

MINUTES
INLAND WATERWAYS USERS BOARD MEETING NO. 37
PITTSBURGH, PENNSYLVANIA
NOVEMBER 3, 2000

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The following proceedings are of the Inland Waterways Users Board meeting held on the 3rd day of November, 2000, at the David L. Lawrence Convention Center, Pittsburgh, Pennsylvania, Mr. W. Norbert Whitlock, Chairman, presiding. Inland Waterways Users Board (Board) members present:

Mr. W. Norbert Whitlock, Senior Vice President, American Commercial Barge Line Company (ACBL) (Board Chairman).

Mr. Larry R. Daily, President, Alter Barge, Inc.

Mr. J. Stephen Lucas, Vice President, Louis Dreyfus Inc.

Mr. Markos K. Marinakis, President and CEO, Marinakis Chartering, Inc.

Mr. Daniel P. Mecklenborg, Vice President and General Counsel, Ingram Barge Company.

Mr. Timothy M. Parker, Jr., President, Parker Towing Company, Inc.

Mr. George H. Shaver, President, Shaver Transportation Company.

Mr. Lester E. Sutton, Manager - Government Affairs, Kirby Corporation.

Also attending the meeting was **Mr. Ronald G. Stovash** as a substitute for **Mr. William G. Rieland**, CONSOL Energy Company.

Also present were the official Federal Observers, designated by their respective agencies as representatives:

Mr. P. Tod Schattgen (as a substitute for **Captain David B. MacFarland**), National Oceanic and Atmospheric Administration (NOAA) (U. S. Department of Commerce).

Mr. Nicholas Marathon, U. S. Department of Agriculture (USDA).

Ms. Bonnie M. Green, Deputy Maritime Administrator for Inland Waterways and Great Lakes, and **Mr. Robert G. Christensen**, Maritime Administration (MARAD) (U. S. Department of Transportation).

Ms. Claudia L. Tornblom (as a substitute for **Dr. Joseph W. Westphal**), Principal Deputy, Office of the Assistant Secretary of the Army (Civil Works).

Official representatives of the Federal Government for conduct of the meeting and administrative support of the Inland Waterways Users Board were the U. S. Army Corps of Engineers officials as follows:

Major General (MG) Hans A. Van Winkle, Executive Director, Inland Waterways Users Board, Director of Civil Works, Headquarters, U.S. Army Corps of Engineers.

Mr. Norman T. Edwards, Executive Secretary, Inland Waterways Users Board, Civil Works Planning Division, Headquarters, U.S. Army Corps of Engineers.

Mr. Mark R. Pointon, Executive Assistant, Inland Waterways Users Board, Navigation and Water Resources Applications Division, Institute for Water Resources, U.S. Army Corps of Engineers.

Staff support provided by the U.S. Army Corps of Engineers were as follows:

Mr. David V. Grier, Navigation and Water Resources Applications Division, Institute for Water Resources, U.S. Army Corps of Engineers.

Mr. Michael F. Kidby, Civil Works Operations Division, Headquarters, U.S. Army Corps of Engineers.

Mr. Steven J. Hudak, Civil Works Programs and Project Management Division, Headquarters, U.S. Army Corps of Engineers.

Program speakers in order of appearance were as follows:

Mr. Norman T. Edwards, U.S. Army Corps of Engineers, Headquarters, Civil Works Planning Division, *WRDA of 2000 Status*.

Mr. David V. Grier, U.S. Army Corps of Engineers, Institute for Water Resources, *Status of the Inland Waterways Trust Fund*.

Mr. Steven J. Hudak, U.S. Army Corps of Engineers, Headquarters, Civil Works Programs and Project Management Division, *FY 2001 Funding for Inland Navigation Projects and Studies*.

Mr. John R. LaRondeau, U.S. Army Corps of Engineers, Northwestern Division (Omaha Office), *Status of the Missouri River Master Manual*.

Mr. David A. Tipple, U.S. Army Corps of Engineers, Rock Island District, *Upper Mississippi River Navigation Study*.

Mr. Gerald J. Dicharry, Jr., U.S. Army Corps of Engineers, New Orleans District, *Status of Inner Harbor Navigation Canal (IHNC) Lock Project; and Status of Bayou Sorrel Lock and Calcasieu Lock Studies.*

Mr. M.K. Miles, U.S. Army Corps of Engineers, Headquarters, Civil Works Engineering Division, *Electronic Charting.*

Mr. Robert C. Patev, U.S. Army Corps of Engineers, New England District, *Results of Barge Impact and Barge Crushing Experiments.*

Mr. Roger A. Burke, U.S. Army Corps of Engineers, Mobile District, *ACT-ACF Tributary Waterway System.*

Mr. Daniel E. Steiner, U.S. Army Corps of Engineers, Great Lakes and Ohio River Division, *Overview of the Ohio River Navigation Program.*

Mr. Paul J. Hanley, U.S. Army Corps of Engineers, Great Lakes and Ohio River Division, *Ohio River Mainstem Study and Proposed Environment Program.*

Dr. T. Randall Curlee, Oak Ridge National Laboratory, *Ohio River Navigation Investment Model (ORNIM).*

Mr. Larry J. Bibelhauser, U.S. Army Corps of Engineers, Louisville District, *Status of Olmsted Locks and Dam Project.*

Mr. Henry A. Edwardo, U.S. Army Corps of Engineers, Pittsburgh District, *Status of Monongahela River L&D 2-4 Replacements Project.*

Mr. George E. Flickner, U.S. Army Corps of Engineers, Louisville District, *Status of McAlpine Locks and Dam Project.*

Mr. Michael Keathley, U.S. Army Corps of Engineers, Huntington District, *Status of Marmet Locks and Dam Project.*

Mr. Don B. Getty, U.S. Army Corps of Engineers, Nashville District, *Status of Kentucky Lock Project .*

Mr. Demi O. Mack, U.S. Army Corps of Engineers, Huntington District, *Status of London Locks and Dam Major Rehabilitation Project.*

Mr. Harry Simpson, U.S. Army Corps of Engineers, Great Lakes and Ohio River Division, *Innovative Initiatives for Navigation Projects; and Status of Ohio River PED Projects - John T. Myers & Greenup L&Ds.*

During the public comment period, a statement was made by **Mr. Joseph E. Lema**, Vice President of the National Mining Association.

The 37th meeting of the Inland Waterways Users Board began with Chairman W. Norbert Whitlock calling the meeting to order.

(Thereupon Board Meeting No. 37 began at 9:30 a.m.)

MR. NORMAN EDWARDS: I would like to welcome you to the 37th meeting of the Inland Waterways Users Board. Before we start the meeting, we are obligated to read for the record that the Users Board was created pursuant to Section 302 of the Water Resources Development Act of 1986.

It provides the Secretary of the Army and the Congress with recommendations on funding levels and priorities for modernization of the inland waterways system.

The Board is subject to the rules and regulations of the Federal Advisory Committee Act.

The U. S. Army Corps of Engineers is the sponsor of the Board and provides the Executive Director, the Executive Secretary and all normal support activities.

This is a Sunshine meeting, and as such is open to the public. The proceedings are being recorded and a transcript will be available shortly after the meeting. Mr. Chairman?

CHAIRMAN W. NORBERT WHITLOCK: Thank you, Norm. First off, on our agenda I would like to call on the district engineer for the Pittsburgh District for his opening comments.

COLONEL DAVID RIDENOUR: Thanks, Norb. Good morning. On behalf of my boss Brigadier General Robert Griffin, commander of Great Lakes and Ohio River Division and its seven districts, I would like to welcome you to Pittsburgh and this meeting of the Inland Waterways Users Board.

I can't tell you how excited the Great Lakes and Ohio River Division is to participate in this meeting in Pittsburgh. I thank you for this opportunity and for the opportunity to share with you the great things that are happening in this division's area.

We are extremely fortunate to have two of the Army Corps of Engineers largest construction projects in our area at Olmsted on the Ohio River and at Braddock Dam on the Monongahela.

Yesterday the Pittsburgh District gave us a look into the future at one way that we, the United States Army Corps of Engineers and the Users Board, can save time and money through the use of innovative methods of construction as we modernize our navigation facilities.

I guess my biggest unresolved issue or question from yesterday is how did the Users Board know that the weather in Pittsburgh would be perfect on the 2nd of November. With

insight like that or the ability to make the sun shine and the water calm, would you folks mind staying through the winter?

I want to thank you for the opportunity to support your meeting. I want to thank all of you for your foresight, hard work and leadership that has and will continue to enable us to modernize our navigation facilities. Thank you very much.

CHAIRMAN WHITLOCK: Thank you, Colonel. Next on our agenda will be Major General Hans Van Winkle, the Director of Civil Works for the U. S. Army Corps of Engineers.

MAJOR GENERAL HANS VAN WINKLE: Thank you, Norb. Good morning everybody. Everybody looks like they have recovered from a great trip yesterday.

I would like to add my personal thanks to Pittsburgh and all the employees of the district and all of the other folks that helped make that happen. I thought that was a really remarkable trip.

Certainly as a member of the Corps of Engineers I was heartened by the folks of the Pittsburgh District and all the great work that they are doing. My personal thanks to you, Dave, and the folks associated with that.

I know some folks were not able to attend. I was talking to Mr. Marinakis this morning and his son is a student here at Carnegie Mellon. I said that we're Tours 'R Us. I offered the opportunity for his son to take a personal tour at some point.

For those of you who haven't had a chance, I'm sure we could arrange for a visit out there to look over the site, the various sites. I would urge you to do that because it's important that you all understand how your money is being spent.

I feel proud as a member of the Corps of the great work that our employees are doing. I would offer that opportunity to those of you who were not able to attend. We could arrange some short personalized tours to get you out there and have a look at that.

First of all, I would recognize our Federal Observers. Nick Marathon is here from the Department of Agriculture (USDA). He has been officially designated as the observer as of the 6th of October. We're glad to have Nick here. Bonnie Green is here representing DOT's Maritime Administration (MARAD). From NOAA (National Oceanic and Atmospheric Administration), Tod Schattgen, a regular participant, is here. We're very pleased to have Ms. Claudia Tornblom representing Dr. Westphal and the Office of the Assistant Secretary of the Army for Civil Works. I'll keep my remarks fairly short to make sure that she has plenty of time to tell us her view of the world.

Just very quickly, we're going to have some detailed reports. Many of us had hoped to have our authorization bill done. I remember talking early in the spring when the indications were this year we're going to get our Water Resources Development Act (WRDA) bill early in the session.

This may be like the Boston Tea Party. We may have somebody riding in this morning to tell us the House has passed the WRDA bill. We know the Senate has done their thing to the bill. The House, as we were told, is very close to agreement on what to do. We'll get a little brief out on some details, but again, as of this morning it is not passed and we'll keep you informed on that. I think a variety of you had been aware of what's going on with the authorization bill.

It is certainly an exciting year in terms of our budget. I think you all will be pleased with the result, but the process has also been very exciting this year. My experts tell me I believe sometime in the mid-seventies when we had a veto of the Energy and Water Bill, the Energy and Water Bill usually passes easily, is a bill that sort of draws members together because of their mutual interest in water related projects.

This year, of course, we had a veto and one House voted to override the veto. The other House chose not to even vote. So they went back to the drawing board and crafted the compromise.

I think the fact that we had the veto and the rhetoric sort of indicates, I think, the level of national interest in these issues. I think we, certainly in the Corps, are observing that and analyzing it and trying to figure out what all that means in the larger picture.

I think the one lesson that we probably all agree with is that waterway issues are increasing in awareness and increasing in their scope. I think that trend will probably continue, not that I'm predicting more vetoes of water bills, but I think the hype and interest associated with it is a pretty good conclusion. So we'll see.

As I said, we have a good budget this year and we'll talk in more detail about that.

This was to have been Mr. Ebetino's final meeting as the vice chair. Unfortunately, he couldn't attend. I would like to just note my thanks to him. A couple of times he subbed for Norb and did just a fabulous job working through the issues and working the agenda items. He was certainly a valuable addition. I will miss him. I wanted to have my personal thanks to him. We will pick an appropriate time. We had an award for him today. We will pick another time when we could give that to him.

The last thing I have this morning is I want to inform you of something that we have been doing. We in the Corps believe one of our responsibilities is public information, listening to the American public and what they have to say.

About a year ago we thought it would be useful to do the listening sessions which have gained some currency overall and talk about water related projects and water related issues. We had a national agenda. We went out to thirteen different sites. We published this little pamphlet called America's Water Resource Challenges. We went out in the communities and completed all of those.

We had a national session on the 24th of September in San Diego and we're going to have our final session which is a national wrap-up session and we're doing that in Washington, D.C., on the 9th of November.

It's an open meeting. People are welcome to attend. It's at the Crystal Marriott Gateway. Get with Norm or myself, anybody here on the Corps of Engineers team, and we'll give you the details on that.

You are certainly invited to come and participate in that. We will give a wrap-up of the listening sessions of what we've learned listening to the various regions and then having engaged in some national level dialogue.

The intent really is to publish a report in the springtime once we have had a chance to analyze and congeal all the information and make that available then to continue our dialogue in terms of prioritization decision making for America's water resources.

I commend that to you if you have an opportunity to attend. I think that's turned out to be a very good program for us.

Mr. Chairman, that's all I have. I'll turn the agenda back to you.

CHAIRMAN WHITLOCK: Thank you, sir. Next on the agenda is Claudia Tornblom who is here representing Dr. Westphal today, Assistant Secretary of the Army for Civil Works.

MS. CLAUDIA L. TORNBLUM: Good morning. I'm happy to be here to represent the Assistant Secretary of the Army for Civil Works.

I'm very sorry I missed your tour yesterday. I have heard from a number of people this morning what a wonderful tour it was.

It brought to mind my first field trip when I started as a budget examiner at the Office of Management and Budget (OMB) in late 1979. I watched the construction of the cofferdam at Lock and Dam 26. That was my introduction to Civil Works projects.

The thing I remember most clearly is they had one piling in when I arrived at the project site and there was a workman sitting up on top of it in a little saddle and the crane lowered down the next piling to interlock into the one he was sitting on and he sat there and guided it down into the slot about three inches in front of him. I was pretty impressed with the quality of the construction workers when I watched that.

I wanted to just share with you what we know about the transition budget process. I spoke yesterday with the acting division chief at OMB to see if they had any more information on the budget process.

Basically the Administration is breaking the mold for a transition budget process. At times in the past -- and I have participated in the transitions from Carter to Reagan, Reagan to Bush and Bush to Clinton -- the sitting president always submitted his last budget which was normally a restatement of the Administration's policies and then the next president would come and amend it very shortly after taking office.

In this case the Administration has decided to send up a policy neutral current services budget with very little detail. We have not submitted a budget to OMB this fall. We have not had any budget hearings with OMB. There will not be a formal budget process until after the new president is inaugurated.

The level of detail that the current Administration will be sending forward is pretty heavily aggregated beyond the function level which is basically -- Function 300 is the natural resources function, and somewhere subsumed in that is most of the Civil Works program. So there will be very little information programmatically sent forward.

The Administration is going to take that opportunity to present an accomplishments report, which I guess they'll have to send it out before January 22 even though their budget is not due until the first Monday in February. They'll work that out.

In the meantime, the Assistant Secretary and our staff is working very closely with General Flowers, General Van Winkle and the Corps staff to develop alternatives, look at requirements, options for new investments for all of the candidates that are ready to go, entertaining and doing some analysis on some policy options so that we will all be ready to move quickly.

Hopefully, it will be when the transition team comes in and we won't have to wait until the end of January to start working with them, but November through January we'll basically be working for two presidents which is a remarkable experience.

When I started at OMB the then division chief called everyone in on Reagan's first day in office and gave us a speech about the privilege of participating in the peaceful transfer of power which was very interesting to be a career employee and to be a part of that.

What does this mean for the Civil Works program? What we know so far is, of course, the current enacted level for 2001 is \$4.5 billion. If you translate that into a current services budget for 2002, just add inflation at the Administration approved rates. The budget that this Administration will send forward would be \$4.7 billion. Once you add inflation to this year's numbers, that's what it comes down to.

As I said, we have been working hard on making sure we're ready with alternatives and ideas to propose to the new Administration as well as all the documentation we need for a normal budget. I'm very excited about the progress we're making working together on this.

Just two weeks ago I attended the senior leader's conference which was General Flowers' first work week as the new Chief of Engineers. Several other people were there, too. General Van Winkle played a very important role in that conference.

He said this is my opportunity to give my view of the world. I just want to close by telling you my view of the world right now is that it's good. We're moving forward. There is a lot of energy and optimism about the program and I'm excited to work on it right now. Thank you.

CHAIRMAN WHITLOCK: Thank you. At this time I would like to also express my thanks to the Pittsburgh District for the fine efforts that they put forth yesterday in conducting the tour and the briefings. As I mentioned yesterday afternoon, I thought the briefings were very professional, very high quality. Colonel, you should be very proud of the staff that you have here in Pittsburgh.

Also, I would like to thank DINAMO and Barry Palmer. I don't know if Barry is here yet this morning, but all the other people in the Pittsburgh area, the various industries in the Pittsburgh area for sponsoring much of the trip, as well as a reception yesterday afternoon. I want to thank you for that.

Just a few brief comments. We have a very, very heavy agenda here today. We're going to try to move along. I know several have planes that are out of here around the 6:00 time frame. So we're going to hopefully try to wrap up no later than about 3:30.

I would just like to comment further. As you know, the last meeting we had out in Portland we spent a great deal of time understanding some of the environmental issues affecting the salmon in the Pacific Northwest.

Some of the meetings that we do plan for next year will probably -- we've been talking about maybe having one where we could understand more of the issues around the Florida Everglades. One might ask why are we having those kind of meetings to understand those issues. I think it becomes an issue that all of us concerned with the inland waterways infrastructure need to understand the competing needs for funds as we move forward.

I would like to also compliment General Van Winkle and all of his staff with the fine execution that they did on projects in the Great Lakes and Ohio River Division this year. We had a lot of money go that way. It looks like the adds to some of the budget requests are pretty significant. We are looking at \$170 to \$180 million in appropriations for projects on the inland waterways system just in the Ohio River Division.

That is moving closer to a theme that you heard me speak about on several occasions, that we need to be somewhere in the range of the \$300 million mark a year in total appropriations, that the Inland Waterways Trust Fund can fund that level and still draw down on the Trust Fund balance and still maintain a positive balance in the Trust Fund.

So we're moving in that direction. I think it's good progress. You can't get there in one step, but hopefully next year and the year after it will be moving closer to those targets.

In order for us to see the Corps construct projects at the full capability level that they are capable of doing, what does that do for us and what does that do for the nation is that it permits the nation to capture the benefits foregone by a protracted or constrained budget ceiling.

So what we see going ahead, I think I can generally concur with the remarks of Claudia that things do look better and that we're moving in the right direction.

It was very gratifying yesterday to see the new construction techniques being employed by the Corps. This is an issue that I talked about for many years in terms of using new construction and design techniques in order to reduce the cost. I don't know whether there will be any savings in this project, but it's certainly a great learning experience for the Corps if we eliminate the need to install expensive cofferdams.

I'm convinced that it will work. It's the way to go. There is a lot of other features of projects now being done in the same way. The guardwalls for Olmsted are being cast upon the Tennessee River in a similar fashion as the dam for Braddock; and they, too, will be floated into place. So I think it's very exciting to see a lot of the new techniques and new technology being employed. I would like to take my hat off to the Corps in that effort. Thank you.

We'll get the business out of the way. The first item of business is the minutes of our 36th meeting which was held in Portland back in the summer. From the Board members do I hear a motion to approve those minutes?

MR. DANIEL MECKLENBORG: So moved.

MR. TIMOTHY PARKER: Second.

CHAIRMAN WHITLOCK: All in favor?

BOARD MEMBERS: Aye. (Unanimously approved.)

CHAIRMAN WHITLOCK: The minutes are approved as submitted.

Next on the agenda we will move to a discussion by Mr. Norm Edwards who is filling in for Larry Prather concerning the status of the WRDA bill.

MR. EDWARDS: Larry couldn't join us today. We learned late yesterday that the Water Resources Development Act (WRDA) was close to being passed and that it was probably best for him to remain in Washington and to be there to help with any of the work that needed to be done to make that happen.

This was a very contentious WRDA this year, more so since '94 or '98. Evidently the real sticking point in this particular WRDA passage was the fact that the House is very interested in

environmental infrastructure and for the Corps to be involved in the environmental infrastructure, whereas the Senate is not. That became a very difficult point among the two Chambers.

This was resolved just very recently with the decision to remove environmental infrastructure from the House portion of the bill and to add it to the Labor and Health and Human Services Appropriation Bill for 2001. So it will be found there instead of in WRDA. It will be through the appropriations process. That released WRDA to come to the floor of the House this morning.

I spoke to Larry last night. He indicated to me that he was absolutely confident that it would probably be passed before we reach lunch today.

To tell you about some of the items in the bill that are of interest to you -- let me just touch on a variety of things, but I'll focus on things of great interest to the navigation community.

First of all, the Everglades, the Everglades is something that the Administration has been very interested in having happen. It is in the bill. When it passes it will be part of the bill. It initiates a 35 year comprehensive Everglades restoration plan with an estimate of total cost of near \$8 billion over those 35 years.

Also, there are a number of regional environmental restoration authorities somewhat similar to the authority that's already in place on the Mississippi River, the Upper Mississippi River Environmental Program. There are a number of them, but the ones that I think are of most interest to the group here are the Ohio River Mainstem Restoration Project, and you may hear some more in-depth this afternoon when the division discusses that, and also the Illinois River Basin Restoration Plan is also in there, as well as the Lower Columbia River and Tillamook Estuary Program, the Great Lakes Fishery and Ecosystem Restoration and Puget Sound.

There were also a number of reform proposals which I know have been discussed in previous Users Board meetings and there were some things that were passed in this WRDA. For the most part those which were very onerous were not included in the WRDA provisions. There are some, however.

The legislation contains two National Academy of Sciences studies. One will look at the value of independent review and the other will examine the evaluation methods that the Corps uses in the planning stages.

There is also a provision to increase public participation including stakeholder advisory groups where appropriate and also a provision to monitor the economic and environmental performance of up to five high value or controversial projects, and all other provisions were rejected by Congress.

In terms of the projects that are directly of interest to the group here, there were some which are specifically of interest; but there are individuals that are members of the Board who are interested in deep draft commerce. The largest navigation project in terms of total dollars

that was passed was the New York/New Jersey Deepening Project. So that is in WRDA. Also, L.A. Harbor was included.

In terms of inland authorizations, we did have two projects. Myers and Greenup were both included in here subject to an Engineer's Report by the end of this year, 31 December. You will also hear quite a bit about that this afternoon. So if you have any specific questions about those projects, I would ask that you hold them until then.

Unless there are any questions, that's what I have to provide you today on WRDA and perhaps we can have Larry come to a future meeting to fill out this as we know more about it. Thank you, Mr. Chairman.

CHAIRMAN WHITLOCK: Thank you, Norm. I would like to summarize just briefly the disposition of our 2000 annual report that was submitted to the Congress and to the Administration.

The priorities that were submitted in the report had Olmsted as our No. 1 priority. The Inner Harbor Navigation Canal Lock is our No. 2 priority. The project we visited yesterday, the Mon River Locks and Dams 2, 3 and 4, was Priority No. 3. McAlpine was Priority No. 4. Marmet project was Priority No. 5. Kentucky Lock was Priority No. 6. The completion of the Byrd facility was Priority No. 7, and Winfield was Priority No. 8.

On the rehab side we had Lock and Dam 24 on the Upper Miss as Priority No. 1. Priority No. 2 was Lock and Dam 3, which the Board has visited as well as Lock and Dam 24. The rehab of London Locks and Dam was Priority No. 3, and Locks 11 and 12 on the Upper Mississippi are Priority No. 4.

Those projects that are in PED or the Preconstruction Engineering and Design category, the Upper Miss was No. 1. Myers and Greenup were Priority Nos. 2 and 3.

For future studies we had the Upper Miss as No. 1. The Intracoastal Waterway, Bayou Sorrel and the seven Intracoastal Waterway Locks at No. 2. Priority No. 3 is the Upper Ohio area, Ohio River Mainstem Study. Priority No. 4 was Calcasieu. Priority No. 5 was the modifications for the Gulf Intracoastal Waterway along the Port O'Connor and Brazos River and those locations. No. 6 was the Black Warrior and the Tombigbee Waterway.

That was all submitted on September 1st. That was submitted to the President of the Senate and the Speaker of the House.

I want to thank all of the Board members who helped participate in preparation of the report. Lisa Fleming and Chuck Ebetino and others did a significant amount of work.

I would also like to thank Mark Pointon and Norm Edwards and your staff for helping with their fine efforts.

Next on our agenda, I would like to move to Mr. David Grier who will be giving us an update on the Inland Waterways Trust Fund.

MR. DAVID GRIER: Thank you, Mr. Chairman. You should have in front of you a couple of handouts, a one-pager, the Inland Waterways Trust Fund Status Report, and then some backup for that is a color copy of traffic projections graphs. Then in addition, the actual Trust Fund Analysis is in Tab 3 in your notebook.

The Trust Fund Analysis itself is unchanged from the last meeting in July. We don't have the new ten-year budget numbers to plug into the model yet. We should have those in time for your spring meeting and we'll see if there are any significant differences to report at that time, so I'll keep my remarks on the Trust Fund Analysis very brief.

With respect to the status report, I'll note that these numbers are a preliminary courtesy from Treasury. They gave us early estimates for the fiscal year.

Reporting on these numbers, the beginning balance for the past fiscal year was \$370.6 million, and this was up just under ten percent from the prior year.

The revenues estimated for the Fiscal Year 2000 is just under \$100 million. The prior year was \$104 million. So there was a slight decline of a little over four percent.

The interest earned for the period of Fiscal Year 2000 was about \$20 million, and this was up from \$14.6 million in the prior year, about a 37 percent increase. Some of that is attributable to the higher balance in the Trust Fund and I believe some of that is attributable to some maturing investments.

Transfers to the Corps were up significantly, just over \$102 million versus \$78 million in the prior year, about just over a 30 percent increase. This appears to be due to both higher appropriations and to some reprogramming of funds later in the fiscal year.

This gave us an end balance of about \$388 million up from \$371 million in the prior year or just about a five percent increase.

The major reasons that appear to be for the Trust Fund revenues is a slight decline in the long haul river traffic movements that tend to consume more fuel. You can see those on the color handout with the traffic charts.

In particular, farm products was down about two and a half percent and coal traffic was down over six percent. So those would appear to account for the decline in the revenues when actual traffic was up in total by a little over four percent, but that appears to have been short haul traffic and not as intensive for fuel consumption.

We do expect revenues to grow in the coming fiscal year. In particular, USDA and Sparks Companies have forecast an increase in corn and soybean exports up about 11 percent;

and if those estimates are realized, we should see a strong increase in the revenues in the coming year.

With respect to the Trust Fund model, as I mentioned, I did not rerun it since I didn't have new budget numbers. Just to summarize real briefly, as you can see, the balance is already quite high, nearly \$400 million. If projects continue to be funded at a baseline budget ceiling level, that balance will as you would expect continue to grow considerably.

In terms of if projects were funded at Corps capability levels, that balance will be gradually drawn down from the ongoing construction projects and would essentially be leveling out by 2007.

This draw down would preclude any major new starts in a period up through 2007 assuming other projects will be funded at capability levels. At less than capability other projects could be started in that interval.

I won't go into any more detail on the Trust Fund model since it was reviewed at the last meeting unless the Board has any questions.

CHAIRMAN WHITLOCK: David, you might discuss for the Board members the ongoing activity that you have with TVA (Tennessee Valley Authority), that kind of forecast that looks at ton-miles and in terms of trying to match the ton-miles up and the receipts and so forth.

MR. GRIER: Yes, sir. TVA has developed a modeling effort using Corps data. It's done at the dock to dock level, so it's at the raw level for the Corps report of waterway commerce data. They use the actual towboats and their horsepowers and from that they've been able to estimate the Trust Fund revenues generated by waterway segment.

I did not bring a tabulation of that with me today, but we do have that breakdown if the Board is interested in seeing that. It estimates that both by individual waterways and with respect to the total movement of one waterway and onto another waterway. For example, traffic coming from the Upper Mississippi moving throughout the rest of the system, and we were able to estimate what revenues were generated from that.

CHAIRMAN WHITLOCK: Are there any comments from the Board members? I would anticipate that receipts for this fourth calendar quarter to be down slightly until the buyers sort out what they are going to do with the genetically modified or altered products, but if you're right that Sparks and USDA forecasts hold, then 2001 should be much stronger in receipts. I would anticipate what we see as our fourth quarter, your first quarter, as receipts being down for this year.

Next on the agenda is Mr. Steve Hudak, who will be discussing the inland navigation projects and studies. Steve?

MR. STEVEN J. HUDAK: I handed out a revised chart like this one. The only difference between what's on this revised chart and what's in your blue book is that we added O&M projects to the list. We'll talk about those as we go along.

Looking at the first page, to tell you where we are now, we finished executing the FY 2000 fiscal year. We spent about \$1.55 billion in Construction, General (CG) which includes the Inland Waterways Trust Fund which is about \$300 million more than expended in FY 99.

We now should be starting to execute the 2001 program –

CHAIRMAN WHITLOCK: Steve, can I get you to move closer to the mike? I think the people in the back may have trouble hearing.

MR. HUDAK: We should be starting to execute 2001 now. As the General said, we have an Act. The President signed it on October 27th. We don't have the funds from this Act yet. We are still operating under the guidelines of the Continuing Resolution.

The Office of Management and Budget (OMB) gets 30 days after the Act is passed to apportion the funds, and we also need warrants from Treasury before we have access to the money, but we are continuing ongoing projects.

About the only difference you'll see is that we are obligating funds incrementally until about the end of November when we expect we'll have the apportionment, we'll have the warrants and we'll be able to send out what we call fund authorizing documents to the districts and then they could just march on in FY 01 as they normally would. So we are starting to execute the FY 01 program.

As Claudia mentioned, at this time we normally would have sent a submission to OMB and we would be answering a lot of questions about what's in our program and that has not yet happened. We made a recommended program presentation to the Assistant Secretary, but we have no feedback and we're just waiting for more instructions.

If you turn the page, we're getting into the actual dollars that were appropriated in FY 01. We had three General Investigation (GI) new starts, White River Navigation, the Ohio River Flow Commodity Study and basically the resumption of the study on the Coosa River.

We also had two PED adds, one for Ericson/Wood County which is shown on Page 2 of the list, and one for Weirton Port. So in the total GI program we had a budget of about \$21 million. We ended up with almost \$23 million for an increase of \$2 million.

The big changes came in the inland waterways construction projects where Olmsted went up almost \$18 million from the budget to the conference. Kentucky Lock went up \$15 million. McAlpine went up \$4 million. The Inner Harbor Navigation Canal Lock went up \$2 million. The Mon River Locks and Dams 2, 3 and 4 that we just looked at yesterday went up \$25 million. Marmet went up \$3.7 million.

Lock and Dam 11 on the Mississippi River which was a new start major rehab project did not get funded, so we'll have to consider that again for the FY 02 budget.

The bottom line for the Trust Fund projects was we budgeted about \$147 million. We got \$211 million for an increase of about \$64 million.

If you turn to Page 3, the big item of interest there is that Montgomery Point Lock and Dam had an increase of \$20 million with a budget of \$20 million to a conference amount of \$40 million.

So overall for the entire inland waterways portion of our Construction, General program the budget was \$344 million. We received a conference amount of \$428 million for an increase of almost \$84 million.

Then on Pages 4 and 5 we have listed all of the O&M projects that were associated with inland waterways and we divided them into two groups.

There is a group associated with the segments of waterways for which you pay the fuel tax, and there were 74 budgeted projects that represent pieces of the fuel taxed waterways. Then we have another group in here that are inland waterway projects but are not subject to the fuel tax, and we have 27 of those.

If you add them all together, we budgeted \$609 million. We received almost \$626 million for an increase of almost \$17 million.

When all things are considered, both GI, Construction, General and O&M, we budgeted \$974 million. We received one-billion-seventy-six-million dollars for an increase of almost \$103 million.

So the efforts that the advocates of inland waterways provided or expended were well spent and we did get substantial increases in our appropriations.

Are there any questions on any of the information? I also passed out a bar chart that shows from FY 96 through FY 01 what our budgets were. This is just for Inland Waterways Trust Fund dollars. So you would have to about double them to show the total program, both CG and Inland Waterways Trust Fund.

We compared the Inland Waterways Trust Fund dollars in the budget to the capability, to the conference amount and then to the balance at the end of each particular year from FY 96 to FY 01. Basically you can see that the budget amount is relatively flat. The conference amount is increasing. The gap between the budget amount and the conference amount from FY 96 was \$7 million. It dropped a million in '97, but then in '98 through 2001 it went up by \$10 million, \$28 million, \$25 million and then \$33 million in FY 01.

What this is displaying is that what we can budget for under the Administration ceilings and what the Congress appropriates in the conference amount is a widening gap. So we have the

disparity of treatment between our program in the Administration's eyes and our program in Congress's eyes. We seem to be diverging.

Even though we are getting increased appropriations, the Trust Fund balance is still growing because the revenues and the interest amounts are going up. We're not spending them fast enough. So I guess it sort of points out the obvious rather graphically. That's all I have, sir.

CHAIRMAN WHITLOCK: Any questions for Steve? If not, thank you, Steve.

Next on our agenda we are going to hear from John LaRandeau to discuss the Missouri River Master Manual.

MR. JOHN LaRANDEAU: Chairman, Board members, General, Ms. Tornblom, honored guests, thank you for the opportunity to present to you the update of the Missouri River Master Manual.

My name is John LaRandeau. I'm with the Operations team in Omaha. I'm part of the Northwestern Division located in the Omaha office. Our division is located in Portland. Rose Hargrave is the program manager for the Missouri River Master Manual study, but she asked me to present this to you today.

The status of our Missouri River Master Water Control Manual Review and Update is on hold pending completion of our formal consultation with the U. S. Fish and Wildlife Service under Section 7, of the Endangered Species Act.

That is pretty much our status, but I'll go on and give you a few more details. These are the creatures that we are consulting on, the interior least tern and piping plover.

We've already consulted several years ago on the operation of our dams. We're opening that back up again. Now we have a new endangered species called a pallid sturgeon which occupies the Missouri River, and that has caused us to consult.

Here is the schedule that has happened so far. We have a long history to the master manual review. It's about a ten year history, and I won't go into the details there. If anybody wants to talk to me later about the history, I can go into that.

The Board has been briefed for several years on this. Our Master Manual Water Control study, we stopped it because we wanted to include the consultation phase between the Fish and Wildlife Service and the Corps which might affect or may affect what we do in furthering our completion of the Master Water Control Manual.

The Endangered Species Act consultation for our basin covers three areas. Our current water control plan is for our dams and in the mainstem. We are consulting on the operation of maintenance of our Missouri River bank stabilization and navigation project. That is the lower river from Sioux City to the mouth.

We're also consulting on the Kansas River Basin. We have several dams on that basin. Downstream some birds showed up several years ago, so we're consulting there. The Kansas River, for those of you who are not familiar with that river, the mouth is at Kansas City.

We began on April 1. On the 21st of August a draft Biological Opinion was presented to us. It was decided to include because of a lot of interest in the basin to open it up to the public so that the public can look at the draft and provide comments to the Fish and Wildlife Service and these would be biological type comments.

On the 10th of October General Stroock, our commander from Northwestern Division, signed the letter and submitted our technical team's comments which also included the comments from the public.

That letter, by the way, is available to anyone who wants it. Just call Rose Hargrave or talk to me after the meeting and we can get a copy of that letter. I'll describe to you later about what that letter said in forwarding those comments.

Sometime in November the anticipated final draft Biological Opinion from the Fish and Wildlife Service will be available to us.

We pretty much know what the Fish and Wildlife Service is going to do as far as the final draft. We know it's not going to change much. By the draft they've opened it up to us the knowledge that we're going to have to coordinate certain additions to the basin, for example, increasing habitats.

Right now we're in the process of implementing a plan based upon what they have told us and what we expect. The implementation plan is being staffed by people from Omaha District and Kansas City District, technical teams, plus staff from our division office of water control folks and people like myself and Rose Hargrave.

The Missouri River Basin Association (MRBA), Indian tribes and the public want to be involved in that implementation plan and they will be part of that process.

We plan on providing an implementation plan and documents to coincide with the Biological Opinion that is also expected this month, the idea being that we can stay on track for our schedule for the Master Water Control Manual.

This is just a repeat explaining to you that the consultation is for the current water control plan. It's not for the Master Water Control Manual. That is being developed.

What are the expected outcomes? The expected outcomes, again, as some of you have reviewed the draft Biological Opinion, we can assume that the current water control plan will be in jeopardy of the species. Our objective is to operate the system of dams so that no jeopardy is in our Preferred Alternative.

By staying on track with our implementation plan we still plan on completing our revised draft Environmental Impact Statement in May of 2000 and implementing that plan in March of 2003.

I need to share something with you about the letter that General Strock submitted. In the draft Biological Opinion there was a push in the plan to provide some interim measures of some flow measures right away. The Corps believes and General Strock agreed that interim measures should not be part of the process. The process should continue.

Also in the letter he addressed that it's probably from our science that we don't agree with the idea of a spring rise, there wasn't enough habitat available. But for your information, the summer flow or split season scenario seemed to indicate from the biological and from the science perspective that there may be some advantages in terms of habitat development. So we are working on those flow ideas in reducing the Jeopardy Opinion in our Preferred Alternative that's coming up.

That's all I can say for now until documentation is submitted forward. You'll have a chance to review that this month hopefully sometime.

If there are any questions, you can talk to me now or in a few minutes or any time. I'll be here until 4:00. Any questions from the Board?

CHAIRMAN WHITLOCK: Thank you, John. Next on our agenda I would like to call Mr. Tipple to discuss the Upper Miss Navigation Study.

MR. DAVID TIPPLE: Good morning. Thank you for the opportunity to brief you on the Upper Mississippi River-Illinois Waterway System Navigation Study. I'm Dave Tipple. I'm with the Rock Island District, Corps of Engineers. I'm a project manager there. I'm here to speak for you on behalf of Denny Lundberg, the regional project manager for navigation at the Rock Island District.

I'm going to touch upon the status as well as the revised traffic for this system study. A quick reminder, we have gone through quite a formulation process and screening effort. We started with over a hundred measures or ideas to help improve the efficiency of the system. We've narrowed it down to these three measures which we'll carry forward in our formulation and development of alternative plans.

Here is a short list of alternative plans comprising the different groupings of the mooring facilities and locks, the 1,200-foot locks and guidewall extensions. We have gone through some formulation and will continue to formulate against those into the rest of the study.

Earlier this year the study team gathered a lot of the information that was available and did some formulation and was coordinating that formulation internally. Headquarters in the January/February time period of 2000 asked for a Headquarters policy review on the formulation to date as part of that process. They recognize that the original traffic forecasts that were completed earlier in the study process took into account traffic data through 1993.

Since that time, the last five or six years, the actual volumes moving on the Upper Miss and Illinois Waterway was less than anticipated in those original traffic forecasts so they asked us to take a look at those and with that lower or flatter volumes moving on the system, and the short-term impact and long-term forecast are part of the formulation as we look out into the year 2050.

We approached our original traffic forecast contractor Jack Fawcett and Associates and asked them to focus on the farm commodities. This shows the bulk of the commodities and a larger percentage are farm commodities on both the Upper Illinois and Upper Miss. So that's what their charge was, to focus on that.

This slide reflects the original traffic forecasts. The year 2000 is the first data point for the original traffic forecast on the Upper Mississippi River. I have a slide similar to this on the Illinois.

That 1993 data point reflects again the last historical data point that was used in the original forecast. The subsequent data points between '93 and '98 are the actual traffic volumes moving on the Upper Mississippi River. I understand the 1999 data hasn't been officially published, but it's around the 85 million ton range.

So again Jack Fawcett and Associates' charge was to focus on the grain recognizing the short term, what was happening on the short term, but based on the reasons behind that it really doesn't affect the long-term forecast that we need to incorporate into our formulation. It doesn't matter.

As part of the review process we looked at the General Agreement on Tariff and Trade, the Farm Bill, China as a net exporter, international financial crisis and genetically modified grain. With those considerations in view of how they approached that in the original forecast and as part of their report they felt that these items have dampened U. S. exports over the last few years, but they didn't feel that it really impacted the long-term implications for the original forecast.

One item they did point out was the crop shift that has occurred between corn, wheat and soybeans. They felt that this tradeoff had long-term impacts. Essentially what this is we see more acreage being planted to soybeans than corn long-term. There is less yield, less bushel per acre, for soybeans than there is for corn. In turn it means there is less volume potential to get to the river.

Also, with the less long-term volume of corn there is still domestic uses that will occur in the processing, the ethanol, the use of hog lots, that all impacts the volumes that could be available to reaching the group for export.

So they incorporated this information into the long-term forecast. The top two lines, the blue and the orangish line, represent -- again, this is the Upper Mississippi segment. The top blue line represents the original forecast between 2000 and 2050. The orange line represents the revised forecast.

So we're looking at in the near term around a ten million ton delta and up to 2050 close to 21 million, around anywhere from seven to 12 percent in any given year depending on what year you look at.

The next two lines represent the corn, the pinkish reddish line is the original forecast for corn and the line underneath that represents the revised forecast, a similar type lower trend.

For soybeans the bottom two lines are tracking pretty close. Soybeans will be a little more volume but then slightly less in the long haul.

There is a similar graph for the Illinois Waterway as for the Upper Miss with '93 as the cutoff point for the original forecast and the '98 data point.

In '99 there was probably around 44 to 45 million tons moving on the Illinois River system, and then the 2000 point and beyond was the original forecast done in the early part of the study.

This is a similar draft for the Illinois. The top line again is the original forecast and the orange line underneath it is the revised total forecast: five million tons in the near-term and up to ten million in the outyears, eight to ten percent less volume; and then the corn deltas and the soybean are underneath that.

Once we got the revised report in we had some independent technical reviewers take a look at the report, Denver Tolivar and John Midson, out of North Dakota State University. They gave us some feedback.

One point was a question of the methodology or techniques to extrapolate data out with a full 50 year planning horizon. Jack Fawcett and Associates used the ten year USDA forecast and extrapolated that out for 50 years. We had some clarifying discussion and they understood that approach.

The one point that they did question and still had concerns about was the use of a ten year USDA forecast or any forecast and extending that out 50 years. Certainly they recognize that when you go out and extend 50 years there is a lot of uncertainty in any type of projection that you do.

We consulted with the USDA and they ran it through their Economic Research Services office and gave us some feedback. They offered some alternative methodologies but in reality looking out in a 50 year planning horizon, they felt that overall the forecasts were reasonable and plausible. In turn we have adopted those revised forecasts for our formulation process.

As a result we have a schedule change. We have to incorporate those into our economic and environmental model and overall formulation process.

Earlier in the calendar year we had anticipated stepping out to the public in September with a draft report and draft of Environmental Impact Statement (EIS) for public review. We are now looking at that process being initiated in September of 2001.

Also, as part of the Headquarters process the team had a 60-day public review period. Headquarters and General Van Winkle's staff recognized the complexities of this system study and extended that public review period from the 60 to a full 90-day public review. So we will accept comments through December of 2001.

In turn the feasibility study has been moved from December of 2000 to April of 2002. At that time the report will be sent up to Washington for Washington level processing, an eventual Chief's Report and processing to Congress.

Here are some opportunities to check on the status of things and get information on the study groups in a little more detail.

I'll also offer up, if you're interested in further detailed discussion of the revised traffic and assumptions, on November 15th in St. Louis as part of the Upper Mississippi River Basin Association meeting there is a two-hour time block at that meeting for the navigation study. Chris Holiman of Jack Fawcett and Associates will be at that meeting to discuss the revised forecast and the independent review of comments in that process.

I appreciate the opportunity to present the Upper Miss study to you. Thank you.

CHAIRMAN WHITLOCK: Thank you, Dave.

MR. NICHOLAS MARATHON: Mr. Chairman, may I make a comment from the USDA?

CHAIRMAN WHITLOCK: Sure.

MR. MARATHON: We worked with Jack Fawcett's review and I wanted to further comment on what Dave said that we did indeed find this forecast feasible and plausible, but they were based on the '96 Farm Bill.

If we do see new changes in the next Farm Bill, those forecasts could change. It's just every year, every February, we do make new yearly changes and every month we make new changes, too.

If I could add one more thing, on November 28th and 29th in St. Louis, the USDA is going to have its second National Agricultural Transportation Summit. We will have a workshop just on the inland waterways. If you would like any information on that, I have some and we will have speakers from the Board and ex-members of the Board there to explain the Upper Mississippi and their business. If you want any information, I have it.

MR. CHAIRMAN: Thank you. I appreciate it. Any other comments? Steve?

MR. J. STEPHEN LUCAS: I don't remember this anymore. When did this study start?

MR. TIPPLE: April of '93.

MR. LUCAS: I've got to tell you, we're in the 21st Century. We're looking at nine years and \$70 or \$80 million and we can't get the answer? That's inconceivable to me in this day and age.

I understand the complexities of it and the biology and the opposition and all of that, but let me tell you, we ain't building the space shuttle here. I don't think it ought to be that hard or that costly. I'm wondering if it's not time to give it up. I'm beginning to think we're throwing good money after bad here just to perpetuate this study. As Dennis Miller said, I could be wrong.

CHAIRMAN WHITLOCK: I guess just to offer one comment, I think the Upper Miss study is extremely important and I think the Corps' track record over the years is that when they get challenged they normally have the data and the backup material that wins any challenge.

So knowing that the Upper Miss is probably going to be one that is contested, if it results in a recommendation of modernization. I know we're spending a lot of money and we're taking a lot of time, but because it is such a confrontational issue on the Upper Miss, I don't see any other way around because if it is challenged and it goes to the courts or what have you, then they will only be ordered to go back and do maybe what they didn't do and spend maybe more than what they are spending now.

I recognize the sensitivity that all of us have in the industry in spending a significant amount of dollars and the time it takes, but I feel that given the challenge ahead of us, I think I for one have mixed feelings, but I guess I for one do tend to support doing the study and ensuring that when we get to a conclusion that we have a viable document that we can all stand behind.

MR. MECKLENBORG: My comment would be I think it's a good idea for the Corps to inject a more up-to-date set of data and try to get as accurate as possible in terms of the forecast. The forecast, I would note, still provides for and predicts an increase in tonnage that's pretty dramatic over the forecast horizon.

Certainly looking at the current level of lock delays and inefficiencies on the Upper Miss and Illinois River systems it certainly looks encouraging from that standpoint.

I would just encourage also the Corps to consider in the event that this type of increased tonnage had to move by other modes what type of congestion either in rail or on our nation's highways might occur from what looks to me to be almost a 50 percent or more increase in tonnage over that planning horizon.

CHAIRMAN WHITLOCK: I would just like to make one other comment. The funds for this study are coming out of the General Treasury funds. They are not funds that get cost shared by the Inland Waterways Trust Fund. Only the engineering and design costs get shared out of the Inland Waterways Trust Fund.

So as a taxpayer we are all sensitive to expenditures, but from a Trust Fund standpoint we are not funding any portion of the study effort at this point.

MAJOR GENERAL VAN WINKLE: Certainly we are sensitive to the fact that this is taking a long time, although many of our studies last a long time. Of course, the more controversial they are, the more they tend to take.

Norb has been at this business much longer than I have. I think his comments are right on. As we try to make decisions or try to come to conclusions, our analysis has to stand multiple scrutinies. At this point our scrutiny has been largely coming from a public perspective, but ultimately we have to stand behind our results in a court of law and that's always the dilemma.

The process is a mandated one and applies to all agencies in this regard. So we have to follow the process. If we don't follow the process, then it doesn't matter what your conclusion is. Then you are going to be back to the drawing board in some sense.

We had a National Academy study about two years ago that looked at the Corps process. Although they made a number of recommendations, they found that our process was generally in line and was generally appropriate given the complexities and the size of our projects.

The Upper Mississippi study I don't think anyone can say has not been a fairly lengthy process, but we had hoped in fact to reach a conclusion prior to this.

I think in the interest of making sure that all sides were heard and of answering some challenges of data and some questions in the forefront we felt unfortunately that to proceed -- perhaps in other circumstances you would have had a report or at least a draft report on the table by now, but we had to make the decision that we did need to go back and relook at some of the data and come to some conclusions.

There is always obviously the case of a new Farm Bill, the new season, there are all sorts of -- clearly the factors change and one does have to reach a decision and conclusion at some point. We addressed that this summer when we had to make the decision that we could not go out on the street now and that was a tough one because where you're making 50 year projections essentially does it matter if you stop it today, tomorrow or yesterday.

We had debated the possibility of doing sensitivity analysis. One can remain within projections and simply handle the new data through sensitivity analysis. I think given the interest of having the best report, the best science, the best projections we can, we felt that was not a good way to go at this point.

It was a tough decision. If you want to know where the buck stops, I made that decision personally, that we could not come out with the report, that we needed to hold up. That was my recommendation that we hold up.

Again, the reason was that I just felt that we could not, given some of the questions raised without additional analysis, go on the table with something that could not withstand incredible scrutiny.

I was very sensitive to your comment. You do have to reach a conclusion. I just personally didn't feel it was the time. So there we are. That is the current schedule.

I am dedicated to achieving that schedule. I know probably other directors have said that on multiple occasions, but we are trying to get through this process. Again, it is something that will withstand very close scrutiny in this process.

I want to tell you also that it may be worth your while to note that in the WRDA bill that is about to pass there is yet additional scrutiny in that process. We have heard that the Congressional budget was quite good, yet in the WRDA bill there are a couple provisions that will add additional scrutiny to the process.

The Secretary will have the ability to have additional public input into that. There is more process into it. So one might conclude that not only from an administrative point of view but from a legislative point of view that there is a desire to have yet even more scrutiny, more public input, more process to that. So I don't think it's a trend, irrespective of where this study goes, that is going to go away.

So again, I think that is an indicator of the desire that there be some very close scrutiny. So that is where it is on the table. At what point do you say cutoff, it's the end of good data and a good, ideal time to come to the table and we just quite frankly did not feel we could do that at this moment.

So we have added yet more delays and more money, as you noted, but as one makes these decisions, these are the toughest calls you have to make and I did it. The buck stops here.

CHAIRMAN WHITLOCK: Thank you, sir. Next on our agenda is --

MR. LARRY R. DAILY: Excuse me, Norb?

CHAIRMAN WHITLOCK: Yes.

MR. DAILY: Larry Daily. I just want to ask a question on this status schedule. In the report it shows December of this year will be complete the ecological modeling and environmental impacts assessment. Will some of that information then be released into the public domain?

Dave, one of the problems we have is we're working very hard and it seems like we're reassessing the economic benefits or lack of benefits right now, but what we get hammered on by some of our opponents is a lot of misinformation is being spread about the environmental impacts and ecological system impacts.

From my review in talking with people involved in the study so far those issues have been covered very well. You have in my mind all the right answers about what this project will do to the environment.

I guess I would like to see some of that information get out there as facts instead of a lot of the myths and half truths that are being published by the people who don't have the information and are just trying to stop it any way they can.

MR. TIPPLE: Our desire to move the study forward is to get the draft report and the EIS together so we have the total picture for people.

I think my perception is we put a lot of the pieces out there, but we don't put the whole picture together and that slows the train down. The normal public forum that we discuss things is our Governor's Liaison Committee where we step out and we will try to schedule, if not an actual quarterly meeting that falls in line with the Upper Mississippi River Basin Association meeting, if we don't have a separate meeting the day before that, it will be part of the UMRBA meeting.

Also, we have our navigation environmental coordinating committee meetings and there is one scheduled for the end of November in Moline, Illinois. Those are public forums that anyone can comment and listen to what's being discussed.

As part of that meeting we are going to further discuss environmental mitigation strategy. Those are the forums that will present this information, but again, the desire is to get all the pieces of the pie together and go through this formally before we put the information out there.

MR. DAILY: The only other comment I have is if price of soybeans stays at \$4 a bushel, you may see some of that acreage going back to corn.

CHAIRMAN WHITLOCK: Next is Mr. Joe Dicharry with the New Orleans District. He'll be talking about the Inner Harbor Navigation Canal Lock Project.

MR. GERALD DICHARRY: Good morning everyone. As Norb said, I am Joe Dicharry with the New Orleans District. I'm the senior project manager for the Industrial Canal Lock Project.

Besides talking about that project, I'm also going to be talking about two other locks in the New Orleans District that are in different phases of the project.

The first one I would like to talk about is the Calcasieu Lock. It's located on the Gulf Intracoastal Waterway about ten miles south of Lake Charles, Louisiana. It was completed in 1950. The existing dimensions are 13 by 75 by 1,206 feet long.

The lock has been experiencing navigation delays up to two hours over the last number of years and, therefore, it needs to be replaced.

We have just recently got approval from Headquarters to begin the feasibility phase of this project. We started the feasibility in June of this year, so we have just scratched the surface on the feasibility study.

The total study cost for this feasibility phase is about \$3.2 million, but it's a hundred percent federally funded right now.

We are looking at a number of different sizes of locks in our feasibility ranging from 75 feet by 1,200 up to 110 feet by 1,200 feet.

For the Calcasieu Lock shown here the traffic annually is about 39 million tons. Eighty percent of that is composed of petroleum, petroleum products and industrial chemicals.

This year we've got about \$339,000 to conduct the study. We have a lot more capability, but we just didn't get enough capability in our funding for this particular study.

The scheduled completion date for the feasibility phase of this project is 2004 depending on adequate funding levels over the next three or four years.

One last thing that I would mention about this one is that we've been coordinating with the Gulf Intracoastal Canal Association down in Louisiana to get the information necessary for this project.

Like I said, we've just scratched the surface on this one and we just started the feasibility so there is not much else to report on this one.

The next one I would like to talk about is the Bayou Sorrel Lock. It's located on the alternate route of the Gulf Intracoastal Waterway between Port Allen and Morgan City.

The Bayou Sorrel Lock along with the Calcasieu Lock was investigated earlier as a systems analysis of all of the locks on the Gulf Intracoastal Waterway west of the Mississippi River, starting with Algiers and Harvey Lock going all the way over to Calcasieu.

This was a comprehensive systems analysis to determine the priority and the need for lock replacements on the western Gulf Intracoastal Waterway.

Bayou Sorrel Lock was determined in an initial study to be the first one needed to be relocated and Calcasieu was the second one.

Bayou Sorrel Lock is a feature of the Atchafalaya Basin Floodway Protection Project. The Atchafalaya Basin protection levees come into the lock and extend this way as the pointer shows. The lock just passes the Gulf Intracoastal Waterway traffic through that levee.

There are two main problems and needs of replacement of the lock here. The first and most important need is that the lock is eight feet below the design grade for the Atchafalaya Basin Floodway. So most of the cost of this lock replacement will be borne by the Mississippi River and Tributaries (MR&T) appropriation and not cost shared as part of Inland Waterways Trust Fund.

Again, the other problem is the delays at the Bayou Sorrel Lock average about five hours, so it needs a larger lock there to be able to more efficiently pass the navigation through that area.

We are just about completing our feasibility study on this particular project. After looking at a number of different alternatives and a number of different plans, we have tentatively selected a new lock 110 feet wide, 1,200 feet long and 15 feet deep as the tentative recommended plan. In comparison the existing lock is 56 feet wide, almost 800 feet long and about 14.8 feet deep.

This gives you a little information about the economic analysis of just the inland navigation system.

This is the cost allocation. You see the total cost is about \$82 million, and \$63 million of that is going to be coming out of our MR&T appropriations. So a little bit less than \$20 million is going to be cost shared with the Inland Waterways Trust Fund. You can see the break-out there of about \$9.8 million each.

Of that \$19.6 million, you can see that we have a very healthy benefit cost ratio of eight and a half to one for that particular increment.

The draft report is scheduled to be submitted this month with a final report to be approved by June 2001.

We expect to initiate PED (Preconstruction Engineering and Design) next fiscal year. We have enough money in the budget to complete the feasibility this year and we expect to get a new start in PED next year to begin this project and complete PED by 2005 with construction starting in 2006. Of course, that's all dependent on funding levels over the next few years.

That completes the briefing on the Bayou Sorrel Lock. As you see, Calcasieu is in the early stages of feasibility. The Bayou Sorrel is in the late stages of feasibility and now we are going to the Inner Harbor Navigation Canal Lock which we are about ready to get started on construction finally on this one. I'll give a little short briefing on that.

Of course, the Industrial Canal Lock is part of the inland system. 60 percent of the traffic that goes through this lock in New Orleans originates or has as its destination the upper inland system from the Ohio, Upper Miss, Missouri River systems and all. So it's truly a vital link in

the entire inland system as well as a vital link in the Gulf Intracoastal Waterway system from Florida to Texas.

The lock was built in 1921. As you can see, the type of vessels that it was designed for at the time has changed considerably to today's vessels.

This is one that, of course, has been targeted for replacement for over 40 years. The original authorization for this project was in the River and Harbor Act of 1956.

Of course, as I said, it's critical to the nation's commerce. Your annual report, the Board's annual report, has named it the No. 2 priority replacement lock in the system.

The need for the lock is that it's just too small. The average wait is about ten hours getting through this lock, but many times it can range up to 24 and 36 hours during high river conditions and all. So it's a highly congested lock.

I'll go briefly through a few slides talking about the construction sequence and how we are going to construct this lock. Just to orient you, this is the existing lock. The Mississippi River is at the bottom. This is the Gulf Intracoastal Waterway going toward the east here.

We're going to be using a similar construction technique as being used here at the Braddock Dam. We're going to prefabricate the lock at an off-site location and float it in to a location right here is where the ultimate new lock is going to be constructed.

As I said, it's going to be prefabricated and floated to a work platform here to put the finishing touches on the lock modules and then floated into place here after a prepared foundation has already been poured in the bottom of the channel, a pile supported foundation that the lock would then be placed on using similar methods as we were described yesterday at the Braddock Dam.

The important feature here is that while all this work is going on in the middle of the channel we are going to have a bypass channel around the construction site so the existing lock and canals will continually be used during the entire construction sequence so there won't be any shutdowns to navigation for this project.

Once we have floated in four sections of this lock we would sink it on this prepared foundation, tie in the flood protection on both sides of the lock and then go down and start demolishing the existing lock. But before we demolish that existing lock we would dredge a bypass channel around it so again you would have no delays to navigation during this phase of the construction.

Dare I say no delays, there may be a couple hours or so delay while we are demolishing the existing lock when explosives are being set off. I don't think anybody wants to traverse that bypass channel while we are blowing up the old lock. So we may have a few hours delay there, but no days or months or any kind of delays like that.

Also, what we're going to be doing is a temporary bypass bridge for this St. Claude Avenue Bridge. It will span across the bypass channel here to be used during the demolition activities.

This is a highly traveled artery for commuter traffic for the city of New Orleans. That's why we had to build this temporary bypass channel to minimize some of the impacts on the area.

Once we demolish the old lock we would build a new St. Claude Avenue Bridge. We would put in some mooring facilities in the canal that are much needed down in that area because right now there are no mooring facilities for barges to tie up waiting to come into the lock.

So this will help the efficiency of the operation by having these mooring facilities here in a protected area rather than having them nose up on the bank of the Mississippi River waiting to go into the lock or nose up on the bank of the GIWW-MRGO back here waiting to go into the lock from that area on that side.

This gives you the cost of the project. We are around \$585 million. This gives you the breakdown between the utilities owners, around \$25 million, the Inland Waterways Trust Fund about \$ 240 million, our regular appropriations of about \$290 million and the Port of New Orleans is cost sharing in the deep draft increment of this project to the tune of about \$28 million.

I'll point that out now that the size of the lock that we are going to be building is 110 feet wide by 1,200 feet long with a sill depth of 36 feet.

One of the parts of the authorized plan is the community impact mitigation plan. Even though we are not going to be relocating a number of houses and destroying neighborhoods in the area, we are still going to have impacts on the communities on either side of the existing canal.

Congress authorized a community impact mitigation plan in the WRDA of '96. It is now estimated to cost about \$35 million. We have actually started to implement some of that mitigation up front.

Where are we? We have established a community based mitigation committee to help us and to make some recommendations concerning that mitigation plan.

We have initiated a job training program as part of that mitigation plan to start training the local people in the area to be able to work on the construction contracts that's going to be needed for this project over the next ten to twelve years.

We have completed a pile test contract in last fiscal year which included noise and vibration monitoring of that to show that the pile driving activities are not going to be the big noisy monster that many of the people think it's going to be when we start driving the piles for the lock.

We've tested a number of different types of piles and a number of different pile driving equipment to determine what's the most effective and least disruptive equipment to use in this area.

We've got three construction contracts scheduled for award. We've got an East Bank Industrial Area Demolition, that was all the businesses on the east of the canal here. We've got another contract ready for award, the demolition of this Galvez Street Wharf that was located here. We've got another levee and floodwall contract ready to be awarded that is south of St. Claude, between here and the Mississippi River. It extends beyond this line here.

We have gotten agreement with the Port of New Orleans on the value of the property which has been the sticking point that we've had over the last year or so. We've just got to dot the I's and cross the T's on some agreements to be able to award these contracts.

If all goes well, in fact, the final negotiations are taking place now while I'm here and maybe by the time I get back to the office on Monday we'll have a signed agreement such that we can start the construction.

The first one will be this TERC contract on the east side of the canal where we are utilizing an existing contract through the Tulsa District to just issue a work order against that contract because this contractor has a lot of experience in working in areas where there is some contaminated materials. There is some contaminated materials in this area here. None of it is hazardous, just contaminated.

So that work could start as early as the beginning of December. The other two contracts will be advertised, and we expect those to be under way by the January or February time frame of next year.

We've had a few lawsuits filed against us trying to stop the project. We have successfully withstood those legal challenges so far. Of course, there may be some more out there once we start advertising contracts, but the lawsuits have been on very minor points, not on the major issues and items associated with this project. So we feel pretty good about that.

The last two things, we are in negotiations with the port on a PCA (Project Cooperation Agreement), a project cost sharing agreement, for the deep draft increment of the project, but we are going to sign this right of entry for construction with the port to allow us to get started with these three construction contracts in the next few months.

So after a long time it looks like we may finally get this project started under construction. That's where we are right now.

I'll be glad to answer any questions on any of the three projects. I didn't stop in between. I'll answer any questions on Calcasieu and Bayou Sorrel that I can, too.

MR. LESTER E. SUTTON: I have a question on Calcasieu. It may have been answered when I was off the Board. First, let me say that the New Orleans District should be

commended by the way they worked with the industry on both Calcasieu and Bayou Sorrel really anticipating a lot of the problems and continuing navigation with as little disruption as possible.

On Calcasieu is the total purpose of that navigation -- and I'm looking at the percent that is going to be cost shared or is there going to be some percentage that is non-navigation like Bayou Sorrel?

MR. DICHARRY: Right now it is all considered navigation. There is some components of salt water intrusion and flood control, and that will be analyzed during the feasibility study to see if in fact there is some other funding sources that might cost share in that. Right now as far as the recon is concerned it shows as a cost share with the Inland Waterways Trust Fund.

MR. SUTTON: Will that be based on the original purpose of the lock or the actual usage of it? I guess my perception is most of the purpose of the lock is salt water control.

MR. DICHARRY: I guess the thing that you have to look at is the lock is being replaced because it is too small for navigation. The salt water intrusion feature and the flood control feature can be handled with the existing lock. So it might be kind of difficult to lay off some of the cost to some other purpose of the project.

MR. SUTTON: Okay.

CHAIRMAN WHITLOCK: Any other questions for Joe? If not, thank you, Joe.

MR. DICHARRY: Thank you.

CHAIRMAN WHITLOCK: Moving along, next on our agenda is Mr. Miles who will be talking about electronic charting.

MR. M.K. MILES: I'm M.K. Miles from Corps Headquarters Engineering Division. I appreciate the opportunity this morning to brief you on this topic. We have a handout going around on our plan for electronic charting. We also have about five CDs here with this briefing on it, if anybody wants an electronic copy of the briefing on electronic charts.

As I said, this is our plan. We wanted to brief it to you so you could get a better understanding of what we're planning to do and to get some feedback from you. As we go through this briefing there is a couple of spots we would like to get some feedback and work with you on this.

Basically there are two things involved in electronic charts. You need a positioning system and you need chart data.

In the first phase of this the Corps has been working with the Coast Guard since about 1994 to expand Differential GPS (Global Positioning System) beacon coverage that the Coast Guard put along the coast and the Great Lakes of the United States.

The Corps has been working with them to expand it into the inland waterways system. We have put up about a dozen of these transponder beacons to rebroadcast corrections to Differential GPS so that you can actually navigate the waterway real time GPS signals at about the two meter level.

Right now that's about 90 percent complete. The only spot we don't have coverage for is here between Pittsburgh and in Huntington up here in the Ohio.

We are working with the Department of Transportation, the Coast Guard, the railroads and so forth on a committee with them to try and get coverage up here in this area. One of the proposed sites would be the Hannibal Lock and Dam for a station up in here to finish off 100 percent coverage of the inland waterways system.

The other component is, of course, the data to drive the charts. So once you have both of these components in place, the Differential GPS signal and the chart data, then you can improve the safety and efficiency of navigation along the waterways.

The chart data also has two components to it. One is the inland system as you can see on the chart in green, and the other one is the coastal system which you see in the darker brown color.

We're working with NOAA (National Oceanic and Atmospheric Administration) on the coastal system. NOAA has the authority to chart the coastal waters of the U. S. The Corps of Engineers dredges and surveys and maintains these navigation channels, so we would be providing electronic data to them for upgrading of their charts as they move into the electronic chart world as well.

First, I want to show you a couple of screen captures from some typical commercial electronic chart systems and to point out to you that this is usually something you see on the bridge of the vessel.

The Corps of Engineers would not provide the system you see on the vessel. That comes from the commercial sector. What we would be providing is the data that you see there in the graphic on the right.

Of course, on the left you see the typical things you need for navigation, heading, course, speed, distance to go, time to go, course to steer, various warning lights and flashes that come on, horns that blow when you are too close to something when you are getting ready to run aground, when you need to make a turn and didn't, things of that nature to help improve safety and navigation.

Of course, if you are in the other room watching the soccer game, that's not going to help you. I don't know if you heard of the ferry that ran aground somewhere over in Europe. They had an electronic chart system on it, but they were watching a soccer game. So this doesn't guarantee safe navigation. This helps safe navigation.

This particular screen capture here came from Off Shore, Limited of Vancouver. It just so happens that the two examples I have are both Canadian companies here. The other one I'm going to show you is from another Canadian company called the International Communications and Navigation. Their acronym is ICAN. Everyone has a neat acronym.

This next screen capture looks a little like the first one, but what I want to point out to you is you can see the vessel there on the right coming across the center of the channel. You see the vessel is coming around here.

If he continues on this course, he will eventually cross this depth contour here. So you can see down in here the depth contour is in this block here. It's the next critical thing that he would face. Unlike radar, with this system you can see things under the water where radar just lets you see things above the water.

There is another similar screen capture. In this case the only thing different is if you look in the anti-grounding area here, you see pipelines. You can see if the vessel continues on its track, it is going to cross the pipeline in a certain amount of time if it continues on a certain course at a certain speed. So these are just indicators to the vessel operators to show them what is coming up.

This is the other commercial system which also comes out of Canada. As you can see, the displays look different. The pull-down menus are arranged differently here, but the basic chart information is the same as it was on the other commercial system.

In this case you can see the vessel following along its wait points here, but in this particular situation he's not following the planned line. He's going to cut across here and you can see the problems that may arise there.

Here is another screen shot from this system that displays what happens when the vessel gets off line. You can see the diagrams and circles there to help him navigate.

Of course, here in this screen capture you can see he has a real serious problem if he continues on the way he's going. He's going to run aground up here on this point of land.

So what the Corps of Engineers is proposing is what you just saw was this electronic chart display information system that has the full picture of everything. They were getting input into their computer from the gyrocompasses, the depth sounders, the identification system, water depths, GPS and things like that.

What the Corps of Engineers is proposing to do on the inland system is to provide the data here in this block, the data we call the electronic navigational chart data. The Corps would provide the data and the updates to the data that would then be fed into a commercial system onboard the vessel.

Here are some documented needs. It goes back to the early nineties and an Amtrak train wreck near Mobile, Alabama. You remember a barge on the inland waterways system hit a

bridge abutment and misaligned the track and the train came across and there was a terrible accident.

The National Transportation Safety Board recommended several things after that accident and one was that the Corps and the Coast Guard work together to develop electronic charts for the inland waterways system.

So when we responded to that request we said we would do two things. We would work with the Coast Guard to put up the Differential GPS beacon system along the inland waterways system which we've almost finished and the second part would be provide the electronic chart data.

We now chart these waterways. We just don't do it with electronic charts. We would convert our paper charts to electronic. The American Waterways Operators (AWO) have also been encouraging us to do this. The National Transportation System recommendations also recommend electronic navigational charts for the inland waterways.

Our objective here would be to have uniform electronic data for both the inland and the coastal system. We will make this directly available from the Corps through the use of the Internet and post these updates to the information on the web.

In the inland system it would be a complete Corps project. In the coastal areas we would just be providing channel data and other detailed data to NOAA for their product. Hopefully the two inland and coastal products would be similar, if not identical.

For those of you using the inland waterways system, you know we have various products in various shapes and sizes out there, everything from paper to CDs, from color to black and white. Right now we have 22 different chart books covering about 9,000 miles of waterways. These are the waterways that NOAA doesn't chart in the inland system. NOAA charts up to Baton Rouge and then we take it from there on.

These chart books vary in age from two to 32 years, various scales, features, accuracies. You name it, they all have something slightly different. Not only do they vary on the outside, but they vary on the inside, too. Some are pretty. Some are pretty old. New Orleans wins for the prettiest. I won't tell you who wins for the oldest.

Along the coast, we're in much better shape along the coast than we are inland. We're doing more accurate surveys of our navigation channels. We're providing them to NOAA, but we're not providing them in a consistent digital format that meets the standards that NOAA is now adopting.

We have about 5,000 miles of coastal waterways and deep draft channels to do this on and try to get some consistency across all of our districts to provide NOAA with the update information they need on electronic format.

We put together this sort of master plan of how we want to approach this. It has eight steps. I want to talk to you a little bit about each one of these eight steps as we go through this, everything from partnerships in working with you folks, prioritizing the waterways, putting together an electronic chart team to make sure this happens and doing some pilot projects.

Of course, our partners would be the Inland Waterways Users Board and American Waterways Operators (AWO). We want to be sure that the data and the products that we provide are exactly what you folks need.

We want to work with NOAA and the Coast Guard because these also overlap with their mission areas. Right now we're working closely with Tod Schattgen here from NOAA who attends these board meetings to get tips and advice on how to do this based on what NOAA has done so far on the coastal areas.

We started discussions with Ken Wells from AWO and are working with Captain Rice in the Coast Guard Nav Center in Alexandria, Virginia.

The issues we got to go through are developing our criteria for prioritizing the inland areas. This is going to cost money, so this is going to be a tradeoff between some other O&M backlog items versus these electronic chart data.

We have to develop the standards, the format of the features you actually need to see on the charts, how accurate they should be, publish this through the internet versus CDs versus continuing to print paper charts.

The updating process, how we're going to do that, are we going to do that solely through the web or are we going to do it through the vendors, how is that process going to work.

Then identifying the agency roles, the Corps versus NOAA versus the Coast Guard in things like aids-to-navigation and Notice To Mariners.

The second step is to adopt this international standard that comes from the International Hydrographic Office, the IHO, which is recognized by most countries around the world. It's called S-57. This is a GIS like data content standard. It is object based.

Basically this chart is not really just a graphic picture. It's a database of features. It's this database of features that adheres to these rigid standards that allows these commercial electronic chart systems to actually interface with these databases so it can tell you when you will hit the next contour or when you will hit the next pipeline crossing. It's very important that we adhere to these exacting standards.

The third step is identify some of these features. This is where we would like input from the inland waterways users, which feature you can see on the chart, do they all need to be out a one to two meter level of accuracy. We're using that number because that's the accuracy of the Differential GPS system right now.

Some pilots, especially on the lower Mississippi, had indicated they would like to use these things as "docking charts." To dock with these charts you probably need every piling, every pier and everything located on the chart. You can zoom in where you can actually see yourself pulling in up to and next to the docks.

So we need to go through that and see exactly how accurate all these things need to be and what are the critical things to the users.

Also, we would like to talk with you about the prioritization process. We put together our first shot at this. As you can see here in red would be the first phase which would start at the mainstem of the Mississippi and Ohio, and then the green and blue areas are lower priorities that feed into those areas.

In order to implement this we have to consider several things, are we going to do it at the district level, are we going to do it at the division level, what's going to be the role of the center in pulling this together, how much is going to be done by contractors. This is a tremendous amount of work to re-map and resurvey the inland system to two meter level because our database is now going to support this level of accuracy.

The last part would be some pilot projects to work out some of the details and guidelines before we go Corps-wide. We would like to coordinate this with NOAA and the Coast Guard and with the users and chart vendors who sell the commercial systems that are probably on some of your vessels today.

We propose to have five inland and five coastal pilot projects. For instance, on the coast, we would like to do one on the east coast, the west coast and a portion of the Great Lakes.

I would also like to mention that right now the New Orleans District is moving out on this clearly and efficiently. They already are working with some contractors down there on the Atchafalaya River and on the Lower Miss in a pilot project to generate S-57 data sets there and working with the local pilots down there to see how that works and how it would fit in with the overall Corps-wide plan.

So this basically is just an information briefing to give you our plan of action to try to set up some relationship with you folks again on how we would best meet your needs in this area. That's all I have.

CHAIRMAN WHITLOCK: Mr. Miles, just one question. Does this mean that you will be doing bathymetric type surveys to determine the river bottom or are you just going to be trying to -- like some of the charts are more of a map in terms of the accuracy from a lat and long standpoint. Maybe you might spend just a minute talking about that.

MR. MILES: I guess that's one of the areas we would like to get with the users on. Right now we do hydrographic bathymetric detailed surveys of the inland river system, but we do them for construction and engineering purposes.

Most of our charts up river just show the sailing line of the river as white or blank. A lot of people want to know what the depths are along each area there.

Of course, our problem is if we only survey those areas once a year or once every two years and they change with the spring flood the data might be out of date. So how much of that we do actually will depend on users and what they request.

In the coastal areas we do the very detailed bathymetric surveys. So some of the pilots on the coast actually want to see detailed drawings of the surveys we made just a few days ago so they can come in with what they call negative field clearances. They want to come in on high tide instead of low tide and get that extra few feet.

CHAIRMAN WHITLOCK: Just to put on another hat as a member of the AWO executive committee, I know this is something that the inland waterways industry has a high level of interest in.

We are very interested from the opportunity we see to providing increased operating efficiency but probably more importantly increased safety not only from avoidance of groundings, but it also offers maybe a lot in safety or insurance, so to speak, from having maybe environmental type spills and so forth on the waterway.

So we as an industry strongly support the development of electronic charts. It is a technology that is available that we should be using.

I have operations in South America on the Parana-Paraguay River and the charts I am using are 55 years old on that river. We have very extensive electronic charting and without electronic charts we probably wouldn't be able to run. We cut about two days off of our roundtrip time with electronic charts even though we don't have good bathymetric surveys and sometimes when we pull it up it shows us cutting across the points and out on land with the boat. So the accuracy of the lat/long positioning is not too good, but I'm able to follow the little red line home.

MR. SUTTON: You said these were made to DGPS standards. I thought the Department of Defense was going to stop putting that differential in and we had to take it out.

MR. MILES: No. What has happened a few months ago the President turned off what they call selective availability on the GPS satellites. The little handheld units you usually get used to position you within about a hundred meters. They turned off the selective availability and now you can get about 10 or 15 meters without any corrections.

The Coast Guard, the Federal Railways, the Federal Highway, Corps of Engineers, we have all signed this joint Memorandum Of Agreement (MOA) to expand the Coast Guard's beacon system across the entire country, even the land areas.

So you can get vehicle positioning at about one to two meters. The Federal Highways is looking at this for vehicle control, collision avoidance. Federal Railroads is looking at it for

positive train control. The Corps of Engineers of course is looking at it for dredging, engineering and navigation on the inland waterways system.

I saw an e-mail last night that said they got their appropriation. They got, I think, \$4 or \$5 million coming up next year to expand the beacon coverage even further.

CHAIRMAN WHITLOCK: Any other questions? Tod?

MR. TOD SCHATTGEN: Speaking for NOAA's Office of Coast Survey, we really support this effort and the Corps collecting the higher accuracy data and we look forward to working with you in the coastal areas.

We do have some concerns though about how we are going to interface in the intracoastal areas like the lower Mississippi and Baton Rouge. We're aware of your prototype to create an ENC in that area and it concerns us. We want you to collect the data, we rely heavily on you to collect that data for us and it's a source of data we need, but in the coastal areas we need to closely coordinate the compilation of that data into a navigational product.

MR. MILES: Absolutely. That's where we want to work with you and our New Orleans folks as the first pilot project that we'll be doing that in.

CHAIRMAN WHITLOCK: Thank you, Mr. Miles.

Next on our agenda we're going to have Mr. Bob Patev with the Waterways Experiment Station (WES) talking about the barge impact test experiments that were conducted at the Old Gallipolis Lock.

MR. ROBERT PATEV: Thank you, Mr. Whitlock. Thank you Board for allowing me to come back and talk with you regarding the status and results that we obtained both from the barge full-scale experiments as well as the crushing experiments we just did in June of this year.

We're just going to be changing over the presentation and we've also got a video to show you, as well, from both of the experiments so you can see what the results gave us.

As we know, in the design of both conventional and innovative structures barge impact forces tend to be a critical factor in their design. It sometimes tends to be the control designs of our structure.

What we set out for the Innovation for Navigation Research Program was to develop the essential research and development to determine realistic barge impact forces on our structures. That's one of the reasons for doing these types of experiments.

As part of the research and development program that we've been performing down at the Waterways Experiment Station (WES) we have laid out a lot of items on our list.

The first, of course, is this full-scale barge impact experiment which I came back in '97 in front of the Board to request partnering which worked out very well for us.

We're also in the process of developing new multi degree of freedom model. There are existing single degree of freedom model which are very over conservative in our barge impact forces.

So in order to alleviate those and get more reasonable numbers for design, we're in the process now of developing a new multi degree numerical model that should be ready by this June to be used in the districts and divisions as needed.

The other thing is we're developing statistical data for the velocities and impact angles and extreme events such as loss of power or loss of control events.

Another thing we are doing under the research is the multiple criteria decision making which is examining the tradeoffs between say, for example, barge impact and earthquake to optimize our designs to get the most for our return.

We've also been examining the energy absorbing fenders to see how much energy we can actually absorb in the impacts and where they can be applied.

Lastly and most importantly and that's coming out of both full-scale experiments and other research being conducted is our final guidance which will be ready by the end of this fiscal year. We'll be able to get that out to the districts our guidance at that time.

As I said, I'll be primarily talking today about the full-scale impact experiments. Our goal here is to perform the experiments in four stages.

We have successfully completed three. The fourth one we're going to negate for now. We found out enough from the full-scale experiments that we don't need to do our lashing experiments.

So we have our prototype experiments which was to kind of quantify what we needed to do in the full-scale and then we had done our crushing experiments this June. So we're on target with our plan as projected.

Quickly just to recap from last time when I talked with the Board regarding this, the Corps of Engineers had never attempted to do full-scale barge impact experiments, so we set up a prototype experiment utilizing a very small barge system to learn how to quantify and measure forces and understand the dynamics of the system. Really what this was was a high return for a very minimal cost. It saved us a lot of costs on the full-scale experiments.

We did these up at Allegheny Lock 2 back in '97. We safely performed 36 different impact experiments, both on the concrete lockwall and some ultrahigh molecular weight plastic fenders that were donated to us to take a look at what effect the non-friction surface had on the impact.

We used four standard barges ballasted at eight and a half feet which was approximately 4,000 short tons of mass.

In order to call this a prototype we had to try different instrumentation devices. We tried accelerometers, strain gauges and something that was new to us which was to measure the actual loads of lashing parts as the barge impacts the wall.

We got velocities of about 0.8 to 3.3 feet per second during these tests and angles of anywhere between five and 28 degrees in the four barge system.

Going from there we decided we pulled up a lot of very good information and it was decided that we needed to partner and find out how we could do this for a full-scale experiment.

The full-scale experiment was designed to be held at the Robert C. Byrd Lock and Dam over at the Old Gallipolis Locks. We did perform it on December 1 through 3, 1998. We used a 15 barge commercial tow drafting of nine foot full of coal.

The barge was donated to us by AEP (American Electric Power Corporation) at no cost and this barge was a commercial coming up the river and we took it off the river for three days. So we greatly appreciate Mr. Ebetino's efforts and the efforts of AEP for helping us to do this.

The weight of the tow was approximately 31,000 tons, and we did impacts both on the upper guidewall and on a prototype energy absorbing fendering system. This is something we wanted to see how much the force could be reduced with that.

The primary goals of these experiments was, one, to understand the baseline response of the barge structure. In developing a numerical model you have to understand how the whole barge system works. That was one of our ways to do this to understand how the system works.

Then it was to measure the actual impact forces normal to the wall using a load measuring device. The third is to investigate the use of energy absorbing fenders to see how much energy they actually absorb, do they work, are they feasible; and then lastly be able to quantify a multi degree of freedom system during impact, how that whole system responds during an impact into the wall.

What we designed here is a low beam. What these two cells are right here are million pound load cells. This has the same curvature as the barge. We measure the forces normal to the wall using this device.

This was attached to a barge, 31 feet by 195 feet. We measured the actual impact forces at angles between five and 28 degrees.

When we talk about the prototype fendering system, this is how it is installed into the wall. It consists of a UH high molecular weight plastic frictionless surface with some sort of composite steel panel behind it. Here is the composite steel and here is the UHMW, about an eight and a half inch surface.

In these fenders steel panels is what's used typically and we went ahead and applied them. A company donated all of this equipment to us called Svedala-Trellux of Keokuk, Iowa.

We designed this system for the wall to see what kind of energy could we afford to absorb. We over stiffened these using the stiffest elements, which would be rubber elements here, that they had available because we weren't sure how much displacement we would get.

Just so you know, we successfully completed 44 full-scale experiments during our three days there at Gallipolis. We did 12 baseline measurements on the concrete. We did nine baseline on the fendering systems, 18 load measurements on the concrete and five load measurements on the fendering systems.

Again, our impacts were between about a half a foot per second to 3.6 feet per second at an angle of five to 25 degrees. We had a good range of angles and velocities.

I want to show the first video which is on the prototype and full-scale. While he's setting this up, people have always asked me, well, these are rather controlled experiments which was true but did you do any damage. Yeah, we broke lashing during these experiments. That was something just to prove that we had enough impact force when we hit the wall.

I'm going to show you a short informative video to explain the experiments in pictures better than I can say.

(Whereupon a video tape was played of the full-scale impact experiments.)

MR. PATEV: That kind of gives you a little flavor of what we went through for three days. Actually, it took a lot longer than that. It took us almost two weeks to instrument everything up at AEP's Lakin facility and we're very grateful for them to give us all their staff and time to do that.

As I said, we broke some lashings. We'll give you some general observations that were coming out of this when we were developing into the numerical model.

Our existing model we had prior was said that barge corners deformed during impact. We can prove without a doubt that they do not. We've obviously seen this in the field. That helps to confirm that suspicion.

The old ETL (Engineer Technical Letter) method that we have to do barge impact design is very conservative and over predicts impact force. From the results of the experiments we see that between 20 and 70 percent depending upon angle and impact velocity.

We also notice that the lashings do greatly contribute to the energy transfer in the barge during impact. So that's something we need to address, as well. That's all going into the numerical model right now as we speak.

The other thing that was very important was the prototype fendering system. It really shows very high potential. It actually reduced forces an additional 50 percent of what we saw on the regular impacts. That was a very stiff system. It can easily be fabricated into new or existing structures. It's a low cost alternative versus increasing the size of the wall if you had to.

The prototype fendering system, as I said, is very stiff. That also can be reduced, as well. These types of systems can use bullnoses and protection cells and upper guide and guardwalls.

I'll talk now a little bit about the barge crushing experiments which we just completed. This gets us our other portion of the numerical models and our guide as to understand how barges deformed.

What we did was we set up a set of experiments down in New Orleans, Louisiana on the 20th to 23rd of June at the Halter Gulf Repair facility. We utilized two scrap barges that were donated from Southern Scrap down there in New Orleans.

We had open hopper jumbo barges. They happened luckily for some reason to be sister barges coming from different sources. They were built by Nashville Bridge back in 1971. So they weren't too old. The corners were in good shape and the under structure, as well.

We fully instrumented those similar to what we did in the full-scale experiments. There were strain gauges, accelerometers and load cells to measure force.

We utilized a device called Statnamic loading device. This device gives us a similar duration in load to what we saw during the full-scale experiments. It's capable of impacting a force of near 2,400 kips, even though we didn't use it to get that high.

We also incrementally loaded the barges just to make sure we got an elastic response and an interelastic response so we could see the difference.

During the three days that we were there performing the crushing experiments, we were able to perform nine crushing experiments. We were hoping to get 18 in, but due to weather and the heat and a bunch of other factors we were only able to get nine completed. We successfully applied those up to about 1,600 kips. That actually was exceedingly high. We backed down from that because of -- I'll show you in the video what happened.

We measured force response both in the corners and on the headlogs to see what the deformation was on the various loads. We saw some damage again to both the corners and the headlogs after each of these crushing experiments.

The device we used called the Statnamic is generally used for pile foundations. It gives the opportunity to test both lateral and foundations.

What it is it consists of a vent rod here that's slid inside. These are all concrete disks. This is about 92 tons of weight.

What you have here is a cell that is inserted into the piston that is sent into the vent. Inside this piston is a nitroglycerin fuse which is specially developed by the manufacturer of this particular device. This device has the same thrust as one of the solid rocket boosters on the shuttle. It can accelerate very fast and very hard. So that's why we decided to use it.

These tests were done on water. We tied the boat up to weights and had a towboat behind to keep the force on. What we did is we assembled the equipment and moved it into place on the corner and we basically detonated it off.

I have a couple short videos that you can actually watch it being detonated and hear the sounds. It is a very forceful device. We'll go to the next video, please.

(Whereupon a video tape was played of the barge crushing experiments.)

MR. PATEV: If we go to the next slide, you'll see the typical damage picture. Here is a headlog with about 700 kips of force which is typically what you would see if you hit something on the river somewhat. You can kind of see the indentations. It is indented about four inches in the middle. The deck plate has risen.

Of course, we originally did a test case of about 300 kip load and then we loaded it higher to about 700 kips to get the response.

That's as it exists right now. What we're doing right now is working all of this into our numerical models so we get better realistic numbers for barge impacts.

We'll have that guidance out by the end of this year so the districts can now use it and use it in design. That was our goal from the original meeting and I think we have met our schedule very well. I'll take any questions or comments.

MR. DANIEL STEINER: Dan Steiner here. Just let me say that I'm privileged to be on the oversight group. This spring when we met and saw the progress that was being made particularly from the Gallipolis models, let me assure you we have added that into our design. So we are saving money in the design at McAlpine and other projects in this region because of this ongoing efforts. We want you to know indirectly that you are going to get a couple bucks back.

CHAIRMAN WHITLOCK: Thank you, Bob. We appreciate the fine briefing. Before we break for lunch this morning, I'm going to ask General Van Winkle to discuss some good news.

MAJOR GENERAL VAN WINKLE: Larry Prather who was supposed to have been here is in Washington monitoring the progress. He just sent in a report stating that WRDA passed 312 to two. That fortunately now is history.

CHAIRMAN WHITLOCK: Before we break for lunch I'm going to ask Mr. Burke to come forward to talk about the Apalachicola, Chattahoochee and Flint (ACF) River system.

I want to reduce the time allotted for lunch from an hour and a half to an hour in order to try to ensure that we get out a little earlier this afternoon.

MR. ROGER BURKE: I appreciate the opportunity to present this briefing this morning to the Inland Waterways Users Board regarding the Apalachicola, Chattahoochee and Flint (ACF) River Basin and water resources activities that we have going on there. The briefing this morning will cover a number of topics, first some background, status and issues.

Just to orient you to this particular project, it is located in Southeastern Alabama, Southwestern Georgia. The Chattahoochee River originates north of Atlanta and flows generally 120 miles to about La Grange, Georgia, and then about the next 200 miles downstream forms the Georgia/Alabama border.

The Flint River originates just south of Atlanta and flows about 349 miles. Flint and the Chattahoochee combine to form the Apalachicola which flows 106 miles to the Apalachicola Bay and the Gulf of Mexico.

The Apalachicola River intersects the Gulf Intracoastal Waterway approximately 350 miles east of New Orleans and the Mississippi River.

The water resources of the basin which drains about 20,000 square miles has been developed by the Federal Government as well as non-Federal interests. There are five Federal projects, three of which are locks and dams, and eleven non-Federal reservoirs.

The navigation channel dimensions are 9 feet deep and 100 feet wide. Lock dimensions are 52 feet wide and 450 feet in length.

The project was originally authorized in 1945. Then in 1946 some of the individual structure locations were authorized for relocation, but it also imposed in 1946 the requirement for local interests in Florida to contribute disposal areas for project maintenance. Further individual structure modifications were authorized by Congress in 1953.

Then in 1962 the West Point project was specifically authorized. Then in 1963 a general plan for the Flint River which consisted of three headwater projects was authorized.

Then in 1965 two of those headwater projects were specifically authorized by Congress. However, the state of Georgia opposed those projects and they were subsequently de-authorized in 1986.

In summary, let me just point out that the original plan for development of the Apalachicola-Chattahoochee-Flint River Basin included three storage projects on the Chattahoochee upstream of Columbus, Georgia; three storage projects upstream on the Flint River of Albany, Georgia. Not all of those projects have been constructed, particularly the three on the Flint River.

In the 1980s the southeast was stricken by droughts. The particular basin droughts in 1981, 1986 and 1988 heightened the awareness of the limitations on the water resources of the basin.

So communities in and around Atlanta began to ask the Corps of Engineers to conduct water supply reallocation studies that would investigate the feasibility of reallocating storage in three headwaters projects north of Atlanta.

Two of them, Carters Lake and Allatoona Lake, are adjacent to the ACF to the east, the Alabama Coosa Tallapoosa or ACT for short. Lake Lanier and the ACF was also of interest to a number of communities in and around the Atlanta area.

Additionally, in 1990 the state of Georgia applied to the Corps for a permit to construct a reservoir called the West Georgia Regional Reservoir which was located in the ACT Basin on the Tallapoosa River just five miles upstream of the state line.

Three days later Alabama filed a lawsuit against the Corps of Engineers alleging that our environmental documentation was inadequate with respect to the proposed reallocations at Carters Lake, Lake Allatoona and Lake Lanier.

Following the filing of that lawsuit the three states and the Corps engaged in a dialogue to reach agreement on how to resolve the issues raised in the lawsuit. One of the ways in which it was decided to resolve it was to conduct a comprehensive study of the water resources in the basin and availability of supplies as well as demands.

So in 1992 a memorandum of agreement was signed between the Assistant Secretary and the three states and the lawsuit was placed on an inactive docket.

Let me give you a few words about the project operations in the meantime. Prior to 1989 the Corps was able to provide navigation depths of seven and a half feet or greater a high percentage of the time.

When navigation depths were known to become limited we were able to provide notices to navigation interests about one to two weeks in advance. The flow required for navigation was provided by releases made in conjunction with producing hydropower.

Maintenance dredge material during this time frame was being placed within bank sites. Open sites were not available due to the failure of the counties along the waterway in Florida to provide the disposal areas as required by the authorization in 1946.

The reason for that is they had little economic incentive to do so. There is very little traffic using this system that has an origin or destination in Florida. Therefore, the state of Florida receives very little transportation benefits from this system.

Therefore, the counties themselves, in fact, petitioned to be relieved of their local sponsor obligations but were denied.

Going to changes in Federal law, in the 1970s we applied for our first Water Quality Certification from the state of Florida in 1979.

Each time since then additional conditions had been placed on Water Quality Certification that had been intended to increase dredging costs and require additional studies to monitor the environmental effects of our operations and maintenance procedures.

In 1983 we signed the memorandum of agreement with the states of Alabama, Georgia and Florida to prepare a navigation maintenance plan. Considerable effort was made to designate disposal areas within the banks that could be provided without local sponsorship being involved. An attempt was made to determine disposal capacity for 25 years, but we found three problem regions for which we were unable to do that and I'll point out a couple of those in a little more detail in just a second.

The Water Quality Certification in 1991 included a technique called mechanical redistribution which was a method that we had developed that would mechanically move material from the within bank disposal site back into the river during high flow so that the river might reclaim the material and transport it downstream into deeper areas of the river.

In 1992 the Memorandum Of Agreement (MOA) I mentioned a moment ago was signed and the comprehensive study of the water resources of the basin was initiated. It was conducted in full partnership with the three states which meant that all decisions including technical and administrative decisions were made in a consensus fashion.

The study is not entirely complete pending ongoing negotiations under an interstate compact that I'll mention in more detail in just a moment.

One of the study elements in the comprehensive study was to determine the mechanism for coordination of water issues along with the three states. The results of this study element was that the states decided to engage and develop the basin compact, and they began doing that in July of 1996.

Again, in the spring of 1997 the three state legislatures passed two identical interstate compacts. Congress approved the compacts in the fall of 1997 and they were formally signed in February of 1998.

Mr. Lindsay Thomas is the Federal Commissioner that's been appointed by President Clinton. He's a former Georgia congressman and current president and CEO of the Georgia Chamber of Commerce. The alternate Federal Commissioners are from Jacksonville State University. Jacksonville State is located in Eastern Alabama.

The compact was somewhat unique in that it did not include a water allocation formula. That was left for the three states to develop among themselves. Initially their deadline for developing such a formula was December 1998. They failed to do that, and they extended the deadline in the compacts four times. The current deadline being 30 December 2000.

Once the states do reach agreement on the water allocation formula, the Federal Commissioner's role is to either concur or non-concur within a 255 day period. The non-concurrence of the Federal Commissioner must be based on some violation of Federal law.

This slide summarizes generally the positions held by the three states in general. The state of Alabama and Florida desire higher minimum flows to be guaranteed at the state line than the state of Georgia is willing to agree to.

Further, the state of Alabama would like downstream hydropower interests to be compensated for any adverse impacts they might receive as a result of water allocations out of Federal reservoirs.

The state of Georgia has taken the position further Congressional authorization is not needed for reallocation of storage out at Lake Lanier.

To support the Federal Commissioner's decision to either concur or non-concur the Corps together with nine other Federal agencies have cooperated to prepare Environmental Impact Statements (EIS). The purpose of the statements are to evaluate environmental and social and economic impacts of the proposed formulas and to provide a record of decision to support the Federal Commissioner's ultimate decision.

The technical evaluations included in the EIS will utilize the August data and other processes developed on the comprehensive study. They focused on the data relative to the Federal Commissioner's decision.

There were a few areas where additional data and analyses were required that were not addressed specifically by the comprehensive study.

Since there was not a water allocation formula for us to address specifically in the EIS, we tried to anticipate what the states might agree to and establish a high and a low range anticipating that when the final formula were adopted that it would fall somewhere within the range that we established in this EIS.

Another comment or two about our water operations on the system in the meantime. During the 1990s we began to use a technique following the droughts of 1986 referred to as the navigation window. This technique involves temporarily storing water in upstream storage projects that are then released over a ten day to two week period of time to provide for an economically navigable depth of at least seven and a half feet.

This technique was employed in 1990 for the first time and continued throughout the decade, but because channel conditions were also deteriorating navigation windows were used with increasing frequency, as many as six times in a year generally between May and December.

The original design for the project estimated that the discharge from the Jim Woodruff Dam of 9,300 cubic feet per second. The dredging would be adequate to provide for a nine foot

channel. By the time the navigation maintenance plan was planned or completed in the 1980s this discharge was estimated to be about 11,000 cubic feet per second or an increase of 18 percent. Presently due to limitations in our disposal practices in the Apalachicola River approximately 18,000 or almost twice as much is required to provide a seven and a half to eight foot channel.

Our most recent navigation window was conducted between 26 April and 6 May for a required 250,000 acre-feet of storage on the upstream reservoirs and it had impacts on those three lakes as shown at the bottom of that slide. It also had some adverse environmental impacts due to the coincidence with a second fish spawning season.

Our most recent Water Quality Certification from the state of Florida in 1999 is for a five year period of time.

The mechanical redistribution technique we had begun in 1991 is now prohibited. It is felt the environmental impacts are significant enough to warrant its discontinuance.

Consistent in the trend for the Water Quality Certifications, the conditions on this one increased and are more rigorous and stringent than the previous ones requiring some slough restorations and restoration of some previously used disposal areas.

I should point out, however, that some of the studies and some of the restorations will be accomplished through other Corps of Engineers programs such as the Section 206, Aquatic Ecosystem Restoration, or Section 1135, project modification in the interest of improving the environment.

This slide shows the performance of the system from the period of 1970 through 1999. The seven and a half foot channel has been available only 82 percent of that time, and the nine foot channel about 62 percent of the time. In dry years a seven and a half foot depth or greater was available only about 25 percent of the time.

This graph shows for a period of 1990 through 1999 total tonnage on the system, the most tonnage it's ever moved, about 1.2 million tons. During this period the traffic was generally between 500,000 and 600,000, but since 1996 you can see there has been a consistent decline part of which I would think is attributable to the current drought situations that we are in.

The shorter bars of the different color are showing the amount of tonnage that moved during navigation windows during this same period of time. 1996 was the year when we had six navigation windows. You can see the amount of tonnage there was about 200,000 tons.

One of two problem areas that I'll show you in some details is referred to as Chipola River Cutoff. The Chipola River branches off at about mile 41.7. Over time this cutoff has increased its percentage of flow from 25 percent to 40 percent. Unfortunately for us it diverted flow that was relatively sediment free to latent waters down in the Apalachicola River.

Numerous studies of this region have been made and a number of structural measures have been proposed, but the state of Florida has rejected each of those and we would have to obtain Water Quality Certification from them.

About 40 percent of the dredging requirement on the Apalachicola River occurs in this area together with the second one that I'll show you in just a moment.

Downstream somewhat about five miles from that location is the second problem dredging region which is Corley Slough. We have placed dredge material in a dike area shown on the right hand of the slide there in the woods.

The dike site was used by permission from St. Joe Paper Company when they were the landowner. However, the state of Florida has purchased floodplain lands on either side of the Apalachicola River to form the Apalachicola River Aquatic Preserve. They ended the use of the dike site.

Subsequently, the capacity of the sites has been exhausted and the state now desires the restoration of these sites to their original condition and they contain about one million cubic yards of sand.

We have a number of significant challenges if we are going to provide a reliable navigation channel. First, as I mentioned earlier, not all of the projects included in the originally authorized plan have been constructed. Further, as the system has matured and responded to physical changes, the flow required to provide a reliable navigation channel has increased.

The Apalachicola River is the only inland waterway segment within our district that has a requirement for local sponsorship to provide the Land, Easements and Rights-of-Way for disposal areas.

Because the state of Florida now owns the floodplain lands on either side of the river this presents a special problem to us because of our lack of condemnation authority to obtain the necessary disposal capacity. So we are limited to the use of the inland sites.

Our O&M costs continually increase. The 1999 Water Quality Certification ended our mechanical redistribution which causes us to pump to more remote locations, some up to 19,000 feet away requiring a booster and of course additional pipeline.

Additionally, spending on various studies required by the Board of Quality Certification conditions further increases our Operation and Maintenance cost.

In response to physical system changes and dredging and disposal constraints we've utilized navigation windows to facilitate navigation during the low flow times of the year. However, the windows have an adverse effect on lake levels and that generates not only environmental concerns but contacts from homeowners through their Congressional delegations.

Under status of three major activities, the comprehensive study is essentially complete. The final report is not being prepared pending the completion of the negotiations by the three states to develop a water allocation formula.

Those negotiations under the compact have been going slow. In fact, there have been no negotiation sessions since April of this year while the three states have tried to reach agreement on a mediator to help them in further negotiations toward agreement on the water allocation formula.

We have completed the draft of Environmental Impact Statement. They have been circulated to the public for comment. We have those comments and are in the process of responding to them and stand ready to prepare a final EIS once the states reach agreement on the formula.

These issues remain. As I mentioned a few minutes ago, the state of Georgia believes that Congressional authorization is not needed for further water supply reallocations out at Lake Lanier. That issue is with the Assistant Secretary's office.

Also, something I didn't mention until now, but there were several communities withdrawing water out of Lake Lanier in 1992 when the Memorandum Of Agreement was signed and they have continued to pay for their withdrawals at the same rates that were in effect at that time. So that's at issue.

With the current drought situation there have been a number of communities in and around Northwest Georgia who have applied to the Corps for permits for small water supply reservoirs including a reapplication for the construction of the West Georgia Regional Reservoir.

The states since April have been negotiating or discussing the selection of a mediator to assist in their negotiations. They recently have agreed on a mediator. The actual process and role of that mediator and the role of the Federal Commissioner in those negotiations have not been fully resolved.

Finally, in the late summer and fall of this year the state of Florida through their Congressional delegation expressed a desire to de-authorize navigation and held some discussions with the Alabama and Georgia Congressional delegation.

The Corps' position is that prior to de-authorization we would recommend a more detailed study of navigation specifically to determine what measures might be taken to develop a dependable and reliable navigation system and to document the effects of de-authorization, economic and social and environmental.

That concludes my remarks. I would be glad to address any questions if anyone has any.

CHAIRMAN WHITLOCK: Are there any questions for Mr. Burke? Thank you for a very comprehensive overview of the Apalachicola, Chattahoochee and Flint River system.

It's approximately 12:20. At this point we will recess for lunch.

(Whereupon a lunch recess was taken.)

CHAIRMAN WHITLOCK: Starting this afternoon's presentations will be Mr. Dan Steiner who will give an overview of the Ohio River Navigation Program.

MR. STEINER: I would like to again on behalf of General Griffin and all the men and women of the Ohio River and Great Lakes Division welcome you here to our valley.

As you can see from yesterday, we have had a very good year. We have had that very good year with your help. We're very proud of the progress we're making in the construction and design innovations.

I'm accused wherever I go of saying you are our best customer and partner. While that isn't entirely false, I'm particularly sincere when I say that to you for a couple of reasons.

We have some interesting customer/partner relationships with big cities like Chicago or Cincinnati, but as a customer group you are consistent. From one time to the next we know exactly what you want.

Secondly, you are by far most effective in that wonderful democratic process when the Congress and the Administration agree on how much money and how much authority of things we're going to get.

You deserve the best and quite frankly with no modesty at all we believe we are giving you our best. We have a winning team of engineers and scientists, not just within the Corps but with the aid of WES, TVA and the community and with other institutions.

We have a command that has a great slogan once you get used to it. It's put the metal on the target. I hadn't heard that before, but the more I hear it, the more I like it. We have put some metal on the target this year.

Our construction placement was 170 percent of our initial work allowance. That's attributed to a lot of things. We had a Director of Civil Works who might be in the room who really stuck his neck out and helped.

We had some great project delivery teams and project managers, and they are going to talk to you later in the day. We really stepped up.

We believe with the appropriations starting for this year that our placement can exceed \$200 million this fiscal year and that's our intention.

Before we start our presentations, I want to talk a little bit about the planning part of the program.

About this time last year it was evident that we had the engineering and the science to produce a favorable report on Greenup and Myers. That was not at issue, but we had to go through a public review process that turned out to be not a good time to go through a public review process.

So we looked at our strategy and we said we've been working on this ecosystem restoration thing that we can possibly speed up and produce in the same time frame because we were working on the concept we call Environmentally Sustainable Civil Works.

If you're on this Board for any length of time, you're going to hear me talk about this again in the future. We believe the future of the Corps is on Environmentally Sustainable Civil Works.

So I stopped worrying about Greenup and Myers because we had it subject to a rigorous public review process. We met with our six key Ohio River states. They signed up to shorten the process to get to the ecosystem restoration. The Fish and Wildlife Service came aboard.

We went up to talk to the boss, Jim Johnson, the Chief of Planning in Headquarters and they supported it. Secretary Westphal was gracious enough to loan us Chip Smith a bit. He helped us streamline the process and we cut six months out of the process.

From the Ohio River Mainstem Study we were producing two vital products. One, the authorization of two originally needed modernization products for about \$300 million plus, and the other an ecosystem restoration effort for about \$300 million plus, all of which is going to be cost shared and none of which is going to come from the customer.

I believe that that has to be an ingredient for success. We had help all across the line and all up and down the Corps. And believe me, that help from the Assistant Secretary's office probably made the difference. I'm not saying that this is the right strategy for everybody, but I'm saying it's the strategy that worked for us.

We got through public review of Greenup and Myers and avoided, I think, any litigation because we were doing that and we were committed to continuing to pursue an environmentally sustainable strategy including the cumulative impact assessments and whatever is necessary.

But I'm going to tell you right here and now that's only one side of the ledger and we're going to hit the other side of the ledger, and that is everybody in this room knows that we've been understating the benefits associated with inland navigation modernization.

We also have been looking at it in the absence of a national transportation strategy. The volume of truck traffic between here and Cincinnati, which is mostly through Ohio, increased 40 percent in the last ten years.

If that continues, how could you possibly get on the interstate highway system in 2020. I believe there is opportunity to look at it legitimately and can place a strategy there where the inland navigation system does its fair share. We're going to give you a few graphics on that.

The other places are the environmental area. We are by far the cleanest mode of moving bulk commodities and we are starting to measure that now.

Our other part of this strategy is environmental sustainability but get at the legitimate and theoretically sound consistent with principals and guidelines additional benefits that are left on the table. I promise you we are going to do that with some diligence.

I'm now going to turn this over to my group of fine scientists and engineers who are going to make a series of reports in a caring and loving way.

We have a great navigation customer up here in Pittsburgh that says you can say anything that could be said in ten minutes. So if we hit minute nine and it sounds like they're still going strong, you might hear me say "nine" which is a clue to finish up in a minute.

Paul Hanley will be next. Thank you for your time and attention. Do you have any questions at this point?

MR. PAUL HANLEY: Chairman Whitlock, General Van Winkle, ladies and gentlemen, I would like to cover two items in my nine and a half minutes. The first item is a very quick status review of the Ohio River Mainstem System Study. Dan has already hit a couple of these points. The second item is to review briefly an initiative we have to more comprehensively measure the benefits of inland navigation resources.

First, let me say something about the Ohio River Mainstem Study. When the Olmsted and McAlpine projects are completed and operational in a few years the Ohio River Mainstem will be comprised of 19 projects, three of which will have twin 1,200 foot locks; Olmsted, Smithland and McAlpine.

As you are aware, Greenup and Myers will be going to twin twelves in a few years. The authorization is essentially done and the projects are actually in design.

The rest of the system with the exception of Emsworth, Dashields and Montgomery (EDM) in the Pittsburgh vicinity are the 1,200 and 600 foot sites which are a result of the modernization effort which started in the mid 1950s.

EDM, of course, are left over from the original canalization completed in 1929, the 600 foot main lock and the 360 by 56 foot auxiliary.

Early in the mainstem study our navigation planning center and our engineers and our plan formulation people generated the information depicted in this slide. This indicates for all of the sites on the mainstem is the annual cost to move commodities through those locks. The annual cost is comprised of the Federal cost, the little white tip on the colored items. You can see there is a little white bar at the top. That represents the Corps of Engineers, the Federal cost, the O&M cost. The yellow bars at the bottom represent normal processing cost, and the big red bar represents the industry cost which is primarily driven by closures of main locks during scheduled maintenance periods.

When we shared this slide with our nav industry partners a while back they looked at it and said, whoa, Greenup and Myers, do we have to wait, can you do something about that before you complete the study. This indicates that they clearly were exceptionally high in terms of operating costs.

So we partnered with the industry folks and we went to Headquarters and we got the green light to do in effect an interim feasibility report to solve this problem of the Myers and Greenup Locks. We still have six other locks which have exceptionally high operating costs.

As Dan has already mentioned, one of the things that we have learned in going through this process is the open forum process focused on environmentally sustainable projects which is very, very important and probably very responsible for the successful way the Greenup and Myers projects have moved to authorization.

The other point, the first bullet, is more importantly than ever we realized is cutting edge technology. Both the engineering focused on driving down cost in a more comprehensive way. A better way of evaluating projects is very important. So those are two major focus points as we move towards completion of the study.

Dan's already told you about the ecosystem restoration report which is part of WRDA 2000. These are some of the things that the restoration program would address. Projects would be individually evaluated. Cost sharing is essentially 65/35 and there are some very favorable provisions for the non-Federal sponsor in that 35 percent. This program is a winner with all of our states and the Fish and Wildlife Service.

The next action item in the environmental arena is the cumulative impact assessment which we have agreed to complete as part of the next decision document that the mainstem study produces.

The cumulative impact assessment will address the points on the slide. We estimate that this cumulative impact assessment will cost \$4 million plus. It's the right thing to do and we're committed to do it.

Now I'm on my second item, the benefit initiative. At the end of my presentation Dr. Randy Curlee from Oak Ridge National Lab is going to tell you about our new evaluation tool ORNIM, Ohio River Navigation Investment Model, so I'm not going to steal his thunder. I'm going to talk about something that Dan started to talk about in his opening remarks.

If you're familiar with Corps of Engineers evaluation process, you understand that when we generate that benefit cost ratio what goes into benefits is the directly observed transportation cost to shippers who use our system.

So, for example, in 1989 we had a closure of the main lock at Myers and that closure lasted for several weeks. For a period of approximately three to four weeks the average daily delay for a tow at Myers was close to four days. That generated about \$15 million of direct impact to shippers. Now, that was in 1989. You can imagine if that event occurred today.

When we improve Myers, when we extend the auxiliary lock to 1,200 feet, that kind of impact essentially goes away. So that \$15 million or whatever the equivalent is in the year 2000, that becomes a benefit of the improvement, but that basically is the story as far as benefits are concerned.

The only thing that mattered up to this point in our benefit evaluation was the reduction in transportation cost to shippers because they moved on the waterway and we measured that across the without and with project conditions. So it was a very focused benefit measure and I would say somewhat myopic.

We know that other things are going on in transportation. There is a class of impacts that economists refer to as externalities. Basically I do something and I cause something bad to happen to you, but you can't make me pay for it. That's an externality.

So in the overland transportation arena, for example, there are a lot of environmental damages and human health impact and impacts on infrastructure that come about from trucks and trains. To the extent that we keep traffic off of overland modes, the reduction of those externalities, these kind of things that we are talking about here, should be a benefit to the waterway, but it isn't. These kinds of impacts don't get measured and they fall through the cracks.

For example, we know the pollutants that are emitted by trucks are orders of magnitude greater than the pollutants emitted by barges and trains are somewhere in between.

So a couple of years ago when General Van Winkle was the commander of the Great Lakes and Ohio River Division we had some discussions and he encouraged us to take another look at this. This is something that we just had kind of ignored over the years. There has been a cultural shift.

So we asked a gentleman who is a researcher at Marshall University, Dr. Mark Burton, who has done a lot of work in the area of environmental economics to do a little study. It wasn't a very expensive study and it is certainly not the last word in these kinds of studies, but what he did is he did a comparison of tonnages that move on the Ohio River system and then compared the pollutants that are emitted in that method of transportation versus the pollutants that would be emitted if these commodities were moved overland.

We know what these overland routings are. We have a very comprehensive database on that. The bottom line is you look at a subset of pollutants, something called PM-10. And if you're interested, I could get you a copy of Dr. Burton's paper. Basically he estimated that the benefit of keeping these tonnages on the inland system, on the Ohio River system, was equivalent to \$2 a ton. That's kind of a startling number and I have read his paper and other people have read his paper and we think he's a little on the conservative side.

To give you an idea of the order of magnitude, we estimate on average tonnages that move on the Ohio River system generated a transportation saving of about \$8.

When we're looking at a subset of polluting externalities and putting a value on them it's equal to 25 percent of the transportation cost savings in our system. So you multiply \$2 times 270 million tons and you get \$500 million plus annually of avoided public health impact.

Basically Burton went through the whole process of tracing the pollutants to days of sickness and in some cases premature death. We wind up with a half a billion dollars and we think he's low.

Is the problem going to get worse? Dan's already told you it's going to get worse, so that number is going up.

What can we do about it? Well, maybe we can move some of that overland traffic to barge. The day may come where you get more and more crowded on the overland system. That's another way of achieving some benefits on the waterway and avoiding those externalities.

Of course, the worst kind of human health impact are the kinds that happen in situations like this in this slide and that's going to get worse.

We are partnering with TVA (Tennessee Valley Authority) and the University of Tennessee in the Chickamauga Lock Study to generate an estimate of the accident cost avoided if we can keep Chickamauga Lock open and keep that tonnage off the interstates in Eastern Tennessee.

So to sum up, externalities of the type that I described are legitimate benefits to the waterway projects. These externalities are not trivial. The study by Dr. Burton and other studies that have been done on the Great Lakes system suggest that these are, in fact, large impacts.

The evaluation of these external impacts has begun. We are partnering with the other divisions in the Corps. We're partnering with the Institute For Water Resources, and we fully expect that an evaluation of these externalities is going to show up in the benefit evaluation in the next decision document for the Ohio River Mainstem Study.

So I'm done. Are there any questions?

CHAIRMAN WHITLOCK: Any questions for Paul? Thank you, Paul. Dr. Curlee will follow.

DR. RANDY CURLEE: I have a few copies of my presentation. I don't know if I brought enough for everybody. I would be very happy to send you copies, if you would like, afterwards.

First of all, thank you, Paul. It's really a pleasure to be here today and tell you about the Ohio River Navigation Investment Model, otherwise affectionately known as ORNIM.

As Paul said, my name is Randy Curlee. I am an economist with the Oak Ridge National Laboratory. I'm the leader of the project to develop ORNIM.

Let me begin with the objective of this model which was quite ambitious. We attempted to and started out with the objective to identify the optimal investment path in new construction, major rehab and major maintenance to maximize the river system benefits over a multi-year horizon given yearly budget constraints.

Let me go from there and talk to you about the capabilities of the model and then at the end I want to come back and share with you one of the scenarios that we recently ran to show you how the model could be used, just one of the many ways it can be used.

As Paul said and I think Dan said this morning, the model looks at the entire system. It looks at systemwide benefits rather than benefits at one particular lock or changes at any one particular lock.

It looks at tradeoffs between projects over time. It looks at tradeoffs between construction and maintenance. It looks at an optimal investment path, not just whether or not you should invest in one place at one time but the entire path of investments.

It can be yearly budgeted constrained. It does not have to be. You could actually constrain it to spend a certain amount per year and that could change over time. That would also figure in to the calculations.

It can consider very long time periods. It's currently set up to go up to 70 years. That's just an arbitrary date. It could go longer. Sometimes we do go less.

As you know, the Ohio River system is very complex. There are 56 locks, a number of sectors, links, nodes, bends, locks, junctions. Each of these have to be represented explicitly in the model.

We've got 8,000 potential movements each year, nine commodity types with numerous barge types and configurations. Each of these have different costs and, of course, you can have an O/D (origin/destination) with different ways to get there and the model goes through in one of its many processes and calculates which would be the optimal way to do that.

Coming back to what I said to begin with, ORNIM is very powerful. It can select among literally thousands of possible project alternatives, rehabs and maintenance policies to maximize the total river system benefits over a long multi-year horizon.

It can tell us given the inputs into the model which alternatives are economically viable, when those projects, when those maintenance changes should occur and the optimal sequence of those alternatives.

Let me take just a couple of minutes to explain at a very elementary form, if you will, what the ORNIM model is doing at its heart. The objective of ORNIM is to essentially balance the cost of delay and the cost of increased river traffic with the cost of infrastructure improvement.

If you look at this figure, it's a very simple representation of the river system where we have three locks. It's hard to see on this figure, I apologize for that, but this is the river traffic.

Just for an example, in year 2000 we have a certain level of river traffic. This doesn't represent actual data, by the way, it's just illustrative. We can see that there is some congestion going in both ways in this particular system, but the congestion represented in yellow is not that severe.

If we do not have any new improvements to the system, then by year 2020 two things happen. There are greater demands on the river system and, in fact, we would see without any change to the river system some increase in the total tonnage on the river system, but as a result of that we have increasing delays at each of these locks represented by the red dots, much more delay.

Well, the question is can you improve the system, and if you can, how do you measure the benefits. Again, very simplistically if we look at a project at this lock one, for example, we see by making an improvement there in maybe extending a 600 foot to a 1,200 or adopting a maintenance policy we can reduce the delays at that lock. That has two benefits. One, the costs of delay at that lock are less and also as a result the system can accommodate more traffic.

Other things can also happen and the model needs to consider this. While we have fewer delays here, we may in fact have greater delays there. You may in fact have greater delays there.

Another way of asking the question is what if I not only improve this lock, what if I improve locks two and three.

In this particular figure, that's what this represents. You get two benefits of that. One, you reduce delays at each of the locks. In fact, the delays at these locks are interdependent. Also, you can see that the total tonnage moving on the river is greater. So you have fewer delays, you have the benefits of greater tonnage on the river and that needs to be compared to the cost of these improvements. Again, this is greatly oversimplified.

If you go to this particular figure, this is a representation of the model itself, although again it is even somewhat simplified. The model consists of three main components, the lock risk module, the waterway supply and demand module and the optimal investment module.

We have a number of inputs that come into the model, random closure probabilities. We have also reliability estimates for all the components of all the locks. We have inputs, repair plans and the costs of those repair plans. That comes into lock risk. That feeds into the waterway supply and demand model.

In that model we have cargo forecasts over any time period that you would like, towboat barge operations which are modeled explicitly. We have a very detailed representation of the river network and we have a very detailed operations or time to process barges, et cetera. Then over in the optimal investment module we can give it any number of possible construction plans,

as well as maintenance scenarios. We can also, if we like, budget constrain it on a year by year basis.

Through an iterative process of all three of these models with all of this input that will iterate. The model runs very quickly.

Once we run the model such that we what we call fully populate the model, we can look at any number of alternatives within a matter of about ten minutes, go to the restroom and come back and the model will give you an optimal investment path in projects and maintenance not only for one lock but for the entire system.

Let me now turn to a demonstration of the model that we ran recently. Let me make a couple of caveats. The model as it exists now is not fully populated with all the inputs that I discussed in the previous model, but it is partially complete. For those inputs that we have not got the final inputs on we are using surrogates.

What we wanted to do in this particular case was to show you one of the ways that the model could be used. The scenario that we posed to the model was this: What if you can reduce all 15-day routine maintenance closures at all of the mainstem Ohio locks and we can reduce those to 10-day closures but this will require an upfront capital investment. Maybe you want to have an investment to have a miter gate changeout system, many other opportunities.

Let's answer the question, well, we really don't know what that would cost but it would be somewhere in the range of \$10 million at each lock or possibly \$5 million at each lock.

Given this question, the question to ORNIM is at which locks is this economically viable to do or would it be beneficial to make this maintenance change and also not only if it would be viable but also when should this maintenance change occur at each of the locks.

This figure which is a graphical representation of the Ohio River system depicts the results of what ORNIM gave us in this particular scenario.

In this case we are asking the question what if it costs \$10 million of initial investment at each of the mainstem locks. This really is only considering the 20 mainstem locks, not all 56 in the system.

When we ran the model for this it said, yes, this is a good idea and it has potential savings at nine of the locks. Those are represented by green. The number there, it gives us the year in which that change in policy is economically viable.

So we see that the implementation of this policy range is from 2001 up to 2020 over that time period with an incremental discounted systems net benefits of \$142 million. We ran this over a 35-year framework. That was just for an example. We could have run it over 75 or any other number of years.

The next slide says what if we can make changes such that we can implement this maintenance policy change so that it will only cost us \$5 million at each lock rather than \$10 million.

Well, you would expect that in fact it would be viable at more locks and, in fact, the model does tell us that. It has potential savings at 14 locks now as compared to nine. It's somewhat difficult to see here, but they are represented again by the green dots on the mainstem.

We not only find that it's viable at more of the locks, but in fact, it makes economic sense to implement that policy change more quickly from 2001 up to 2010 rather than going up to the time period 2020 that we saw in the previous \$10 million scenario.

We also have an increase in the benefits. Our incremental discounted system net benefits go up to \$175 million rather than \$143 million which I believe was the previous one.

I want to just give you a very brief status of where ORNIM is now. We completed and delivered version 1.0 of ORNIM to the Corps back in April of 2000.

Since that time we have identified ways to improve the speed of the model and as a result of that we are finishing the development of version 2.0 which we will demo to the Corps, in fact, this next week.

This increased speed has allowed us to go back and re-address the way that we deal with probabilities in the model and we're doing that in a slightly more sophisticated way. The speed of the model has increased.

I would again point out to you that the model is very quick. With the proper analyst you can go through many, many different scenarios in a day given the inputs that you have given into the model.

So we feel that this is a very powerful robust model that we feel is a significant improvement over the suite of models that they are currently using which are not connected.

So that's all I have to present about the model today. I would be very happy to answer any questions you have or follow up after the meeting or call me at the office or whatever. I'm open for questions.

MR. STEINER: Before we take questions, the lock risk model is probably optimal for projects under 50 years of age, but for older projects where more profound unplanned outages might occur, we still I think got to work with the database and the model to have any confidence to make any decisions on that basis. Any questions?

MS. TORNBLUM: I have a question. In your graphic here you count the benefit of increasing river traffic. I assume that's included at the end in your category of benefits there.

DR. CURLEE: Yes, it does. The model, as I said, is very complicated. It's extremely complicated. One of the main benefits though would be the increased river traffic.

MS. TORNBLUM: The traffic projections, how do you --

DR. CURLEE: The traffic projections are given to the model.

MS. TORNBLUM: So it's not just capacity you are measuring?

DR. CURLEE: No. We actually do have capacity constraints in the model. If you get into the question of what is capacity, the more congested the lock becomes, we have a model that predicts what the congestion level will be at each lock given the barge traffic that's coming through.

So, yes, you do get more congested at that lock. You would tend to have more tonnage coming through but more congestion, and the model is essentially saying when does it not make any sense to put another ton of traffic on the river given the cost of the alternative which is land.

MS. TORNBLUM: Actually, I was asking if your estimates were constrained by real traffic projections. I'm just assuming if you build it the traffic will come.

DR. CURLEE: That's a subtle point, that the traffic projections are given. The only way that would come in is through something called induced demand. So the model does have the capability to say if in fact you improve the lock that in fact could induce the demand for the flow of commodities through that lock.

MR. HANLEY: I think the question is where did the traffic projections come from. That's a data input. The traffic projections, engineering information and so forth. These are determined by the engineers and economists outside the model. What the model does is it grinds all that stuff and ascertains what the optimal investment path is, but you're constrained. You can't put any more traffic on the system than your projection shows will occur.

MS. TORNBLUM: That's what I was asking. Thanks.

DR. CURLEE: The model is actually asking -- you have a projection of traffic demand and the model will put everything on the river that it can that's economically viable. When it becomes not economically viable, it diverts it to land.

MS. TORNBLUM: Thank you.

CHAIRMAN WHITLOCK: Any other questions? Thank you. Moving to the Ohio River Construction Status Reports, we have Larry Bibelhauser up first.

MR. LARRY BIBELHAUSER: Good afternoon everyone. Since I was just here six months ago I'm not going to explain the scope of the project. I'll just give a status report.

The Olmsted Lock contract has proceeded. We expended \$61 million on that contract last year. We have a projected earnings of \$15 million earnings to the contractor this year and a completion date of November 2001 on that particular contract.

As you can see from this aerial photo taken in September, the concrete work has been completed on that contract. We are finished up through elevation 310 which is the top of the lockwalls with the construction and we're working in the piers and control houses. This is just another close-up view of the upstream end of the lock.

On October 2nd General Griffin came down and turned the pumps on and started refilling the cofferdam. It took us about twelve days to refill the cofferdam. We have water in our lock at Olmsted now. We are at equilibrium with the river on the outside.

On October 12th we took the first sheetpiles out of the cofferdam. We are in the process of tearing down that cofferdam right now. It will take us about one year to do that. So by next November the cofferdam will be gone. That's a major milestone.

The approach wall contract, Massman Construction Company is building approach walls over in Paducah. We expended \$15 million on that contract last year. The contract earnings are about \$30 million. Right now I don't have enough money to pay his earnings.

Rendering the floating approach walls and these nose piers. These nose piers are instead of cells. They are large precast, made out of precast pieces. We're driving large 145 foot, 10 foot in diameter casings into the river right now. This is the first nose pier that the contractor started on. We're driving those about 90 foot into the bottom of the river.

In order to assure ourselves that all this innovative design that we did on the floating approach walls would work, we required a contractor to build a test section. That's just showing the test section that we were building to prove out all of the design things before we went into mass production at the Paducah site.

This is the Paducah site. He has laid out this graving yard. He'll build the 11 segments that make up the floating approach walls in this graving yard.

He will then fill this area full of water and float these sections over into a deeper section over here in this slide here to the right.

Then we will break through to the river and float these out to the Tennessee River and push them down to the project site and in some cases we'll hook five of these segments together, some places three, some two, to make up the entire length of that approach wall.

Then we'll place it between pile on the lock that's already built there and connect the other end to the nose piers where you saw in the previous slide that we started on.

This work has taken us a little while to mobilize and work out some of the bugs, but it's similar to what some of you saw yesterday with Hank on his project.

The dam design, the A-E contractor is proceeding very well with the dam design. We're about 55 percent complete with the plans and the specs. We will be ready to advertise by the end of this FY.

Advertisement and award of this contract, to stay on my optimum schedule I would like to do that in FY 02. Our ceilings and so forth and where we are budget-wise will determine whether I advertise this contract in '02 or '03.

Initially I advertised this boat ramp contract as relocations for the village of Olmsted. I advertised this year and didn't get any successful bids. I put it off until this year and I am not advertising it right now because I don't have enough money in my budget this year for this contract.

A year or two ago we worked on a lot of things that we could do to keep Olmsted moving and to accelerate some of the work. I got a contract to build the spare gates. The spare gates are being fabricated. It started last year and will be completed this year.

I need a place to store those gates. Currently we're working in-house to put together a design build contract. That contract will be advertised when funds become available.

The operating and maintenance bulkhead contract will be ready to advertise this year probably in the second quarter. It is on the critical path for the project. This contract needs to be advertised and awarded and nearly complete before we award the dam contract. It's about a \$15 million contract. Advertisement of this will be subject to funds for the Olmsted project. I would like to advertise that this year.

One of the other things we did a year or so ago was put out for the wash down barge. The Marine Design Center is managing that for me. It is under construction and proceeding just fine.

Some downstream mooring cells, those bid documents will be ready. If we have any extra money, we'll spend it on those.

The overall schedule, the green ones are the two contracts that are under construction right now. The gray ones are future work. The red one is a critical path contract that I need to get going before you can get the dam going in either '02 or '03 depending on how that works out.

The project is still at the billion dollar price level. Funding has been good in the last year. We were in the conference for \$34 million. Through reprogramming I ended up expending \$87 million on this project.

The conference amount this year for Olmsted was \$56 million. Due to savings and slippage, reprogramming to other projects and paybacks that I used the money from other projects last year, I'm going to have \$44 million this year is what my budget is, but I really need \$60 million to keep this job going and to keep it on schedule. I will get \$44 million when I get

my allocation this year. Hopefully the division or Headquarters will find me that other \$16 million to keep me moving.

The budget ceilings that I'm under, you can see the projections here of my constrained budget. The '02, '03, '04 numbers are extremely low. I cannot stay on schedule with that kind of money to complete and make this job operational in 2008. If you want this thing completed in 2008, I got to get a lot more money than that in the earlier years up there.

So my whole summary here today, guys, is send me money if you want this job to stay on schedule and be operational in 2008 and the project completed in 2010. Any questions or comments?

CHAIRMAN WHITLOCK: Thank you, Larry. Next up is Hank Edwardo with Pittsburgh District.

MR. HENRY EDUARDO: Good afternoon. I thought for a while this morning that Mark, Dave and Mike would have to get their hard hats from yesterday, watching that crane work behind them. I'm glad to see it is off the window ledge.

My talk is on Locks and Dams 2 and 3 and 4, the Monongahela River Navigation Project. We call that Lower Mon. I'm going to give you a project overview and talk about the Braddock Dam component of Lower Mon and talk about our work effort this year.

On the left of this slide are the existing projects. Lower Mon project is a \$705 million two for three replacement project. We're going to be replacing a 100 year old dam at No. 2, a 100 year old dam and locks at No. 3 and 70 year old locks at No. 4 with a new gated dam.

This is the Braddock Dam component. Locks and Dam 3 will be eliminated. Locks 4 will receive twin 84 by 724 foot lock chambers. This is the existing river profile. Dam 3 in the middle which will be eliminated provides an 8.2 foot step in the river. When that goes away we will change the river levels between Braddock and Charleroi. The river level will rise five feet in this reach and drop 3.2 feet in that reach.

Because of those river level changes we have a \$25 million relocation effort to adjust municipally owned infrastructure that would be adversely impacted by those changes. Most of that is sewer work.

We also have a cost sharing effort to adjust the railroad bridge. I'll show you that in a minute. We also have to dredge about a million and a half cubic yards of material from the riverbed in Pool 3 to reclaim a nine foot deep 300 foot wide navigation channel.

We've already started working on the municipal relocations. This is Elizabeth Borough, Dravosburg, West Elizabeth which took a grant in lieu and helped separate their sewer system to comply with EPA requirements for combined sewer systems. We've already completed an underwater crossing in Pool 3 in the reach we are going to be dredging. That was a sewage force main job.

This is a very interesting project for the authority of Charleroi which was a water line. This was done through direction boring under the river where a pilot hole will snake through the river and then a larger hole was drilled along that pilot hole and is welded together and high density polyethylene pipe was snaked under the river. It was a very interesting job.

This is the railroad bridge I mentioned. It's currently owned by Norfolk Southern. When I briefed you last time it was a Conrail bridge. The main truss will have insufficient overhead clearance to comply with Coast Guard requirements for 42 and a half feet after the river is raised.

We're working with Norfolk Southern to provide the required clearance. Our original concept was to fabricate a new truss, this part off site when it was ready, float this one out, float the new one in and that would all be done in one day according to Conrail. Norfolk Southern wants it done in three days, so they are easier to deal with than Conrail.

Braddock Dam, which many of you saw yesterday, is breaking with tradition. We are building Braddock in-the-wet, no cofferdams.

Prior to this innovative contract under way we broke out some lock work that needed to be done in preparation for the new dam.

The first contract that got us out of PED was a \$1.5 million contract to upgrade the floodway bulkhead structure. The second contract was extending the upper guardwall. This was to help control outdrafts with the new gated dam in operation.

We also completed last year a \$13 million contract to build the new abutments for the Braddock Dam. That consisted of reconstructing a portion of the lock river wall and building a new left bank abutment. This was a really interesting job because the contractor had to first build an island on the left bank to work from and then he started to build a wall consisting of what are called lagging caissons and structural caissons. The lagging caissons were four foot in diameter, seven feet apart.

When he completed those he then came back with a machine that cut down between the lagging caissons taking a foot off of each side. They were five foot diameter and the steel was placed in those and filled with concrete. A cap wall was put on top of those caissons and rock anchors were installed.

This is the top row of rock anchors being installed. There will be a second row lower than that under this current Braddock contract. That's what the completed abutment wall looks like. You got to see that yesterday hopefully.

The main contract, Braddock Dam was designed and is being constructed using innovative techniques in-the-wet. This is a conception of the segment being floated into position through the aid of towboats and winches.

That innovative design and construction was accompanied by an innovative contracting procedure in the Pittsburgh District called Best Value Acquisition. We acquired that through the Request For Proposals that followed our decision to go in-the-wet in July 1997.

The interesting part of these acquisitions is that we prepared animated videos to help offerers conceptualize this innovative approach to building a dam.

The final request for proposal was issued in December of '98. We sent out over 300 of them through electronic bid sets along with a 45-minute digital animation.

The cornerstone of Best Value was that we had non-price and price factors. We considered non-price and price to be essentially equal for the acquisition. We had a rigid set of evaluation factors and criteria that we evaluated proposals against. We also had a contract funding profile that said, Mr. Contractor, please design your job so you don't outspend the government. That was what we said we would make available in each of the fiscal years 1999 through 2001 balance to complete in 2002.

We had six offerers. Four of them proposed building these segments in casting basins. Two proposed building them on deck barges. The offers ranged from \$107 to \$134 million.

After evaluation we determined that the proposal of the joint venture of J. Jones Construction Company and Traylor Brothers, Incorporated, offered the best value to the government. You can see on the left, green represented acceptable, blue was exceptional and their price of \$107.4 million balanced against those non-price factors again represented best value. Jones was issued a notice to proceed on 2 August. He's got 1,185 days to complete the job.

For many of you that were at Leetsdale yesterday, this is where components of the dam are being fabricated. The essence of the innovation here is that while the contractor is building a foundation for the dam in the river from floating equipment at Braddock he's concurrently building two football field size structures at Leetsdale.

When they are seaworthy they will be launched into the river at Leetsdale and floated 27 and a half river miles up the Ohio River and up the Monongahela River to a dock at Duquesne where they will be made heavier and bigger before being brought back down, positioned over the foundation and ballasted down onto 88 large diameter drilled shafts. Those are 78-inch diameter drilled shafts.

The concept here is a two level casting basin. This is the upper part. This is the launch basin. When it's seaworthy this whole area is super flooded just enough to get this thing to float. It's pushed over to this area. The dike is removed. It's pulled out into the river and it starts its journey.

This is a web cam review from 5:00 yesterday evening of the segment one being cast at Leetsdale. This is a close-up view of that, the precast panels being erected into the shape of segment one.

This is the contractor's progress comparing his actual earnings for '99 and 2000 against the funding profile.

In the course of obtaining permits to open up the Leetsdale casting site Jones-Traylor was required to complete a Phase One archeological survey. That revealed the presence of an archaeological site containing both historic and prehistoric artifacts eligible for the National Register.

That area coincided somewhat with the casting basin that he had to open up. The government contractor and State Historic Society worked a plan that let the contractor continue excavating the casting area while preserving three areas that will be opened up for data recovery.

We partnered up with Corps experts to figure out what's the smart thing to do in this matter and we completed that last month.

The findings of this independent technical review team were that we got significant archeology. We will contribute significantly to the prehistory of the Upper Ohio Basin. We will limit data recovery to one percent of project cost.

We're starting immediately. You saw yesterday, there were people working in area one. We are going to be soliciting for a ranged effort over the rest of the areas as a weather vein for the state regulator to sense the contracting view of this job to get an idea of how much it is going to cost.

Back up at the site of Braddock where the foundation is being constructed we have excavated 350,000 cubic yards of material out of the river. That was taken up into the former U.S. Steel Duquesne property. That hole has been dug in the river upstream and downstream. Cutoff walls are in place and the graded gravel base has been put in the river. The material shown being taken out of the river was deposited throughout the Regional Industrial Development Corporation site, capping soils, filling in large pits.

This is a view of the brownfield from last fall. That's a view of the dock that is under construction to receive the segments. We completed a temporary overgrade bridge. It's almost 90 percent complete that avoids an at grade crossing with Norfolk Southern.

We completed the batch plant on the left bank, erosion controls and the laboratory, a conveyor system to get the concrete into the river.

This is where we're at now. Our conference report and now our appropriation is at \$60 million which is a remarkable outcome given where we were looking at this months ago. We established the capability early of \$75 million. That included a lot of stretch work, some of which we already started, building approach docks at Locks 4 and dredging at Pool 3.

We'll continue those contracts into this year as well as providing at least \$40 million to Jones-Traylor for advancing designs for works at Lock 4, preparing plans and specs to advertise in 2002 for a new river chamber, new access road and a new building.

This is the schedule completing the project in 2008. This is where we are right now. We have completed the abutments, in-the-wet Braddock, relocations will extend as project funding allows, Locks 4 starting in Fiscal Year 03.

I would be happy to entertain any questions at this point.

CHAIRMAN WHITLOCK: Any questions? If not, thanks, Hank. We appreciate it.

MR. EDUARDO: Thank you.

CHAIRMAN WHITLOCK: Next up is Mr. George Flickner discussing McAlpine.

MR. GEORGE FLICKNER: My name is George Flickner. I'll be presenting McAlpine today. The site you see here is an aerial view of McAlpine as it exists right now. This is prior to any construction beginning.

In a nutshell I'll just briefly go over what the project entails. There is an existing 1,200 foot lock which is the primary lock which is used right now.

To pass traffic what we are doing is taking out two locks. There is an old 360 foot lock that is out of commission that is not used any longer and there is a 600 foot lock that you see there. That is our auxiliary lock. That's only operated when we have down time for the 1,200 foot for maintenance.

The 360 and 600 foot locks will be demolished. There will be a cofferdam placed on top of the end of the 1,200 foot lock both on the upstream and downstream end. We'll demolish the two locks and come back in and build a new 1,200 foot lock and we'll have twin 1,200 foot locks when we are finished.

One note that you might want to make on this particular picture is once we put the cofferdam in and shut down the 600 foot lock we're in a mode of only having one way of passing traffic up and down the river. And that will be about 1 February of this coming year that we shut down the 600 foot lock.

The cofferdam contract was awarded on the 26th of May. It amounts to \$32.7 million. It was awarded to the joint venture of Morris/Knudsen /Lane Construction. Date to proceed was 23 June. It has a two year period. Earnings to date are \$2 million. The two year period is based on us getting funding fast enough to keep the contract on schedule. I'll talk a little bit more about that in a minute.

One item on this contract is the sheetpile that will be used in the cofferdam is coming out of the Olmsted project. That is saving us about \$3 million compared to purchasing new sheetpile. So that's a good plus. It also helps us to pay contractor earnings for other work.

The first barge load of sheetpile is due about the 11th of November. Right now it looks like we're on schedule for that, so that's good news.

The first cofferdam cell will start sometime during the end of November. So those of you who are running tows up and down the river sometime in late November or early December you should see the coffer cell going on in and being put in the river probably on the downstream end first and then at McAlpine.

I have some pictures here. The following pictures show the ongoing construction we have now. This first picture happens to be an industrial wharf area that was an earlier contract that was put out to put in a wharf area to construct a spare set of miter gates for the existing 1,200 foot lock.

That spare set of miter gates is on order and will be showing up around mid-January. They will be then assembled here at the wharf. One set of those gates will be hung between those two piers. They will be available should we have a problem at the 1,200 foot lock. If we have an accident where we tore some gates up, we'll have a spare set on site to get the locks back in operation. Since once again I'll remind you that the 1,200 foot lock is your only way up and down the river after 1 February when we shut down the 600 foot lock.

This is a shot of some stone work. The old 360 foot lock is 1870s vintage construction. It is considered historical. We are taking out some of the old stone work and it is sandstone primarily, large blocks of it. We're pulling some of that off to the side and there are some stairs that were there that you can't see in this picture. We are taking that and going over in front of the Resident Engineer's office which will later on be a visitor's area and placing this in what we're calling a historical mitigation area.

We're doing some other features and we'll have these blocks there. There is a couple of tablets that you can't see. They are up on the wall you see in that picture in front of you. They are notes to some of the original construction and construction company names and dates of construction and so forth and one of those plaques will be over in this mitigation area.

This is a shot of the mitigation area where the stones will be moved to and placed into. Some of the stair casings would be used over there, also.

This will also make a nice overlook and visitor's area during construction. That's where the public will be able to come in and view the site.

This is a shot of some drilling that's taking place. This is a core drill. We have to go in to the existing 1,200 foot lock on many of the areas of the river side wall that will be inside the cofferdam. The reason for that is when the cofferdam comes off the two ends of the 1,200 foot lock and once we dewater we then change the stability criteria on the existing 1,200 foot lock.

So to make that a stable structure we have to go in and put quite a bit of rock anchors into the existing 1,200 foot lockwall. That work has just started. That picture is probably just about a week old.

That work will probably continue on, so as you are coming down to the river in tows you'll see that work going on on the 1,200 foot lockwall for probably the next year.

These are the templates for the cofferdam cells. Once again, the sheetpile is on its way from Olmsted. It's being removed now and will be down here in mid-November.

Actually, these templates came from Olmsted, too, by the way. The contractor bought them from the contractor at Olmsted. These will be used for the upstream and downstream coffer cells. So they are sitting there ready. When the sheetpile shows up, the contractor is ready to start work on that.

This is a shot of one of the bridges. There are two bridges. This happens to be a swing bridge that swings open. It's the one that goes over the 600 foot lock. There is another bridge to what would be this side of it that's over the 1,200 foot lock.

When the project is done these two bridges get replaced by a highlift concrete bridge that will pass traffic without having to wait on the tows to go by.

What I'm trying to show you here is the decking on this old bridge has failed on us and we had to temporarily put on some wood planking. You can see to the back of the picture, that's the wood planking back there that was used to pass traffic until we could come in and put a new deck on this bridge.

The bridge will be used as the primary construction hauler out. All the contractors work area and lay down area for the lock contractor will be back over on the island side of this bridge. So it's going to have a heavy traffic load on it during the construction of the project. So we had to come in and re-deck the bridge in order to take the next six years of construction traffic on it.

That is now finished, by the way. I was just out there yesterday and they've completed the decking on the bridge.

Once again, my story is somewhat like Larry's on Olmsted. The budget for this year, we tried to get \$20 million actually. We went in and got \$18 million. Savings and slippage cut us to \$15.1 million, but my capability is closer to \$22 million this year. So we're shy. If we want to keep this cofferdam contract on schedule, we're going to have to go out and find some money.

The lock and bridge design, the follow-up contract to the cofferdam, the design is 60 percent complete and presently being reviewed. We expect the RTA in February of 2002, to advertise and award in June of 2002. Cost is about \$170 million. Scheduled completion is July of 2006. Once again, that completion date is dependent upon funding.

The next slide sort of shows the picture and the problem we're getting into. If we want to keep this moving on schedule we're going to need more money. It shows you what happens with

the constraints that we have within the ceilings that we think we will have. Just like Olmsted, this stretches it out to 2008 if I have to remain constrained by these ceilings. We can do it in 2006 in terms of capability, so there is at least two years difference. As time goes by that slides.

I also have a contract that was not awarded last year that was termed boat mooring facility. It's a mooring facility over off to the side of the project that is not a critical item to the project, but it was designed. It was negotiated with an 8A contractor and ready to award. That's a \$2.5 million job and we decided not to award it and keep the money there to fund the earnings on the cofferdam contract and keep it moving. So that's sitting out there ready for award. It doesn't look like it will get awarded unless extra money shows up.

The cofferdam lock demo, we actually have insufficient funds this year we think to keep it on schedule for two year completion. So that's the second problem we have.

As the previous slide showed you, we have insufficient funds to actually award the lock in 2002 if we can't get funding above those ceilings that we're constrained under right now. We have the capability to complete in 2006. Funding has us out in 2008 and probably creeping into 2009 as time goes on. Any questions?

MS. TORNBLUM: Are those the current services ceilings that we're talking about, Steve?

MR. HUDAK: Yes, those are flat ceilings, assuming the President's Budget for FY 01 is just as flat.

MS. TORNBLUM: So they are below where we are now?

MR. HUDAK: They are below the current services, yes. The last set of ceilings are the only ones we have.

CHAIRMAN WHITLOCK: Are there any questions? If not, thank you. We appreciate it.

Next is Mr. Keathley who will be talking about Marmet Locks and Dam.

MR. MICHAEL KEATHLEY: Chairman Whitlock, General, members of the Board, thank you for this opportunity to be here and provide you a briefing of our Marmet Lock Replacement Project in the Huntington District. My name is Mike Keathley.

The Marmet Lock is a very important project in the Huntington District. It's located on the Kanawha River. I'll give you a very brief overview of the efforts we have accomplished to date on this project and what we plan to do in the near future.

The Marmet Locks and Dam is the second of three lock and dams located on the Kanawha River in the central part of the state of West Virginia. The Kanawha River is a tributary to the Ohio entering near Point Pleasant.

It's a very important tributary for commerce as it reaches into the central chemical valley near the capital city of Charleston and also into the southeastern coal fields in the state of West Virginia.

All the projects along the Kanawha River are 1930 vintage consisting of twin 56 by 360 foot chambers. As most of you are I'm sure well aware the Winfield Locks and Dam was recently upgraded to a 110 by 800 foot lock chamber and the plans for Marmet include a similar upgrade.

London is the third project at the upstream headwaters on the Kanawha River and Mr. Demi Mack of the Huntington District will provide you a brief overview of the rehabilitation plans for that project a little later today.

The Marmet project description, of course the project was authorized by WRDA '96. The fully funded estimate is currently \$304 million taking into account the budgetary funding ceilings and spreading that project out through 2009.

The replacement lock will consist of a 110 by 800 foot chamber and this will replace the twin 56 by 360 foot lock chambers. The smaller chambers are very inefficient for the modern tow configurations on the Kanawha River allowing only passage of a single jumbo barge per lockage. So you can imagine there are lengthy delays at the project sometimes reaching in excess of five hours just for a single tow to be processed through the lock.

The project will require 216 tracts of real estate. We have implemented a number of innovative design lock features to reduce the project cost resulting in savings of approximately \$40 million to date.

The replacement lock and incidental features are shown in red on this slide. They will be located immediately adjacent to and landward on the right descending bank of the existing locks which are shown in yellow.

The dark blue areas signify the cofferdam requirements for the project. As you can see, a significant portion of the existing lock will serve as a cofferdam and to minimize the real estate requirements for the project.

A filling and emptying system for the replacement lock will consist of a through the sill filling and emptying system with intakes housed in the upper miter gate sill. Filling and emptying valves will be housed in the lockwalls and longitudinal culverts running the length of the chambers with side wall filling and emptying ports will be recessed into the lock floor.

Summarizing the real estate requirements for the project, we will require a total of 98 acres of lands in addition to the currently owned Government lands adjacent to the existing project.

This will consist of 216 individual tracts of real estate and result in a total of 252 displacements including single family residences, mobile homes, apartments and businesses.

This recent aerial photograph of the project illustrates the extent of development adjacent to the existing locks which can be seen here in the background.

We have two major interstate arteries located to the north on the right-hand side of the photograph. There is also a rail line located running parallel to the interstate shown here. The Dupont Chemical Plant is just visible in the bottom limits of the photograph. If you look downstream there is extensive commercial and industrial development on that end, as well. So the project is very constrained.

The real estate has been prioritized into three areas. The first area shown in yellow is immediately adjacent to the existing locks. Of course, this will house the replacement lock as well as the operational and maintenance areas.

The second area shown in dark green on the downstream to the right end of the project will be used as a disposal area and also for on-site mitigation of habitat losses resulting from relocation of a channel.

Then the dark blue areas have been designated area three on the upstream end of the project on the left side of the photograph are required for construction of the new upper approach channel and upper approach wall. Prioritization of the real estate requirements will permit an initiation of construction at an earlier date than would otherwise be possible if we wait until all the real estate were available.

The project schedule as last testified, of course, the real estate acquisition was initiated in FY 98. The Plans and Specs for the lock construction contract are scheduled for completion this FY, as well as acquisition of all the Phase One and two real estate requirements.

The construction for the lock contract is planned for award in FY 02 with the completion of the Phase Three real estate following that year also and being available the following year to the contractor.

The lock operational date based on the budget constraints or ceiling constraint schedule would be operational in FY 08 with the remaining construction activities being completed in FY 09.

A more optimistic schedule ignoring the budgetary ceiling constraints that we currently have would have the project on the most efficient schedule completed or operational in FY 06. You can see some of the intermediate construction steps and their timing.

To give you a summary of the financial allocation to the project to date, through FY 2000 a total of \$32.8 million have been appropriated to the project. This FY we have a work allowance or an allocation of \$8.6 million leaving a balance to complete the project of \$262.6 million.

Activities which were completed last year or advanced, of course, we have continued our real estate acquisition program. Acquired structures are being demolished concurrent with that acquisition program.

We are continuing our cultural mitigation work in the Phases One and Two real estate areas. We have completed the construction of materials and utility relocation DMs and advanced the Plans and Specs for the lock construction due to 70 percent level of completion.

Planned activities for this year include completion of the Phases One and Two real estate acquisition program, as well as the cultural mitigation in those areas in advancing to Plans and Specifications to the 100 percent level ready for award in FY 02.

The only issues that have been identified for the Marmet Lock Replacement Project are the fact that the existing locks are nearing capacity. The traffic levels are projected to exceed the capacity of the existing projects by the year 2005 requiring implementation of some sort of a helper boat or assistance to maintain traffic levels at the project.

Unfortunately, the lock operational date based on our budgetary ceiling is not until 2008 with remaining construction being completed in 2009.

That concludes my presentation. If anyone has any questions, I'll entertain those.

CHAIRMAN WHITLOCK: Any questions? Thank you.

MR. DON GETTY: Good afternoon. My name is Don Getty. I'm with the Nashville District. I'm the project manager on the Kentucky Lock Project. It is my pleasure to discuss it with you today.

This is what I plan to cover. I'll give you a brief description of the project and tell you what's happened with the project since the last time I briefed this Board about two years ago. I'll tell you about the ongoing and recently completed construction and upcoming construction activities and what we plan on doing this fiscal year.

Kentucky Lock is the lower most lock on the Tennessee River. It's at mile 22. It is somewhat unique in that it has a sister lock located a couple miles away from it on the Cumberland River. Theoretically vessels can travel through either lock and get upstream or downstream because their waterways are connected by a canal.

Most of the traffic goes through the Kentucky Lock because the lower Cumberland River below Barkley Lock is so narrow and winding. It's about a 40 million ton system going through both locks.

This is an aerial photograph of the project site. Here is the dam, the existing 600 foot lock. The yellow outlines are the proposed new 1,200 foot lock which will be located landward and adjacent to the 600 foot lock.

This is an artist's rendering of the project site on the downstream side looking upstream. This is an existing 600 foot lock. This is the proposed 1,200 foot lock. In addition to the new lock, there are three other major features of this project. They are all relocations, the first of which are these four large transmission towers. There was actually seven towers here.

We are having to relocate the four upstream towers to make way for lock construction as well as build four new towers on Powerhouse Island. I'll show you some construction photos of those in just a minute.

The other two major features are the new downstream bridges over both the highway and the railroad. Right now a single track railroad and two lane highway go across the lock and dam. When we build the new lock, we will have to relocate those to move downstream bridges. You can see those depicted here.

Those are about \$100 million in project cost, the tower is about \$12 million and the lock makes up the balance getting up to a total project cost of right about \$500 million.

This is a computerized rendering of the project site from the upstream side looking downstream. I wanted to show this to depict two other bridges involved in the project. We had to build a pedestrian bridge across both locks, as well as a maintenance bridge to get to the middle wall when we build the new lock. Downstream you can see the two bridges crossing the Tennessee River.

Getting to some of our design changes since last time, this is a picture of the navigation model we built down in Vicksburg, the Waterways Experiment Station (WES). This is depicting existing conditions. We only built this really to look at tailwater conditions. We're not concerned about what we're going to experience in headwater. We got a pretty good grasp of it. Tailwaters is a different story both with downbound tows as well as upbound tows.

So the only headwaters is this area right here. The rest of this is tailwater. Again, this is under existing conditions. This does not have a new lock in it.

I'm going to show you a video hopefully, if this works, of testing the model with water in it and with the new lock in place. So if this works, we'll see it here.

(Whereupon a video tape was shown.)

This was a gathering of local navigation folks down in WES in April. We're looking primarily at upbound tows. We have a problem with tows approaching the new lock under regular conditions.

You can see the stern of the tow was pretty far off the guidewall and you'll see in a minute why that is. We're trying to rectify that by putting in some training dikes. This is on the downstream tip of an island.

They are showing a dye test here. There is an eddy in this area that pushes the tows away from it. You can see this moving across here. There is a current taking the tows away from the guidewall. So we are putting these dikes in trying to minimize that eddy and therefore making it easier for the tows to approach the new lock.

So this is a towboat going in with this dike in place. You can see the stern doesn't come off the wall as much. So it made it better, but it still hasn't rectified it.

Now they are putting two dikes in and seeing what kind of impact this has. This is just an overhead of the two dikes. You can see them there. These will just be stone dikes. In this particular case it didn't make any difference. It is still coming off of the guidewall some, so it didn't really help.

This is just showing a dye test. We are building some fishing jetties over here. We have two mooring cells we didn't want to impact and we are showing we are not impacting those. So these are just some tests we ran down at WES.

This is a picture of the model again with water in it looking downstream. This is the final selected dike configuration. These are just simple rock dikes. It's a lot less than we had anticipated and it's going to be a very small project cost. It does solve the problem for upbound tows getting into the lock chamber.

In the foreground here these are our piers for the highway and railroad bridges, as well as a fishing jetty that we are going to have to build.

Just like Hank mentioned on the Mon, we're going to have a railroad truss and we are anticipating having to float it in. This is WES's rendition of what a railroad truss looks like.

We are building it over the west bank and floating it across to the east bank. This is going to be a difficult operation below a dam with flows coming out of it. So we are testing different scenarios in the navigation model just to make sure we can get some good information to the bidders when we prepare the bid documents.

I want to talk about another major design issue or decision we made this year. One of our big concerns is keeping the existing lock open during construction of the new lock. Our downstream cofferdam was causing us concerns and we have come up with a float-in downstream cofferdam scenario to help us minimize impacts in the existing lock.

This is just an overhead look. This is the downstream end of the new lock. Here are the miter gates. This section is the cofferdam itself. This is a traditional cellular type cofferdam.

This section is with our concrete float-in structure. Not only is this going to help keep the lock open, but it looks like it's going to save about \$7 to \$10 million over our original design and there are several reasons for that.

This is a cross-sectional view of the cofferdam and the middle lockwall. This is the outline of the lockwall. Here is our cofferdam. Before our design we built a cofferdam and then we were going to tear it out after we built the lockwall. Here we are going to leave the cofferdam in place and actually incorporate some of it into the lockwall. So we are actually saving concrete when we build the lockwall as well as we're also saving the cost of demolishing the cofferdam. So that's a lot of where that \$7 to \$10 million comes in.

This cofferdam will also withstand the impact from a barge loading much more so than a regular cofferdam would.

Just to give you a feel for some construction that we recently completed and have ongoing, the Tennessee Valley Authority (TVA) is doing the transmission tower relocation. They were actually our project start back in July of '98. We didn't have much money for them then. They would be finished by now if we would. We have enough money and they will probably be finished close to the end of this time next year.

We built a small access road and did some relocations over on the west bank for the bridges. Those just got completed last month.

We issued our first large contract on the job this summer for the west bank approaches to the bridges. That work is ongoing and I'll show you some pictures of it.

This is a construction photo of the towers on the east bank. There are four towers. We are looking upstream. They started erecting the most upstream towers. You can see the foundation for the other towers here.

This is up about 45 feet now. The total tower height is about 375 feet. This is going to be about the second highest tower in the TVA system.

This is just a shot from the other bank looking over. This is the tower that's under construction. These are the towers that are going to be replaced. They are about 175 feet tall now. The new ones are going to be over twice as high.

We're also having to build four towers on Powerhouse Island on the other side of the navigation canal. As you can see, the first tower is under construction and the foundations for the other three have already been constructed.

This is just some water pipe being off loaded for our relocation on the west bank. This is some sewer line relocation work that they have finished up. This was taken back in August, but they finished this job now.

This is some clearing work for our west bank bridge approaches. This is going to be significant embankment. The maximum height is about 60 feet. Through this area it's going to be 40 to 50 feet in height. It's about a million cubic yards of construction of the bank replacement.

This is just a photo of some chipping of our cleared debris going on and just another shot of our cleared area.

As far as our upcoming construction, we hope to issue two large contracts this year, award them this summer, start the upstream cofferdam and the lock itself. Just the upstream lock excavation, that will be about a \$25 million contract we hope to award in July. We also hope to award soon thereafter our contract to build the bridge piers for our two bridges crossing the Tennessee River. That will be about a \$35 million contract.

The fall of '02 we'll look to issue a contract to finish up the bridges, the superstructure, and then in the fall of '03 start the lock itself and the downstream cofferdam.

As with all the other projects you heard today we're looking at an unconstrained completion date of around 2007. If we have funding constraints, who knows.

Lastly, I'll follow up with how we stand this fiscal year. Unlike unfortunately McAlpine and Olmsted, Kentucky Lock is looking good from a funding standpoint this year. We got just about the right amount of money to keep this project on track. We're spending about half of it on construction and the other half on design. A lot of that is going through A-E contract. We're doing a fair amount in-house and TVA and other Corps districts are helping us, as well.

Our main focus this year is to get out these two large contracts here, the upstream cofferdam and the Tennessee Bridge superstructure contract.

We're in the same boat as a lot of other projects. Next year our funding needs are going to be about \$65 million. So it's a significant increase over what we had this year, so we're really ramping up and we're going to have some significant funding needed.

That concludes my presentation. Are there any questions?

CHAIRMAN WHITLOCK: Yes, we have one question.

MR. LUCAS: This is more a comment than a question. Since I was on the Board the first time in '94 this project has consistently been at the bottom of the priority list. I guess I'm more frustrated than anything else that we have four or five of these other projects that we've heard say we're going to run behind schedule, the Lower Mon, Olmsted, McAlpine, some of those projects that the Board's priority was much higher on for the lack of funds while Kentucky Lock which this Board for ten years has said should come slightly after hell freezes over continues like a runaway elephant. I know that's a tribute to the power of positive politics, but it's very, very frustrating.

MR. STEINER: Certainly we appreciate your comments, Steve. We all have to respond to what the congressmen said.

MR. GETTY: Did you want me to address that?

MR. LUCAS: No, that was a comment. That wasn't a question.

MR. GETTY: I have a biased view, by the way.

CHAIRMAN WHITLOCK: Okay. Thank you. Next.

MR. DEMI MACK: Good afternoon. I'm Demi Mack with the Huntington District, Corps of Engineers. I'm here to give you an update on the London Rehabilitation Project and I appreciate the Board inviting me to give this presentation to you.

This slide is the London Locks and Dam as it appears today. As you can see, this is the existing upstream miter gates which we'll be doing some work on along with the guardwall. I'll show you an artist's rendition of this in a minute.

The project including replacing the upstream guardwall as we showed here requires that the lock chamber be closed during which time we can also move this existing miter gate here upstream so we'll be able to lock through two lockages rather than one as it is today.

In addition, the project includes some miscellaneous electrical work and metals work bringing the facility up to current day's standards.

The fully funded project cost is \$22.2 million. You can see the Benefit/Cost ratio is 19.3.

The Huntington District initiated design of the London Lock Rehab Project back in August of 1997 using O&M funding and then received Construction, General funding last year and were able to complete Phase One construction.

Phase One included fabrication and delivery of the steel needle dam which we had delivered to the site here, also the steel sheetpile needle dam panels which you see at the site and the concrete needle sill which is also at the site currently.

The construction contract was awarded in April of last year and delivery of these three components was in September.

Phase Two has been a little more complicated due to what you don't want to hear again but the funding restraints.

When we shut the lock chamber down for construction it's imperative to have it out of operation for a minimum length of time and the funds must be available in order to complete on schedule.

So we broke Phase Two into three parts. So we will take advantage of what funding we get this year to do Phase 2A and 2B and then we'll do Phases 2C in FY 02 assuming we get the funding as required.

Phase 2A is electrical features including replacement of the motor control center, installation of the closed circuit TV and intercom systems, innervation of the pool level gauge.

That will be done by operations division, installed by them, with the program logic control system and installation of the power receptacle.

Plans and Specifications are due to be completed in December of this year and award of the contract in February.

Phase 2B is miscellaneous metals associated with the 2C contract which will be Government furnished material associated with relocation of the miter gates and the equipment including machine bases, pintal shoe bases, casings and the coin blocks. It also includes two new floating mooring bits.

Plans and Specifications for Phase 2B is also scheduled for completion in December and award of the contract in April of next year.

Phase 2C will be the major rehab. It includes replacement of the upstream guardwall, extension of the river chamber and includes installation of the Phase 1 and 2B Government furnished items.

Final Plans and Specs will be completed this year and award of the construction contract in December of next year.

These next two slides just show, like I said a while ago, the artist's rendition. You see how the miter gate has been moved out. This is the cell construction. It will be bid as an alternate or an option. This is shown with caisson construction.

Allocations to date are about \$2.4 million. This year we get \$1.2 million after the savings and slippage that's what we'll be using. We need a balance of \$18.6 million to complete the project.

That completes my update on the London Rehab Project. Are there any questions?

CHAIRMAN WHITLOCK: Okay. Thank you, Demi.

Next we're going to be talking about the Ohio River PED projects, Myers and Greenup Locks and Dams.

MR. HARRY SIMPSON: Chairman Whitlock, Board members, my name is Harry Simpson. I want to say good afternoon to you.

First of all I will be talking about Greenup and Myers, but I would like to start out speaking to you about our design innovations initiatives for navigation projects.

I will note for you that our innovations initiatives are instrumental in driving our project costs down and getting our projects to construction.

Part of my job is to work as a liaison between our regional navigation design team and the Waterways Experiment Station which I will refer to as WES.

The regional team identifies needed navigation improvements and WES investigates those improvements and they are our direct link to navigation experts throughout the world.

The good news is we have the best of the best working on our projects to drive our project costs down.

Our regional design team is made up of these people and you can see it crosses our district boundary and it crosses our division boundary. It is made up of our senior talent.

As a result of our design innovations we have accumulated a savings to date of \$500 million. That's significant in that it equates to getting two 600 foot lock extensions for free. That's Greenup and Myers.

These are two main focus areas that our lock design innovations focused on. It identified roller compacted concrete as one of the savings, in fact, over 50 percent of the savings in lieu of using the conventional structural concrete.

Another design innovation was in-the-wet construction which eliminates cofferdams and you heard a lot about that in the last couple of days. This innovation saves us time and money. We are currently using this at two of our projects, Olmsted Dam and the new Braddock Dam.

What you see here are suggestions from the first generation of the Innovations for Navigation Projects (INP) Program which is headed up by WES.

What I would like to do now is move on to our physical lock model which emphasizes or focuses on the emptying and filling systems for extension of the 600 foot lock.

The reason why we went to our physical model is because we propose the 600 foot extension at Greenup and Myers projects. This slide just shows you what we are intending to do at these locations.

At Myers, of course, depicted in the yellow, we are extending the lockwalls as well as extending the miter gate if you are looking at the landward lock. Of course, this lock chamber is a 600 foot lock that's existing at Myers while the main chamber is a 1,200 foot. Our end stage is to have twin 1200s at Myers. Of course, when we extended the gate or moved the gate out, that gave us an opportunity to save money with the emptying and filling system.

We are doing the same thing on the Greenup and Myers project. This is the first cost as reported in our Greenup and Myers feasibility report this year. The good news about this is we're continuing to drive our costs down by having our districts further study areas that could reduce costs. Some of those examples are looking at reducing the approach wall, possibly using precast boring holes if you will, on the front wall.

Of course, we are using design dollars to apply to our model. This year we have \$5.5 million to apply to our physical model which is located at Waterways Experiment Station, WES.

This is our physical model. It is something if you have the opportunity you must see at WES. This is a very powerful model in that it has potential for a great payback. It has that potential because it is the prototype for other projects. We expect significant savings from this model. The savings gives us an opportunity or at least it is going to be instrumental in moving our projects which are cued in the future forward in time toward authorization, award and construction. That's where we want to be.

We are going to water this model up next month and we are going to start to obtain data from it at that time. The scale on this is 1 to 25. This photo does not do it any justice, if you will.

What I tried to do here, we're going to use this pusher boat which will be remote controlled to test the effects of tows entering the chamber. What I tried to do is give you a depiction of the physical size of a 1 to 25 scale.

I am fully confident that we will meet our target savings of \$20 million per project as a result of using this model.

Our progression strategy is to use, as I stated before, design dollars to apply to the model. We are going to use our lessons learned on the remainder of the projects that are authorized.

The second generation of INP, the Innovations for Navigation Projects Program, will have a potential theme of reduced life-cycle cost maintenance, minimize lock transit time and minimize the construction time and adverse impacts.

WES will have the second generation workshop meeting next month. At this time what I would like to do is give you an invitation to give me any suggestions you may have so that I or Mr. Steiner can take those suggestions to the workshop.

That concludes my presentation. Are there any questions?

MR. SUTTON: I have one. What's roller compacted concrete and what's tremie concrete?

MR. STEINER: The simplest explanation, and I'm not the expert, I'm a general practitioner, is tremie concrete is placed in an underwater environment, whereas roller compacted concrete is a weak mixture of concrete and other materials that is placed with a lot of compaction to get the conformance you want.

I have a lot of engineering talent behind me. Did I mess that up?

MR. FLICKNER: Roller compacted concrete is not necessarily weak. It's placed in a dry situation and it's rolled into the batch plant mixture that you're used to seeing.

MR. STEINER: The unit placement costs are decidedly less. Let me sum up the Ohio River part of this program.

We are aggressively pursuing construction wherever we have construction authorization. We are putting ourselves in a posture that we could spend any monies that might be available. We don't apologize for that.

Within our planning our strategies are pretty simple, utilize very good technology and try to aggressively reduce project costs while aggressively increasing project benefits. We don't make any apologies about that either.

Our objective is to continue to sustain momentum of the Ohio River Navigation and Modernization Program because we believe it's of great benefit to this region and to cooperate with anybody else in any other region that we might be.

Harry's comment about the regional design team, the last regional design team in effect was at Rock Island so there is a lot of partnering going on. If you have any overall questions, I would be glad to answer them.

CHAIRMAN WHITLOCK: Thank you, Dan. The only question I have is the rendering showing the extended 600 foot lock at Myers and Greenup, particularly the one at Myers was showing the downstream middle wall and downstream land wall to be somewhat the same length as the existing guardwall downstream. That certainly, I think, needs to be modeled. It's going to be difficult to thread the needle with a tow getting into those lower approaches.

MR. STEINER: With the model down in WES, we modeled 1,200 foot upstream and downstream of the lock to get those approaches just right, so we know that. That was just an artist's rendering. It wasn't trying to depict the actual plan.

CHAIRMAN WHITLOCK: Any other questions? If not, we're ready to move to the public comment period. The only individual that has indicated an interest to speak is Mr. Joe Lema.

MR. JOSEPH LEMA: I'm Joe Lema with the National Mining Association. I feel pretty much at this moment like that great quarterback Terry Bradshaw. He was six points behind with two minutes left and he had to throw a lot of passes so he took about 20 minutes. I won't do that. I filed a statement with the reporter for the record of the hearing, so I respectfully request that be included in the record of this hearing.

CHAIRMAN WHITLOCK: Certainly.

MR. LEMA: I would simply summarize that statement very tersely by, first of all, complementing the Ohio River Division on a very comprehensive report on the marvelous work they are doing.

As far as the National Mining Association is concerned, we intend to continue to lobby intensively as we have for several years for the necessary authorizations and for the

appropriations for four lock and dam improvements on the Ohio River Mainstem; John T. Myers, Newburgh, Cannelton and Greenup.

We, of course, will continue to lobby for the appropriations necessary for not only those four but also for McAlpine and Olmsted. In this case I've only mentioned the six projects that we have on our priority list on the Mainstem of the Ohio.

Some people have mentioned to me that they have some concern about the future of coal and coal traffic. Let me call to your attention four reasons to think that we have good prospects for coal utilization and utilization of Ohio River coal barge traffic.

One is the nation's utilities, particularly American Electric Power and others in the Ohio River Basin, have invested heavily in clean coal technologies. They have made huge investments. Those who would say the air is dirty are wrong. Some air may be. Most air is not. Those investments will pay off and they will let coal continue to flow for power generation.

Secondly, we have the computer systems of the nation going full blast. They are enormous consumers of electricity. We think it's a wonderful high technology, this computer system application, fueled by electricity generated from burning coal we hope.

Thirdly, coal is very competitive with other fuels. We like all fuels. We think the United States ought to be energy independent. We enjoy competition with natural gas, hydro, all other forms of fuel. We think that coal will continue to compete vigorously on price basis and we will get our share of the market.

Finally, I would say that the restructuring going on in the utility industry between those who generate power, those who distribute power and those who would do both is really a monumental change in that industry. Those changes are just evolving, but we believe that they will inert to the benefit of coal producers, barge coal handlers and the nation's consumers of electricity.

In closing I'll say thank you for having me. I certainly would like to have Dr. Curlee's study results because when a person testifies, even an old Jesuit engineer like me, it's nice to have facts, not reasonable facts but facts. I appreciate the work of the Board. Thank you, Mr. Chairman.

CHAIRMAN WHITLOCK: Thank you, Joe. Are there any other public statements? Hearing no one speaking up, I would like to ask the Board members is there any old business or new business that we need to discuss? If not, I would like to thank everyone once again for coming and participating.

It's been a very full packed agenda, but I think by and large the information shared is of excellent quality and very valuable to us as Board members as we move forward.

The meeting stands adjourned.

(Whereupon, Board Meeting No. 37 adjourned at 3:25 p.m.)

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