

**Ohio Environmental Protection Agency
Division of Surface Water
Response to Comments**

**Project: Toledo Harbor Dredging
Ohio EPA ID #: 073192**

Agency Contacts for this Project

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Ohio EPA held a public hearing and/or comment period on October 23, 2008, regarding a Clean Water Act Section 401 water quality certification for U.S. Army Corps of Engineers' project to dredge Toledo Harbor as proposed in an application received by Ohio EPA on August 20, 2007. This document summarizes the comments and questions received at the public hearing and/or during the associated comment period, which ended on November 21, 2007.

Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format.

Ohio EPA received numerous comments regarding this application for this water quality certification. Comments were received from various federal, state, and local regulatory agencies; national, state, and local environmental groups; and, citizens of the State of Ohio.

Several comments were similar in nature; and, therefore, will be addressed as one single response per those comments.

Comment 1: 2005 Memorandum of Agreement

Response 1: In July 2005, the U.S. Army Corps of Engineers, Buffalo District (Corps), Ohio Environmental Protection Agency (Ohio EPA), and Ohio Department of Natural Resources (ODNR) entered into a Memorandum of Agreement (MOA) that would require all involved parties to work together towards the development and implementation of habitat restoration units (HRUs) through the utilization of suitable materials dredged from the Toledo Harbor Lake Approach Channel (Lake Miles 2-19). The MOA also required that the Corps seek other opportunities for the beneficial reuse of dredged material and alternate upland placement locations.

Since 2005, issues regarding funding and recent analytical results of dredged material have made compliance with the MOA unachievable, as it is written. Regarding funding, the MOA states that the majority of funding will be federal, with a 25 percent non-federal component provided only during the construction phase. However, changes in federal requirements regarding cost sharing now require that state agencies provide cost share for all phases of the beneficial reuse project development except for the reconnaissance phase, which has been completed.

Additionally, the MOA was written to address sediment dredged from the Lake Approach Channel (Lake Miles 2-19). However, recent analytical data submitted by the Corps shows that the sediment that the Corps dredges from the Maumee River (River Miles 0-7) meets open lake water quality disposal criteria in accordance with the Great Lakes Dredged Material Testing and Evaluation Manual (September 1998) except at River Mile 2. Since the Corps cannot use federally regulated confined disposal facilities to dispose of dredged material that that would not be considered to be contaminated in accordance with the abovementioned manual, this material will have to be considered in beneficial reuse exploration.

Ohio EPA expects the Corps to continue its work with stakeholders to solve the problem of the need for open lake disposal through the development and implementation of beneficial reuse options for the dredged material, as per the MOA, so that the need for open lake disposal of dredged material from Toledo Harbor is reduced.

Comment 2: Declining Lake Levels

Response 2: Lake Erie water levels change on short-term (daily and seasonally) and on long-term scales (over years and decades). Long-term declines in water levels can come from a variety of sources such as water withdrawals, diversions, modifications to connecting channels or global climate change. Water levels have been documented to fluctuate about 6 ft. over a long term cycle. Precipitation patterns also play a large role in lake levels.

Ohio EPA believes that it is imperative that alternatives for the long-term management of dredged material be developed and implemented as soon as is practical. Ohio EPA has already taken steps to ensure that open lake disposal is severely limited by 2011; however, prior to that date, it is expected that beneficial reuses of dredged material will be continue to be explored so that reductions in the need for open lake disposal can be implemented before and in preparation of that date.

Comment 3: Environmental Impact Statement

Response 3: Ohio EPA does not have the authority under our current regulations to require a full environmental impact statement. Through the water quality certification process and anti-degradation review, Ohio EPA evaluates the direct and indirect impacts that the applied for project could have on water quality, and weighs the impacts of the fill activities to the social and economic justification for the activity.

Comment 4: Island 18

Response 4: In August 2007, a weir located at the combined disposal facility (CDF), known as Island 18, breached and water associated with dredged material that had recently been placed in the CDF was released into the environment. The material was dredged from an area of the Maumee River that, according to recent sampling, met open lake disposal water quality standards. However, since the Corps was not authorized to dispose of this material in the open lake, it was placed in the CDF. Sampling of water and sediment associated with the dredged material after the breach confirmed that the material did not pose a significant risk to the environment.

In their recent 401 application for open lake disposal of dredged material, the Corps proposed the use of Island 18 as a containment site for dredged material that does not meet open lake disposal water quality standards per the Great Lake Dredged Material Testing and Evaluation Manual. The Corps is

currently conducting an investigative study as to the cause of the breach. Since this study was not available at the time of the submittal of the 401 water quality certification application, Ohio EPA does not feel that dredged material should be placed in this location until such time that the Corps effectively demonstrates to Ohio EPA that the berms and weir structures associated with Island 18 are structurally capable of withstanding the increased capacity.

Comment 5: Mitigative Techniques

Response 5: Rule 3745-1-05 of the Ohio Administrative Code requires that the applicant provide a "Mitigative technique alternative" designed to offset all or part of the lowering of water quality, preferably within the same watershed. Best management practices are acceptable as mitigative techniques. In addition to the mitigative techniques proposed by the Corps in their application, Ohio EPA will also require, as a mitigative technique in this 401 water quality certification, that contaminated sediments from River Mile 2 be placed into a confined disposal facility; and, that open lake disposal be restricted to the northeast half of the open lake disposal site (the deepest part of the open lake disposal area).

Comment 6: National Pollutant Discharge Elimination System (NPDES)

Response 6: In order to prevent redundancy in permitting, the return water associated with dredged material is regulated under Section 401 of the Clean Water Act, not Section 402 (NPDES). Like the NPDES permit, Ohio EPA could set effluent limits in the 401 water quality certification; however, we do not feel this is necessary at this time.

Comment 7: Open Lake Disposal Location

Response 7: In the most recent Section 401 water quality certification application, the Corps has proposed to open lake dispose the sediments from the federal navigation channels in the open lake disposal site located approximately 3.5 miles northwest of the channel at the latitude/longitude of 41 46'10" and 83 15'39". This area has been used for dredged material disposal since 1989.

Per the National Oceanic and Atmospheric Agency (NOAA) navigation charts, the open lake disposal site depth is typical of the western basin depths at approximately 6.1 meters (20 feet). The Corps provided information from their latest soundings on

the area showing that the depths range from 16 to 22 feet low water datum.

Placement of the dredged material in the central basin of Lake Erie would increase the dredging cycle time, which is the time it takes to dredge, dispose of the material and return to the dredge site again. Open lake disposal in the central basin at a depth of 40 feet would require hauling the dredged material an additional 45 miles out, and 45 miles back. The Corps has provided estimates that this would increase the cost from \$3 to about \$15 per cubic yard. Assuming that the Corps open lake disposes 550,000 cubic yards, this would increase open lake disposal costs at a minimum by \$5,500,000 per dredging operation

Comment 8: Quality of Dredged Sediment & Open Lake Disposal

Response 8: Analytical data submitted by the Corps shows that the sediment that they dredge in Toledo Harbor meets open lake water quality disposal criteria in accordance with the Great Lakes Dredged Material Testing and Evaluation Manual (September 1998), except at River Mile 2 (sediment from River Mile 2 will be placed in a combined disposal facility). Since the Corps cannot use federally regulated confined disposal facilities to dispose of dredged material that that would not be considered to be contaminated in accordance with the abovementioned manual, they are required to manage the material by the most cost effective, technically feasible and legal means possible. In this case, the Corps has identified open lake disposal as the only viable means to meet this criteria. Ohio EPA feels that further effort must be made by the Corps to identify upland disposal options for dredged material.

From Ohio EPA's perspective, we believe that there are alternatives to open lake disposal. This was our concern during the last certification review and it remains the same today.

Several comments were submitted regarding the effects of turbidity plumes and nutrients on the aquatic environment, and the public water in-take structures for the Cities of Toledo and Oregon. These comments are addressed as follows:

Comment 9: Phosphorous & Algae Blooms

Response 9: Concerns have been raised regarding a species of blue-green algae in the western basin of Lake Erie, *Lyngbya wollei*. *Lyngbya wollei* is found in the southern United States and its growth appears to be a direct result of dissolved, reactive

phosphorous. Comments suggested that the practice of open lake disposal is responsible for the proliferation of the algae.

At this time, little scientific information exists to determine the complicated biological processes that encourage the spread of *Lyngbya wollei*.

Some theories as to the changing relationships between external phosphorus loading and algal growth in the lake may be a consequence of increasing release of phosphorus from bottom sediments, mediated by zebra and/or quagga mussels. Others have suggested that phosphorus loading from unmonitored tributaries may be larger than estimated. Most recently, it has been suggested that increased dissolved phosphorus loading from nonpoint sources may be involved.

Additionally, there is some evidence that *Lyngbya wollei* has been in the lake system already for decades, and Ohio EPA is not sure why it exploded so suddenly in Maumee Bay. There are reports that it is in Put-in-Bay harbor and at several areas in Lake Ontario.

There is also a difference between the issues of impairments related to *Microcystis* and those related to *Lyngbya*. We know that *Microcystis* produces a toxin that could impact drinking water sources. We don't know what toxin might be associated with this particular species of *Lyngbya* or if it causes a threat to human or ecosystem health. To further complicate the matter, questions have been raised recently as to whether this species is actually *Lyngbya wollei* or something else. Different species could present different levels of impact/risk. While it does appear that increased dissolved phosphorus loading is causing the *Microcystis* blooms, we can't say the same for the *Lyngbya*. The appearance of *Microcystis* blooms pretty much follows the timing of the increased dissolved phosphorus loads, dating back to 1995. However, there does not appear to be a new condition that supports the sudden growth of *Lyngbya* in Maumee Bay in 2006.

In order to investigate this issue further, Ohio EPA has formed a Phosphorus Task Force to more formally review the phosphorus loading data from Ohio tributaries to Lake Erie; to consider possible relationships between trends in dissolved reactive phosphorus loading and in-lake conditions; to determine possible causes for increased soluble phosphorus loading; and, to evaluate possible management options for reducing soluble phosphorus loading.

More information regarding the Phosphorous Task Force can be found on Ohio EPA's Web site at:

<http://www.epa.state.oh.us/dsw/cafo/PTaskForce/PTaskForceWorkgroup.html>

Comment 10: Toledo and Oregon Water Intakes

Response 10: The drinking water intakes nearest the project area serve the Cities of Toledo (one intake) and Oregon (two intakes). These intakes are located in Lake Erie more than 10 miles east of the mouth of the Maumee River. Both intakes are located beyond the normal flow of the Maumee River as well as that of the Detroit River to the north. At its closest, the project area is more than five miles northwest of the intakes for the City of Oregon and the open lake disposal facility six miles north of the City of Toledo's intake.

Per Ohio EPA's Division of Surface Water's (DSW) request, the Agency's Division of Drinking and Ground Water (DDAGW) reviewed the water quality certification application submitted by the Corps for the proposed Toledo Harbor maintenance dredging for potential adverse impacts to public water supplies. Based on that review, Ohio EPA has determined that the proposed dredging project should not impact the intakes for the cities of Toledo and Oregon or water quality.

DDAGW further commented that the Corps is aware of the location of Toledo's and Oregon's intakes, and routinely notifies the public water systems when dredging operations will occur near the intake so turbidity levels can be closely monitored. This is a condition of the current 401 water quality certification, and will remain a condition in any subsequent certifications.

Ohio EPA also will continue to require that best management practices be implemented to reduce turbidity during dredging and open lake disposal. These include limiting the amount of material that can be open lake disposed at this time; prohibiting placement during storm events; and, restricting placement to the deepest part of the open lake disposal area.

Also worth noting is that in 2005, the Corps studied turbidity plumes related to the placement of Toledo Harbor dredged material at the existing open lake disposal area, and documented their findings in a draft report titled, "Suspended Sediment Plumes Resulting from Bucket Dredging Operations in Maumee Bay, Lake Erie." This document is still under review by the Corps and has not been issued final. Ohio EPA has not

been provided with a copy of this report; therefore, the conclusion of the study, as presented in a summary to Ohio EPA, was not taken into consideration when reviewing this 401 water quality certification.

Comment 11: Walleye

Response 11: Per the Ohio Department of Natural Resources, walleye spawning in the Maumee River generally initiates in late March and extends through late April, with peak spawning generally occurring in early April. On the reef complex, spawning generally initiates in early April and extends through mid May, with peak spawning generally occurring around the third week of April. Egg incubation can range generally from seven to 28 days, depending on the water temperature. In Lake Erie, egg incubation times typically range from seven to 15 days. Per Ohio Department of Natural Resources, researchers also have conducted egg sampling in the Maumee Bay and found late-stage walleye eggs on May 5, suggesting walleye that are spawning in the bay spawn between those in the rivers and on the reefs.

The data available to Ohio EPA indicate that open lake disposal does not significantly increase the susceptibility of walleye spawning to impacts from sedimentation. This is primarily due to the presence of considerable existing sediment on the floor of the Western Basin.

Basically, walleye eggs and spawning efforts are susceptible to impacts from sediment, but the sediment disposed in the western basin does not create conditions significantly worse than those that already exist. Heavy wind and associated wave action are the principal agents by which sedimentation conditions are created that may impact walleye spawning efforts.

In a paper titled, "Assessment of Potential Impacts of bucket Dredging Plumes on Walleye Spawning Habitat in Maumee Bay, Ohio," the Corps presented information that suggests that dredging activities have little or no effect on walleye spawning activities within the vicinity of the federal navigation channel. This report, however, does not document any effects on walleye as a result of open lake disposal activities. In the 401 water quality certification application, the Corps requested that in-water work restrictions be waived within the Lake Approach Channel (LM2 to LM19), and used this study as the basis for the waiver. Based on comments that Ohio EPA received from the United States Fish and Wildlife Service, the in-water work

restriction from March 15 through June 30 shall remain in effect unless specific permission to work outside of that window is granted by the Ohio Department of Natural Resources, Division of Wildlife.

On a final note, population estimates conducted by the Lake Erie Committee (LEC) of the Great Lakes Fishery Commission, indicate that walleye populations increased between 2000 and 2005, with the population rated as "high quality" in 2005. The high quality walleye population of 2005 is attributed to improved management techniques, increased food availability and improved reproductive success in 2003.

Comment 12: Benthic Macroinvertebrates

Response 12: Per a study by Dr. Kenneth Krieger (Heidelberg College, 2000) on the assessment of the macroinvertebrate community in and around the open lake disposal area, 22 samples collected in May 1999, showed that "the kinds and relative numbers of macroinvertebrates were indicative of mesotrophic lake conditions and were probably representative of the conditions found throughout the western basin of Lake Erie." Ohio EPA is not aware of any new studies that contradict this report.

Comment 13: Sediment Management & Beneficial Reuse

Response 13: Ultimately, what matters most in the above issues, is the reduction of sediment and nutrients that are introduced into the western basin, and appropriate management of the sediment after it has entered the waterway.

The reduction of nonpoint sources of pollution (e.g., agricultural practices, residential applications of fertilizers, construction activities, etc.) is an Ohio EPA priority. Programs such as Ohio's Lake Erie Protection and Restoration Plan, and the recently formed Phosphorous Task Force are in place to achieve this goal. The state of Ohio has committed \$33.7 million to the Lake Erie Conservation Reserve Enhancement Program and the Ohio Lake Buffer Program to reduce sediment and nutrient runoff in the upper Maumee Watershed. Federal commitment to this program raises it to \$200 million during a 10-year period. Additionally, there are other major federal, state and local programmatic commitments to sediment reduction in the Maumee watershed area.

U.S. EPA and the state of Ohio have construction and storm water regulations in place to reduce sediment loadings to the watershed. Urban areas have been required to develop a

program to reduce urban runoff and all construction that disturbs more than one acre is required to file for a storm water permit. Ohio uses all of these tools to reduce sediment loading.

To manage sediment after it enters the waterway, Ohio EPA believes that beneficial reuse of dredged material is necessary to minimize and eventually eliminate the need to place dredged material from Toledo Harbor into the existing open lake disposal location in Lake Erie's western basin. To this end, renewable uses of dredged material have been and are being pursued. Ohio EPA continues to meet with the Corps, Ohio Department of Natural Resources and other stakeholders to examine beneficial reuse options for dredged material from Toledo Harbor, and to monitor the progress being made towards the development and implementation of those efforts. Some examples of beneficial reuse options that are under consideration include:

- ◆ Landscaping
- ◆ Topsoil creation and enhancement
- ◆ Road construction
- ◆ Land creation and reclamation (e.g., strip mines, brownfields)
- ◆ Habitat creation and restoration (i.e., habitat restoration units)

Habitat Restoration Units (HRU) have been of particular interest to all involved parties since they would have a positive influence on water quality and provide much needed wildlife habitat in the western basin.

More information regarding the beneficial reuse of dredged material can be found in "Waste to Resource: Beneficial Use of Great Lakes Dredged Material" (Great Lakes Commission, August 2001), available on-line at <http://www.glc.org/dredging/publications/benuse.pdf>.

Comment 14: Are there any plans to expand existing combined disposal facilities and/or construct new combined disposal facilities for dredged material in Maumee Bay?

Response 14: Ohio EPA is unaware of any plans to expand existing combined disposal facilities or to construct new combined disposal facilities in Maumee Bay. If such a proposal is made, the application will be subject to the same public participation requirements as this application for open lake disposal.

End Responsiveness Summary