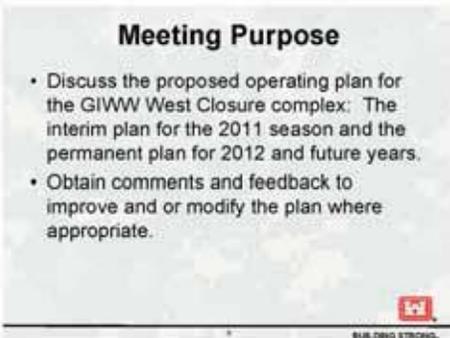


## GIWW West Closure Complex Operating Plan and Master Water Control Manual Stakeholder Meeting Tuesday, March 15, 2011

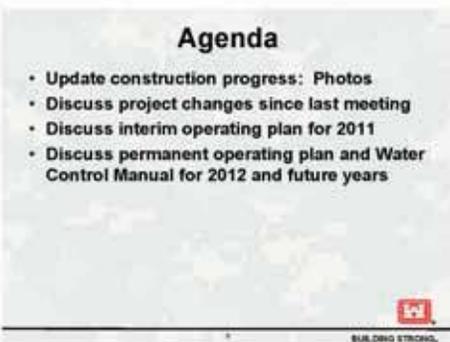
<b>Location</b>	MI-SWACO
<b>Time</b>	Meeting 2 to 4 p.m.
<b>Attendees</b>	Approx. 24
<b>Format</b>	Presentation Discussion
<b>Handouts</b>	<ul style="list-style-type: none"> <li>• Draft Water Control Plan Manual</li> </ul>
<b>Facilitator</b>	Tim Connell, Project Manager



Tim Connell: We have two plans that we are discussing; we will talk about plans this hurricane season and then the future hurricane seasons when the Corps of Engineers is not in the process of constructing the West Closure Complex and it has been turned over to our partners, the state, for operation and maintenance.



The reason for this meeting is that I'm going to share the proposed plan and we really want to hear your feedback if there are issues with the plan, we want to discuss it and modify it accordingly.



I'm basically going to go over some photos for those who have and haven't seen it. There have been some changes in the progress. We've had meetings here before as this has been going on for three years and I will go over those changes that have occurred. Our last stakeholder meeting was April 16, 2009 and I want to go over the changes. We had some changes in October 2009. Then basically we are going to go over the operating plan, both the interim and permanent operating partner.

# Public Meeting Summary



Here is where we were in July 2009, about a year and a half ago.



In 2010 the contractor had rapidly cleared the site and started the marine work.



Skip forwards a year and here is what you have. You can see how far along we are with the pump station and the gate structures and you can see work on the 404(c) floodwall up to the northwest.

# Public Meeting Summary



Here we are in November 2010.



Then in January we have the structure.



And here in March you can see the gates, the large sector gates have arrived and have been placed now in the past week.



These are just some shots that I thought were interesting to give you the size and scale of the gate. Here they are still in Houston in February.

# Public Meeting Summary



This is the placement of one of those large gates. It required two of Bisso's big heavy lift cranes that can lift 750 tons each.



This is inside the pump station looking from the safe house. This is a shot of the engines and the driving pumps. They are 55-hundred horse power diesel engines.



This is another construction view; this is before we enclosed the structure in January; this photo is dated October.

# Public Meeting Summary



This is the setting of one of the 11 large flower pot pumps. These pump 1,740 cubic feet per second each.



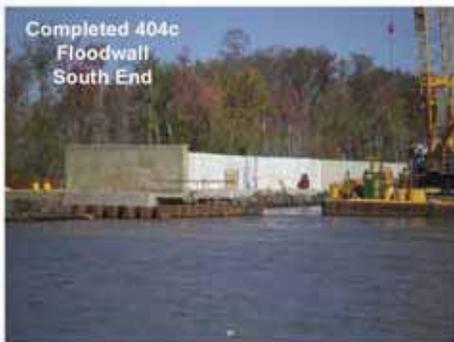
Here is a shot of the fuel tanks. They hold 300,000 gallons, enough to keep the pump station operating for three days continuously.



This is a view of the safe house. If there is any place you want to be in the city to ride out a hurricane, this is it. This is inside a building that is already tough.



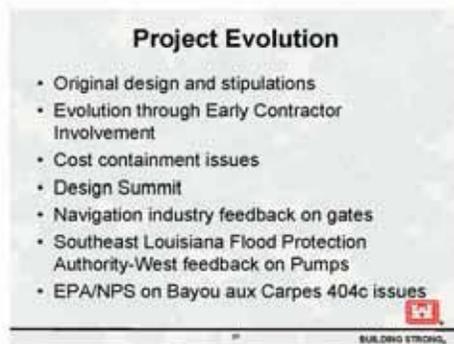
Again, this is work on the 404(c) floodwall. This is just showing you a shot during construction.



This is the transition wall that goes between the floodwall and the gate is going to be placed.



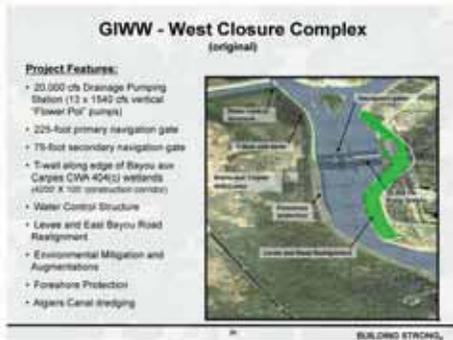
This is just one of the things that we've done. The Algiers Canal is dredged in order to increase the conveyance capacity of the canal to the pump station. The material that was taken out was barged to Lake Salvador, a geocrib site, an area that they have been trying to fill in and rebuild it for a long time. We had this material available so we decided to do some beneficial use of marsh creation in that location in cooperation with the National Park Service.



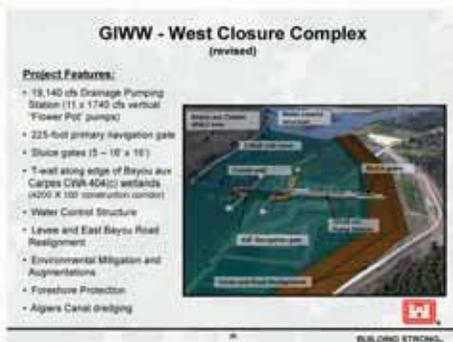
When we talk about the project evolution, like I said, we've had these discussions on two navigable floodgates and it used to be 16 pumps, then it was 13 and now it's 11 pumps. The evolution of this project was done using the early contractor involvement process where the contractor came on board and became part of the design team. I will go through all the changes that have occurred. Some were prompted by rising costs so we introduced some cost containment and this was our

# Public Meeting Summary

attempt to that. We held this design summit where we got everyone together and a lot of you participated in it. We went through different scenarios on how we could contain the cost and the results are what we have now. In making the changes we didn't do large stakeholder meetings again after the design summit. When we had changes on the gates we had representatives from the navigation industry, Coast Guard, AWO and basically made these decision regarding specifically to the gate we had small group meetings for those. When we had issues with pump capacity and elimination of pumps and changing the size of the pumps, we met with our partners at SFLPA-West and went through those. When we had issues with the 404c where we did some things we didn't intend on doing we got with the EPA and National Park Service with all those issues.



This was the original project that we went out with. You see two navigation gates; there's a 225 and 75 foot to the west and we had a 20,000 cubic foot per second with 13 pumps. After it was all done we went through the design summit and individual meetings and we are now with a 19,140 cubic foot per second pump station with 11 pumps that are larger and we have eliminated the 75-foot navigation structure. We kept the 225-foot structure and added a bank of sluice gates on the east side of the structure to replace that 75-foot navigable floodgate. That was in order to keep the flow velocity down in the main channel and we needed that 300 feet.



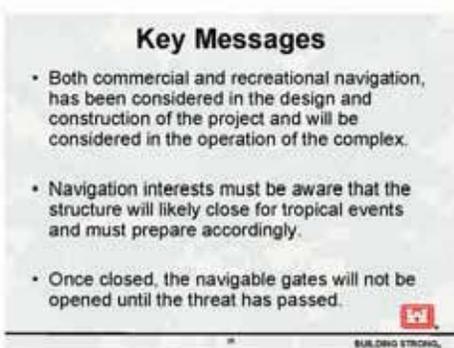
Now here is what we are going to be operating.



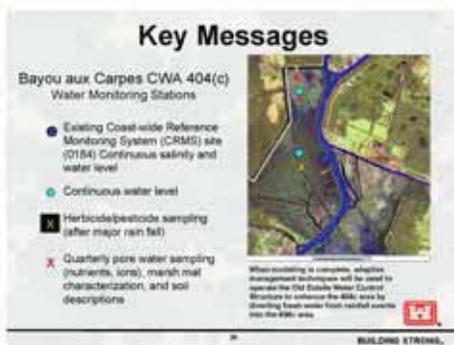
So, what I want to go over next is the water control plans.



The difference between the two plans is that we are going to be doing it this season with eight of the 11 pumps as opposed to 11 of the 11 pumps. In some future years, it will be operated by, as it currently stands, our local partner – the Office of Coastal Protection and Restoration and whomever they designate to do so. I have a couple of key messages that I need you to take out of this and let it provoke thought. The primary function of this structure is the Hurricane Storm Damage Risk Reduction for the 250,000 people that are behind the West Bank and Vicinity Project. The structure will be operated to assure that it performs its function.



In the process of building this project both commercial and recreational navigation has been considered. We also considered navigation in the design and construction of the project and will also consider you in the operation of the project. Navigation interests have to know that the structure will likely close during tropical events so you have to keep that in mind and plan accordingly for this because it is a different situation than we've had in the past. Once closed, the navigable gates will not be opened until the threat has passed. When the decision is finally made to close the gates, we don't want to have to deal with entities showing up on the outside and putting us in the position to have to make the decision to open or not.



For our environmental folks, part of this project had to do with the water control structure at the Old Estelle Outfall Canal. We are doing modeling and we will use adaptive management techniques to operate that structure. We will see what the modeling says is the best way to operate and if turns out that it's good to throw fresh water over the 404(c) then that's the way the lock will be. If it turns out that it's not a good thing environmentally to do that, then we will keep those gates open all the time except during a storm event.

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**Key Messages**

- Effects to Lafitte / Crown Point have been numerically modeled and effects measured for various storm paths and intensities. The results show the impacts to be on the order of .1 to .2 feet. WCC will be operated to avoid additional adverse effects to the greatest extent possible.



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The effects of this structure on Lafitte and Crown Point have been modeled for various storm paths. The results have shown there is an increase in water levels from about .1 to .2 feet and that is occurring at already elevated water levels. These areas are low lying and it's just important to know that the West Closure Complex is in a way that basically do everything it can to reduce any actual or perceived impacts on those areas below; to the greatest extent possible.

**Key Messages**

- Joint Gulf Intracoastal Constructors / USACE team will be on-site to operate the WCC for the 2011 Hurricane Season.
- The Commander of the New Orleans District will be the decision maker for the operation of the structure, both gates and pumps.
- Proposed plan is GIC will provide technical expertise on-site for the actual operation of the components. GIC will not be involved in the decision making process for when the gates will be closed nor when the pumps will be operated.



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This is for this hurricane season. The Corps of Engineers will be on-site to operate the WCC for this hurricane season. The commander of the New Orleans District will be the decision maker for operation of the structure, both the gates and the pumps. He will determine when they will be closed and what will happen with the structure. The proposed plan is that GIC will provide technical expertise on-site with the Corps on-site for the actual operation of the components. GIC will not be involved in the decision making process for when the gates will be closed or when the pumps will be operated. They will be strictly technical experts for the operation of the components.

**Stakeholder Input**

- Navigation: USACE, USCG and Navigation Industry through GICA, AWO and HCIA
- Hurricane Risk Reduction: SLFPA-W, OCP, NWS & USACE
- Interior Drainage: Jefferson, Orleans and Plaquemines
- Environmental: EPA, NPS, Other Federal and State Environmental Agencies, NGOs



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We've had stakeholder input through the entire development of this project and we are here today to continue this. I just want you to think about what we are saying here and we invite comment.

**Notification and Communication**

- Web sites –Corps and Non-Corps
- Local television and radio media outlets
- Gulf Coast Joint Hurricane Team communication network
- Local Government Liaisons (LGL) to Parishes
- USCG Marine Safety Broadcast
- COE Navigation Bulletin

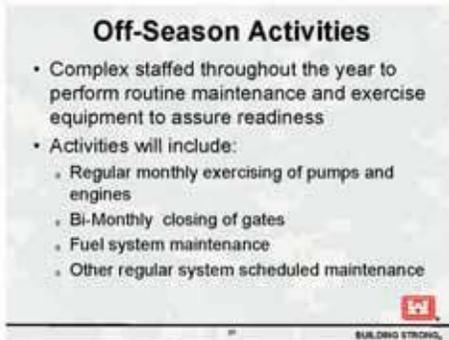


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One of the key things with this structure is what is going to happen because before this structure, navigation came in and out and now there is going to be a time when it's closed off. The notification will be through both Corps and non-Corps websites. There will also be the local TV and radio media outlets and we have the Gulf Coast Joint Hurricane Team communication network. We also have the local government liaisons, the Corps has people through all the parishes so it will be communicated through the parish emergency management offices and

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we have the U.S. Coast Guard Safety Broadcast and the COE Navigation Bulletin.

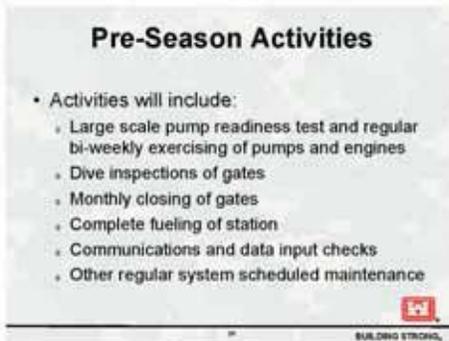


**Off-Season Activities**

- Complex staffed throughout the year to perform routine maintenance and exercise equipment to assure readiness
- Activities will include:
  - Regular monthly exercising of pumps and engines
  - Bi-Monthly closing of gates
  - Fuel system maintenance
  - Other regular system scheduled maintenance

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We do some off-season activities. It will be staffed throughout the year to perform maintenance exercises to be sure the structure is ready to go when it needs to operate during hurricane season. We can't let a structure like this, with these kind of components just sit out there and expect it to be ready to operate when you need it. It will be staffed and maintained continuously. This will include regular exercising of the pumps, closing of the gates, fuel system maintenance, and then other systems like electronics, screens and the other systems that are inside the station.

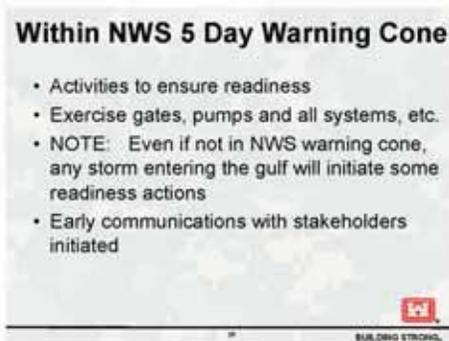


**Pre-Season Activities**

- Activities will include:
  - Large scale pump readiness test and regular bi-weekly exercising of pumps and engines
  - Dive inspections of gates
  - Monthly closing of gates
  - Complete fueling of station
  - Communications and data input checks
  - Other regular system scheduled maintenance

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Right before the season we will do a large scale pump readiness test, meaning testing more than one pump at a time. We will do a dive inspection on the gates to make sure there is no debris that could cause a problem with closing the gates. We will then start a monthly closing of the gates as opposed to a bi-monthly closing. We will have the station completely fueled up to deal with the storm event and then we will have regular communication and input checks because we need to know what is happening down the canal and with the rainfall with the radar. We'll make sure all that is up and running as well as other systems scheduled maintenance checks. The major checks will be done right before the season starts.



**Within NWS 5 Day Warning Cone**

- Activities to ensure readiness
- Exercise gates, pumps and all systems, etc.
- NOTE: Even if not in NWS warning cone, any storm entering the gulf will initiate some readiness actions
- Early communications with stakeholders initiated

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So now let's talk about having a storm show up in the Gulf. If we end up in the National Weather Service 5-day warning cone; we will begin activities to ensure readiness. We will exercise all the gates, pumps and all systems. Even if the NWS says we are not in the cone we go on high alert so that if anything even looks like it's coming in the Gulf we take action. We will also issue early communication with the stakeholders via those methods we talked about earlier.

## Within NWS 3 Day Warning Cone

- Continue readiness activities
- Dive team called up to report and gate inspection performed
- Continue consultations with stakeholders
- Begin review information which could indicate need to close WCC gates



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So we are in a 3-day cone, and it looks like it's coming so we continue activity. We will call in the dive team again because if these gates don't close we have a problem. We bring in the dive team again and have them perform an inspection to make sure it all works. We then exercise the gates and the dive team remains on site until the gate is closed and locked. We also continue communicating with the stakeholders as that is important because we are in the process that looks like we are going to close the gates and this is when we communicate on when it might happen.

## Within NWS 3 Day Warning Cone 48 hours

- Continue readiness activities
- Continue consultations with stakeholders
- Begin review information which could indicate need to close gates
- Communicate gate closure probabilities to all parties through communication networks



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When we get two days out and if we are still in the cone, people are already taking actions such as evacuation. We will continue all our activities. At this time you will have a good idea on whether we need to close the structure.

## Within NWS 3 Day Warning Cone 24 hours

- Continue readiness activities
- Continue consultations with stakeholders
- Continue review and analysis of information which could indicate need to close gates
- Communicate gate closure probabilities to all parties through communication networks
- Decision to close structure likely



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Now we are honing in on the event and if we are still in the cone the decision to close the structure is likely and it will happen relatively quickly.

## Gate Closure Decision

- Decision to close will be made by the MVN Commander with information input from:
  - National Weather Service
  - US Coast Guard
  - Emergency Operation Center
  - SLFPA-W, Office of Coastal Protection and Restoration
  - Parish Governments
  - Navigation Industry
- Wide variances in effects based upon storm path, speed intensity, expected rainfall, etc., require the flexibility to make the closure decision within a range of water elevations
- Proposed plan is to allow for closure when water surface elevation at the WCC is between 2.5' and 3.0' ft
- Minimum advance notice of closure is 12 hours



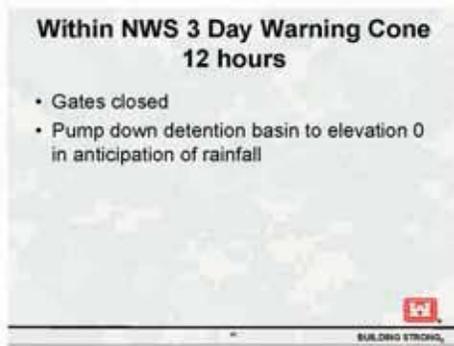
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Now we are talking about closing the gates and what are the criteria. The commander will make the decision but it will be an informed decision based on the National Weather Service, what is happening with the Coast Guard and the Emergency Operation Centers SLFPA-West, the Office of Coastal Restoration, parish governments, the navigation industry; all these people

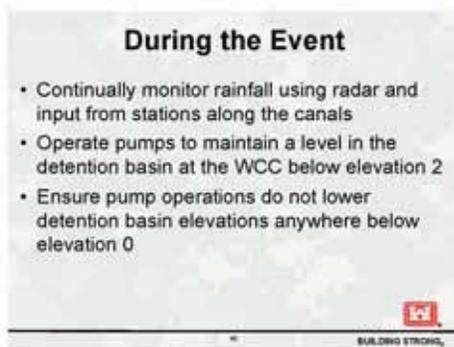
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# Public Meeting Summary

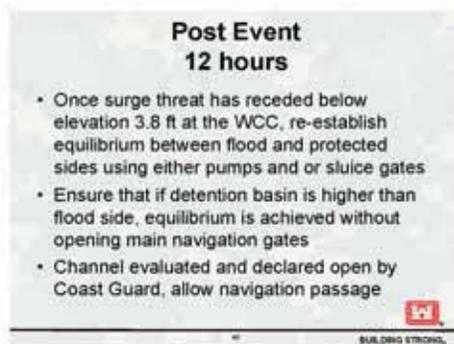
will have input into the decision on when to exactly close the gate. The reason why we can't have a definite time of when or a definite elevation of when to close is because the path of the storm, the speed and intensity, the expected rainfall, it requires that the commander have the flexibility to make the closure decision within a range of values. We don't see that the structure will be closed before an elevation of 2.5 in the canal, but we don't see that it won't be closed at an elevation of 3.8. Based upon what is actually happening in the canal and predictions there will be a decision. The minimum advance notice that we are looking to give for closure of the gates is 12 hours.



So, now we've decided to close the gates and basically the plan is now the gates are closed and the detention basin is pumped down to elevation zero so if that is at elevation 4, it will take approximately four hours to pump that down to zero if we are using all the pumps. We could also use fewer pumps and bring that water down slower. If the elevation is two, we will make an adjustment and it will be up to the people on site and the commander to decide when we start pumping that out and at what intensity. That may have a perceived impact on Crown Point and Lafitte so we may do that more slowly than rapidly.



During the event there will be a continual monitoring of the rainfall and input stations along the canals. The pumps will operate to maintain at the WCC below elevation 2. As the rainfall increases, remember the pumping capacity of all the non-stations along the canal is greater than our pumping capacity so we do utilize storage and that is why we pump the basin down in the beginning. As the event continues, especially if it's a heavy rainfall event, those water levels inside the canal will rise but we will bring the pumps on line. It is important that we don't over pump the basin because that can impact the stability of the levees so we will make sure we keep it above elevation zero. All the information to do this will be provided by SCADA system that is monitoring these levels along the canal.



Once the surge threat has receded below elevation 3.8 at the WCC, we are looking to re-establish equilibrium and if it is a dry event, we may have to let water in. If it's a wet event, we may have to wait to let water out. The gates have to be close to equilibrium before we can open

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# Public Meeting Summary

the channel to navigation. We won't do that until the Coast Guard has declared that it's safe for passage.



So this is how we operate the structure and now we want to hear from you.

**Male Speaker:** When you close these main gates, the Algiers Lock and my railroad gates across Belle Chasse Bridge, will those be closed at that time or will that be decided later?

**Tim Connell:** This is Chris Accardo from our operations division and he can add something here, but I see that as an independent decision and it will certainly effect the movement on the waterway if the bridges are down, but it's not a decision that will directly affect each other.

**Chris Accardo:** The trigger points for closing the structure is right now, a draft in the operations manual that has [Inaudible]. It's not set in stone at this point. The locks will continue to be operated.

**Male Speaker:** When this criteria is met and it is closed, the gates across my rail close at the same time?

**Tim Connell:** Are you talking about the gates along the canal?

**Male Speaker:** The canal levees.

**Tim Connell:** That's an independent decision ...he's talking about the railroad bridges. Typically we've thrown baskets or sandbags across the railroad.

**Male Speaker:** Except for the Algiers Canal there are breaks in the levee where my rail gates are and the Corps put gates across that as part of the raising of the levee on both the north and south side to meet the environment...

**Chris Accardo:** Are those gates going to be closed by the Levee District? I don't even know who is responsible....



# Public Meeting Summary

**Tim Connell:** Those are on the Algiers Canal right now and typically what has happened is that we have sandbagged those or we have placed the sandbags out there and Plaquemines Parish would take the initiative and put those sandbags on those levees because they were the last ones to be placed. Some of the operators along the canal would place them also themselves, but we would provide the bags. Now the structure is going to be in place. What I am trying to tell you is that the decision to close these gates is an independent decision of those particular closure decisions and I'm not prepared to tell you exactly how those closure decisions will be effected. We will have to get you some information. We have a gentleman from Jefferson Parish who [Inaudible]

**Male Speaker:** [Inaudible] ...we have a concrete number of hours it will take to bring the detention basin up to a levee or [Inaudible] and that water will be higher [Inaudible] ...

**Tim Connell:** Yes we do. We have all those numbers and I could put them up. We modeled everything from varying capacities of the pumps coming to the West Closure Complex operating from a levee all the way down to six pumps. There is a body of evidence that shows what the timeframe is and that particular body of evidence doesn't include the reduction in pumping capacity, which can be substantial if the Algiers and Harvey Canals rise up to the top of the levees. We do have that information and I can provide that for you. It varies to the amount of pumps we have operating and the amount of pumps that you are doing. It is a bunch of different variables in there but they have all been modeled and there are numbers associated with them.

**Male Speaker:** [Inaudible] ...they are not pumping at full capacity when we start off at [Inaudible] 17 hours until....

**Male Speaker:** Worse case scenario, a 100-year storm rain event?

**Male Speaker:** A hundred year storm event...two days straight...yes, something like that. That probably is very unlikely to happen but if....

**Tim Connell:** I've got these numbers and I will just give you some of them. If we are operating with 11 pumps and pumping the total they can pump is 29,912 cfs. If that case occurs, then we have 9.3 hours of pumping to get to the top of the levees over there. If you are operating at 70% you have 50 hours to get there. What is important to know is that we talked about the design being a 10-year rainfall event and the ...

**Male Speaker:** Do you talk to them as you talk to [Inaudible] and having them dial back....

**Tim Connell:** There should be no need for dialing back. The combination between storage capacity that is in the system when you close the gates and pump down and the pumping capacity they have at the West Closure Complex, that combination of storage and pumping capacity matches the capacity of the 10-year rainfall event model for all the stations on the canal without exceeding elevation 4 on the Harvey Canal and without exceeding 5.8 on the Algiers Canal. In those events, that a 10-year, 24-hour rainfall event, which is 9.1 inches of rain....

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# Public Meeting Summary

**Male Speaker:** Do you have the code and confidence if something goes wrong such as [Inaudible] but you have the same ability to talk to them like you have with Sewerage and Water Board?

**Tim Connell:** Communication systems, yes, but we don't see the need for ...that's not something that should happen. Let me pull something up here just to show you again...well I'm not going to be able to pull that up. What I wanted to tell you was ....

**Male Speaker:** I'm assuming that you are closing [Inaudible] as well ...

**Chris Accardo:** That's correct. The second gate at Harvey will still be [Inaudible] with West Closure and the trigger points for Harvey are first for West Closure. You close the sector gates there first and then you wait until peak conditions are right to close...

**Male Speaker:** But you are going to keep...trapped barges inside the Harvey Canal and this side of the structure and in the Algiers Canal, are you going to keep locking in Algiers?

**Chris Accardo:** We are going to keep locking as long as we have traffic and as long as we are not effecting the elevation in the canal. Before we had the problem where we had the locking where we raised the elevation, we backed off of that a little bit because we feel confident that the Harvey Sector Gate, where before we didn't have pumps, now we have pumps there so because of that we can begin locking a little bit more and then pump them out.

**Tim Connell:** To get back to an earlier question, what I was going to pull up on the screen was the National Weather Service rainfall charts for the area. What happens is a 24-hour, 10-year rainfall is about 9.1 inches but your 48-hour is about 10 inches. Your four-day is about 13 inches so what I'm saying is that eventually the system run out of steam and their ability to pump water in the area. Now the 100-year rainfall is more but there is reserve storage capacity in the canal. The model capacity for the 10-year rainfall event is 5.8 in Algiers and the levees are 8.2. It's 4 on the Harvey Canal, but they do have additional capacity along the bank and of course ultimately, they have the 8.2 elevation throughout the entire detention basin so there is additional capacity should they need it.

**Male Speaker:** If the additional capacity is in this building right here, which is what concerns me, is your calculation of a 10-year rain with 4 feet in the canal is that based on run out to this wall or run out to ...

**Tim Connell:** The canal. It's within the actual canal.

**Male Speaker:** Which means behind the....

**Tim Connell:** This doesn't flood.

**Male Speaker:** Based on the interpretation that 4 feet is maintained out there by property owners.



# Public Meeting Summary

**Tim Connell:** You've got more than 4 out there right now. At times it was probably loosely maintained up to elevation 8 with HESCO baskets and stuff, but 4 was considered the elevation that was generally there and livable.

**Bret Toups:** Our concern, and it may not be the proper forum of Corps people here, our concern is that we are only as good as the weak link. Some of these parcels of land may be unoccupied at the time. We are no longer the authority or have funding to maintain this so it's on the property owners. You may not have an occupant or property owner at some of these parcels at the time it occurs. While this is a wonderful thing for 250,000 residents and thousands of businesses, 12 to 15 businesses here are at their own peril and their own expense with this remedy, which doesn't seem fair. It's my opinion that you need to take some responsibility for that and its responsibility to take authority to make sure the whole thing is maintained at some level other than the property owners. We don't have the wherewithal to be here during the storm and keep that levee up so you either need to do that, you need relocate us or you need to compensate us. Your real estate department right now is offering to compensate me for these buildings for nickels on the dollar. It's not fair that these few businesses have to suffer for your retention pond to save everything else. We are talking about all the theory and models on a 10-year rainfall; there's a good chance that we get more than a 10-year rainfall and we get into that scenario where you said we have more capacity than the 4 feet so where are the responsible parties and who do we talk to seek some revenue or protection on this?

**Tim Connell:** I'll take it back. This is not a new issue; when we were looking at the project and we were provided with the economic impact study of the businesses, which I believe were \$65 million a year at the time, that's where we analyzed what we had out there and we brought forth the elevation 4 was about as good as we were going to get. It has been maintained to an elevation that was higher than that but we think that elevation 4 is sustainable along this canal without any type of federal involvement. The models were formed and the design was produced that met those criteria and that is for the 10-year rainfall event that this area is not inundated with rainfall.

**Bret Toups:** I agree with all of that and it is a great model but we are a dog chasing our tail for three years figuring out how we are going to maintain that protection if we have one weak link. I don't have equipment here at the time of the storm to be plugging a leak; the levees district, the state or the Corps does, so someone needs to take responsibility and say too bad. When you say too bad then we go after whatever remedy we believe is available to us. But for three years no one has said a thing other than we recognize that and it was taken under consideration, but now we are getting close and I have to decide whether to keep this business here or move this business out of here at a great expense. If I have to do that, then that's going to be tough and someone should be recognizing this and what this is going to do to the people and the economy. In this country too bad is a horrible answer to me. We didn't ask for any of this. Until those walls broke down on the London and New Orleans canal where the light bulb came on ...

**Tim Connell:** I do understand your concerns and we will take this back and work with OCP, Jefferson Parish and others. We can raise it up again. I'm not sure this is the proper venue for this, but what I do have to point out is that the 100-year surge would have inundated all of us. Even though there is this possibility of a rainfall event exceeding what the system can

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pump out and allow some rainwater back into this area, there is definitely a large net benefit for this area with the West Closure Complex.

**Bret Toups:** Understood and that's what makes it even more frustrating. We are so close but no agency from the city on up through Washington will take the initiative to say we are going to help you; we are going to make sure there is a mandate or funding to do that and we are that close. We are that much closer than before you built the gate, but we can't get anywhere.

**Tim Connell:** I can't answer your question here but we will take that back.

**Male Speaker:** How long does it take to close the gates?

**Tim Connell:** The actual closing of the gates, to get everything done, is less than 30 minutes.

**Male Speaker:** [Inaudible]

**Tim Connell:** The time is less than 30 minutes. From the time you press the button to the time the gate is closed if there's no issue with it, within 30 minutes they will be closed. You have to make sure they will close and that why we have contingency plans.

**Male Speaker:** During this period of only eight pumps in the study, what is the water level going to be during the first year, during this 10-year rainfall?

**Tim Connell:** If we have an event this year, and I'll be honest, if we have a 10-year event this year and everyone is pumping water there will be water in here; it's highly likely that water will come in here if we are operating with only eight pumps. I won't say highly likely, but there is a possibility.

**Male Speaker:** Even with eight pumps we are a heck a lot better off than in the past...

**Male Speaker:** I know, but if you didn't have a wall there and you have the floodwall, whatever did happen would be spread over so many thousands of acres that it wouldn't affect anyone. The wall is...it would dissipate and we wouldn't have more than six inches of water. In other words your detention area would be thousands of acres as opposed to...

**Tim Connell:** Just to point out, if you do get the advertised capacity of the interior stations, which is one inch the first hour and a half-inch after that, if you do exceed that you are going to have street flooding anyway. It would be great to have all pumps operational this season and as we get toward the end of the season as pumps come on line, they will be put in service, but this is the reality of where we are right now.

**Male Speaker:** You have eight in right now?

**Tim Connell:** We will have eight in by June 1<sup>st</sup>, by August they should have all 11 in.



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**Male Speaker:** All 11 by the peak of the hurricane season?

**Tim Connell:** Yes.

**Male Speaker:** This year?

**Tim Connell:** Yes, operational. Now, let me explain something else about the operation of this whole system. It is set up to be eventually to be run from inside the safe house, an individual sitting at a control screen will be able to operate all our pumps. All our pumps will be operational from the individual pumps so there are dual operation stations for this hurricane season, but this hurricane season, not everything will be operational from the safe house it will have to be manually operated at each of the pump locations.

**Female Speaker:** I was just going to say that the river is low enough [Inaudible] in Algiers...

**Tim Connell:** That's correct. If the river is low enough or the surge isn't too high, it has to be a substantial event. As we all know there are so many variances in the way these storms come. For Katrina you had a terrible storm on that side that was blowing water out of the other side. So it will depend on the storm as to what happens.

**Male Speaker:** Are you going to say that at category three we are going to close or is it clearly just predictions? How are you going to make a determination if you are going to close?

**Tim Connell:** That's what we have a discussion about and that's what I showed you on one of those slides if you want to go back. The commander will make the decision based upon the rainfall intensity forecast. They would like to have a number where the water elevation at the West Closure Complex reaches, say three, to change, but the fact of the matter is that it may not be appropriate so that's why we are proposing this range; between 2.5 and 3.8 that the commander can take all the input from everywhere and make the decision on what is the appropriate time to close. That is our proposed plan. That's informed by the AIS system and the National Weather Service that shows a two right now be we are expecting elevation eight when the storms hits or when the National Weather Service says the surge will be less so maybe it doesn't require closures. This is the kind of flexibility that the water control managers who understand all the different parameters that are involved have to operate in.

**Male Speaker:** Are you talking to the levee board also or is that one of your...

**Tim Connell:** Yes.

**Chris Accardo:** The primary trigger point is the gauging [Inaudible] it's not cut and dry and [Inaudible]. It's a little bit more complicated than that. Before we move on, someone mentioned the river and getting water out, generally, from hurricanes the river is higher than canals so you would want to hold in any of the locks, but we do staff Algiers, Harvey and IHNC looking for that window of opportunity if we get lucky and the river does drop and the [Inaudible] we would do that if we had an opportunity.

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**Male Speaker:** It looks like one of the big modeling tools that should be used in that decision is the hurricane surge that you refer to in this document. Is that available?

**Unidentified Mae Speaker:** It's at the district.

**Male Speaker:** The document is not at the website it's at the Haskoning Surge Atlas.

**Unidentified Mae Speaker:** That's the website of the company that developed the atlas. I've only seen it in hard copy and I believe it's [Inaudible]

**Male Speaker:** That's the question. It's not open to the public, why? You decided that it was a big decision making tool so it should be available to the public.

**Male Speaker:** [Inaudible] it's hundreds of pages long so it doesn't download, but I think it's something you could come to the office and see.

**Male Speaker:** I would like a copy.

**Tim Connell:** When these storms are approaching they are writing storm prediction models and all of this is changing and moving around and making its approach and intensifying, so every event requires a lot of input and analysis of that input to determine what is the appropriate course of action and the appropriate time, even if to close or not to close.

**Male Speaker(s):** [Inaudible] cross-talk

**Male Speaker:** You are predicting a 12-hour notice of the prediction when you expect to get four feet at the site so it would be a handy tool for the navigation to have so they could second guess what you are doing or think ahead like y'all are thinking.

**Unidentified Mae Speaker:** [Inaudible] for the closing without having the data from the weather service so that you don't [Inaudible]

**Male Speaker:** Navigation does have access to NWS data [Inaudible]

**Tim Connell:** We would expect that navigation industry in participating in all of these calls and discussions. I think through the Joint Hurricane Task Force that the navigation industry will be fully informed and what the thought is with regards with what is coming up.

**Male Speaker:** Did you say the maximum [Inaudible] in water in the canal is +4?

**Tim Connell:** In the Harvey Canal it's 3.9.

**Male Speaker:** Harvey and Algiers Canal?

**Tim Connell:** Algiers Canal is 5.8 between the Belle Chasse Tunnel going back toward the Algiers Lock. In that event, when you are starting to pile up water in the canal and everyone is pumping, you are winding up with an elevation of 3 at the West Closure Complex Pump Station and these higher elevations further back, by Cousins and Algiers Lock.

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**Male Speaker:** Where is the command center in the event local pump operators had to throttle back; where is that decision made and where is that decision located understanding that all the representatives from Plaquemines, Orleans and Jefferson [Inaudible]

**Tim Connell:** I don't expect them to throttle back ...

**Male Speaker:** They didn't expect Katrina so you have to have a plan.

**Male Engineer:** We are a lot better than we were in Katrina. Everyone would have radios [Inaudible]. They will be listening to what we are saying. We will get in touch with Jefferson Parish we can call them so they will have access to the local authorities [Inaudible]. We will have people imbedded from each perspective location from the Corps that will be [Inaudible].

**Male Speaker:** [Inaudible] question

**Male Engineer:** There really hasn't been a communication problem about closing gates because of the radios and satellite phones; we have a lot of systems in place to let people know what is going on.

**Male Speaker:** [Inaudible] there have been a couple of cases last year where there has been some misunderstanding of who has the authority to order [Inaudible]. There's been some serious and tense efforts to [Inaudible] to banding after the event. My biggest concern [Inaudible] I think one of the biggest issues out of all of them is that the community [Inaudible] who has what responsibility for and have that worked out well ahead of time so they can drill so that when the actual event occurs so that the person who has that responsibility [Inaudible]. The Corps is doing a great job with concrete and steel, but the human aspect of getting organized [Inaudible] so that we collectively are better off. The Corps is talking about what they intend to do when they operate it this year's hurricane season. After that the Corps will come and set up the structure [Inaudible].

**Male Speaker:** The Corps should [Inaudible] the procedures this year. The command and control of this think is the key and you are working with [Inaudible] so you don't get a barge getting to the gate after it's closed saying I have [Inaudible].

**Male Speaker:** You bring up a good point; this is the question I want you navigation folks to ask if you haven't asked it yet. If you are behind the West Closure are you safe? That's the question. The restricted navigation area...

**Female Speaker:** We have a meeting about that next Tuesday.

**Male Speaker:** We do, but I want to ask about it here. You guys have never been shy about it before and I don't know why you are starting today. My recommendation will be that it will be a mooring plan required but we will work with the Coast Guard to see if we can tweak that on some of the requirements for you. The memory of barges moving around the IHNC is still fresh in everyone's mind.



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**Male Speaker:** [Inaudible]

**Male Speaker:** What I'm saying is that there were certain people out there that the West Closure was shut down and if I hid behind there I'm safe.

**Female Speaker:** I think we all believed. Once these projects on both sides are completed then that's going to be the safest place for anyone.

**Male Speaker:** [Inaudible] you are still going to be subject to wind. There will be some water...

**Male Speaker:** It's even more critical to the stepchildren in here who maintain their own levee out here to four feet to not have the barges and shrimp boats piled in here to this safe haven with no mooring plan coming through the little thing that we have. That puts in even more peril because that is going to be hard to police despite your best efforts.

**Male Speaker:** [Inaudible]

**Male Speaker:** I know some barge operations don't plan, and come to my dock because they don't have a better one. Some of their plans are to do their crew change there and some of their plans are to load up [Inaudible] and with all due respect to any barge and fleet owner in here, I don't have a ton of confidence in a 100% safe mooring plans for all of these companies. I was as nice as I could be to them but we have insurance and liability problems, I can't have you jumping across the levee. About every two weeks I'm going out there to throw one of them out.

**Male Speaker:** One thing we are very sensitive to [Inaudible] and everyone who has designed this wants to make sure the gates are closed, but y'all want to pull the trigger too early for the folks on that side.

**Male Speaker:** I'm worried about too late.

**Male Speaker:** I know. It has to be just right.

**Female Speaker:** Well because our concern is that we have boats that are trying to get to safe harbor and they get trapped out [Inaudible].

**Male Speaker:** That's why you keep the Coast Guard tied in...

**Female Speaker:** [Inaudible] you made the decision to leave Mobile because this is where you think this is where the storm is going to go and it takes hours to get there and clear through the Industrial Canal and you make the decision to leave and get trapped, that's what we all look at.

**Male Speaker:** [Inaudible] conference call with all navigation with information...



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- Tim Connell:** When do those protocols start?
- Juaquin Mujica:** Seventy-two hours prior to predicted landfall. In some locations where the storm just shows up in the Gulf we start right away. If any other parties involved have concerns, we start.
- Male Speaker:** The problem this year with that timeline is the IHNC because it's going to take [Inaudible]
- Male Speaker:** IHNC is going to close before that because it will take 72 hours to close.
- Male Speaker:** Tim, who is the MVN commander?
- Tim Connell:** That's Col. Flemming. The colonels move every three years so you have EOC and others who have been here for awhile and understand the issues. They are all going to be part of that team advising the Commander, but he has the ultimate responsibility this year.
- Male Speaker:** That's only going to be for 2011 season right?
- Tim Connell:** There is a designated water control manager in the permanent plan and he may or may not be designated as the authority in that water control depending on the outcome of these meetings.
- Male Speaker:** He will get information from various sources before he makes that decision?
- Tim Connell:** There has been a lot of interesting aspects of having a navigable floodgate, enclosing the channel, a federal navigation channel, that's not a Corps structure, which this eventually won't be, and the authority to do that...for this particular structure right now it's with the Coast Guard. The actual real authority to close the channel is with Coast Guard. There will be coordination and you have the whiskey and zulu conditions and eventually the port will be closed, but it will be a collaborative effort because there are so many diverse interests associated with operation of the structure. We've all known that from the very beginning when we started talking about this. This is different from the outfall canals where it's pretty simple; it's just water and you don't have this other component of navigation and people on the outside and all of these different factors that weigh into the decision on when to close it.
- Male Speaker:** Have you tested the pumps yet? When will that be?
- Tim Connell:** That will be starting up in late March or early April.
- Male Speaker:** The first one in April.
- Male Speaker:** Will you start all eight at one time or you just start ...

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**Tim Connell:** We test one and as soon they do one and then we will keep on going down the line. This is a very tight schedule to get these pumps up and running for June 1<sup>st</sup>.

**Male Speaker:** How about the sector gate, it's been installed?

**Tim Connell:** It's been placed into the recesses and it's on the peddle and they are in the process of aligning and getting ready to pour the upper pins and anchorages. That's all expected to be done in the next three weeks and then we will do a test on the gates and making sure they are working properly.

**Male Speaker:** You will have the dive team available if there are any problems?

**Tim Connell:** Yes. In the next three weeks we hope to have a perfect alignment and then we test it out and then we will have picked up three weeks in the schedule, which will make the navigation industry happy because they will be able to roll right into the closure law without having to do 12-hour closures that they will be starting shortly. The contractors have performed well so far so we don't have any reason to believe they won't.

**Male Speaker:** What is the new total cost of this; one billion?

**Tim Connell:** It's pretty close. I've got the figures exactly somewhere, but it's pretty close. A lot of the figures are still being negotiated.

**Male Speaker:** [Inaudible] are the engines directly coupled to the pumps or are there ....

**Tim Connell:** You have the engine, you have the right-angle gear drive and that goes down to the pump. There is a pump start.

**Male Speaker:** You can't start all the engines then ...

**Tim Connell:** The engines and the pumps run together; they are not...once you start the engine up it starts spinning the pump. When you bring the engine up to speed is when you starting moving the water up and over, but there is no transition between the two.

**Male Speaker:** I have a difficult time understanding trying to maintain a level in the canal of 4 when it's raining and [Inaudible]

**Tim Connell:** That will be a condition when we have a relatively dry storm so that you are assured to have time to pump out. Truthfully, I can't see waiting that long, but there may be some condition where you would wait that long, but it would have to be that you do have the time, based upon the actual climate that is going on, the weather that is occurring right there, that you will have time to pump that basin down. I would say that would be associated with dry storms that you would be able to do something like that. It's important to be able to get the detention basin pumped down. What that will do, if you get it down to zero, it allows the local pump stations at the beginning of the event to operate more efficiently because we are at a lower head, you are not pumping against...all these local pump stations use siphonic action and if they are lower than it increases their capacity to deal with that first burst of rainfall and of course as

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we have discussed, as the canal fills up there efficiency is going down. It's an interesting dance as the water level inside the basin goes up, the West Closure Complex gets a little more efficient and the interior pump stations get a little less efficient.

**Male Speaker:** If it's not raining how long does it take to pump it down to the zero?

**Tim Connell:** If we are dry and we have 11 pumps operating, you can pump the basin from 4 to zero in 2.3 hours. With eight pumps operating, you can pump it from 4 to zero in 3 hours. Now, is that way we going to actually do it? Probably not. Depending on what's going on. If you don't have an impending rainfall coming you will probably pump it down slower if the gates are closed further in advance. Those are all those operating parameters that will require an analysis of the event at the end and the actions need to be tailored to that event at the end. It's complicated but that's the way it goes.

**Male Speaker:** Are the pumps American made?

**Tim Connell:** The pumps are made by Fairbanks Morse in Missouri.

**Male Speaker:** We don't have many components coming from Japan I hope?

**Tim Connell:** Just the reactors. The engines are Caterpillar. The gears were made in Texas and the pumps are Fairbanks Morse.

**Male Speaker:** So we can say all of it is American made. Is it still the largest pumping station in the world?

**Tim Connell:** Yes that we know of. There is an irrigation pump station that is close to it – the Grand Cooling Dam – but it's pretty close; a different type.

**Male Speaker:** Is there a water level where the parish pumps capacity drops to the point where the WCC pumps are equal or greater than that?

**Tim Connell:** At elevation 8, which is not a good elevation to have, my understanding is that they are about 67% of their capacity, which would bring it pretty close.

**Male Speaker:** But there is nothing like 4 or 5 feet?

**Tim Connell:** No. There are stations along the canal where some of the pump stations are being revamped and upgraded. At one station at elevation 4 they were pumping so...you will expect that the pump stations along the canals will be improved with time also.

**Chris Accardo:** You are asking excellent questions. A few years ago we went through this with the outfall canals and there was a lot of concerns about whether the pumps would work. We couldn't wait for the first hurricane season to turn those pumps on because once we did we established a certain amount of confidence. I'm not convinced that we will do that yet, but I can understand your concerns as it's a new structure with a lot of pieces that have to fit and



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how the communications will work, but y'all are asking some good questions. Until we probably go through this cycles your concerns will be ongoing. I hope we never....that's a much better...

**Male Speaker:** What is the latest estimate on the completion, 68 or 70% completed so far?

**Tim Connell:** We are right at 70%. Once the gates become operational we will jump there. Just to let you know something about the rainfall tables, the 2-day, 10-year rainfall is 102. Inches and the 4-day is 11.1 inches. The 100-year rainfall event, the 24-hour is 13.2 inches and the 4-day is 17 inches of rain. We don't an infinite supply in rainfall, at least in modern times as documented by the National Weather Service. Thank you.