Public Meeting Summary

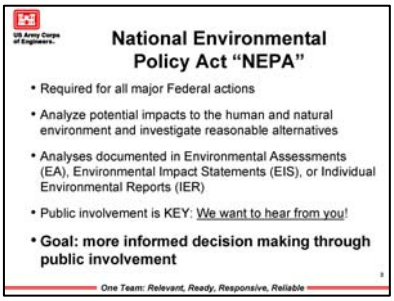
Individual Environmental Reports 6, 7 & 11
New Orleans East / IHNC Surge Barrier Protection public meeting
Tuesday, April 29, 2008

Location	Church of New Orleans Apostolic and Doctrine
Time	Open House 6:00 p.m. Presentation 7:00 p.m.
Attendees	21 attendees and 10 staff
Format	Presentation then Q & A
Handouts	• PowerPoint Presentation • Borrow handout 4.24.08 • Corps approval process brochure • Hurricane system location map
Facilitation	Randy Cephus, Public Affairs, HPO
Presenter(s)	Kevin Wagner, senior project manager, Orleans Parish Maj. Jeremy Chapman, senior project manager, IHNC Surge Barrier

Welcome

Randy Cephus, Public Affairs, HPO

Welcome. Tonight we're going to cover IER's 6, 7 and 11. Kevin Wagner and Maj. Jeremy Chapman are the senior project managers who will make the presentations.
We're going to relax the ground rules and waiver the time limit on your comments but keep them brief and allow everyone to ask their question before you ask a second question.
Please hold your questions until the presentation is done, then we'll open the floor to questions and answers. We ask that you state your name and the area where you live before you ask your question.

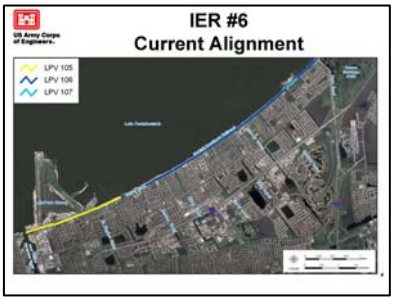


Kevin Wagner, Senior Project Manager
Hi, my name is Kevin Wagner and I'm in charge of the levees and floodwalls in Orleans Parish. We've had many public meetings to address the possible impacts to the environment as required by the National Environmental Policy Act.

You can see from the bullets that we have to document all impacts as required by all of our actions. We are looking at potential impacts to the human and natural environment and possible mitigation associated with projects. This information is documented in the Individual Environmental Report. That is the reason we hold these meetings; to get input. That's the key to getting the best alternative.

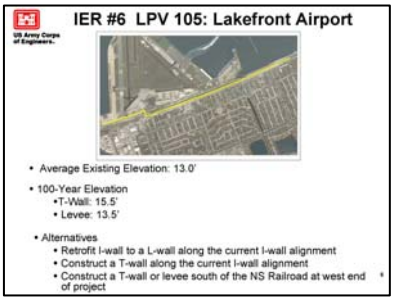
These two areas are covered by IER 6 & 7.

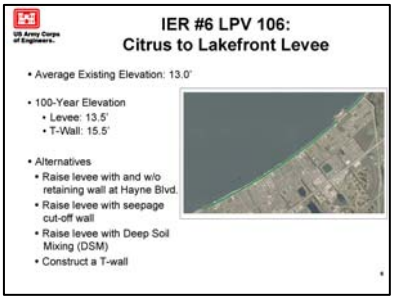
The following notes were recorded by USACE contractors. These notes are intended to provide an overview of the presentations and public questions and comments, and are not intended to provide a complete or verbatim account of the meeting. This account is not intended to be a legal document.



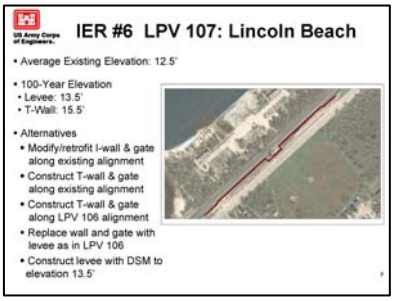
This slide shows the current alignment. The Alignment in IER 6 goes from the Lakefront to Paris Road. It covers three projects for this area labeled LPV 105-207 Lake Pontchartrain and Vicinity.

Each contract in the particular area is numbered to show the alternatives we're looking at. The average elevation is 13.5 ft right now. For 100-year level of protection the T-wall will be 15.5 ft and the levee will be at 13.5 ft. Alternative 1 is retrofitting the existing wall. Alternative 2 will replace the I-wall a T-wall. And Alternative 3 will move the alignment south of the current railroad. Those are the three alternative we looking at. We haven't selected a preferred alternative. We are starting to get info back from our consultants. We will talk with the city, state and levee authorities to get the best alternative for all reaches.

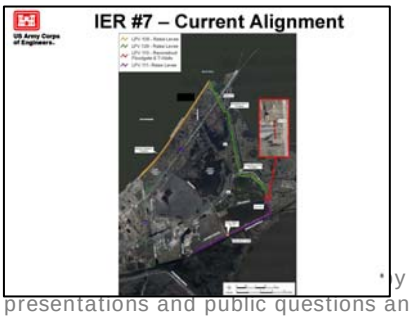




This is the reach from the Lakefront Airport to Paris. What's not included is Lincoln Beach. Where we are now is at 13 ft and where we want to be at 13.5 ft. The T-wall at Lincoln Beach will be at about 15.5 feet. Alternative 1 will raise the levee with a retaining wall along Haynes Blvd., we'll need to restore right-of-way to the Louisiana Department of Transportation and Development. They are aware of the encroachment plus understand the need for a retaining wall for levee stability.
Alternative 2 is to raise the levee and put [inaudible] seepage cut off. Another alternative is to raise the levee with soil mixing columns under the foundation. All options [are under consideration, we're trying to] determine the best plan but we have constraints of a four-lane highway on the south side of the levee, and two sets of railroad tracks on the other side. That's going to cause mitigation impacts.



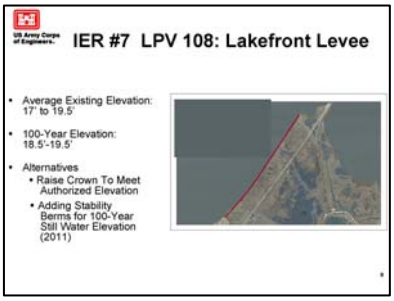
The levees at Lincoln Beach are currently at 12.5 ft. For 100-year protection, the levee would be 13.5 ft and the T-wall will be at 15.5 feet. The two pump stations will be modified in place, the other two will be completely redone. We're going to construct a T-wall along the alignment. The third option is a T-wall and gate at the same height, 10 ft 6in. We'll replace some [inaudible] and construct levees with deep soil mixing. Each alternative we [evaluate] will include a local sponsor, they [will help us] determine the best alternative.



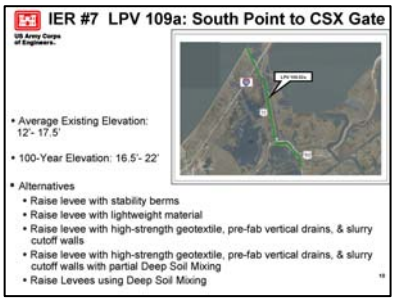
The current alignment of IER 7 is noted in the red box. The current project picks up from Pump Station 6 and Paris Road and goes to the CSX railroad and GIWW to the Michoud Canal. From there Maj. Chapman will take it over with a surge barrier to connect the system with the Chalmette Loop.

* y USACE contractors. These notes are intended to provide an overview of the presentations and public questions and comments, and are not intended to provide a complete or verbatim account of the meeting. This account is not intended to be a legal document.

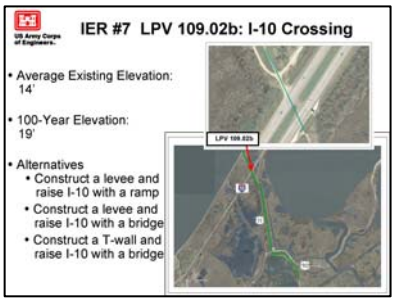
Public Meeting Summary



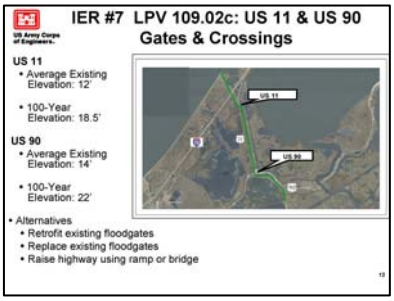
This is the Lakefront Levee. A couple of reaches are at elevation 10'8" from Paris Road to South Point. Others are currently at 17 ft and will need to go to 19 ½ ft. The 100-year level of protection will restore the levee to previously authorized heights because the 100-year elevation is lower than what was previously authorized. What we're thinking of doing is re-dressing the current levee to make sure its stout in this location and we'll restore foreshore protection along the reach. This project will restore previous authorized section to meet the 100-yr level of protection.



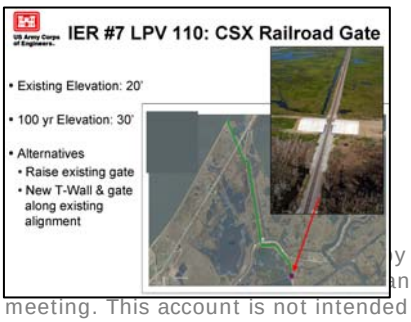
We have three contracts for the reach of levee from South Point to the CSX Railroad Gate. One is for a levee enlargement, the second is for [inaudible] and the third one will be for Hwy 11 and Hwy 90. The existing elevation may vary because the project was constructed that way. As the levee gets closer to the GIWW it gets higher so the elevation ranges from 12 -17 ft. To be at 100-yr elevation it needs to be at 16 ½ - 22 ft. There are different alternatives for this area because we're trying to minimize impacts to environmental wetlands. The Bayou Sauvage Wildlife Refuge is talking about raising the levee with stability berms which would result in a large project footprint. We could possibly reduce the footprint by using lightweight materials. Another option is the use of geotextile fabric. A third option is to install wick drains to drain from underlying soils and add a slurry cutoff wall to prevent seepage. The fourth option would be the same as the third but with deep soil mixing to reduce levee footprint.



The levee ties into the interstate system at this location. The current levee is at 14 ft but we have to raise the I-10 levee to elevation 19 ft. The alternative is to construct a levee ramp at I-10 but it would require a large footprint or it would require us to raise the interstate bridge and put a levee underneath. A third option is to build a T-wall under the bridge.

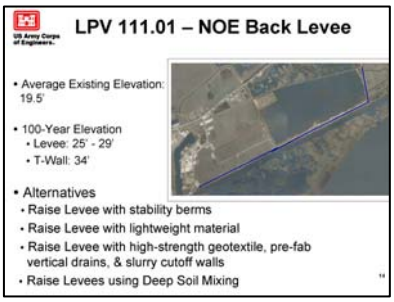


The final contract in this reach addresses US Hwy 11 and Hwy 90. Those locations are at elevation 12 ft but have to be raised to 18 ½ ft. The Hwy 90 elevation is at 14 ft and has to be raised to 22 ft. The types of alternatives we're considering are to retrofit or replace gates there and put a bridge or ramp in that location.

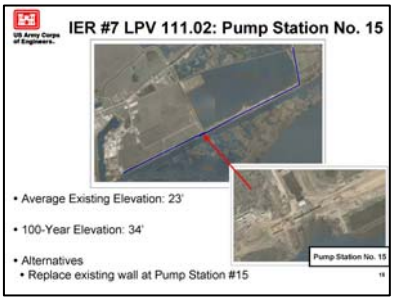


Notice the little purple box. We rebuilt this right after the storm. You can see the rock here is new because the gate was overtopped and washed out the material. We raised it to 20 ft during Task Force Guardian. The elevation for 100-year level of protection is at elevation 30 ft. That's a significant raise. Alternatives include raising the gate or constructing a new T-wall in the same general vicinity.

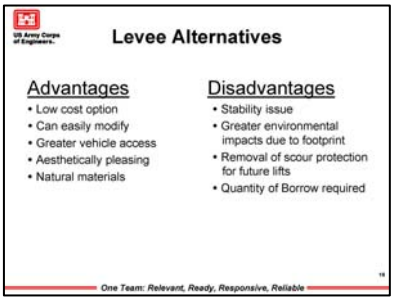
y USACE contractors. These notes are intended to provide an overview of the
and comments, and are not intended to provide a complete or verbatim account of the
meeting. This account is not intended to be a legal document.



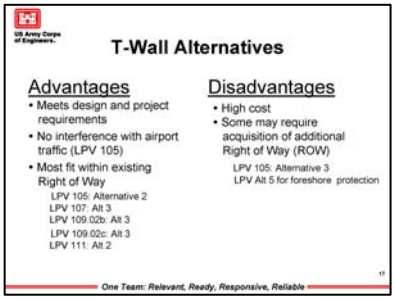
The New Orleans East Back Levee extends from the Michoud Canal to CSX Railroad gate. There are two contracts for this reach. One is for levee work and the other will address Pump Station 15. We're currently at elevation 19 ft. We rebuilt this levee after Hurricane Katrina to 19 ft. The height along this entire reach is at 25-29 ft and it varies from here to here [pointing]. At Pump Station 15 we'll raise the protection to elevation 34 ft. The alternatives we're considering are similar to what was discussed earlier. For the levee raise we could possibly use lightweight material to get consolidation of the footprint or we might do deep soil mixing. We may possibly consider constructing a T-wall for the entire area.



The final contract for Pump Station 15 was awarded. The pump station was overtopped during Katrina. We rebuilt it to elevation 23 ft but it needs to be at elevation 34 ft; that's a significant raise. We are looking to replace the wall to make higher.



There are advantages and disadvantages to choosing levees. This list isn't all inclusive but it's something to consider when we're talking about levee options. Advantages of raising levees are it is the lowest cost option, we can more easily modify the levee in the future and it's also easier to access so vehicles can inspect the levees in the future. We talked to the public and stakeholder folks, they like green space. Also, use of natural borrow material borrow will be needed. Disadvantages to the levee are the stability issues with underlying soils and we'd have a larger project footprint. We're trying to reduce impacts so we'd have to remove the current scour protection which we need because it protects the levee. All that material may need to be removed and that would be wasted, and of course another disadvantage is the amount of borrow we'd need.



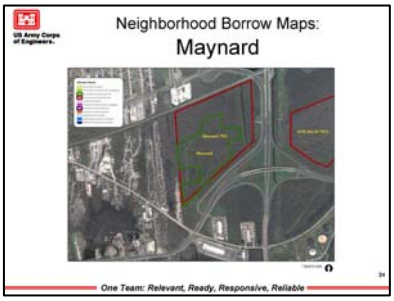
We're gong to compare the levees to T-walls. If we meet the design and project requirements for Reach 105, it'll most likely be a T-wall because a T-wall would reduce impacts to airport traffic. If there's an existing I-wall we'd replace it with a T-wall so the disadvantage of a T-wall is the high cost. The job will require acquisition because we now need piles and that means we'd need an increased project footprint. For an I-wall we may have certain right-of-way but a T-wall will need more. Reach 105 will also need foreshore protection.

Soon these four contracts will be awarded. Reach 109 which is the real from South Point to GIWW. We'd raise it to the previously authorized height. Reach 113 is along the Michoud Canal, behind the surge barrier. We're working with the Michoud Assembly Center to get the work done. They've secured funds to raise a stretch of levee from the Michoud Slip to the Michoud Canal. The last reach is the stretch

between the airport and Paris Road. Reaches 108 and 106 have rock work with them.

We'll have to build temporary access channels for construction. For the rock work along Reaches 106 and 108, we're documenting the environmental impacts. The only way to get rock to the site is to dig access channels. Whenever we dig, we use stockpile to push it in the hole. We have channels that have been previously used so we are trying to minimize disturbance to the lake bottom.

We're looking at all these potential sites for borrow. We need 24 million cubic yards of borrow for the Orleans Parish area. This map shows all the areas we're looking at.
These are the sites in New Orleans East that we've secured or are getting close to securing. This is Mr. Maynard's pit and we have come to terms with Mr. Maynard to secure his property. We also have the site called Cummings which is partially owned by the Franklin Ave. Baptist Church. We are looking to see who owns the site east of I-510 and we're looking in Eastover which is a contractor furnished pit. Other areas in green are those we're investigating in particular the site called Stumpf. We think it has potential but we're just starting the investigation. At the site called Cummings we're close to negotiating for the property. We had a meeting with him to talk about his vision so he can have something useful for him and for us.



This is the site called Eastover where we expect to get borrow and more than likely, once dug, will be developed as a lake. This is the Maynard borrow site. In green we're showing the suitable material. The rest is wetlands and we're not going into wetlands but we have to purchase the entire property.

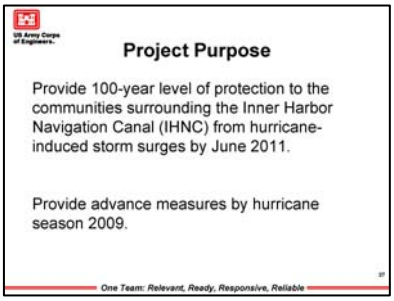
We're just beginning investigations of the Stumpf site. It's not the only source of borrow. We're also looking at issuing a supply contract. We've explored all the options of obtaining the borrow we need to do levee enlargements

The following notes were recorded by USACE contractors. These notes are intended to provide an overview of the presentations and public questions and comments, and are not intended to provide a complete or verbatim account of the meeting. This account is not intended to be a legal document.

Public Meeting Summary

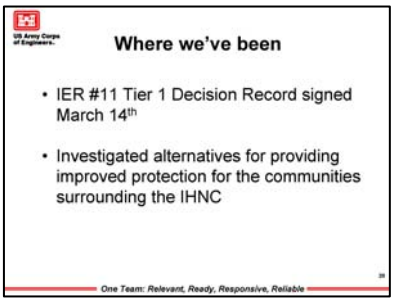
Maj. Jeremy Chapman, Senior Project Manager

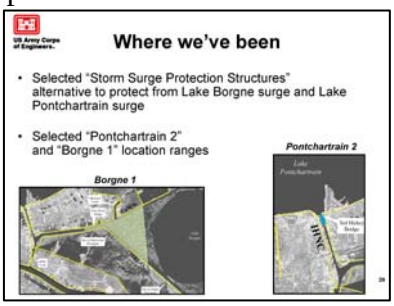
I'm Maj. Jeremy Chapman the senior project manager for the Industrial Canal. I'd like to thank Councilwoman Lewis for coming on a boat tour with us earlier to get a look at all the levees and floodwalls that make up the 25 miles of this project.



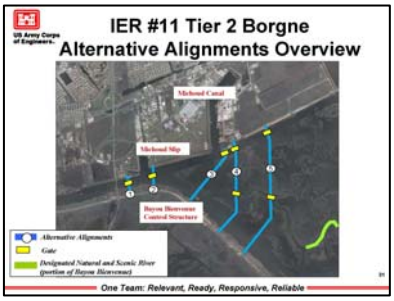
The purpose of this project is to provide 100-year level of protection to the communities surrounding the Industrial Canal. The three polders protected by this project are St. Bernard, New Orleans Metro and New Orleans East. The secondary mission is to put in advance measures with interim protection by 2009.

So far we've been through Tier 1, the first phase of the environmental process. The Decision Record for IER 11 Tier 1 was signed on Mar. 14. We investigated all the alternatives we could that would provide protection to the entire area near the Industrial Canal. What was selected for a storm surge protection structures was a gate or barrier to block surge from Lake Borgne and Lake Pontchartrain. We focused in on alternatives that would be placed in the Borgne 1 and Pontchartrain 2 locations. Pontchartrain 2 is south of the Seabrook Bridge.



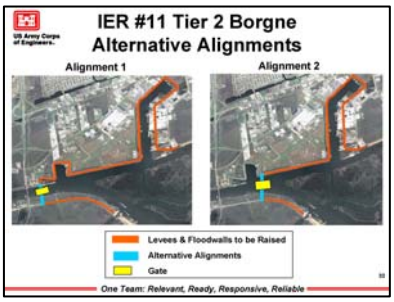


Now we're going on to Phase 2 of the environmental process which will produce two Tier 2 documents, one that describes how to prevent storm surge from Lake Borgne and another to prevent storm surge from Lake Pontchartrain. Lake Borgne is would need to be built first so that if anything happens at the Seabrook location you don't make it worse by water being stuck in the Industrial Canal. We are still in the engineering phase at Seabrook. The engineering analysis is ongoing and we should have a decision on Seabrook in the fall.

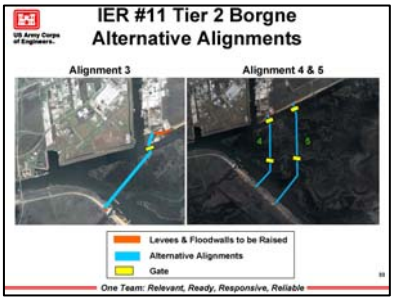


Within the location of Borgne 1 are five possible alignments, they are shown here and noted in blue. The alignments consist of various gates and barriers that connect New Orleans East to the St. Bernard Loop. Alignments 1 and 2 are deep draft channels that have to be 40 ft deep by 300 ft wide and would require very costly gates.
On alternative 3, five shallow draft gates were considered on the GIWW. This channel is only 16 ft deep and 150 ft wide. It would be faster and cheaper for navigation to take Bayou Bienvenue which goes around Paris Rd to Lake Borgne. This is mainly for shrimp boats and recreational fishing boats. It also allows for flow of water and for natural flows in Lake Borgne.

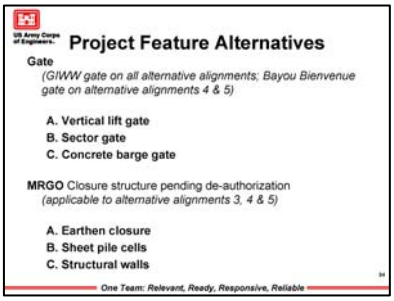
Public Meeting Summary

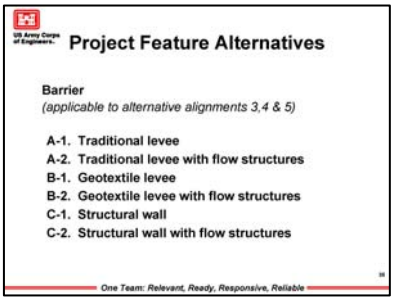


Alignments 1 and 2 are not just barrier gates but also walls and levees that meet up with Kevin's projects. The project would start in Orleans Parish and head south to St. Bernard. The IHNC project encompasses seven miles of walls around the Michoud Canal and on Alignment 1, also on the Michoud Slip.

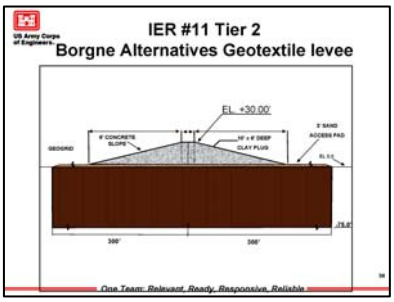


Alignments 3, 4 and 5 are similar, just farther east. There are differences between Alternatives 3 and 4 and 5. Bayou Bienvenue is on the protected side so we wouldn't have to replace that structure with 100-year protection which would be expensive. Project alternatives for the MRGO closure and levee vertical lift gate would be similar. The sector gates are similar to the ones in Bayous Dupree and Bienvenue. We could possibly build a concrete-barge gate which we would be able to close during a storm event and an extra, extra large earthen closure would be needed.



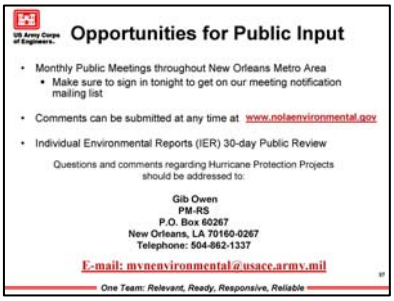


There are three basic techniques used for barrier structures. A traditional levee would be large but using geotextile in a levee's foundation would shrink the footprint. And then we would use other options be added. A second option is to have water flow for environmental purposes. This would allow tidal sheet flow.



This is what a geotextile levee would look like. The dark brown represents deep soil mixing and the light brown is the geotextile fabric. The grey is scouring protection on the levee.

This is an opportunity for you to give your input on the hurricane system. NolaEnvironmental.gov is our Web site and it has a lot of information on it and locations where you can write in and submit different ideas.



The following notes were recorded by USACE contractors. These notes are intended to provide an overview of the presentations and public questions and comments, and are not intended to provide a complete or verbatim account of the meeting. This account is not intended to be a legal document.

Discussion

Randy Cephus, public affairs

The formal presentation is over but I'd like to acknowledge Councilwoman Cynthia Willard-Lewis and thank her for coming tonight.

Question 1: Cynthia Willard-Lewis: Thanks everyone for coming while our Hornets are winning. This is important but the thing on my mind is WWL reporter Lee Zurik's report. If you can, **please address our grave concern that the Corps is putting newspapers in our floodwalls and thinks that this is an acceptable solution to our problem**. I've been receiving calls into my office. Families' beliefs and confidence in the Corps have been raised, from my perspective. Maybe we need independent monitoring. **Second, your technical information is interesting but what we want to know if this area is safer than it was before Hurricane Katrina.** We need a definitive statement of our safety. We've just seen tornados. We empathize with those families. We see a lot of activity in other parts of the city and now, two and a half years later, we are getting movement in Eastern New Orleans but no one writes about risk reduction for our area. Some areas seem to have zero risk. We're not saying this is the case today but because no one responds about extra protection, our businesses are subject to reports talking about risks reported during the beginning stages of Katrina. **Third, we need to understand about follow-up protection.** We need equitable restoration of our neighborhoods. We were most devastated.

Regarding the IHNC, Alignment 3, relative to MRGO, Maj. Chapman made a presentation of five different alternatives; two require deep draft navigation and three are further out to the east. **With the two closer in, where they are closer to the Industrial Canal, would that cause additional flooding in New Orleans East or in St. Bernard verses those further out?** These have to be difficult because this was a painful process and we want to make sure we do it right. We know you're New Orleanians but we want to hold you accountable because we need answers.

Response 1. Maj. Kurgan: We know you've heard a lot about the newspaper in the joint at the parish floodwall. This is what's in there [pointing to model]. This is a mockup. That's your floodwall where you put expansion joints because concrete expands to protect. We put expansion joints in every wall. This is cased in concrete. It stops the floodwall from leaking. This has been tested and stretches 300 percent. This is 9 inches. It'll go to 27 inches.

Question 2. Willard-Lewis: **Then where is the newspaper?**

Response 2. Maj. Kurgan: The wall with the newspaper didn't flood during Katrina. It was overtopped but that joint held and didn't leak. This area here [pointing to model] there's a small area between joints which allows the concrete to expand. The rubber allows the wall to expand. The only other thing in a floodwall is caulk used to fill the gap and that's designed to keep debris out of the wall so nothing else gets in the way. Sealer is a method to keep debris out of the wall because you don't want it chipping off. Typically what is used is rubberized foam. Before Katrina we used Celotex fiber board basically to fill in gaps and that's where newspaper came in. The walls were filled with foam insulation as the backing. It's basically cement caulking and that backer material prevents thinks from getting in between the joint and caulk. It gives you something to keep debris out. This material [pointing to expansion foam] isn't meant to keep debris out of expansion joints. Newspaper isn't the right thing to use. We're going to pull it out and put rubber in there. There's no issue with the wall

The following notes were recorded by USACE contractors. These notes are intended to provide an overview of the presentations and public questions and comments, and are not intended to provide a complete or verbatim account of the meeting. This account is not intended to be a legal document.

leaking, it didn't leak during Katrina. We made it stronger after Katrina by placing scouring protection on each side of the wall.

Question 3. Willard-Lewis: Thanks for the display but you began by saying the levee was overtopped. I know how it is when the media is coming after you. It would have been helpful to say, "the wall didn't fail, they were overtopped." It also has prompted me to ask the question, **how do we know that this isn't the only wall where substitute material was used? That there weren't others that were [filled with newspaper] or that they used other material not specified during the repairs? How do you know the contractor didn't do that on other walls?**

Response 3. Maj. Kurgan: Actually, Corps workers did it.

Question 4. Willard-Lewis: Didn't the specs call for certain materials to be used?

Response 4. Maj. Kurgan: Yes, they did. We didn't use the right material.

Question 5. Willard-Lewis: Have you gone back and examined all the floodwalls so that citizens and media know you are going back reviewing, assessing and redoing?

Response 5. Wagner: In this particular instance, if we want, we can go back to check but the work that was done on the walls that failed were constructed in this manner [referencing the model].

Comment 6. Willard-Lewis: I recommend you do that. People like me need to know it's been done correctly and right now there are concerns with citizens who are outside the city thinking they were right not to come back.

Response 7. Wagner: You can appreciate how the media works. We explained that adding the caulking was an extra measure and that this was something extra to provide additional protection. We explained this while working with the media on information about the gate and adjacent floodwall but that didn't come across in the story. We explained what was supposed to happen. To reduce stick up and slope paving, our hired labor pool raised and put up floodwalls. On these three joints we used extra measure for these [pointing to model].

Comment 8. Willard-Lewis: I wasn't sure I heard that from the media.

Response 8A. Maj. Kurgan: We tried to get them to understand. We invited all media who would come to Peters Rd to show them [how we construct floodwalls]. We asked them to come to the wall but the message didn't get out. We will continue to provide them with information until they understand the issue there. We want everyone to understand but we don't want to cause alarm.

Response 8B. Wagner: We also tried to explain that the road wasn't damaged. This was an extra measure we will be out there doing the joints the way they are supposed to be done.

Comment 9. Willard-Lewis: I probably missed watching that segment. I would hope you get another chance to get it right. There are responsible reporters who do a good job. Unfortunately they weren't available, but it behooves them to tell a good story. But really you have to do that and you have to have them with you so that the story is told and shared. That's your responsibility.

Response 9. Maj. Kurgan: All of these projects have detailed Quality Assurance and a Quality Control plans. Everything is looked at time and time again. We understand your concern for all this work and we'll continue to address it. Part of the problem is that we have other work we must continue to work on. If I take great guys like Kevin to go back to work on projects that we know have been done right, that's a great asset we no longer have. There are only so many people and so many engineers to provide the best protection as fast as possible.

We need to be getting the message out, we need to communicate risk so people know that they have better protection today than before Katrina. We're working to get that message out. We're working on that.

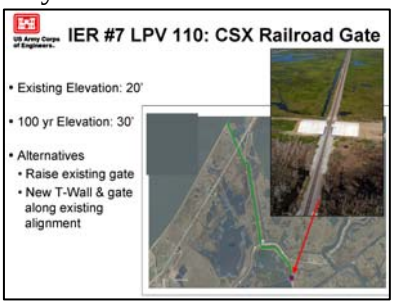
Question 10. Pastor Greg: About the filler piece, you said the concrete expands. Does that material expand with concrete and go back into formation?

Response 10. Maj. Kurgan: All this material does is lie like this [showing model] as the concrete expands and cracks. It gets smaller and gets wider and moves with the wall.

Question 11. Woman from back of room: Can you put the floodwall and the asphalt stuff in water to see how it works?

Response 11A. Maj. Kurgan: This is just a Styrofoam model but it works. It was loaded with water during Katrina and it worked.

Response 11B. Wagner: The system is better than it was during Katrina. We talked about how much better the system is because of our improvements. If you look at Reach 111 it was overtopped all the way to the CSX railroad. The whole levee was wiped out. When we went to see it, from the crown of the levee to the protected side, it was washed away. We had a complete breach of the levee itself. We built it higher because we wanted to make sure it was overbuilt to allow for settlement until we get back to elevate to the 100-year level. Previous authorization was 17 ½ ft. At the time of the storm it was about 15 ½ or 16 ft. We rebuilt it to 19 ft so it's higher now than it was there before Katrina. We showed the CSX railroad gate in one of the images. That was overtopped [pointing]. It was washed out for a couple of hundred feet. The gate was not at elevation 20. There is a 6 ½ foot difference. The rest of the system, from the Lakefront Airport where we had overtopping, we've now gone back and have material there. Where material was overtopped our new criteria now allows us to reduce stick up. We'll have scour protection there too so if water overtops, it'll hurt the scour protection but won't wash away the material behind it. We made improvements so the system is better than pre-Katrina. Dean (Arnold) can talk about Risk & Reliability and how when we finish the system we'll be better off.



Response 11C. Arnold: The current flood risk maps show depth of flooding [referring to display]. We don't have pre-Katrina [information with us tonight]. On this map we show depth of flooding from a 1 percent storm. Flooding is pretty deep in some areas. We have one with Jun. 1. It's up there with depth. It's not much different because levees aren't up to their final grade, yet. They were raised higher but they aren't up to final elevations yet. These levees go to 29 ft. They are currently at 17 ft.

You're going to have overtopping until 2011 when 100-year protection is in place. Plus there's rainfall that falls within the polder. [This map] is dark blue with more than 8 ft of water and flooding. Now this [different map] shows water but that is just from rainfall. Levees won't be overtopped with the 100-yr elevation levels but will get rainfall and depending on how much pumping there is, you can see how much water [is pumped out of the area]. There are sub-polders also so the [rainfall impacts and flooding wont be even in every area]. The maps don't show levees until all are at the same elevation. It gives a relative risk reduction until the 100-year system is in place. The system will be better once 100-year storm protection is in place. It won't overtop but we will have rainfall, water level increases and waves.

Question 12. Man: What have we done with pumping? I heard the pumps are not as up to par as they should be after Katrina.

Response 12A. Arnold: The pumping function is a local interest. Some of our projects get involved with local issues but the local governments handle pumping. Pumping should be as good as it was pre-Katrina.

Response 12B. Wagner: We are doing things to make the pumps more reliable. We can do storm proofing. We've gone to evaluate each station to ensure they continue to operate. We've done some things like raising engines or diesel cases making it so that operators have a place to stay, we're making the safe houses reliable.

Question 13. Man: Are there any safe houses for pump personnel, as they have in Jefferson Parish, so they don't have to evacuate?

Response 13A. Martin: We can get you more information but there is a storm proofing team that can covers things like safe houses. I can't speak to the measures planned but know we're working across the system.

Response 13B. Willard-Lewis: I'm aware of what Kevin Wagner indicated that the pumps have been elevated and armored and relative to the men and women who staff pumps during hurricanes, our Sewerage and Water Board personnel didn't leave. They had to be rescued from the pumping stations. With water above normal height they were rescued. That's how some areas were dewatered in three weeks.

Question 14. Man: But New Orleans East wasn't dewatered? Was that because pumps didn't work as soon?

Response 14. Willard-Lewis: New Orleans East took a 20-30 ft storm surge and with saltwater we had to retool the pumps. Even our water hydrants were corroded. We're retooling a component in safe houses now so they won't corrode again.

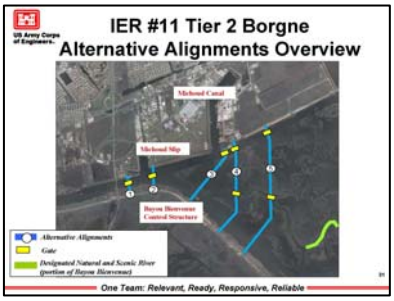
Comment 15. Willard-Lewis: About the risk reduction comment, these maps speak to storms and rainwater, in New Orleans East, except where subsurface drainage is an issue. Most people will probably tell you they experience street flooding. From a reality check it's disappointing to see blue at all considering the technology that ought to be there but when you talk about street flooding, New

Orleans East never flooded before Katrina. We never flooded from rainwater. It's hard to see that, even in the CBD you can't get to Loyola Ave. or to Poydras St. unless you roll your pants up.

Response 15A. Arnold: This 100-yr event [generates some significant] rainfall.

Response 15B. Willard-Lewis: [The rainfall will be greater] than our capacity to drain the streets.

Response 15C. Arnold: Drainage has improved a great deal and it will continue to improve.



Response 15D. Maj. Chapman: The council woman also asked a question, about storm risk reduction. Consider all five alignments. You have Lake Borgne. And any time you narrow down it raises the height of water so the closer you get in to the Industrial Canal, near the GIWW and the MRGO you have highest surge at that point. These two alignments would have higher surge but in the range of a foot. So it's not that much. If we did these alignments, we'd have to raise the levees by a foot. We're compensating for that. Height would be at 29 feet then decrease. Surge here [pointing] is the biggest as it narrows down in the marsh so we'd compensate by building higher levees. So there wouldn't be the opportunity for flooding. Take into consideration that the backing effect is what we've modeled and it will be included in the 100-year elevation. In other area where we have narrowing or triangulations, the surge would be higher. Alternatives 1 and 2 aren't any worse than 3-5 other than that we would have to build walls higher. But there are negative effects because of cost and engineering.

Alignments 1would intersect the Entergy Plant. Alignment 2 is east of the Michoud Slip where it intersects with the edge of Michoud Slip. NASA would be on the flood side. These alignments [pointing] wouldn't have to be raised but there are a lot of businesses that would be impacted. The project footprint would expand to the rooftops of businesses. That's a major undertaking just in real estate impacts to local economy which is why alignments here [pointing to eastern alignments] are preferable. We're looking at Alternative 4 as the proposed alignment. You can't see the utilities in the area but there are pipelines to consider. There is a refinery and pipes going through the marsh right now. Alternative 4 misses all the pipelines but Alternative 3 goes through major pipelines that feed Air Products which are major pipes for gas and liquid nitrogen.

Comment 16. Mark Schleifstein: I was under the impression that the rainfall amount is for 10 years, not 100-years.

Response 16A. Arnold: It's a 100-year rain event.

Response 16B. Schleifstein: It's 10-years, not 100-years. Maps in IPET, Chapter 8 says it's 10-year rainfall and an 100-year storm

Question 17. Man in striped shirt: Do numbers indicate rankings?

Response 17. Maj. Chapman: No, they aren't rankings just number from alignments left to right. Alignment 5 may be eliminated because it's longer and bigger and more expensive to build.

The following notes were recorded by USACE contractors. These notes are intended to provide an overview of the presentations and public questions and comments, and are not intended to provide a complete or verbatim account of the meeting. This account is not intended to be a legal document.

Alignment 4 would be the quickest. Alignment 3 would take long to build because of the pipelines. Alignment 1 and 2 involve building deep draft sheet navigation gate which can take a long time to build and would be hard to engineer.

Question 18. Man: Anyone from the public can comment on which one we want? Will you help us make a decision? If a surge comes it'll be higher [with Alignment 1 and 2].

Response 18. Maj. Chapman: You can comment, that's what this meeting is for. You can make any comment. When the IER 11 Tier 2 document goes out in June you can comment then also.

Question 19. Willard-Lewis: I haven't been briefed. This is my first real understanding of the various alternatives. I know you just awarded the contracts. I would like Alignment 5 but from a cost feasibility standpoint, Alignment 4 accomplishes the same and there's less distance and it's quicker. Then I like Alignment 4. I would hope with discussion moving forward you can give completion dates?

Response 19. Maj. Chapman: I can go over milestones with you. We awarded a design build contract to Shaw Environmental and local subcontractors to build this right now. We've given notice to proceed on the design phase so they're in the design phase. We should go to construction in the Fall. We'll probably set Sept. 1 for a construction start date. Interim protection will be completed by Jun. 1, 2009. Interim is a barrier along the alignment but at a reduced height. So we'd start building the levee to 15-25 ft, then from 2009-2011 we would add additional height. The levee would be built in layers across each alignment to bring the height up gradually. We'd be reducing risk continually as we go through construction. The higher the levee the more protection.

Question 20. Willard-Lewis: So by 2009 there should be substantial risk reduction from storm surge that destroyed our area?

Response 20. Maj. Chapman: That's correct. And walls in the Industrial Canal will have significant decrease [inaudible].

Question 21. Willard-Lewis: About Shaw Environmental. We congratulate Shaw on their contract. Will they be engaging the public in similar reviews and allow comment by the public so that many people can give input? Or are you driving the train? So is someone from Shaw here?

Response 21A. Wilkinson: In reference to the environment, you're driving the train. We want to make sure your voice is heard. You're giving good input now.

Response 21B. Maj. Chapman: We have a local sponsor. Louisiana's Coastal Protection and Restoration Authority representative, Garret Graves, he delegated to the Department of Transportation and Development which is run by David Miller, he's the director. We also have the local levee board and its team leader, Bob Turner. He's is embedded with the Corps. He's looking at that and the two departments are looking over the shoulder of the review team as the design progresses.

Comment 22. Willard-Lewis: I think it's critically important that whoever the vested parties are, whether coastal or levee boards, that there is aggressive outreach to people who are being impacted. That families here and people here should not have to go to DOTD meetings. Just as you have come

into the community and folks can come out that they should be able to give that same feedback. Many people are concerned about Lee Zurik's report. If they knew about the MRGO closure structure, you'd have more people in this room. You're in peoples' backyard so I would hope you continue to do that. We've met many times but now if other stakeholders are participating then we need them in our neighborhood so we can tell them what we feel is in our best interest.

Response 22. Maj. Chapman: The Orleans Levee District is an important partner and Steve Spencer is its representative.

Question 23. Man: How will the Tier 2 document work?

Response 23. Wilkinson: This is all part of the process of getting feedback. Working with the public and in public meetings we are hoping that you will invite a friend or talk about this when you get back to your community group and let them know that these are opportunities for them to speak up.

Question 24. Man: You'll be informed [when you make the decision]?

Response 24. Willard-Lewis: This situation right here on the alternative alignments is a decision that will be made in a room someplace else, but no one from New Orleans East or St. Bernard were present before because we didn't know about the alternative arrangements. No one could get there to Baton Rouge to be a part of that decision. I know you have 10 a.m. Baton Rouge meetings but those shouldn't be the only meetings you have. It's only proper that you have citizen participation. You should be sincere with them in that.

Response 24B. Man with DOTD: We come to all meetings and listen to comments and that influences the decision. We go back and report to our supporters and they take that into account. The point is to listen to the public and take your comments into account.

Comment 25. Willard-Lewis: My point is that if there is a meeting to focus on that it should be held in the area of impact.

Response 25A. Man with DOTD: I think most IHNC meetings are held here in New Orleans.

Response 25B. Wilkinson: We had this same meeting on April 17, the next is May 13.

Response 25C. Wagner: You have the opportunity tonight and even following this to make comments. As we get further detailed we're going to come back to the public and will show you where we are to give more information. This is not about the Corps, this is about your part in the process. No one wants their house flooded again. We want the best protection. We'll come out and do more meetings. Don't hesitate to provide comments. We're all after the best solutions for the entire area.

Question 26. Man in white: You said levees are a lower cost. What about future maintenance?

Response 26. Wagner: We're considering that eventually the responsibility to maintain will be the local sponsor's. We have to give them estimated operation and maintenance costs. The cost of a T-wall may be less than a levee because it requires fewer lifts.

The following notes were recorded by USACE contractors. These notes are intended to provide an overview of the presentations and public questions and comments, and are not intended to provide a complete or verbatim account of the meeting. This account is not intended to be a legal document.

Question 27. Man: Does the system here resist subsidence better?

Response 27A. Wagner: When we zero in we have to gather real estate costs and operation and maintenance costs. We present that information to the local authority so you can help us to make decisions.

Response 27B. Wilkinson: The IER is a decision document. We will weigh the impacts whether they are to wetlands or homes or human impacts, it will be documented. The cheat sheet is to come here to get the information but when the document is released you have 30-days to comment on it and then we're going to make decisions.

Comment 28. Schleifstein: I checked back in my notes, it's really a 100-year rainfall event, not 10-year rainfall.

Comment 29. Willard-Lewis: Don't schedule a meeting when the Hornets are playing.

Response 29. Owen: We schedule 3 months out, we didn't know the Hornets would be in the playoffs.

Cephus: Our project managers will be around to answer any additional questions. Thanks for coming.

The following notes were recorded by USACE contractors. These notes are intended to provide an overview of the presentations and public questions and comments, and are not intended to provide a complete or verbatim account of the meeting. This account is not intended to be a legal document.

U.S. ARMY CORPS OF ENGINEERS

HURRICANE AND STORM DAMAGE RISK REDUCTION SYSTEM

US Army Corps of Engineers®

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**

US Army Corps of Engineers®

New Orleans East Levees IER #6 and IER #7

One Team: Relevant, Ready, Responsive, Reliable

US Army Corps of Engineers®

IER #6
Current Alignment

LPV 105
LPV 106
LPV 107
Lake Pontchartrain
Lakefront Airport
Hayne Blvd
Paris Road
Bayou Sauvage NWR
Gentilly Ridge
Gulf Coast
Bayou Sauvage
Bayou Savage
Bayou Sauvage
Bayou Savage
Bayou Savage
St Charles Canal
Bayou Sauvage
Gulf Coast
Bayou Savage
Bayou Savage
Bayou Sauvage
Bayou Sauvage
Bayou Sauv

IER #6 LPV 105: Lakefront Airport

US Army Corps of Engineers®

- Average Existing Elevation: 13.0’
- 100-Year Elevation
  - T-Wall: 15.5’
  - Levee: 13.5’
- Alternatives
  - Retrofit I-wall to a L-wall along the current I-wall alignment
  - Construct a T-wall along the current I-wall alignment
  - Construct a T-wall or levee south of the NS Railroad at west end of project

US Army Corps of Engineers®

IER #6 LPV 106: Citrus to Lakefront Levee

- Average Existing Elevation: 13.0’

- 100-Year Elevation
  - Levee: 13.5’
  - T-Wall: 15.5’

- Alternatives
  - Raise levee with and w/o retaining wall at Hayne Blvd.
  - Raise levee with seepage cut-off wall
  - Raise levee with Deep Soil Mixing (DSM)
  - Construct a T-wall

IER #6 LPV 107: Lincoln Beach

- Average Existing Elevation: 12.5’

- 100-Year Elevation
  - Levee: 13.5’
  - T-Wall: 15.5’

- Alternatives
  - Modify/retrofit I-wall & gate along existing alignment
  - Construct T-wall & gate along existing alignment
  - Construct T-wall & gate along LPV 106 alignment
  - Replace wall and gate with levee as in LPV 106
  - Construct levee with DSM to elevation 13.5’

US Army Corps of Engineers®

IER #7 – Current Alignment

US Army Corps of Engineers®

IER #7 LPV 108: Lakefront Levee

- Average Existing Elevation: 17’ to 19.5’
- 100-Year Elevation: 18.5’-19.5’
- Alternatives
  - Raise Crown To Meet Authorized Elevation
  - Adding Stability Berms for 100-Year Still Water Elevation (2011)

IER #7 LPV 109a: South Point to CSX Gate

US Army Corps of Engineers®

- Average Existing Elevation: 12'- 17.5'
- 100-Year Elevation: 16.5'- 22'
- Alternatives
  - Raise levee with stability berms
  - Raise levee with lightweight material
  - Raise levee with high-strength geotextile, pre-fab vertical drains, & slurry cutoff walls
  - Raise levee with high-strength geotextile, pre-fab vertical drains, & slurry cutoff walls with partial Deep Soil Mixing
  - Raise Levees using Deep Soil Mixing

US Army Corps of Engineers

IER #7 LPV 109.02b: I-10 Crossing

- Average Existing Elevation: 14’
- 100-Year Elevation: 19’
- Alternatives
  - Construct a levee and raise I-10 with a ramp
  - Construct a levee and raise I-10 with a bridge
  - Construct a T-wall and raise I-10 with a bridge

IER #7 LPV 109.02c: US 11 & US 90 Gates & Crossings

US Army Corps of Engineers®

US 11

- Average Existing Elevation: 12'
- 100-Year Elevation: 18.5'

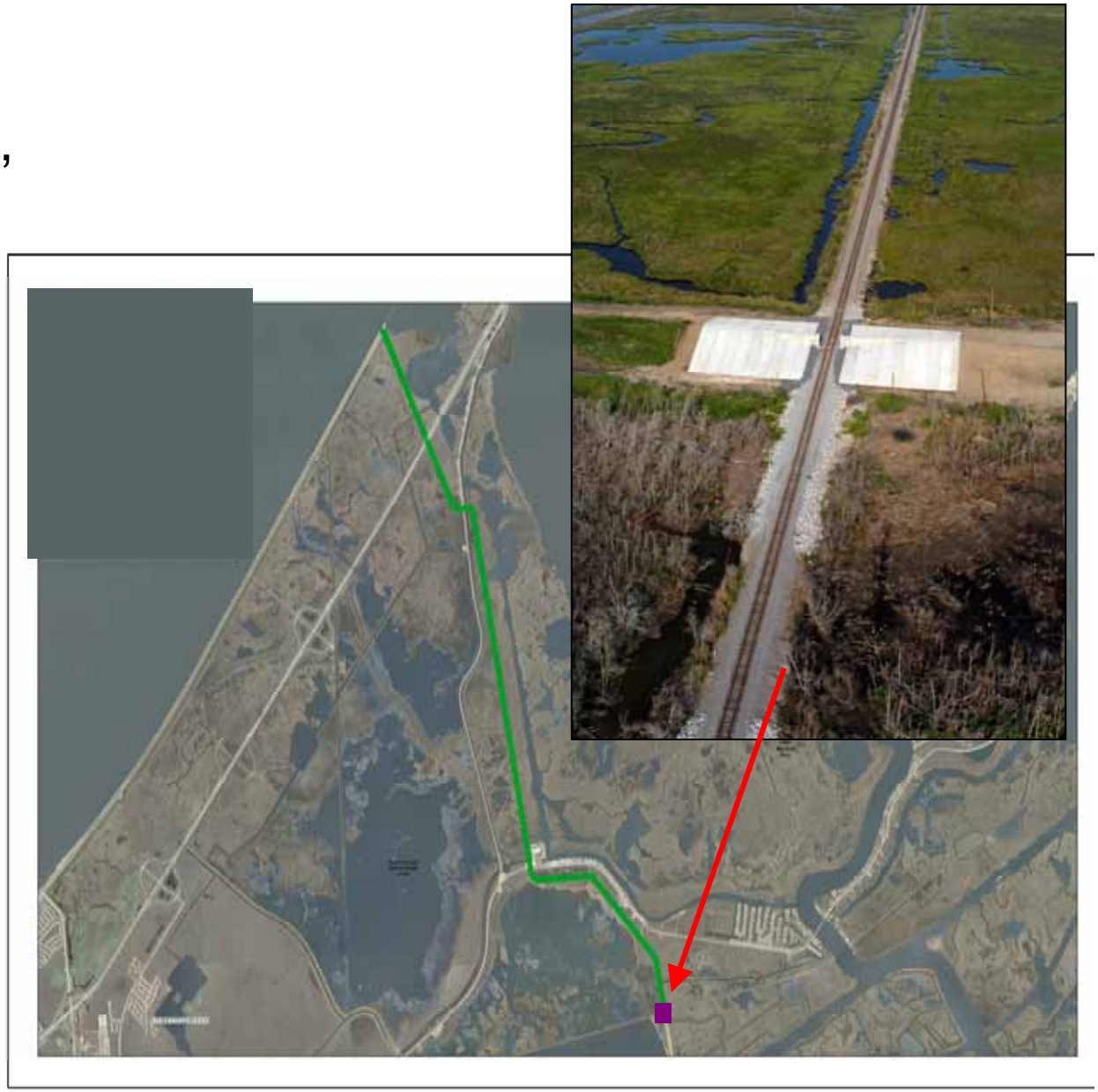
US 90

- Average Existing Elevation: 14'
- 100-Year Elevation: 22'

- Alternatives
  - Retrofit existing floodgates
  - Replace existing floodgates
  - Raise highway using ramp or bridge

IER #7 LPV 110: CSX Railroad Gate

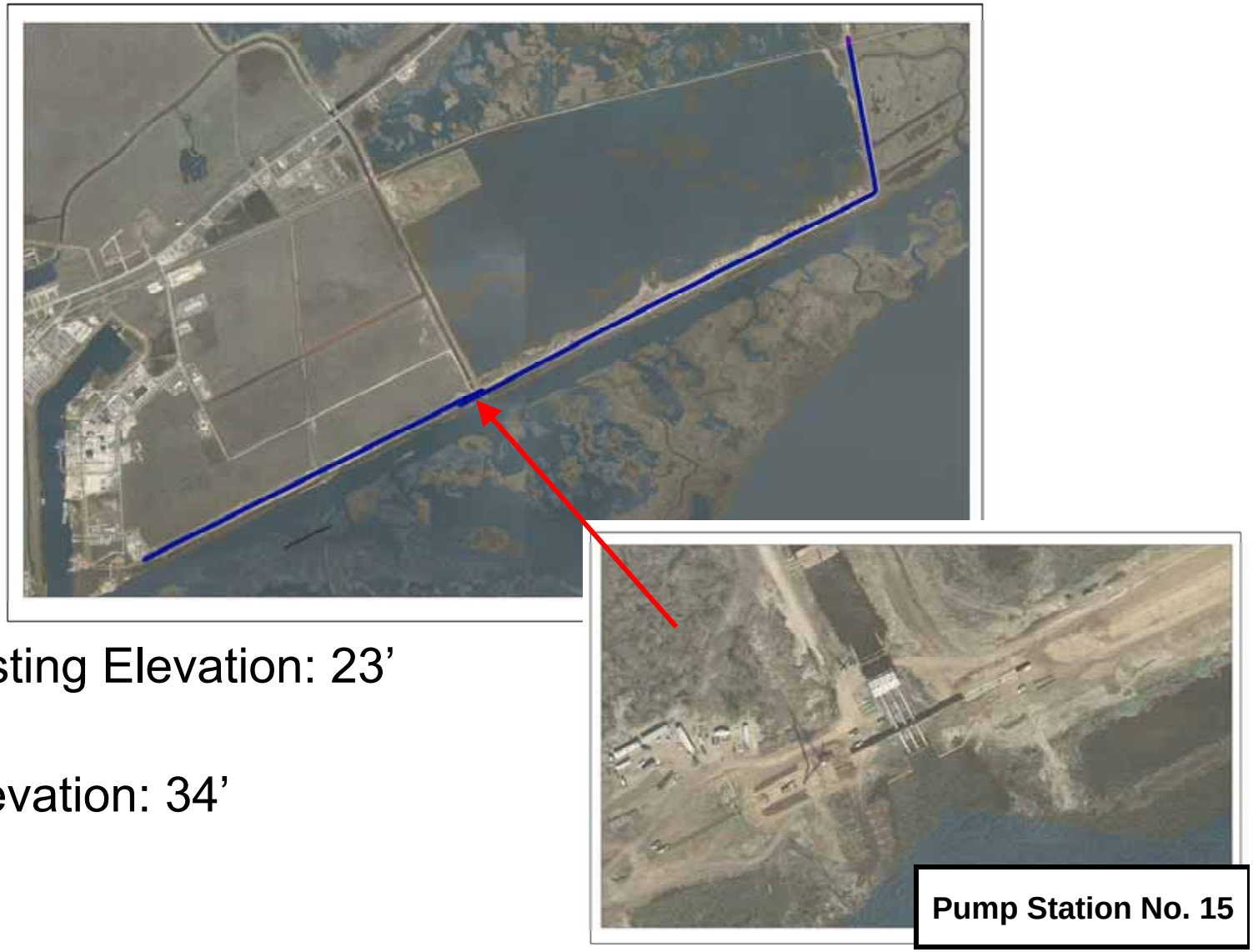
- Existing Elevation: 20’
- 100 yr Elevation: 30’
- Alternatives
  - Raise existing gate
  - New T-Wall & gate along existing alignment



LPV 111.01 – NOE Back Levee

- Average Existing Elevation: 19.5’
- 100-Year Elevation
  - Levee: 25’ - 29’
  - T-Wall: 34’
- Alternatives
  - Raise Levee with stability berms
  - Raise Levee with lightweight material
  - Raise Levee with high-strength geotextile, pre-fab vertical drains, & slurry cutoff walls
  - Raise Levees using Deep Soil Mixing

IER #7 LPV 111.02: Pump Station No. 15



- Average Existing Elevation: 23’
- 100-Year Elevation: 34’
- Alternatives
  - Replace existing wall at Pump Station #15

US Army Corps of Engineers®

Levee Alternatives

Advantages

- Low cost option
- Can easily modify
- Greater vehicle access
- Aesthetically pleasing
- Natural materials

Disadvantages

- Stability issue
- Greater environmental impacts due to footprint
- Removal of scour protection for future lifts
- Quantity of Borrow required

US Army Corps of Engineers®

T-Wall Alternatives

Advantages

- Meets design and project requirements
- No interference with airport traffic (LPV 105)
- Most fit within existing Right of Way

  LPV 105: Alternative 2
  LPV 107: Alt 3
  LPV 109.02b: Alt 3
  LPV 109.02c: Alt 3
  LPV 111: Alt 2

Disadvantages

- High cost
- Some may require acquisition of additional Right of Way (ROW)

  LPV 105: Alternative 3
  LPV Alt 5 for foreshore protection

US Army Corps of Engineers®

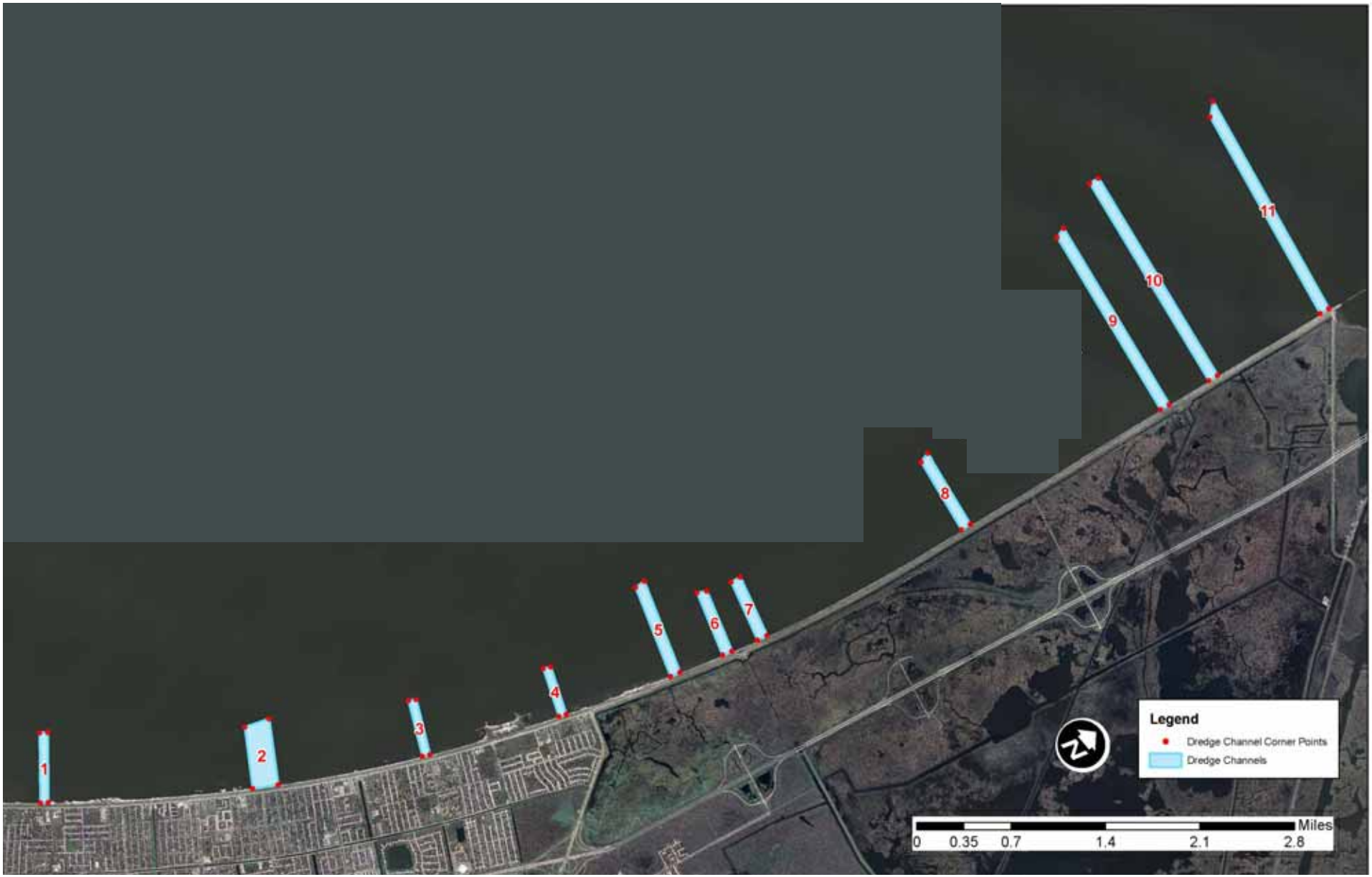
Upcoming Levee Contracts

New Orleans East Contracts to be awarded in Summer 2008

- LPV 109.01: South Point to Gulf Intracoastal Waterway - June
- LPV113: Citrus Back Levee (Michoud Canal to Michoud Slip) – June
- LPV 108: Paris Road to South Point – July
- LPV 106: Citrus Lakefront Levee (west of Paris Road) - TBD

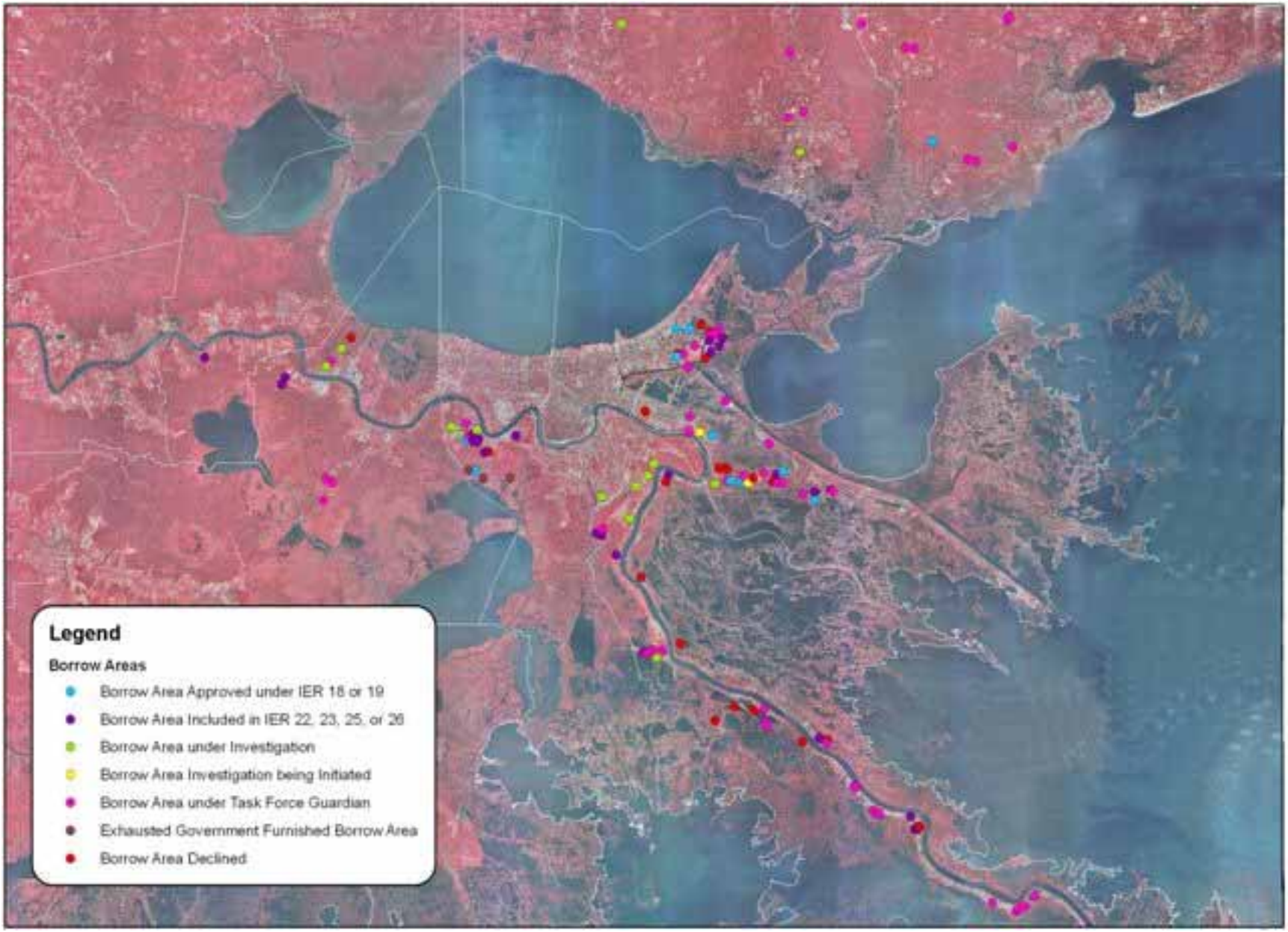
US Army Corps of Engineers®

Temporary Access Channels



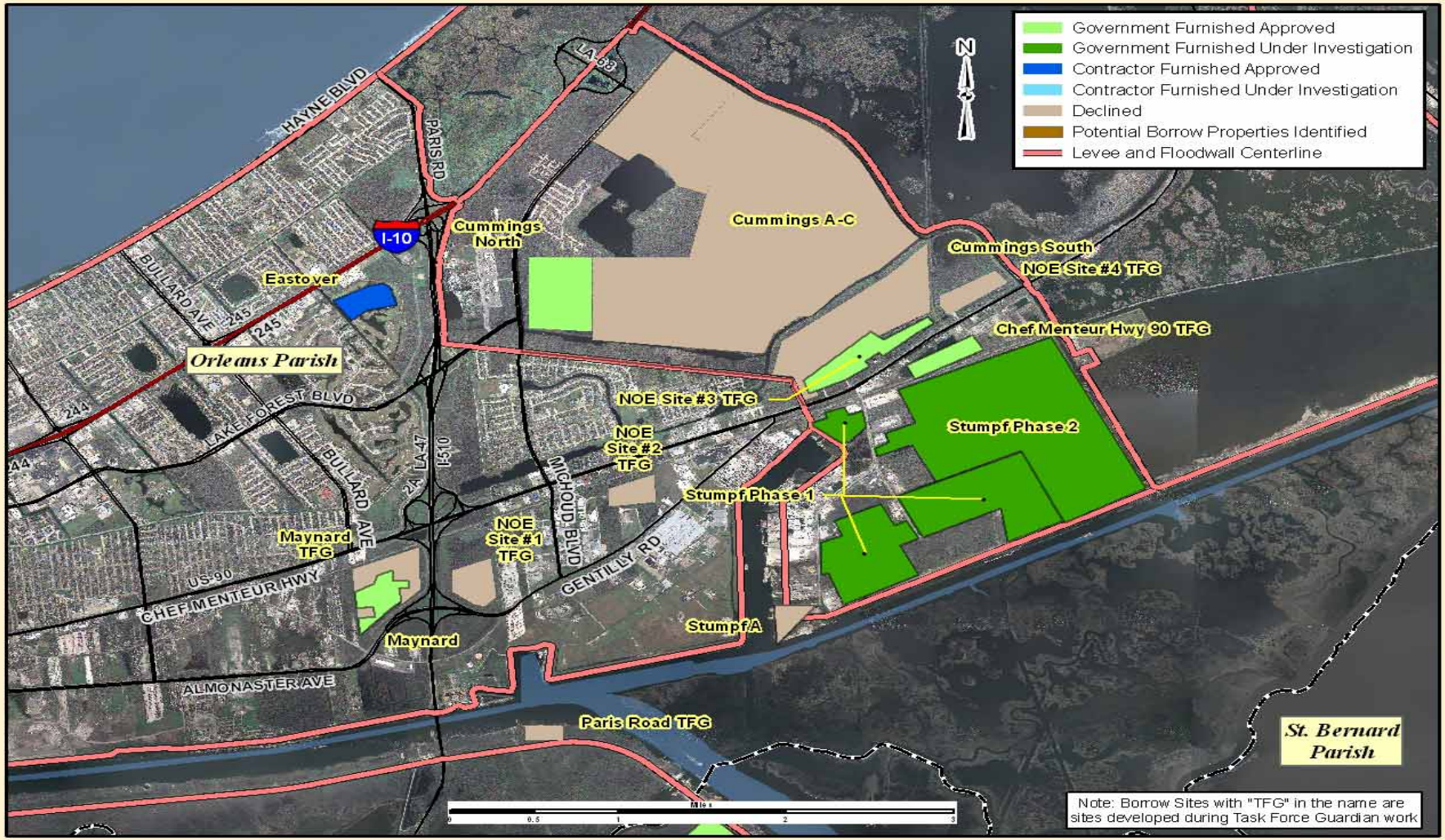
US Army Corps of Engineers®

Investigated Borrow-Site – System Wide



US Army Corps of Engineers

NEW ORLEANS EAST - ORLEANS PARISH



Updated on 4/18/2008

Job No. EGIS-08-111

One Team: Relevant, Ready, Responsive, Reliable

US Army Corps of Engineers®

Neighborhood Borrow Maps:

Cummings / Franklin Ave Baptist Church

7 MARCH 2008

US Army Corps of Engineers®

Neighborhood Borrow Maps:
Eastover

7 MARCH 2008

US Army Corps of Engineers®

Neighborhood Borrow Maps:
Maynard

US Army Corps of Engineers®

Neighborhood Borrow Maps: Stumpf

7 MARCH 2008

One Team: Relevant, Ready, Responsive, Reliable

US Army Corps of Engineers®

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

US Army Corps of Engineers®

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.

US Army Corps of Engineers®

Where we've been

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

US Army Corps of Engineers®

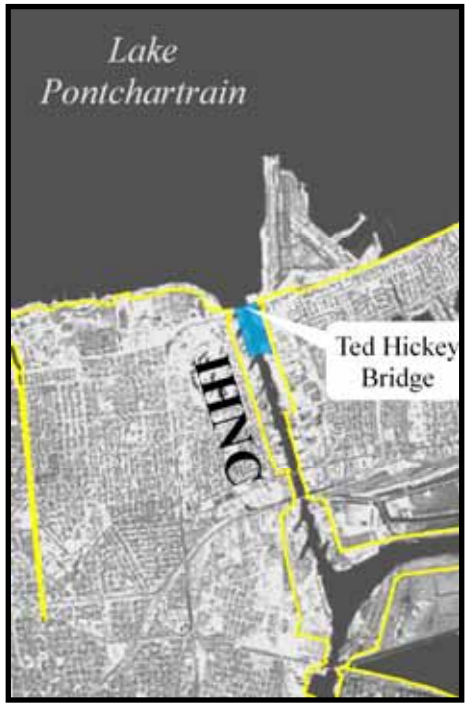
Where we've been

- 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



US Army Corps of Engineers®

IER #11 Tier 2: Where we're going

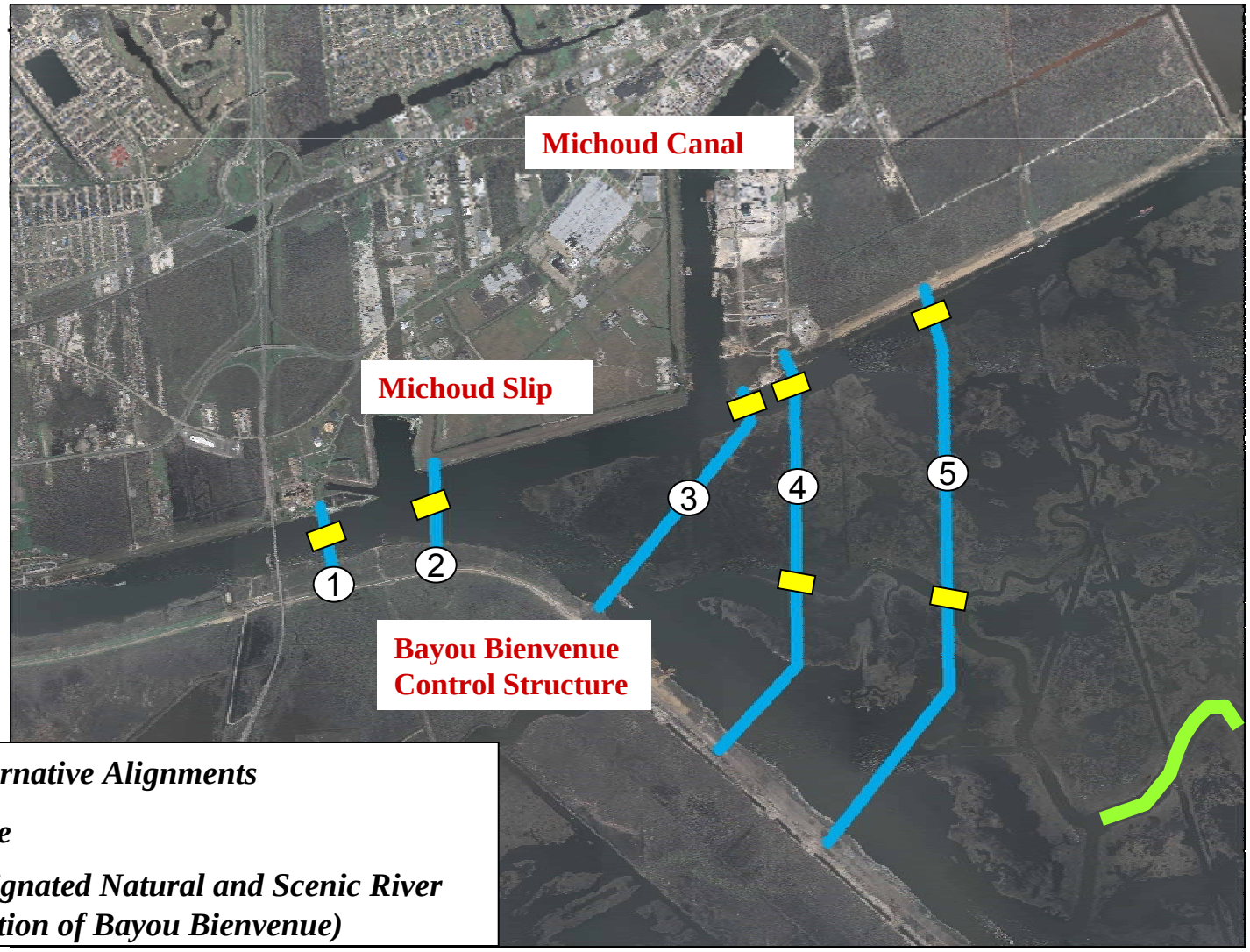
Two Tier 2 IERs

- **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)

US Army Corps of Engineers®

IER #11 Tier 2 Borgne Alternative Alignments Overview



Alternative Alignments

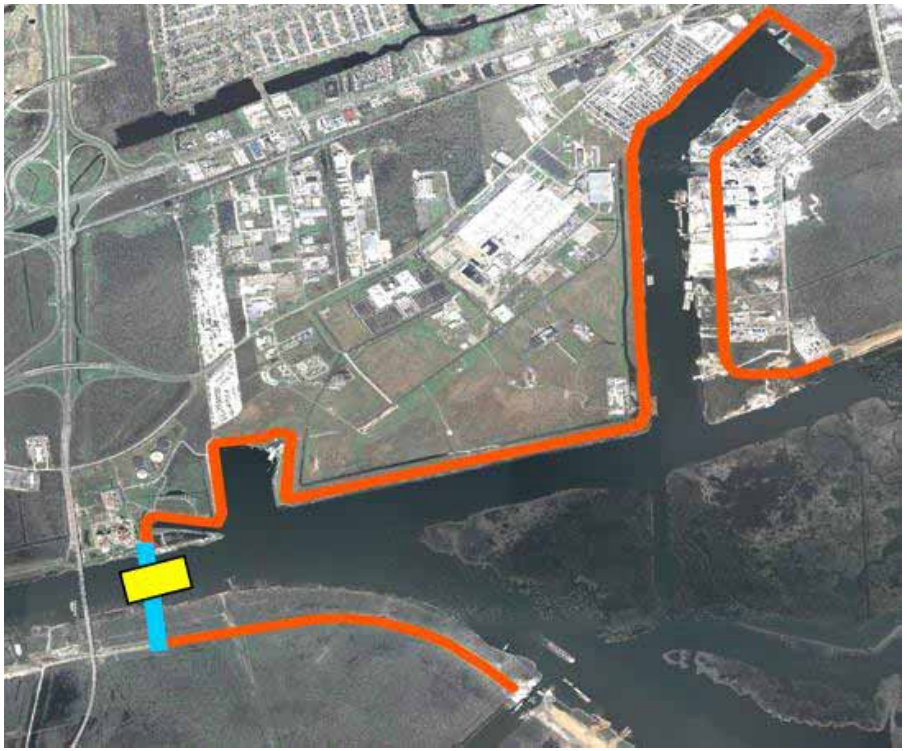
Gate

Designated Natural and Scenic River (portion of Bayou Bienvenue)

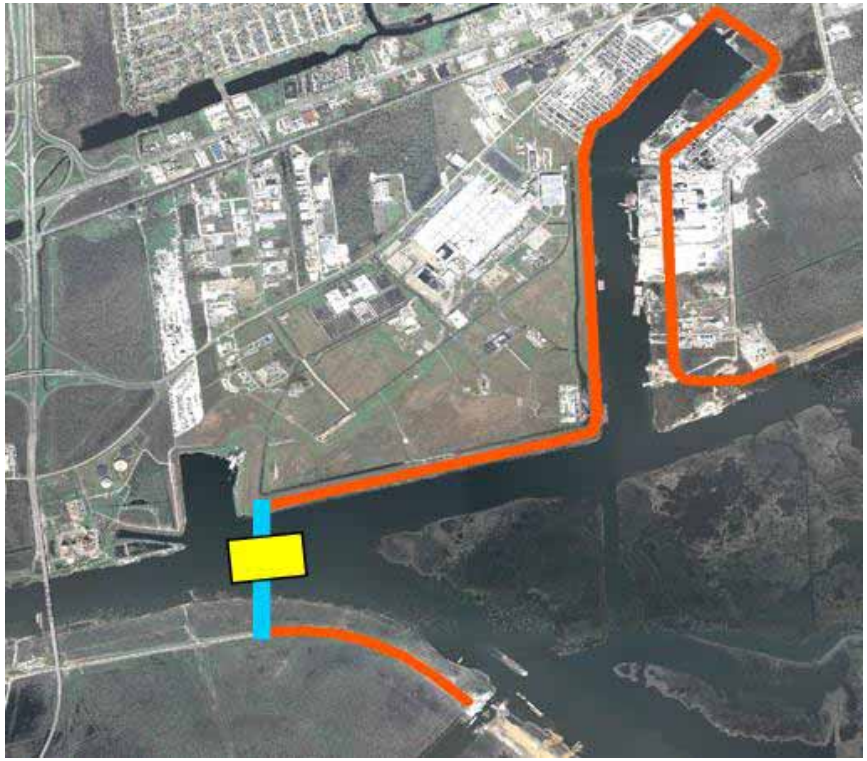
US Army Corps of Engineers®

IER #11 Tier 2 Borgne Alternative Alignments

Alignment 1



Alignment 2

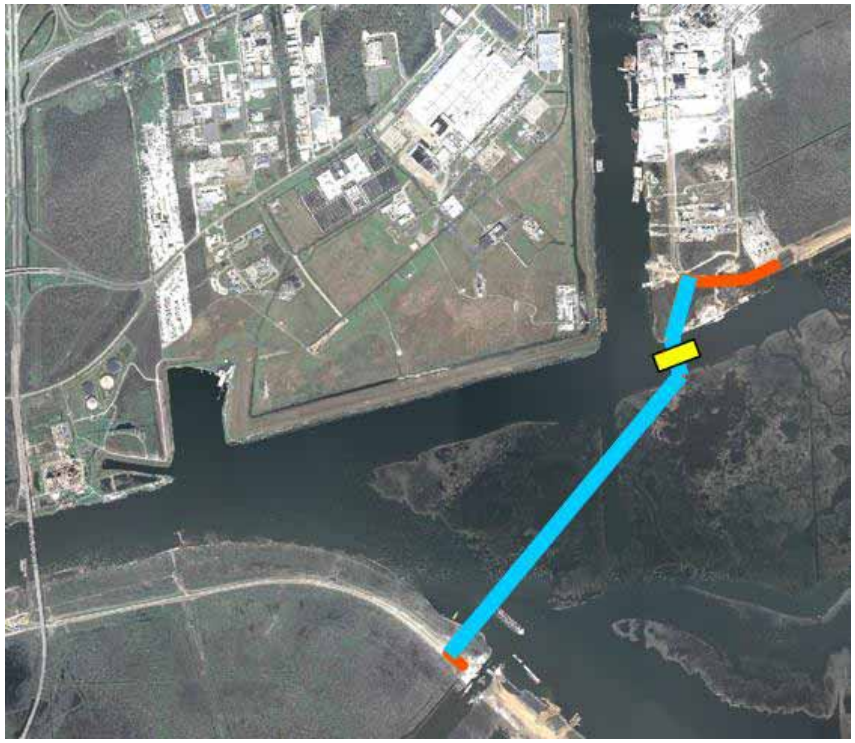


- Levees & Floodwalls to be Raised
- Alternative Alignments
- Gate

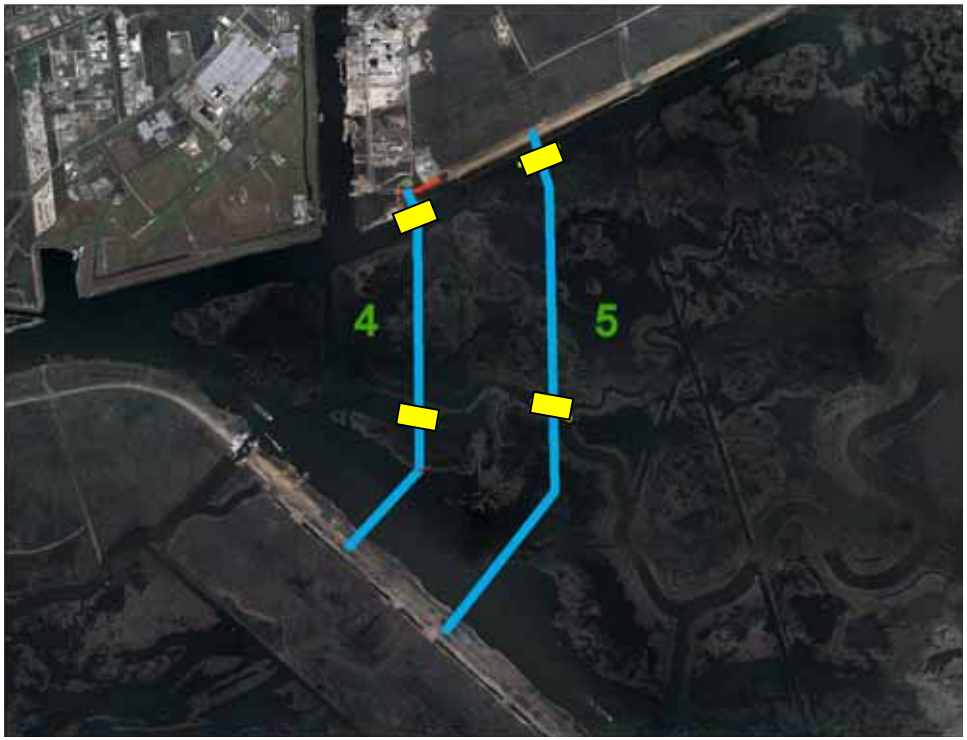
US Army Corps of Engineers®

IER #11 Tier 2 Borgne Alternative Alignments

Alignment 3



Alignment 4 & 5



- Levees & Floodwalls to be Raised
- Alternative Alignments
- Gate

US Army Corps of Engineers®

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

US Army Corps of Engineers®

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

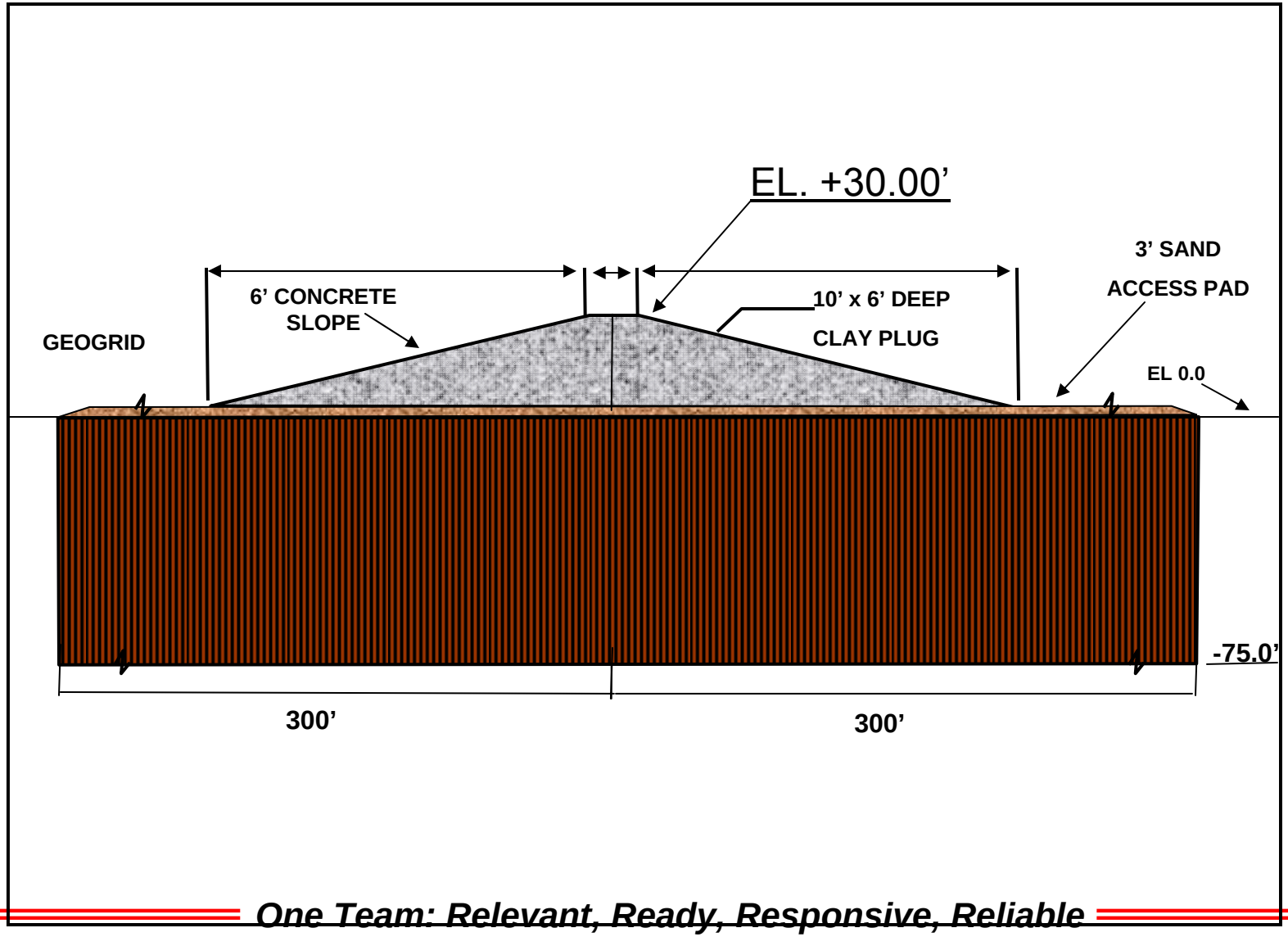
B-2. Geotextile levee with flow structures

C-1. Structural wall

C-2. Structural wall with flow structures

US Army Corps of Engineers®

IER #11 Tier 2
Borgne Alternatives Geotextile levee



US Army Corps of Engineers®

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**
- 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: mvnenvironmental@usace.army.mil

US Army Corps of Engineers®

NOLA Environmental

NEW ORLEANS, LOUISIANA

Environmental Compliance Data Bank

www.nolaenvironmental.gov

PROJECTS | MEETINGS | 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

- IER 1 Draft Public Comment Period 4/29 - 5/28
- IER 15 Draft Public Comment Period 4/28 - 5/28
- IER 22 Draft Public Comment Period: 4/01 - 4/30
- The Decision Record for **IER 11** has been signed by the District Commander: Final IER 11 *(News Release)*
- The Decision Records for **IER 18** and **IER 19** have been signed by the District Commander

Upcoming

- 04/29/2008 - Public Meeting (IERs 6 7 11 & Borrow)
- 04/29/2008 - IER 1 Draft Public Comment Period Begins

More...

Newly Available

- IER 1 DRAFT La Branch Wetlands Levee St. Charles Parish 29 April 08
- Ad - IER 1 Notice of Availability 29 April 08

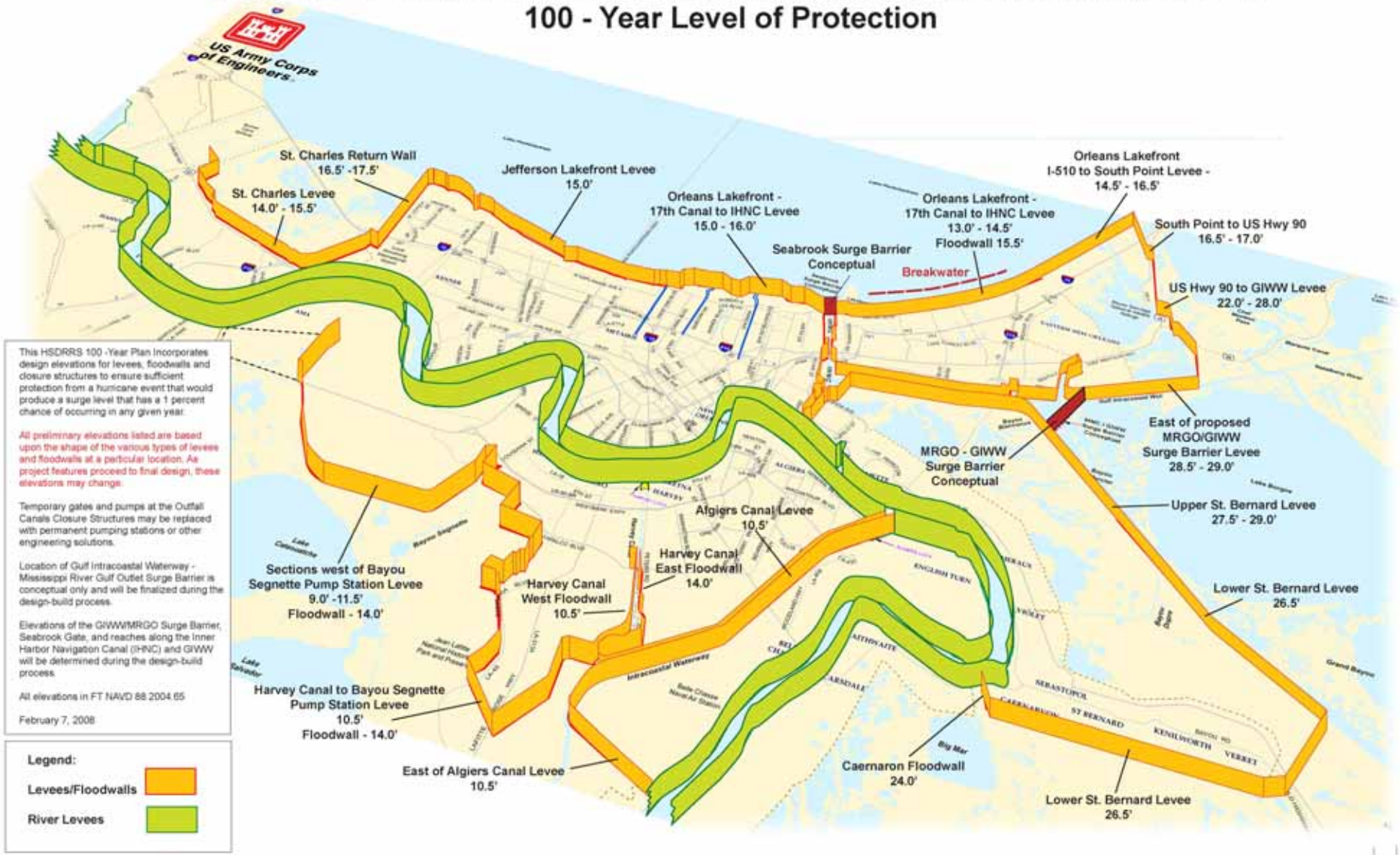
More...

FEATURED PROJECT

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

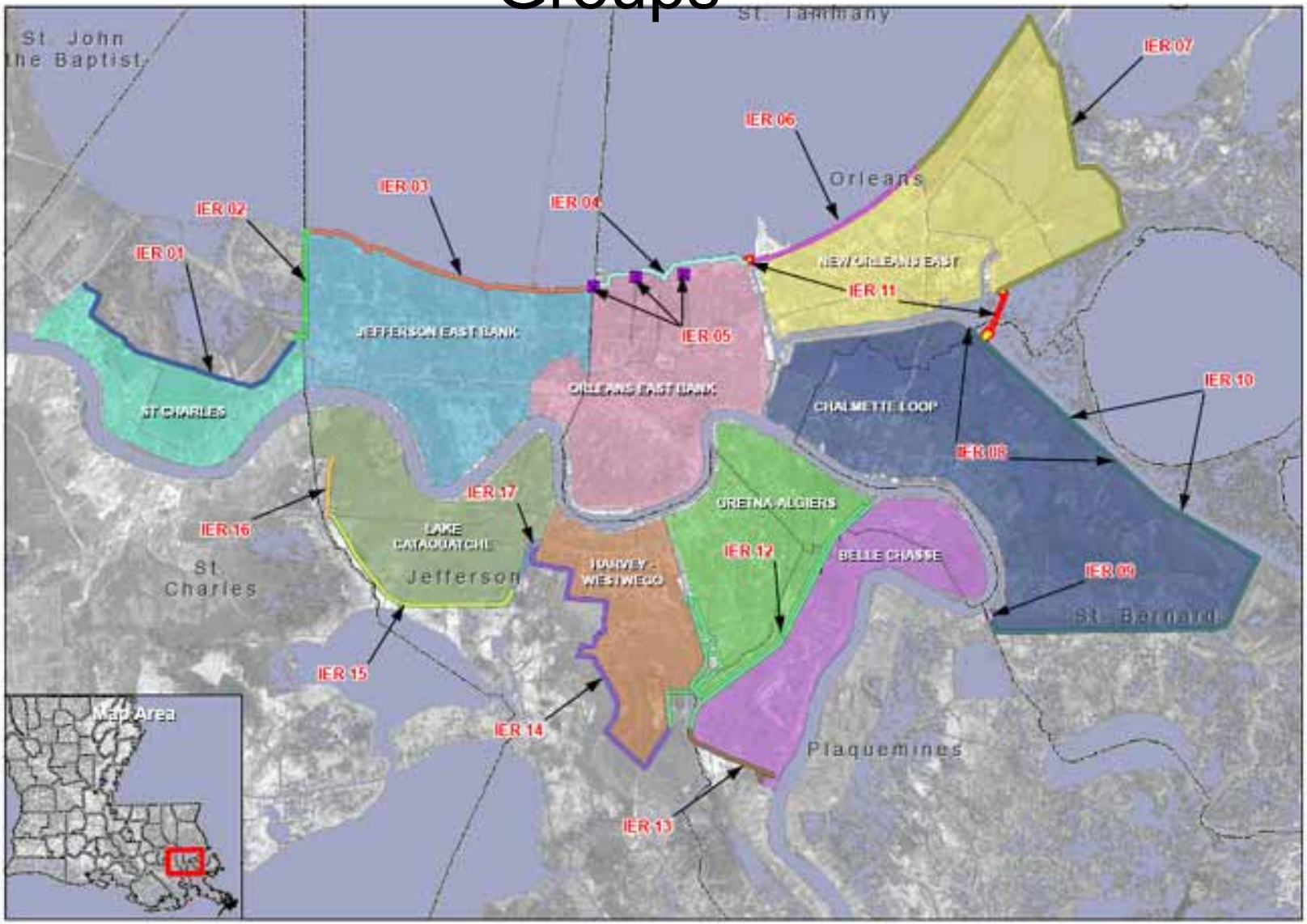
Back-up Slides

Greater New Orleans Hurricane and Storm Damage Risk Reduction System
100 - Year Level of Protection



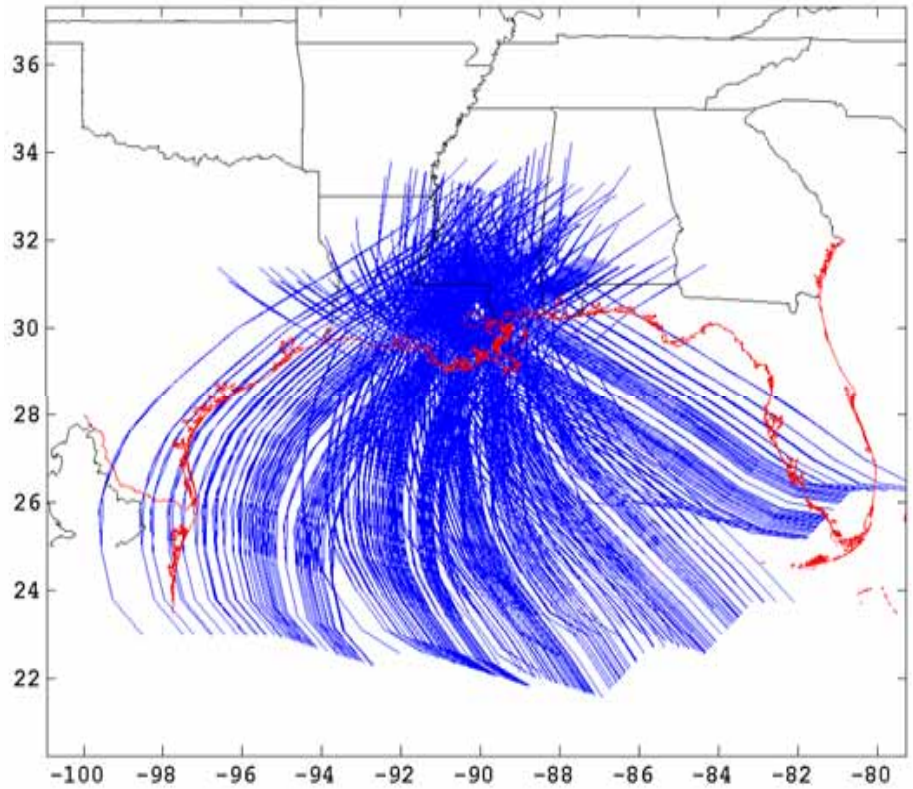
US Army Corps of Engineers®

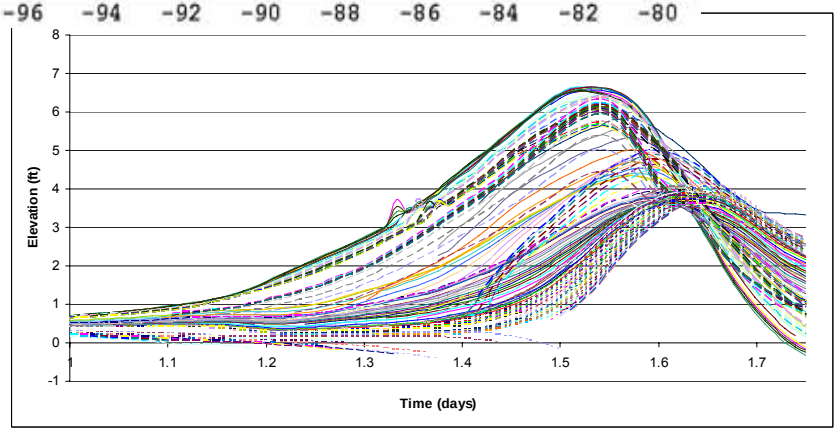
Sub Basins and Representative Project Groups



One Team: Relevant, Ready, Responsive, Reliable

Hurricane Paths Considered in the Risk Analysis





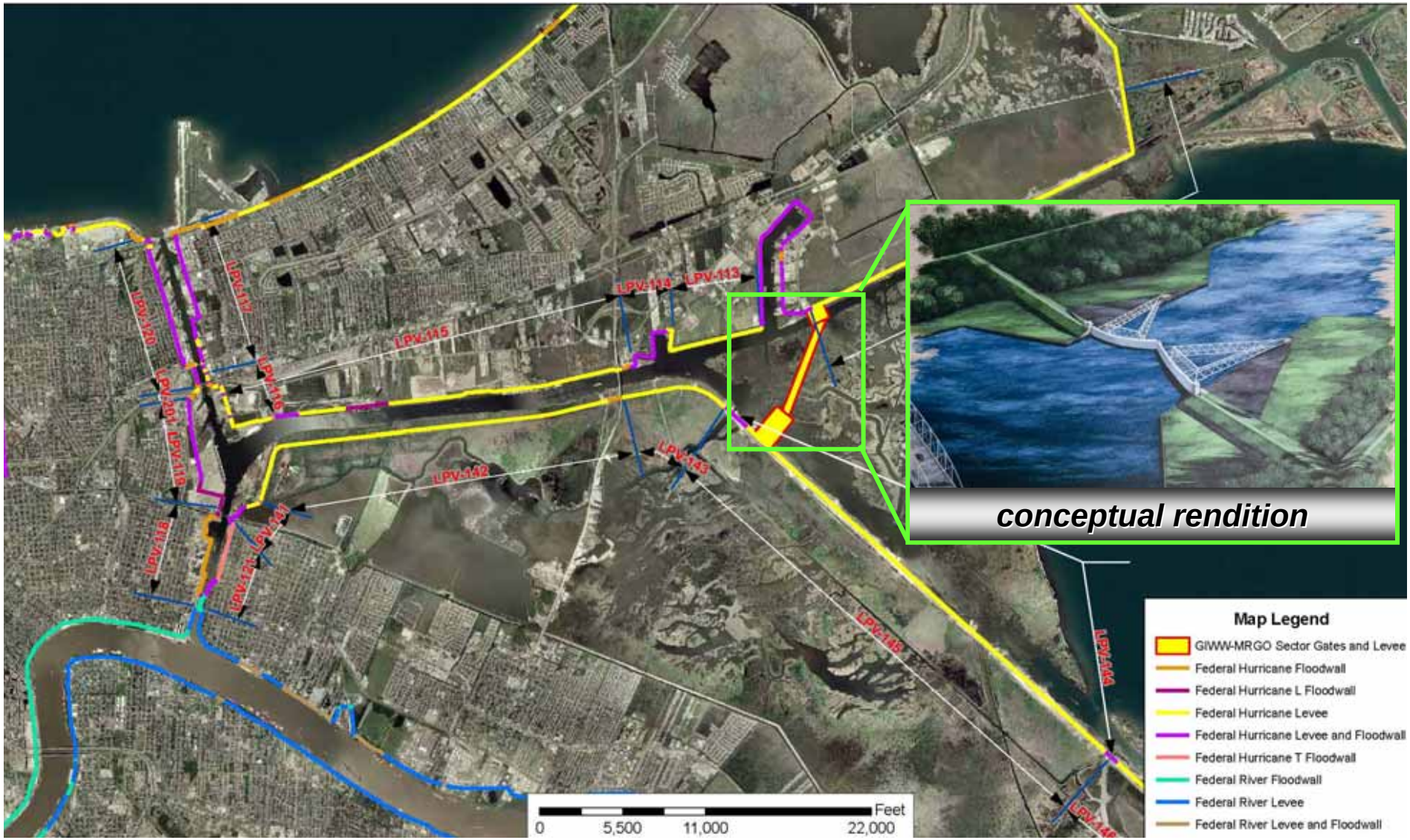
- *3 HPS Geometries*
  - *Pre-Katrina*
  - *Current (1 June 07)*
  - *100-year LOP (~2011)*
- *152 storm hydrographs*
- *350+ features*
  - *Floodwalls*
  - *Levees*
  - *Pumps Stations*

→ **62,928 Hurricane**
→ **Hydrographs**

US Army Corps of Engineers®

IHNC Surge Protection

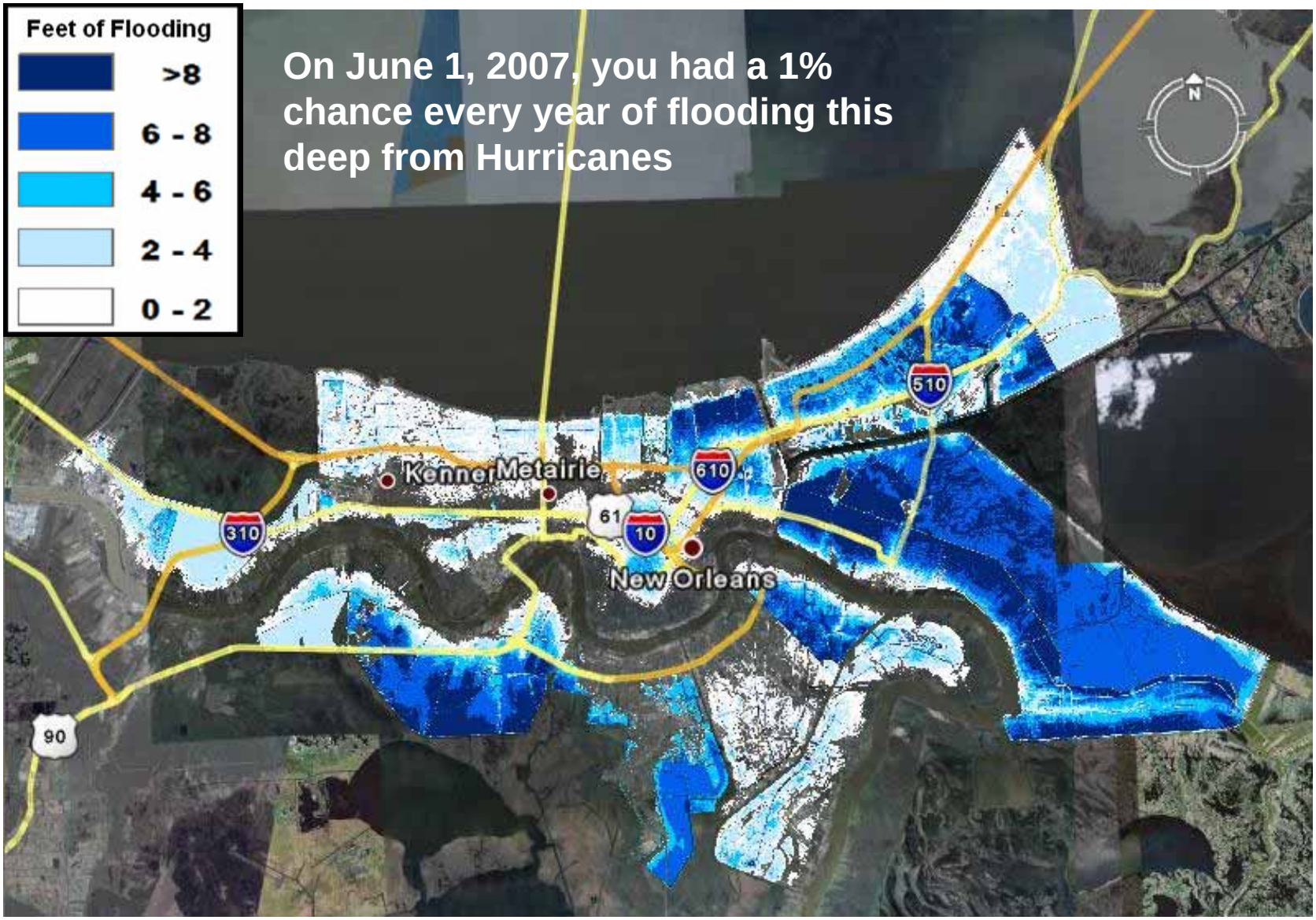
cost $500 Million to $1 Billion



One Team: Relevant, Ready, Responsive, Reliable

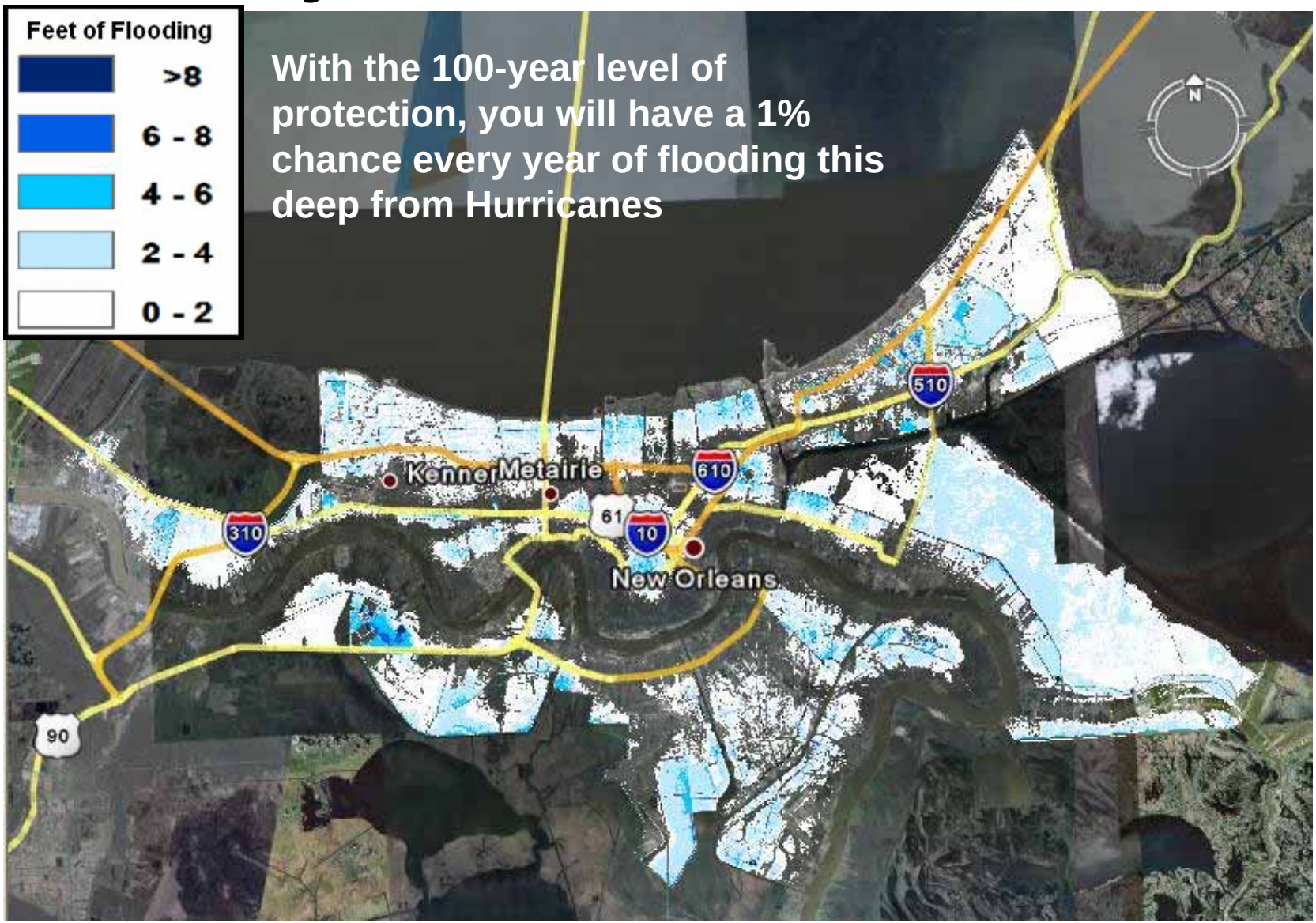
US Army Corps of Engineers®

Current Flood Risk

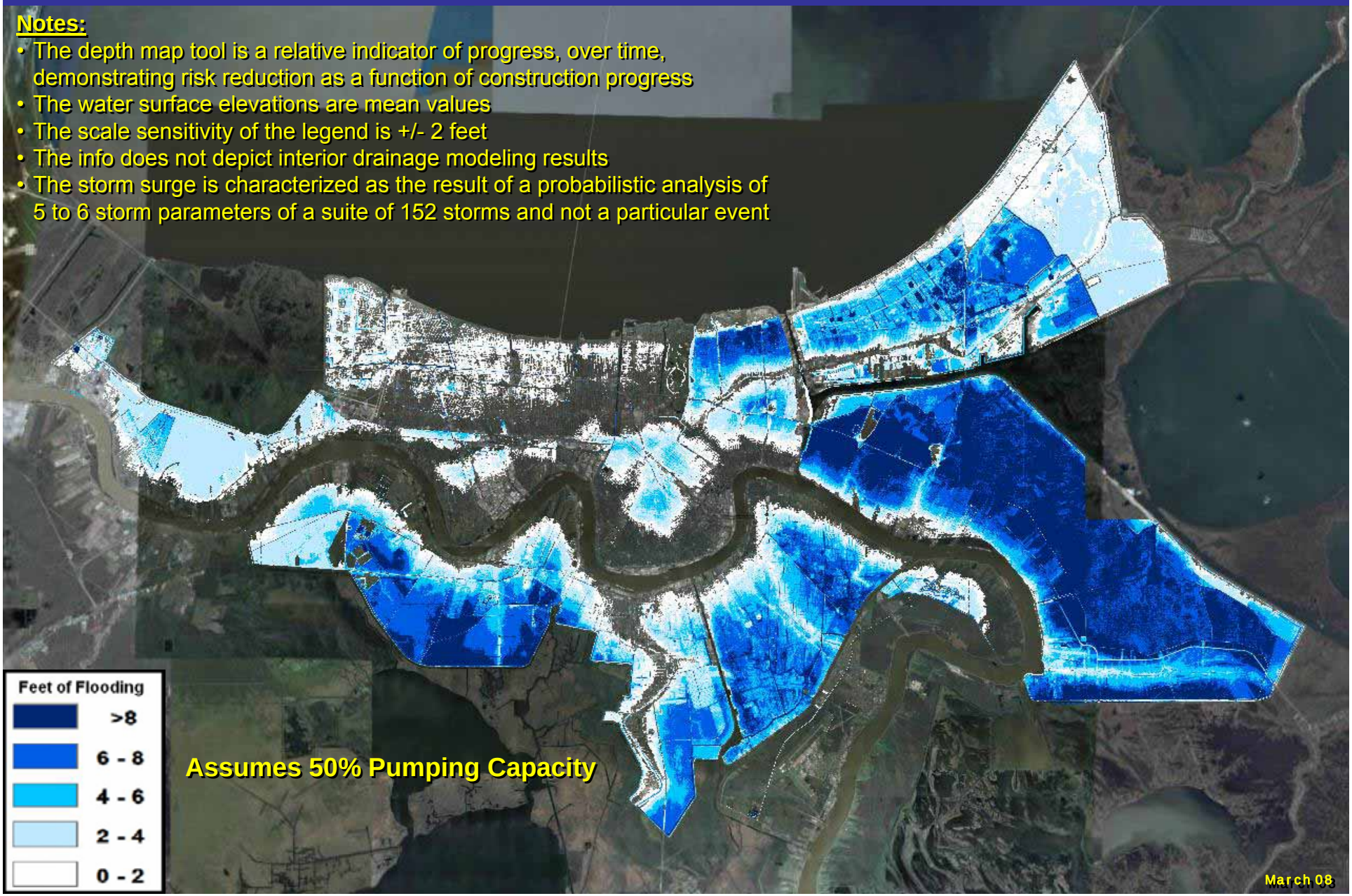


US Army Corps of Engineers®

100-year Protection Flood Risk



On June 1, 2007, you had a 1% chance every year of flooding this deep from Hurricanes



With the 100-year level of protection, you have a 1% chance every year of flooding this deep from Hurricanes