

# Public Meeting Summary

## Individual Environmental Reports 4 & 11 New Orleans / IHNC Surge Barrier Protection public meeting Tuesday, May 13, 2008

<b>Location</b>	Dillard University Stern Amphitheater 2601 Gentilly Blvd. New Orleans, LA
<b>Time</b>	Open House 6:00 p.m. Presentation 7:00 p.m.
<b>Attendees</b>	25 attendees and 10 staff
<b>Format</b>	Presentation then Discussion
<b>Handouts</b>	PowerPoint Presentation Borrow handout 5.13.08 Corps approval process brochure Hurricane system location map
<b>Facilitation</b>	Randy Cephus, Public Affairs, HPO
<b>Presenter(s)</b>	August Martin, branch chief, levees, floodwalls and armoring Laura Lee Wilkinson, environmental manager

### Welcome

**Randy Cephus**, public affairs, Hurricane Protection Office

Thanks for choosing to come to this meeting rather than watch the basket ball game. Tonight we'll give a presentation about Individual Environmental Report 4, 11 and borrow. August Martin, the branch chief of Floodwalls and Armoring will give the presentation on IER 4 and then Laura Lee Wilkinson, the environmental manager will give the presentation on IER 11. We'll also discuss borrow.

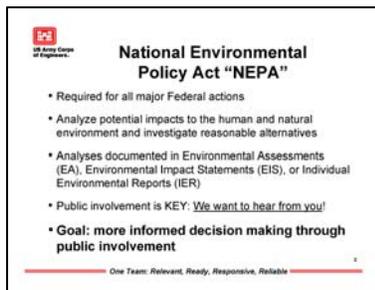


August and Laura Lee will give the presentation and I'll ask that you please hold your questions until they turn the floor back over to me to facilitate the questions and answers. If you have a question, please stand and let me acknowledge you. I'll ask that you please say your name and where you are from then you can make your comment or ask a question. Please limit yourself to two questions and a follow comment. Please keep under three minutes. If your comment gets lengthy I may chime in to get clarification on what your question is. On behalf of the District Commander, Col. Alvin Lee welcome to tonight's meeting and presentation.

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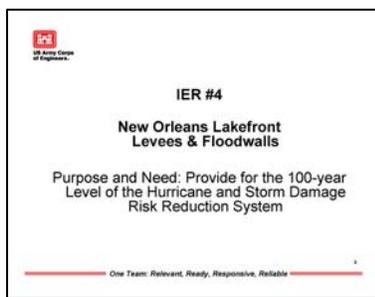
August Martin, branch chief, Hurricane Protection Office



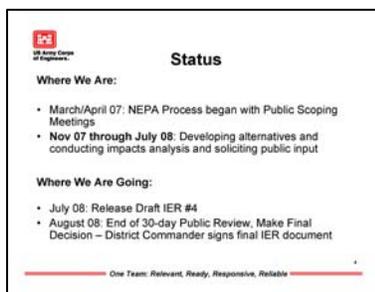
We're here tonight because of the National Environmental Policy Act. NEPA is required of all federal projects. We analyze the impacts a project may have on the human and natural environment then normally would document the process in an Environmental Impact Statement. Hurricane Katrina has allowed the Corps to go through the environmental compliance requirements a little differently and assess the impacts of building the system that will provide 100-year level of protection in an Individual Environmental Report. Our task is to provide 100-year

protection and it is a formidable project that will take team work to accomplish. Your part of the team effort is providing input. We host meetings to get your input so we can develop a plan that takes into account all of your concerns. We go through this process with the levee board, state government and non-government entities and the purpose is to get full involvement of

stakeholders in the process as we march forward with building a 100-year system.



IER 4 covers the levees, floodwalls and gates from the 17<sup>th</sup> St. Canal to the Inner Harbor Navigation Canal or Industrial Canal. Our mission is to provide 100-year protection to people living within the Greater New Orleans Hurricane and Storm Damage Risk Reduction System.



The process to bring the system up to 100-year protection began over a year ago, in Mar. 07. By July we hope to have completed the process of evaluating alternatives and soliciting input. We expect a draft of the report to be completed in July and then will release it for a 30-day public comment period. After the comment period [and if no significant comments are received] the New Orleans District Commander, Col. Alvin Lee, will make a decision to sign the final report.



This slide shows work the Corps has done from the 17<sup>th</sup> St. Canal to the Industrial Canal. The first reach is from the 17<sup>th</sup> St. Canal to the Topaz Gate. That gate has been removed and we expect work on it to begin in the first quarter of 2009. The three reaches on this alignment primarily consist of levee construction. This second reach is almost complete from Topaz St. to the Orleans Ave. Canal. The reach was removed and replaced by a raised levee. We're about halfway done with improvements to the reach between the Orleans and London Ave. Canal. The reach between

London Ave. Canal and the IHNC is substantially complete as well.

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**New Orleans Lakefront Levee  
Phase 1A & 2 of 100-year Level of Protection**



- Modifications or replacement of floodwalls / gates
- Additional embankment work to meet new design criteria
- Raise Road Ramps
- Armoring of transitions & utility crossings

One Team: Relevant, Ready, Responsive, Reliable

A number of ramps such as the one at Canal Blvd requires that we raise it and that work will move us further toward providing the 100-year level of protection. That project includes modifying or replacement of floodgates, raising levees and floodwalls, raising ramps and where there are utility crossings, building transitions between floodwalls and levees. We're also armoring.

**IER #4 LPV 101.02  
17<sup>th</sup> St. Canal to Topaz St.**



One Team: Relevant, Ready, Responsive, Reliable

The first reach is from the 17<sup>th</sup> Street Canal to the Topaz St. gate, we call this the Topaz reach. On each side of the canal there's a levee and on the west end it's a floodwall indicated in green. The east end of the levee goes to the Topaz St. gate. Between those floodwalls are levee reaches and a number of floodgates. And there are number of options we're considering for 100-year protection.

**IER #4 LPV 101.02  
17<sup>th</sup> St. Canal to Topaz St.**

- West End Levee
  - Construct floodwall above existing levee
  - Raise levee
- Existing Floodwall between gates L-1A and L-5
  - Retrofit
  - Raise Lake Marina Ave
  - Realignment of floodwall to marina seawall
- Gate L-1A
  - Remove and replace existing gate
  - Remove gate and replace with ramp

One Team: Relevant, Ready, Responsive, Reliable

We can improve the current levee to provide 100-year protection or we can construct a new floodwall. Just south of that levee is a floodgate and a reach of floodwalls between the west end levee and east end levee. Floodwalls could be retrofitted by raising Lake Marina Ave. or by realigning the floodwalls so it's closer to the marina. The other option in that reach is replacing the existing I-walls with T-walls. You'll see a number of floodgates that we have to address. Those gates could be replaced or we may replace them with a ramp. The local entities, such as the levee district, favor ramps because the operation and maintenance is less than it would be with a gate.

**IER #4 LPV 101.02  
17<sup>th</sup> St. Canal to Topaz St.**

- Gate L-4 and Floodwalls along Pontchartrain Blvd
  - Realign HPS and construct new floodwall and gate L-4A adjacent to Lake Marina Ave.
  - Remove floodwall and gate L-4 and replace on existing alignment
- East End Levee between Topaz Street and Gate L5
  - Construct floodwall above existing levee
  - Raise levee with and without supplemental retaining walls

One Team: Relevant, Ready, Responsive, Reliable

Floodwalls and gates are part of the current alignment. We may be replacing the floodwall so that we have a straight line of protection and could remove existing floodgates and replace [inaudible]. On the east end we'd do the same thing as on the west end by either improving the levee by raising it or constructing a floodwall to replace it. There are number of factors to consider in our decision such as how big the levee footprint is and how much

new right-of-way it would require. We will also look at cost and input from you and other interests.

**IER #4 LPV 103.01A  
Topaz to Orleans Canal**



- Canal Blvd Ramp
  - Raise Ramp
  - Construct New Flood Gate

One Team: Relevant, Ready, Responsive, Reliable

The next portion of this project is from the Topaz Gate to the Orleans Ave. Canal. This would require replacement of the Canal Blvd ramp. Those familiar with area the area know there's a dip as you pass through the existing flood protection on Canal Blvd. That would require us to raise or construct a new floodgate to provide 100-year level of protection.

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There are a number of ramps we hope to replace as part of Phase 1 of the levee work. This is part of the ongoing work that is about 50 percent complete. It will raise the levee to the 100-year level but we'll talk further about that when we get to Bayou St. John.

From Orleans to London Ave. Canal we're raise the ramp or floodgate.

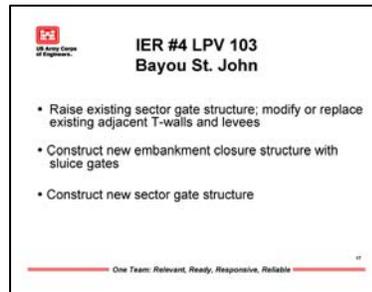


This is the existing alignment, and this is the future alignment.

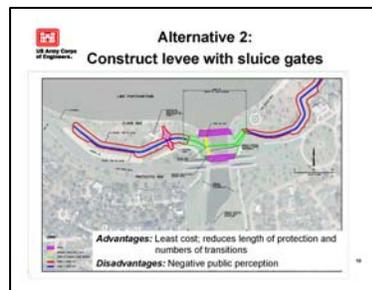
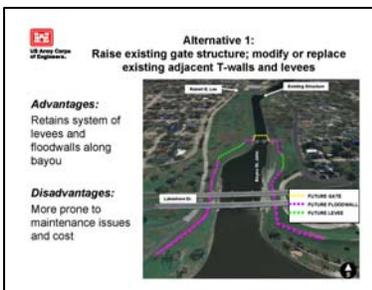
The existing alignment has 15 reaches starting east of Bayou St. John and going to the London Ave. Canal. This will require a major ramp replacement.



Bayou St. John includes a series of levees and floodwalls that we'll need to address. We are considering a number of options that could include raising the existing sector gate, modifying levees and replacing I-walls with T-walls. We could also construct an embankment at the mouth of the bayou along with sluice gates or we could construct a new sector gate at same location.



Some of the advantages and disadvantages of Alternative 1 are that we retain the character of the bayou as it is now. To meet 100-year protection we'd replace with I-walls with T-walls, raise levees and modify the sector gate. A disadvantage to this alternative is that existing gate will have higher maintenance costs.

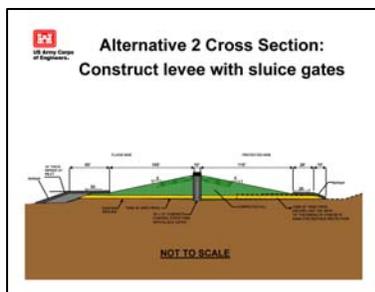


Alternative 2 would be constructing a levee at the mouth of Bayou St. John. It would provide a straight line of protection to the community and has the least cost of all the alternatives. A big disadvantage is

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the negative public perception that it would change the character of the existing bayou. In addition, there could be delays due to the permitting process that would be required if we wanted to change character of what some consider a scenic waterway.



This is what Alternative 2 would look like, it has sluice gates.

Alternative 3 is to use a sector gate that would reduce the length of protection and the number of transitions needed. The disadvantages of the sector gate are the high costs and changing the character of the existing bayou.

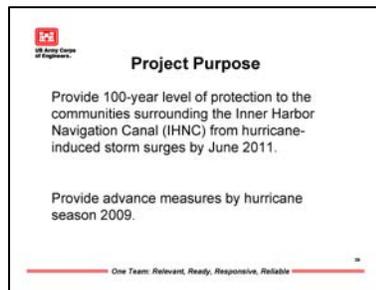


On levee reach LPV 104, which goes from London Ave. Canal to the IHNC there is ongoing addition levee work. There is construction on a number of

ramps on both sides of UNO including the Franklin Dr., Leroy Johnson.



The alternatives for LPV 104 are we may replace some ramps, we may also convert the I-walls into L-walls. Of course any I-wall can be replaced with T-walls probably within the same footprint. We may also replace floodwalls and floodgates with ramps and a new levee section. We have existing levees and floodgates that we're basically considering the same options for to provide 100-year protection.



**Laura Lee Wilkinson,** environmental manager

The Corps is capturing the impacts of this project called, "Improving Hurricane Protection on the Inner harbor Navigation Canal," in IER 11 and the part

will discuss tonight is the portion of that document called IER 11 Tier 2 Borgne.

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The purpose of this project is to provide 100-year protection to the communities surrounding the IHNC. We're protecting people behind the walls of the Industrial Canal. The other purpose of this project is to provide advanced protection measures by hurricane season 2009. We'd start construction in early September then have something in place by hurricane season 2009.

**Where we've been**

- IER #11 Tier 1 Decision Record signed March 14<sup>th</sup>
- Investigated alternatives for providing improved protection for the communities surrounding the IHNC

One Team: Relevant, Ready, Responsive, Reliable

IER 11 Tier 1 discussed the Corps' plan to improve hurricane protection by selecting two areas to block storm surge from Lake Pontchartrain and Lake Borgne. The IER and its Record of Decision documented our investigation of the locations we considered to build those structures and noted that we intend to build something to block storm surge in the locations called Borgne 1 and Pontchartrain 2.

**Where we've been**

- Selected "Storm Surge Protection Structures" alternative to protect from Lake Borgne surge and Lake Pontchartrain surge
- Selected "Pontchartrain 2" and "Borgne 1" location ranges

Borgne 1  
Pontchartrain 2

One Team: Relevant, Ready, Responsive, Reliable

**IER #11 Tier 2: Where we're going**

Two Tier 2 IERs

- IER #11 Tier 2 Borgne: Alignment and design alternatives within "Borgne 1"
- IER #11 Tier 2 Pontchartrain: Alignment and design alternatives within "Pontchartrain 2" (alternatives to be developed this summer)

One Team: Relevant, Ready, Responsive, Reliable

In essence the location called Borgne 1 stops storm surge from Lake Borgne and Pontchartrain 2 protects people from storm surge from Lake Pontchartrain.

These are the alignments we're considering for the Lake Borgne structure. I'll walk you through the alignments. Alignment 1 would be a deep draft gate about 350 ft x 40 ft deep.

**IER #11 Tier 2 Borgne Alternative Alignments Overview**

Legend: Alternative Alignment, Gate, Undersized Natural and Scenic River (portion of Delta River)

One Team: Relevant, Ready, Responsive, Reliable

**IER #11 Tier 2 Borgne Alternative Alignments**

Alignment 1  
Alignment 2

Legend: Levees & Floodwalls to be Raised, Alternative Alignments, Gate

One Team: Relevant, Ready, Responsive, Reliable

Alignment 2 would also be a deep draft gate but it would be east of the Michoud Slip. Alignment 3 would be a barrier across golden

**IER #11 Tier 2 Borgne Alternative Alignments**

Alignment 3  
Alignment 4 & 5

Legend: Levees & Floodwalls to be Raised, Alternative Alignments, Gate

One Team: Relevant, Ready, Responsive, Reliable

triangle marsh and a small shallow draft gate east of Michoud Canal. Alignment 4 would also be a barrier across the golden triangle marsh and would involve a gate. Alignment 5 is the furthest east, it's calling for a barrier through the marsh and MRGO channel and a shallow draft gate here [pointing] and a barrier on the Gulf Intracoastal Waterway. This is GIWW [pointing] and this is the MRGO here [pointing]. Another feature I'd like to point out is that we have a scenic river here [pointing]

that's designated by state law.

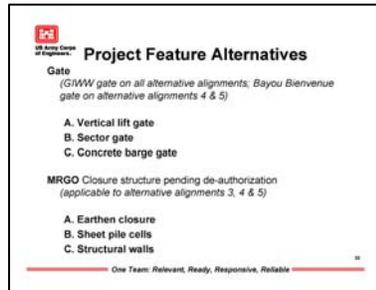
Alignment 1 would have a deep draft navigation gate and would require us to raise all the levees and floodwalls to 100-year protection levels as well as raising the levee on the Chalmette Loop levee and replace the Bayou Bienvenue Control Structure.

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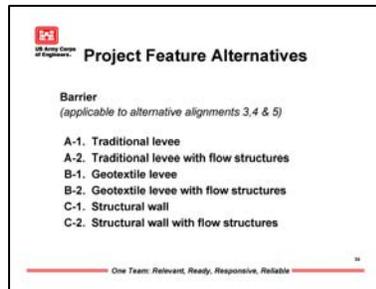
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Alignment gate 2 has a shorter length of levees and floodwalls that would need to be constructed.

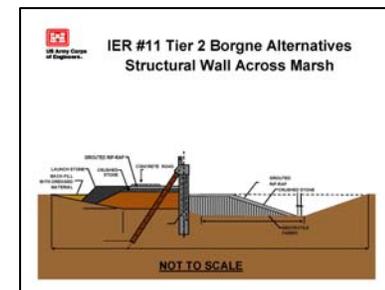
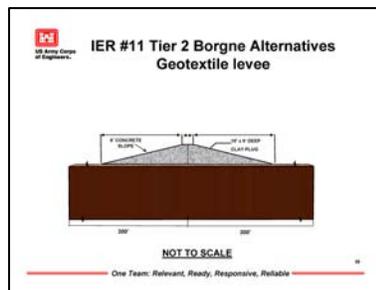
Alignment 3-5 cut out the levees and floodwalls that have to be raised. They are different from each other in that they are further east and with Alignment 4 and 5 they are east of the Michoud Canal but involve a gated structure on Bayou Bienvenue to maintain the flow to this national scenic river. These are the five alignments we're investigating.



We're considering several gates to allow for navigation on the GIWW and those include the vertical lift, sector and concrete barge gates. For the MRGO closure we're considering an earthen closure, sheet pile sells and structural walls.



The barriers we're considering are a traditional levee or a traditional levee that allows flow. Some of the reasons we're considering all these project features are there are impacts associated with building levees and there are issues of maintaining sheet flow and with flow structures you can increase circulation [inaudible]. We're also considering geotextile levees, geotextile levees with flow structures and structural walls with and without flow structures.



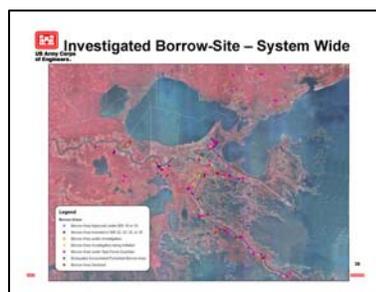
This is a cross section example of what geotextile levees look like. These [pointing] are soil improvement features that would be drilled in to the ground. You'd see a structure like a levee on top but it's not made out of dirt.

This is an example of a structural wall. It's pile supported and there's crushed stone on top, there would be a channel dredged to get the building equipment to the wall



location.

This is an example of a vertical lift gate, it's on St. Claude. And this is an example of a sector gate, this is the Bayou Bienvenue sector gate on the Chalmette Loop. This was repaired after Katrina.



These are the sites for borrow we've investigated in southern Louisiana and Mississippi. And these are the sites we're considering in Orleans Parish.

are intended to provide an overview of the and to provide a complete or verbatim account

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We're here to answer your questions and inform you about projects that are under investigation. The purpose of this meeting is to collect your input but if you still have other questions, please call or write us to let us know. The Web site [www.NolaEnvironmental.Gov](http://www.NolaEnvironmental.Gov) is also a source of information for you.

## Discussion



**Cephus:** Before we go to the discussion period I'd like to introduce the sources of information we have for you here tonight. In addition to August Martin and Laura Lee Wilkinson we also have:

Soheila Holley	Senior Project Manager, borrow
Joe Kopec	Real Estate
Maj. Tim Kurgan	Chief, Public Affairs
Rueben Mabry	Risk and Reliability, Task Force Hope
August Martin	Branch Chief, floodwalls and armoring
Gib Owen	Chief, Ecological Planning and Restoration Section
Laura Lee Wilkinson	Environmental Manager

**Question 1.** Starr Wilson, Bayou St. John: There was an option of a barrier down from Lakeshore Dr., is that near Fillmore St.? Can you elaborate on that?

**Response 1.** Martin: There are two options that don't involve improving levees and floodwalls and it would be to build a sector gate or a levee closure close to the mouth of Bayou St. John.

**Comment 2.** Wilson: It looks like those options go in quite away [into Bayou St. John].

**Response 2.** Martin: That's the existing gate.

**Question 3.** Man: What walls or gates will protect New Orleans East?

**Response 3.** Martin: If you start at the Lakefront Airport there are existing walls that we're considering replacing. The alignment would be on the western side of Dowman Rd. then east a long stretch of levee that's sandwiched between Hayne Blvd. and the railroad track. We have an option to improve or replace that wall with a T-wall within that reach all the way to the

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Lakefront Airport. There's also a floodwall on reach LPV 105 that goes to Paris Rd. It stretches from the floodgate by Lincoln Beach. The alternatives are to replace [inaudible] on the existing alignment or to possibly shorten the alignment to create a straight line of protection. From Paris Rd. to South Point the levee would [inaudible] from South Point to the GIWW. Along alignment [inaudible] Hwy 11 and CSX railroad then there is a reach from the CSX railroad to the Michoud Canal. Basically our project would improve that protection and tie into the gate crossing that Laura Lee Wilkinson covered.

**Question 4.** Man: How far along are we?

**Response 4.** Martin: There are two contracts that we expect to award for levee reaches LPV 108 and LPV 109 from South Point to the CSX railroad. We also expect to award contracts that are further east than what's shown here. The major levee contracts will cover 18 miles.

**Question 5.** Man: Do you have funding for those projects?

**Response 5.** Martin: We have part of the funding for these two contracts, yes. To complete the full system, part of money is in the president's fiscal 2009 budget request that we expect to get this fall.

**Question 6.** Man: Is it part of the supplemental defense budget or the general budget?

**Response 6.** Martin: It's the 2009 budget, we'd expect to have funds by Oct. 1 2008.

**Comment 7.** Man: There's already a bridge being built across the lake from New Orleans East to Slidell in St. Tammany Parish.

**Response 7.** Martin: That's not a Corps project.

**Question 8.** Man: On the north shore the Corps was involved in a recreation project to bring a water park there. Why isn't putting a water park on the Orleans side of Lake an option?

**Response 8.** Cephus: Is that a recreational facility?

**Comment 9.** Man: It would make the north shore more inhabitable. The Corps was involved in that other effort.

**Response 9.** Cephus: We can look into it. We can get that question answer.

**Question 10.** Woman: One of your plans is that the London Canal wall is embedded in sand. What are the plans to change that to clay so those canal walls won't breach again? I know pumps are there to relieve the surge but still, I-walls should be embedded in the canal.

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**Response 10.** Martin: When the surge barriers are in place, they are the first lines of protection. You're referring to an analysis we did with the walls that tie in with the rest of the protection system. That's being realigned in case any action is needed, we'd go further up into the canal. The Corps looks at safe water elevation and tests to see what the walls can tolerate. It took several months to determine the heights of the walls and those have been looked at again. The only area that would require replacement would be walls that tie into the outfall canals.

**Question 11.** Lady: The concern of residents is that areas that did not breach during the flood may have weakened and could possibly breach in the future even if there's not a hurricane.

**Response 11.** Martin: The surge barrier would protect the surge from impacting those walls. The safe water elevation was analyzed so it shows how high water can be in the canal while still maintaining its integrity.

**Questions 12.** Another woman: Did you replace the sand with clay?

**Response 12.** Cephus: We actually just did an exercise to test how high we could raise the safe water elevation.

**Question 13.** Lady: I want to know if I'm going to have to sweep sand off my porch?

**Response 13.** Cephus: I can't answer that but we are concerned about people. We studied and analyzed the system and the closure structures and walls. They are able to withstand the water as deemed by the London Load Test. We can't give guarantees, there will always be risk to you but we're trying to minimize that risk

**Question 14.** Wilson: Are you going to coordinate with the New Orleans Sewerage and Water Board? Specifically, what water level is considered safe for us?

**Response 14.** Maj. Kurgan: The safe water elevation in the London Canal is 5 ft. Based on the Load Test, the instruments tell is the wall is physically and structurally sound.

**Question 15.** Wilson: Is that from the base of the cement?

**Response 15.** Maj. Kurgan: No, that's from the geotechnical fabric, not just from the base of cement.

**Question 16.** Wilson: How will you work with the NOSWB so the walls are not overloaded?

**Response 16.** Maj. Kurgan: We monitor the canals and we communicate with the NOSWB and other key stakeholders all the time. The London Outfall Canal's safe water elevation is 5 ft [even though the walls are higher] because we need that extra [space] above 5 ft to mathematically determine the pumping capacity. We don't want to pump too much water in and get above the safe water elevation. If there ever gets to be too much [water pumped into the canal] we have

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people with the NOSWB who can back off on pumping so they don't overwhelm the system. We have an operating in system in place that uses microwave satellites, BlackBerry technology and state band radio so there are multiple lines of communication with the NOSWB. We don't depend on one communication route. And today we had a test where we closed the outfall canal structures and tested them with Orleans and Jefferson parish. The exercise went well today and we'll practice again and every year until we have the system in place. We don't want you to worry about it.

**Question 17.** Lady: Has the NOSWB been invited to meetings?

**Response 17.** Cephus: They've been invited but they're not here tonight.

**Question 18.** Wilson: They put a bigger pump out in middle of the road and it's going to flood and not work anymore. Have you heard from them when will it be elevated?

**Response 18.** Wilkinson: We can check on that pump.

**Question 19.** Wilson: The pump in the middle of the road is at Perlita and Prentice streets. It's still only 1ft high which is a problem.

**Response 19.** Wilkinson: I'll check with the NOSWB and get back you.

**Question 20.** Man: How much clay sources are there so far?

**Response 20.** Holley: Clay for the New Orleans metro area will come from the Bonnet Carre Spillway because the clay has been tested and we don't have to go through real estate acquisition. It'll be excavated when contractor is ready.

**Question 21.** Man: Is that the site with 16 million [cubic yards of clay]?

**Response 21.** Holley: We have 25 million cubic yards tested and we'll investigate more. As soon as we pump water out of the Bonnet Carre it will be functioning again. It will take about a month.

**Question 22.** Man: How much clay do you have left to source?

**Response 22.** Holley: The hurricane system needs more than 100 million cubic yards of clay but that number changes as we get closer to the specific project requirements. At this point we've identified 40 million cubic yards of clay. We're fortunate that not all the contracts are being awarded at the same time but we have three methods to acquire borrow and are optimistic we'll find it.

**Question 23.** Man: So you have 40 million [cubic yards of clay]?

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**Response 23.** Holley: At this point no. We have a solicitation that will be finalized at the end of the month as a supply contract.

**Cephus:** If there are no other questions, we'll have the project managers around to answer anything for you one-on-one. You can also go online to send us your comments. Please visit [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov), we want to hear from you because your input will be used to develop the hurricane system. Thank you for coming out tonight.

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# National Environmental Policy Act “NEPA”

- Required for all major Federal actions
- Analyze potential impacts to the human and natural environment and investigate reasonable alternatives
- Analyses documented in Environmental Assessments (EA), Environmental Impact Statements (EIS), or Individual Environmental Reports (IER)
- Public involvement is KEY: We want to hear from you!
- **Goal: more informed decision making through public involvement**



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## IER #4

# New Orleans Lakefront Levees & Floodwalls

Purpose and Need: Provide for the 100-year  
Level of the Hurricane and Storm Damage  
Risk Reduction System



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# Status

## Where We Are:

- March/April 07: NEPA Process began with Public Scoping Meetings
- **Nov 07 through July 08:** Developing alternatives and conducting impacts analysis and soliciting public input

## Where We Are Going:

- July 08: Release Draft IER #4
- August 08: End of 30-day Public Review, Make Final Decision – District Commander signs final IER document

# New Orleans Lakefront Levee - Current Construction: Phase 1 of 100-year level of protection



**LPV 101-  
17<sup>th</sup> Street  
Canal to  
Topaz Street:**  
*Currently in  
Design Phase*

*Anticipated  
contract award:  
1 Qtr '09*

**LPV 102-Topaz  
Street to Orleans  
Avenue:**  
*Contract Awarded  
3 Oct 07*

**100% Complete**

**LPV 103-Orleans  
Avenue Canal to  
London Avenue  
Canal:**  
*Contract Awarded  
3 Dec 07*

**50% Complete**

**LPV 104-London  
Avenue Canal to  
IHNC:**  
*Contract Awarded  
13 July 07*

**100% Complete**

# New Orleans Lakefront Levee Phase 1A & 2 of 100-year Level of Protection



- Modifications or replacement of floodwalls / gates
- Additional embankment work to meet new design criteria
- Raise Road Ramps
- Armoring of transitions & utility crossings



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# IER #4 LPV 101.02

## 17<sup>th</sup> St. Canal to Topaz St.





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# IER #4 LPV 101.02

## 17<sup>th</sup> St. Canal to Topaz St.

- **West End Levee**
  - Construct floodwall above existing levee
  - Raise levee
- **Existing Floodwall between gates L-1A and L-5**
  - Retrofit
  - Raise Lake Marina Ave
  - Realignment of floodwall to marina seawall
- **Gate L-1A**
  - Remove and replace existing gate
  - Remove gate and replace with ramp



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# IER #4 LPV 101.02

## 17<sup>th</sup> St. Canal to Topaz St.

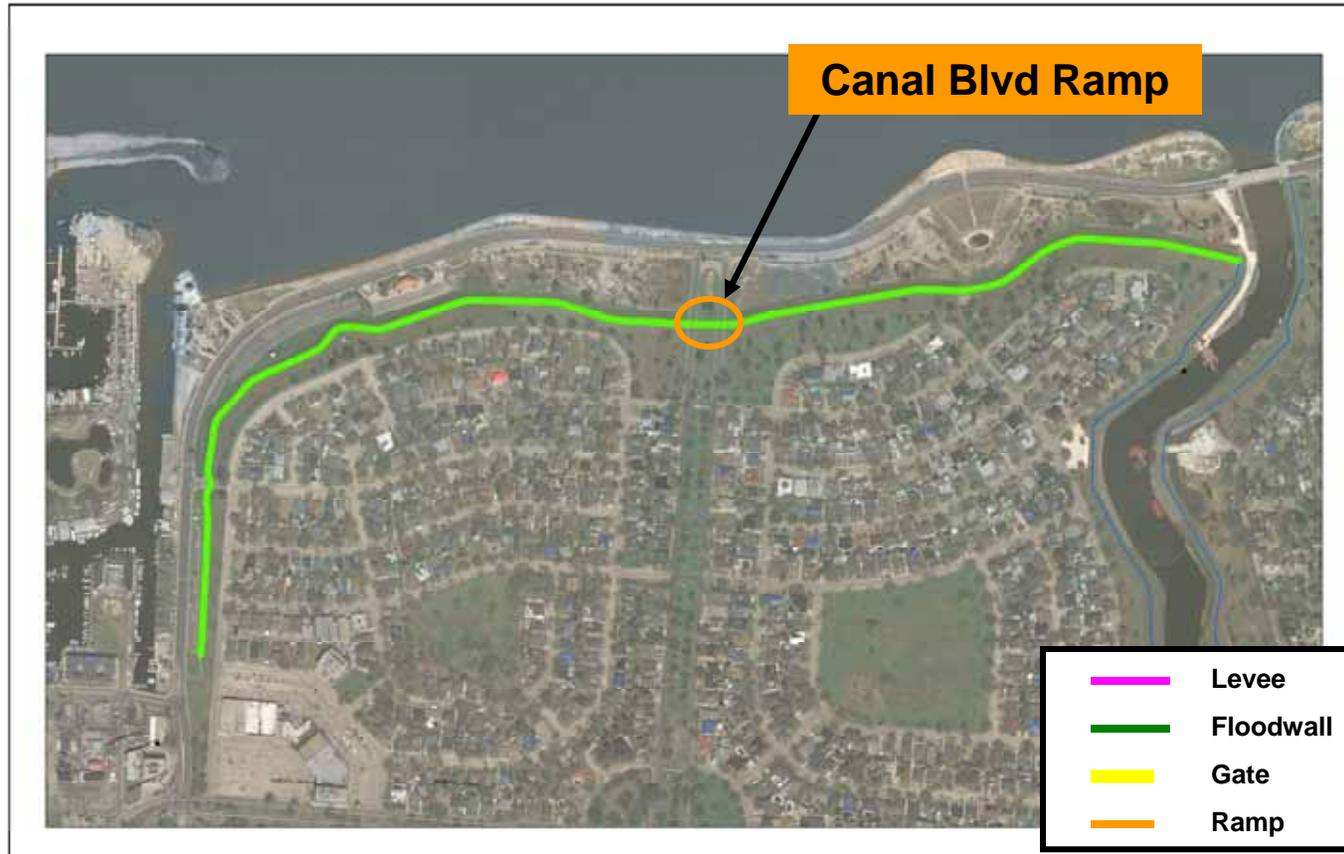
- **Gate L-4 and Floodwalls along Pontchartrain Blvd**
  - Realign HPS and construct new floodwall and gate L-4A adjacent to Lake Marina Ave.
  - Remove floodwall and gate L-4 and replace on existing alignment
- **East End Levee between Topaz Street and Gate L5**
  - Construct floodwall above existing levee
  - Raise levee with and without supplemental retaining walls



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# IER #4 LPV 103.01A

## Topaz to Orleans Canal



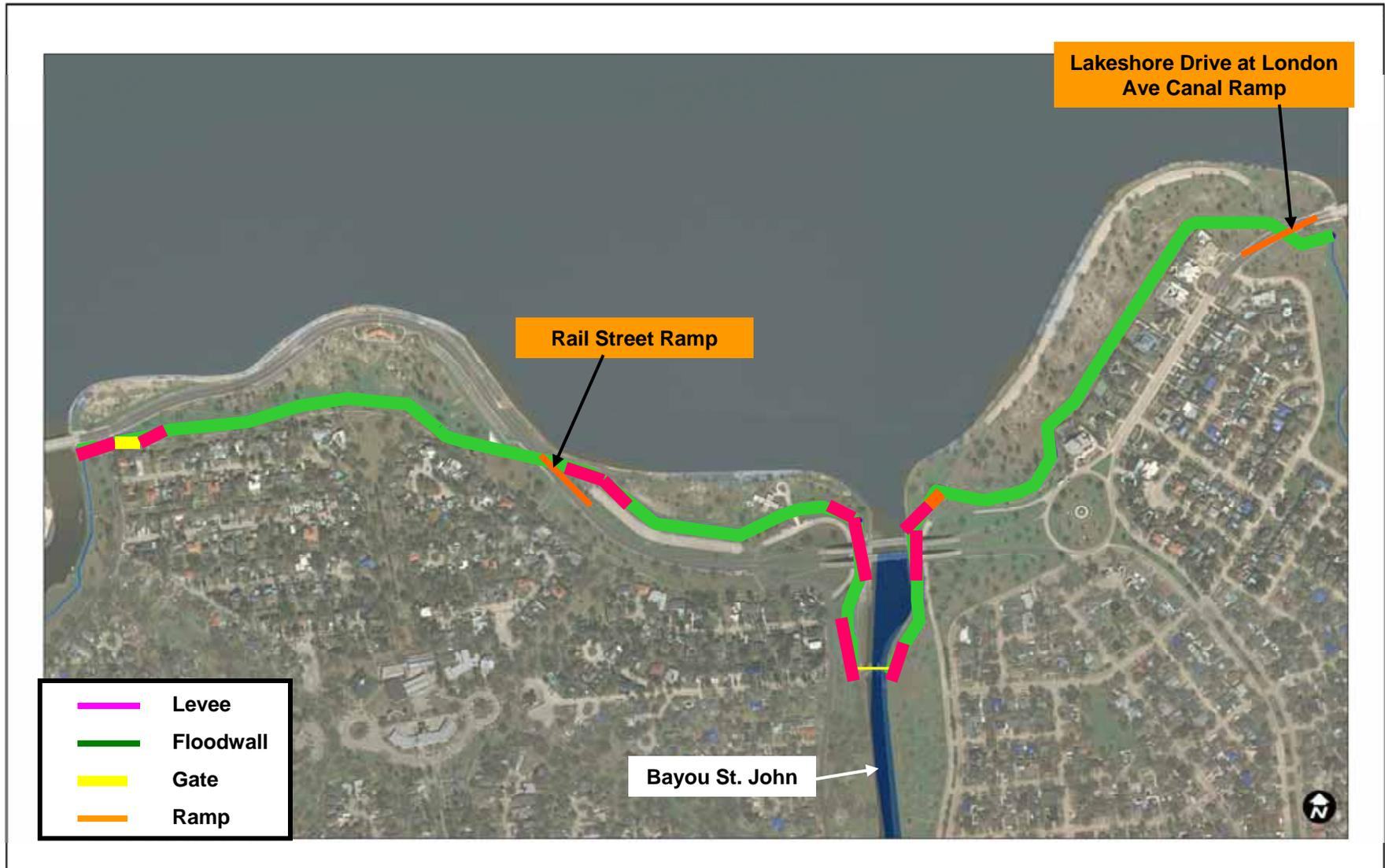
- **Canal Blvd Ramp**
  - Raise Ramp
  - Construct New Flood Gate



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# IER #4 LPV 103

## Orleans Canal to London Ave





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# IER #4 LPV 103

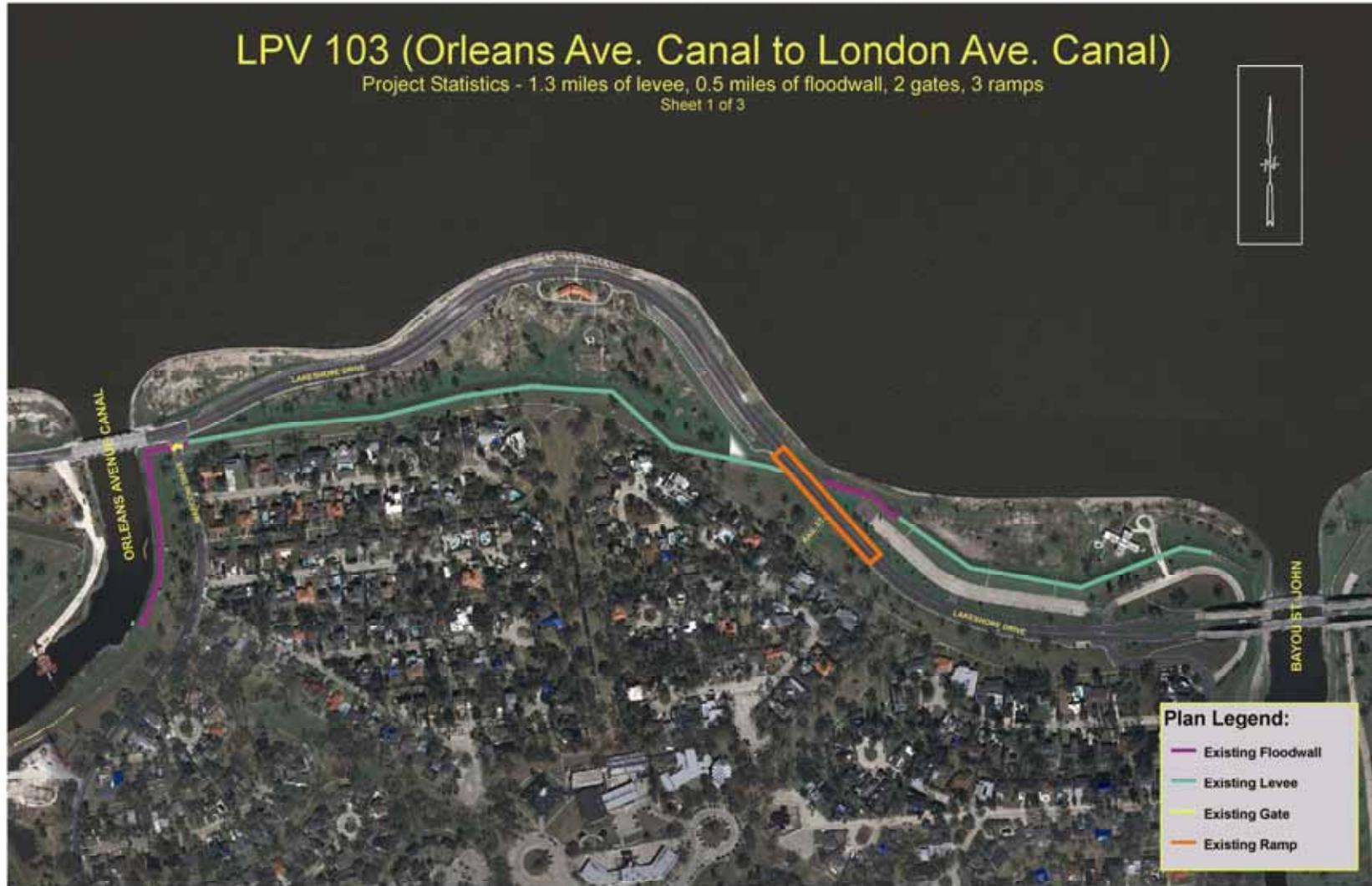
## Orleans Canal to London Ave

- **Rail Street Ramp**
  - Raise Ramp
  - Construct new floodgate
  
- **Lakeshore Drive at London Ave Canal Ramp**
  - Raise Ramp
  - Construct new floodgate



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# Existing Alignment





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# Future Alignment



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# Existing Alignment





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# Future Alignment





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# IER #4 LPV 103

## Bayou St. John

- Raise existing sector gate structure; modify or replace existing adjacent T-walls and levees
- Construct new embankment closure structure with sluice gates
- Construct new sector gate structure



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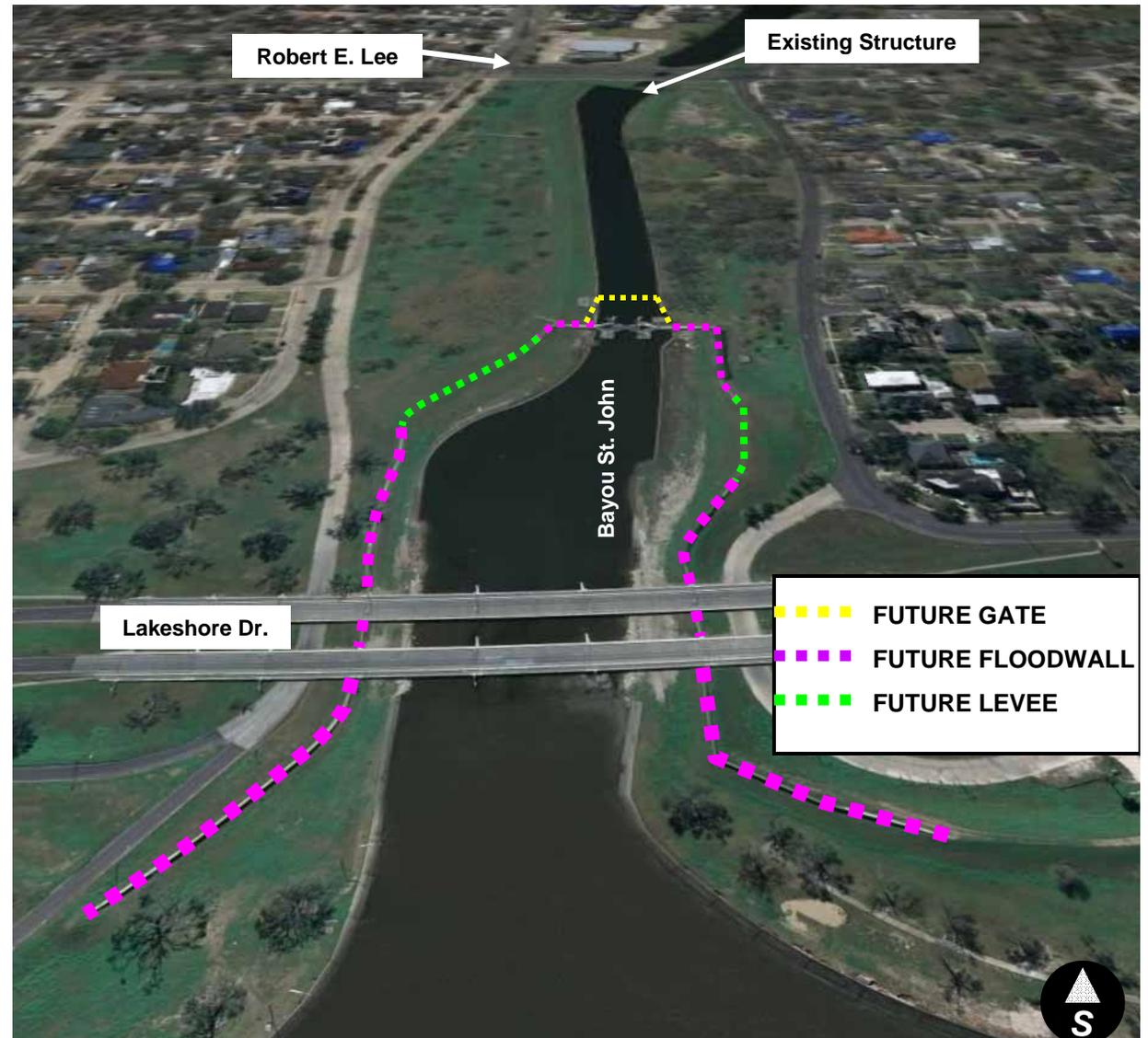
## Alternative 1: Raise existing gate structure; modify or replace existing adjacent T-walls and levees

### ***Advantages:***

Retains system of levees and floodwalls along bayou

### ***Disadvantages:***

More prone to maintenance issues and cost

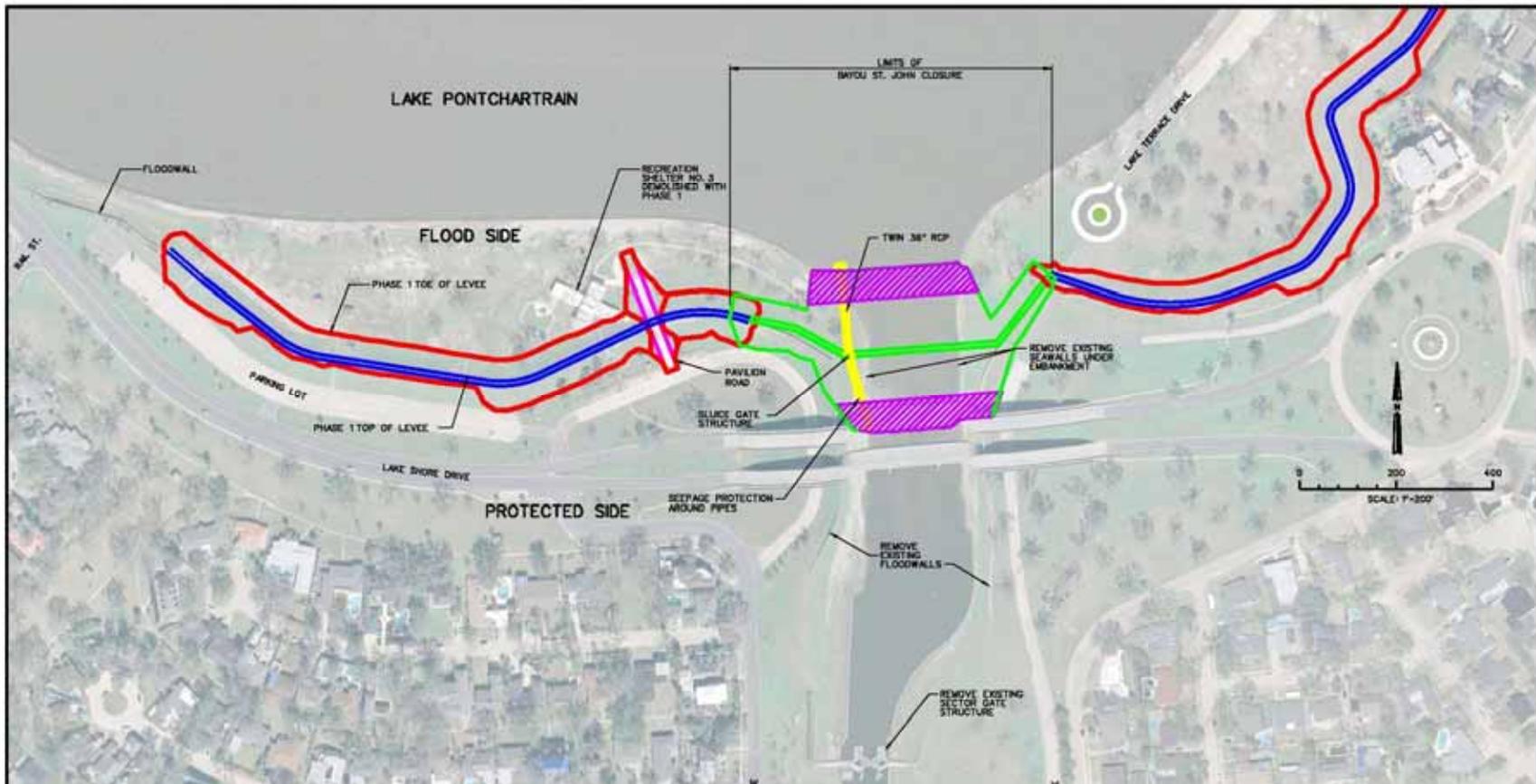




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## Alternative 2:

# Construct levee with sluice gates



**LEGEND:**

-  RIPRAP
-  DRAINAGE STRUCTURE / PIPE
-  LIMITS OF CLOSURE LEVEL SECTION
-  PHASE 1 LEVEE TOE
-  PHASE 1 LEVEE TOP

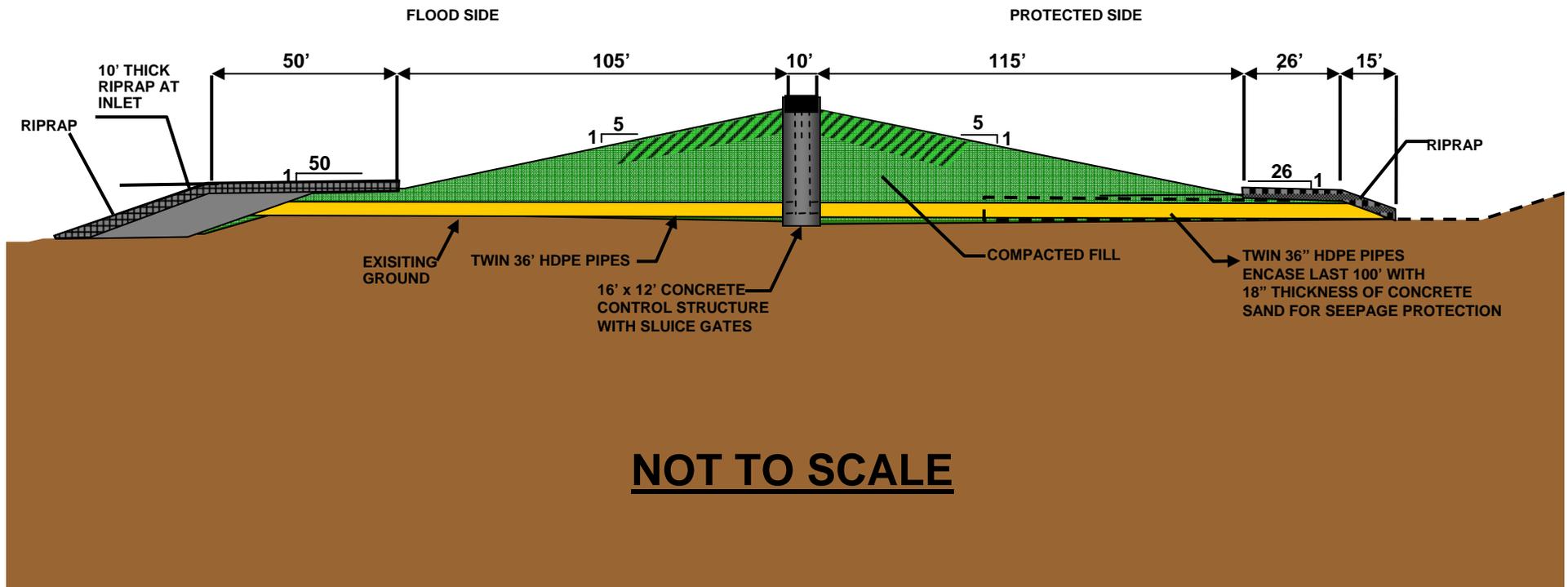
**Advantages:** Least cost; reduces length of protection and numbers of transitions

**Disadvantages:** Negative public perception



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# Alternative 2 Cross Section: Construct levee with sluice gates





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# Alternative 3: Construct levee with sector gate



**Advantages:** Reduces length of protection and number of transitions

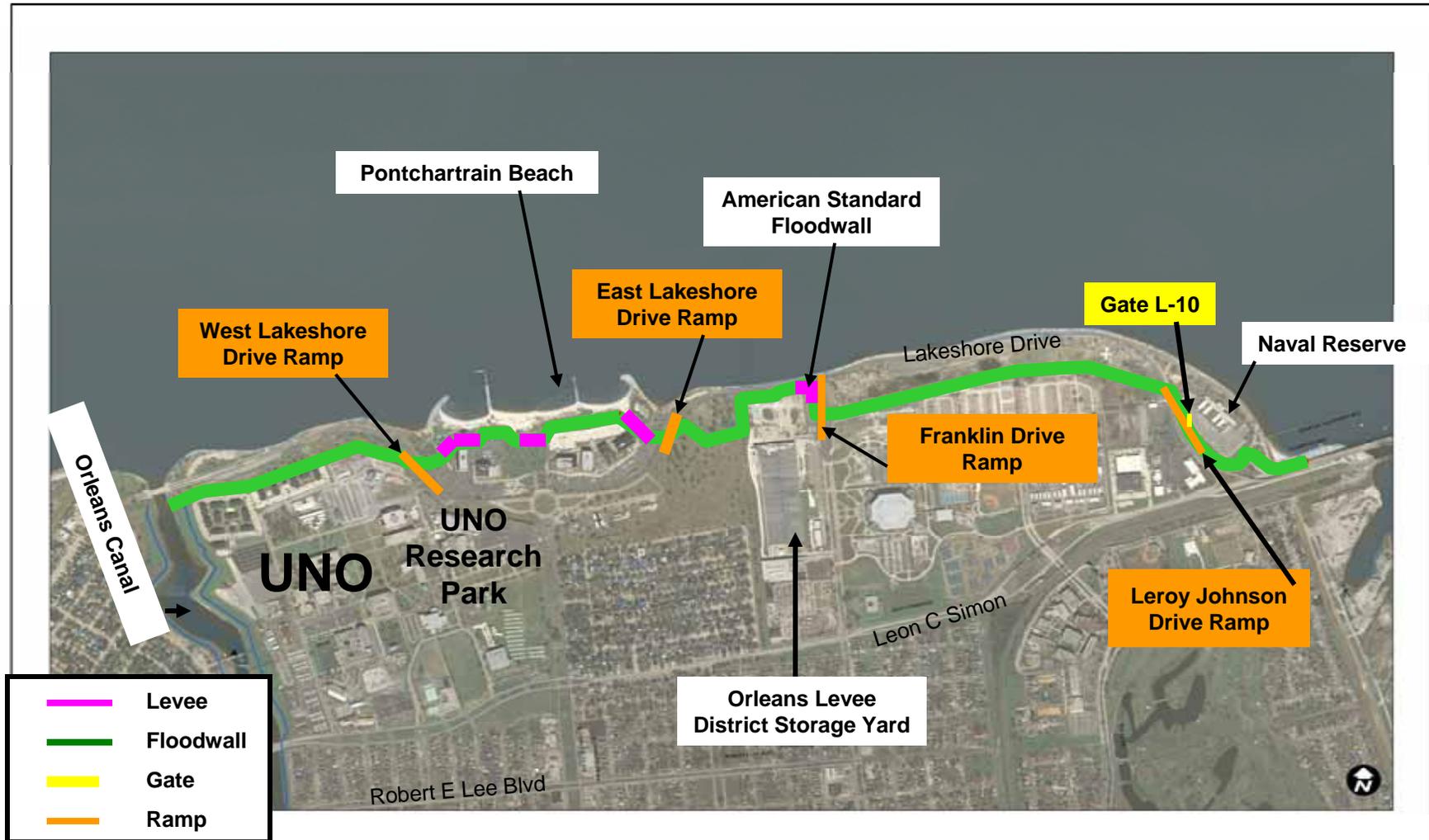
**Disadvantages:** Highest cost alternative



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# IER #4 LPV 104

## London Ave Canal to IHNC





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# IER #4 LPV 104

## London Ave Canal to IHNC

- **Lakeshore Drive ramps east / west of UNO research facility**
  - Raise Ramp
  - Construct Gated closure
- **Pontchartrain Beach**
  - Convert I-wall to L-wall on current alignment
  - Remove gates and replace with new floodwall
  - Remove floodwall and gates and replace with levee section
- **American Standard Floodwall**
  - Convert I-wall to L-wall; leave T-wall as is
  - Construct new floodwall
  - Remove floodwall and replace with levee section



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# IER #4 LPV 104

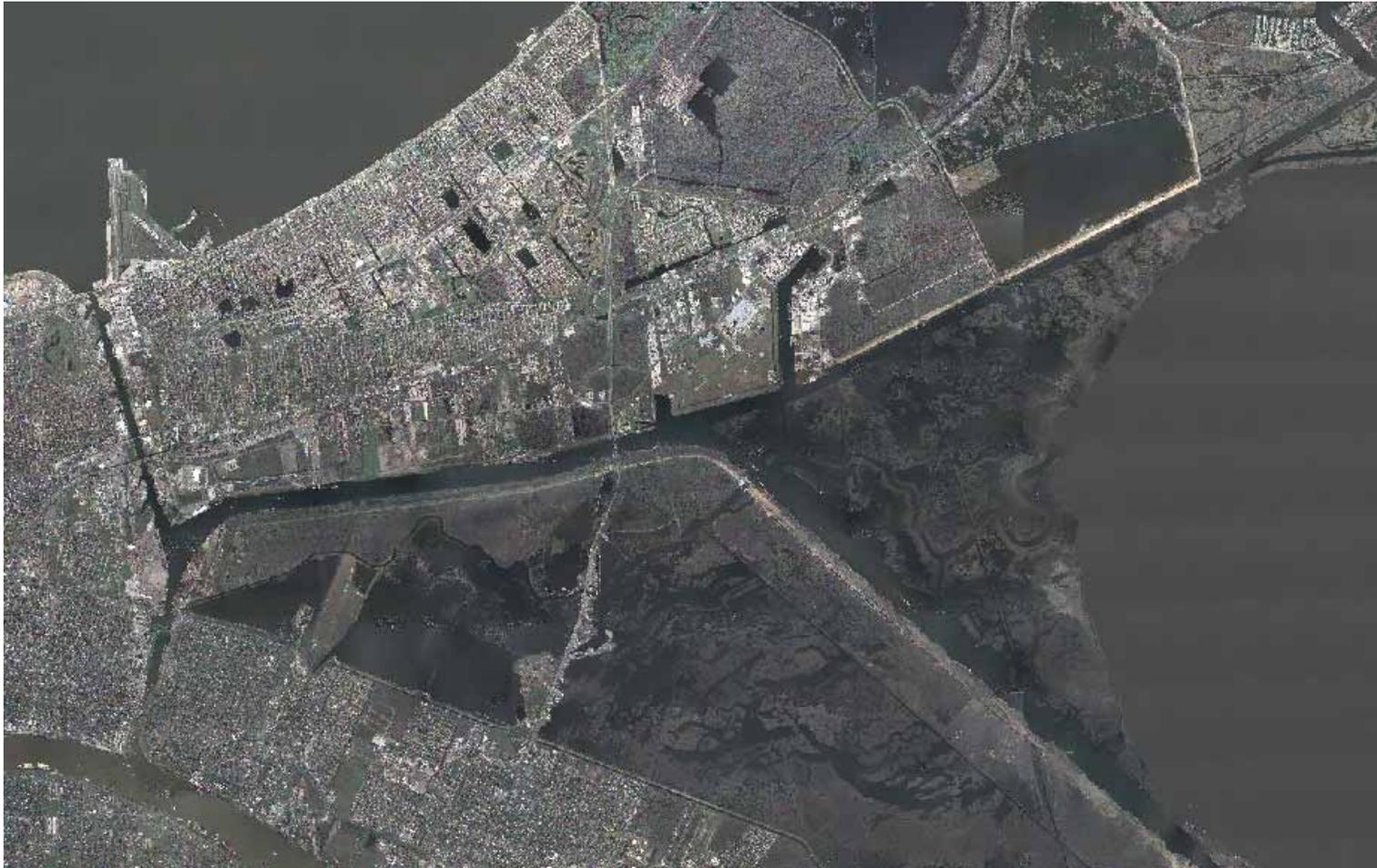
## London Ave Canal to IHNC

- **Levee adjacent to OLD storage yard**
  - Raise levee on current alignment
  - Degrade current levee on alignment
- **Leroy Johnson Drive Ramp / Franklin Ave Ramp**
  - Raise Ramp
  - Construct gated closure
- **Naval Reserve Center Levee**
  - Raise levee on current alignment
  - Degrade current levee and constructs new levee on alignment along Lakeshore Drive
- **Gate L-10**
  - Construct new gate
  - Remove gate and replace with levee section



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# Improving Hurricane Protection on the Inner Harbor Navigation Canal IER #11 Tier 2 Borgne



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# Project Purpose

Provide 100-year level of protection to the communities surrounding the Inner Harbor Navigation Canal (IHNC) from hurricane-induced storm surges by June 2011.

Provide advance measures by hurricane season 2009.



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## Where we've been

- IER #11 Tier 1 Decision Record signed March 14<sup>th</sup>
- Investigated alternatives for providing improved protection for the communities surrounding the IHNC



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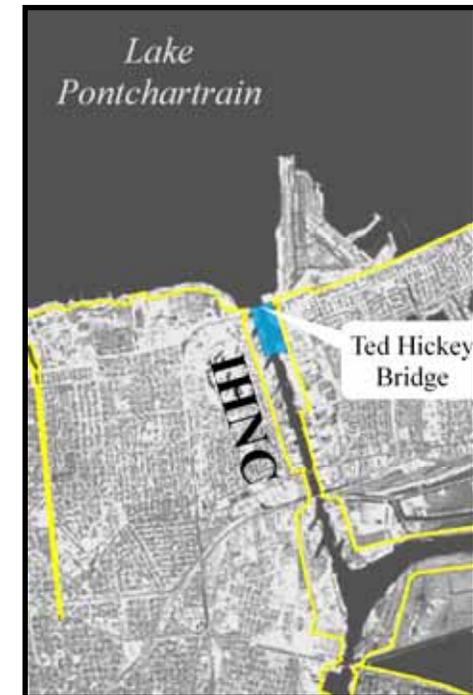
# Where we've been

- Selected “Storm Surge Protection Structures” alternative to protect from Lake Borgne surge and Lake Pontchartrain surge
- Selected “Pontchartrain 2” and “Borgne 1” location ranges

**Borgne 1**



**Pontchartrain 2**





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# IER #11 Tier 2: Where we're going

Two Tier 2 IERs

- **IER #11 Tier 2 Borgne:**

Alignment and design alternatives within “Borgne 1”

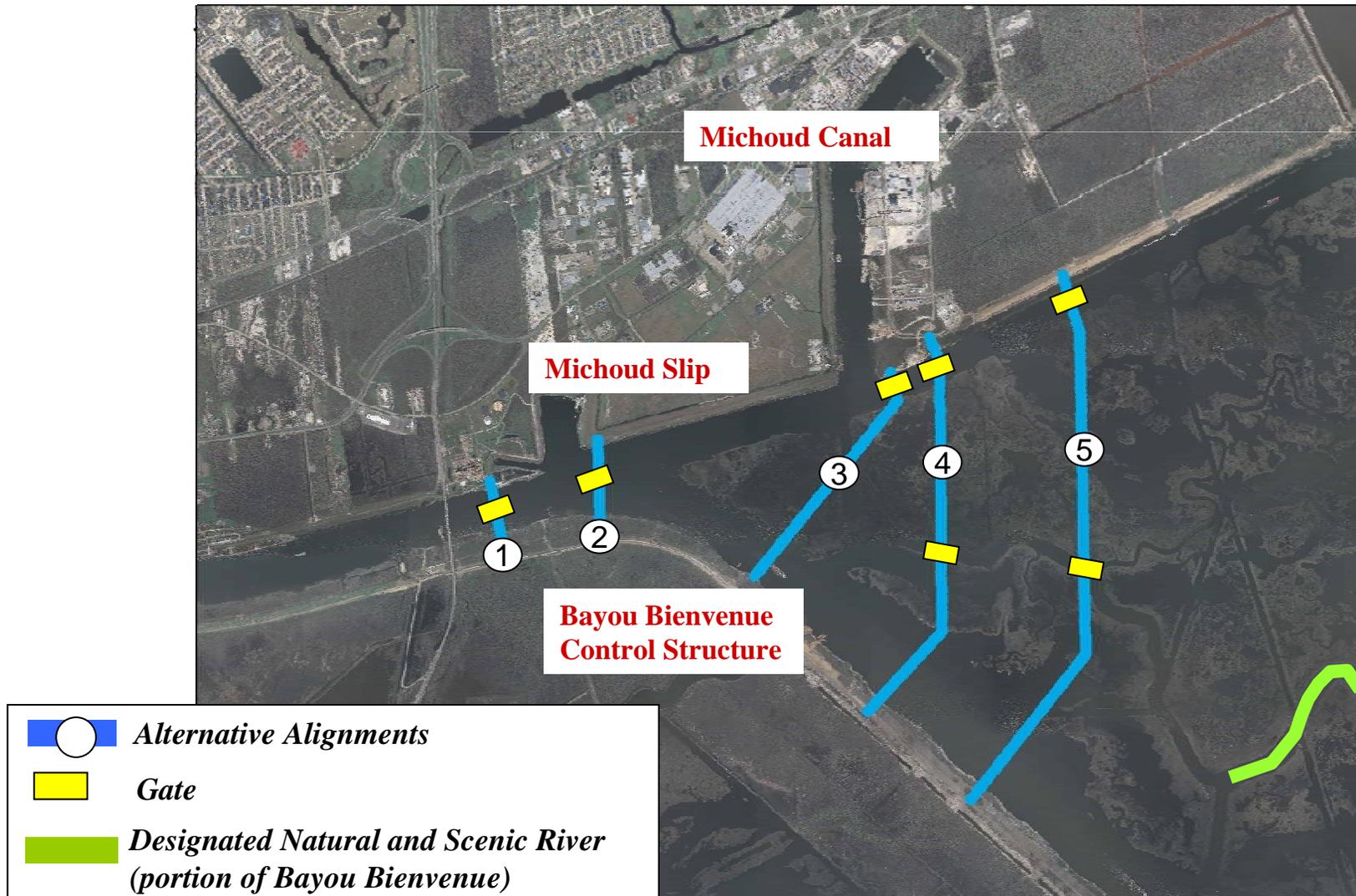
- **IER #11 Tier 2 Pontchartrain:**

Alignment and design alternatives within “Pontchartrain 2”  
(alternatives to be developed this summer)



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# IER #11 Tier 2 Borgne Alternative Alignments Overview

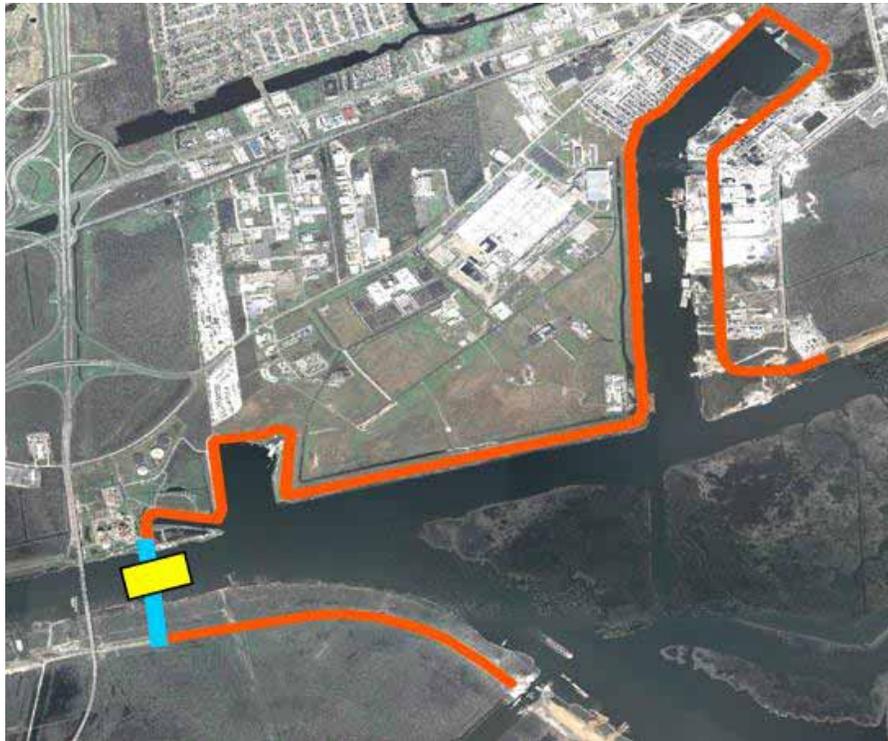




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# IER #11 Tier 2 Borgne Alternative Alignments

Alignment 1



Alignment 2



Levees & Floodwalls to be Raised



Alternative Alignments



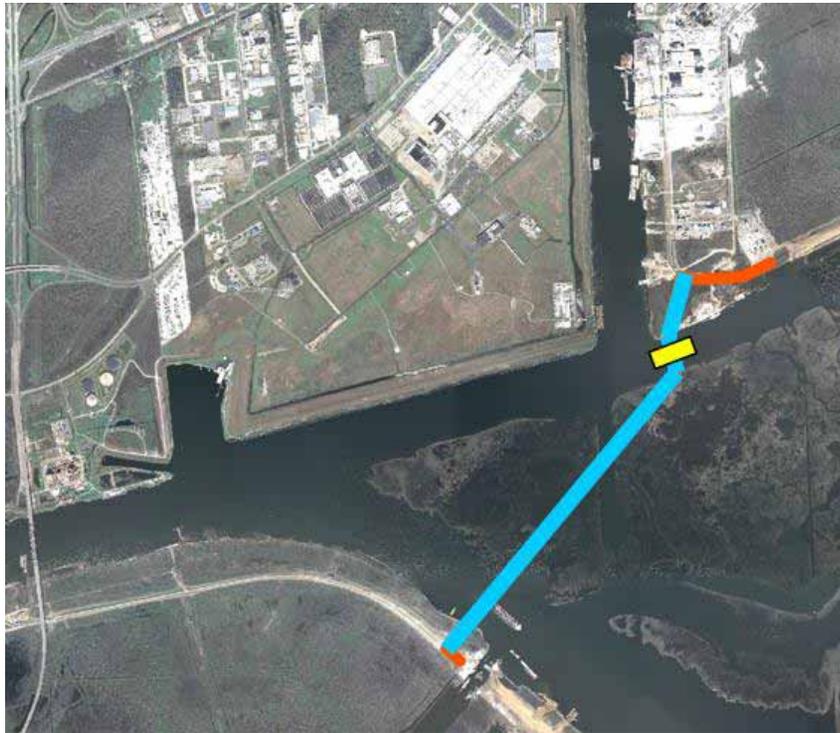
Gate



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# IER #11 Tier 2 Borgne Alternative Alignments

## Alignment 3



## Alignment 4 & 5





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# Project Feature Alternatives

## Gate

*(GIWW gate on all alternative alignments; Bayou Bienvenue gate on alternative alignments 4 & 5)*

- A. Vertical lift gate**
- B. Sector gate**
- C. Concrete barge gate**

**MRGO** Closure structure pending de-authorization  
*(applicable to alternative alignments 3, 4 & 5)*

- A. Earthen closure**
- B. Sheet pile cells**
- C. Structural walls**



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# Project Feature Alternatives

## Barrier

*(applicable to alternative alignments 3,4 & 5)*

**A-1. Traditional levee**

**A-2. Traditional levee with flow structures**

**B-1. Geotextile levee**

**B-2. Geotextile levee with flow structures**

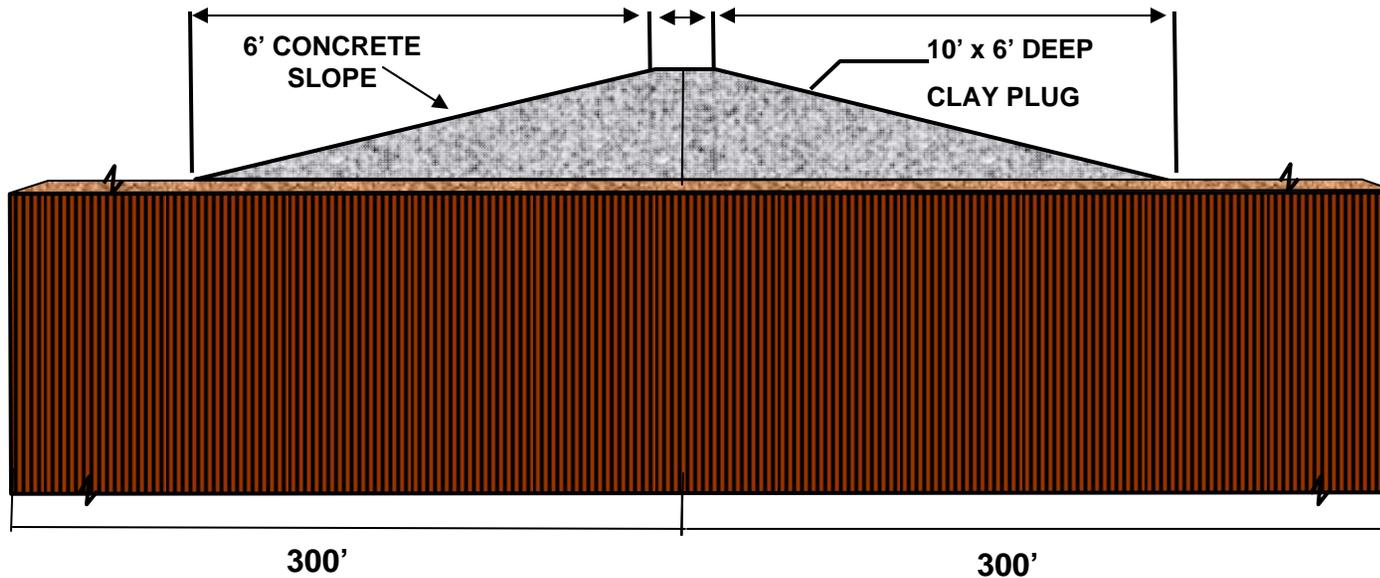
**C-1. Structural wall**

**C-2. Structural wall with flow structures**



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# IER #11 Tier 2 Borgne Alternatives Geotextile levee



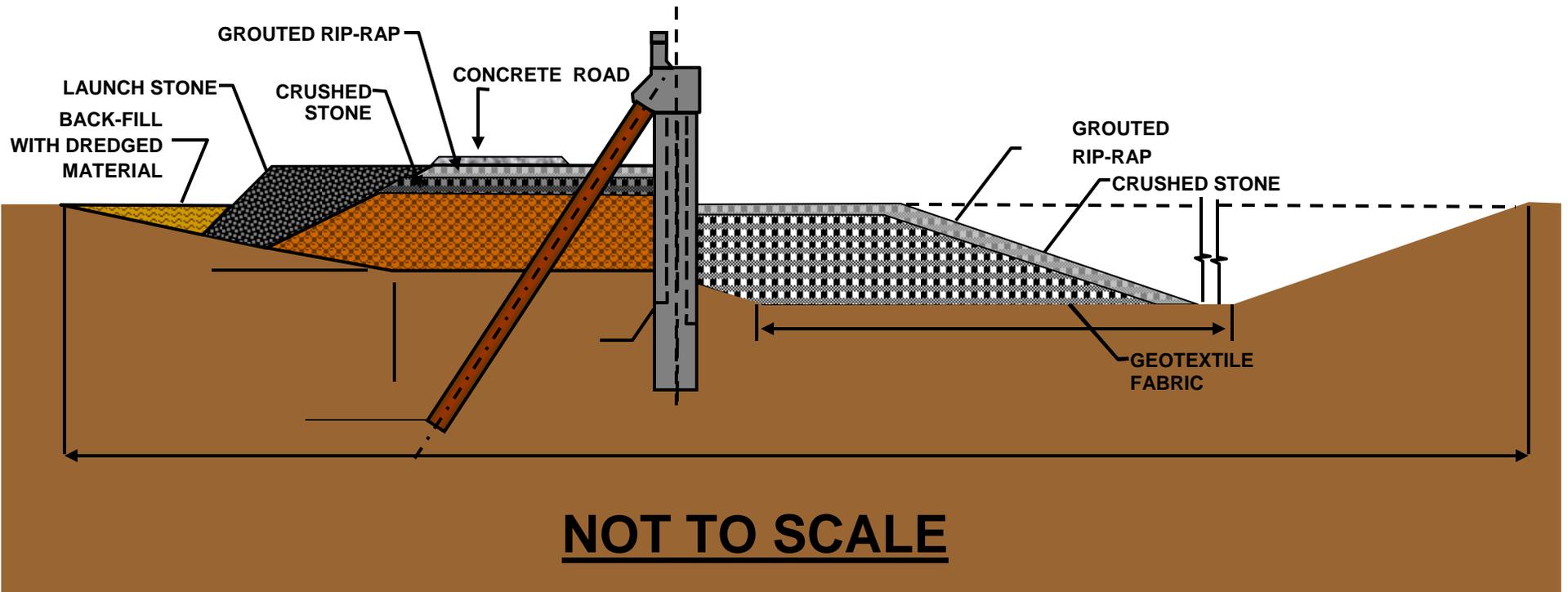
**NOT TO SCALE**



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# IER #11 Tier 2 Borgne Alternatives

## Structural Wall Across Marsh





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# Vertical Lift Gate



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# Bayou Bienvenue Flood Control Structure



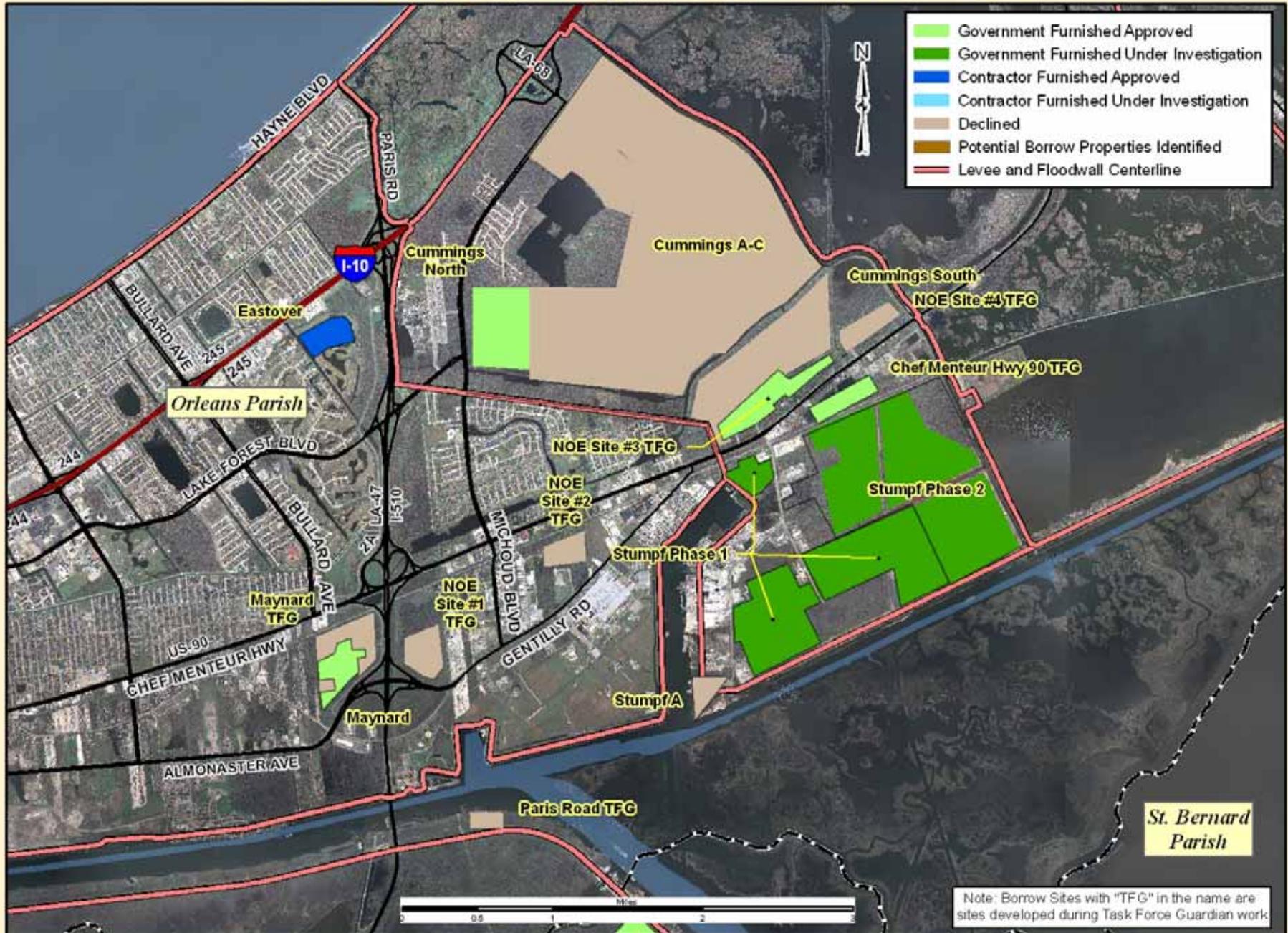


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# Investigated Borrow-Site – System Wide



# NEW ORLEANS EAST - ORLEANS PARISH





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# Opportunities for Public Input

- Monthly Public Meetings throughout New Orleans Metro Area
  - Make sure to sign in tonight to get on our meeting notification mailing list
- Comments can be submitted at any time at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov)
- Individual Environmental Reports (IER) 30-day Public Review

Questions and comments regarding Hurricane Protection Projects should be addressed to:

**Gib Owen**  
**PM-RS**  
**P.O. Box 60267**  
**New Orleans, LA 70160-0267**  
**Telephone: 504-862-1337**

**[E-mail: mynenvironmental@usace.army.mil](mailto:mynenvironmental@usace.army.mil)**



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**NOLA**  
Environmental



NEW ORLEANS, LOUISIANA  
Environmental Compliance Data Bank  
[www.nolaenvironmental.gov](http://www.nolaenvironmental.gov)

PROJECT: [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov)
LIBRARY
DATA VIEWER
GET INVOLVED
RELATED LINKS

**Welcome to NOLA Environmental!** This site has been set up to share with the public the efforts being made by the U.S. Army Corps of Engineers and other Federal and state agencies in south Louisiana regarding the environmental compliance for proposed Federal and state Hurricane Protection Projects. Additional information pertaining to other Federal and state agencies' hurricane recovery efforts in southeast Louisiana will also be posted on the site as it becomes available. [Learn more...](#)

### Announcements

- The Decision Record for [IER 23](#) has been signed by the District Commander ([News Release](#))
- [IER 1 Draft Public Comment](#) Period 4/29 - 5/29
- [IER 15 Draft Public Comment](#) Period 4/28 - 5/28
- The Decision Record for [IER 11](#) has been signed by the District Commander ([News Release](#))
- The Decision Records for [IER 18](#) and [IER 19](#) have been signed by the District Commander

### FEATURED PROJECT



USACE-MVN Emergency Alternative Arrangements  
**Greater New Orleans  
Hurricane and Storm Damage  
Risk Reduction System Projects**

### Upcoming

- [05/13/2008 - Public Meeting - \(IERs 4 11 Tier 2\)](#)
- [05/15/2008 - Public Meeting \(IERs 15 16 17 & Borrow\)](#)

[More...](#)

### Newly Available

- [News Release 9 May 08 Public Meeting IERs 15 16 17](#)
- [News Release 8 May 08 Public Meeting IERs 4 11 Tier 2](#)

[More...](#)