HARBOR DEEPENING PROJECT

PUBLIC MEETING

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P R O C E E D I N G S

MR. HARRAH: Good evening, everyone. Go ahead and take your seat and we'll get started here momentarily. Real fast, the presentation today is on blasting aspects for the Jacksonville Harbor Deepening Study. That's strictly what we'll be focusing on today. I will give a brief presentation, general overview of where we're at with the project, talk a little about the upcoming schedule, what are some of our milestones we have coming up, when could you potentially see the project being deepened. We'll get into some of that, as well.

And then we have a terrific presentation. I guess one of the key things is to lead by example, so we want to present to you today a presentation that was a successful project we did down in Miami, Miami Harbor. Ms. Terri Jordan-Sellers will be presenting that.

We will also have some opening remarks from the interim CEO of Jacksonville Port Authority also. And at the end we'll have a few folks come up, we'll try to address some

of your questions here. I did bring a group of individuals with me, technical experts in their field as far as engineering, environmental, geotech, blasting, et cetera.

If you have really, really detailed blasting questions, I'll be happy to answer them here, but we will have all those folks in the back so they can speak to you one on one. So I do suggest you go back there, as well.

So with that said, I want to turn it over to Mr. Schleicher, who will give us some opening remarks.

MR. SCHLEICHER: Thank you, Jason.

Good evening. Thank you for being here tonight. I'm very happy to see everyone here that's concerned about Jacksonville, the economy, as well as the environment and the river. And I think you'll be pleased with the presentation that the Corps will show you today.

We're very excited about the possibility of going to 47 foot because it puts us on an even keel with ports that we compete with on a daily basis. It creates jobs and it makes

a lot of potential business for the future for the entire area, not just Jacksonville but also for all of Northeast Florida.

So thank you again for being here today. And I'll turn it back over to Jason.

MR. HARRAH: Thank you, Roy.

Okay. Can everyone see this okay or do we need to dim the lights?

First we'll talk about some of the presentation outline, some of the things you're going to hear today. The first: Why consider deepening the channel? What's the benefit of that, why would we even consider taking the channel from its existing 40-foot depth up to a deeper depth? Why are we looking at that?

Secondly, where would the deepening occur? The river, the federal channel is over 20 miles long. We're not deepening 20 miles of river. We're going to show you exactly where the deepening would occur.

What is the Corps' recommended depth? We're going to tell you what depth we came up with from a national economic development standpoint.

Number four, we're going to talk to you about Jacksonville Port Authority's locally preferred plan request, as Roy just mentioned, of 47 feet.

Number five, we'll talk a little bit about the timeline, when some of the things are going to occur, what are some of the major milestones that we have coming up for the project.

And number six, as I mentioned, Ms. Sellers, a senior biologist for the Corps of Engineers, will give you a presentation on blasting to try to alleviate some of the concerns and pinpoint exactly what we're talking about doing here.

Again, as I mentioned, I'm Jason Harrah, the project manager. And Ms. Sellers will be doing a presentation, as well.

I'll take this time to introduce some of the Corps folks real fast. Mr. Eric Summa -- waive your hand, Eric -- chief of environmental. Samantha Borer is my planning technical lead for the project. Steve Meyers is a geotech. Dr. Aconya (ph) helped us write a blasting report for the

project. Mike Hollingsworth is our water quality permit lead. Jason Spinning and Terri Sellers, both out of the environmental group. I'm looking for Adrise Dobbs (ph), our senior economist for the project. Steve Bratos, Steve? He is an engineering modeler for the project.

I'm trying to see if there's anybody else. I think that pretty much covers all the main Corps folks that are here to help.

Again, as we go through the presentation, those folks will move to the back of the room and they'll be here to answer all the questions you have. We will answer them publicly up here, as well.

So why consider deepening? First we've got to address what the problem is. The problem is transportation cost and efficiency. We have inefficient federal channel depth and restrictive channel widths and turning basins.

It's no secret to everyone that the Panama Canal -- and there went one of my posters on the ground. It's no secret to anyone that the Panama Canal is opening in

2015, 2016. I know the date kind of moves around a little bit. With that will come larger vessels, more cargo. More cargo, heavier weight equals deeper channels that are needed.

So that's the reason. We are trying to help Jacksonville Port Authority prepare for those larger vessels to anticipate that new -- more courses of ships that will be coming into the channel.

What's the opportunity? We can reduce transportation costs. We can provide more efficient transportation of cargo, increase navigational safety and an opportunity to capitalize, as I mentioned, on those larger vessel costs.

Where will we be deepening? Segment one goes from the entrance channel all the way to river mile 14. Segment two goes from river mile 14 all the way down to Talleyrand terminals. Segment three is the West Blount Island channel.

As we -- original project study limits was all the way from zero, river mile zero, all the way to 20. As we further got into

the project, did more analyzing of the project, to help us reduce the environmental impact for the project, the Jacksonville Port Authority, the local sponsor, ultimately made the request initially to reduce from this 20 all the way down to 14. So that took out six miles of channel right there that we've eliminated from the project.

Secondly, we removed the West Blount Island channel from consideration. And lastly, we dropped river mile 14 to river mile 13. So ultimately, the dredging for the Jacksonville Harbor Deepening Project will be from the entrance channel at Mayport all the way to river mile 13, which is near the MOL terminal.

Now, please keep in mind, too, some of this is already at 50 feet for the Navy fleet, okay. That's important to remember.

This thing likes to skip.

Discussion on channel depths. As I mentioned before, the Corps' recommended plan, we look at this from a national economic development plan, what we feel as

the Corps -- we have a model we put this in. It looks at the engineering aspects, it looks at the costs, it takes the benefits into account, bringing in those larger classes of vessels, and basically puts all this into a model. And it will spit out essentially what the recommended depth for the deepening is.

Our recommended depth was 45 feet, okay. This depth provides a transition to those larger vessels I was mentioning in the Panama Canal. 44 to 45 feet, we do see that transition to the larger ships. Now, are they fully loaded? No. But there is a transition to the larger vessels.

The other reason, why are we not at 47 feet as the Port's requested? The main reason for us not being at 47 feet is due to the fact that there are significant port improvements that have to occur, some of the docks, the berth areas, et cetera, have to be built to accept these new vessels. That's all paid by the sponsor 100 percent. That's sponsor funds.

So there is a significant cost growth

from 45 to 47 feet for those port improvements; however, there are benefits beyond that. These larger ships, you can bring more cargo, more boxes per ship. However, there is a large spike in cost, which keeps us at 45 feet.

So Jacksonville Port Authority, they heard our plan, they had a presentation to their board, and it was ultimately decided it was in the best interest of Jacksonville Port Authority to go to 47 feet.

What's the next step that has to occur to do that? The Jacksonville Port Authority made an official request to us in writing for the 47 feet. We have packaged that up, we have sent that up through our vertical chain. It has to be approved by our division office in Atlanta. It has to be approved by our headquarters office in Washington, D.C. And ultimately, the final person that approves that is the Assistant Secretary of the Army for Civil Works, Ms. Jo-Ellen Darcy.

She will look at it from an engineering aspect, an environmental aspect. She will

ultimately make the call if that can be approved as the preferred plan. So that package is routing as we speak.

Additional depths beyond 45 feet is paid 100 percent by the sponsor. As I mentioned before, the port improvements that are needed beyond 45 feet, the sponsor picks up the bill for that, as well as the additional costs of deepening beyond 45 feet. And the Port picks up that cost, as well, okay.

And as I mentioned before, as well, there are benefits beyond 45 feet. Obviously those vessels were coming in at 45 feet; however, you can put more boxes on those vessels and possibly make Jacksonville a first inbound, last outbound port. So there are definitely benefits, we know that.

It's just there is a lot of cost to go beyond 45 feet that the Port has agreed to pick up. So just to summarize, Corps' plan is 45, Jacksonville Port Authority is 47.

Project timeline, just to kind of give you guys some real quick dates of things that's going to be coming up. We will complete the draft report with SEIS, that is

Supplemental Environmental Impact Statement, in accordance with NEPA, National Environment Policy Act. We will complete that in late April 2013, next month. We will start concurrent reviews; the key one that the people in this room are concerned about would be the public review. That is scheduled to start on 6 May and that will be a 60-day review so the public will have the opportunity -- the report will be put on our website. The public can go out and take a look at that. They can provide comments. We'll address each one of those comments during that 60-day period.

We also have several other congressionally-mandated reviews that we have to go through at that same time. As you can see, it's a busy few months. We have a public review, a legal review by our counsel, agency technical review; that is, all the other districts in the Corps of Engineers, New England, Wilmington, they all take a look at our package to make sure we've dotted our Is and crossed our Ts, as well.

We have a division review in Atlanta, a headquarters review and an independent external peer review as mandated by Congress. That review is by one of the largest engineering firms, Mattel. Some of the big firms, they have the opportunity, as a third party, to review our package and provide comments, as well.

So as you can see, our project goes through a series of six to seven reviews before it even gets up to our division engineer for his official approval. We have several reviews to go through. That will occur, as I said, from May to July of 2013. Our division engineer will take all this into account and make his final approval in October 2013. Why is that important? Once that occurs, we would start the plans and specifications phase, or the design of the project.

Civil works review board is December 2013. What is that? That's when several generals from Washington, everyone gets in a room and they ultimately make the decision that we have dotted all our Is, we've

crossed all of our Ts, and this design, this study, is ready to go to Congress for authorization and appropriations. That's a really key point in our project.

We have a chief's report in April 2014. That is the final report completed. Everything is done, and that's when we would officially make the request to Congress for authorization in April 2014, somewhere in thereafter.

When will we deepen? Well, we're going to put the report in front of Congress in the spring, summer of 2014. Ultimately, nobody in this room can make that call. It's going to be from our elected officials, congressional delegates. The report will be there and they have the opportunity to make the authorization and then make the appropriation.

Our schedule, assuming all the clouds align, we could be constructing as early as 2015. How long will it take? We're estimating approximately five to six years to deepen the project. So around 2021 would be the completion date.

With that said, I'm going to turn it over to Terri to go over the presentation for the blasting. As I said, lead by example. We want to show you a project today that was successfully done. And once Terri completes her portion, we'll turn it to our corporate communications officer. Then we'll do some Q and A.

MS. JORDAN-SELLERS: Can everybody hear me okay? I'm going to go back here.

I guess one of the first questions you probably are asking is why are you talking to me about Miami when I'm in Jacksonville. Because we had a project in 2005 where that was the first time that the Corps, the Jacksonville district, had actually used confined underwater blasting as a construction technique in the continental United States; also did a great deal of research and data development and publication in the peer-reviewed literature out of this project, and a lot of lessons learned that have now been incorporated and are being used nationally. We kind of set the standard for what everybody else was

doing.

And I seem to recall some folks that were down with us in Miami and said, well, if you can blast in Miami, you can blast anywhere. And I want to show you how that environment set the stage for what we might be doing here in Jacksonville. So I'm using Miami Harbor as a case study for you tonight.

So -- you were right, Jason. This thing is real sensitive.

Okay. So the issues that we had to deal with at Miami and carries through to Jacksonville is how does the Corps and our contractors meet a congressional mandate to deepen a port in an extremely environmentally-sensitive area? How do we define environmentally-sensitive? We had sea grasses. We had coral reefs directly offshore. We had a national park to the south of the project. We had the entire bay in which the port is located designated outstanding Florida waters. We also had a state aquatic preserve. We had a critical wildlife area directly to the south of the

port. We had endangered, threatened, protected species that called the port, the area adjacent to the port, home. And we had a highly-aware citizenry and a city that overlooks the project site. Now, I think you can immediately begin to see some similarities between what we dealt with at Miami and what we may be dealing with here in Jacksonville.

So first of all we start talking a little bit about the different construction techniques that we could use. One of the things here is that the rock-hardness of the substrate hardness requires blasting in some areas.

In Miami there had been previous blasting and in South Florida in the early 1980s. And for the Miami Harbor Project and the actual Miami Harbor that's getting ready to deepen this coming summer, we use something called confined blasting. And I'm going to tell you a little bit more about that in a moment. But this was developed with the blasting industry but also looking at some safety radiuses that were adapted

from the United States Navy.

The Navy has these wonderful gentlemen that we refer to as the U.S. Navy Seals. They do underwater warfare. They have a tendency to put explosives onto enemy vessels. And then you've got to get that guy as far away from that bomb before it goes off so that he's not going to be injured. So we adopted their safety radiuses to project our threatened and endangered species.

Some of the other methods that we might look at for construction is a cutterhead dredge. This is an example of a cutterhead dredge. We might also use a clamshell dredge; exactly as it's described, it looks like a clam closing. We might need a hopper dredge. This is an oceangoing vessel that sails around and basically drags two underwater vacuum cleaners alongside of it and sucks up sediment. Or we might use a bucket dredge, or you might refer to this as a backhoe. You've seen them on the side of the road. We use these in a marine environment.

Now, when we talk about blasting, the amount of blasting that we're looking at would be contractor-dependent, because different contractors have different kinds of equipment. One might have a very, very, very strong cutterhead that can excavate 75 percent of the project without having to blast. Another one might have a strong backhoe that can do 55 percent of the project without having to blast.

Unfortunately for the Army Crops of Engineers, there are these wonderful things known as federal laws that require us to give competition to industry, and we have to write our plans and specs such that we cannot sole-source. So we have to write a specification that gives the most opportunity for competition amongst the industry.

And so, again, the amount of blasting may very well end up being contractor-dependent. And then the equipment that that individual contractor chooses to bring, he may have a tool that could do it, but that tool could be in

Australia and he's not going to be able to get it back here in time to do the project, so he's going to have to use something else instead.

So some of the dredging equipment, like I said, is not going to require as much pretreatment. That is a term that we use for blasting because what we're doing here is we're trying to crack the rock before dredging. We're trying to pretreat it before dredging.

And one of the other things we have to take a look at, and I'm giving you an example here from another report project we're currently working for Everglades, we look at the hardness of the rock that we're dealing with. And what they've done is our geotechnical folks have gone out with a core boring device and taken a core of the limestone rock, and they put it in this machine and they squeeze it. This is called an unconfined compressive strength test. And they see how much pressure do I need to exert on this rock before this rock cracks. And what we see is right about 4,000 pounds

per square inch is where we begin to talk about blasting, no blasting. Again, contractor equipment-dependent.

So at this point I know there have been some core borings taken in Jacksonville but not all of the ones that will be needed. A lot of that will be done during our planning, engineer and design phase that Jason just mentioned, our plans and specs phase. So these kinds of tests will be done at that point to even narrow it down more as to where we would be likely to blast in the Jacksonville project.

Now, to give you some history, confined underwater blasting is not new in the United States. It has been used throughout the country, but the Jacksonville district was one of the pioneering districts to do it. We did it in San Juan Harbor in 2000. It was done at the Wilmington Harbor in 2002.

For those of you who are familiar with the City of Wilmington, it overlooks their river with 100-year-old structures right immediately adjacent to the river. And they were blasting right next to those

structures.

We did it in Miami Harbor in 2005. And it's been ongoing in New York Harbor since 2004. Additionally -- these are just the east coast projects -- there was recently a project done in Columbia River, as well, out in the Portland district.

Now, again, using Miami Harbor as an example today, when we did our original environmental impact statement in 1989, we estimated that there would be 250 blasting events required along this area here called Fisherman's Channel and the Dodge and Lummus Island Turning Basin to pretreat the rock. So that's the number that we started with was 250 based on a general review of all available industries in 1989.

Now, remember, we did the project in 2005, so a few things have changed. A little bit of technology, new equipment coming on board that we didn't have access to that information. So you heard Jason just mention, well, we'll give the report to Congress and then it will depend on when Congress funds it. So there may be new

things coming on board, new technologies and things that we'll be able to take advantage of in Jacksonville that we don't yet know about.

Now, this is the typical perception that people give me when I talk about blasting. How many of you have ever watched on AMC or TCM an old World War II movie where they're doing depth charges? Come on, your hands aren't glued to your side. This is an interactive presentation.

Okay. So when I talk about blasting in the water, 95 percent of the people I first meet go, oh my gosh, it's like a depth charge. No, this is not. This is not what we talk about when we talk about a confined blast.

Actually, this is a ship shock of the USS Winston S. Churchill. The U.S. Navy, when they build a new class of ships, actually sets off a bomb next to the ship to see how well it does. I don't know if I'm comfortable with that, but hey, it's their boat.

So this is not what I'm talking about,

though. What I'm talking about is confined explosions, and this is actually a 3,000-pound confined blast here on the left-hand side at Miami Harbor. And I want you to compare that to a seven-pound unconfined blast. And I know it's a little hard with the lights being this bright, but there's a buoy there and there's a buoy there. And I believe they're approximately the same size.

Now, how did I get 3,000 pounds to be that low and seven pounds to be that high? That's what I'm going to tell you. That is confined blasting. So confined underwater blasting can be used as a successful and efficient construction technique to pretreat and crack hard rock and do it with minimal impact.

Now let me tell you a little about confined underwater blasting and then the effects of blasting. So when we talk about blasting, we talk about confined underwater blasting. The first thing that we do is we drill down into the rock that we're proposing to pretreat. And we'll put the

primer and the booster and the actual explosive charge, and then we're going to cap it.

How many of you in here played with firecrackers as a kid? Okay. When you were holding those firecrackers, how many of your moms said, don't close your hand around the firecracker? Okay. Because you'd blow your fingers off, right?

Believe it or not, that's what I want to do in confined underwater blasting. I want to put my firecracker in my hand, I want to close it around and I want that pressure to stay in the rock so, when it fires off, I crack it. I'm going to crack that rock. And by putting that little cap right here, which is exemplified right here with this bag of stemming material with the young lady holding it for scale, that reduces the pressure that escapes into the water and it reduces that column of water going vertical by up to 90 percent, which improves the efficiency of the rock cracking, but, oh, by the way, reduces all of the environmental impacts significantly as a result. Neat

little side effect there. So smaller impact area. We like confined underwater blasting.

Now, the other thing we'll do is that you will see, this is a drill barge at Miami Harbor, this is the Miami Harbor port right here. You can see how close we actually are to the port, and they were drilling what we call a blast array. And here's a drawing of what a blast array might look like.

This whole area would be considered one shot. But that shot is broken up into multiple small blasts, and those blasts are referred to as delays. We use the term delay because we break them up by a small little section of time in between each shot. And that time is typically -- has to be greater than eight milliseconds. Typically -- in fact, our specifications require it to be no less than 15 milliseconds.

Physics, being the wonderful thing that it is, says that, if I put that much time between the two shots, I now have taken one big shot and broken it into two smaller. Whereas if I have multiple delays, I've put

that timer in there, I've broken that big shot into multiple small shots. So the channel typically closes 15 minutes before a blast so that nobody is coming through, we don't have any boats or anything. After the shot goes off, we'll give an all clear.

Now, one of the things you can see here in this lower drawing is these are actually the delays. So here is the -- the delay number one, number one goes off by itself; then number twos are going to go off together; number threes are going to go off together; number fours are going to go off together. And this is going to allow the rock to fall or crack in a certain way.

And I've actually seen this done in quarry blasting where it looks like a loaf of bread as the rock falls, it's (demonstrating). So the blasters can actually cause the rock to fall and crack in a certain direction; again, minimizing impacts to associated structures. So that's another beneficial side effect of using delays.

Now, when I'm talking about protecting

endangered, threatened species, this is what I'm talking about. Now we're back to that Navy diver radius that I mentioned. Everybody remember that we're confining, we're reducing the pressure up to 90 percent. Then take that, throw it up and wad it away. Because when we talk about protecting species, we don't give ourselves any credit for that reduction. I want to be exceptionally conservative when I'm dealing with species protected under the Endangered Species Act and/or the Marine Mammal Protection Act.

So what we end up doing, our drill boat -- this is actually what we used at Miami Harbor. So in this case, I had an average delay rate of 90 pounds, and here is my drill barge, and I set up a group of zones. My inner zone is called the danger zone. And you can see the mathematical equation here for the danger zone. And we get the danger zone radius, and that's going to be the inner one. And with 90 pounds, if I plug 90 in to that little pounds-per-delay, that W right there, that's

where the W comes in, pounds-per-delay, I end up with 1278 feet.

Now, that is the area in which, if an animal were to be present, we would have a situation that we call a take. Now, it is not a lethal take, it is what we call harassment. Anybody ever been to a really loud concert and had a great time and walked out afterwards going, I can't quite hear anything, my ears are ringing? That is actually what we deem harassment for purposes of manatee or turtle or a dolphin, we're going to make their ears ring if they're too close to the shot.

So what I want do is I want to avoid that. To avoid that I put another radius around that 500 feet farther out. We call that the exclusion zone. And we set up a set of monitoring stations and we're looking for animals. And if an animal enters the exclusion zone, we all get to sit and wait.

I can't go and cajole the animal out. I can't tease him out. I can't beg him. I can't feed him, because those are all violations of federal law. So we all just

sit and wait for the animal to decide to leave of its own volition.

After the animal has left or after we haven't seen it for 30 minutes -- and I bet all of you are saying, wait a minute, why 30 minutes? Because all of the animals I'm talking about are air-breathing animals. They have to come to the surface and none of them can hold their breath for longer than about 25 minutes. So again, being conservative, giving myself a little bit of cushion there with 5 more minutes, didn't see anything for 30 minutes, now we can fire the blast.

So we have another radius here, this is our safety radius. This is where we're going to monitor with boats. I'm going to show you that in a minute.

Then we have our big watch area that we monitor with aircraft. Now, if you look at Miami Harbor, the one thing you'll notice is all this bay down here. Jacksonville doesn't have that. The St. Johns River is this nice river that has banks on either side, so an animal is going to approach from

the left or the right or the north or the south, depending on where my drill barge is. And these animals all have to come to the surface again to be seen and noted.

Remember I showed you a project in New York Harbor. They had harbor porpoises in New York Harbor. They've used this in Boston, again with harbor porpoises. Wilmington doesn't have really clear water, it's actually in a river just like we here in Jacksonville have the same kind of water clarity. Didn't have any problems.

The animals all come to the surface. We keep track of them, plus they're very easy to see from the air, as well. And in fact, Jacksonville University does a lot of manatee monitoring and dolphin monitoring from the air, so we know that methodology would work here in Jacksonville.

So some of our monitoring methods. I mentioned aerial surveys with a helicopter. It's such fun to sit in a helicopter with the doors off and pray the seatbelt holds as you're hanging out the side.

Drill barge, we'll have two observers on

the drill barge, one looking each direction. Then we'll have two small boats on the water on either side of the drill barge in that safety zone looking for animals. And they're communicating back and forth by radio, as well as if we need to even go to red hand flag. So if a radio flags, we don't have reason to fire that shot until we fix the problem.

One of the other things that we did for the first time at Miami Harbor, this is cutting-edge stuff, we actually recorded the pressures in the water from a confined blast. This had never been done before. We had the information from unconfined blasting going all the way back to the 1940s. Remember they were talking about how do we protect Navy divers.

So the Loveless organization, the same gentleman that gave us the medical test for the space astronauts, did tests using monkeys and sheep and goats and various animals and subjecting them to unconfined blasting, because obviously you can't subject humans to it.

But additionally, they actually pulled out data from World War II fighter pilots. And gentlemen who were on ships that sank as munitions were going off in the water. Those gentlemen's bodies were exposed to pressure, and notations were made about what happened to them as this occurred. So they compiled all that data, we have a ton of data about unconfined blasting. We had zero data about confined blasting.

So as we went into Miami Harbor, there was some very interesting times for me, first of all, as a marine biologist walking in the door of the Corps of Engineers. And then for two weeks they assigned me this project; ironically enough, my first job with the government was in Miami Harbor writing down and tracking bottlenose dolphins. These were like my kids. I actually knew them by name, by sight, and here I was going to go down and allow somebody to blow up bombs next to them. Wait a minute.

Fortunately for me, some of the project management staff in Jacksonville district

very quickly realized that they could not have me going, you're going to kill everything. So they sent me to, of all places for a biologist, blasting school.

I'm probably -- and I joked with Dr. Aconya earlier today -- one of the only biologists I know who has basic blast design certification. Thank you, Dr. Aconya. But I had to learn that this actually is not what I thought it was. It's not that huge impactful thing that we talked about.

So one of the things that I pushed for very, very heavily for Miami Harbor was we need to capture these lessons learned and be able to use them in the future. We need to capture this and we need to report it and we need to get it in the peer-reviewed literature. We need to fill that gap.

So one of the things, we took pressure transducers and we set an array of pressure transducers off of the drill barge. And we actually captured the pressure data from different distances and different depths. That allowed us to characterize what the blast looked like using an oscilloscope; you

can see it right here.

We also used hydrophone, just like if you've ever watched the Discovery Channel, you'll look at them lowering the hydrophone down, these special hydrophones that can deal with the pressure changes and they've recorded those. And I'm actually going to play you one of the blasts under the water so you can hear what it sounds like in a little bit. But we recorded all this data, took it, and I'll show you in a little bit what kind of publications we used.

One of the other things we did at Miami Harbor that will be -- it's important in any blasting job and it will be just as important here in Jacksonville, because we're an urban river with people living and working right near it, is seismic and vibration monitoring. In an urban environment like Jacksonville, surrounded by commercial properties, residential communities, protecting structures is paramount.

Well, once the areas of the project that require blasting have been determined,

critical structures within the blast zone will also be determined by our geotechnical team and with the contractor. And they will actually do a pre-blast survey and a post-blast survey.

A couple of things that happened to us, one in Miami Harbor, there is a very, very large community of condominiums immediately south of the port. We got a phone call one day from a lady who lives on Fisher Island and she said, I'm really, really worried about my house. Can you come out and, you know, put a monitoring device? I need to know what's going on.

So a team went out and installed a seismograph. It's basically the same thing that you use for earthquake monitoring, for those of you, if you've ever heard about seismographs. They were sitting in her house talking to her and she finally said, you know, I've got to go. When is this thing going to go off? And the geologist said, well, it went off about 20 minutes ago. And he could see it on the seismograph, but it was so minor she

couldn't feel it. And this was immediately adjacent to the blast.

The other example that I'll use for you for those of you that are familiar with San Juan, Puerto Rico, this is the El Morro Port. It's on the headland right as you enter the Port of San Juan. Here is the entrance channel right here. And the park service was extremely concerned about us blasting immediately adjacent to a 400-year-old fort. This is a national monument. It's not replaceable. They said, yeah, well, we're really not happy.

So again, what the contractor did with the Corps was they went in and found every crack in the stucco and they took a photograph of it. And in some of them they installed these crack monitoring devices to actually see if the cracks got bigger or longer. And they put an array of seismographs throughout the national monument.

And what was interesting was that once the blasting was all done, they were able to go back to the park service with the data

and point out to them that, A, the blasting hadn't had any effect on the fort, but, oh, by the way, that big road with all those trucks driving by it every day was actually damaging the fort. This was something they didn't know about because nobody ever thought to put a seismograph in the fort or an array of them and collect this kind of data. So, again, protecting structures.

So where vibration damage may occur, there are energy ratios and peak particle velocities that are set by local law and state law that require certain limitations. And the contractor has to meet those limitations, as well. And you can see whichever the state or the county requirement, whichever is more astringent, so that is a requirement of our blasting code that I know our geotechnical folks can address a little bit more in detail if you have questions on that.

Now, what I'm going to do is show you an actual recording of a blast from the surface from the drill barge. This was August 2nd of 2005. This was 16 holes. Remember that

array that I showed you uses 16 holes. 67 pounds was the maximum weight of the delay and you have 16 delays for a total of 1,105 pounds of explosives.

No, no, no. Let's try this one more time.

Okay. I'm going to try to do this a different way because I have the video here. Let me see if I can get it to play a different way.

Well, hold that thought. I will play it as soon as we get him back. But what I do want to also play for you, listen very carefully, you'll be able to hear the delays in the shot, okay. So let's try this one.

And that's not going to work either. Next time we're using my laptop; just saying.

Okay. I'm going to play it again and I want you to see if you can hear it go (indicating). Those are the delays. It's not boom, it's (indicating). And that is each of the delays firing off sequentially, if I can get him to come back and let him play it. I've got it on the computer, I

just can't figure out how to drag it to the main screen, because he's got this split and I can't -- we can play it on my laptop in the back afterwards if we need to.

So we talked about results. Again, we did a lot of monitoring, what kind of things did we see. We did 40 shots. Remember I said originally we'd estimated 250. The contractor we brought in only needed 40 shots in 38 days to get the work done between June and August of 2005, blasting six days a week. Miami Dade County ordinance does not allow them to blast on Sunday, so Sunday was out.

186 animals observed, 58 of them were dolphins, 110 of them were manatees, 16 of them were turtles. We had 13 times that we had delays to insure animal safety. 31 percent of those were dolphins and 31 percent of those were manatees. And ironically enough, our biggest issue was sea turtles.

I guess we have actually a nice benefit here in Jacksonville that above river mile 6 we don't have sea turtles, too fresh. So

from river mile 6 south, or east, don't have to worry about sea turtles north of river mile 6. It's actually too fresh, the turtles won't be there. So remove those guys at that point.

And the average distance that we saw the animals from the array was 2,000 feet for dolphins, 3,500 for manatees and 500 for sea turtles. Sea turtles were closer typically to the array, and we believe that's because the sea turtles in the area habituated to being in a port environment. The port is immediately adjacent to where they hang out. They're used to the ships, they're used to people, they're used to speedboats, so there's no reason for them to leave.

Now, when we talk about the effect on marine mammals, if I use a 450-pound unconfined blast, remember, I'm not giving myself any credit for confining the shot, and I look at the danger zone, we measured a maximum pressure at the edge of the danger zone of 23 pounds per square inch. And that was actually 700 feet from the blast. You remember how big I said the array was when

we were looking at 1278? So not even to the edge of the danger zone and we get to our maximum pressure that we thought was 23. So we get all the way to the edge of the danger zone or less than that.

I mentioned earlier that we do have a situation if an animal is in the danger zone of having a harassment take. That is set forth by the National Marine Fishery Service under the Marine Mammal Protection Act. And they say the maximum threshold they have to take would be 22 psi's. It's not lethal or injurious, but it is harassment. So if an animal were inside the danger zone, we just said, that's a take, even though we know there's a buffer between the edge of the radius and 700 feet.

The safety zone, which is farther out, the maximum pressure was significantly less than 23. Within the zone and this take hold was 22, so we didn't have -- we wouldn't have take and we wouldn't have harassment.

Now, when we talk about fish, do I have any fisherman in the room? Okay. Got some folks concerned about fish, and I know I

like to go fishing. If I'm talking about a fish with no swim bladder like a shark or a ray, and I'll show you these right here, these guys don't have swim bladders. The research tells us this has actually no effect on them because the issue for animals is a change in pressure in a gas-bearing organ. So either we're talking ears for a person or in the case of a manatee they tend to end up with a lot of gas in their stomachs or in the lungs. These are gas-bearing organs. These are things that would expand and contract associated with those pressure waves passing over you. If you don't have a gas-bearing organ like a shark and a ray, you don't have a problem on your hands.

So no effect to fishes without swim bladders. We're talking about a fish with a swim bladder, again, looking at the unconfined data that was in the literature, open water shot, there were three different studies that were done. One of them said if you get to 14 psi, you start having issues. That's the one that's still currently used

by the Canadian Department of Fisheries and Oceans.

Another study done in 1952 looked at a range between 40 and 70 psi and a study done in 1995 by Dr. Tom Keevin said 50 psi. Now, ironically enough, if you get to a confined shot, 14 psi is what we saw in Miami Harbor and that was done by Hemper in 2008. So again, taking and answering questions that were previously unanswered.

Here is the safety radius again for that 260 W to the third for an unconfined blast. So if I'm trying to figure out the distance that I'm looking at for a confined shot where I might have fish injury or fish kill, 51. So it's one-fifth of what we would see in an unconfined shot. So the safe distance for fish at a 14 psi, which was the most conservative, remember, an unconfined from a 90-pound shot would be 1,148 feet. But Dr. Hemper was able to show that, for a confined shot of the same rate, it's 570 feet. Fish within the 570-foot range would likely survive, considering the observations of both the Hubb's and Rechnitzer paper and

Dr. Keevin in 1995.

One of the things that we did in Miami Harbor that we're doing again in the upcoming job and is sort of becoming standard is we put teams on both after the shot who go in this nest and recover the fishes that do float to the surface. We can't go down and collect them on the bottom, but there actually was a team that went down to the bottom of Miami Harbor to see, well, how many fish are down there. And it was like about five or six during a whole shot, but we had about 20 on the surface.

So if I look at the fish monitoring, we had, again, 40 shots between June and August of 2005, and we used something called a fish scare. Right before the shot goes off, we actually fire off a small firecracker under the water to try to scare the fish out of the area so we have fewer fish closer to the shots to, again, lessen the impact.

We had 23 of these shots monitored by the Florida Fish and Wildlife Conservation Commission where they were out there with

boats picking up the fish. Our average number of fish was 14 and the maximum number of fish we had was 38. And most of these fish were small scrawled filefish or cowfish. There were no commercially or recreationally targeted seafood like snook or tarpon or grouper that were recovered. I won't try to play that on the video because you won't see it. I have it in the back and I'll show it to you there.

Now, when we talk about invertebrates, particularly shrimp here up in Jacksonville, a literature review of the effects of open water blasts on invertebrates including corals and arthropods and arthropods that include shrimp that were done by Dr. Keevin and Hemper in 1997 looked at all the available peer-reviewed literature on unconfined -- remember, the worst case -- and said that the results of all of the studies reviewed indicate that invertebrates are insensitive to pressure-related damage from underwater explosions.

This may be due to the fact that all invertebrates species lack gas-containing

organs. They don't have that organ to contract and expand and cause the issue, so hence they are insensitive. We have consulted with the National Marine Fishery on this for our upcoming Miami Harbor project for corals and they have concurred with our determination.

Now, one of the other things that we put together for Miami that we'll be using again in every project that we've done, because it really did set the standard, was a communication and coordination team led by the Corps. We had the Port and the local counties, our contractor, their subcontractors, the federal resource agencies, the state resource agencies, the local county or city resource agencies and nongovernmental organizations. These are your environmental organizations; in the case of Jacksonville Riverkeeper would be a good example, so would the Sierra Club.

One of the things that we did is we had a blasting workshop where we brought in experts to teach the resource agency staff about blasting. I can tell you from my

copious amount of environmental education, biologists don't go to blasting school, so it's not part of the regular biological training that we go to to become biologists. As Dr. Aconya can well-attest to you, like I said, when I started with the district, I said, you can't do this, you'll kill everything. Nobody never sat me down and taught me about confined underwater blasting.

A blasting workshop was also held for the public by the contractor. That is a requirement of our blasting specification. So if blasting is used at Jacksonville, there will be at least one blasting workshop conducted by the contractor who will be doing the blasting here on the project. And we also arrange for visits to the worksite by resource agencies and interested parties, including the press.

The contractor that we had at Miami Harbor also created this flier that they insert into the Miami Herald. So every person who got a copy of the Miami Herald got a copy of this delivered to their

doorstep in case they had any questions about blasting at Miami Harbor.

We also had monthly meetings on site. They were held in Miami. Obviously it was a more convenient location for most of our stakeholders, it was their backyard. We had conference calls for those who were unable to travel, we reviewed our project progress and previewed upcoming events. And I think it made a huge difference for all parties.

We maintained open communication lines between agencies, the stakeholders, the contractors of the Corps. I started to affectionately call them the good, bad and ugly meetings because we told everybody the good, the bad and the ugly; what's going on, what's happened, what are we doing to fix it if we've had a problem. My project manager just loved putting me on a plane once a month every month to fly me to Miami.

Now, one of the things I mentioned was that we worked to answer questions. Confined underwater blasting was a newer methodology to resource agencies. They're familiar with military ordinance, some of

them working with military ordinances since some of them came into existence. The Navy and the Army are all about doing things with military ordinance.

But here we were talking about this confined thing. As a result of the work that we did on phase 2, there is now a large database of information regarding confined blasting, and in allowing to successfully perform future confined blasting programs in equally sensitive areas. I mentioned the project in Portland that was completed with the Columbia River. They were blasting there with endangered salmon.

Any of you familiar with what's going on in Columbia? There's a lot of endangered salmon species that use the Columbia River to get up into the mountains to breed. They had to go right through the blasting zone, and so they were able to use a lot of our data to work with the agencies.

We're working obviously -- I've been asked to help consult on Jax Port. We are also working at Tampa and we've been brought in by our Alaska district to work with them

on the deepening of the Coast Guard station in Kodiak, Alaska. They've got these cute little fuzzy little guys floating around out there who obviously they don't want to impact any endangered sea otters in Alaska. So they're asking us to come in and help them prepare public meetings, informational sessions, how did you guys do it in Jacksonville. You had manatees and dolphins, you have turtles. How do we do this? So, again, lessons learned and paying it forward.

And one of the things that I think I'm most proud of, because I jumped up and down, screamed, hollered and stomped my feet a lot to make this happen, was we got published in peer-reviewed literature and did presentations. For the first time ever, we took the lessons learned from a project like this, wrote them up and put them in scientific journals reviewed by our scientific peers and put those papers out there, so now they're available to everybody.

We went and presented at a variety of

conferences. The Ocean Scientist Conference; it was a special session on acoustics, noise in the environment, and I was asked to present at that.

We presented at the 15th and 16th Conference on the Biology of Marine Mammals. And again, we had a slew of articles and interviews, National Public Radio, Comcast Newsmakers, U.S.A. Today, Miami Herald, Jacksonville Times Union, etcetera, trying to get the information out, not just to the blasting community, but to everybody else.

Education is part of what I wanted to do with this, and I had to fight a little bit because it was sort of a new paradigm for the Corps. It's always been, we got the data, put it on the shelf, maybe we'll get to use it next time. And I said, we need to make this more public and get it out there because either it's going to be easier next time or it's going to be harder next time.

And what was really interesting was when we went to go get our permits for Miami Harbor for the one that's coming up this summer, our counterparts in the agency said,

well, are you going to do it like you did the last one? And we said, well, of course we are. Then they said, then we don't have any problems, which was a complete paradigm shift because everybody was like, wait a minute, you don't have -- you're happy with that, okay, so we don't need to change anything.

So the conclusion: Confined underwater blasting, again, can be used as a construction technique to crack the rock with minimal impact to marine organisms living in our project area when proper monitoring and safety precautions are established.

And we have the protocols from the beginning of the project planning, which is why I've been asked to come in early on the Jacksonville Harbor project and get those protocols in as part of the supplemental EIS and any permitting packages so that those are upfront considerations, not after-the-fact considerations.

And with that, I will hand it over to Amanda and let her go from there. And like

I said, I can show you the videos in the back on my laptop, and I'm going to get lots of feedback here.

MS. ELLISON: Thank you, Terri, for your presentation.

At this time we're going to open up the floor for any questions or comments that you might have. We do have a court reporter in attendance tonight, so what we're going to do is ask you to come to the microphone, line up one behind the other and ask your question or make your comment. And she will be recording so we do ask that you please state your name and spell it for us so that we can have it for the official record.

Also, if you do not want to make a verbal comment, we have comment cards that you should have received when you signed in this evening. If you didn't, there's still some outside and I can get them for you. If you would, just fill that out and you can submit that for the official record, as well.

So right now if we have anyone that would like to come up and make a statement,

ask a question. We'll also have our team of experts up here to answer those for you and when this portion is over, we'll have technical experts in the back to meet and speak with you and answer any questions you have for as long as you need this evening.

MR. RAGSDALE: John Ragsdale, chairman of the board of the St. Johns Riverkeeper. What are the expected effects on river turbidity from the blasting and what is the Corps' plans to control that?

MS. JORDAN-SELLERS: Blasting has low turbidity, in fact, because you're going down into rock and there's a very small amount of turbidity that comes up with that. And if I could have shown you the video, you would have seen, when the shot goes off, there is a small like a boil where the water comes up with the gas, that 10 percent does come up to the surface. It's a very, very small plume when you look at the bigger picture as compared to dredging. It will be something that is part of the monitoring, but under the Clean Water Act that is considered de minimis turbidity, so it's not

something that's been documented as having significant problems.

MR. SUMMA: And we will be required to get an authorization from the State of Florida under the Clean Water Act to insure that we meet turbidity standards. That will be a standard requirement.

MR. HILL: I'm John Hill. I live on the north side of the river. I've heard everything tonight that has assured everything that the sea life and everything is taken care of. I've watched dredging over the years coming up and down the river. And I've seen washouts, I've seen collapses over, and basically they fall within the realm of the dredging. The Corps says there's no correlation to it.

I'm going to ask you a specific question. You come in there and I know it's contained and it's very minimal, bam, we have collapse of property. What are you going to do about it? I see the south side of the bank reinforced with major granite rocks. I see nothing on the north side of the river because they say the deeper side

is on the south side. However, the ships run to the northern side, all the tubs run on the north side, we get all the power wash of everything that happens. Explain to me why and what you're going to do in the event something happens at that point.

MS. JORDAN-SELLERS: Well, first I'll start out by saying I'm a biologist, so I'll pass that on to the project manager, because I'm not an engineer and I don't even play one on TV. So I don't go into areas that aren't my expertise, so I'll pass that off to our project manager.

MR. HARRAH: I know that's a point of contention a lot of folks have. I've heard the stories from the previous project manager of some of the issues raised by various communities. I will tell you during -- first, to answer your question, what happens if we're dredging and something happens, you know, an issue happens on one of the properties, our district, our engineers, the contractors' representatives, we're required to investigate that to see what the cause was, to make an investigation

and make a determination of what we anticipate the cause was. So that's required during construction.

I will tell you that everything we've done from economics, we've invested millions of dollars of modeling so far for this. Everything we've done indicates that we will not have any issues like that for our deepening project. Our environmental impact statement will address that, as well.

But I encourage you, if you have specific concerns like that, too, when the report comes out, make those public on the record and the question -- you know, period, and we will address them formally in a response. Everything we've done, we don't anticipate having any issues like that.

MS. HILL: Are you saying we're getting no rocks?

MR. HARRAH: Could you come up here? I'm sorry.

MS. HILL: Sure.

I'm Susan Hill. So you did not answer his question. Are we getting rocks to protect our property?

MR. HARRAH: In our current feasibility project, we do not have rocks listed in the -- well, we have not got the plans and specs pages yet. That's later down the road in October when we start that.

MS. HILL: Is that before or after you get approved?

MR. HARRAH: We get approved in April 2014 for the chief's report. We start the design in October 2013 and that goes parallel with the final report being completed by Congress.

MS. HILL: In your design, I still don't hear rocks. You said we design --

MR. HARRAH: We haven't designed it yet. I mean, that will start in October when we start looking at all the designs, anything that needs to be completed in October 2013.

MS. HILL: Okay. So you need everyone's input; is that right?

MR. HARRAH: That's right.

MS. HILL: Then -- this is greatly then. Can you please tell me why everyone who will be affected by this project was not notified of this meeting? We are all listed on

coj.net, you've had our names and addresses, who is on the St. Johns River. We have to hear by word of mouth that this meeting was held tonight. Can you tell me why everyone was not notified who is directly affected by this?

MR. HARRAH: I guess sometimes -- first, I do apologize you weren't directly notified. I do know that it was in the Florida Times Union. It was in the paper --

MS. HILL: Does everybody get the paper?

MR. HARRAH: It was on National Public Radio. I do apologize --

MS. HILL: It was not on TV. I looked for stuff on TV.

MR. SUMMA: I'm so sorry about that. We just did it on the radio this morning. This is the fourth of five public meetings that we're having, so this is the fourth one. I'm sorry if you haven't been notified of the prior four. Our intention is to be clear, open and transparent about this process.

MS. HILL: So are you going to let everyone else know and give them back

information that are affected by this, since you're going to be direct?

MR. HARRAH: We will have another public meeting. The report will come out May 6th. That's the date the report actually hits the streets. It's on the website, everybody can download it to their personal computer --

MS. HILL: Everybody who knows and everybody who has a computer. I know people across the street from me -- excuse me, next door that are on the river who do not have a computer.

MR. HARRAH: Did you take the personal information? I mean --

MS. HILL: For me, because I was here.

MR. HARRAH: I understand. What we need to do is make sure all the folks in the room, we get their addresses and they'll get a personal invite to the next meeting.

MS. HILL: Not only the people who are here, the people who are on the river and are directly affected.

MR. HARRAH: Yes, ma'am. Understood.

MS. HILL: Thank you.

MR. HARRAH: You're welcome.

MR. PELLEGRINI: Well, I guess you know me because I've been directly affected numerous times. I've lost two docks and I've lost -- just recently in November I lost my bulkhead and my next-door neighbor lost her bulkhead. And these aren't little routine current movements. These are major shifts in the bottom where literally 20 feet will disappear, and it will just take everything that's above and take it below.

And then, like my first dock I lost was 100 foot, and I could take 75 feet of it and I could walk out at high tide and it was only this deep. Now it's -- it was, after my first experience, 32 feet. Now it's down to like 26 feet. And then just recently my bulkhead, which collapsed, was -- the depth at high tide was like three or four feet. Now it's 10-feet deep there and I completely lost my bulkhead and I had to build a new one. And I had to build it stronger this time, a lot stronger.

But I guess -- and I can show all the impact to my area. I've got film and I've also got photography on everything. And I

can show where we used to have sawgrass across there and we used to have a beach. You know, at low tide we had a big beach. And that's all gone now because now the water is all the way up to my bulkhead. It's 10-feet deep.

So I can document all this and show you, go through a video presentation and show you every bit and document the times and everything if you would be willing to see that.

But my main reason I came up here was to ask you where will the turnaround zone be in the river?

MR. HARRAH: That's a good question. If you go back to that other presentation, I'll show you.

MR. PELLEGRINI: I'm sorry I didn't -- my name is Don Pellegrini and I live on Raymond Drive.

MR. HARRAH: One thing I mentioned, too, before we do this blasting, we are required to go to the individual properties along the banks that potentially could be impacted and we do pre-surveys from an engineering firm.

They go look at the properties, measure everything out, blast goes off and they do post-surveys, as well. So they see if there are any cracks that form, is there any property that's been damaged. So those are both done and completely documented.

In the event there are impacts encountered, that's what contractors are bonded and insured for. That's the whole reason they get bonded and insurance, so just something to keep in mind, as well.

Anyways, as I said, the deepening will occur from the entrance here -- now, keep in mind, some of this is already 50 feet due to the Navy.

MR. PELLEGRINI: Yeah. They're dredging there right now.

MR. HARRAH: Right. We'll come all through here. There will be a couple small rounding features here and here just to cover two-way traffic as vessels are coming in and out of channels.

MR. PELLEGRINI: Where was that widening? I hate to be --

MR. HARRAH: No. That's fine.

MR. PELLEGRINI: Out neighborhood is right there and if you --

MR. HARRAH: The widening will be on the south bank. Correct, Steve? It's on the south.

MR. PELLEGRINI: From my understanding, the last time you all dredged, not only did you dredge the channel, but you dredged towards us on the other side of the red buoy, which is buoy number 34. And after that is when we started having all the issues with the collapses and stuff.

MR. HARRAH: I can't speak to that. I wasn't here. I was in West Virginia.

MR. PELLEGRINI: Show me the turnaround again.

MR. HARRAH: The turnaround will have one turning basin in here and one turning basin here.

MR. PELLEGRINI: Okay. They have been turning around, the Navy ships, right in front of my house, so --

MR. HARRAH: This will be the -- what we do is do a ship simulation report. And they run the models, they talk to the pilots to

see where they're having issues. And ultimately it was decided that this would be a turning basin and there be a turning basin here, as well. I do know that.

MR. PELLEGRINI: Well, I'm happy you're not putting one in front of our house, I can say, because they are turning around -- the Navy -- the Marine Corps ships right there in front of our house, which is where the peninsula comes out in White Shell Bay. We're right there, you know, a little bit back from there from the peninsula.

That's it. Thank you.

MR. HARRAH: Anyone else? Again, please give your name so the court reporter can get it.

MR. HILL: My name is Curtis Hill. I live at 6834 Raymond Drive. I think everyone in this room is all for the Port increasing revenues in Jacksonville, providing jobs for everyone. We know what a major situation that is in the country today. And with the deficit spending going, it seems like the only way we're going to get out of it is to, you know, reverberate

the economy and get jobs for people and that type of thing.

But what I'm concerned with is this: We're spending, I don't know how much, hundreds of millions of dollars probably, on this one project, okay. And I think basically the people on Raymond Drive need some consideration on the front end of the project rather than being post-active, rather than reactive to the situation and whatnot.

And we know that you came in and lined the entire side of the other river by those huge granite rocks and whatnot, you know. And so all we're asking is that you consider doing that for us before you start the project.

Now, in this particular case, you've got a lot of engineering statistics and everything to back up studies and that type of thing, okay. But -- and I believe they're true, okay, that this should happen unless something goes forward that we hadn't considered in the initial calculations of the thing and whatnot.

But our problem is not only with the blasting, it's with the dredging that's going to occur after that, okay. Because what you're doing is you're deepening that river channel, and I know, I've heard a lot of comments that it doesn't affect the bank area at all and whatnot.

But I can build you a sandbox, okay, and we'll dig a channel down the center of it, and it will start to fill in from the sides of the river, okay. Now, if I take that another seven feet or whatever is proposed in this proposal, it's going to continue to slide in and whatnot, okay. I don't have to have a lot of engineering studies to prove that or to show that.

So all we would like for you guys to consider is, since hundreds of millions of dollars are being spent, what we're requesting is a very small economic impact on this project, okay. And we would like some consideration in that thing and whatnot. That's question number one I'd like an answer to, okay.

Question number two: You say this

ultimate decision will be made by Congress before it goes back to your people for final approval and whatnot. Is there a committee in Congress that's responsible for this or is it the whole congressional?

MR. HARRAH: Make sure I said that right. Go back to the schedule slide.

After we do all the reviews, our division engineer in Atlanta will approve it. This is -- she was asking when will the design start, and I was saying the October 2013 for the design. It is going on parallel with the report going through its final stages of the civil works review board by our generals in Washington.

April 2014 is when the report is finalized. And that's when we will send it to Office of Management and Budget and ultimately to Congress for authorization and provision. Got to have the authorization first, it has to be authorized under the Water Resource Development Act, or awarded, and then the appropriations would come from Congress, actually.

MR. HILL: My question is is it full

congressional or just a committee?

MS. JORDAN-SELLERS: WRDA is a bill that is like any other law. The house has to vote on it, the senate has to vote on it and the president has to sign it. So every congressman, every senator and the president will have to vote either yea or nay.

MR. HARRAH: And the last WRDA we had was --

MS. JORDAN-SELLERS: 2007 was the last time we had a national WRDA bill.

MR. SUMMA: And the WRDA is the Water Resources Development Act project. That's what WRDA stands for. These are the large infrastructure projects.

MS. JORDAN-SELLERS: That's W-R-D-A, Water Resources Development Act. They used to be done every two years. We had one in 2000, then we didn't have one for seven years. There was one passed the last year of President Bush's administration, and we have not had one since. There is currently one in development in committee.

They've done this seven times where they've tried to get it through committee

and then it doesn't get out of committee or you get it in one side of the Congress doing it and the other side not taking it up. So unless they both come together, they agree on a list of projects -- and these are national. These are all around the country. It's not just Jacksonville that would be looking at being in this list. They have to agree, they have to have an approved chief's report from the chief of engineers. Then that list goes to the president for signature.

And that, again, is only authorization. Then it is inherent on the Port and the local community to lobby Congress to get the appropriation to build. So you can have it authorized, but that is not appropriated.

MR. HARRAH: And also the Port has the opportunity in the State of Florida to build it themselves if the federal money is not coming through.

MR. SUMMA: If it's authorized.

MS. JORDAN-SELLERS: If it's authorized.

MR. HILL: We all have been good neighbors with the Port. We all live out

there and we understand what the Port means to this city and ultimately that that's a huge growth vehicle for the City of Jacksonville. So -- but all we're asking for is some consideration on the front end rather than this thing go all the way through the steps and we're left holding the bag and everybody says, well, it's done now. You didn't come to us and say anything before.

What we would like is a definitive answer from the Corps and the Port telling us either you're going to do something about bulkheading in our area or you're not. And if you're not, then we will call whoever we have to call in our congressional districts and whatnot and take a different route to achieve what we want to do.

That's the last thing we want to get involved in. I'm retired after 50 years in the workplace and I don't want to spend my retirement up there at meetings and getting lost in whatever is going on in Washington, anyway. They can't even get together and pass simple bills up there now, so who

knows.

But all we want is for it to be considered and then you all come out with public statements saying, we're going to do it for you, we'll strengthen the bulkheads before we actually begin the dredging project in the thing. And then I think everyone on Raymond Drive will be very happy campers and can support the project 100 percent rather than 90 percent at that point in time.

MS. JORDAN-SELLERS: As Jason mentioned, when the draft supplemental EIS hits the street, it is open for a 60-day commentary. My recommendation to you, as someone who does NEPA, separate from what Jason does as project management, that is your opportunity to go on the record in writing that we want this component considered. And then by law the Corps has to respond to you in their final EIS. And they have to come and say either, yeah, we're going to do it, or no, we're not and here's why we're not. So that way you're on the record, it becomes part of the administrative record under the National

Environmental Policy Act and you have it then in writing as it moves forward up the chain as Jason described it.

MR. HILL: Thank you. That's all we're asking is some consideration. We don't need to be considered stubborn when this is all done. Thank you very much for your time.

MR. HARRAH: Thank you.

MR. DOYLE: I'm David Doyle. I'm a property owner.

MS. JORDAN-SELLERS: Hit the yellow button.

MR. DOYLE: I'm a property owner on Raymond Drive right here where this point's at, just a little bit inbound where the Hill folks have their property. And I think what we're asking for here is a little consideration and a little time other than engineering studies. I appreciate all the time that people put in going to college and getting degrees and getting smart, learning all kinds of things, but there's obviously a problem here that no engineer has figured out if they cared, or we wouldn't have a roomful of people here that have a problem

with what's going on.

I've lived down here since 1995. I had to put literally hundreds and hundreds of tons of concrete around the wall on the back to keep it from washing it and my neighbor's properties away. Because if we lose that point right there, we're going to lose the whole front all the way down through there.

There's an issue here. It doesn't take an engineer to figure it out. Come out there, live for three or four years, watch the dredge boats go away, watch your bulkheads go away after they leave.

Six years ago they tore down a big two-story house next to mine. I got all the concrete from the floor, from the footer, from the driveway. I had a four-foot-high wall of concrete all the way around the front of my property and the side. These folks would be happy to witness to that. It's gone. It's not there anymore. Today, right now, it is not there anymore. It didn't get up and walk away. And I'm getting too old to pick it up and carry it around and put it there and place it

anymore. We've got to have some help. That's all we're asking for. Somebody come out here and give us some help.

Years ago when they were doing a lot of dredging in the river, we came out with the Corps of Engineers people, we met with Tillie Fowler out here at the Heckscher Drive Community Club. And someone was asked about the same thing Curtis just referenced; build a sandbox, put water in it, scoop the middle out, what happens? The sides fall in. Somebody from the Corps walked up and whispered into his year: It's the sand from Palatka. It's coming from Palatka. It's not local.

Come on, folks. Let's have some commonsense here. It's not the sand coming from Palatka. When you squeeze the bottom out of that river, the sides fall in. You know what happened right after that? They went over here and built this big beautiful granite wall to protect that waterway.

And I noticed, after they did that, that side stopped falling in. We don't have any more big washouts or cave-ins going over

there, but we still have them over here. This needs to be addressed.

I have no big problem with the extra depth of the water and extra ships coming in. Lord knows we need the jobs. What we really need is to manufacture the stuff here and not import it. That would be even better, but right now importing it seems to be the only way we have to go.

Another thing you mentioned earlier is the turning basins down here. You need to come out here -- again, it doesn't take an engineer to figure this out. Every time they put a big military supply ship back in this port back here to load it up or unload it, they bring it out here in the river and they put four tugs on it and turn it around. And I can tell you the turbulence that comes off of that can be seen all the way to the shore when they're doing it. That, again, is washing that bank out. And if you're going to deepen this, you're going to be bringing in bigger ships and bigger tugs and you're going to wash it out even farther.

Again, somebody please go back and talk

to the engineers and figure out a way to add a little commonsense to it, because not everything that's engineering is done right. If I remember, quite a few years ago they built a ship called the Titanic and it was unsinkable, so the engineers said.

MR. HARRAH: Thank you. Anyone else, questions?

MS. SIMON: Hi, my name is Suzanne Simon from the University of North Florida. And first I have a question and then I have an observation.

First of all, I regularly teach a course on environmental anthropology from the University of North Florida. I'm not from Jacksonville. Many of my students are from Jacksonville, and many of them are nontraditional age students. And they have asked me about something called creasote. And while I appreciate the concern for the sea turtles and the dolphins and the sea grasses, there is also concern for human health effects. So could you please tell me what the potential health effects of creasote are and if they would be affected

by the blasting or the dredging. That's my question.

And the second part is actually an observation. I have been observing these public comments, public participation sessions since May of last year, and what I have observed is actually a little bit disturbing. And I think you have a public participation mechanism that is a little bit unproductive.

What I have observed is that they tend to be technical, top-down affairs in which the public is only involved at the last minute as some of our commenters have already observed. And if you will notice, the questions that were asked at the end are directly or indirectly related to what you have presented, but these are the substantive questions that the community actually has.

I have a couple of very concrete suggestions which I can offer for you for how you can have public participation that's more substantive and more ongoing dialogue, and actually something that responds to

community needs. But up until now, I think it's been a very dissatisfying process for many community members.

MR. HARRAH: I guess we need to address your question first.

MR. HOLLINGSWORTH: Hi, I'm Mike Hollingsworth. And I'm with a biologist group for this particular project and did the hazardous waste assessment of this particular project area.

With regard to the creasote question, there was an issue in the Talleyrand area with regards to creasote a number of years ago, right next door to the -- where the JEA Kennedy power plant was. There was a creasote operation there where they actually treated the wood there onsite since the 1920s on up through the 1960s. And from that time period there still was creasote located on the property and some of that creasote was leaching down into the river at that particular area.

In 2005 there was a remediation, acid remediation project to remove that creasote from the river channel, and which it was and

it was placed in another facility adjacent to the JEA Kennedy.

Now, with the reduction of the project from that segment two, from river mile 14 down to 20, that was eliminated, that particular issue, from being in this particular project. The Corps points and temporal samplings that we had been doing prior to this time, especially associated with our EPA concurrences for placement of material in the offshore exposed area have shown that this particular area is pretty much free of chemical contamination in the channel itself where we'll actually be dredging, and the risk is very, very low. It's either rock or sand, a little bit of silt located in these areas. And we have not seen any issues with regards to creasote contamination in the area that we're actually going to be doing the dredging.

Now, if we were going to be going to Talleyrand, we would have to take additional precautions because of that site and some other sites are located in that area. Since we're not, that's eliminated that problem,

that issue.

MS. SIMON: Thank you. That was very helpful.

MR. HARRAH: One of the -- I guess I've heard a couple comments basically related to media output and reaching the community with status of the project. I'll take responsibility for that one. I tried to introduce a new topic to the navigation side that we did in Everglades, which was to have bimonthly public calls to give the public the opportunity to call in. We've done that consistently since -- it's been about a year now. I've asked the public at the end of every meeting to provide comments on what you would like to hear or like to talk about, and we will have another meeting in June.

I want all my team members to raise your hand, all right. How many people don't live in Jacksonville, put your hand down. I mean, everybody, this whole team is from Jacksonville, too. This is our community. Our kids, my kids play here, as well. We want to do what's right for the community.

And I've heard the concerns on the rock, and I will bring it back to my engineers and we will look at it. I don't have to wait until your public comment, I'll take it back to the drawing board and we'll look at it. I promise that.

For the media outreach, Amanda and I, we need to do better and we will. We'll look to see what we can do to get to the community. If we have to have community association meetings and get more one-on-one with you folks, that's what we'll do. You have our commitment, we'll do that.

MS. SIMON: May I make an additional suggestion? Because I think the efforts have been very genuine. One thing that might help is on your website where you post information from the different meetings, as well as the minutes and so forth, it would be helpful if you posted something like a civil society comment box where people can go at their own leisure and post comments that they might have, and then based on those questions and those comments, perhaps design a meeting that begins with those

questions rather than having them come in at the back end.

MR. HARRAH: That's a great idea. Sounds great.

You had a question, ma'am?

MS. PELLEGRINI: My name is Brenda Pellegrini. Having a meeting and expecting the public to be able to participate at 10 o'clock on a Monday morning when most people are at work is not something that most people can do because they're expected to work at work.

MR. HARRAH: I understand and that's -- I mean, that's the issue. We work the same hours. That's something maybe we can look at. Possibly I can do -- we need to look at it. We'll do a media thing where maybe we can try to, every bi-month I can personally, as long as my wife will allow it, I'll check with her, but I'll do like a 5:30 or 6 o'clock in the evening so I can sit and listen to you all's concerns or we can meet at the Port or wherever location is convenient to you.

But I understand your concern. It's

just -- it was a new concept in navigation as far as inviting the public. We're doing Everglades and stuff all the time. I came from the Everglades, so I said, well, why not bring it -- we do get a lot of participation and I understand your concerns. There are a lot of folks that probably do call in. But we'll look and see if we can try and hold those in the evening or something, as well.

MS. PELLEGRINI: I do have another question. How close are the tugboats allowed to come? They're blasting by the shore and pushing off a surfable wave to completely break bulkheads.

MR. HARRAH: That is out of my --

MS. PELLEGRINI: They are so close, it's ridiculous.

MS. JORDAN-SELLERS: That's the Coast Guard.

MR. HARRAH: Coast Guard, Mr. Butt. You didn't think you'd have a speaking part. It looks like you do, sir.

MR. BUTT: After the meeting you can meet with me and talk about it.

(Inaudible crosstalk.)

MS. PELLEGRINI: They're so close.

MR. BUTT: Can you say your question one more time?

MS. PELLEGRINI: The tugboats some close to the shore. They're pulling that barge. I just know they're going to run down the docks, what docks are still there.

MR. HARRAH: So what's the question? What can we do?

MS. PELLEGRINI: How close are they allowed to get?

(Inaudible crosstalk.)

MR. BUTT: The tug operations throughout the river, they are to operate within the navigational beacons. I would be surprised if they are pulling their tows outside the navigational channels. As far as their speed --

MS. PELLEGRINI: Is that 50 feet offshore?

UNKNOWN MALE SPEAKER: More like 100.

MR. BUTT: Are they between the navigational beacons?

UNKNOWN MALE SPEAKER: No.

MR. BUTT: No.

UNKNOWN MALE SPEAKER: Crowley Maritime is the major --

UNKNOWN FEMALE SPEAKER: Jax, San Juan.

UNKNOWN MALE SPEAKER: Tugs generate the most washout of anything on the river, and if you're not out there doing your job to stay in the lanes you're supposed to be in, the impact is going to be more severe. So that's what we're asking. What is the limitation, stay within your limitation, stay within your speed range. They put another full tow, whether with or without something, the waves are four foot hitting the wall. If they're not pulling nothing, they should be running at a very --

MR. BUTT: Sure. And the tug operators, all the operators in the maritime community, they are responsible for their wakes. In other words, if someone has caused damage to your dock, your work, your bulkhead, you should reach out to them. We can certainly help you facilitate that communication with them. There's no problem there.

You know, the waterway is somewhat like

the highways that you drove on when you came over here. There isn't a speed limit, but there are banks that keep us within the bumps along the highway, so they should be operating within the navigational beacons. The Corps of Engineers does a fantastic job, regardless of what some of you may have as an opinion, but they do keep the federal channel clear. And then likewise, we come in behind them and lay down the aids of navigation to make sure there are beacons to guide merchant marine operators through the waterways.

So they are responsible for their wake. They should be held accountable for wakes. I have a good working relationship with all the -- I can certainly voice your concern. What I was suggesting, if you could tell me, not here to take up this important time, but all of you, I'd be happy to provide my contact information. I'd like, if you have something specific, I can go to the operators and have them contacted.

MR. HARRAH: Let me ask you a quick question. Is there something that, some

kind of media output to say, just a reminder, you need to keep it -- how does that communication, how could that occur as far as letting people know, hey, we've been getting some complaints. You need make sure you stay in --

MR. BUTT: The Port Authority has what we call the Jacksonville Marine Transportation Exchange. It's a means for all of us to communicate back and forth with each other, and I can certainly push one out tomorrow letting all the operators know, the vessels, that there was some public comment this evening regarding their responsibilities to navigate safely and at a speed that doesn't cause wake damage. That's something I can work with with Mr. Jim McLaughlin (ph) and Captain Mike Etchel (ph) tomorrow to put something out.

MR. HARRAH: It essentially boils down to kind of like the neighborhood watch programs, the neighborhood river program. If you see somebody committing a crime, write the information down and get it to the proper people.

MR. BUTT: There is a waterways, American Waterways Watch Program out there. I didn't bring any brochures along tonight, didn't think it would be necessary, but we do have a program like that. You can call the Coast Guard, let us know what is happening on the waterways and then we can, you know, address your specific concerns.

But after the meeting, again, let me know your concerns, who the operator was, so we can get it out and I'll talk with Captain Mike Etchel tomorrow and Jim McLaughlin and put something out to the core community.

UNKNOWN FEMALE SPEAKER: I have plenty of videos.

MR. HARRAH: Thank you, sir. Sorry about that. You did a great job.

MR. BLANCHARD: Good evening. My name is Don Blanchard. I'm also a member of the Riverkeeper Board of Directors. Lisa Rinaman, the Riverkeeper, couldn't be here so she asked a couple of us to come and ask a few questions.

Before I ask my question, though, I'd remind the gentleman who was curious about

the draft environmental impact statement, it will be ready next month. Is that according to the timeline? April, I think.

MR. SUMMA: Yeah. It will be ready then, but then we're going to do a quality control test on it and then it will be out for the public review on May 6th.

MR. BLANCHARD: And as of May 6th, will there be copies here at the library?

MS. JORDAN-SELLERS: Yes. That is required. There will be at least two physical hard copies here at the Jacksonville library.

MR. BLANCHARD: That's where you all will see what you want to see in detail.

Also, if you could include the Riverkeeper on the communication -- you kindly mentioned it -- on the communication and coordination team, you can just visit our website or I'm sure Lisa Rinaman will be in touch.

The two questions that I wanted to ask were, one: What are the anticipated impacts of the final dredging and project up river on salinity? And then kind of a more money

question: What is the likely impact of the sequester and the overall budget cuts? Is that -- is this grandfathered or is this still --

MR. HARRAH: I'll wait for Steve to come up for the salinity question. For the sequestration, my wife asks the same question every night. We're still waiting to see. We haven't received any official notification of what's going to occur, but in the event that it would occur and we have to take days off and ultimately that schedule could be impacted.

MR. BLANCHARD: Okay.

MR. BRATOS: I'm Steve Bratos. I oversee a lot of the modeling from the standpoint of salinity itself. There are impacts that are changes to the salinity up river to at least the Buckman Bridge. We have put out -- we've released all of the reports that document all of this change in salinity. In terms of impact to actual ecological indicators, I think that's still under development. I think we're done with that.

MR. SUMMA: I can address some of that. We've had five ecological models and we've taken the physical data that's detail plus develop that basically documents the existing salinity in the river and we overlay in a very conservative fashion different proposed depth scenarios; 44 feet, 46 feet and 50 feet. And we've done this with the -- with drought conditions involved.

In other words, in the period of record that was available to us in our model, we've taken three of the driest consecutive years on record so that we can basically find any discernible effect, any change in salinity in any area of the project downstream as far as it may show up.

And so that data is still being collected. What it is showing is that there are effects, changes in salinity in different areas basically starting about the Acosta Bridge and moving south towards the Buckman and farther down from the Buckman, a little bit past the Buckman.

We worked with the scientific community

and we've asked for their help in identifying the ecological resources in the area. We're focusing primarily on wetlands and submerged aquatic vegetation. We know how important the wetland community is to the local area and also the importance of the -- (inaudible). And we're trying to understand the tolerances of those particular species to salinity changes. That's still under development, but by the time the draft report comes out you're going to have a real good idea, should be well-represented as to exactly what the effects will be on specific species that we're looking at.

MR. BLANCHARD: Thank you.

MR. HARRAH: Any other questions? Again, as I mentioned, all the Corps team, Dr. Aconya, our blasting expert, will be in the back of the room to answer technical questions, as well.

MR. ANDERSON: Good afternoon. My name is Jim Anderson. I've got three questions for you. One is do you know the total number of shots it's going to be to deepen

the river yet?

MR. HARRAH: No, sir. In the plans and specs phase in October that she was asking about, that's when we'll get in that level of detail.

MR. ANDERSON: Second question: How will this project affect the Intracoastal St. Johns River project that's going to be going on where they'll be moving the little jetties and redoing that whole area there.

MS. JORDAN-SELLERS: That's mile point.

MR. ANDERSON: Where the Intracoastal crosses over the St. Johns River, they've always had a problem with boats, large boats, going through there. And that's going to be redone with another project.

MR. SUMMA: Yes, sir. That is a separate project altogether. So that was a navigational concern that the Port has had for a long time with the navigation community. That was a separate feasibility study that we recently completed and recently had approved, so that particular component of the project is underway. We're still looking at particular ways it can --

Congress hasn't appropriated authorization --

MS. JORDAN-SELLERS: That's not authorized yet.

MR. HARRAH: I thought he was asking about the environmental. Did you have a question on the environmental?

MR. ANDERSON: Well, are the two projects are going to interfere with each other? Are they going to be going on at the same time?

(Inaudible crosstalk.)

MR. ANDERSON: Good question. If the river is deepened, with all the problems in Congress going on, is that going to affect the rate of the water flow at Mayport with that extra five to ten feet of water? Anyone know that?

/PWAO*EUZ: By deepening, we will change the tidal flow, what happens in this river park we're looking at, so we will, in different parts of the river, affect the currents, water levels. Some of our effects for modeling indicate we might change the tidal range by a few tenths of a foot, for

example. Currents, we can see something on the order of two- to four-tenths of a knot change in a peak maximum flood or epic flow. That just depends on which part of the river you're talking about how that changes. There will be some effects, but as far as we can tell right now, it's a fairly minimal effect.

MR. ANDERSON: It's going to be interesting --

/PWAO*EUZ: Well, it depends where in the river and which -- the type of current, Mayport itself or --

MR. ANDERSON: Like the boat ramp at Mayport.

MR. SPINNING: At Mayport the flow current will increase and the ebb current will decrease.

MR. ANDERSON: Thank you.

MR. SPINNING: Just real quick, to answer your one question, this deepening project actually takes the Mile Point Project completed as a baseline condition to study this. So Mile Point was considered complete when we went into this because it

is ahead of this as far as schedule and everything else.

(Inaudible.)

MR. SPINNING: Mayport and Mile Point, yes.

MR. HARRAH: Any other questions before we bring it to the back of the room and you can go back there? Anything else?

Yes, ma'am.

MS. THOMAS: Janie Thomas, T-h-o-m-a-s. I'm the executive director for the Shrimp Producers Association. I'm here to go on the record. My first question is on the segment two for mile 13 and mile 20, when is that proposed?

MR. HARRAH: At the request of Jacksonville Port Authority, that was, you know, excluded from our study. The Port would have to come to us with an official request to study that additional length.

Roy, any interest in the future? You want to address that?

MR. SCHLEICHER: The Port has no intention of dredging out by the Talleyrand terminal.

MR. HARRAH: Okay. So as you heard, this will remain in its current depth of 40 feet.

MS. THOMAS: Where, though? I just understood about the salinity change, and we're very concerned with that. It's about 40 boats out of the 600 in 1976 that still have a license to trawl in the river. We're highly, highly regulated and highly restricted. We have to stay 100 yards from the shoreline, so you're going to knock us out now from -- all the way from Blount Island to the MOL. We're going to lose that unless you'll help us and go to the legislature and let us get closer to the 100-yard shoreline. And then we're going to have to keep the salinity change and the habitat of our shrimp, because you know a shrimp knows no boundaries. It's only water temperature and salinity.

And you may have to go with us to Tallahassee to the Fish Commission and get our boundaries extended south, because we feel like that the shrimp will be in Palatka and live and stay there. We don't know that

they're even going to have a reason to go back to the ocean as the natural habitat is.

But we're giving and we're taking and we're -- we always do. We always work with the government for anything that they have to do, and I just merely wanted to be here tonight to go on record and let you know where we stand on behalf of our industry.

I think you've done a very good presentation. I used to live right there in front of buoy 48 before I moved to the fabulous Nassau County. Thank you.

MR. SUMMA: Thank you, ma'am.

MR. HARRAH: Any other questions or comments?

That concludes our presentation. As I mentioned, the guys will be in the back of the room to answer any additional questions you have. Fill out the comment cards. We'll have another public meeting when the report comes out in June of 2013.

(Whereupon, the meeting was concluded at 8:17 p.m.)

C E R T I F I C A T E

STATE OF FLORIDA)

COUNTY OF DUVAL)

I, Amanda E. Robinson, Court Reporter and Notary Public, duly qualified in and for the state of Florida, do hereby certify that I was authorized to and did stenographically report the foregoing proceedings; and that the transcript is a true record.

I further certify that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

Dated this 8th day of April, 2012.

_____

Amanda E. Robinson, RPR