Public Meeting Summary

Individual Environmental Report (IER) #27
Outfall Canal Remediation
Public Meeting
September 16, 2010

Location	Holy Trinity Greek Orthodox Cathedral
Time	Open House 6 p.m.- 6:30 p.m. Presentation 6:30 p.m.
Attendees	Approx. 200
Format	Open House Presentation Discussion
Handouts	• Draft IERS 27 • Corps Approval Process brochure • June 2010 status map • Interim Control Structure fact sheet
Facilitator	Nancy Allen, public affairs

Nancy Allen: Good evening. I'm Nancy Allen with public affairs for the Hurricane Protection Office. We want to thank you for being here and taking time out of your busy schedule to attend this meeting.

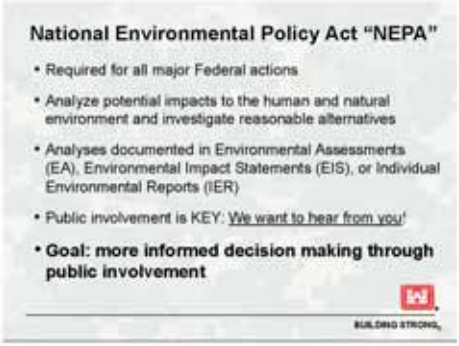
The purpose of this evening's meeting is to answer questions and collect public comments on Individual Environmental Report #27 (IER 27), Outfall Canal Remediation on the 17th Street, Orleans Avenue and London Avenue Canals. We will get through all the slides and then we will turn the meeting over to you for questions and comments. There are comment cards available at the sign-in table and we ask that you fill them out and return them. When your name is called I will read your question or comment and then you will have the chance to elaborate or ask follow-up questions. I know that many of you are interested in other topics related to the outfall canals and permanent pumps and we are willing to address those questions and subjects, but we need to ensure that we cover the remediation work covered in this document first.

Tonight we have with us Councilwoman Susan Guidry from the New Orleans City Council. We also have Marcia St. Martin and Madeline Goddard from the Sewerage & Water Board and from the Jefferson Parish Drainage Department we have Kazem Alikhani.

Tonight you will be hearing from Col. Robert Sinkler, commander of the Hurricane Protection Office, and Dan Bradley, branch chief for permanent pumps. Before we begin I do want to introduce some more of our Corps subject matter experts that we have with us: Dr. John Grieshaber, from HPO; Laura Lee Wilkinson, Environmental HPO; Todd Klock and Lisa Gallagher from Real Estate; and we have others with us as well so we should be able to answer all of your questions.

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.

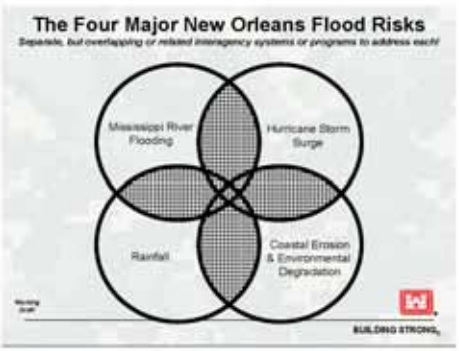
This is our agenda for the evening. We are going to give you a brief update on the system overall, discuss the project, the impacts, the type of remediation we will be doing and then we will go into each canal to show you exactly where we will be doing this work.



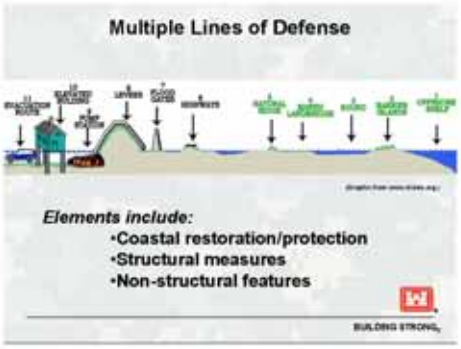
National Environmental Policy Act, or NEPA, is required for all major federal projects. This looks at both the human and environmental impacts of any work so we will discuss the work that is in IER # 27 and then we want to hear from you; we want you to be involved in this process.

We always start off our meetings talking about risks. Everyone has a responsibility in reducing risks. You can look at things like you have your initial risk then you have your zoning, your building codes, evacuation plans, outreach, coastal restoration and then the structures that we construct, the levees and floodwalls. There will always be residual risks in Southeast Louisiana and we all share a role in reducing that risk. Now I'm going to invite Col. Sinkler to give you a brief update on our work in Orleans Parish.

Col. Sinkler: I commanded the Rock Island District prior to coming down here and while I was up there, I got up there in 2006, and while I was up there the Rock Island District was responsible for doing work, primarily on the Westbank and designing the West Closure Complex and then we also did some work along the lakefront in Orleans metro. In May of 2009, I was asked to come down here and take over the Hurricane Protection Office, which really is a large task force that was put together to deliver a large portion of the $14.3 billion dollar Hurricane & Storm Damage Risk Reduction System. Before we get into the meat of this public meeting, I just want to give you an overview of the system and what we have done to date.



As everyone knows there are four major flood risks facing Southeast Louisiana and New Orleans in particular. There is flooding risk from the Mississippi River. The night after the 1927 flood, Congress authorized and funded the construction of the Mississippi River and tributaries project to reduce the risk of flood along the Mississippi River. The Bonnet Carre Spillway was a portion of that project. As everyone knows, New Orleans has never flooded from the Mississippi River since that project was constructed. After Hurricane Katrina, Congress fully authorized and funded the construction of a hurricane and storm damage risk reduction system for Southeast Louisiana and we are in the process of constructing that now. We should be able to handle a 100-year storm surge event by next summer. Work will continue for a few years beyond that, but we will have everything in place to handle a 100-year storm surge event in June of next year. Because a large portion of New Orleans is at or below sea level, there is always an issue with flooding as a result of rainfall. We will talk about that tonight because the improvements we are making to the outfall canals are really improvements to canal walls whose primary function is to help remove rainwater from the city. There is another risk because of coastal erosion and degradation it brings the Gulf of Mexico closer and closer to the City of New Orleans and that is something that needs to be addressed. The marshes are very important to us. We never want the Gulf of Mexico waves to be lapping up against levees and floodwalls that we are building so those marshes are very important to the structural system that we are building as part of the risk reduction system.



We do support the concept of multiple lines of defense. The Barrier Islands are important as well as some of the natural ridges out there and there are other structures such as highways and things that can be used to reduce storm surge.

There were three major strategic improvements that it was obvious we needed to make after Hurricane Katrina. The first big improvement was the five major avenues that storm surge could penetrate into the heart of the city needed to be blocked. They had never been blocked; it was part of some plans that were on the shelf from the 1960s, but those structures to block the storm surge was never authorized and funded by Congress. After Hurricane Katrina we built three temporary closure structures at the outfall canals so that storm surge never again can penetrate two miles into the heart of the city through the outfall canals. We are now in the process of constructing a closure structure at Seabrook so storm surge from Lake Pontchartrain can't come into the Inner Harbor

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Navigation Canal. We are also building the world's largest surge barrier of its type out here in Lake Borgne to prevent storm surge from penetrating into the heart of the city here. The Lower 9th is located here and the surge barrier is located about eight miles from there and about 12 miles from downtown New Orleans. What we have done is that we have moved the lines of defense about 12 miles from the heart of the city out into the middle of Lake Borgne. The wall itself is completed and we are finishing three navigation gates that are in that wall and over the next nine or ten months we will have those gates in place.

The second major strategic improvement was to construct a system that had the same design stands. One of the weaknesses prior to Katrina was that the levees and floodwalls were owned, operated and maintained by up to a dozen different organizations and they were maintained at different levels because the tax base was different throughout the Southeast Louisiana area. Because of the way these projects that made up this system, and really it was a system in name only, were incrementally funded by Congress over a series of years the whole system was not built and constructed to the same standards. What we have done, with the support of Congress, is come in now and we are in the process of constructing a system that is constructed to the same design guidelines. This is just a few examples of what we are doing. This is an old I-wall in New Orleans East and it had an elevation of about 17 feet and it had about 20 feet of sheet pile below the ground surface. This is the T-wall that is being constructed; this is an elevation of 32 feet. You can see the base as it's about as wide as the T-wall is high and then there are two rows of H-piles that go down 120 feet on each side and then there is sheet pile in the center of that to cut off any seepage that goes between them. Almost every structure that we are building out there right now, almost 2/3 of the structure, is below ground. In this case, we have this T-wall here with this portion above the ground, but there are two rolls of H-piles on each side of that. This is a section of T-wall in St. Bernard Parish. We are building 23 miles of T-wall around St. Bernard Parish and to finish by June, we will have to construct about two miles a month and that is on schedule right now. This levee that is in existence in St. Bernard Parish, we have raised that to an elevation of 17.5 feet. Prior to Katrina, that elevation was 14 feet so the storm surge poured over much of the levee around St. Bernard Parish and flooded that. So we have raised the levee to 17.5 feet; the storm surge at that point during Katrina was 18 feet, which brought it right about here. The whole purpose of this T-wall is to take care of any waves we would encounter during a 100-year storm surge event. At this location, there was about seven foot of waves on top of the 18 foot storm surge, so the top of the wave was about 25 feet and the T-wall that we are building is at 32 foot elevation so it's higher than the waves there were experienced at that location. In Orleans metro, even though these floodwalls were not overtopped during Katrina, I just wanted to show you this as an example. This is the old T-wall and this is the new T-wall and it's about four feet higher in elevation than what existed in Katrina even though this particular floodwall did not overtop during Katrina. Water went over the top in New Orleans East and water went over the levee in St. Bernard Parish, but we now have some pretty massive structures being built in those two areas. Even though the levee was not overtopped in Orleans metro, we are still raising the levees and the floodwalls and bringing them up to current design standards.

The last strategic improvements we've made since Katrina is the improvements to all the pump station and modernize them. There are 61 pump stations inside the system and

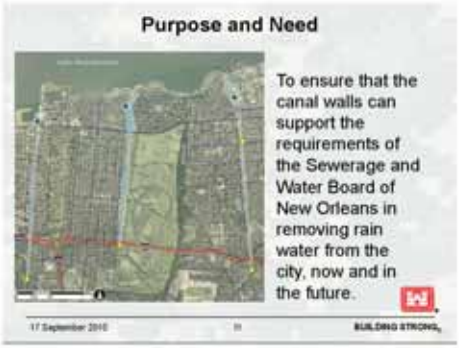
we've worked closely with the Sewerage & Water Board to make those repairs. We've stormed proofed 49 pump stations to the key stations can be more effectively operated when there is water in the city. We have also constructed some safe house so some pump stations operators can ride out the storm close to the pump station to ensure they can be operated and that will reduce the time it takes to remove rain or floodwater from the city if that is ever needed to be done again.

I just want to quickly walk you around the system. As you know the levees and floodwall in Jefferson Parish were not overtopped during Katrina, but we are in the process of raising those right now and that work is progressing. In Orleans metro, 95% of the work along the lakefront is already done and our goal is to reach 100-year level of risk reduction by December of this year. At each one of the outfall canals we have temporary closure structures in place and around April of next year, we will award contracts to build permanent structures at those locations. The Seabrook opening is under construction now and we will have a cofferdam in place in January of 2011, which will meet the 100-year requirement for storm surge risk reduction and then we should have the gate behind that finished up next summer. This work from here to here is underway right now and then the work from Paris Road to South Point is complete at this time so 50% of the work along the lakefront in Orleans East is done. This area out here, we are moving about 4.9 million cubic yards of clay and placing it on the levee there. The volume of the Superdome is about 4.4 million cubic yards, so we are moving more clay than you can put in the Superdome. This is a major effort and we have a lot of material to move in about nine months to finish that off. This is going to be the largest levee cross section in the system when we are finished. We are taking a levee that was about 150 feet wide and when we are finished, the levee will be as wide as a football field is long and then we will raise it up to an elevation of about 19 feet, which is much higher than what that area experienced from the storm surge from Katrina. This little area right here, the soil conditions are just poor and an engineer just referred to that area as the soil being like coffee grounds and it really is. It's a lot of organic material and it's just not suited to build a levee on in its current condition so what we are doing is we are drilling down and mixing cement 80 feet down and we are making cement pillars through the area so we can have a sturdy sub-surface to support the levee that we are building at that location. It's the largest deep soil mixing project ever attempted by the Corps and it's the largest deep soil project every constructed in the western hemisphere and maybe in the world. We are pumping a lot of cement down into the earth's surface to support the levee we are building here. There is a two mile long surge barrier here and we completed that in record time. We wanted to get as much of it in place before this hurricane season, so the wall is actually done. It is 26 feet in elevation and the storm surge during Katrina at that location was 18 feet and had seven of waves on top of that, so it's about a foot higher than the tip of the waves there were in that area during Katrina. This is the 23 miles flood wall system that we are building around St. Bernard Parish. I just want to emphasize that there is a lot of focus on the surge barrier; it's a 1.1 billion dollar project. The levee and floodwall system we are building around Orleans is over a billion dollars and the floodwall we are building around St. Bernard Parish is a billion and half dollars so they are all about equivalent to what we are spending on the surge barrier and that is significant federal investment into the future of Southeast Louisiana. The pump stations and closures that we are building here will be over a billion dollars. There are some big projects that are being constructed. To put thing in perspective, the entire Corps budget for programs for the entire nation is about four to five billion dollars a year and we are spending about three times that to construct the hurricane and storm damage risk reduction system.

With that I'm going to turn this over to Dan Bradley and he will give you some details on what we are going to be doing. The purpose with this meeting tonight is to listen to you and we will use that to shape

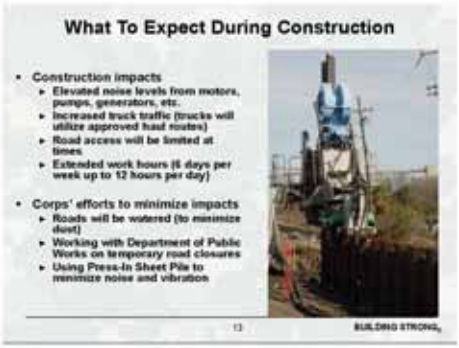
the remediation work that we will be doing. I know there are a lot of folks here tonight and I just want to see what you are here for. How many of you are interested in the remediation work on the outfall canals, just a show of hands? How many of you are here because they want to talk about the pump stations at the end of the outfall canals? I know there are some of you interested in property rights with the 17th Street Canal. Any other groups here? Earlier I was talking with a councilmember and I know there are some issues with drainage and improvements that are being made and we are interested in those comments and issues, but our plan is to address all the outfall remediation work issues first and then we will address other issues as well.

Dan Bradley: I am a project manager and I would first like to say this proposed project is about addressing seepage and stability along the outfall canals. In accomplishing this work, there is a maximum benefit of raising the maximum operating water elevation in all three canals. This will support the Sewerage & Water Board pumping requirements in removing rainwater from the city now and in the future. What that means is that when the project is completed in June 2011, the canal walls will be able to support not only the current drainage requirements, but also the planned future capacity increases of the Sewerage & Water Board as well as any backflow prevention measures they have planned. Secondly, I want to emphasize that that closure structures that the Colonel spoke about earlier will provide risk reduction for storm surge and only rainwater will be conveyed by the three outfall canals. So the meditation of the storm surge is performed by these closures at the outfall canals and prevents that storm surge from entering the heart of the city. The canals will then be used to convey rainwater from the pump stations out to the lake. With that I would like to present a brief slide show and an overview of the proposed project described in IER #27.

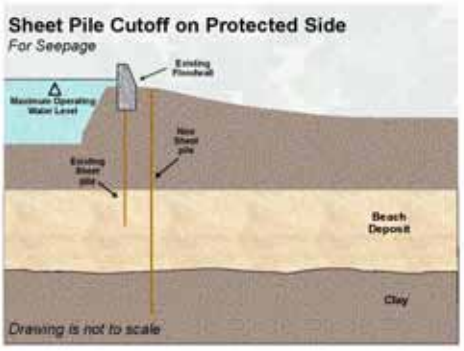


The result of the proposed remediation we are doing will ensure that the canal walls will support the requirements of the Sewerage & Water Board of New Orleans in removing rainwater in the city now and in the future. All work will be done within the existing right-of-ways.

The proposed construction will begin by the end of 2010. All construction will be done within the existing right-of-ways. On the 17th Street, we will be conducting deep soil mixing for strengthening the canal levees, adding embankment at the crown. At the Orleans Ave. canal, we will be adding stability berms, deep soil mixing for strengthening the canal levees and adding embankment at the crown. At the London Ave. canal, we will be adding sheet piles for seepage and adding embankment at the crown. So in all three we are adding embankment at the crown and all construction of this proposed action will be completed by June 2011.

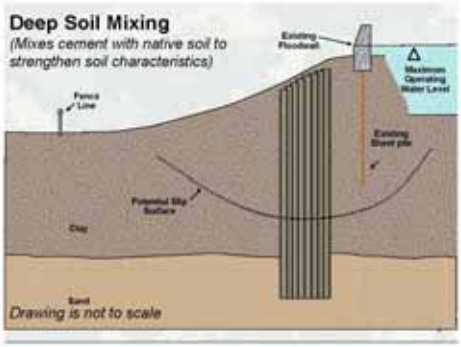


Now what to expect during the proposed construction? Some of the construction impacts will be elevated noise; levels from motors, pumps and generators; increased truck traffic; road access will be limited at times and extended work hours will be six days per week at 12 hours per day. The Corps efforts to minimize and remediate these impacts will include watering roads to minimize the dust, working with the Department of Public Works on temporary road closures and using a press-in-sheet pile technique that minimizes noise and vibrations. This picture right here captures that press-in-sheet pile. The sheet pile right here is being held by the machine and the hydraulic press presses it down into the earth. In rides along the previously driven sheet pile as it goes along the canal walls so you can see it minimizes the impact. This can be done within four or five feet of the canal walls.



This slide shows sheet pile cutoff on the protected side and this is done for the seepage. This shows the existing pile length and this is the maximum operating water level in the canal that will result from this remediation action. This is the existing floodwall and the new sheet pile will be driven down past the beach deposit sand and into the clay preventing any seepage path from existing now and in the future.

The next slide again illustrates the silent press-in method of sheet pile installation. The hydraulic machine itself is relatively silent. There is a generator that provides power for the unit, but that's a very low noise level. You won't ever see anything like this large pile driving installation like you've seen on other construction sites.

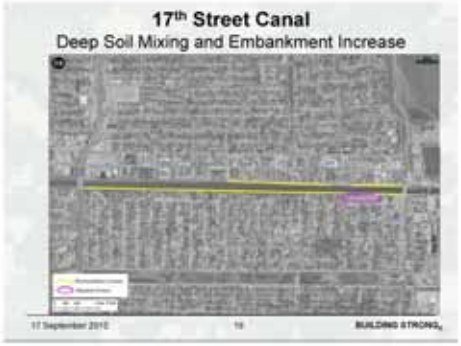


The next type of remediation is deep soil mixing. It's a type of deep soil mixing that is occurring out in the east where we are mixing cement with native soil to strengthen the soil characteristics. Again, these panels will be a mix of cement and also native soil and they will be placed down well into the sand strata. You can see how close to the existing floodwalls this is going to be accomplished. This is the existing sheet pile and this is the relative distances down that these will be placed.

The maximum operating water elevation will result from this remediation action as well.

This illustrates what this will look like and how close the wall this method will be able to be used. You can see they are within four or five feet of the wall at the crown of the levee. An auger is used to drill down and then the cement is mixed and placed down in the earth to mix with the native soil to strengthen that soil characteristics. You can see the machinery is all being worked from inside the canal so very little on is on the protected side of the canal impacting residents and neighborhoods.

Another type of remediation is stabilization berm on the protected side. This is to increase the factor of safety of the embankment. This is mostly along Orleans Canal and a lot of this is along the City Park side. You have probably seen these stabilization berms out there. They are hard to protect as they are grassed over and they are down at the toe of the levee. At no point will we add more than four feet of fill; in some cases it will be two to three feet. So this will be placed along Orleans Ave. canal and I'll show you where those will be.

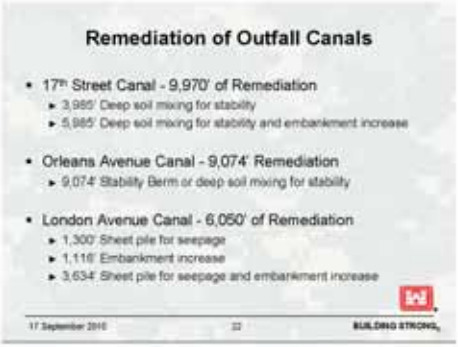


Our first slide goes back to the 17th Street and these are the proposed locations. Now on the IER we identified the whole canal, but in reality we are only working in certain sections. So we are doing deep soil mixing in combination with that embankment increase that I spoke about at the crown of the levee along these areas along the canal. This is the staging area. This is Hammond Highway to the north and this is Veterans Highway right here. On those large maps in the back, you can probably pick out your neighborhoods if you live along that canal. So again, the deep soil mixing that we saw with the auger and mixing cement with native soil and also embankment increase of an added layer at the crown.

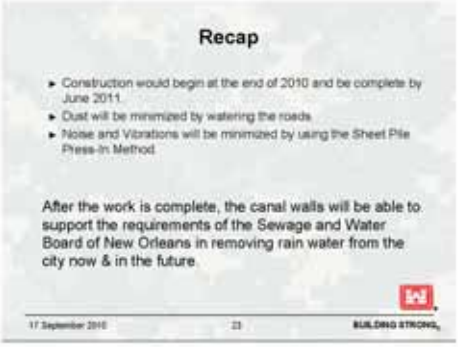
This is the Orleans proposed locations. These are the areas where stability berms will be used. That was the area off the toe of the levee where we had that fill and grass covered area. That will be used all along the canal between Harrison and Robert E. Lee mostly on the City Park side. Then north of Robert E. Lee, it will be both on the east and west side. There is an area of cypress trees in this area and we don't want to impact roots in any way, so in that case we are going to be

using a deep soil mixing there, which will be close to the floodwall so we won't impact any root systems of the cypress.

On the London Ave. proposed locations, we are using sheet pile cut-offs. That's where we are using the silent press-in method. Most of that work will be occurring in this area here, just south of Mirabeau. This area right here will be staging areas and those locations are just north of Filmore. So we will be working on both sides here and as we go toward Pump Station #4 on London Ave. and just north of Pump Station #4 on London Ave.



The proposed remediation of the outfall canals will consistent of this much and these types of remediation. On 17th Street, we have about 9,900 feet of remediation that is going to have to be accomplished. We have around 4.000 feet will be that deep soil mixing for stability and around 6,000 feet will be deep soil mixing for stability and embankment increases. On Orleans Avenue, we have around 9,000 feet of remediation and most of that will be stability berm or deep soil mixing depending on locations where around tree roots or areas where we can't get that stability berm in due to geometric considerations. On London Ave. we have about 6,000 feet of remediation and this is on both sides; there is 1300 feet of sheet pile for seepage cutoff and 1,100 ft for embankment increase and around 3,600 ft for sheet pile for seepage and embankment increases combined.



So to recap, the proposed construction would begin at the end of this year and be completed by June 2011. Again, dust will be minimized by watering the roads and noise and vibration from the sheet pile will be minimized by using the sheet pile press-in method. After the proposed work is complete the canal walls will be able to support the requirements of the Sewerage & Water Board of New Orleans in removing rainwater from the city now and in the future. By tying these remediation efforts together and accomplishing a maximum operating water level elevation coupled with those barriers at the outfall canal mouths, will enhance the safety and security of the city.

Nancy Allen: Thank you Dan. I have a number of comment cards so let me tell you how we are going to proceed. I will be reading from the cards and when we read your card we will come to you with a microphone and you will have a chance to provide additional comments or ask a question. We ask that you be respectful of the fact that we have many people here and everyone needs to have a chance to speak so we ask that you limit your comments to three minutes. For those of you who have requested to make your three minute comment, we will accommodate that and there is a timer. It's

important that you speak into the mic as we are recording this meeting for the record and after the meeting we will be here to answer additional questions you may have.

We do have a few IERs out for public review and there is information on the back table.

We did schedule a public meeting on Wednesday, October 13th regarding IHNC Levee and Floodwalls.

You can always make a comment by visiting www.nolaenvironmental.gov and if you signed in you will be added to the mailing list. If you want to make written comments on any project you can send it to that contact person below.

You can also check our web-based resources. We have our www.nolaenvironmental.gov, all of our environmental documentation is there. We also have the New Orleans District webpage, which is www.mvn.usace.army.mil.

We also have several networks at Twitter. You can find project photos on Flickr and we are also on Facebook.

This card is from Linda Russo. First question I have is how many surveys were already done? I am assuming you mean property surveys?

Linda Russo: My property backs up to the 17th Street Canal. I'm very interested in the safety of the city and I think this is a wonderful presentation; however, the water from the 17th Street Canal passed through my home before it went into the rest of the city and when they pumped the water out of the city it passed through my house before it was all pumped out. With that said, the levee behind by house had sheet piling put in several years ago by the Corps and it was to no surprise that the sheet metal wasn't put in properly and this is why the levee broke. There was no one to follow-up, there was no one to check the work that was being done that the contracts were being done properly. Everything on paper looked good, but at the same time all of these projects look wonderful on paper but who is going to be following up and insuring the citizens that everything is being done the way it is supposed to be done. For example, they have been doing surveys behind my home to determine where the toe of the levee is. That is a simple project but there have been at least three, maybe four surveys and each survey the toe is moved several feet. If they can't survey where the toe of the levee is how are they going to complete these projects properly and who is to determine which measurement is accurate and which is inaccurate? I would like to know who the people are who are making these decisions because they are decisions that affect all of our lives. When FEMA came into New Orleans, they changed the rules every six weeks and we don't need them to change the rules and learn as they go. I think those are the answers that we need. Let's not learn as we go, let's try and have some definitive answers and some competent people who are following up on the project and by example they should show us they know what they are doing and not keep sending surveyors out and decide I'm going to take three feet of your property, or no I'm going to take five, or ten feet of your property. You have to know whether you are going to have a backyard or a living room in order to complete this project.

Nancy Allen: All of the work will be done within the existing right-of-way and that is as determined by OLD and SLFPA who are the non-federal sponsors responsible for providing the real estate. Dan, do you want to speak about the peer review process and the process by which all our sponsors have been involved in this work so far?

Dan Bradley: All along during design we have had representatives from CPRA and Southeast Louisiana Flood Protection East reviewing the designs and they have an AE of their own for additional external review of the design and the construction as we go forward.

Male Speaker: Probably?

Dan Bradley: That would be their determination on how much they want to fund their AE. They are welcomed to stay with us through the duration.

Nancy Allen: Next question is from Edward Feinman. Your card asked who would pay for sinkage.

Edward Feinman: Everything, the streets, sidewalks, the driveways because I live against the 17th Street Canal and I've been living there for 50 years and when you put up the concrete flood wall and only went down so many feet, you cut off the top seven or eight feet of the sand strata and for instance, my house is on piling but my driveway is reinforced concrete where it meets the carport has sunk three inches. Out in the middle of the street when the Sewerage & Water Board used to come out to do repairs, they had to put sheet piling down because the water level was seven or eight feet down. Now when they come out, the water level is down to 12 or 15 feet and when you start going down 80 feet and you look at the cross section of the area, everyone has a wet sand strata flowing through it. What I want to know is do we depend on the Sewerage & Water Board with their unlimited funds to come out and repair the drain lines and Public Works to repair the streets? I think we need a written guarantee from someone that these repairs will be paid for and not put more millage or taxes on the tax payers. If you want to do the project fine, but make sure you have the funds available because even in your reports they say sinkage is very probable as far as that area is concerned. Also, the Uptown drainage and all that, you are doing all this planning for safe water level of six to eight feet; however, Uptown when they finish the SELA program will be dumping even more water into the canal. You also have big projects coming on line like the LSU Medical Complex that will have a tremendous amount of rain runoff and all these street repairs where you used to have an open ditch now you have a subsurface drainage and I think you are starting to see it more Uptown with flooding so they are going to be hollering for more pumping capacity into the canal so what is that going to do to the safe water levels?

John Greishaber: Unlike the sheet pile that was put in for the protection along the 17th Street Canal, this deep soil mixing does not create a curtain across, this is intermittent, they are spacing between panels. Right here these panels are not continuous in and out of the screen so the actual water flow that you are concerned with being cut off, will not be cut off. You have the sheet pile that was established underneath that wall when the wall was initially constructed that may or may not have induced that settlement, but this process of putting concrete panels in will not affect ground water elevations underneath your house or your driveway.

Edward Feinman: You say it won't inhibit the water flow, but it seems to me if you have a 100% water flow through there and then you take can put panels even with spacing you cut it to 50%, you are still going to cause sinkage. If this doesn't work out like that other wall didn't work out who is going to guarantee to foot the bill if there is problems. I think that should be in writing and our Congressional delegation should require it. Fine if you never have to use the guarantee, but you want to be protected if it does. My point is that we want a guarantee.

Nancy Allen: The next question is from KC King and his question is how this project contributes to ensuring that the total protection is more than a system in name only.

KC King: The IPET study I thought was very clear in its conclusions that the works that we had before Katrina was a system in name only. I don't see a presentation that says this is how our new work will be a full system, a guaranteed, comprehensive, integrated resilient system. To say that your risk reduction system says there are some risks that you are not even going to think about or inform people of what the residual risk is other than some pictures of water in neighborhoods. That is inadequate communication and managing of total risk so risk reduction system is an oxymoron so I would like to hear how you are going to work as a system.

John Greishaber: Earlier, Col. Sinkler had a map of the whole Southeast Louisiana area showing a perimeter system that will provide risk reduction what we are doing here now with the permanent pumps is completing that system at the outfall canals. We currently have temporary risk reduction for surge barriers and pumping at the outfall canals, but we are making that permanent. What we are doing with this work that we are here to discuss tonight is remediating these wall so in addition to that assist the Sewerage & Water Board in removing rainwater from their interior drainage system. What Col. Sinkler addressed earlier was the hurricane protection storm surge system.

KC King: Just one comment on that, the IPET cited that many of the interfaces between project area experienced failures. The project by project approach that you portrayed here says that we are not going to solve that problem.

Col. Sinkler: What we went back and did after Katrina is we went bank and armored every one of those places where components of the system connected with another one. Then we have a study that is ongoing right now that Colorado State University has the lead on it and they are looking at the entire system to figure out if we need to further armor it. We are going to wait until that study is done and come back in do additional armoring. Right now we have armored the system between those places where two different project, like a levee tied into a floodwall, we went back in and did some armoring and we will wait until the independent study is completed and then both SLFPA and the levee authority and the Office of Coastal Restoration will have a chance to look at that and then we will be able to go in and do additional armoring wherever it's needed. Many of you have heard me say this but we don't want to build this project for you, but we want to build this project with you and that's why we are having this public meeting tonight. We want folks to come out and take a look at the projects we are constructing and I would be happy to spend as much time as needed to take you out and show you on the ground what we will do, what we are doing and what we have done. We will be happy to do that and have folks come out. I know I'm deviating a little bit with this question, but some gentleman asked me about getting access to the area near 103 to do some running along the top of the levee. Captain Smith if you can link up with him he can work those kind of issues with you off the side of this meeting.

Nancy Allen: The next question is from Ray Guidry. What specific differences are there between the west side of London Canal and the east side where there is little to no improvement being done on the west side?

Ray Guidry: The Colonel was very specific about armoring levees out in New Orleans East that were not overtopped. The London Ave. Canal broke in several places but you have less remediation at all three of the inflow canals by you numbers that you put up there. He was very specific about the T-walls replacing the I-walls, so why would a canal that was damaged, destroyed and broken not be completely rebuilt instead of this patchwork we have? We all know that our levees are like a chain and the weakest part is where the disaster occurs. How can you determine and what have you used to determine that certain sections of this don't need to be replaced, remediated or repaired?

John Greishaber: The difference between London Ave. and the other canals is the mode of failure. If you remember, Katrina came in and it blew away the sand under the levees. If you were around post Katrina, you could all down Mirabeau to Elysian Fields and we still had sand. That mode of failure was water actually washing underneath the wall and taking the sand away. What we did is we went and examined below and above ground and we determined the areas where we needed to drive sheet pile all the way through the sand so there is an actual curtain of steel so the water can't get on the flood side of the sand. So where we are today is we are looking at a canal and your question is why are we fixing one side and not the other? The difference between this side here and here is the ground surface elevations are different. I have higher elevations over here. The same is true over here. So where I have a

lower ground surface elevation, which would allow that water to come through the sand and bubble up we are cutting the water out. Where I have a significant amount of fill above that sand that will not happen so I don't have the problem. The main difference between why is it here and why is it not here, is the basically the geometry of what is out there; how high is the ground surface?

Ray Guidry: So 40 feet across, which is the distance of that canal, the earth changes is what you are saying?

John Greishaber: No sir. The subsurface underground does not change. The elevation changes all along the area on this side less fill was placed when they developed those subdivisions many years ago. On this side, a greater quantity of fill was placed; the street elevations are actually higher.

Ray Guidry: The maps don't say that. They say it's a typical elevation of whatever that percentage is; I think it's 4.3 underneath from a google map when they do the elevations, it shows they are both the same, but I'll look at your data from your view. We think that the canal walls were actually damaged because of the flood, the ones that did not break. We don't see any work being done on the walls except where they were broken at. What information do you use to look at the walls to see if they are still structurally sound?

John Greishaber: Those walls were inventoried to verify that there was no displacement of the walls and no excessive settlement of those walls. There was a very detailed subsurface investigation done to determine what the foundation is under those walls and there was a detailed survey done to see how much ground difference there is between one side of the wall and the other and how much cover we have over the sand strata. There was extensive work that was done on this canal to determine the mode of failure and what can we do to prevent that from ever happening again.

Ray Guidry: The second question I have concerns the fences that was taken down and the property that was taken. You took six to ten feet and removed fences and cut trees down. In my particular case, you cut trees down 10 feet inside of that. There were cable gates along the London Ave. Canal that prohibited people from driving on that. Today for the first time since Katrina the cables went back up on those gates. The problem is people drive on the canal bank and because fences were removed the gates serve no purpose; you can easily go around them to drive. Is there going to be any new fences put up to take care of this problem to keep people from driving and damaging the canal; they have been driving on it for five years since your test were done. We see things in Plaquemines Parish about not driving on levees and we need something to happen in that respect.

John Greishaber: That is for the Orleans Levee District so I can't speak for them, but I assure you that they don't want people driving on those levees.

Ray Guidry: They are ones who leave the gates unlocked so they don't have to get out of the truck when they cut the grass.

John Greishaber: I will mention this to Steve Spencer from Orleans Levee District and we will have this conversation.

Nancy Allen: This question is from Norma Poole. Your first question is about property values. Is there is any consolation to what I feel is a decline in property values? We would pay for any property we would use for the project; however, all of it is in the existing right-of-way and there is no mode of compensation for a perceived decline in property values.

Norma Poole: That was not my question. My question was whether or not you were concerned about the decrease in our property value. Houses have been going up for sale left and right around the neighborhood and they are not selling. The man right across the street from the pumping station on London Ave. can't sell his house for nothing and I know it's because the pumping station is sitting right there. So my concern is just property values itself, not property right-of-way. But I would like to get more to my second question. The roads throughout the neighborhood, in particular Lake Shore Drive, are no constructed to my knowledge for the heavy equipment that is running across them continuously, the dump trucks and the heavy cranes and so forth and so on. I feel as though the work that is being done, it's good and needed work, is also undermining the roadways in and around the areas that they are trying to reinforce. I guess the question there is has anyone taken that into consideration, what's going to happen when the roads start caving in after you guys leave, the levees are built and we have no roads to travel on?

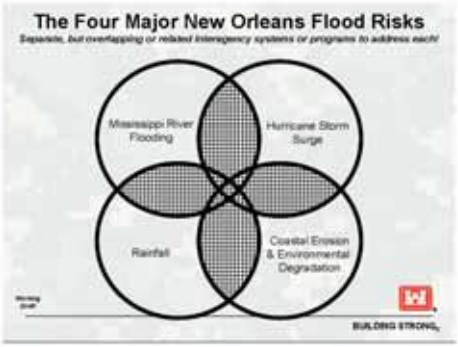
Nancy Allen: First of all, all contractors must stay on approved haul and truck routes and those are identified in the IERs. We did have a regional meeting last summer to talk about this issue. We brought together localities, regional planning commission to talk about the impact of the cumulative amount of traffic related to construction of the hurricane and storm damage risk reduction system. Also, if there are specific damages on the roads, the contractor has to restore those roads to the condition to which they were. Sometimes roads are being used for multiple purposes, both Corps and city and state projects so that is the best answer I can give you.

Nancy Allen: The next comment is from Lee Richardson. Please change the stated reason for elimination in article 2.4.2 to reflect the fact that USACE found the Hoey's Basin Pumping Station proposal option 2a to be the best solution. The statement that quote, "The alternative would not address the purpose and need of water safely passing through the canals in a timely manner is factually accurate, nor would that project take three to four years."

Lee Richardson: The Corps of Engineers was ordered by Congress to make a study of the feasibility and cost of options of 1, 2, and 2a. The Corps' own report stated that Option 2a was the best technical solution and I would like the public record of the IER to incorporate the facts of what the Corps own report to Congress stated. As far as the amount of time it would take to build it there has been a lot of literature available to demonstrate that 8-10 years or 15 years or whatever that says is a gross exaggeration.

Nancy Allen: Option 2 and 2a have not yet been authorized or funded by Congress. We do not have the authority or permission to build those, nor have we been appropriated the monies to build those. However, what we are building will be able to be modified so that if Congress were to authorize and fund those improvements at a later time we could continue those and they would not interfere with the work we are doing right now.

Col. Sinkler: Nick can you go back to that four circle slide? I know that what I'm going to say has nothing at all to do with the improvements we are making to the outfall canals, but what I want to do is talk about this circle here.



I think everyone, including me, who lives in New Orleans we know that there needs to be improvements made to the interior drainage system. None of us what to be driving down the street with two feet of water or 18 inches of water and I think everyone here has experienced that. Record rainfalls in December of last year highlighted some real serious issues and there are others also. This issue right here is really a complex one. Is Marcia still here? She may have left. All of that responsibility doesn't necessarily fall on the shoulders of Sewerage & Water Board to remove rainwater from the city. It also involves the Public Works Department to some degree to help get water to the system at the S&WB operates and maintains, but I think we all know there needs to be improvements made to the interior drainage system. A piece of that may be option 2 or 2a and there are other issues with removing rainwater from the city and there were some discussions about that earlier. There really needs to be an integrated systems approach to this rainwater removal circle so that everyone understands what the full integrated plan is. If your storm sewers on the street are clogged and the water can't get to some of the Sewerage & Water Board facilities or rainwater removal or conveyance systems, then there are issues. If the Sewerage & Water Board can't keep up with the water that's going in there, there are issues. If there are systems constructed by the Corps of Engineers at the outfall canals can't stay ahead of what's being pumped into the outfall canals, then there are issues. This is a complex issue and what I have told people and we really need to have an interior drainage summit in the City of New Orleans, get everyone in a room and help craft this inner agency vision on where we want to go. When it comes to Option 2, even if we dropped the canals to ground level and there was gravity flow where the canals are, there would still be issues of getting water to those canals. That would be something much greater than what we now envision when Option 2 and 2a were discussed with Congress. My point is, this right here is the next big nut to crack. This is important too so I don't want anyone to take their eyes off the coastal restoration protection piece, but there really needs to be a summit where the local, state and federal government that have a piece of this sit down and figure out how to work through these issues. I do agree with you, we do need to make improvements to the interior drainage system in the City of New Orleans. When I say we it's not just the Corps, it's a collective we. Right after Katrina, Congress funded 1.3 billion dollars of improvements to the interior drainage system. Much of that money is still sitting in the bank right now, but that 1.3 billion dollars is there to support improvements to the drainage system through the SELA program and Marcia is well versed in what that program is all about.

Lee Richardson: We recognize that we lost the fight as far as getting Option 2a incorporated into the current plan, but we would like the public record to reflect that it was not such a looser proposition as stated in the current IER draft.

Nancy Allen: Thank you sir. Mr. Richardson also asked why his deep sheet piling not being used for the entire reaches of the 17th Street Canal?

John Greishaber: The sheet pile is being used to stabilize seepage-type failures. The majority of the work on the 17th Street Canal is about stability or a sliding-type failure. If you all remember the pictures right after Katrina when they showed the failure at 17th Street Canal, you saw the fence line where the failure was actually shifted horizontally. Unlike the blowout of sand that we saw on London Canal, we needed to make sure that the levees themselves were stable not to slide so the methodology of repair that we are using on 17th Street Canal is to balance the levee against sliding with the methodology of repair of the deep sheet pile is to protect against seepage pressures that we found on London Canal.

Nancy Allen: The next comment is from Deanne Faucheaux. Can someone go to the Orleans Ave. slide? She is asking about the staging area for the Orleans Avenue work Dan.

Deanne Faucheaux: So it would be on City Park property?

Nancy Allen: Yes. Your second question is have contracts been awarded? No, contracts have not been awarded….

Deanne Faucheaux: For either pump stations or remediation?

Nancy Allen: The remediation contracts have not been awarded. We need to wrap up the NEPA process and then we will be awarding those contracts. The permanent pump station, we are in that process of awarding those contracts. We have moved from Phase 1 to Phase 2 and that is a pretty lengthy process to select a design bid builder, so we are working through that now and we expect that contract to be awarded in April or spring of next year.

Deanne Faucheaux: If I could make just one more comment. To the gentleman's question about the system, I think one of the frustrations that I have felt throughout the whole restoration process, is that a lot of the different elements have been stove-piped. The colonel just talked about having an overall committee interior drainage summit and we've mentioned the streets. A whole system, not just a levee system overview is what we need and I would encourage the Corps to broaden that stakeholder base so that the levee board that does the maintenance on the levees is tied into the maintenance so that cars that drive don't wreck what has already been done and so that streets don't' get torn up immediately after the Sewerage & Water Board puts in a new line or after the street has been fixed, then S&WB comes in and does, all needed and good work, it's just the sequencing and system-wide approach would help.

Nancy Allen: Bill Stenson is asking about the capacity now and in the future of the three canals.

Bill Stenson: I believe we could before Katrina move something like 10,000 cubic feet per second and now the Sewerage & Water Board has to turn the pumps back to 7500 to keep a safe water level?

Dan Bradley: Right now, I believe the capacity of the Sewerage & Water Board combined with I-10 Pump Station and Pump Station 6 and a smaller pump station, can pump around 10,500 cfs peak flow. Our station out at the ICS can keep up to about 9,200 cfs.

Bill Stenson: That's when you close the gate, correct?

Dan Bradley: That's correct.

Bill Stenson: I'm not talking about closing it. I'm talking about a May 1994 like flood when your gates were wide open and we got to pump 15,000 down that canal but you won't let them pump that fast because the water too high to the walls.

Dan Bradley: Currently they are unrestricted. There is a safe water elevation out there, but when they pump 10,500 for the period of time they would during a rain storm, the hydrologic flow lines show they barely touch that six water elevation. So right now I don't think there is a case and maybe Ms. St. Martin knows of a case and I'm just not aware of it.

Bill Stenson: I think I remember just recently where the Corps required the Sewerage & Water Board to pull their pumps back because they were getting and maybe she can answer this…

Dan Bradley: I don't believe that was the case.

Bill Stenson: Well all three affect the entire city.

Dan Bradley: I don't believe that's the case for Orleans, but then again, I'll have to let the Sewerage & Water Board address that because I don't recall that event. There may have been an event in the spring time on London Ave. where that is a lower safe water elevation where it bumped up against five.

Marcia St. Martin: I'm not sure Dan wants me to answer this question, but we've had at least three situations where we have had to reduce pumping capacity at the London Ave. Canal since 2005. When you get to my card and read my comment, there is a concern by the Sewerage & Water Board of having a safe water elevation of eight. While we are pleased that the Corps is taking the initiative to patch the levees, we believe there is a better long-term solution. We have had at least three situations at the London Ave. Canal, we've not had it at the 17th and we have not had it at the Orleans Ave. Canal, but the London Ave. and the safe water elevation at the London is the lowest. Because of that the Corps has implemented because of the height of the lake that we have to take actions as low as 2.5 depending on what's happening in the lake.

Dan Bradley: So what's she's saying is that the pumping capacity it tied to and the canal level to what the lake level is at the time they are pumping. She's correct at 17th and Orleans there has never been an issue, but there was an issue at London, three times.

Bill Stenson: So to clarify, the 17th can pump unrestricted?

Marcia St. Martin: I'm never going to say we can go unrestricted, but we have not had a situation since the interim flood gates have been installed in summer of 2006; however, we don't think that because it hasn't happened it won't happen in the future. That is why the solution has to be foremost holistic than just an eight foot elevation.

Bill Stenson: So you are not restricted by water going up the side of the alls right now other than…

Marcia St. Martin: Because we haven't had event, we haven't had that event and that is why we can't put a period; we need to continue to work.

Dan Bradley: And that is what the remediation effort is about.

Male Speaker: These water levels, will they be higher along the walls after [Inaudible]

Dan Bradley: As a byproduct of doing this remediation, yes.

Marcia St. Martin: This is a statement that is fully supported by the 13 members of the Sewerage & Water Board as well as local officials both regionally and nationally. The New Orleans City Council has also taken a position on this issue. The Sewerage & Water Board of New Orleans has been charged with the task of draining the City of New Orleans since 1896. We have successfully executed the task for over 110 years with the single exception of the failure of the federal levee system. Even then, the board was able to drain the city 11 days following the closure of the federal levee system when the Corps

estimated it was going to take months. To put it simply, we know drainage and we know how to do it. As we look to the future, the history of the drainage in New Orleans is a history of pumping stations, insulations and expansion. Addressing the flood wall at elevation of eight feet will represent a limiting factor for the future expansion and draining of pumping stations that discharge into the three canals. We have Option One, which relies on new pump stations to operate in series with existing pumping stations at Orleans, London and 17th Street Canals to deliver storm drainage to Lake Pontchartrain requiring two pumps stations to discharge water doubles the risks of compromise to our drainage capacity and doubles the costs of operations to the citizens of Orleans and Jefferson Parishes; a cost that we can barely afford. Additionally, the double pumping will require constant monitoring of the floodwalls that have failed to receive remediation that will allow safe water elevation of only eight feet. I'm going to go into further protection. Before Hurricane Katrina, the Sewerage & Water Board and Corps of Engineers was working in tandem to address frontal protection at the pump stations of Orleans, London and London Ave. Canals. Frontal protection for Drainage 4 and 6 were completed, but drainage at Pump Station 3 and 7 were not addressed. Pre-Katrina the Sewerage & Water Board had agreed to purchase three additional pumps for drainage at Pump Station 7, which is on the London Ave. Canal and the Corps had agreed to install these pumps on delivery before any additional frontal protection work was to begin. The bid documents for the frontal work projects were completed prior to Katrina, which would have greatly strengthened the facility. However, it is the current understand that the Corps of Engineers no longer intends to work at Drainage Pump Station 7 at Orleans Ave. Canal and at Drainage Pump Station 3 on the London Ave. Canal. In the absence of this continuing necessary frontal protection any plan to bring the federal levee system to a safe water elevation of eight should include the provisions of bringing Pump Station 3 and 7 in compliance with the criteria I just outlined. The federal perimeter protection levees have functioned as storm protection for both tropical events and the daily rainfall events that seem to inundate our city. When the Corps of Engineers built these levees nearly 100 years ago and limiting these repairs to the safe elevation of eight is then inclined that the federal government will possibly no longer have the responsibility of maintaining these levees quite alarming. As long as these canals are open to Lake Pontchartrain the perimeter protection should be remained as part of the federal levee system. They are the federal assets that must be remained until they are removed. The citizens of New Orleans and Jefferson Parish deserve a commitment from the federal government that these federal perimeter protection levees remain part of the federal system. As this work continues, it must be clearly stated that whoever maintains it, should be responsible for continuing maintenance. In conclusion and I should mention and we can never put a period on this process, it must be evolutionary, continuing, and holistic and we need to look at every option that is available. We've talked about Options 1, 2, and 2a, but we always need to be open to what is the next tasks and never leave with a period on this very important resource for the citizens of this region.

Amy Sims: I'm with the 17th Street Canal Coalition and I wanted to start with saying the our goal is to have the best flood protection that this city needs, but I don't have the confidence as a citizen of New Orleans that what we are getting is the best flood protection. One of the challenges I have is that in the past we have been mislead, information has been misrepresented and data that is presented to the public is often incorrect. When it's brought up that that information is incorrect, it is then blamed on another organization or entity and with that said, I think it's horrible that there is not a representative from the Southeast Louisiana Flood Protection Authority or the Orleans Levee District here to address any of the concerns of the citizens since they are supposed to be working on concert with the Army Corps of Engineers on this project. One of the challenges we have had is if you look at this presentation, it says it's all within a current right-of-way. That right-of-way is being disputed, but that is being disputed and in litigation and there is no current right-of-way. It also makes it sound it's just a few feet, but so far 25 feet of my property has been taken. I don't care about the trees, but I do care about the fence because then my property is left for exposure from people driving on the levee breaking into the back doors of people's homes, that kind of thing. Then we have surveyors coming out to our homes, accessing our property and measuring an additional 15 and 20 feet from the 25-30 feet that has already been taken from us. Now, that

is hardly within a current right-of-way. We have not been given no guarantees and I can't expect that if we were given a guarantee that it would even stick. I have a swimming pool in my backyard and once you start creeping in, I have no quality of life; I don't have a backyard anymore, I have an area of land with grass that I can't put a lawn chair on because the Levee Board and the Corps of Engineers have taken it, but guess what? I'm liable for it. Someone walks on the un-gated levee, they are walking into my backyard and fall, again, I can't put a lawn chair in it, but they can walk in it. What happens next? There are threats and intimidation by the levee board, by the Army Corps of Engineers; we don't know what the next step is and they can't guarantee us that more things aren't going to happen. At what point does it stop and we sit back and say we want the best protection possible so let's purchase the property, let's put up walls 200 feet, I don't care, I want what is best for this city, but it seems like they are going around it the wrong way and they are being dishonest and the information is inaccurate and it's extremely frustrating as a resident who came back and was a pioneer in an abandoned neighborhood and was one of the first people to sink all their money back into their house and now here we are, what next?

Dante Maraldo: I actually have a few questions that come to mind with tonight's presentation. My first question is will the toe of the levee along the 17th Street Canal be moved, changed or altered in any matter in connection with IER 27?

Nancy Allen: No, not in connection with any remediation of the outfall.

Dante Maraldo: Will the Southeast Louisiana Flood Protection Authority or the Corps being expanding or modifying in any manner, the alleged right-of-way or right-of-use along the 17th Street Canal in conjunction with IER 27?

Nancy Allen: No, it's within existing right-of-way as provided by the non-federal sponsors.

Dante Maraldo: My next question is that it's my understanding that IER 27 is going to be performed on the existing right-of-way that is currently in litigation in civil district court in the Parish of Orleans, is that the existing right-of-way we are talking about?

Nancy Allen: Yes, it's the existing right-of-way for the canals and we can't speak to the litigation as we are not involved in that, that's a SLFPA East question.

Dante Maraldo: Is there someone from there to address this question tonight?

Nancy Allen: Do we have any SLFPA or OLD folks? No, but we can provide you with a name and contact information or get your information and have someone contact you.

Dante Maraldo: We know one another.

Roy Arrigo: As a follow-up to Mr. Maraldo, I will say that I know while you are claiming that the right-of-way authority comes from the Southeast Louisiana Flood Protection Authority, it's you folks who are moving on that right-of-way and clearly you've stated and you know it's in litigation and it sounds like you are moving forward and going to act on it. I too am for the best flood protection for the city and in fact it was the 17th Street Canal Coalition that strongly came out in favor and requested that these floodwalls be repaired instead of having our land taken from us. I do want to point out one thing, SLFPA as well as the Corps has repeatedly talked about these toe plus-six feet that they claim and try and paint this picture that they are taking away six feet of the people's property as if six feet is a reasonable amount of land to take from people. I can tell you as Ms. Sins just commented it's 25 feet of her property, it's 31 feet of my property. Somebody needs to get a new tape measure; it's not six feet,

it's 31 feet of my property. You say you are operating within the right-of-way and I will say the last time the Corps came out to my property and said they would not be taking any land, my property got 31 feet shorter and I'm here to tell you, don't come on my property, you do not have any right-of-way on my property and I just wanted to make that statement.

Nancy Allen: Craig Berthold has a similar question. All remediation work will be done in the right-of-way, but this right-of-way is in litigation so how do you rights to an undetermined piece of property? Again, right-of-way is in the existing right-of-way and it's provided by the local sponsors and any litigation that is ongoing, we are not a part of that.

Male Speaker: We were at the Southeast Flood Authority meeting this morning and they would not answer any of my questions because it was under litigation, yet you can go on our property while under litigation and do remediation construction on it. A lot of what I want to say has already been said. We are grateful for the sheet piling as we have been advocating for that. If we would have had that and if we would have had that in the first place, none of us would have been flooded. I agree with Roy and I'm letting you know, until the litigation is solved one way or the other in court, you are not coming on to my property.

Nancy Allen: Jim Sparacello is asking if there will be any changes to previous toe of levee? No, it will be in the existing right-of-way.

Jim Sparacello: Existing toe of the levee [Inaudible] is there any difference? Is the right-of-way the levee plus the six feet?

Nancy Allen: We simply make our request to the non-federal sponsor. We requested existing right-of-way

Col. Sinkler: Right now in the IER that we are discussing tonight, there is not a reference to going into the property that is not owned by a government entity. The two major property owners are the Sewerage & Water Board that will be impacted with the construction work and the Orleans Levee District. If there would be a change in anything that we are talking about that would require us to do construction on privately owned property, we would have to do a supplemental of this IER and start over basically and work through those issues. We have no active and we don't plan on having requests for right-of-entry or obtaining additional real estate to support this construction work. From our perspective right now, we don't see a need to do any construction work on privately owned property. We will abide by any legal decision, if the U.S. courts have some authority over a piece of property that involves our construction, we are forced to abide by those decisions. So if there something out there, some legal decision by a federal court or federal judge, we would have to abide by that. I don't know of any case right now based upon the work that we are going to do.

Col. Sinker: On the City Park property you could make an argument that we may be extending the levee with some of the earth work we are doing. In this particular case, this material used to be at a higher elevation and over the years it has subsided. This is just going to be done on Orleans. Orleans canal already have a safe water elevation of eight feet, but because this area subsided, we are going to come back in and put some material here, but that is all on City Park property. You can make an argument that in this particular case we are going to replace this one to four foot, depending on location,

stability tie berm here. It could be viewed as increasing the toe of the levee but that is all on City Park property. So that is the only case I know of.

Nancy Allen: Natanya Black-Porto writes on her card that she lives next to the 17th Street Canal and asked how long will there be construction in my neighborhood and how many hours a day and how loud? The hours a day we spoke about earlier, that it could be as much as six days a week and 12 hours a day. This is the deep soil mixing technique that will be happening along in there where they drill down and mix that cement with the native soil so it's very little vibration and noise associated with deep soil mixing in those panels. I can't tell you exactly, but it will be a matter of weeks that we will be in that particular area.

Col. Sinkler: If anyone is interested in seeing the deep soil mixing project, we can take you out and show you one we have going on right now. If anyone wants to get an appreciation for what we are doing in the neighborhood we can take you out and show you what we are doing at other sites in the area.

Nancy Allen: This is the best example of the kind of work we will be doing. This is the deep mixing we did along the I-10 so you can see how close we are to the houses and how small a footprint we are. We will abide with local noise ordinances and rules.

Nancy Allen: Kim Harvey writes about the Orleans Canal. Levee remediation stops at the current surge pump. The new flood pump is further north as the June 2010 map shows levee top too low. When will this levee portion be remediated? I'm not sure what you are asking.

Kim Harvey: Very simply your map of Orleans Canal fixing the levees stops at where the current pump is. Then going further north, right now the new pump is slated to be put right at the Lake Pontchartrain mouth and the June 2010 map says that levee is deficient. So what I'm asking is when is that part is going to be remediated?

John Greishaber: The deficiency that we are speaking to is not a deficiency of elevation, it's a deficiency based on meeting the new more stringent criteria as opposed to the old criteria. To answer your question, we have actively engaged an architect engineering firm to do the work and reanalyze all these areas and we will have by June 2011 the 100-year protection in.

Kim Harvey: So to answer the question you are going to do something…

John Greishaber: We are going to be doing work in that area…

Kim Harvey: So there is work on that levee that you are not announcing tonight from the canal to the new pump station?

John Greishaber: Correct. That work is covered under the IER, but this has always been planned.

Kim Harvey: I have one follow-up and what I want to know is the location of the Orleans station pumped fixed? I have heard different stories; is it fixed or is it under consideration in being moved to another location?

John Greishaber: No, it's not being moved to another location if that is your question.

Nancy Allen: The blue box will stay the same and Freddy Yoder also asked the same question if he has any follow-ups. This is the maximum footprint and the Corps will look for any way we can minimize that footprint as much as possible, but those were decided in IER #5.

Freddy Yoder: I do want to get a clarification. We received an email that there was some consideration on moving that pumping station from the throat of the canal right at the lake to a station further back on the south side of Robert E. Lee. So the blue area is rather a large area. I represent the Lake View Civic Improvement Association and we have 1000 members and they are very concerned that if that location should happen to be south of Robert E. Lee so can you tell me for sure that it is not going to be at that location and that it is reasonably very close to the mouth of that location because if it's not then we feel like the levees in that section are going to be in the same position for failure that we had during the storm. We don't want t hat to happen. We want the control gates that are going to be at the canal to act as control structures along as them acting as pumping stations. Is it going to be at the mouth of the canal?

Nancy Allen: The new permanent pump station will be located within that blue box as that is what has been cleared in IER #5. We have received no new information and we have no plans to take another look at those locations.

Freddy Yoder: Where is the blue box? Does it stop? Does it proceed past Robert E. Lee?

Nancy Allen: No. Robert E. Lee is here and the blue box is here. The next question is from Lisa Ludwig and she asked when the last time the 17Th Street Canal interim pumps tested and please describe the duration of the test and how many of the pumps failed to operate properly and what was the net capability during the test? I believe Ken Holder agreed that he would provide that information to you tomorrow and then we will include them in the record of this meeting and IER #27, but we do not have those figures. We do invite anyone who is interested in those pumps to watch as we test them and you can see Ken in the back. The next question is from Harold Weiser and he asked when are you going to fix Press Street?

Harold Weiser: Earlier someone addressed the question the destruction of streets by heavy equipment over the two year period and the answer given sounded ludicrous to go after the construction people. We don't know who the Corps hired to do these jobs as I've talked to many supervisors and I talked to Corps members and I called City Hall, but I think the Corps tries to do the right thing so why haven't they supervised those contractors that they have hired. Press Street was beautiful and it's now destroyed. I'm one of the few people who have rebuilt and they promised that they wouldn't use heavy hammer when they piled but they did, 115 feet deep, and I had to buy another roof my roof leaked in 12 places. The thing I'm more interested in right now is trying to get home and leaving without breaking another axle on the car due to the big holes in the street. I think those contractors should be held responsible for Pratt Street from Robert E. Lee to Filmore so I ask that you please check it out.

Col. Sinkler: We coordinate all of our haul routes with the city and we are interested. I don't have the authority to arrest anyone out there who is breaking the law so if a contractor is going too fast off of one of our project sites, I've got authority inside that area, but if someone is hauling outside

that site, it's the authority of city police and Department of Transportation. I am interested if one of our contractors has an employee is violating the law. We do have a 1-800 number and I will give that and if you can report the time and location we can pass that information on to the appropriate contractor. It may not be one of our contractors as there is so much building going on, but we will pass that on.

Nancy Allen: Marie Rousselle has the next question and she has asked two questions about the Jefferson Parish lakefront levees. Reaches 1-4 have been shown not to meet the 100-year criteria so what are the plans to bring those up to 100-year criteria and what is the timeline of those projects? Yes, they are working on that right now and the mission to obtain that by June 2011. She also asked what is the timeline for the shore protection on the map status. I'm not sure what she is asking, but we will try and get an answer to her directly. Another person who left who wanted to make these comments known; draining water from south to north to 17th Street Canal half of the water should go to the river and half to Lake Pontchartrain. Also, a barrier wall in Lakes Borgne or Lake Pontchartrain to stop surge from the Gulf. Any other questions? I would like to remind you to fill out the questionnaires and turn them in as you leave. And we have this question, the Robert E. Lee bridge over the London Canal was to be rebuilt before Katrina and it's now at its highest point that is three feet below the levee or floodwall. Will it be replaced? No, there are no plans to replace that bridge.

Male Speaker: There are no plans to increase the size or height?

Nancy Allen: Not as part of this project.

Male Speaker: It was scheduled to be replaced before Katrina along with other bridges and all with the exception of Robert E. Lee happened and Katrina came in and stopped that project.

Col. Sinkler: We don't have any plans to make those kinds of improvements to the transportation system in the city and I'm not sure if DOTD has any plans.

Male Speaker: I'm not worried about transportation I'm worried about floods. You can't keep the level of the outfall canal up to a usable height with the level of the bridge right now because it would top the bridge and pour into the neighborhoods.

John Greishaber: Those bridges that you referred to that were replaced were what we call storm-proofed. We rebuilt them to protect them from storm surge of Lake Pontchartrain. The post-Katrina perimeter protection does not require those bridges those bridges to be storm-proofed.

Male Speaker: Even thou it is now below the protection level you have been putting up?

John Greishaber: No, the protection level that we are working toward is elevation eight and those bridges will not impact the pumping for Sewerage & Water Board and the safe water elevation.

Nancy Allen: We want to thank everyone for coming tonight. The minutes of this meeting and all of the slides will be on www.nolaenvironmental.gov and we can answer any follow-up questions you may have.

Individual Environmental Report (IER) #27
Outfall Canal Remediation
Public Meeting

Holy Trinity Greek Orthodox Cathedral
September 16, 2010

US Army Corps of Engineers
BUILDING STRONG®

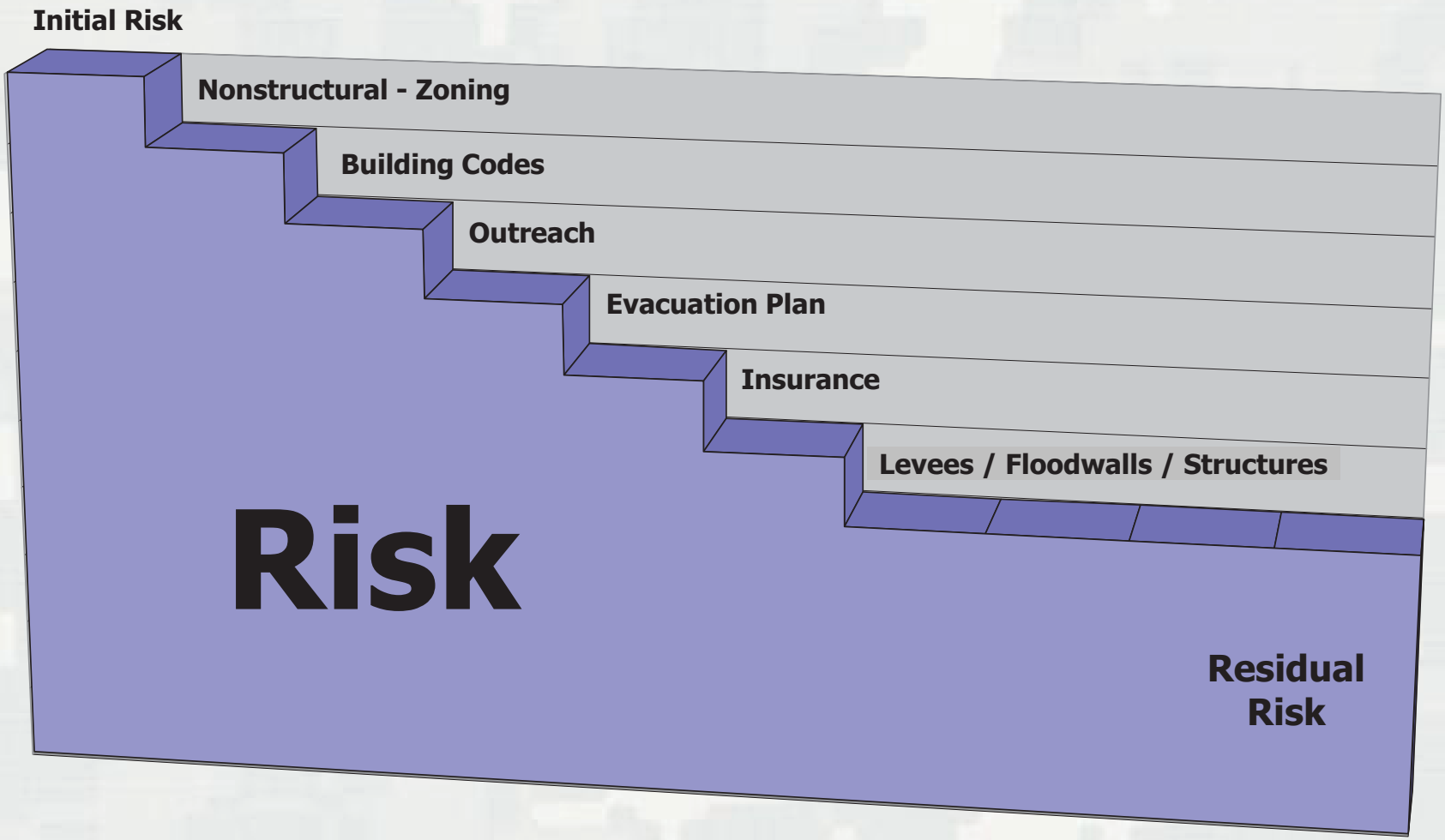
Agenda

- Hurricane & Storm Damage Risk Reduction System Update
- Purpose and Need
- Project Overview
- Construction Impacts
- Types of Remediation
  - Sheet pile cut-off
  - Deep soil mixing
  - Stability Berms
  - Embankment Increase
- 17th Street Canal Remediation
- Orleans Avenue Canal Remediation
- London Avenue Canal Remediation
- Recap

National Environmental Policy Act "NEPA"

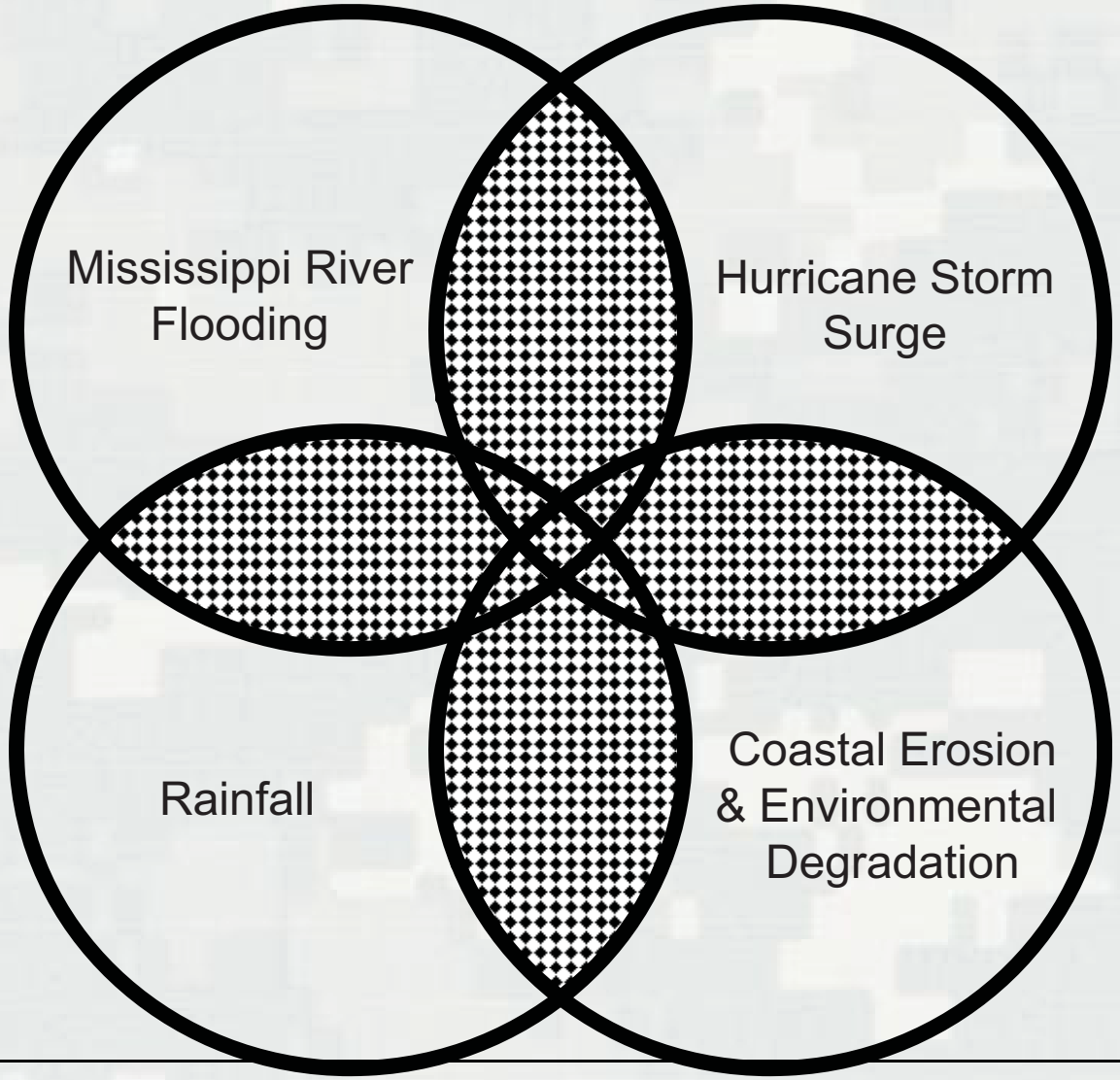
- Required for all major Federal actions
- Analyze potential impacts to the human and natural environment and investigate reasonable alternatives
- Analyses documented in Environmental Assessments (EA), Environmental Impact Statements (EIS), or Individual Environmental Reports (IER)
- Public involvement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

Risk – Shared Responsibility



The Four Major New Orleans Flood Risks

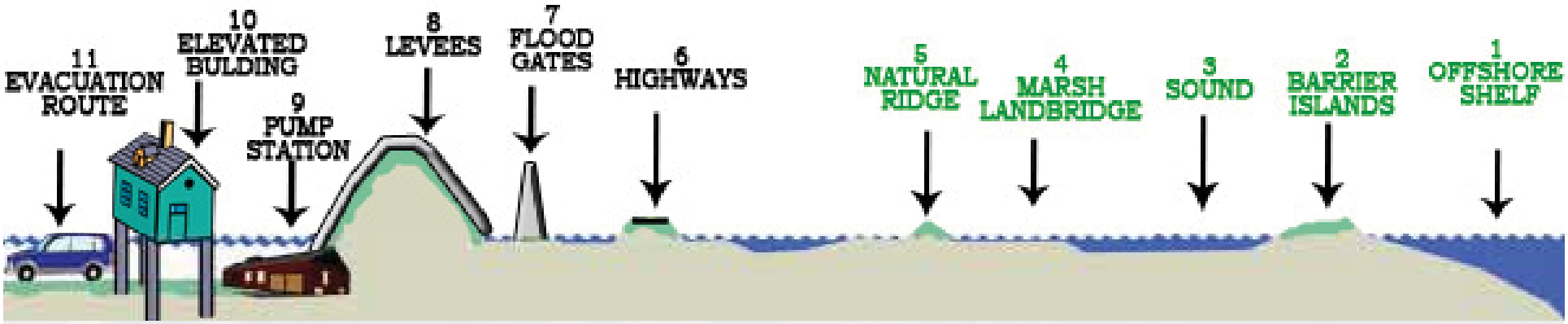
Separate, but overlapping or related interagency systems or programs to address each!



Working Draft

BUILDING STRONG®

Multiple Lines of Defense

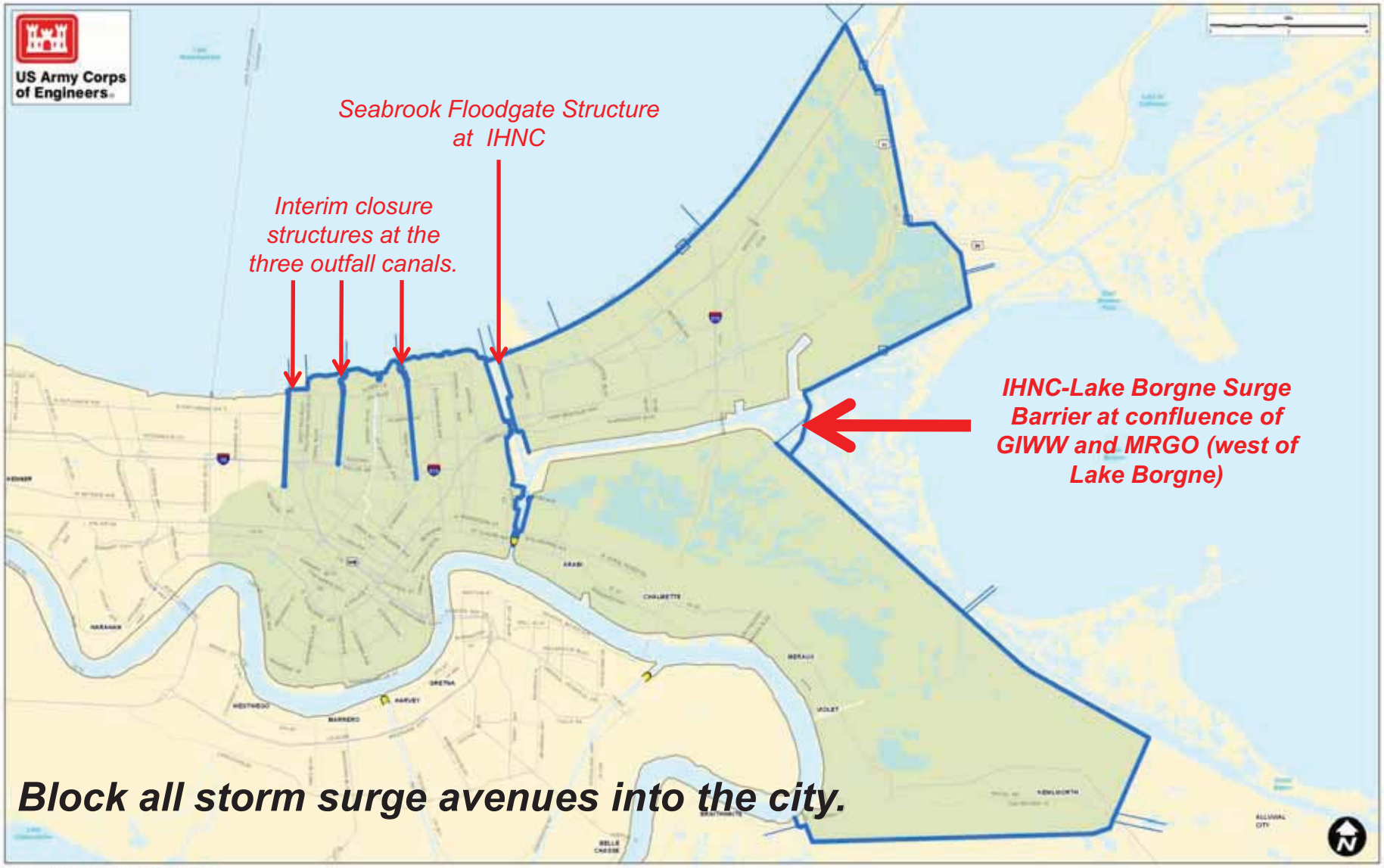


(Graphic from www.mlods.org)

Elements include:

- **Coastal restoration/protection**
- **Structural measures**
- **Non-structural features**

First Strategic Improvement



Second Strategic Improvement

New Orleans East

St. Bernard Parish

Orleans Metro

Raise Levees and Floodwalls throughout the system.

Third Strategic Improvement

Repair 61 pump stations.

Storm proof 49 pump stations.

Construct 5 safe houses.

Repair and storm proof key pump stations.

GREATER NEW ORLEANS HURRICANE AND STORM DAMAGE RISK REDUCTION SYSTEM (HSDRRS)
Status - June 2010

US Army Corps of Engineers

N

Lake Pontchartrain

Orleans Metro - Orleans Marina Floodwall
Under Construction

Orleans Metro - Bayou St. John Tie-in Levee / Floodwall
Under Construction

Seabrook Floodgate Complex
Under Construction to Elevation 16.0
(The 100-year requirement for the GIWW-IHNC area will be met by construction of the Seabrook and IHNC Surge Barriers.)

I - 10
Ramp Under Construction

Jefferson Lakefront Levee Reaches 1 - 4
Under Construction

Jefferson Lakefront Pump Stations 1 - 4 Fronting Protection
Under Construction

Orleans East Lakefront - Airport Floodwall
Under Construction

West Return Floodwall
Under Construction

St. Charles - Bayou Trepanier Complex
Under Construction

St. Charles - Airport Runway Levee
Current Elevation is 14.0

Levees \ Floodwalls and Drainage Structures
Under Construction

Lake Borgne

IHNC Surge Barrier
Under Construction to Elevation 23.0
(The 100-year requirement for the GIWW-IHNC area will be met by construction of the Seabrook and IHNC Surge Barriers.)

Outfall Canal Closure Structures
Interim Gates - Pumps Provide Risk Reduction

Bayou Bienvenue to Bayou Dupree
Under Construction

Bayou Dupre Floodgate
Under Construction

St. Charles - I-310 Floodwall
Under Construction

Bayou Dupree to Hwy 46
Under Construction

Interim Barge Gate Closure in Company Canal
Current Elevation is 9.0

Western Tie-In
Minimal Risk Reduction
Under Construction to Elevation 11.0

Bayou Segnette Complex
Under Construction

Harvey Canal Floodgate
Current Elevation is 11.0

Lake Cataouatche Pump Station
Under Construction to Elevation 18.0

Lake Cataouatche Levee
Under Construction to Elevation 11.5

Westwego to Harvey Pump Stations Fronting Protection
Under Construction

Westwego to Harvey Levee \ Floodwalls
Under Construction

Algiers Canal Pump Stations Fronting Protection
Under Construction

Caernarvon Floodwall
Planned Construction to Elevation 24.0

Verret to Caernarvon
Under Construction

Hero Pump Station
Under Construction

Hero Canal to Gabville Levees / Structures (Eastern Tie-In)
Under Construction

GIWW West Closure Complex
Under Construction to Elevation 16.0
(The 100-year requirement for the Harvey Canal and Intracoastal Waterway areas will be met by construction of the GIWW West Closure Complex.)

Assessment Guide

- 100-yr Risk Reduction Established
- Does Not Meet 100-yr Risk Reduction Criteria
- More Vulnerable Areas
- 100-yr Risk Reduction Requirement
- Current Elevation
- Pre-Katrina

Note:
- Concrete structures are built to a higher elevation to accommodate future subsidence.
- Levees will require future lifts to accommodate subsidence.

Key to Map Features

- New Alignments
- Levee Centerline (Non-HSDRRS)
- Mississippi River Levee (Non-HSDRRS)
- Outfall Canals - Ongoing Analysis
- Locks
- Pump Station
- Designates different sections of Levee/Floodwall
- Under Evaluation
- Temporary 100-yr Risk Reduction Established

ALL ELEVATIONS ARE NAVD 88 (2004.65)

Mile
0 2 4

Date: 25-JUN-2010
Edition 1.0 - EGIS Map ID No. 10-052

Map produced by the U.S. Army Corps of Engineers - New Orleans
http://www.mvn.usace.army.mil/hps2/gdlRiskStatusMap.pdf

Key Accomplishments:

1) Largest Civil Works project ever - more than $14 billion
2) Using more stringent materials and design standards, and innovative construction techniques
3) Awarded more than 260 construction contracts so far for $6.9 billion
4) 100 contracts currently under construction worth more than $5.7 billion
5) Construction started on Gulf Intracoastal Waterway - West Closure Complex, to include largest drainage pump station in the world
6) Construction at 70% on Inner Harbor Navigation Canal Surge Barrier at Lake Borgne, largest Civil Works design-build project in Corps history
7) When the System is completed, the New Orleans area will have the best perimeter defense in its history

Purpose and Need

To ensure that the canal walls can support the requirements of the Sewerage and Water Board of New Orleans in removing rain water from the city, now and in the future.

Project Overview

- Construction would begin by the end of 2010
- All construction would be done within the existing Right of Way

- 17th Street Canal
  - Deep Soil Mixing for strengthening the canal levees
  - Adding embankment at crown to reduce stick-up.

- Orleans Avenue Canal
  - Stability Berms and Deep Soil Mixing for strengthening the canal levees
  - Adding embankment at crown to reduce stick-up.

- London Avenue Canal
  - Sheet piles for seepage
  - Adding embankment at crown to reduce stick-up.

- Construction would be complete by June 2011.

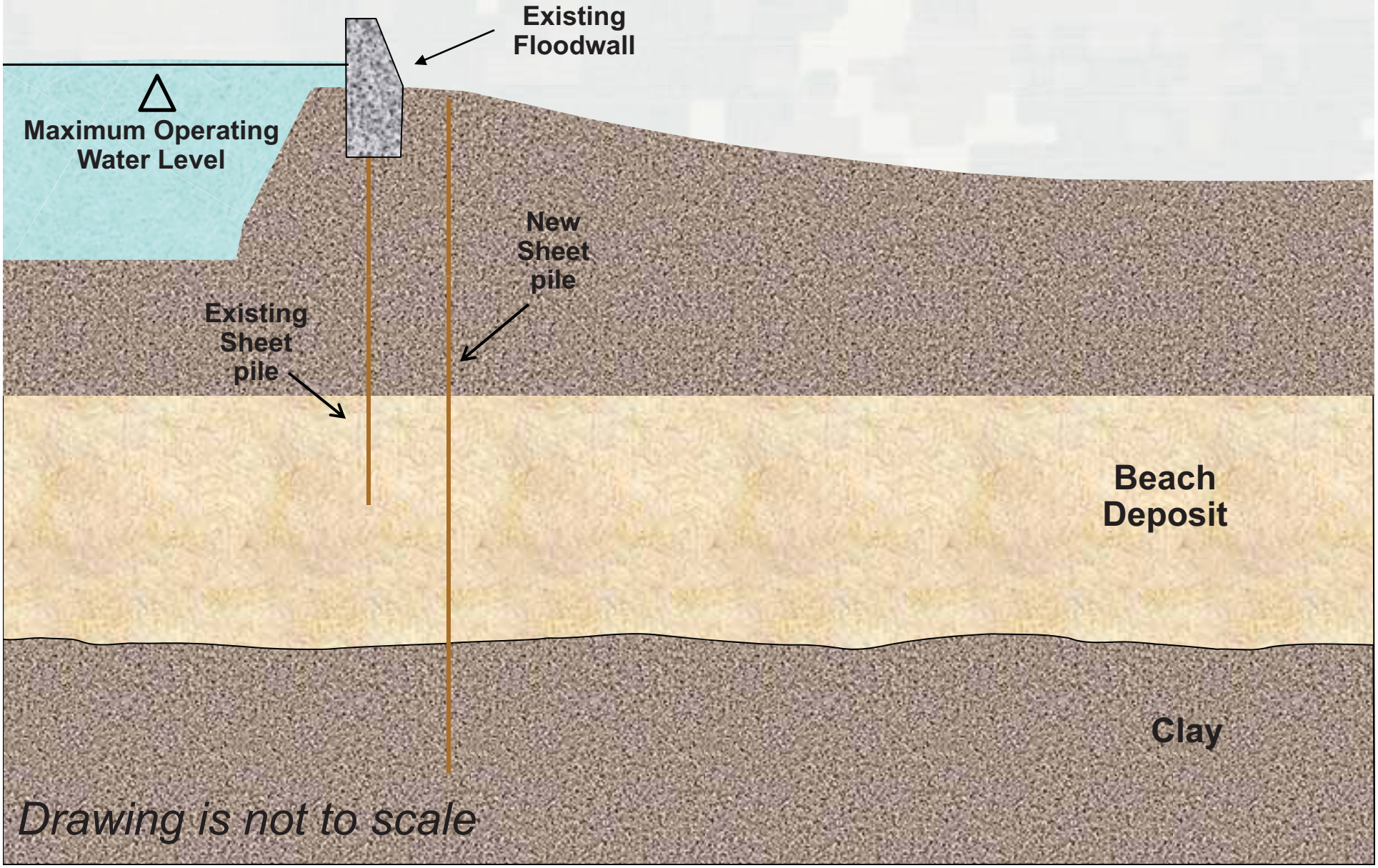
What To Expect During Construction

- **Construction impacts**
  - Elevated noise levels from motors, pumps, generators, etc.
  - Increased truck traffic (trucks will utilize approved haul routes)
  - Road access will be limited at times
  - Extended work hours (6 days per week up to 12 hours per day)

- **Corps' efforts to minimize impacts**
  - Roads will be watered (to minimize dust)
  - Working with Department of Public Works on temporary road closures
  - Using Press-In Sheet Pile to minimize noise and vibration

Sheet Pile Cutoff on Protected Side

For Seepage



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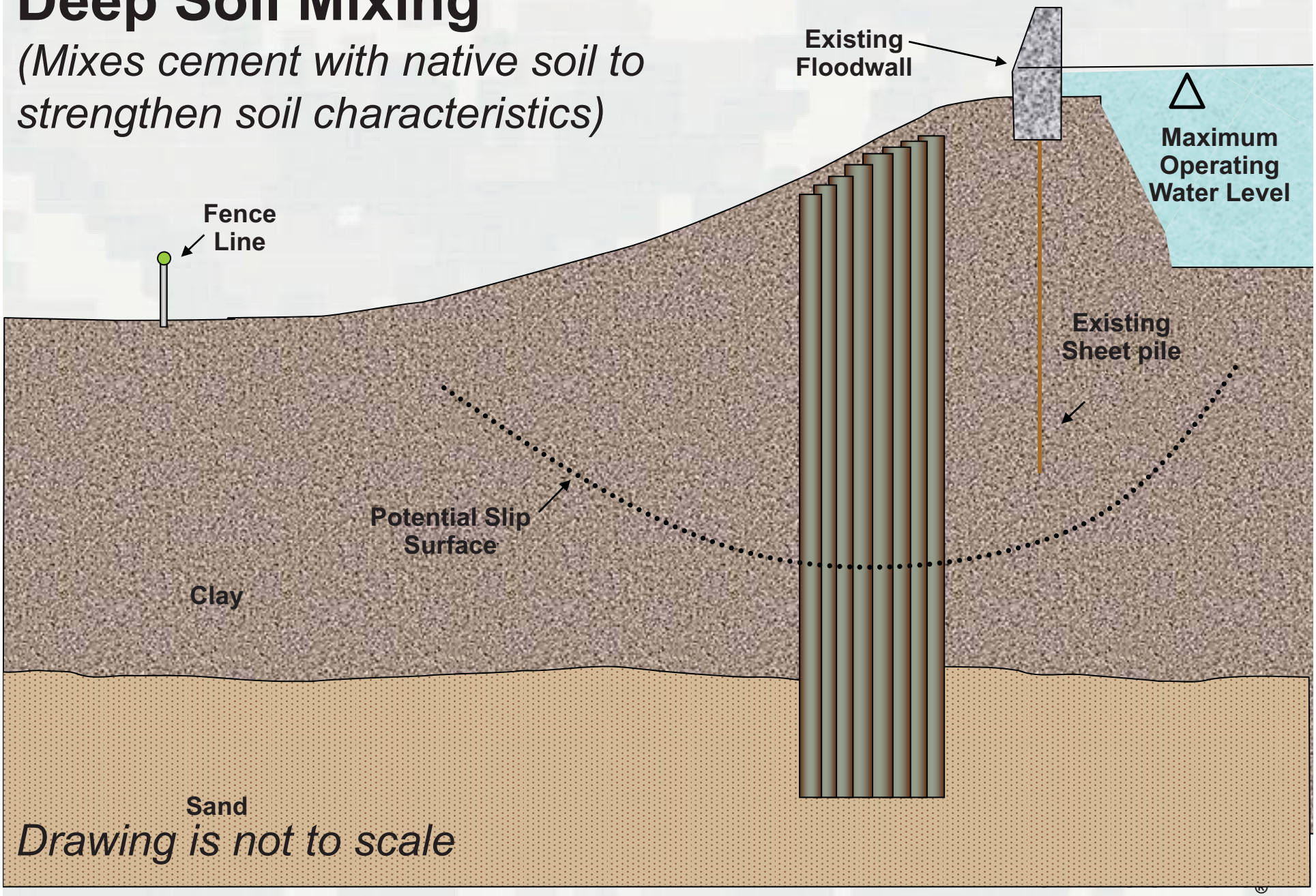
Silent Press-In Method of Sheet Pile Installation

for Seepage Cut-off

Deep Soil Mixing

(Mixes cement with native soil to strengthen soil characteristics)



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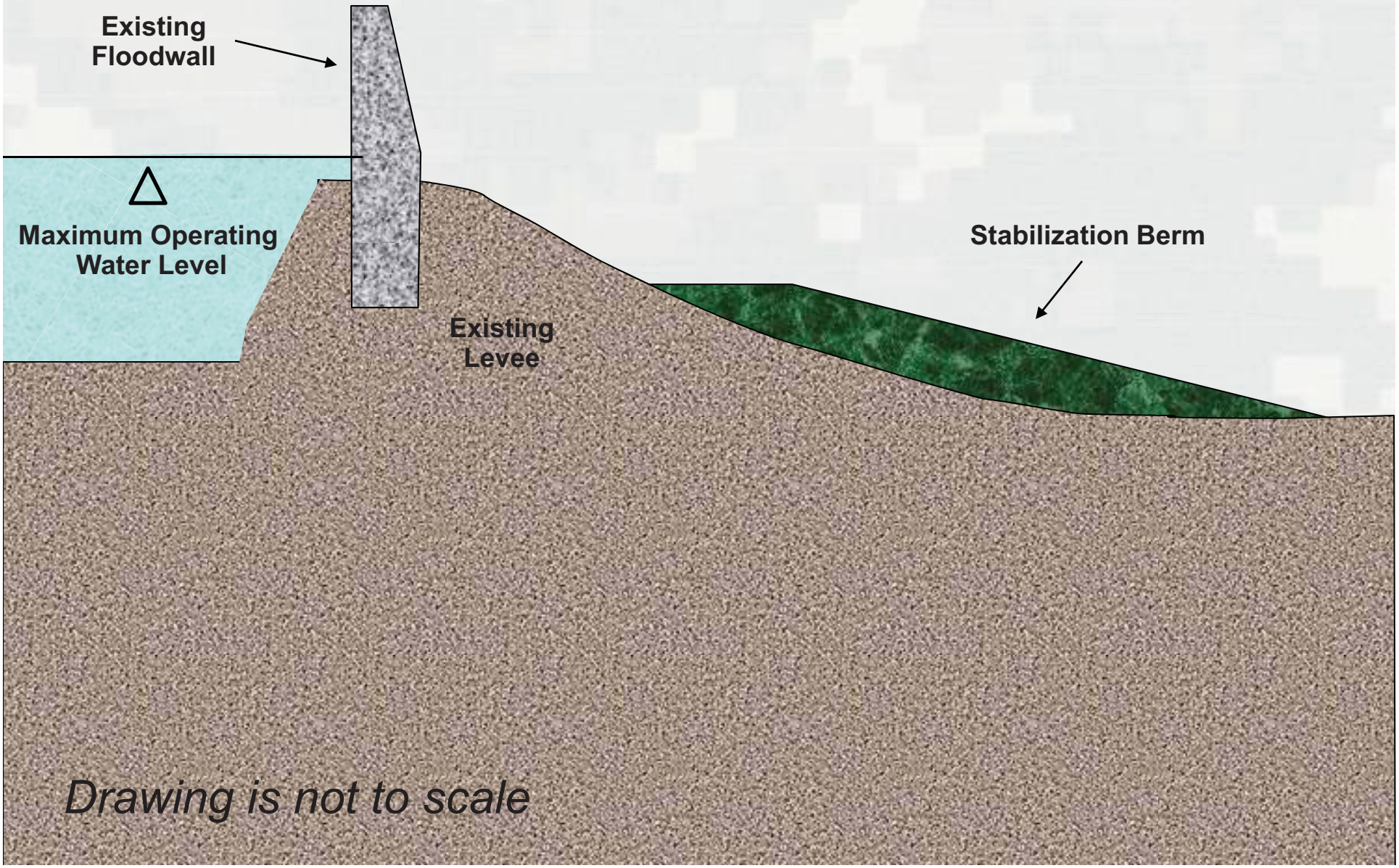
Deep Soil Mixing

For Soil Strengthening

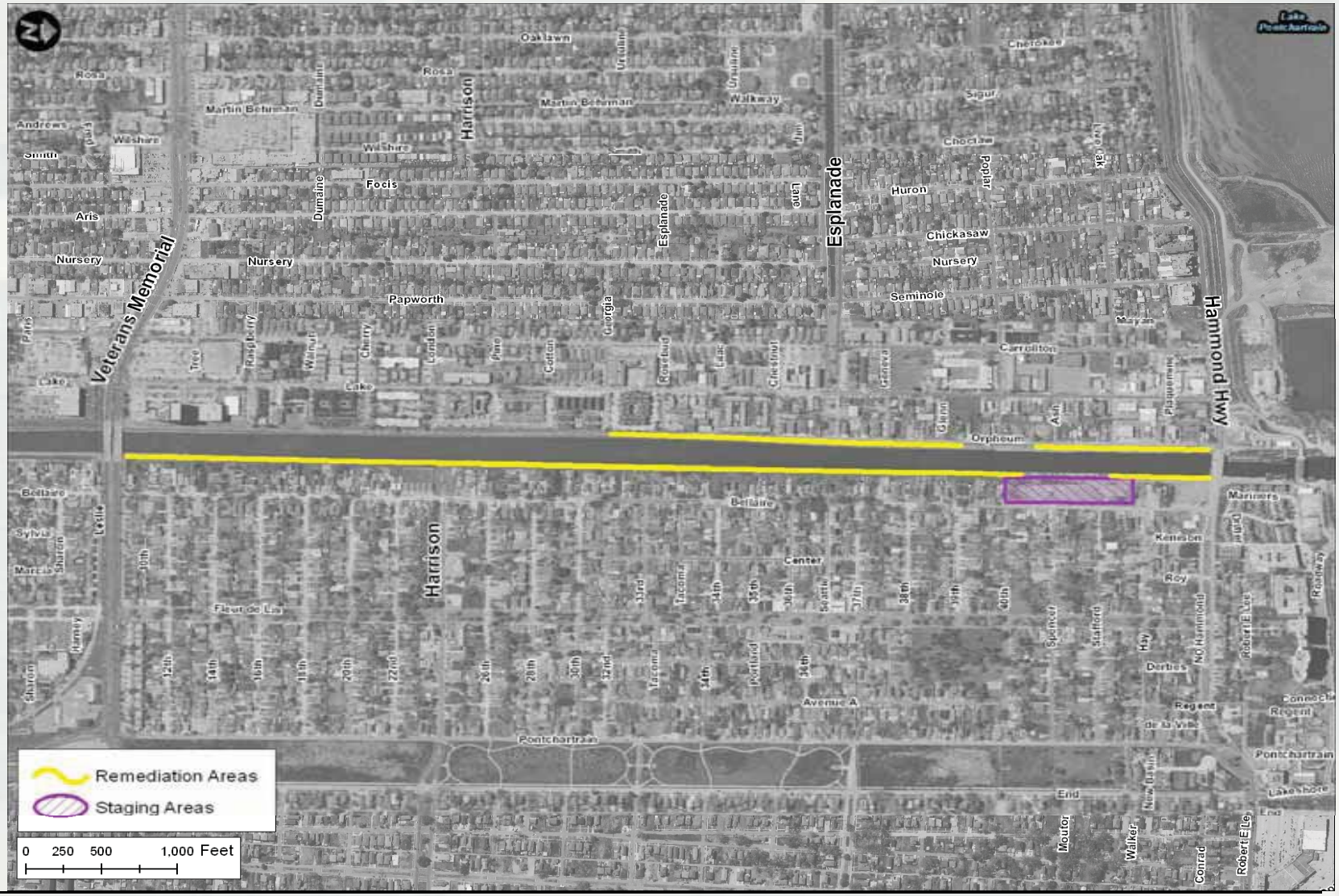
Stabilization Berm on Protected Side

To Strengthen the Canal Levees (increase Factor of Safety of the Embankment)



17th Street Canal

Deep Soil Mixing and Embankment Increase



Orleans Avenue Canal

Stability Berms or Deep Soil Mixing

London Avenue Canal

Sheet pile cut-off and Embankment Cutoff

Remediation of Outfall Canals

- 17th Street Canal - 9,970’ of Remediation
  - 3,985’ Deep soil mixing for stability
  - 5,985’ Deep soil mixing for stability and embankment increase
- Orleans Avenue Canal - 9,074’ Remediation
  - 9,074’ Stability Berm or deep soil mixing for stability
- London Avenue Canal - 6,050’ of Remediation
  - 1,300’ Sheet pile for seepage
  - 1,116’ Embankment increase
  - 3,634’ Sheet pile for seepage and embankment increase

Recap

- Construction would begin at the end of 2010 and be complete by June 2011.
- Dust will be minimized by watering the roads.
- Noise and Vibrations will be minimized by using the Sheet Pile Press-In Method.

After the work is complete, the canal walls will be able to support the requirements of the Sewage and Water Board of New Orleans in removing rain water from the city now & in the future.

Currently Available for Public Review

- IER 27 – Outfall Canal Remediation
  - Public review Sept. 2 through Oct. 1, 2010
- IER 12 Supplemental – Westbank N Disposal Site
  - Public review Sept. 3 through Oct. 2, 2010
- IER 31 – Contractor Furnished Borrow Material #7
  - Public review Sept. 17 through Oct. 16, 2010
- Comments can be submitted by:
  - Calling 504-862-1544
  - E-mailing mvnenvironmental@usace.army.mil
  - Or at any time at www.nolaenvironmental.gov

Upcoming Public Meetings

Open House 6 p.m. - Presentation 6:30 p.m.

Wednesday, Oct. 13, 2010

IHNC Levees and Floodwalls

IER 11.b Supplemental Tier 2

St. Gabriel the Archangel Catholic Church
Parish Hall 5010 Piety Drive

New Orleans, LA 70126

Opportunities for Public Input

- Regular Public Meetings throughout the Hurricane and Storm Damage Risk Reduction System (HSDRRS) 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

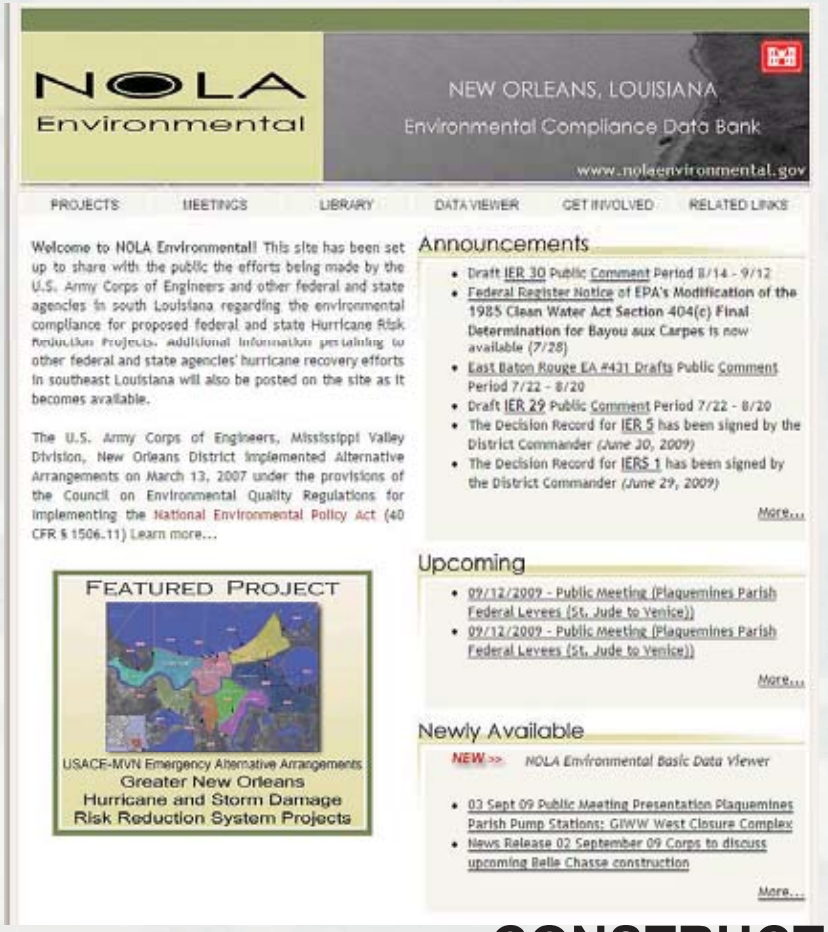
Questions and comments regarding Hurricane Risk Reduction Projects should be addressed to:

Patricia Leroux
PM-RS
P.O. Box 60267
New Orleans, LA 70160-0267
Telephone: 504-862-1544

E-mail: mvnenvironmental@usace.army.mil

Web-based Resources

www.nolaenvironmental.gov



http://www.mvn.usace.army.mil

CONSTRUCTION IMPACTS HOTLINE
877-427-0345

US Army Corps of Engineers
New Orleans District

Social Web Networking Communities

and what they mean to you

twitter is an online messaging and social networking system that allows people to share their daily life experiences minute-by-minute, hour-by-hour, and/or day-by-day via their computer or mobile phone. Team New Orleans is joining in and taking on the opportunity to tweet with the public and offer reports on developments, additions, changes, and upcoming public meetings and events that will affect local communities. Check it out by going to **twitter.com/teamneworleans**.

Flickr is an online community platform for global photo management and sharing applications via the web. Team New Orleans has become a part of the movement and is using Flickr to visually explain our projects. Check out our photos at **www.flickr.com/photos/37671998@N05**.

flickr

facebook is a global social networking Web site that links people from across the world and is currently ranked as the most popular of its kind. Team New Orleans is following in the trend and is using Facebook to update the public about projects, events, activities and public meetings. Become friends with Team New Orleans by visiting **www.facebook.com**, **search New Orleans District**.