DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT

Recent Correspondence
Corps Of Engineers/State of Delaware

U.S. Army Corps of Engineers, Philadelphia District

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3391

REPLY TO
ATTENTION OF

Planning Division

DEC 16 1998

Sarah W. Cooksey, Administrator
Delaware Coastal Management Program
89 Kings Highway
P.O. Box 1401
Dover, Delaware 19903

Dear Ms. Cooksey:

In your letter of November 20, 1998, summarizing several potential issues regarding the Delaware River Main Channel Deepening Project, you suggested we meet to discuss their status. Prior to meeting, we have prepared a set of responses (refer to enclosure) to these potential issues.

As you know Congress, as part of the Fiscal Year 1999 budget, appropriated Federal construction funds for the project. To initiate project construction, a Project Cooperation Agreement (PCA) needs to be executed between the Corps and the Delaware River Port Authority (DRPA), the project sponsor. We are working with the DRPA to develop a mutually acceptable agreement. Without an executed PCA, the project construction phase cannot be initiated. Much of the information that needs to be finalized is dependent upon the execution of that agreement.

After your review of our responses, we would be glad to meet with you, if you believe it would be productive. Please contact my study manager, Stan Lulewicz at (215) 656-6586 to arrange a meeting.

Sincerely,

Robert L. Callegari
Chief, Planning Division

Enclosure

DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT

Responses
To
State of Delaware Department of Natural Resources & Environmental Control November 20, 1998 Letter

ENCLOSURE

State of Delaware Department of Natural Resources & Environmental Control November 20, 1998 Letter

Responses to each issue as presented in November 20, 1998 letter are as follows.

1. **Blasted Rock.** Based on our past experience in the Marcus Hook area, the quantity of reusable rock to be removed from the channel is uncertain. In the past, much of the blasted rock was broken into large gravel and very small pieces, or pinnacles that broke off in irretrievable sizes. Obviously, some quantity of the 229,000 cubic yards to be blasted will be suitable for reuse, however, the segregation of this material may be too costly. Until the rock is removed to the surface and stockpiled for visible inspection, it is difficult to ascertain the available amount for reuse.
2. **Pea Patch Island.** The Corps is committed to addressing the ongoing erosion problem at Pea Patch Island. The District is preparing an environmental assessment that recommends a plan of action to arrest the ongoing erosion and associated environmental impacts. A draft environmental assessment will be circulated for agency and public comment. Comments received will be incorported into a final document, and plans and specifications will be prepared. Congress as part of the Fiscal Year 1999 budget, appropriated $750,000 for a project to protect Pea Patch Island from shoreline erosion. These funds will be used to initiate project construction in the summer of 1999.
3. **Kelly Island.** As part of plans and specification development, "best management practices" that are appropriate for the construction, the final design, and the maintenance of the Kelly Island wetland restoration will be formulated, and these will be coordinated with your office and other resource agencies. This effort will be initiated during the project construction phase, upon execution of the PCA.
4. **Sand Placement.** The District, in coordination with your office, Federal and other state resource agencies, and the interested public, will be formulating which beaches will be used for disposal of the sandy dredged material. The volume of sandy material that is expected to be available is about 4 million cubic yards. An environmental assessment will be prepared and distributed for review and comment. This effort will be initiated during the project construction phase, upon execution of the PCA.
5. **Sediment Testing/Results.** Mr. Rick Greene's independent analysis of our sediment quality data, concluded that the level of contamination in the Delaware River Main Channel and bends is low to moderate, and that Delaware Bay sediments are suitable for beneficial use. While he did look at the data differently, this conclusion is essentially the same as that presented in the Corps' Supplemental Environmental Impact Statement dated July 1997 for the Delaware River Main Channel Deepening Project. He did identify higher concentrations of some metals at two bends in the channel. One of these bends, located at the confluence of the Delaware and Schuylkill Rivers, would not be dredged as part of the deepening project. The other bend, located north of Pea Patch Island, has been reexamined since Mr. Greene's

presentation. A total of 17 individual sediment samples were collected from this bend and analyzed for bulk concentrations of heavy metals. Attached is a table that shows the spread of heavy metal data in comparison to Effects Range Low (ERL)/Effects Range Median (ERM) guidelines developed by Long and Morgan. As can be seen from the table, the majority of heavy metal concentrations are either below the ERL value or in between the ERL and ERM values. These data do not suggest a contamination concern at this bend location. These data support Mr. Greene's conclusion that contamination in the Delaware River Main Channel and bends is low to moderate. As such, we would not characterize the trend identified by Mr. Greene as an "important feature" of the data. We do not believe that our use of mean concentrations to present such a large data set resulted in the loss of any significant information. With regard to his last conclusion that metals are likely to exceed their respective water quality criteria at the point of excavation, his analysis was based on assumptions and various calculations. One example of this is his assumption that suspended sediment concentrations in the water column at the point of excavation would be 1 gram per liter(g/l). The U.S. Army Corps of Engineers' Improvement of Operations and Maintenance Techniques Research Program has documented suspended sediment concentrations from cutterhead and hopper dredges without overflow to be in the range of 25 – 250 milligrams per liter (mg/l) within 100 feet of the point of excavation. We suggest that actual data from the on-going hopper dredge overflow and Pedricktown dredged material disposal area studies be evaluated prior to identifying water quality issues. We expect this information to be available in a couple of months.

DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT

Analysis of bulk heavy metal data from 17 sediment samples collected at channel bend north of Pea Patch Island.

Parameter	ERL*	ERM*	Highest Conc.*	Samples < ERL	Samples >ERL<ERM	Samples >ERM
Antimony	2	25	32.4	3 of 17	13 of 17	1 of 17
Arsenic	8.2	70	52.8	13 of 17	4 of 17	None
Cadmium	1.2	9.6	2.6	15 of 17	2 of 17	None
Chromium	81	370	145	16 of 17	1 of 17	None
Copper	34	270	131	15 of 17	2 of 17	None
Lead	46.7	218	173	15 of 17	2 of 17	None
Mercury	0.15	0.71	1.4	9 of 17**	7 of 17**	1 of 17
Nickel	20.9	51.6	29.7	14 of 17	3 of 17	None
Silver	1	3.7	1.4	16 of 17	1 of 17	None
Zinc	150	410	630	15 of 17	1 of 17	1 of 17

*-Concentrations are in parts per million (ppm).

**-Mercury was not detected in any of these samples; values based on detection limits.

ATTACHMENT

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF SOIL AND WATER CONSERVATION
89 KINGS HIGHWAY
OFFICE OF THE DIRECTOR
DOVER, DELAWARE, 19901
TELEPHONE: (302) 739-3451

20 November 1998

Mr. Robert Callegari
U.S. Army Corps of Engineers
Philadelphia District
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390

Dear Mr.Callegari:

On 4 November 1998, several members of the Delaware Coastal Management Program (DCMP) attended the Delaware River Basin Commission (DRBC) Joint Meeting of the Toxics Advisory Committee and the Fish and Wildlife Management Cooperative Technical Committee in West Trenton, NJ. At this meeting, participants raised a number of issues regarding the Main Channel Deepening project. At this time we have identified several outstanding issues regarding the project and solicit an update on the following:

1. In your letter dated 30 April 1997, the Philadelphia District of the Army Corps of Engineers committed to investigate the feasibility of using blasted rock from the channel deepening in the Marcus Hook region for shoreline erosion control and habitat enhancement projects. Has this investigation identified the projected size of such rock pieces or yielded any conclusions regarding the material's suitability for restoration or enhancement projects in the area?

2. At the DRBC meeting, several comments referred to the erosion problems at Pea Patch Island and the Corps' commitment to address this ongoing problem. Could you provide an update on this project and the status of Congressional funding for erosion control on the Island?

3. In the 30 April 1997 letter referenced earlier, the Corps also indicated that Best Management Practices would be used for the Kelly Island Wetland Restoration project and ensured that there would be "subsequent maintenance of the site after construction." However, some ambiguity still surrounds this segment of the project. There has been no publication of the specific plans for this site or indication of how DNREC's comments of 2/26/97 would be incorporated into the final design and ongoing maintenance plans.

4. What is the exact status on plans to deposit dredged sand material directly onto Delaware's beaches rather than stockpiling it in valuable shallow-water fisheries habitat areas? What volumes of sand are specifically proposed for which beaches?

5. Finally, at the DRBC meeting, Rick Greene of DNREC Division of Water Resources presented an independent analysis of the Corps sediment contamination results. His

presentation indicated that the Corps' practice of averaging the data has the effect of masking important features of the data. Furthermore, his analysis revealed a significant likelihood that water quality criteria would be exceeded frequently during dredging operations. We need to discuss the ramifications of these findings.

I believe the above issues are best discussed face to face and request a meeting with Corps personnel regarding the Delaware River Main Channel Deepening Project. Someone from our office will be calling you to set up a mutually convenient time to discuss these issues.

In the mean time, if you have any questions or comments, please do not hesitate to call me at (302) 739-3451.

Sincerely,

Sarah W. Cooksey, Administrator
Delaware Coastal Management Program

SWC/jmr

cc: Stan Lulewicz
John Brady
Tom Groff
Mary McKenzie
John Hughes
Sergio Huerta
Andy Manus
Charles Salkin

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF SOIL AND WATER CONSERVATION
89 KINGS HIGHWAY
OFFICE OF THE DIRECTOR
DOVER, DELAWARE, 19901
TELEPHONE: (302) 739-3451

April 6, 1999

Robert Callegari
Chief, Planning Division
U.S. Army Corps of Engineers
Philadelphia District
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390

RE: Confined Upland Disposal Facilities

Dear Mr. Callegari:

I write to continue our dialogue on the Philadelphia District Army Corps of Engineers' long-term and large-scale dredging projects in Delaware, in particular the Delaware River and Bay Main Channel Deepening Project and the Chesapeake and Delaware Canal Deepening Project. The Delaware Coastal Management Program (DCMP) and the Corps of Engineers have worked closely in the past few years to resolve issues related to these two projects through the Federal Consistency review process. In both of these projects, the U.S. Congress has authorized increasing the channel depth, which prompted the development of an Environmental Impact Statement pursuant to the National Environmental Policy Act. Since these federal dredging activities were expected to impact the coastal resources of the State of Delaware, Federal Consistency review regulations (*15 CFR 930*) required the Corps of Engineers to prepare a Federal Consistency determination for the DCMP to review and deem consistent. However, it is not the intention of this letter to focus on the planning phases of these deepening projects.

The DCMP would like to focus on the maintenance dredging that will occur in the future in order to maintain these newly authorized channel depths including maintenance and disposal procedures for confined upland disposal facilities. As you know, in the past the DCMP has sent your division information requests related to these issues. The DCMP feels that the time is now to iron out these maintenance and disposal concerns prior to project implementation.

The DCMP is concerned with how the Corps of Engineers will handle the dredged material once it is placed in confined upland disposal facilities. The impetus for the DCMP's concern lies within the Draft and Final Environmental Impact Statements that were prepared for the Main Channel Deepening project and for the Chesapeake and Delaware Canal Deepening project. In these reports, little or no attention was focused on how handling and treatment of the potentially contaminated sediments in these facilities would be addressed. Specifically, there was no discussion on actual placement procedures, site management prior to effluent discharge, or monitoring procedures during dewatering. The DCMP believes that in light of past questionable metal concentrations at Chesapeake and Delaware Canal confined upland disposal facilities and results from new chemical analyses conducted on Main Channel sediments, this matter needs immediate attention.

An independent review and analysis of the chemical composition of the sediments to be dredged for the Main Channel Deepening project has been completed (in draft form) by Mr. Rick Greene of the DNREC Division of Water Resources. Mr. Greene's analysis focused on potential water quality violations that could occur in the dredging "plume" using the sediment chemical analysis performed by the Corps. He concludes that water quality standards can be met if the suspended solids concentrations in the mixing zone remain at or below 25 and 250 mg/l. Once available, the results from the economic loading impact study conducted on the hopper dredge McFarland in the summer of 1998 will be used to validate Mr. Greene's statistical analysis and conclusions as to predicted water quality in the mixing zone.

Mr. Greene's report does go on to articulate explicit concerns for how dredged material will be handled once it is placed in confined upland disposal facilities. The report specifically states that it is not clear whether the effluent from confined upland disposal facilities will meet water quality standards. In order to further evaluate whether any potential water quality standards violations from confined upland disposal facility effluent are likely to occur, results from the Pedricktown North confined upland disposal facility effluent study should be incorporated into this analysis. In addition, Dr. Thomas Fikslin of the Delaware River and Bay Commission's (DRBC's) Estuary Toxics Management Program has also looked at the concentrations and mass-loadings of contaminants during de-watering from two confined upland disposal facilities, Fort Mifflin and Money Island, in the Delaware River. Dr. Fikslin, in a presentation to the DRBC's Toxic's Advisory Committee in November 1998, concluded that his preliminary evaluation of these sites showed that confined upland disposal facilities have the potential to impact aquatic life through acute and chronic exposure and human health through bioaccumulation of organic contaminants such as PCBs and DDT and its metabolites.

The DCMP would like to reiterate its request for information regarding how dredged material from Army Corps of Engineers maintenance projects will be handled, how dewatering effluent will be monitored, and what will be done to mitigate any potential contaminant reintroduction into the aquatic environment. The DCMP believes that Mr. Greene's report, the results from the Pedricktown North study, and Dr. Fikslin's report should all be incorporated into a discussion related to confined upland disposal areas between the DCMP, the Division of Water Resources, and the Corps. As mentioned earlier, Mr. Greene's report is still in draft form. It should be finalized within the next two weeks and will be forwarded to you for your review and consideration. I will contact you within the next two weeks so that we can arrange a forum in which to begin a discussion on the aforementioned concerns.

Sincerely,

Sarah W. Cooksey

Sarah W. Cooksey, Administrator
Delaware Coastal Management Program

SWC/jll
Cc: Dr. Sergio Huerta, Division of Water Resources
Mr. John A. Hughes, Division of Soil & Water Conservation
Mr. Rick Greene, Division of Water Resources

From: Brady, John T NAP02
Sent: Wednesday, September 01, 1999 2:45 PM
To: Lulewicz, Stan Z NAP02
Cc: Pasquale, Jerry J NAP02; 'Shirey, Craig'
Subject: Atlantic Sturgeon

Stan,

I have had a number of conversations with Craig Shirey, with the Delaware Division of Fish and Wildlife. Mr. Shirey has studied the Atlantic Sturgeon for many years and is one of the most knowledgeable persons on this species in the Delaware Estuary. I am attaching a fact sheet that summarizes the status of this species in our area. I also sent Mr. Shirey a drawing of the Marcus Hook Anchorage, the only one to be deepened as part of the Main Channel Project. Mr. Shirey did not believe that any additional measures need to be taken to protect the Atlantic Sturgeon during this dredging

Fact Sheet.doc

project. John

Current Status of Atlantic Sturgeon in the Delaware Estuary

1. This species has been in decline for at least the last century. In the early part of the twentieth century the primary causes were overfishing and pollution. More recently (early 1990's) the problem has been overfishing since the water quality of the Delaware River has improved. The Atlantic sturgeon takes 9 to 15 years to reach sexual maturity. The Atlantic States Marine Fishery Management Council has recently stopped fishing for this species. It is possible that stocking may increase this species.
2. Spawning: There is no current data concerning this; however, it is likely that they spawn between Wilmington (River Mile 70) and Trenton from May to early June. Spawning habitat is hard substrate over moving water. Incubation takes 4 to 7 days.
3. Juvenile summering areas that have been located include from RM 55 to 59 (Artificial Island to the C&D Canal), as well as from RM 68 to 78 (Delaware Memorial Bridge to Oldman's Point) on silt/mud bottom. These areas are used from late May to early October. Large juveniles (from 3 to 10 years old) rarely use the navigation channel. They use deep flats and anchorage areas with depths of 20 to 35 feet preferred. The sturgeon will occasionally use the navigation channel to move from one preferred area to another.
4. Winter area: This is presently not known within the Delaware Estuary. Some go to the nearshore ocean and reenter the Delaware Bay in early March.
5. Adult use of the Delaware River, including the navigation channel is not known. Adults use deep water in the Hudson River (up to 90 feet) and may use the navigation channel.

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
OFFICE OF THE SECRETARY
89 KINGS HIGHWAY
DOVER, DELAWARE 19901
PHONE: (302) 739-4403
FAX: (302) 739-6242

REVISED

March 2, 2000

LTC Debra M. Lewis
District Commander, Philadelphia District
U.S. Army Corps of Engineers
100 Penn Square East
Philadelphia, PA 19107

Dear Lieutenant Colonel Lewis;

I am writing regarding some unresolved issues related to the proposed Delaware River Main Channel Deepening Project.

During our meeting in Dover on 15 December 1999, you committed to providing the legal background and citations which you believe support the Corps' claims that it is exempt from state permitting requirements for federally funded projects. As you know, we have consistently maintained that the Corps is subject to state permitting requirements for this project. Your legal analysis and justification will be most helpful in our considerations of how to proceed with approval of this project.

Additionally, in an 11 August 1999 letter to Mr. Robert Callegari, Ms. Sarah Cooksey requested the raw data for the bulk sediment analyses at the industrial facilities' and port terminals' berthing areas. This material still has not been provided. It is our understanding that this information already has been provided to other parties. We are interested in examining the raw data in order to evaluate the Corps conclusion that "sediments within port facility berthing areas are sufficiently clean to conclude that dredging and upland dredged material disposal operations would not result in any significant environmental impacts" (Section 4.5, Supplemental Environmental Impact Statement, July 1997). [Since this project's benefits rely in part on use of the deepened channel by major industrial facilities and port terminals, the impacts from related work must be considered in the "planning, processing, and review of Corps projects" (33 CFR 336.1).]

Until the above information is provided and the issues are resolved, we will be unable to complete our review of the proposed deepening project. If the information is not provided in a timely fashion, the state will be forced to consider revocation of the conditional Coastal Zone Federal Consistency Determination. I will look forward to your response and to continued cooperation with the U.S. Army Corps of Engineers, Philadelphia District.

Sincerely,

Nicholas A. DiPasquale
Secretary

pc: John Hughes, Director, Soil & Water Conservation

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3390

REPLY TO
ATTENTION OF

MAR 0 2 2000

Planning Division

Subject: Delaware River Main Channel Deepening Project, Sediment Testing Data for Non-Federal Berthing Areas

Nicholas A. Di Pasquale
Secretary
Delaware Department of Natural
Resources and Environmental Control
89 Kings Highway
P.O. Box 1401
Dover, Delaware 19903

Dear Mr. Di Pasquale:

As we discussed in our February 24, 2000 telephone conversation, I am enclosing a copy of the bulk sediment quality testing data collected within the non-Federal berthing areas that would require deepening to realize benefits from the main channel deepening project. These berthing facilities are all located immediately adjacent to the existing channel, and no spur channels are necessary to provide access. A summary of this data was included in the July 1997 Final Supplemental Environmental Impact Statement for the project.

Please note that none of the berthing facilities are located within Delaware State waters. Any associated dredging within non-Federal areas will require appropriate regulatory clearances from the Corps of Engineers as well as the State, either Pennsylvania or New Jersey, where the site is located. This data has also been made available to both States and we have received all appropriate environmental approvals. If you have any questions, please do not hesitate to contact me.

Sincerely,

Robert L. Callegari
Chief, Planning Division

Enclosure

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3390

REPLY TO
ATTENTION OF

Planning Division

MAR 10 2000

Subject: Delaware River Main Channel Deepening Project

Mr. Nicholas A. Di Pasquale
Secretary
Delaware Department of Natural
Resources and Environmental Control
89 Kings Highway
P.O. Box 1401
Dover, Delaware 19903

Dear Mr. Di Pasquale:

I am responding to your letter of March 2, 2000 to Colonel Lewis concerning issues related to the Delaware River Main Channel Deepening Project.

We are in the process of preparing the legal background and citations that will state our rational for believing that we are not required to apply for a state subaqueous permit for this project. We should have this information shortly and will be contacting you within the next week to schedule a meeting to discuss this issue. Nevertheless, it is our intention to continue to work with your staff to comply with all conditions that will protect environmental resources in Delaware. The cooperation between our offices has been outstanding and I expect that it will continue in this and all projects in the State of Delaware.

In regard to your request for raw data for the bulk sediment analysis at the berthing areas, I forwarded this information to you on March 2, 2000. If you have not yet received this data, please contact me and I will provide you with another set.

I hope that this information satisfies your needs. We look forward to continue to work with you and your staff in finalizing this project. If I can be of further assistance, please call me at 215-656-6540.

Sincerely,

Robert L. Callegari
Chief, Planning Division

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

OFFICE OF THE
SECRETARY

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: (302) 739-4403
FAX: (302) 739-6242

March 31, 2000

LTC Debra M. Lewis
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107

Dear Lieutenant Colonel Lewis:

I am writing to follow up on our numerous conversations and correspondence regarding the proposed deepening of the Delaware River Main Channel. I appreciate your willingness to address these issues and to work constructively with the State of Delaware to ensure that this project will not go forward unless it complies with our environmental laws and that any environmental impacts from this project will be minimal.

This letter summarizes the remaining environmental issues that the Department of Natural Resources and Environmental Control (DNREC) believes need resolution. In particular, it is essential that the Corps demonstrate conclusively that the project will comply with State of Delaware Surface Water Quality Standards, the Wetlands Act, and the requirements of the Subaqueous Lands Act. We also are beginning to formulate the requirements for testing and monitoring that would apply before, during, and after completion of the project should it move forward.

As you are aware, the National Oceanic and Atmospheric Administration regulations (15 CFR 930) require that this project be consistent with the Delaware Coastal Management Program (DCMP) policies. That program issued a conditional Federal Consistency determination to the Corps on 1 May 1997. The extensive scope of this project necessitated that DCMP review the project in phases. Now that the final design and specification phase is underway, it is an appropriate time to address remaining issues regarding the project. The conditional approvals did not obviate the need to meet the substantive requirements of other state permits.

The outstanding issues include construction of material placement facilities, placement of sandy dredged material on beaches, the wetland creation project at Kelly Island, various monitoring and reporting requirements, fisheries concerns, and future maintenance burdens for the project.

1. Construction of Confined Disposal Facilities

Prior to any construction, it will be necessary to identify and describe in detail the functions of all confined disposal facilities (CDFs) to be used for the project – whether located within the land area of the State of Delaware or discharging into Delaware waters. It is our understanding that the only Delaware-land sites slated for use are Reedy Point North and South, both currently in existence. This list identifying the disposal sites must include a description of the current status of each site, expected future capacity, amount of material to be deposited during the initial dredging cycle, and ability to accept material for future maintenance cycles. Additionally, there must be reasonable assurance that the site is designed and operated in a manner which can ensure compliance with Delaware State Water Quality Standards. The rationale and justification supporting this assurance must be provided in detail.

In addition, an Erosion and Sediment Control plan is required from the Division of Soil & Water for any landward disturbance of 5000 square feet or more. Several of the principles regarding erosion and sediment control are included for general reference:

- An approved erosion and sediment control plan must be followed. Any modifications to the plan must be approved as revisions to the approved plan.
- Any site or portion thereof on which a land-disturbing activity is completed or stopped for a period of fourteen days must be stabilized either permanently or temporarily following the specifications and standards in the Erosion and Sediment Control Handbook.
- Unless an exception is approved, not more than 20 acres may be cleared at any one time in order to minimize areas of exposed ground cover and reduce erosion rates.
- A land-disturbing activity shall not cause increased sedimentation or accelerated erosion off-site. Off-site means neighboring properties, drainageways, public facilities, public rights-of-ways or streets, and water courses including streams, lakes, wetlands, etc.

More specific criteria for vegetation and berm stabilization can be found in the Delaware Erosion and Sediment Control Handbook for Development.

The Corps must also comply with any additional requirements of the State NPDES program. A permit regulating the discharge of effluent from the CDFs is likely.

Additional NPDES Storm Water Regulations apply, since a NPDES certification is required for land disturbing activities. The "Regulations Governing Storm Water Discharges Associated with Industrial Activity, Part 2 – Special Conditions for Storm Water Associated with Land Disturbing Activities" (1998) states that "Land disturbing activities shall not commence and coverage under this Part shall not apply until the Sediment and Stormwater Management Plan for a site has been approved, stamped, signed and dated . . .".

2. Placement of sandy dredged material on beaches

To date, DNREC has not received official word of which beaches have been chosen to receive sand from the southern portion of the project. This information should be made available as soon as it is determined so that we can evaluate the permits and requirements needed. Please be advised that DNREC expects that consideration be given to a number of shoreline locations previously unnourished. A Section 401 Water Quality Certification and State Subaqueous Lands permit will be necessary for beach nourishment activities. Our intent is to ensure that state Water Quality Standards are met. DNREC also wants to ensure that beach replenishment activities will not take place during critical horseshoe crab spawning periods (April 15-June 30). Also, sand placement activities should not use barriers (i.e. silt fences, bulkheads, rocks, etc.) that would interfere with spawning.

3. Wetland creation/enhancement project at Kelly Island

DNREC anticipates coordinating with the Corps on the final design and monitoring plan for Kelly Island at a meeting on 5 April 2000. However, the following describes general principles which would be applicable regardless of the specific design criteria.

An Erosion and Sediment Control plan is required from the Division of Soil & Water Conservation. The general requirements are listed above under item 1.

The Corps must also comply with any additional requirements of the State NPDES program. This includes the NPDES Storm Water Regulations as well as the State Sediment and Stormwater Regulations, since a NPDES certification is required for land disturbing activities.

Because the beneficial use project at Kelly Island will take place in an existing wetland area, a Wetlands Permit will be required from the Division of Water Resources. In addition, a Subaqueous Lands Lease will also be necessary. There are several standard conditions for mitigation projects which should apply to the wetland creation/ enhancement taking place at that site. For example, standard mitigation projects must

demonstrate 85% survival of the planted vegetation after the second growing season. If 85% is not achieved then a report outlining corrective action must be submitted. Other parameters for stabilization and flow should be developed by Corps engineers and submitted to DNREC for final review and approval.

The Corps must also commit to maintaining the integrity of the created site at Kelly Island and to do what is necessary to evaluate and ensure the *function* of the new/enhanced wetland area. In addition, the beach constructed at the perimeter must be able to withstand a significant storm event. The project should be examined and monitored annually in order to ensure berm stability, vegetation viability, flushing, and general "success" of revitalizing the wetland habitat at that site. A monitoring report to this effect will be required annually.

The DNREC, Division of Fish and Wildlife, has concerns about increased silt load and sedimentation of adjacent oyster habitat during construction of the perimeter sand sill at Kelly Island and while the confined disposal area is being filled. Seed beds of concern include "Drum Bed," "Silver Bed," and "Pleasanton's Rock," as these are the closest seed beds to Kelly Island. Should an impact be noted on these beds, it would indicate a need to monitor "Ridge Bed" which is farther from the project area but has historically been very productive.

Monitoring of oyster population conditions and habitat quality should begin prior to construction and continue throughout. Checking for changes in sedimentation patterns should be extensive and focused at broad areas of each bed rather than be limited to discrete sections. In addition, it may be necessary to monitor oyster habitat on leased grounds south of the Mahon River mouth as they may be impacted by sediments moved south by ebb tide currents.

4. Monitoring and reporting

Monitoring at confined disposal facilities

Monitoring of confined disposal facilities (CDFs) must be performed to determine whether return flows from the CDFs cause or contribute to violations of Delaware Surface Water Quality Standards. This is an issue of concern for the Department because CDFs often discharge return flows into ecologically sensitive, shallow water habitats which have limited dilution and dispersion capacity. To evaluate whether return flows are causing or contributing to violations of the Standards, the Corps will need to collect data on flow rate, duration, concentration, and toxicity of CDF discharges and then determine the resulting concentration and toxicity in the receiving water through a combination of fate and transport modeling and in-stream sampling. Both near-field (i.e.,

mixing zone) and far-field (i.e., complete mix) concentrations and toxicity resulting from the discharges must be determined and compared to applicable Standards.

Sampling and analysis for the CDF should follow the general approach taken by the Corps in evaluating the Pedricktown CDF (i.e., "Pedricktown Confined Disposal Facility Contaminant Loading and Water Quality Analysis," June 1999). The Corps will need to submit a sampling plan/scope of work to the Department for review and approval prior to proceeding with this work and prior to discharging from the CDFs. Close out reports detailing the findings of the sampling and analysis will also need to be submitted to the Department for review and approval. If violations of applicable Standards are identified, then the close out report should identify the steps the Corps intends to take in order to eliminate future violations. Based upon the findings of the initial studies, the Department will determine the nature and extent of subsequent testing that will need to be performed at the CDFs in order to assess compliance with Delaware Surface Water Quality Standards.

In addition to the testing described above, the Corps will also need to collect contaminant data for surface sediments in the CDFs and assess potential impacts to terrestrial and avian species that may use the disposal areas. A plan to accomplish this work should be submitted to the Department for review and approval, as should a close out report. If unacceptable risks are identified as a result of this assessment, then the Corps will need to develop a plan to limit access to the site.

Finally, the Corps will need to submit an annual letter to the Department which summarizes the operational history and structural integrity of any CDF used over the previous year. The letter should address the following factors:

- Condition of containment berms, dewatering and stormwater weirs, and other structures.
- Summary of disposal operations at the CDF over the past year, including volumes of material placed into the CDF, as well as volumes, mass loading, duration, and timing of return flows.
- Summary of maintenance and management activities conducted at the CDF.
- Summary of any material removed from the site.
- Analysis of available remaining disposal capacity at the site.
- Summary of surface and groundwater monitoring programs not otherwise covered in the study identified above.

Monitoring during dredging operation

It will be necessary to monitor during dredging operations in order to ensure that the predictions of "no significant impacts" are fulfilled. Therefore, the Corps should submit a sampling plan to the Department for review and approval.

Measuring the exact position of the dredge at all times is essential to ensuring that the channel and bends are deepened based upon the footprint of the original project. Sampling in the water column surrounding the excavation will require, at a minimum, collection of data on total suspended solids concentrations, dissolved oxygen, ammonia, and any contaminants of concern identified in the pre-dredge evaluation. Suspended solids must be maintained between 25 and 250 mg/l at the edge of a two-hundred foot regulatory mixing zone in order to meet water quality standards, according to the report *Metal Contamination of Sediments in the Delaware River Navigation Channel* (Greene, 1999). The results from all sampling data must be compared to applicable Delaware Surface Water Quality Standards, and any exceedances must be reported immediately.

The Corps must also work with DNREC to develop a protocol that will come into effect if water quality violations are identified. This would include events where total suspended solids are higher than those determined to be sustainable around the point of excavation.

Additionally, the Corps must follow established protocol if turtles, sturgeon, or other species of concern are identified in the dredge slurry or if there is indication that these species are excessively impacted.

Standard best management practices should be used to the extent practicable during the dredging operation in order to minimize sediment suspension, impacts to aquatic organisms, and water quality exceedances.

If the Corps intends to use the practice of economic loading during the Main Channel Deepening project, this must be discussed with the DNREC. Permission must be granted for economic loading and will be limited by geographical location and material characteristics. Additional monitoring will also be required.

Bi-Annual Reporting

In addition to the annual reporting information stated above, I request that the Secretary of DNREC receive a bi-annual report detailing the progress of the Main Channel Deepening project, including the locations dredged in the previous twelve months, the status and capacity of CDFs, and any unforeseen consequences and their remedies. I would expect members of my staff to be in regular contact with their peers at

the Corps in order to ensure that the project satisfies the requirements of the State of Delaware's laws, regulations, and standards.

5. Fisheries and living resource concerns

Aquatic species of concern include sea turtles, several species of whales, and shortnose and Atlantic sturgeon, along with several others. The Corps must follow the recommended dredging windows as established by the Delaware River Basin Fish and Wildlife Cooperative and as reported in the 1997 *Supplemental Environmental Impact Statement*.

In addition, the following concerns from the Division of Fish and Wildlife must be addressed:

- Striped bass spawning is a concern from the Delaware Memorial Bridge to Philadelphia April 15 to June 15. The Delaware Basin Fish and Wildlife Cooperative May 1997 policy entitled "Seasonal restrictions for dredging, blasting and overboard disposal in the mainstem of the Delaware River" should be followed in order to protect anadromous spawners such as striped bass.
- Atlantic sturgeon spawning sites are located over rocky bottom in the deepest portion of the river. Spawning season is April 15 to June 15. Because the eggs adhere to the hard surfaces, rock should not be blasted or removed from the river through the end of June to protect sturgeon eggs and larvae.
- Atlantic sturgeon wintering areas are located from Artificial Island to Chester, Pennsylvania.
- An observer should be placed on hopper dredges to monitor for sturgeon impacts on overwintering fish in the wintering areas.
- The Corps will need an "incidental take statement" from NMFS as required under the Endangered Species Act for sea turtles and shortnose sturgeon. The Corps should ensure that their agreement with NMFS reflects the most up-to-date requirements. A copy of this statement should be provided to the Division of Fish and Wildlife.
- In addition, a turtle observer should be on board the dredge during the period of the year when sea turtles are known to be present in our area. The report from this observer, as well as any identified turtle parts, should be forwarded to the Division of Fish and Wildlife as well.

6. Future Maintenance

If the Main Channel is deepened, there will be increased volumes of material removed during each maintenance cycle in order to achieve the project depth. This material will place additional burden on existing disposal areas, causing them to fill at a

more rapid rate than with the forty-foot project depth. As a result, new disposal facilities must be sited or beneficial uses must be developed for the material currently contained in the facilities. The Corps must be prepared to address dredged material placement needs in the context of future maintenance related to the proposed deepening.

We look forward to continuing our dialogue and working to resolve the above issues before any plans for actual construction take place. As the Department of Natural Resources and Environmental Control, it is our mission to ensure that projects are designed to avoid or minimize adverse impacts on air and water quality, habitat, and living resources. The above requests and requirements are in keeping with this charge as it applies to the proposed deepening of the Delaware River Main Channel.

Sincerely,

Nicholas A. DiPasquale
Secretary

pc: John Hughes, Director, Division of Soil & Water Conservation
Sarah Cooksey, DCMP

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

FFICE OF THE
SECRETARY

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: (302) 739-4403
FAX: (302) 739-6242

May 18, 2000

LTC Debra M. Lewis
U. S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107

Dear Lieutenant Colonel Lewis:

Thank you for faxing copies of the slides from your Friday, May 12th presentation to the Maritime Association on the environmental impacts of the proposed main channel deepening project on the Delaware River. Your fax also included copies of the New Jersey MOU and the matrix of issues the Corps developed from my March 31, 2000 letter to you.

I appreciate your suggestion that the issues raised in my March 31 letter dealing with the conditional federal consistency determination and various permits and permitting requirements be incorporated into a single management matrix to facilitate tracking and response. I think this makes a great deal of practical sense.

In our telephone conversation on May 12th, you suggested that Delaware consider the approach used in New Jersey to consolidate issues under a memorandum of understanding (MOU). You further suggested that the MOU serve as a substitute for, or in lieu of, state required permits. As we discussed, I question the enforceability of an MOU over the explicit enforcement provisions associated with the applicable permitting programs. I also indicated that I was unaware of any explicit authority vested in the powers of the Secretary to accept an MOU or similar document in lieu of a permit. It is conceivable that such a document could be incorporated into a permit.

It also may be possible to structure a legally binding agreement, such as a Consent Decree, that would be judicially entered in the State Superior Court and would contain specific enforcement provisions. However, if the Corps is unwilling or legally unable to subject themselves to such an agreement and the Corps is unable to provide an applicable legal citation in federal law that would exempt them from the need to obtain state permits, it would be our expectation that the Corp would submit an application and comply with applicable requirements and secure appropriate permits before the state would be willing to provide approval for the project to proceed in Delaware waters.

As you know, this matter has been an issue since 1992 and has been raised by two previous DNREC Secretaries. Over the past eight years we have received contradictory comments from various officials concerning the Corps' intentions to secure state permits. I have been told by you and others that a reply to the issues raised in the March 31, 2000 would be forthcoming. I am looking forward to your expeditious response.

I appreciate your understanding and cooperation.

Sincerely,

Nicholas A. DiPasquale
Secretary

pc: Jeffrey Bullock, Chief of Staff
John Hughes. Director
Kevin Donnelly, Director
Sarah Cooksey, DCMP
William Moyer, Wetlands

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3390

June 9, 2000

REPLY TO
ATTENTION OF

Executive Office

Subject: Delaware River and Bay Main Channel Deepening Project

Secretary Nicholas DiPasquale
Delaware Department of Natural Resources
and Environmental Control
89 Kings Highway
Dover, DE 19903

Dear Secretary DiPasquale:

In response to your letter of March 31, 2000, we compiled an assessment of the approximately 57 items of concern that were identified and grouped them into 8 broad categories. A draft matrix of this assessment was faxed to you on May 12, 2000. To insure that we have captured all of the outstanding concerns, please review the enclosed update of this assessment for its accuracy and completeness with regard to the State of Delaware's environmental issues (including consideration of those raised by Mr. Fleming of the Delaware Nature Society and others).

I want to assure you that this District is committed to safeguarding the environmental resources of the State of Delaware. Based on our assessment, we can meet the goals stated in your March 31, 2000 letter. We have extensively reviewed numerous options we believe are available to the State. One ongoing process that already exists is the State's Coastal Zone Consistency Certification (referred to as CZM) which addresses or can incorporate these issues. The CZM has strict provisions for legal enforcement and applies to all Federal activities in the Coastal Zone. The CZM would outline precisely what needs to occur to appropriately and comprehensively address the existing and anticipated environmental issues as the Project moves forward.

The importance of this project clearly justifies the time and effort our staffs have expended in addressing the issues you have raised. We ask that you review our assessment, verify its completeness, and evaluate our proposed course of action to satisfy the State's environmental concerns using the CZM process.

I look forward to discussing this matter with you in the very near future.

Sincerely,

Debra M. Lewis

Debra M. Lewis
Lieutenant Colonel, Corps of Engineers
District Engineer

Enclosure

Copy Furnished:
Senator Roth
Senator Biden
Representative Castle
Governor Carper
Delaware River Port Authority

DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT

ASSESSMENT OF ENVIRONMENTAL ISSUES

RAISED BY MARCH 31, 2000 LETTER
FROM
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT

JUNE 2000

ENCLOSURE

DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT

This table summarizes the extent of the U.S. Army Corps of Engineers commitment to safeguard the environmental resources of the State of Delaware and addresses all of the specific environmental issues raised by Secretary DiPasquale (DNREC) in his March 31, 2000 letter to the Philadelphia District. One ongoing process that already exists is the State's Coastal Zone Consistency Certification (referred to as CZM) which addresses or can incorporate these issues. The CZM has strict provisions for legal enforcement and applies to all Federal activities in the Coastal Zone.

TABLE OF CONTENTS

Issue Category	Location	State of Delaware Requirements	Project Schedule	Corps Response
1.0 Confined Disposal Facility (CDF)				
1.1 Construction	Reedy Point North Reedy Point South Killcohook	**Provide information for all:** > Current status of site > Total site capacity > Placement quantity for initial construction > Future capacity for maintenance > Rationale for assurance that site operation will comply with DE water quality stds.	Pre-project	Concur, requested information will be supplied to Delaware.

Issue Category	Location	State of Delaware Requirements	Project Schedule	Corps Response
	Reedy Point North Reedy Point South	Prepare Erosion and Sediment Control plans for each site, plans must be approved by Division of Soil and Water	Pre-project	Concur. Corps specifications require the contractor to prepare these plans and get them approved prior to start of construction.
	Reedy Point North	State NPDES Sediment and Stormwater Management permits are required for land disturbing activities	Pre-project	In accordance with Corps regulations, CDFs are normally regulated under Section 401 of the Clean Water Act. Since this project has a 404{r}exemption, we can utilize the CZM process to insure the safety of project operation.
1.2 Operation	CDFs not specified Assume: Reedy Point North Reedy Point South possibly Killcohook	A State NPDES permit for regulating the discharge of effluent from CDFs is likely	Pre-project	In accordance with Corps regulations, CDFs are normally regulated under Section 401 of the Clean Water Act. Since this project has a 404 (r) exemption, we can utilize the CZM process to insure the safety of project operation.
1.3 Effluent Monitoring	Reedy Point North Reedy Point South possibly Killcohook	Collect data on flow rate, duration, concentration, and toxicity of discharges; determine toxicity in receiving water through fate and transport modeling and in-stream sampling	During project	Concur. The District has recent experience doing this type of work for DE. Procedures have been developed and coordinated with the State expert; this work will be implemented during construction.

Issue Category	Location	State of Delaware Requirements	Project Schedule	Corps Response
	Reedy Point North Reedy Point South possibly Killcohook	> Follow the Pedricktown CDF monitoring approach > Submit a sampling plan/scope of work for approval > Submit a close out report for approval > Identify any violations and identify steps to eliminate future violations	During project	Concur. The District has received a protocol for a scope of work from DNREC. The effluent monitoring will be conducted during construction; a report will be submitted.
1.4 Contaminants	Reedy Point North Reedy Point South	> Collect contaminant data for surface sediments in the CDFs > Assess impacts to terrestrial and avian species that use the sites submit plans and a close out report for approval > Limit site access if risks unacceptable	Post-project	Concur. Data will be collected when contaminants are suspected for active CDFs and appropriate action will be taken should the need arise; sites will remain active CDFs until they are full at which time a close out plan will be provided.
2.0 SAND PLACEMENT ON DE BEACHES				
	Undetermined	Notify DNREC what beaches will be nourished with bay channel sand; DNREC expects consideration of a number of locations previously unnourished	Pre-project	Concur. The Corps has agreed to work with DNREC to determine final locations for nourishment. Discussions are on-going.
	Undetermined	401 Water Quality Certification and a Subaqueous Lands permit will be required for beach nourishment activities	Pre-project	The Corps has previously acknowledged the need for 401 certification for beach nourishment activities. All of the concerns regarding environmental protection can be met under the CZM process.

Issue Category	Location	State of Delaware Requirements	Project Schedule	Corps Response
	Undetermined	> No beach nourishment between 15 April and 30 June to protect spawning horseshoe crabs > Beach nourishment should not include the use of barriers that would interfere with spawning horseshoe crabs	During project	Concur.
3.0 WETLAND CREATION/ENHANCEMENT				
3.1 Design/Permits	Kelly Island	> The final design must be approved by the DNREC > An Erosion and Sediment Control plan must be prepared and approved by the Division of Soil and Water > A State NPDES Sediment and Stormwater Management permit is required for land disturbing activities A Wetlands permit and a Subaqueous Lands lease will be required from the Division of Water Resources	Pre-project	Concur. The Corps is working with the DNREC to obtain their approval on the final wetland design; the contractor would prepare Erosion and Sediment Control plans for State approval prior to construction; these issues are normally regulated under section 401 of the Clean Water Act. This project has a 404(r) exemption, we can utilize the CZM process. The CZM process can address the wetlands permit issues. We believe a subaqueous lands lease is not required as the Federal Govern ment's servitude covers this area.

Issue Category	Location	State of Delaware Requirements	Project Schedule	Corps Response
3.2 Mitigation	Kelly Island	DE considers this to be a mitigation project which must include standard conditions: > Demonstrate 85% survival of planted vegetation after the second growing season > If 85% survival is not achieved a report addressing corrective action must be submitted flow should be developed and submitted to DNREC for approval	Pre-project	This is a beneficial use of dredged material project, not a mitigation project. The Corps is attempting to accommodate the State of Delaware requirements, and is working with DNREC to obtain approval for the final wetland design which is already a requirement in the exisitng May 97 CZM letter from DNREC.
3.3 Monitoring	Kelly Island	Corps is required to maintain the integrity of the site after construction > Ensure function of the wetland > Beach must be able to stand a significant storm event > Annual monitoring with submittal of a monitoring report	Post-project	Concur. The Corps will insure the integrity of the structure after construction is complete; a post-construction monitoring plan is being developed as part of ongoing coordination with DNREC, and will be implemented.
4.0 OYSTER HABITAT MONITORING				
	Kelly Island	DE concerned about increased silt load on oyster habitat during construction of Kelly Island; oyster monitoring should begin prior to construction and continue throughout	Pre-through post-project	Concur. An oyster monitoring plan for Kelly Island is being coordinated with DE to address potential impacts from confined silt.

DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT

Issue Category	Location	State of Delaware Requirements	Project Schedule	Corps Response
5.0 WATER QUALITY MONITORING				
	Dredging operations within State of DE waters	Water quality monitoring at the point of dredging is required to ensure that no significant impacts occur; monitoring parameters are provided; the Corps should submit a sampling plan to DNREC for approval	During project	Concur. A sampling plan will be developed and coordinated with DNREC.
	Dredging operations within State of DE waters	Develop protocol to follow when total suspended solids exceed 250 mg/L	Pre-project	Concur. Past WES research suggests that dredges can meet the total suspended solids criteria; there are operational changes that can be made to a working dredge to minimize sediment suspension.
6.0 ENDANGERED SPECIES				
6.1 Sea turtles/short nose sturgeon	Dredging operations within State of DE waters	Follow established protocols for monitoring potential impacts to sea turtles and shortnose sturgeon	During project	Concur. Protocols are currently in place and will be followed as appropriate.
	Philadelphia to the Sea	>Obtain an "incidental take statement" from NMFS for sea turtles and shortnose >Provide a copy of the statement to the Division of Fish and Wildlife	Pre-project	Concur. An "incidental take statement" was provided by NMFS for Philadelphia District dredging activities including the deepening project, dated 26 November 1996; a copy will be provided to DNREC.

Issue Category	Location	State of Delaware State Requirements	Project Schedule	Corps Response
6.2 Sea turtles	Not specified, assume Delaware Memorial Bridge to the Sea	>An observer should be on board the dredge during periods of the year when sea turtles are present >An observer report should be prepared and provided to the Division of Fish and Wildlife	During project	Concur. Sea turtle observers are currently used on hopper dredges only; this practice will continue for the deepening project.
7.0 DREDGING				
7.1 Dredging windows	Dredging operations within State of DE waters	Follow dredging windows established by the Delaware River Basin Fish and Wildlife Cooperative and reported in the 1997 final SEIS	During project	Concur. Corps is committed to specific dredging windows in the 1997 final SEIS.
7.2 Striped bass spawning window	Delaware Memorial Bridge to Philadelphia	Follow existing seasonal restrictions for dredging, blasting and overboard disposal in the mainstream of the Delaware River	During project	Concur. Corps is committed to these dredging windows in the 1997 final SEIS.

DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT

Issue Category	Location	State of Delaware State Requirements	Project Schedule	Corps Response
7.3 Atlantic sturgeon spawning window	Delaware Memorial Bridge to Philadelphia	Rock should not be blasted or removed from the river between 15 April and the end of June	During project	Concur. Corps is committed to a blasting restriction between 15 March and 30 November in the 1997 final SEIS.
7.4 Atlantic sturgeon spawning window	Delaware Memorial Bridge to Philadelphia	Rock should not be blasted or removed from the river between 15 April and the end of June	During project	Concur. Corps is committed to a blasting restriction between 15 March and 30 November in the 1997 final SEIS.
7.5 Atlantic sturgeon overwintering	Artificial Island to Chester, PA	Employ an observer to monitor potential sturgeon impacts from winter hopper dredging activities	During project	Concur.
7.6 Economic loading of hopper dredges	Dredging operations within State of DE waters	>Economic loading must be approved by the DNREC >Economic loading will be limited by geographic scope and material characteristics >Additional monitoring will be required	Pre-project	Concur. The extent of economic loading has not been finalized with DE; monitoring protocols have been developed and previously employed by WES; the State had determined that Bay material is clean and can be used for beneficial use and if appropriate monitoring will be employed.

DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT

Issue Category	Location	State of Delaware State Requirements	Project Schedule	Corps Response
8.0 REPORTING				
8.1 CDF Annual Operational Report	Reedy Point North Reedy Point South	>Current site conditions >Annual disposal operation >Maintenance and management Activities >Summary of material removal >Remaining disposal capacity >Summary of surface and ground-water programs not discussed above	During project	Concur. This information will be provided to DE for initial construction of the deepening project. The sites will not be used for Operation and Maintenance of the Delaware River Main Channel Deepening River Project.
8.2 Bi-annual progress reporting of the channel deepening project	Dredging operations within State of DE waters	>Dredging locations in the previous 12 months >Status and capacity of CDFs >Unforeseen consequences and remedies	During project	Concur.
8.3 Future CDF capacity for maintaining the 45-foot project	Philadelphia to the Sea	Corps must be prepared to address dredged material placement needs in the context of future maintenance related to the deepening project	Post-project	Concur. The current project design includes sufficient capacity for a 50-year project life

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3390

REPLY TO
ATTENTION OF

July 7, 2000

Executive Office

SUBJECT: Delaware River and Bay Main Channel Deepening Project

Secretary Nicholas DiPasquale
Delaware Department of Natural Resources
and Environmental Control
89 Kings Highway
Dover DE 19903

Dear Secretary DiPasquale:

I am writing to update you on the status of our efforts to resolve ongoing issues regarding the Delaware River Main Channel Deepening Project. Our two agencies have a long history of working together to resolve tough issues on behalf of the State of Delaware.

As we proceed toward constructing this project, we are committed to seek the best way to safeguard Delaware's natural resources. While we have numerous policies and procedures in place to ensure compliance with all Federal, State, and local requirements, we have not received confirmation from you that the information provided in your 31 March 2000 letter is a complete listing of all your issues. Without this information, we cannot determine the adequacy of our current plans and procedures.

A short synopsis of coordination activities to date should clarify our situation. On 12 May 2000, I faxed to you my Port of Wilmington Maritime Society presentation, a matrix that was our initial attempt to systematically organize and address the many issues raised in your 31 March letter, and a Memorandum of Acknowledgment that we used to address similar concerns raised by the State of New Jersey. We also discussed by telephone the potential for utilizing a similar mechanism that was acceptable to the State of New Jersey in addressing their issues. You indicated that this approach does not give you the legal assurances you require.

As a result of our 12 May conversation and with no further input on additional issues, I proceeded to further clarify and organize into seven broad categories the 57 original issues raised in your 31 March letter, and to finalize our District's assessment of these requirements. On 9 June, I formally responded to your letter and suggested we could utilize the Coastal Zone Consistency Certification process to meet your need for stringent legal enforceability. On 12 June, Mr. Bullock hosted a meeting in Delaware, attended by another representative of Governor Carper, you, me, and members of our respective staffs.

At that meeting, we agreed to look for an alternative to the CZM process since you found the enforceability of this process insufficient. We agreed to let our legal staffs develop other possible alternatives, and you indicated that within one week you would specify the environmental standards we should use to safeguard Delaware's natural resources.

On 23 June, I offered the availability of our District's technical staff to work with your staff to finalize the specific standards. Further, I asked you to let me know the dates that your staff could meet with mine during the following week. I am still awaiting word from you on these specific dates. I am sure that you agree we must set these standards before we can define the best course of action to proceed further.

Please let me know as soon as possible your plan as to how we can expeditiously resolve Delaware's issues. I look forward to your continuing cooperation as we work on this matter together.

Sincerely,

Debra M. Lewis

Debra M. Lewis
Lieutenant Colonel, Corps of Engineer
District Engineer

Copy Furnished:

Senator Roth
Senator Biden
Representative Castle
Governor Carper
Delaware River Port Authority

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
FFICE OF THE SECRETARY
89 KINGS HIGHWAY
DOVER, DELAWARE 19901
PHONE: (302) 739-4403
FAX: (302) 739-6242

July 14, 2000

LTC Debra M. Lewis
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107

Re: Delaware River Main Channel Deepening Project

Dear Lieutenant Colonel Lewis:

The Department of Natural Resources and Environmental Control (DNREC) has reviewed your letter of June 9, 2000 and the updated matrix entitled "Assessment of Environmental Issues" that you provided in response to my March 31, 2000 letter regarding the deepening of the Delaware River Main Channel. This letter also addresses issues raised in your most recent correspondence to me of July 9, 2000. Let me begin by thanking you and your staff for meeting with me and members of my staff, discussing our concerns and providing the organized response. Overall, we appear to be in agreement on the means to resolve many issues. Clarifications of DNREC requirements for specific issues are outlined below. We still have several remaining concerns.

. The following are comments from the Department regarding the matrix "Assessment of Environmental Issues." Comments are organized by section.

1.0 CONFINED DISPOSAL FACILITIES	
1.1 & 1.2	The Corps will need to follow the requirements for Delaware permit processing, regardless of the eventual enforcement mechanism. DNREC uses EPA Application Form 1 – General Information; EPA Application Form 2D – New Sources and New Discharges and EPA Application Form 2E – Facilities Which Do Not Discharge Process Wastewater to collect information to control discharges such as those from CDFs. These forms must be filled out and submitted to the Division of Water Resources for all discharges that could impact Delaware waters. Copies are attached.
1.3	Procedures for effluent monitoring must be submitted to DNREC for review

	and comment. This should be sent along with the information required for permit processing (above). State of Delaware water quality standards attached.
1.4	It appears that DNREC's concern for contaminants might be deferred until post project. DNREC's original comment reflected two concerns: potential contaminant discharge during de-watering and potential longer term impacts after de-watering. These concerns need be addressed by the Corps before the project commences.
2.0	**SAND PLACEMENT ON DELAWARE BEACHES**
2.1	See Attachment A for a list of Delaware's preferred locations for sand placement.
	The FEIS does not address the impacts of placing material on Delaware beaches. The EIS will not be complete until it is amended to address this issue.
2.2	It is unclear from your response whether you intend to apply for Subaqueous Lands permits. Does your acknowledgement of 401 Water Quality Certification requirements include agreement on Subaqueous Lands permits? A Subaqueous Lands permit or its enforceable equivalent is needed.
2.3	DNREC is satisfied with the agreement regarding horseshoe crab protection measures.
3.0	**WETLAND CREATION/ENHANCEMENT**
3.1	If tidal wetlands are to be impacted during the construction of Kelly Island, the substantive requirements of a State of Delaware wetlands permit must be obtained before any work can commence.
	If the de-watering of Kelly Island necessitates a discharge into surface waters, the Crops will be required to complete the same application forms required for CDFs.
3.2	DNREC will continue working with the Corps until a final wetland design plan can be approved. Work cannot commence until this plan is finalized. Regardless of what the Kelly Island project is referred to, we are targeting the survival rates outlined in the March 31, 2000 letter as measures of success.
3.3	A post-construction monitoring plan to ensure protection of water quality standards must be developed by the Corps and submitted to DNREC for review and approval before the project can commence. In addition, the Corps must clarify how long it intends to maintain the beach constructed in front of the wetland area.
3.4	A Subaqueous Lands permit or its enforceable equivalent is required.
4.0	**OYSTER HABITAT MONITORING**
	DNREC is awaiting the final oyster-monitoring plan from the Corps for review and comment. The monitoring plan should include widespread measures of sediment coverage.
5.0	**WATER QUALITY MONITORING**
	DNREC requires that a sampling plan at the point of dredging be submitted for review and comment. This plan is to include steps to be taken if TSS exceeds 250 mg/l.

	Corps regulations require that an EIS address water quality impacts in states adjoining areas where side channels and berthing areas are to be dredged. The Corps is to assist the states where this dredging is to occur in obtaining Section 401 Water Quality Certification from the state where there could be adverse impacts on water quality. The Corps has not done this for the dredging that will occur at Marcus Hook.
6.0	**ENDANGERED SPECIES**
6.1	DNREC requires the submission of protocols for monitoring potential impacts to sea turtles and short-nose sturgeon for review and comment before the project commences.
6.2	DNREC is satisfied with agreements regarding protections of sea turtles.
7.0	**DREDGING**
7.1	DNREC is satisfied regarding adherence to dredging windows.
7.2	DNREC is satisfied regarding adherence to dredging windows for striped bass.
7.3	DNREC is satisfied regarding adherence to dredging windows for Atlantic sturgeon.
7.4	DNREC is satisfied regarding adherence to dredging windows for Atlantic sturgeon.
7.5	DNREC is satisfied regarding Atlantic sturgeon overwintering monitoring for hopper dredge activities.
7.6	The extent of economic loading needs to be finalized and approved by DNREC before the project can commence. ***Please note final comments regarding female overwintering blue crabs.**
8.0	**REPORTING**
8.1	An outline for the CDF Annual Operational Report must be submitted to DNREC for review and comment before the project may commence.
	A description of current CDF site conditions must also be submitted.
8.2	DNREC is satisfied with agreements for bi-annual progress reporting.
8.3	DNREC is satisfied with agreements for CDF capacity for maintenance.

Please share with us as soon as possible the Corps' proposed dredging schedule and dredging techniques. Over the past years, we have discussed many dredging closure windows and investigated the impacts of economic loading. If the Corps plans to dredge the lower Delaware Bay during the winter, we need to know what measures will be put in place to avoid and reduce impacts to overwintering female blue crabs. During cold winters female blue crabs hibernate in the channel, particularly on the channel sides. They may be torpid and unable to move away from the dredge as stated in the Supplemental EIS. This, combined with the possibility of economic loading depositing a burdensome amount of sediment on top of them, should be accounted for and avoided. This most important fishery must be protected.

Also, we have gotten conflicting information regarding the final quality of rock available after blasting. As you may be aware, our conditional consistency determination required the

Corps to make this rock available to Delaware for habitat improvement. This rock is a resource that belongs to Delaware. Placement of rock in Delaware's eleven permitted reef sites could serve as partial mitigation for unavoidable fisheries impacts sustained during the dredging process.

Additionally, a preliminary DNREC review of berthing area sediment toxicity data has shown contamination levels of concern. We are just now bringing this issue up because of the length of time it took the Corps to provide the requested data and the time it took our staff to convert the raw data to an electronic format to facilitate analysis. I trust you have shared this information with the state environmental agencies of Pennsylvania and New Jersey. It is our understanding that Corps regulations and Section 401 of the Clean Water Act require that an EIS address water quality impacts in states adjoining areas where side channel berthing areas are to be dredged and that the Corps is to assist states to obtain Section 401 Water Quality Certification from the affected state. DNREC requests that you document potential effects to waters of the State of Delaware from dredging activities in side channel/berthing areas in adjoining states.

Finally, as previously discussed on numerous occasions and as we have maintained over the past decade, the State of Delaware continues to assert that the Corps is subject to state permitting requirements for this project. We have provided your legal and technical staff with appropriate statutory and regulatory requirements and permit application forms. Before we will entertain any further discussion about alternative mechanisms for satisfying these remaining environmental and regulatory requirements, the U.S. Army Corps of Engineers must provide to the Delaware Department of Natural Resources and Environmental Control a written legal justification that articulates why the Corps should be exempt from applying for required State of Delaware permits.

Sincerely,

Nicholas A. DiPasquale
Secretary

pc: James M. Seif, Secretary, Pennsylvania Department of Environmental Protection
Robert C. Shinn, Jr., Commissioner, New Jersey Department of Environmental Protection

Attachments: EPA NPDES application forms
State of Delaware Water Quality Standards
Prioritized list of sand placement locations

Prioritized Areas for Sand Placement in Delaware

The following is a list of shoreline sites, prioritized by the Division of Soil & Water, that Delaware would like to receive sand from the Delaware River Main Channel Deepening project. These sites should be evaluated by the U.S. Army Corps of Engineers by standard criteria for feasibility of placement. With the exception of the authorized federal projects, the numbers are estimated.

1. Port Mahon* (Mahon River) to Pickering Beach (Old Marina Canal)
Length - 17,000 lf
Quantity - 1,003,000 cy

2. Rehoboth Beach/Dewey Beach*
Length - 13,500 lf
Quantity - 1,440,000 cy

3. Kitts Hummock (south end) to St. Jones River
Length - 11,000 lf
Quantity - 660,000 cy

4. Broadkill Beach*
Length - 14,600 lf
Quantity - 1,305,000 cy

5. Big Stone Beach (south end) to Mispillion River
Length - 18,000 lf
Quantity - 1,080,000 cy

6. Slaughter Beach (south)
Length - 4,700 lf
Quantity - 376,000 cy

7. Cape Shores
Length - 2,900 lf
Quantity - 290,000 cy

8. Fowler Beach Area
Length - 18,500 lf
Quantity - 1,480,000 cy

* Denotes authorized federal project with EIS.

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3390

REPLY TO
ATTENTION OF

NOV 13 2000

Environmental Resources Branch

SUBJECT: Delaware River Main Channel Deepening Project

Mr. Jeff Tinsman
Delaware Department of Natural Resources
and Environmental Control
Division of Fish and Wildlife, Shellfisheries
89 Kings Highway
Dover, Delaware 19903

Dear Mr. Tinsman:

On November 8, 2000, a meeting was held at the Grassdale Center, Delaware with representatives from the Delaware Department of Natural Resources and Environmental Control, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the Corps of Engineers. The purpose of the meeting was to discuss and finalize the design and monitoring plan for the Kelly Island Wetland Restoration Project, which is part of the Delaware River Main Channel Deepening Project.

As you were absent from the meeting, we have enclosed copies of the Kelly Island project design, the Kelly Island Wetland Restoration "Goals" table that has been revised as a result of this meeting, and copies of digitized maps of State of Delaware oyster seedbeds and lease areas. This information was presented and finalized at the meeting. Please review this information and provide any comments.

The digitized oyster maps were prepared from the paper maps that you provided. We are concerned that the location of oyster resources, especially the seedbeds, is not accurate due to the small number of registration points that were used to identify areas. We would like to obtain more precise information on the location of the oyster seedbeds to insure that our monitoring efforts are accurate. The most useful information, which we have previously requested, would be coordinates for the boundaries of the beds.

Please review the enclosed information and provide any comments by November 30, 2000. We also request additional coordinate data with regard to the location of oyster seedbeds. If you have any questions, please contact John Brady at (215) 656-6554. We appreciate your assistance in this effort.

Sincerely,

Robert L. Callegari
Chief, Planning Division

Enclosures

1. Kelly Island Project Design.
2. Kelly Island Wetland Restoration "Goals" revised table, based on comments received at the meeting.
3. Digitized maps of State of Delaware oyster seedbeds and lease areas.
4. Information on how the oyster resources maps were prepared.

Copy Furnished:
Richard W. Cole, DNREC, Shellfisheries
Sarah W. Cooksey, DNREC, Coastal Management Program

Mapping Delaware Oyster Resources

1. The maps that were produced for the Delaware oyster resources are not exact, but show the general area where each feature exists.
2. Paper maps were obtained from the Shellfish Office of DNREC, and were scanned.
3. The scanned maps were then digitized.
4. Each map (Seed Beds and Lease Areas) were registered, that is, putting real coordinates on them using UTM Coordinate System, Zone 18 (1983 Datum). The oyster data was overlain on digital quad maps.
5. The Lease Area maps are more accurate because more coordinates were on the original map (30 registration points).
6. The Seed Bed maps are less accurate since only 4 registration points were used, and these locations were estimated from known locations on the original map, such as a navigation buoy.

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF FISH AND WILDLIFE
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

OFFICE OF THE
DIRECTOR

December 7, 2000

Mr. John Brady
U.S. Army Corps. of Engineers
The John Wanamaker Bldg
100 Penn Square East
Philadelphia, PA 19107-3390

Dear John,

Enclosed is a list of coordinates (mostly Loran-C) for Delaware's natural oyster seed beds. The list was compiled by Capt. Buddy Sipple, of our staff. Let me preface my comments about these coordinates by saying that they are for the Corps'. use only in fine tuning GIS charts of the seed beds, which you have produced. The Division of Fish and Wildlife would like to request that these coordinates not be published or made available to the public, in any form.

Coordinates are provided for twelve natural oyster seed beds. These include: Persimmon Tree, Woodland Beach, Joe Flogger Shoal, Over-the-bar, Silver, Lower Middle, Black Can, Red Can, Pleasanton's Rock, Drum, Ridge, and Southwest. Some of these coordinates mark the "corners" of the bed. These corners fall within the productive part of the bed, but do not define its perimeter, which may be irregular in shape. Mapping of the exact shape of the bed would best be done using sidescan sonar techniques, as we have discussed previously.

Coordinates listed as "stations" represent productive areas within the bed where we collect samples for our annual oyster bar survey. Again, connecting these point would not represent the total spatial extent or shape of the seed bed.

Coordinates marked "working buoys" indicate productive areas within the bed where oyster harvesters have worked. These coordinates also do not define the extent or shape of the seed bed.

In checking your GIS maps, all these coordinates should fall within the perimeter of the charted seed beds. If you have any questions regarding interpretation of this data, please contact me at your convenience.

Sincerely,

Jeff C. Tinsman
Fisheries Biologist

Cc: Richard W. Cole, Shellfisheries Program Manager
Buddy Sipple, Shellfisheries Management Vessel Captain

Delaware's good nature depends on you!