DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207-3199

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OHIO E.P.A.
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REPLY TO
ATTENTION OF

November 15, 2013

2013 NOV 20 AM 11:02
OHIO EPA - DSW

Environmental Analysis Section

SUBJECT: Toledo Harbor, Lucas County, Ohio - Request for Section 401 Water Quality Certification for Scheduled 2014 Maintenance Dredging Operations

Mr. Scott J. Nally
Director
Ohio Environmental Protection Agency
Division of Surface Water
P.O. Box 1049
Columbus, Ohio 43216-1049
ATTN: Mr. Ric Queen

Dear Mr. Nally:

Enclosed is the Public Notice and Section 401 Water Quality Certification (WQC) application for our scheduled 2014 maintenance dredging operations at Toledo Harbor, Ohio (Enclosures 1 and 2). This project entails the maintenance dredging of authorized Federal navigation channels, and placement of the associated dredged material in the Harbor's existing, authorized open-lake area in Lake Erie. The Public Notice has been prepared in conformance with USACE regulation, "Practice and Procedure: Final Rule for Operation and Maintenance of Army Corps of Engineers Civil Works Projects involving the Discharge of Dredged Materials into Waters of the United States or Ocean Waters," 33 Code of Federal Regulations (CFR) 337.1.

The USACE - Buffalo District is requesting Ohio Environmental Protection Agency (OEPA) WQC for the scheduled 2014 maintenance dredging of Toledo Harbor, with the associated discharges of dredged material, or waiver thereof, under Section 401 of the Clean Water Act.

The following items are contained within this package:

a. Enclosure 1 is the Section 404(a) Public Notice.
b. Enclosure 2 is our Section 401 WQC application.
c. Enclosure 3 is an aerial photograph of Toledo Harbor.

SUBJECT: Toledo Harbor, Lucas County, Ohio - Request for Section 401 Water Quality Certification for Scheduled 2014 Maintenance Dredging Operation

Please note that all National Environmental Policy Act (NEPA) documents (i.e., Environmental Impact Statements or Environmental Assessments) and Section 404(b)(1) Evaluation(s) have been completed for this maintenance dredging project, and were previously furnished to your office. The majority of the information requested in item 10 of the WQC application is contained in these documents in further detail.

An evaluation of Toledo Harbor Federal navigation channel sediments was completed and provided to OEPA in 2011. The evaluation reconfirmed that material in the lower end of the River Channel and Lake Approach Channel [River Mile 0.75 (Station 360+00) to the lakeward end of the channel] and the upper River Channel [River Mile 5 (Station 138+00) to the upstream limit of the channel (River Mile 6.75 / Station 33+36.61)] meets Federal guidelines for open-lake placement, and complies with applicable Ohio water quality standards.

Similar to last year's WQC application, Question 10 of the WQC application addresses water quality-related concerns included in joint OEPA/Ohio Department of Natural Resources (ODNR) letter dated April 15, 2010. For example, OEPA and ODNR alleged that an excessive sediment/nutrient load (e.g., resulting from the placement of Toledo Harbor dredged material) to the Basin is likely causing negative impacts and possibly exacerbating HABs. However, this assumption is not supported by the weight of the scientific evidence. Considerable knowledge already exists and has been provided to OEPA along with previous applications regarding the release of phosphorus (P) from Toledo Harbor dredged material. This information indicates that the contribution from the open-lake placement of dredged material is a very minor facet of the overall Western Basin P budget, and therefore has a low potential to affect HABs. In fact, the Ohio Lake Erie Phosphorus Task Force has reported that the most significant P loading to the Basin was dissolved reactive phosphorus (DRP) in runoff from agricultural land use. Existing data strongly indicate that DRP from the Maumee River watershed is transported into Lake Erie, and likely drives late summer HABs. Nevertheless, in coordination with OEPA, we are currently conducting an investigation under contract to further quantify the release of P associated with dredged material placement within the Basin, including the use of water quality monitoring during placement activities.

In the April 15, 2010 letter, OEPA and ODNR were concerned that the placement of Toledo Harbor dredged material into the Basin continues despite the dedication of large-scale governmental resources to prevent soil and nutrients from entering and negatively impacting the affected waterways. In our opinion, this is an inaccurate comparison. Because soil and nutrients are external loading sources to the Basin, the relocation of Toledo Harbor dredged material as an internal loading activity does not contravene these abatement efforts. As you know, the USACE has been involved (via several forums, including the Toledo Harbor Dredging Task Force) in the examination of alternatives that productively utilize Toledo Harbor dredged material through the creation of habitat areas for the benefit of fish and wildlife. Several studies evaluating the cost

and feasibility of these alternatives have been performed by USACE and members of the Task Force, including the Ohio Lake Erie Commission and the Toledo-Lucas County Port Authority. At this time, there does not appear to be a willing non-Federal partner to advance any of the identified alternatives to construction.

We propose to place Toledo Harbor dredged material in the southwest half of the existing open-lake placement area because water depths in the northeast half have become prohibitively shallow for placement. Dredged material placement was originally restricted to the northeast half due to previous local concerns that suspended solids (SS) during placement migrated toward and potentially impacted the quality of water at the city of Toledo potable water intake (PWI). We believe the potential for this to occur to be very low, apart from any spatial restrictions on placement within the two square mile open-lake area. Nevertheless, we are currently performing water quality-related modeling to verify that the placement of dredged material in the southwest half of this area does not significantly impact the quality of water at this and other nearby PWIs.

A copy of the Public Notice was sent to U.S. Fish and Wildlife Service (Ecological Services, Columbus, Ohio) and ODNR (Division of Wildlife, Ohio Biodiversity Database, Columbus, Ohio) on November 15, 2013 to coordinate comments with respect to Threatened and Endangered species, including the presence or absence of Critical Habitat. Further, we e-mailed these two entities on November 15, 2013 to request their comments in this regard with copy furnished to OEPA.

OEPA has already been provided the majority of the technical information contained in response to Question 10 of the WQC application, most of which has been cited in previous documentation. We can provide references for this information upon request.

While we understand that it is OEPA and ODNR policy to eliminate the placement of Toledo Harbor dredged material in the Basin, the beneficial use of the typical volume of sediments annually dredged will require viable options that provide extraordinary capacity and require non-Federal funds for implementation. Please note that, like any other Federal navigation project, the Federal cost of dredging and dredged material placement for Toledo Harbor must be kept to the minimum of what sound science indicates is environmentally acceptable. Future funding allocated toward the USACE maintenance of Toledo, as well as other Great Lakes and coastal harbors, must first be economically justified based on economic considerations at the national level. Each harbor must then compete for funding, which presently is unlikely to increase given current demands on the Federal budget. To remain viable, Toledo Harbor must be cost competitive with comparable harbors, in terms of both private sector shipping costs for carriers and Federal costs for maintenance of the Federal navigation project.

We sincerely appreciate the efforts that were made last year that resulted in issuance of WQC within 150 days of application. The timely receipt of WQC has allowed us to maintain

channel dimensions throughout the 2013 navigation season and has reduced the risk of not completing the required maintenance dredging. In 2014, it is expected that there will be a shortage of available Great Lakes dredging contractors due to an unusually large number of projects. Therefore, it is critical that WQC is received by April 15, 2014 in order to accept contract bids on schedule.

Please advise us on the completeness of the WQC application by December 9, 2013 and we ask that you schedule the Public Hearing for this application at your earliest possible convenience, and no later than January 30, 2014.

We appreciate your cooperation in this matter. A copy of this letter has been provided to ODNR.

Questions pertaining to this matter should be directed to Mr. Eric E. Hannes at (716) 879-4311, by writing to the following address: U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York, 14207-3199, or by e-mail at: Eric.E.Hannes@usace.army.mil.

Sincerely,

Martin P. Wargo, PWS
Supervisory Biologist
Environmental Analysis Section

Enclosures

US Army Corps of Engineers®

Public Notice

Issuing Office: CELRB-PM-EA
Notice No: TOLEDO-14

Published: 15 NOV 2013
Expires: 15 DEC 2013

OPERATION AND MAINTENANCE
DREDGING AND DREDGED MATERIAL PLACEMENT

TOLEDO HARBOR

LUCAS COUNTY, OHIO

This Public Notice has been prepared in conformance with U.S. Army Corps of Engineers (USACE) regulation, "Practice and Procedure: Final Rule for Operation and Maintenance of Army Corps of Engineers Civil Works Projects involving the Discharge of Dredged Materials into Waters of the United States or Ocean Waters," 33 Code of Federal Regulations (CFR) 337.1. Its purpose is to specify what dredged/fill materials would be discharged into waters of the United States by implementation of the proposed action, and advise all interested parties of the proposed project and to provide an opportunity to submit comments, or request a public hearing.

The USACE - Buffalo District anticipates the need to dredge and discharge material excavated from the Federal navigation channels of Toledo Harbor, in order to maintain sufficient depth for deep-draft commercial vessels. The attached map (Figure 1) shows the authorized limits and depths of Toledo Harbor Federal navigation channels. Dredging in 2014 will be conducted in the upper end of the River Channel, the lower end of the River Channel near the Maumee River mouth, and Lake Approach Channel in the Western Basin of Lake Erie (Basin). Up to one additional foot of material may be removed to ensure authorized depths are obtained and account for inaccuracies in the dredging process.

The 2014 dredging operation at Toledo Harbor is tentatively scheduled to be performed during the period between 1 July 2014 and 15 March 2015.

A contractor of the Federal government will accomplish the project. Sediments will be removed from the channel bottom by a mechanical or hydraulic dredge and placed into hoppers aboard ship or scow for transport to the designated dredged material placement area. The method of excavation will be determined by the Contractor performing the maintenance dredging. In previous years, clamshell bucket, pipeline and hopper dredges have been used to complete the required work.

The material to be dredged from Toledo Harbor consists primarily of silts and clays. In 2014, an estimated total of 1,100,000 cubic yards (CY) of material will be dredged from the Federal navigation project. The quality of the material has been evaluated using 2004, 2006 and 2010 sediment data in accordance with the protocols and guidelines contained in the U.S. Environmental Protection Agency (USEPA)/USACE 1998 Great Lakes Dredged Material Testing and Evaluation Manual. This evaluation specifically addresses the potential contaminant-related risks to aquatic life associated with placing the dredged material in open-lake waters. Based on this evaluation, material in the lower end of the River Channel and Lake Approach Channel [River Mile 0.75 (Station 360+00) to the lakeward end of the channel] and the upper River Channel [River Mile 5 (Station 138+00) to the upstream limit of the channel (River Mile 6.75 / Station 33+36.61)] was toxicologically comparable to sediments at open-lake areas in the Western Basin of Lake Erie. Consequently, material dredged from these reaches of Toledo Harbor has been determined to meet Federal guidelines for open-lake placement. This dredged material will be placed at the existing two-square mile open-lake placement area in the Basin, located three and one-half miles from the Toledo Harbor light at an azimuth of 033°00' (Figure 2). This site has been previously used by the USACE for the placement of Toledo Harbor dredged material. Because the northeast half of this area has become too shallow for dredged material placement, placement will occur within the southwest half.

Concerns that have been raised include the position that the open-lake placement of Toledo Harbor dredged material represents a net increase in sediment loading to the Basin, and results in a substantial increase in turbidity. However, material being placed in the Basin is being dredged from within the adjoining riverine and lacustrine systems. Therefore, the dredging of the River Channel and Lake Approach Channel with the associated placement of material in the existing authorized open-lake placement area constitutes an internal relocation within the aquatic system, rather than external loading. Turbidity associated with the placement of this dredged material should be viewed within the framework of the amount of sediments within the system and entering the Basin from other sources. The amount of Toledo Harbor dredged material annually relocated into the lacustrine system (for this exercise, the amount used is 1,250,000 CY or an estimated 1,450,000 metric tons [MT]) is less than one percent of the estimated annual resuspended sediment load (150,000,000 to 300,000,000 MT) in the Basin, and is less than that contributed by the Maumee River every year (an estimated 1,500,000 cubic yards). Therefore, the open-lake placement of Toledo Harbor dredged material results in short-term, temporary turbidity, and does not represent widespread or substantially increased background turbidity in the Basin.

Factors such as the considerable annual volume that is removed from the Federal navigation channels, and lack of non-Federal sponsors to cost-share have to date precluded the implementation of any practicable beneficial use alternative for Toledo Harbor dredged material. At this time, there is currently no viable placement area outside the aquatic ecosystem available to USACE that complies with USACE requirements, is accessible, economically feasible, and can accommodate the quantity of dredged material necessary to maintain Toledo Harbor on an annual basis and at a reasonable cost to Federal and non-Federal partners.

Water Quality Certification (WQC) from the Ohio Environmental Protection Agency (OEPA) is required for this action, pursuant to Section 401 of the Clean Water Act. Therefore, a copy of this Public Notice has been provided to OEPA requesting WQC, or waiver thereof, for the associated placement of dredged material at the existing open-lake placement area.

The environmental effects of the dredging operation are documented in the ***Final Environmental Impact Statement, Operation and Maintenance (O&M), Toledo Harbor, Ohio (1976); Environmental Assessment (EA) and Section 404(b)(1) Evaluation, O&M, Toledo Harbor, Ohio (1989); and EA and Section 404(b)(1) Evaluation, O&M, Dredging and Placement of Dredged Material, Toledo Harbor, Ohio (2009).*** These documents, and supplemental documentation, have been submitted to USEPA. Copies are available for examination at the Buffalo District office.

There are no registered historic properties or properties listed as being eligible for inclusion in the National Register of Historic Places that will be affected by this project. By this notice, the National Park Service is advised that currently unknown archaeological, scientific, prehistorical or historical data may be lost or destroyed by the work to be accomplished.

This office has determined that the proposed project will have No Effect upon any species proposed or designated by the U.S. Department of the Interior as threatened or endangered, nor will the proposed work result in an Adverse Modification of designated critical habitat for any such species. Therefore, unless new information indicates otherwise, no further consultation pursuant to Section 7 of the Endangered Species Act Amendments of 1978 will be undertaken with the U.S. Fish and Wildlife Service.

This work will be undertaken in a manner consistent, to the maximum extent practicable, with the State of Ohio Coastal Management Program. A Coastal Management Program Federal Consistency Determination has been submitted to the Ohio Department of Natural Resources (ODNR) documenting this determination.

The decision whether to perform dredging will be based on an evaluation of the probable impact, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative factors thereof; among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

This activity is being coordinated with the following agencies, as well as other appropriate Federal, State and local agencies, Indian nations and organizations:

Ohio Department of Natural Resources
Ohio Environmental Protection Agency
Ohio Historic Preservation Office
U.S. Coast Guard
U.S. Department of the Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency

Any interested parties and/or agencies desiring to express their views concerning this proposed discharge of dredged material may do so by filing their comments, in writing, no later than 30 days from the date of this notice. Any person who has an interest which may be affected by this discharge may request a public hearing. The request must be submitted in writing to the undersigned within 30 days of the date of this Public Notice. The request must clearly set forth the interest which may be affected, and the manner in which the interest may be affected, by this activity.

Interested parties are encouraged to contact the USACE - Buffalo District with their comments regarding the proposed dredging of Toledo Harbor. Please review this Public Notice and send your comments in writing within 30 days to the following e-mail address:

ToledoDredging@usace.army.mil

or via mail to:

U.S. Army Corps of Engineers - Buffalo District
Environmental Analysis Team
1776 Niagara Street
Buffalo, NY 14207-3199
ATTN: Environmental Analysis - Toledo Dredging

This Public Notice is published in conformance with 33 CFR 337.1. All dredging and dredged material discharge will be performed in conformance with Sections 313 and 404 of the Clean Water Act (33 USC 1323 and 1344, respectively).

Martin P. Wargo, PWS
Supervisory Biologist
Environmental Analysis Section

Attachments

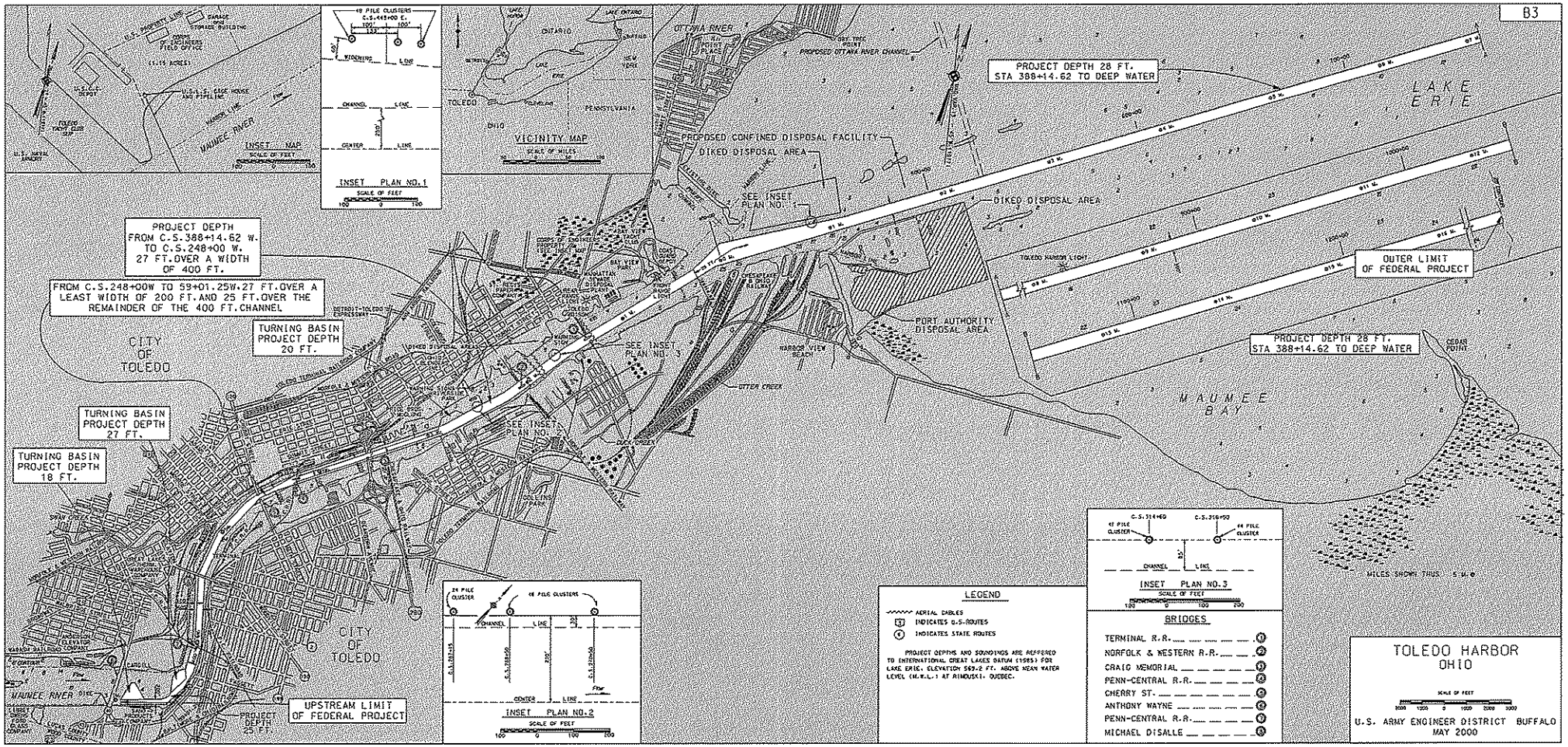

Figure 1 - Toledo Harbor, Lucas County, Ohio

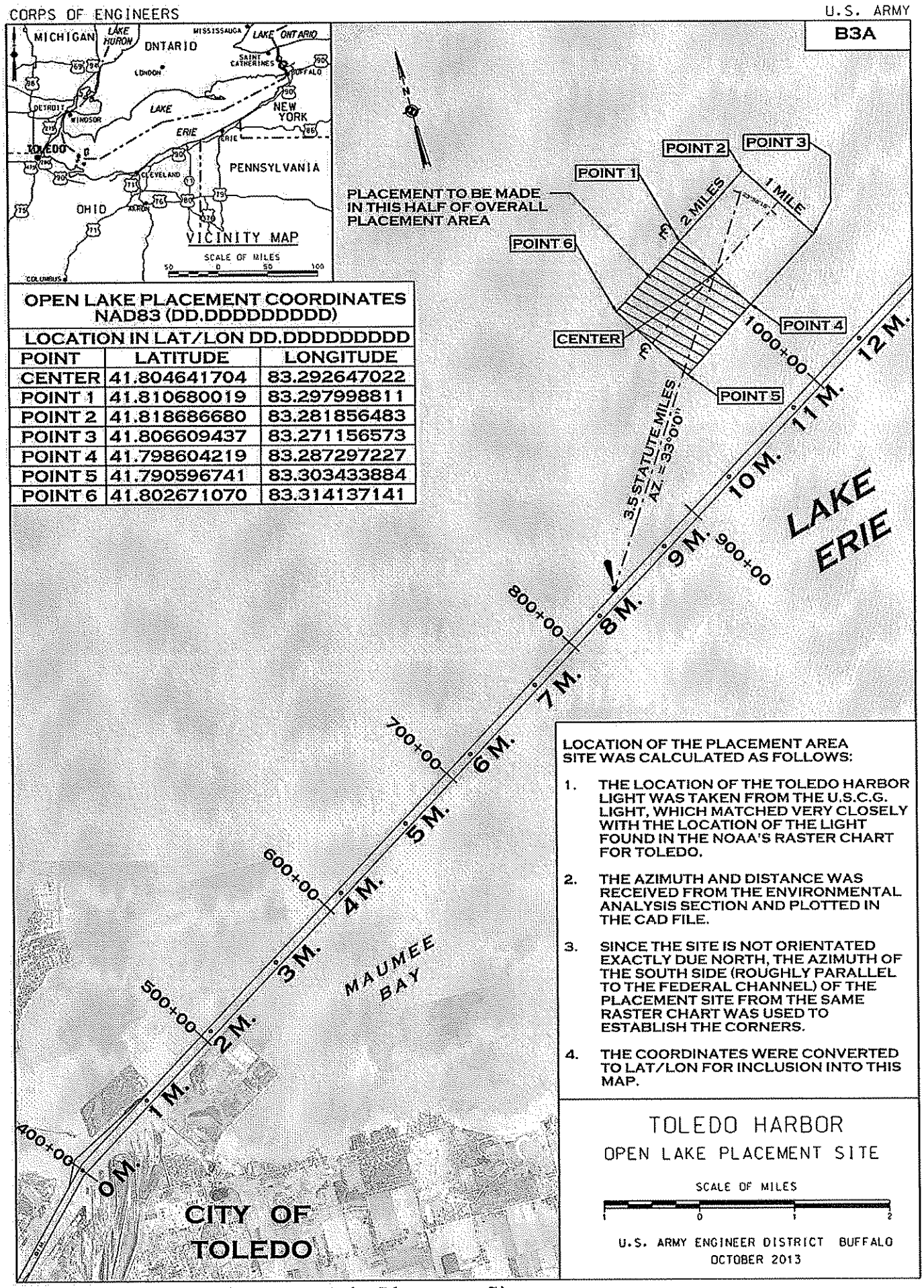

Figure 2 - Toledo Harbor Open Lake Placement Site

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APPLICATION FOR OHIO EPA SECTION 401 WATER QUALITY CERTIFICATION

Effective October 1, 1996
Revised August, 1998

This application must be completed whenever a proposed activity requires an individual Clean Water Act Section 401 Water Quality Certification (Section 401 certification) from Ohio EPA. A Section 401 certification from the State is required to obtain a federal Clean Water Act Section 404 permit from the U.S. Army Corps Engineers, or any other federal permits or licenses for projects that will result in a discharge of dredged or fill material to any waters of the State. To determine whether you need to submit this application to Ohio EPA, contact the U.S. Army Corps of Engineers District Office with jurisdiction over your project, or other federal agencies reviewing your application for a federal permit to discharge dredged or fill material to waters of the State, or an Ohio EPA Section 401 Coordinator at (614) 644-2001.

The Ohio EPA Section 401 Water Quality Certification Program is authorized by Section 401 of the Clean Water Act (33 U.S.C. 1251) and the Ohio Revised Code Section 6111.03(P). Ohio Administrative Code (OAC) Chapter 3745-32 outlines the application process and criteria for decision by the Director of Ohio EPA. In order for Ohio EPA to issue a Section 401 certification, the project must comply with Ohio's Water Quality Standards (OAC 3745-1) and not potentially result in an adverse long-term or short-term impact on water quality. Included in the Water Quality Standards is the Antidegradation Rule (OAC Rule 3745-1-05), effective October 1, 1996, revised October, 1997 and May, 1998. The Rule includes additional application requirements and public participation procedures. **Because there is a lowering of water quality associated with every project being reviewed for Section 401 certification, every Section 401 certification applicant must provide the information required in Part 10 (pages 3 and 4) of this application**. In addition, applications for projects that will result in discharges of dredged or fill material to wetlands must include a wetland delineation report approved by the Corps of Engineers, a wetland assessment with a proposed assignment of wetland category (ies), official documentation on evaluation of the wetland for threatened or endangered species, and appropriate avoidance, minimization, and mitigation as prescribed in OAC 3745-1-50 to 3745-1-54. Ohio EPA will evaluate the applicant's proposed wetland category assignment and make the final assignment.

Information provided with the application will be used to evaluate the project for certification and is a matter of public record. If the Director determines that the application lacks information necessary to determine whether the applicant has demonstrated the criteria set forth in OAC Rule 3745-32-05(A) and OAC Chapter 3745-1, Ohio EPA will inform the applicant in writing of the additional information that must be submitted. The application will not be accepted until the application is considered complete by the Section 401 Coordinator. An Ohio EPA Section 401 Coordinator will inform you in writing when your application is determined to be complete.

Please submit the following to "Section 401 Supervisor, Ohio EPA/DSW, P.O. Box 1049, Columbus, Ohio 43216-1049:

- Four (4) sets of the completed application form, including the location of the project (preferably on a USGS quadrangle) and 8-1/2 x 11" scaled plan drawings and sections.
- One (1) set of original scaled plan drawings and cross-sections (or good reproducible copies).

(See Application Primer for detailed instructions)

1. The federal permitting agency has determined this project: (check appropriate box and fill in blanks)

   a. X requires an individual 404 permit/401 certification- Public Notice # (if known) TOLEDO-14

   b. ____ requires a Section 401 certification to be authorized by Nationwide Permit #_____

   c. ____ requires a modified 404 permit/401 certification for original Public Notice #_____

   d. ____ requires a federal permit under _____ jurisdiction identified by #_____

   e. ____ requires a modified federal permit under_____ jurisdiction identified by #_____

OHIO EPA - DSW
2013 NOV 20 AM 11:03

2. Application number (to be assigned by Ohio EPA): 134288

3. Name and address of applicant:
Martin P. Wargo
U.S. Army Corps of Engineers, Buffalo District
1776 Niagara Street
Buffalo, NY 14207-3199

Telephone number during business hours:
( ) (Residence)
(716) 879-4116 (Office)

3a. Signature of Applicant: Martin P. Wargo Date: 11/14/13

4. Name, address and title of authorized agent:
Eric E. Hannes
U.S. Army Corps of Engineers, Buffalo District
1776 Niagara Street
Buffalo, NY 14207-3199

Telephone number during business hours:
( ) (Residence)
(716) 879-4311 (Office)

4a. Statement of Authorization: I hereby designate and authorize the above-named agent to act in my behalf in the processing of this permit application, and to furnish, upon request, supplemental information in support of the application.

Signature of Applicant: Martin P. Wargo Date: 11/14/13

5. Location on land where activity exists or is proposed. Indicate coordinates of a fixed reference point at the impact site (if known) and the coordinate system and datum used.

Address:
SEE ATTACHED CONTINUATION SHEET

Street, Road, Route, and Coordinates, or other descriptive location

Watershed | County | Township | City | State | Zip Code

6. Is any portion of the activity for which authorization is sought complete? _____ Yes __X__ No
If answer is "yes," give reasons, month and year activity was completed. Indicate the existing work on the drawings.

7. List all approvals or certifications and denials received from other federal, interstate, state or local agencies for any structures, construction, discharge or other activities described in this application.

Issuing Agency	Type of Approval	Identification No.	Date of Application	Date of Approval	Date of Denial

SEE ATTACHED CONTINUATION SHEET

8. DESCRIPTION OF THE ACTIVITY (fill in information in the following four blocks - 8a, 8b, 8c & 9)

8a. Activity: Describe the Overall Activity:

SEE ATTACHED CONTINUATION SHEET

8b. Purpose: Describe the purpose, need and intended use of the activity:

SEE ATTACHED CONTINUATION SHEET

8c. Discharge of dredged or fill material: Describe type, quantity of dredged material (in cubic yards), and quantity of fill material (in cubic yards). **(OAC 3745-1-05(B)(2)(a))**

SEE ATTACHED CONTINUATION SHEET

9. Waterbody and location of waterbody or upland where activity exists or is proposed, or location in relation to a stream, lake, wetland, wellhead or water intake (if known). Indicate the distance to, and the name of any receiving stream, if appropriate.

SEE ATTACHED CONTINUATION SHEET

10. To address the requirements of the Antidegradation Rule, your application must include a report evaluating the:

- Preferred Design (your project) and Mitigative Techniques
- Minimal Degradation Alternative(s) (scaled-down version(s) of your project) and Mitigative Techniques
- Non-Degradation Alternative(s) (project resulting in avoidance of all waters of the state)

At a minimum, item a) below must be completed for the Preferred Design, the Minimal Degradation Alternative(s), and the Non-Degradation Alternative(s), followed by completion of item b) for each alternative, and so on, until all items have been discussed for each alternative (see Primer for specific instructions). (Application and review requirements appear at **OAC 3745-1-05(B)(2), OAC 3745-1-05(C)(6), OAC 3745-1-05(C)(1) and OAC 3745-1-54)**.

10a) Provide a detailed description of any construction work, fill or other structures to occur or to be placed in or near the surface water. Identify all substances to be discharged, including the cubic yardage of dredged or fill material to be discharged to the surface water. **(OAC 3745-1-05(B)(2)(b))**

10b) Describe the magnitude of the proposed lowering of water quality. Include the anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including threatened and endangered species (include written comments from Ohio Department of Natural Resources and U.S. Fish and Wildlife Service), important commercial or recreational sport fish species, other individual species, and the overall aquatic community structure and function. Include a Corps of Engineers approved wetland delineation. **(OAC 3745-1-05(C)(6)(a, b) and OAC 3745-1-54)**

10c) Include a discussion of the technical feasibility, cost effectiveness, and availability. In addition, the reliability of each alternative shall be addressed (including potential recurring operational and maintenance difficulties that could lead to increased surface water degradation.) **(OAC 3745-1-05(C)(6)(h, j-k) and OAC 3745-1-54)**

10d) For regional sewage collection and treatment facilities, include a discussion of the technical feasibility, cost effectiveness and availability, and long-range plans outlined in state or local water quality management planning documents and applicable facility planning documents. **(OAC 3745-1-05(C)(6)(i))**

10e) To the extent that information is available, list and describe any government and/or privately sponsored conservation projects that exist or may have been formed to specifically target improvement of water quality or enhancement of recreational opportunities on the affected water resource. **(OAC 3745-1-05(B)(2)(g))**

10f) Provide an outline of the costs of water pollution controls associated with the proposed activity. This may include the cost of best management practices to be used during construction and operation of the project. **(OAC 3745-01-05(C)(6)(g))**

10g) Describe any impacts on human health and the overall quality and value of the water resource. **(OAC 3745-1-05(C)(6)(c) and OAC 3745-1-54)**

10h) Describe and provide an estimate of the important social and economic benefits to be realized through this project. Include the number and types of jobs created and tax revenues generated and a brief discussion on the condition of the local economy. **(OAC 3745-1-5(B)(2)(e), and OAC 3745-1-05(C)(6)(i))**

10i) Describe and provide an estimate of the important social and economic benefits that may be lost as a result of this project. Include the effect on commercial and recreational use of the water resource, including effects of lower water quality on recreation, tourism, aesthetics, or other use and enjoyment by humans. **(OAC 3745-1-05(B)(2)(e,f), and OAC 3745-1-05(C)(6)(e))**

10j) Describe environmental benefits, including water quality, lost and gained as a result of this project. Include the effects on the aquatic life, wildlife, threatened or endangered species. **(OAC 3745-1-05 (B)(2)(e,f), OAC 3745-1-05 (C)(6)(b) and OAC 3745-1-54)**

10k) Describe mitigation techniques proposed (except for the Non-Degradation Alternative):

- Describe proposed Wetland Mitigation (see **OAC 3745-1-54** and Primer)
- Describe proposed Stream, Lake, Pond Mitigation (see Primer)

11. Application is hereby made for a Section 401 Water Quality Certification. I certify that I am familiar with the information contained in this application and, to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities or I am acting as the duly authorized agent of the applicant.

Signature of Applicant	Date	Signature of Agent
	11/14/13	

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in Block 3 has been filled out and signed.

Do not send a certification processing fee with this application. The appropriate fee will be assessed when a certification is issued.

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CONTINUATION SHEET

Application for OEPA Section 401 State Water Quality Certification

TOLEDO HARBOR (LAKE APPROACH AND RIVER CHANNELS)
MAINTENANCE DREDGING PROJECT

5. The project is located at Toledo Harbor, Lucas County, Ohio. The latitude/longitude of the dredging activity is 41°41'49"N/83°27'49"W. The latitude/longitude of the open-lake placement area is 41°46'10"N/83°15'39"W.

7. Environmental Impact Statement (EIS), Operation and Maintenance, Toledo Harbor, Ohio

< Issuing Agency – U.S. Army Corps of Engineers
< Type of Approval – Statement of Findings (SOF)
< Date of Application – February 1976
< Date of Approval – May 1976

Environmental Assessment (EA) and Section 404(b)(1) Evaluation, Operation and Maintenance, Toledo Harbor, Ohio

< Issuing Agency – U.S. Army Corps of Engineers
< Type of Approval – Finding of No Significant Impact (FONSI) and Section 404(b)(1) Evaluation
< Date of Application – 29 December 1988
< Date of Approval – 18 August 1989

EA and Section 404(b)(1) Evaluation, Operation and Maintenance, Toledo Harbor, Ohio

< Issuing Agency – U.S. Army Corps of Engineers
< Type of Approval – FONSI and Section 404(b)(1) Evaluation
< Date of Application – 8 August 2007
< Date of Approval – 24 July 2009

8a. The project entails the maintenance dredging of sediments from the authorized Lake Approach Channel and River Channel of Toledo Harbor, Lucas County, Ohio (see Figure 1 of the attached Public Notice). In 2014, an estimated total of 1,100,000 cubic yards of material will be dredged from the Federal navigation project. The channels will be dredged to authorized limits and depths, and up to one additional foot of material may be removed to ensure authorized depths are obtained and account for inaccuracies in the dredging process. The quality of the material has been evaluated using 2004, 2006 and 2010 sediment data in accordance with the protocols and guidelines contained in the U.S. Environmental Protection Agency (USEPA)/USACE 1998 Great Lakes Dredged Material Testing and Evaluation Manual. This evaluation concluded that material in the lower end of the River Channel and Lake Approach Channel [River Mile 0.75 (Station 360+00) to the lakeward end of the channel] and the upper River Channel [River Mile 5 (Station

138+00) to the upstream limit of the channel (River Mile 6.75 / Station 33+36.61)] was toxicologically comparable to sediments at open-lake areas in the Western Basin of Lake Erie. Consequently, material dredged from these areas has been determined to meet Federal guidelines for open-lake placement. This dredged material will be placed at the existing two-square mile open-lake placement area in the Western Basin of Lake Erie, located three and one-half miles from the Toledo Harbor light at an azimuth of 033°00' (see Figure 2 of the attached Public Notice). This site has been previously used by the USACE for the placement of Toledo Harbor dredged material. Dredged material placement will occur in the southwest half of this area. The 2014 dredging operation at Toledo Harbor is tentatively scheduled to be performed during the period between 1 July 2014 and 15 March 2015. A contractor of the Federal government will accomplish the project, and the type of equipment used to perform the maintenance dredging will depend on the contractor performing the work. The project is described in further detail in the attached Public Notice.

8b. The purpose of the project is to maintain sufficient water depths for deep-draft commercial navigation. This project was congressionally authorized by the 1899, 1910, 1935, 1950, 1954, 1958 and 1960 River and Harbor Acts. Toledo Harbor is the 51st leading port in the United States and is ranked 7th among Great Lakes Ports with a five year average (2006-2010) of over 11 million tons of material shipped or received. The harbor generates $381M annually in direct revenue while supporting 6,971 jobs that generate over $558M per year in personal income. The loss of between two and three feet of channel depth would result in increased transportation costs of between $964,000 and $2,585,000 annually. If the harbor was closed to commercial traffic, commodities would have to be transported by rail and truck. This is predicted to increase annual emission rates by over 69,568 tons of harmful particulate matter and increase costs by $4,775,000 due to increased railroad related accidents, and $971,000 due to increased trucking related accidents.

8c. Based on past testing programs, the material to be dredged consists mainly of silts and clays. Approximately 1,100,000 cubic yards of sediments will be dredged from the harbor in 2014. All of this dredged material will be subsequently discharged as described in Item 8a of this application. Additional information on the dredged material can be found in the 2009 EA and Section 404(b)(1) Evaluation.

9. The dredging portion of the project is located in Toledo Harbor, which is located at the mouth of the Maumee River on Lake Erie. The dredged material placement area is located in Lake Erie, as noted in Item 8a of this application. The Maumee River and Lake Erie are the receiving water for dredging activities, and Lake Erie is the receiving water for dredged material placement activities.

10. Some relevant information required under this item is included in the EIS, EAs and Section 404(b)(1) Evaluations specified above and previously furnished to OEPA. The following is a summary of the information contained in these documents that apply to this item of the application:

a. Descriptions.

(1) *Preferred Design Alternative*: This alternative would entail the dredging of an estimated 1,500,000 cubic yards of material from the River Channel (Station 58+00 to 138+00 and Station 360+00 to 388+00) and Lake Approach Channel (Station 388+00 to 814+40) (Attachment 1). This dredged material will be placed at the existing two-square mile open-lake placement area. A Contractor of the Federal government will accomplish the project, and the type of equipment used to perform the maintenance dredging will depend on the Contractor. Dredging will not be performed during Lake Erie storm events. The project will take about 180 to 220 days to complete.

(2) *Non-Degradation Alternative*: This is the "No Action" alternative. Toledo Harbor would not be dredged. No construction or filling of surface waters would occur as a result of this alternative.

(3) *Minimum Degradation Alternative*: This alternative would entail the dredging of an estimated 1,100,000 cubic yards of material from the River Channel (Station 58+00 to 138+00 and Station 360+00 to 388+00) and Lake Approach Channel (Station 388+00 to 731+57) (Attachment 2). This dredged material will be placed at the existing two-square mile open-lake placement area. Dredged material placement will occur in the southwest half of this area. The dredging operation will be tentatively scheduled to be performed during the period between 1 July 2014 and 15 March 2015 in order to minimize perceived impacts to local environmental resources, primarily fisheries. A Contractor of the Federal government will accomplish the project, and the type of equipment used to perform the maintenance dredging will depend on the Contractor. Dredging will not be performed during Lake Erie storm events. The project will take about 130 to 170 days to complete.

Note that the Minimum Degradation Alternative estimates dredging 400,000 cubic yards less than the Preferred Design Alternative. It is estimated that dredging activities specified in the Minimum Degradation Alternative will impact an estimated 535 acres (Attachment 2), which is 95 acres less of channel bottom/habitat than the 630 acres that would be impacted under the Preferred Design Alternative (Attachment 1) with an assumed shoal depth of three feet. The estimated "length" of Federal navigation channel (i.e., not actually stream) to be dredged under the Preferred Design and Minimum Degradation Alternatives are 53,340 and 43,060 linear feet, respectively. Note that the actual shoal thickness cannot be determined until just before the dredging begins. In addition, shoal thickness will vary throughout the harbor and greatly depend on weather conditions. Therefore, the above quantities are merely estimates regarding the acreage of Federal navigation channels to be dredged under either alternative.

b. Water Quality Impacts.

(1) *Preferred Design Alternative*: This alternative would result in a short-term, negligible lowering of ambient water quality, less than that which occurs during Lake Erie storm events. The main water quality impacts would be the generation of turbidity and variation of dissolved oxygen levels in the water column.

The material that would be dredged under this alternative consists of sediments that have

deposited in the Federal navigation channels since the last maintenance dredging effort. These types of sediments are homogenous and residually contaminated with pollutants that are ubiquitous throughout the Great Lakes. A characterization of the Toledo Harbor material is documented in the *Evaluation of Toledo Harbor Federal Navigation Channel Sediments With Respect to their Suitability for Open-lake Placement* provided to OEPA in 2010 and 2011. This evaluation concluded that material in the lower end of the River Channel and Lake Approach Channel [River Mile 0.75 (Station 360+00) to the lakeward end of the channel] and the upper River Channel [River Mile 5 (Station 138+00) to the upstream limit of the channel (River Mile 6.75 / Station 33+36.61)] was toxicologically comparable to sediments at open-lake areas in the Western Basin of Lake Erie and therefore meet USEPA/USACE guidelines for open-lake placement, pursuant to Section 404 of the Clean Water Act. This evaluation also contains 2010 data on the ambient concentrations of contaminants, such as metals, nutrients, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and pesticides in Basin water. Standard elutriate test (SET) data on the dredged material indicate that discharge of this dredged material at the existing open-lake placement area in the Western Basin of Lake Erie complies with applicable Ohio State Water Quality Standards for the Protection of Aquatic Life. For the general effects of this alternative's lowering of water quality on aquatic life, refer to the 2009 EA/FONSI and Section 404(b)(1) Evaluation. This EA/FONSI documents that the placement of the dredged material at the authorized area in the Western Basin of Lake Erie would not culminate in significant, adverse environmental impacts.

Open-lake placement of Toledo Harbor dredged material constitutes internal loading and does not result in a net increase of sediments into the aquatic system. With respect to turbidity, the Basin is a naturally shallow and turbid aquatic ecosystem impacted by urbanization, point and non-point source pollution. Cultural eutrophication has been a chronic problem in the Basin due to nutrient loads that derive primarily from agricultural land use. These anthropogenic activities ultimately increase sediment load and turbidity in the Basin. Turbidity created by the mix of natural and anthropogenic activities within the Basin is enormous compared to that associated with the placement of Toledo Harbor dredged material. The amount of dredged material annually relocated in the lacustrine system (for this exercise, the amount used is 1,250,000 cubic yards [estimated 1,450,000 metric tons {MT}]) should be viewed within the framework of the amount of sediments within the system and entering the Basin from other sources. For example, the Maumee River at Waterville annually contributes an estimated 1,500,000 cubic yards of sediments to the lower river and Basin. When compared to a very conservative estimate of 150,000,000 MT per year (the upper estimate is 300,000,000 MT) that are normally resuspended, the placement of dredged material from the Basin is an extremely small fraction (i.e., less than 0.96 percent of the resuspended sediment load). Therefore, the open-lake placement of Toledo Harbor dredged material results in short-term turbidity, and does not induce widespread and/or substantially increased background turbidity in the Basin. With respect to long-term movement of open-lake placement area sediments, 2010 studies and modeling show that bottom sediments in the area migrate in a net northeasterly to southeasterly direction, and do not reach City of Toledo and City of Oregon potable water intakes (PWIs) situated along the south shore of Maumee Bay east of the river mouth.

Concerning short-term turbidity-related impacts, the results of a preliminary field investigation in

August 2005 on turbidity plumes relating to the placement of Toledo Harbor dredged material at the existing open-lake area indicated that plume migration was in a net northeasterly direction and decayed to near background (30 mg/L total suspended solids [TSS]) at 870 feet (0.17 miles) such that the maximum plume length observed was 1,115 feet (0.21 miles). The entire footprint of the plume remained within the boundaries of the existing open-lake placement area. A subsequent modeling effort predominantly showed that only 1.5% of the sediment that is open-lake placed would remain in suspension after four hours, and less than 1% would be expected to remain in suspension after 24 hours. The TSS concentration associated with open-lake placement would be less than 12 mg/L and 1 mg/L above background after four and 24 hours, respectively. Therefore, turbidity plumes associated with the placement of dredged material at the open-lake area are small in spatial extent and magnitude. Toledo Harbor dredged material is typically released from a barge into the water column, and it therefore settles very rapidly as a mass that is similar to flocculent settling. Because it settles as a mass, very little turbidity is generated via a plume before the material reaches the lake bottom.

Based on this and other relevant scientific information, turbidity resulting from the placement of Toledo Harbor dredged material in the Basin is short-term and spatially limited.

Toledo Harbor sediment data from 2004 and 2006 show that the total phosphorus (P) concentrations in the sediments proposed for open-lake placement range from 328 to 1,010 mg/kg, and average 630 mg/kg. These concentrations are comparable to those at the open-lake reference area (range = 457 to 585 mg/kg; average = 554 mg/kg). Sediment P is subject to resuspension in the Basin, whether it is in-place within the Channel or discharged at the open-lake placement area. Without considering availability or sedimentation, total P added to the Basin water column by open-lake placement (630 mg/kg suspended solids x 1.45 million MT suspended solids/year = 913 MT/year) is less than 10% of the total added annually by external loads (about 7,000 MT/year) or introduced into the water column by wind-driven resuspension (about 6,100 MT/year). This load, however, is truly a redistribution of total P and already counted as part of the external load.

A very small fraction of total P is released via open-lake placement of Toledo Harbor dredged material; the dredged material which then settles on the bottom behaves much like the surrounding lake bottom sediments. SET data on the dredged material are consistent with low P availability during placement, and resuspended bottom sediments from the Basin have higher bioavailable phosphorus when compared to Lake Erie tributary suspended solids or the dredged material itself. External tributary and point source loads and wind-induced resuspension of bottom sediments release far greater amounts of phosphorus into the water column than open-lake placed dredged material and have a much greater potential than dredged material to contribute to excessive growth of algae, including harmful algal blooms (HABs), in the Basin.

Microcystis or *Lyngbya* are the two key species of alga involved with HABs in the Basin. It has been perceived that the open-lake placement of Toledo Harbor dredged material has the potential to exacerbate the formation of HABs in the Basin, which typically occur in late summer. However, current research indicate that *Microcystis* blooms originate in the Maumee River and extend in a plume from the river mouth out into the bay and there is no spatial relationship with

placement of the dredged material, while *Lyngbya* growth typically occurs along the western shoreline of the Basin. It is unlikely that these species' are obtaining their nutrients from Toledo Harbor dredged material placement operations. Considerable evidence already exists regarding the release of P from Toledo Harbor dredged material. This evidence indicates no cause-and-effect relationship between the open-lake placement of Toledo Harbor dredge material and HABs. Further, the contribution from the open-lake placement of dredged material is a very minor facet of the overall Basin P budget, suggesting a low potential to affect HABs. The Ohio Lake Erie Phosphorus Task Force has reported that the most significant P loading to the Basin was dissolved reactive phosphorus (DRP) in runoff from agricultural land use. This source of phosphorus is the most available to algae and is not attached to sediment (including dredged material). DRP is transported from the Maumee River watershed into Lake Erie and likely drives the HABs. Existing data indicate that the release of dissolved total P associated with the placement of Toledo Harbor dredged material in the Basin is an inconsequential factor in HAB development.

In 1989, a typical open-lake placement operation involved the release of an estimated 20 to 30 MT of DRP (estimated from settling column tests) from Lake Approach Channel sediments between Lake Miles 2 and 10. Thus, only about 10% of the ultimately available P is released during the initial placement of dredged material. This represented less than 0.63 percent of the external basin load of DRP estimated in 1980, indicating that 99.4 percent of the DRP load comes from other sources. If it is assumed as an upper limit that open-lake placement of Toledo Harbor dredged material will ultimately release double the amount that is immediately available (i.e., easily desorbable while material is settling through the water column) the resulting percentage of 1.26 is still very small compared to other sources. Further, a USACE letter to OEPA dated October 5, 2009, points out that the Toledo Bay wastewater treatment plant (WWTP) reported a 69.4 ton/year discharge of dissolved total P compared with 0.77 tons/year calculated as the release of dissolved total P from open-lake placement of Toledo Harbor dredged material. This indicates that the release of DRP during open-lake placement is very low (about 1%) of the amount released by the WWTP discharge. If it is assumed that the discharge of dissolved P from the WWTP discharge is much less than that associated with agricultural runoff, this indicates that the contribution of DRP to the Basin from open-lake placement of Toledo Harbor dredged material is miniscule in comparison to other sources.

Dredging and dredged material placement activities would result in the excavation, and some smothering and mortality of benthic macroinvertebrates, and the temporary avoidance of work areas by fish and wildlife species (i.e., mostly gulls and waterfowl). However, following dredging operations, the benthic communities would recolonize the impacted areas. A 2003 benthic community investigation on the open-lake placement area concluded that the diversity and abundance of macroinvertebrates within the area were similar to other reference areas in the Western Basin of Lake Erie. This study also showed that there was no association among sampling areas in relation to their proximity to the placement area, indicating that the placement of dredged material had no measurable long-term effect on the benthic community within or outside the area.

Regarding impacts to fish, the open-lake placement area was situated to avoid fish spawning

grounds. During dredged material placement operations, the modes of impact indicate that adverse impacts to fish are minor and short-term. The increase in suspended sediments and turbidity resulting from the open-lake placement of Toledo Harbor dredged material is very small in comparison to ambient conditions, and is therefore unlikely to trigger any significant adverse effects to fish. Indigenous fish are naturally exposed and have likely adapted to naturally occurring and much more extended elevated suspended sediment events (such as during storm or high runoff events) relative to episodic open-lake placement events. At the open-lake placement area, discharge activities place mud on mud-bottom habitat; therefore, there is no resulting significant change to bottom substrate. The material settles within a few hours and becomes subject to the same resuspension forces typically affecting the surrounding lake bottom. Impacts on fish over the full range of possible effects include either an avoidance or attraction to the area by fish, or no noticeable effect. Some fishes have been observed to be attracted to open-lake placement operations because they have a tendency to feed on the benthic macroinvertebrates contained and released from the dredged material. Many fishes have a wide tolerance for turbidity, and fish behavior in response to a dredged material placement event depends on the species. The placement of dredged material at the open-lake area may result in some mortality to demersal fish eggs (e.g., from broadcast spawning species) existing on the lake bottom in very close proximity to the actual placement of dredged material due to suffocation from burial or siltation, and/or oxygen deficiency at the sediment-water interface. Studies and modeling show that short- and long-term turbidity impacts associated with the open-lake placement of Toledo Harbor dredged material are negligible to minor. Therefore, it would not result in any measureable reduction of light penetration into the water column, or adversely affect phytoplankton and aquatic plant production and fish. Given the dredging period, limited spatial area of impact and natural population variations of these types of species, this type of impact would not culminate in any long-term, adverse impacts to any fish population. The open-lake placement of Toledo Harbor dredged material has a very low likelihood of causing turbidity-related adverse effects on fish, including commercially and recreationally important species such as walleye (*Sander vitreum*) and yellow perch (*Perca flavescens*). Successive 2012 and 2013 laboratory studies found that suspended sediment exposures to walleye eggs, walleye larvae and fingerlings mimicking sediment resuspension during dredging did not result in significantly reduced hatch success or fingerling survival, or evidence any sublethal effects through general gross morphological observation including an examination for gill lamellae abnormalities. The studies concluded that walleye eggs and fingerlings are relatively tolerant of suspended sediment concentrations likely to be encountered during dredging (and open-lake placement of dredged material) in the Great Lakes region.

Regarding impacts of open-lake placement of the dredged material on aquatic community structure and function, the aquatic ecosystem in the open-lake placement area, both before and after dredged material placement, is a profundal area within the Basin. It can be appropriately described as silt-bottom, warmwater, eutrophic habitat which supports a variety of benthic and pelagic organisms. Placement of dredged material at the open-lake area creates a mound, which results in some local bottom surface relief. This mound is subject to settling and lake currents in the Basin, which tend to flatten the mound over time following the cessation of dredged material placement operations. Available relevant evidence indicate that the aquatic ecosystem at the open-lake placement area is resilient, and that the periodic disturbance created by open-lake

placement of dredged material is absorbed or accommodated by the ecosystem because its structure and function has not fundamentally changed to a different state. Ecosystem resilience signifies ecosystem health (gauged by species diversity) and ecosystem stability (the probability that all species persist).

No impacts to any listed Threatened or Endangered species would occur.

(2) *Non-Degradation Alternative*: Since this alternative involves no construction or filling of surface waters, no lowering of water quality would result.

(3) *Minimum Degradation Alternative*: This alternative involves a reduction in the volume of dredged material and the associated water quality impacts would be similar to those described for the Preferred Design Alternative.

c. Feasibility.

(1) *Preferred Design Alternative*: This alternative is technically feasible, as it involves routine maintenance dredging and dredged material placement procedures. Equipment is readily available to accomplish this type of work. The most recent Benefit/Cost (B/C) ratio for this alternative with respect to commercial navigation in the harbor is greater than or equal to 3.09. Costs of this project would range from $3.50 to 4.00 per cubic yard of dredged material. Although this alternative is the most viable for commercial navigation, recurrent maintenance dredging needs of the Federal navigation channels, as required, would continue to result in a negligible to minor degradation in water quality.

(2) *Non-Degradation Alternative*: Since this alternative involves no construction or filling of surface waters, this alternative is technically feasible and available, but would not be cost effective from a commercial navigation standpoint. Under this alternative, the Federal navigation channels would progressively shoal in and impede commercial navigation, which would result in an increased cost of commodities to the local community. Deep-draft commercial navigation in the harbor would become economically nonviable and gradually cease.

(3) *Minimum Degradation Alternative*: This alternative is technically feasible, as it involves routine maintenance dredging and dredged material placement procedures. Equipment is readily available to accomplish this type of work. The B/C ratio for this alternative with respect to commercial navigation in the harbor is greater than or equal to 3.09. Costs of this project have ranged from $4.00 to $5.00 per cubic yard of dredged material over the past five years. Although this alternative is viable for commercial navigation, recurrent maintenance dredging needs of the Federal navigation channels, as required, would continue to result in negligible to minor reductions in water quality.

d. Regional Sewage Collection/Treatment Facilities. N/A.

e. Water Quality Improvement/Recreation Projects. N/A.

f. Water Pollution Control Costs.

(1) *Preferred Design Alternative*: Not dredging during storm events constitutes "blow days," which cost about $10,000 to $20,000 per day of lost work. The decision not to dredge based on weather conditions would be due to safety concerns.

(2) *Non-Degradation Alternative*: Since this alternative involves no construction or filling of surface waters, no costs would be incurred from water pollution controls.

(3) *Minimum Degradation Alternative*: The cost of adhering to the environmental window for this alternative would be significant. It is estimated that the restrictive environmental window under this alternative will increase the cost of the project by at least five percent (or $300,000). In addition, not dredging during storm events constitutes "blow days," which cost about $10,000 to $20,000 per day of lost work. The decision not to dredge based on weather conditions would be due to safety concerns.

g. Human Health Impacts.

(1) *Preferred Design Alternative*: The human health impacts associated with this alternative would be indiscernible, and would not significantly impact the overall quality and value of the water resource. The generation of turbidity and variation in dissolved oxygen levels in the water column would be the major effects associated with the dredging operations. The dredging area is within an industrialized water resource designed for commercial navigation, and a river and bay that are relatively shallow and naturally turbid. Toledo and Oregon PWIs are situated along the south shore of Maumee Bay east of the river mouth, about 7.5 miles south of the existing open-lake placement area. Field monitoring and modeling show that turbidity plumes generated during open-lake placement operations do not migrate far and generally remain within the boundaries of the placement area. The results of an August 2005 preliminary investigation on turbidity plumes relating to the placement of Toledo Harbor dredged material at the existing open-lake placement area in the Basin indicated that the plume migrated in a net northeasterly direction, and westward migration was minimal as it decayed rapidly to background TSS levels near 246 feet to the west of the placement area. Further, at 870 feet (0.17 miles) northeast of the open-lake placed dredged material, only traces of the plume remained as it decayed toward background at a TSS level of 30 mg/L. The maximum plume length was about 1,115 feet (0.21 miles), indicating that the entire footprint remained within the boundaries of the existing open-lake placement area. A subsequent modeling effort in 2007 predominantly showed that only 1.5% of the sediment that is open-lake placed would remain in suspension after four hours, and less than 1% would be expected to remain in suspension after 24 hours. The TSS concentration associated with open-lake placement would be less than 12 mg/L and 1 mg/L above background after four and 24 hours, respectively. Studies and modeling in 2010 show that bottom sediments in the area migrate in a net northeasterly to southeasterly direction, and do not reach Toledo and Oregon PWIs situated along the south shore of Maumee Bay east of the river mouth. Variations and increases in turbidity, and reductions in water quality near the PWIs are substantially influenced (i.e., essentially driven) by the natural wind-driven resuspension of sediments in the nearshore zone and from the Maumee River plume, which can extend 15 miles. The spatial and temporal distribution of violations in state water quality standards at the PWIs indicate that

natural phenomena, such as input from river and nearshore sediment resuspension due to currents and winds, as the principal causal factors. Therefore, the turbidity plumes or sediment resuspension associated with the placement of dredged material at the open-lake area typically do not reach or affect the quality of water at either the Toledo or Oregon PWIs. The potential of the dredge material placed at the open-lake area to impact the quality of water at these PWIs is very low. A 2009 OEPA Interoffice Memorandum is consistent with this assessment and concludes that it is unlikely that the proposed dredging project and open-lake placement will impact the water quality at these PWIs.

(2) *Non-Degradation Alternative*: Since this alternative involves no construction or filling of surface waters, no effects to human health would occur.

(3) *Minimum Degradation Alternative*: This alternative involves a reduction in the volume of dredged material and the associated human health impacts would be similar to those described for the Preferred Design Alternative.

h. Social/Economic Benefits Gained.

(1) *Preferred Design Alternative*: This alternative would restore navigable depths in the harbor channels for commercial vessel traffic. A large industrial base depends on the harbor to receive and ship commercial goods at a competitive cost. As such, it would allow for the cost-effective transport of commodities through the local community. The major products shipped through Toledo Harbor include coal, iron ore, grains, petroleum, limestone, sand and gravel and iron and steel products. This commerce has a substantial positive impact on the local economy by providing jobs that support the transportation, processing and production of these commodities, as well as by maintaining competitive price levels on commercial goods. The harbor generates $381M annually in direct revenue while supporting 6,971 jobs that generate over $558M per year in personal income. This industrial base generates substantial tax revenues for local governments. The estimated annual rate savings provided by Toledo Harbor (savings compared to the costs of alternative modes of transportation, such as rail or truck) is $338 million. Construction of the project itself would support about 10-20 blue-collar jobs in the dredging industry for a period of about three to five months. In addition, social and economic benefits associated with recreational navigation would accrue with harbor maintenance.

(2) *Non-Degradation Alternative*: This alternative would involve the cessation of maintenance of harbor Federal navigation channels. However, benefits would accrue to recreational navigation until the channels shoal in such that they would no longer be usable for shallow-draft vessels. Recreational benefits in this regard would include primarily those associated with local marinas and the leisure craft they support.

(3) *Minimum Degradation Alternative*: This alternative would restore navigable depths in the harbor channels for commercial vessel traffic. The social and economic benefits generated as a result of this alternative would be similar to those associated with the Preferred Design Alternative. A large industrial base depends on the harbor to receive and ship commercial goods at a competitive cost. As such, it would allow for the cost-effective transport of commodities

through the local community. The major products shipped through Toledo Harbor include coal, iron ore, grains, petroleum, limestone, sand and gravel and iron and steel products. This commerce has a substantial positive impact on the local economy by providing jobs that support the transportation, processing and production of these commodities, as well as by maintaining competitive price levels on commercial goods. The harbor generates $381M annually in direct revenue while supporting 6,971 jobs that generate over $558M per year in personal income. This industrial base generates substantial tax revenues for local governments. The estimated annual rate savings provided by Toledo Harbor (savings compared to the costs of alternative modes of transportation, such as rail or truck) is $338 million. Construction of the project itself would support about 10-20 blue-collar jobs in the dredging industry for a period of about three to five months. In addition, social and economic benefits associated with recreational navigation would accrue with harbor maintenance.

i. Social/Economic Benefits Lost.

(1) *Preferred Design Alternative*: This alternative would not result in any significant reduction in the economic value of the Basin through use for recreation, tourism and enjoyment by humans. Negligible to minor, short-term degradations in water quality associated with this alternative, such as that associated with turbidity in the water column, would be aesthetically displeasing and may not be attractive to recreational boaters in the area. Recreational and commercial fishing activities in the vicinity may be temporarily negatively affected by temporary degradations in water quality. Except for commercial industries such as restaurants and other riparian retail establishments, the temporary degradation in water quality would have minimal negative effects on commercial activities. Studies and modeling show that short- and long-term turbidity impacts associated with the open-lake placement of Toledo Harbor dredged material are negligible to minor. Further, existing data indicate that open-lake placement of this dredged material has a very low potential to influence HABs.

(2) *Non-Degradation Alternative*: Since this alternative involves no construction or filling of surface waters, no lowering of water quality would occur. Therefore, negative effects on the recreational use of the harbor would not occur. However, substantial effects on commercial navigation and associated industries would occur as a result of this alternative. The overall value of the harbor as a water resource to commercial navigation would progressively deteriorate to a point at which deep-draft commercial vessels would no longer be able to economically navigate the harbor due to decreased channel depths. The large industrial base that depends on the harbor to transport commodities would no longer be able to do so cost-effectively. The harbor would no longer provide competitive price levels on local commercial goods delivered by water because water delivery of these products will have ceased. If the harbor were not dredged and is no longer available to commercial navigation traffic over time, commodities would need to be moved by alternative modes of transportation, such as rail or truck. The transportation costs associated with these goods would then increase by $338 million annually, which is the estimate of rate savings benefits that the maintained port currently provides. The eventual closure of the harbor would have a substantial negative impact on the $381M in direct annual revenue and the 6,971 jobs that generate over $558M per year in personal income. Likewise all related tax

revenues would be lost. The lack of maintenance dredging would result in the loss of about 10 to 20 blue-collar jobs in the dredging industry for a period of about three to five months.

(3) *Minimum Degradation Alternative*: This alternative would not result in any significant reduction in the economic value of the Basin through use for recreation, tourism and enjoyment by humans. Negligible to minor, short-term degradations in water quality associated with this alternative, such as that associated with turbidity in the water column, would be aesthetically displeasing and may not be attractive to recreational boaters in the area. Recreational and commercial fishing activities in the vicinity may be negatively affected by temporary degradations in water quality. Except for commercial industries such as restaurants and other riparian retail establishments, the temporary degradation in water quality would have minimal negative effects on commercial activities. Studies and modeling show that short- and long-term turbidity impacts associated with the open-lake placement of Toledo Harbor dredged material are negligible to minor. Further, existing data indicate that open-lake placement of this dredged material has minimal potential to influence HABs.

j. Environmental Benefits Lost/Gained.

(1) *Preferred Design Alternative*: Refer to water quality impacts evaluation for "Preferred Design Alternative," relative to Question 10(b) of this application. This alternative would result in a short-term, minor reduction of water quality in the receiving waters. Testing and evaluation indicates that placement of the dredged material at the authorized open-lake area would not significantly impact aquatic life. Open-lake placement of the dredged material constitutes internal loading and does not result in a net increase of sediments into the Basin. The receiving waters are naturally turbid; the main water quality impacts would be the generation of turbidity and variation of dissolved oxygen levels in the water column. These impacts would be short-term and spatially limited. Turbidity would not increase to an extent that it would result in any measureable reduction of light penetration into the water column, or adversely affect phytoplankton and aquatic plant production and fish. Discharge of the dredged material at the open-lake placement area would have a very low potential to influence HABs in the Basin largely due to very small releases of DRP to the water column. Dredging and dredged material placement activities would result in the excavation, smothering and mortality of benthic macroinvertebrates. Following dredging operations, benthic communities would recolonize the impacted areas. The open-lake placement area is located to avoid any significant fish spawning areas. The fish community is generally adapted to natural levels of turbidity in the Basin and open-lake placement of the dredged material would not significantly increase ambient turbidity levels over the long-term. Fishes may avoid or be attracted to open-lake placement events, or may not show any noticeable effect; they would return following the completion of dredging operations. The aquatic ecosystem at the open-lake placement area is resilient. The periodic disturbance created by open-lake placement of dredged material is absorbed or accommodated by the ecosystem because its structure and function has not fundamentally changed to a different state. Wildlife species (i.e., mostly gulls and waterfowl) would temporary avoid work areas and would return following the completion of dredging operations. No effects to any listed Threatened or Endangered species would occur.

(2) *Non-Degradation Alternative*: Since this alternative involves no construction or filling of

surface waters, associated environmental benefits would include no degradation of water quality in receiving waters, and no physical disturbances to benthos, or fish and wildlife. No effects to endangered or threatened species would occur.

(3) *Minimum Degradation Alternative*: This alternative involves a reduction in the volume of dredged material and the associated environmental benefits lost/gained would be similar to those described for the Preferred Design Alternative.

k. Mitigative Techniques.

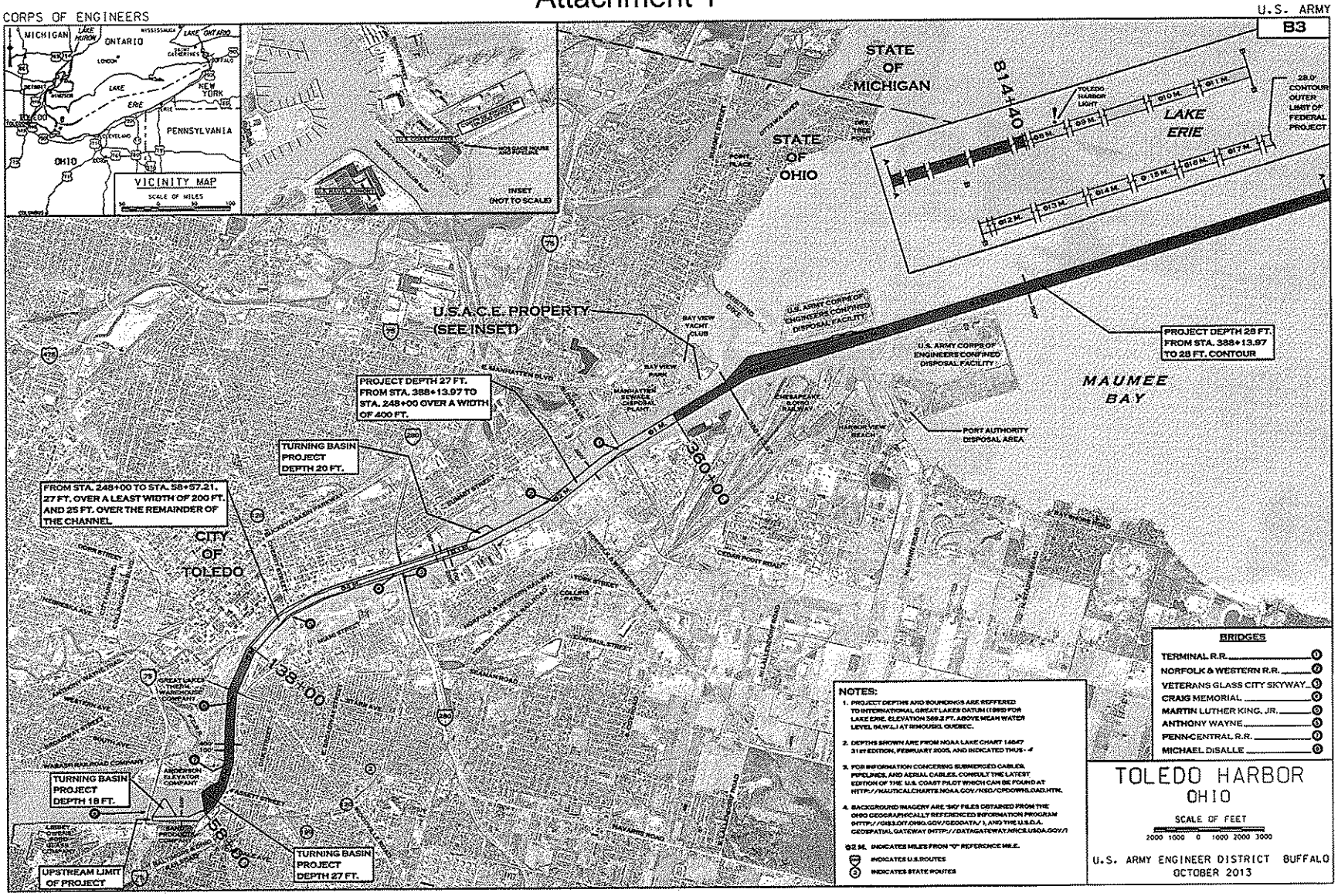
(1) *Preferred Design Alternative*: Dredging would not be performed during Lake Erie storm events. Care would be employed throughout the course of the dredging and discharge operations to avoid the creation of unnecessary turbidity that may degrade water quality or adversely affect aquatic life outside the project area.

(2) *Non-Degradation Alternative*: N/A.

(3) *Minimum Degradation Alternative*: Dredging would be restricted to between 1 July and 15 March in order to minimize perceived impacts to local environmental resources, primarily fisheries. Dredging will not be performed during Lake Erie storm events. Care would be employed throughout the course of the dredging and discharge operations to avoid the creation of unnecessary turbidity that may degrade water quality or adversely affect aquatic life outside the project area.

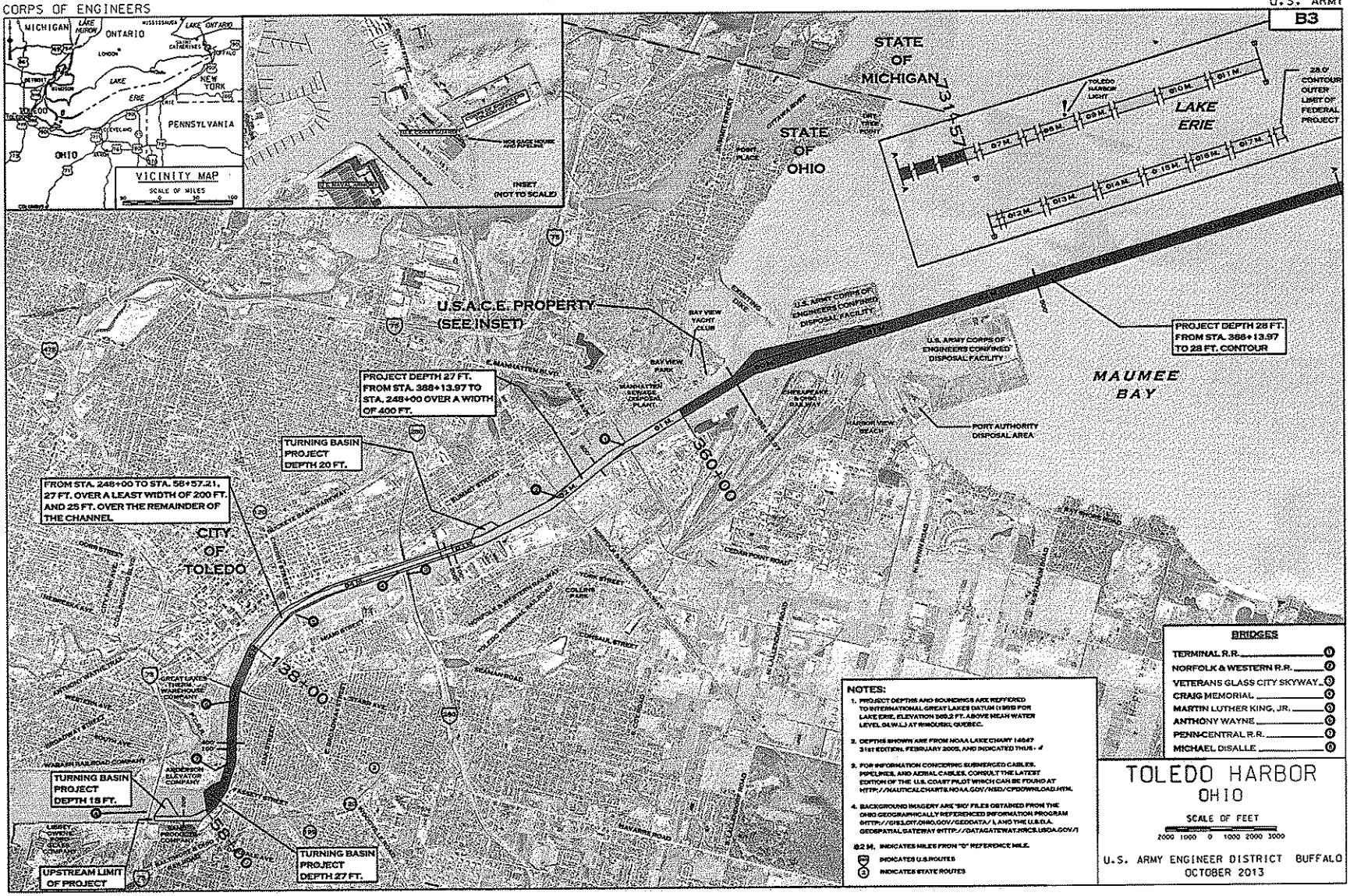
PREFERRED DESIGN ALTERNATIVE
FY14
(DREDGE 630 ACRES, 53,340 LINEAL FEET, LOCATIONS AND EXTENTS WILL BE ADJUSTED BASED ON ACTUAL SHOALING LOCATIONS AND DEPTHS [redacted])

Attachment 1



MINIMUM DEGRADATION ALTERNATIVE
FY14
(DREDGE 535 ACRES, 43,060 LINEAL FEET, LOCATIONS AND EXTENTS WILL BE ADJUSTED BASED ON ACTUAL SHOALING LOCATIONS AND DEPTHS [redacted])

Attachment 2



Enclosure 3
Aerial Photo of Toledo Harbor

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

December 9, 2013

Mr. Martin P. Wargo
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Re: Complete Section 401 Water Quality Certification Application
Toledo Harbor Dredging 2014
Corps Public Notice No. TOLEDO-14
Ohio EPA ID No. 134288

Dear Mr. Wargo:

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the Section 401 water quality certification application received by the Agency on November 20, 2013, and has determined that it is administratively complete.

As per Section 6111.024 of the Ohio Revised Code (ORC), Ohio EPA will act on this application within 180 days of the date of this letter. To determine the action that should be taken by the Director, Ohio EPA may ask for additional information. You are encouraged to provide information requested during the technical review process in a timely manner as the lack of complete or inadequate plans may be grounds for a proposal to deny this certification.

Public Notice Requirements

As a part of the antidegradation review process, Ohio EPA must provide for public participation and intergovernmental coordination prior to taking action on all activities for which a section 401 water quality certification is required. In some instances, a public hearing may be required.

In accordance with Section ORC 6111.30(C), the applicant is responsible for issuing a public notice regarding the application. In this specific case, Ohio EPA is aware of significant public interest in this project. The public notice will announce the receipt of the application by Ohio EPA and that a public hearing will be held regarding this project.

Information contained in the application indicates that a public hearing is mandatory pursuant to Ohio Administrative Code (OAC) 3745-1-05. The public notice will announce the receipt of the application by Ohio EPA and that a public hearing will be held regarding this project. The public hearing will be held on January 23, 2014, at Toledo City Council Chambers, One Government Center, 640 Jackson Street, Toledo, Ohio.

Enclosed is a draft public notice that Ohio EPA has prepared for this project. This notice must be published in a newspaper of general circulation for the region in which the impacts are proposed to occur within 21 days of the date of this letter. Guidance for preparing the final public notice and getting it published in the correct newspaper is available at: www.epa.ohio.gov/dsw/401/publicnotice.aspx. The correct newspaper for this project is:

Toledo Blade
Legal Notice Department
541 North Superior Street
Toledo OH 43660
(419) 724-6452
Fax: (419) 724-6455

You may find a copy of Ohio EPA's rules and laws online at http://www.epa.ohio.gov/dsw/rules/index.aspx. Information regarding Ohio's Section 401 and Isolated Wetlands Permitting programs is also available online at http://www.epa.ohio.gov/dsw/401/index.aspx.

If you have any questions, please contact me at (419) 373-3024 or via email at heather.allamon@epa.ohio.gov .

Sincerely,

Heather Allamon
Application Coordinator
401/Wetlands Section

/jlm
Enclosure
ec: Eric Hannes, Department of the Army, Buffalo District, Corps of Engineers
Shelby Gilbert, Ohio EPA, DSW, Permit Processing Unit
DSW File

Date of Public Notice: **[DATE]** Lucas County

PUBLIC NOTICE
NOTICE OF RECEIPT OF 401 APPLICATION AND PUBLIC HEARING

Public notice is hereby given that the Ohio Environmental Protection Agency (Ohio EPA) Division of Surface Water (DSW) has received an application for, and has begun to consider whether to issue or deny, a Clean Water Act Section 401 water quality certification for a project to dredge Toledo Harbor. The application was submitted by Martin Wargo, U.S. Army Corps of Engineers. The project is located in the Toledo Harbor Federal navigation channels. The Buffalo District Corps of Engineers Public Notice Number for this project is TOLEDO-14. The Ohio EPA ID Number for this project is 134288.

As required by the Antidegradation Rule, rule 3745-1-05 of the Ohio Administrative Code (OAC), three alternatives have been submitted for the project. The applicant's proposed preferred alternative, if approved, would involve dredging 1,500,000 cubic yards (CY) of material from the River Channel and Lake Approach Channel and open lake disposal. The applicant's proposed minimal degradation alternative, if approved, would involve dredging 1,100,000 cubic yards (CY) of material from the River Channel and Lake Approach Channel and open lake disposal. The applicant's proposed non-degradation alternative, if approved, would have no direct impacts on waters of the state.

Discharges from the activity, if approved, would result in degradation to, or lowering of, the water quality of Lake Erie. Ohio EPA will review the application, and decide whether to grant or deny the application, in accordance with OAC Chapters 3745-1 and 3745-32. In accordance with OAC rule 3745-1-05, an antidegradation review of the application will be conducted before deciding whether to allow a lowering of water quality. All three proposed alternatives will be considered during the review process. No exclusions or waivers, as outlined by OAC rule 3745-1-05, apply or may be granted.

Starting **[DATE OF PUBLICATION]**, copies of the application and technical support information may be inspected on Ohio EPA-DSW website:

www.epa.ohio.gov/dsw

Ohio EPA will hold a public information session and public hearing relative to issues of lower water quality on January 23, 2014 at 6:30 p.m. at Toledo City Council Chambers, One Government Center, 640 Jackson Street, Toledo, Ohio. The public hearing will end when all interested parties have had an opportunity to provide testimony related to the project.

All interested persons are entitled to attend or be represented and give written or oral comments on the proposed project. The purpose of the hearing is to obtain additional information that will be considered by Ohio EPA prior to any further action on the application.

Ohio EPA will continue to accept written comments on the application through the close of business on January 30, 2014. Comments received after this date may not be considered as part of the official record of the hearing. Anyone may submit written comments or requests to be placed on a mailing list for information by writing to: Ohio EPA-DSW, Attention: Permits Processing Unit, P.O. Box 1049, Columbus, Ohio 43216-1049.

Date of Public Notice: **[DATE]** Lucas County

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