NATIONAL WILDLIFE FEDERATION®
Great Lakes Regional Center®

February 22, 2010

VIA E-MAIL

Ben Smith
Ohio EPA
Division of Surface Water
Attention: Permits Processing Unit
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RE: Toledo Harbor Dredging Application – Comments on Section 401Water Quality Certification, Project No. 093554

Dear Mr. Smith:

I am writing to submit the comments of the National Wildlife Federation ("NWF") on the application submitted by the U.S. Army Corps of Engineers ("Corps") for certification of annual dredging of the Toledo Harbor federal navigational channel from 2010-2012. The Corps proposes to dispose of 100,000 cubic yards of dredged sediment in a confined disposal facility, and to dispose of an additional 1.25 million cubic yards of sediment at an open-lake disposal area in Lake Erie.

The Director of the Ohio Environmental Protection Agency ("OEPA") has already determined that open-lake disposal has negative ramifications on water quality.[1] The Director's determination is well-justified. The available facts show that the deposition of 1.25 million cubic yards of dredged sediment in Lake Erie will violate water quality standards ("WQS"). Furthermore, because the full effects of such deposition on water quality are unknown, the OEPA cannot certify that the deposition will comply with WQS. Accordingly, the OEPA must deny the Corps' application for certification. Eliminating the practice of open-lake disposal of Toledo Harbor sediment may be the single most significant action that can be taken to restore Lake Erie.[2]

[1] Letter from Chris Korleski, Director, OEPA, to Gary Gulezian & Cameron Davis, U.S. EPA (Jan. 27, 2010).
[2] Letter from Jeffrey M. Reutter, Ph.D., Director, Ohio Sea Grant College Program, to Michael Russ, U.S. EPA, at 3 (Jan. 25, 2010) ("Reutter Letter").

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NWF has a significant interest in this proceeding. NWF is a national conservation organization with approximately one million members nationwide and tens of thousands of members in Ohio. NWF works to protect the ecosystems that are most critical to native wildlife in order to ensure a healthy wildlife legacy for future generations.

NWF members use Ohio's waters, including the Maumee River and Lake Erie, for fishing and boating, among other recreational pursuits, and derive aesthetic enjoyment from those waters. Any activity that would degrade those waters would adversely affect the fish and wildlife dependent on them, as well as the use and enjoyment of those waters by NWF's members.

I. Background

The Western Basin of Lake Erie is very shallow.[3] Of the three Lake Erie basins, it is the warmest during the summer and receives the most nutrients and sediment.[4] The shallow waters of the Western Basin make it easy for storm events to re-suspend sediments, especially because a significant proportion is fine grained.[5] (Most sediment samples in the federal navigational channel comprised of the Maumee River and Bay are also mostly fine-grained silts and clays.[6]) "The projected impacts of climate change – lower water levels and more frequent severe storms – will exacerbate this [re-suspension] problem."[7]

In 1987, the OEPA determined that open-lake disposal of sediment from Toledo harbor is an "unacceptable practice."[8] "The Ohio EPA maintains that the sheer volume of sediments placed into open waters impacts lake ecology by reducing water clarity for an extended time."[9]

In the Lake Erie Protection and Restoration Plan of 2008, Priority Nonpoint Source Pollution, the Ohio Lake Erie Commission states that critical actions for the years 2009-2011 should be to develop water quality criteria for the western Lake Erie basin that would result in a prohibition of open-lake disposal in excess of 50,000 cubic yards by 2011.

Despite this recommendation, the Corps has requested that it be allowed to dredge the federal navigational channels and dispose of 1,250,000 cubic yards of that sediment in "the

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[3] Reutter Letter at 1.
[4] *Id.*
[5] *Id.* at 2.
[6] *Id.*
[7] *Id.*
[8] Ohio Environmental Protection Agency, *Case Study Series: Toledo Harbor Revisited: Changing Open Water Placement Policy for Western Lake Erie*, at 2 (2005) *available at* http://www.glc.org/dredging/case/documents/Toledo_final.pdf.
9 *Id.* at 3.

existing two-square mile open-lake placement area in the Western Basin of Lake Erie . . . ."[10] Open-lake disposal on this scale would have drastic social, economic, and environmental consequences by lowering the water quality in Lake Erie.

II. OEPA Must Deny the Certification Request Because the Corps Cannot Demonstrate or Has Failed to Demonstrate that the Proposed Discharge Will Comply with WQS.

The available facts demonstrate that the open-lake disposal proposed by the Corps will not comply with WQS, because the Corps has failed to demonstrate that the discharge of dredged or fill material to Lake Erie, or any conditions on such discharge, will not prevent or interfere with the attainment or maintenance either of designated or existing uses.

A. A certification may only be issued if it contains conditions that will assure compliance with WQS.

A certification may not issue unless (1) the state determines that a discharge will comply with applicable water quality standards and (2) the certification includes limitations necessary to assure compliance with WQS.[11] The Supreme Court explained these requirements in the case *PUD No. 1 of Jefferson County v. Washington Dept of Ecology*, 511 U.S. 700 (1994) ("*PUD No. 1*").

PUD No. 1 involved a controversy between petitioners, a city and local utility district, and respondent, a state environmental agency. Petitioners proposed to build a hydroelectric project on the Dosewallips River, which would divert water from the river to electricity generating turbines, then return the water to the river.[12] Because the Federal Power Act required a federal license for the project, and because the project could result in discharges into the Dosewallips, petitioners were required to obtain certification before the license could be issued, pursuant to § 401 of the Act.[13]

In issuing a certification, the State imposed a variety of conditions, including minimum stream flow requirements in the Dosewallips where the water was to be diverted.[14] The State imposed this condition to protect the salmon and steelhead fishery in the Dosewallips,[15] a

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[10] U.S. Army Corps of Engineers, Application for OEPA Section 401 State Water Quality Certification, Continuation Sheet at 2 *available at* http://epa.ohio.gov/portals/35/401/toledo_dredging_nov09/401_WQC_App.pdf.
[11] 33 U.S.C. § 1341 (a)(1) & (d); s*ee PUD No. 1 of Jefferson County v. Washington Dept of Ecology*, 511 U.S. 700, 712-13 (1994); Ohio Admin. Code ("OAC") 3745-32-05(A)(1) & (2).
[12] *See id.*, 511 U.S. at 708.
[13] *See id.*
[14] *See id.*
[15] *See id.*

designated use under the state WQS.[16] Petitioners challenged the State's action, asserting that the State lacked authority under § 401 to condition its certification on the protection of a designated use.[17]

"A water quality standard defines the water quality goals for a water body . . . by designating the use or uses to be made of the water, by setting criteria necessary to protect the uses, and by protecting water quality through antidegradation provisions."[18] To assure compliance with a WQS, a certification must include conditions sufficient to assure compliance with all three components of the WQS: the designated uses, the water quality criteria (numeric or narrative), and the antidegradation policy.[19] In *PUD*, the Court upheld the minimum stream flow condition because it protected the designated use of the Dosewallips and satisfied the antidegradation policy.[20]

To protect a designated use, effluent limitations must assure that the use will be maintained. This follows from the CWA's mandate that WQS "shall . . . serve the purposes of this Act,"[21] which are "to restore and *maintain* the chemical, physical, and biological integrity of the Nation's waters."[22] An impairment of a designated use would run contrary to the mandate of maintaining the integrity of the water. Consequently, a violation of a WQS occurs where a designated use continues to a diminished extent. The purposes of the Act would not be served by deeming a designated use protected even as its usefulness degrades, by turning a blind eye to the degradation of a designated use until it is completely eliminated.

The requirement to fully maintain designated uses is paralleled for existing uses. The antidegradation policy requires the maintenance and protection of existing uses and the water quality necessary to protect existing uses.[23] "Existing uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality

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[16] *See id.*, at 706.
[17] *See id.*, at 711.
[18] U.S. Environmental Protection Agency, *Water Quality Standards Handbook* (1994), § 1.2, at 1-1 ("*EPA WQS Handbook*") (attached as Exhibit 1); *see also* 33 U.S.C. § 1313(c)(2)(A); *PUD No. 1 v. Washington Dept. of Ecology*, 511 U.S. at 714; 40 C.F.R. § 131.3(e) ("Water quality standards are provisions of State or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses."); 40 C.F.R. § 131.6 (identifies the elements that states must include in water quality standards, including designated uses, water quality criteria, and an antidegradation policy).
[19] *See PUD No. 1 v. Washington Dept. of Ecology*, 511 U.S. at 714-15, 719.
[20] *See id*., 511 U.S. at 715, 719.
[21] 33 U.S.C. § 1313(c)(2)(A).
[22] 33 U.S.C. § 1251(a) (emphasis added).
[23] *See* 40 C.F.R. § 131.12(a)(1); OAC 3745-1-05(C)(1) ("Existing uses, which are determined using the use designations defined in rule 3745-1-07of the Administrative Code, and the level of water quality necessary to protect existing uses, shall be maintained and protected.").

standards."[24] "No activity is allowable under the antidegradation policy which would partially or completely eliminate any existing use."[25] Thus, a state must protect existing uses (including existing uses which are also designated uses) against degradation, not just elimination.[26]

To justify a lowering of water quality in a superior high quality water, such as Lake Erie[27] – subject to the prohibition against lowering water quality below the level necessary to maintain and protect existing uses – an applicant must provide an estimate both of (1) the important social, economic and environmental benefits to be realized through the project or activity if the water quality is lowered and (2) important social, economic and environmental benefits to be lost if water quality is lowered, such as lost or lowered recreational opportunities.[28]

B. The Corps cannot demonstrate that the discharge of dredged or fill material to Lake Erie, or any conditions on such discharge, will not prevent or interfere with the attainment or maintenance of (1) the designated and existing uses of Lake Erie as exceptional warmwater aquatic life habitat, or (2) water quality criteria.

As noted above, the sediment that the Corps proposes to dredge and dispose of in Lake Erie is mostly fine-grained sediment. The deposition and re-suspension of this sediment will prevent or interfere with the attainment or maintenance of designated and existing uses of Lake Erie as exceptional warmwater aquatic life habitat.[29] It will also prevent or interfere with the attainment or maintenance of the water quality criteria requiring all surface waters to be:

> "(A) Free from suspended solids or other substances that enter the waters as a result of human activity and . . . that will adversely affect aquatic life;
>
> ". . .
>
> "(D) Free from substances entering the waters as a result of human activity in concentrations that are . . . harmful to human, animal or aquatic life . . . ;
>
> "(E) Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae . . . ."[30]

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[24] 40 C.F.R. § 131.3(e); OAC 3745-1-05(A)(8).
[25] EPA WQS Handbook § 4.4.2, at 4-5.
[26] *See, PUD No. 1*, 511 U.S. at 718-19; OAC 3745-1-05(C)(1) ("There may be no degradation of water quality that results in . . . the elimination or substantial impairment of existing uses.").
[27] OAC 3745-1-05(E)(1)(a); OAC 3745-1-31(A).
[28] OAC 3745-1-05(B)(3)(f) & (g).
[29] OAC 3745-1-31(A).
[30] OAC 3745-1-04(A).

> "Very fine sediment is especially troublesome for habitat . . . . Suspended sediment reduces sunlight from penetrating the water column causing a reduction is phytoplankton and aquatic plant growth. High concentrations of suspended sediment can abrade damaging fish gills and destroys the protective mucous covering the eyes and scales, increasing risk of infection and disease. As sediment settles out of the water column fish eggs, benthic organisms and high quality bottom substarte can be destroyed. We continue to exacerbate these problems by placing material that has been dredged . . . back into the Lake in shallow areas where it will rapidly disperse."[31]

In addition, "Open lake disposal of sediments increases loading of nutrients and contaminants and makes both Dead Zone[32] and HABs [Harmful Algal Blooms] worse."[33] These are among the most important problems currently facing the Lake Erie ecosystem.[34]

The volume of sediment the Corps proposes to dispose of in Lake Erie contain "very large quantities of nutrients and other contaminants," including phosphorus.[35] The estimate of potential contaminant loadings from open-lake dumping of 1,250,000 cubic yards includes 1,200 tons of phosphorus, a very significant quantity.[36]

Turbidity caused by the movement of sediment from the open-lake dumpsite gives Microcystis[37] a competitive advantage and allows Microcystis that floats on the surface to thrive.[38] The resulting algal blooms "also contribute to the dead zone when they float and are carried into the Central basin where they die, sink to the bottom, decompose, and lower the oxygen content of these deeper waters of the hypolimnion."[39] The volume of sediment that the Corps proposes to dispose of in shallow erosive areas of Lake Erie significantly worsens this problem.[40]

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[31] Reutter Letter at 2.
[32] The "Dead Zone" is a term used to describe an area of anoxia in Lake Erie where the dissolved oxygen is used up during the summer. *Id*.
[33] *Id*.
[34] *Id*.
[35] Reutter Letter at 3.
[36] *Id*.
[37] "*Microcystis* sp. is a form of blue-green algae that produces the toxin microcystin and requires warm, nutrient-rich water, like that found in the Western Basin." Reutter Letter at 2.
[38] *Id*. at 3.
[39] *Id.*
[40] *Id*.

The Corps itself recognizes that "[s]ediments resuspended [sic] during dredging operations pose a variety of water quality and ecological concerns."[41] Specifically, the Corps has admitted that suspended sediments:

> "[C]ould influence the behavior of fish and other receptors sufficiently mobile to avoid the plume and potentially impact the health of less mobile aquatic vertebrates and invertebrates. Resettling of suspended particulates could also impact bottom-dwelling organisms. Resuspension [sic] can also result in higher concentrations of particulate-associated contaminants in the water column. Furthermore, particulate-associated contaminants can repartition, thereby increasing dissolved contaminant concentrations in the water column."[42]

For these reasons, the OEPA must deny the Corp's requested certification.

C. The Corps has failed to demonstrate that the discharge of dredged or fill material to Lake Erie, or any conditions on such discharge, will not prevent or interfere with the attainment or maintenance of (1) the designated and existing uses of Lake Erie or (2) water quality criteria.

There are many unknowns surrounding the Corps' proposed open-lake disposal of sediment that may violate WQS. For example, the Corps claims that there will be no impact to drinking water either in Toledo or Oregon, Ohio, despite the fact that water intake valves are roughly 7.5 miles away from the open-lake dumping site.

There are conflicting reports whether the sediment dumped in the lake can reach these valves and affect drinking water quality. Studies have shown that 25% of dredged material placed in the lake can remain suspended in the water column for up to twenty-four hours. With a current of 0.2 – 0.3 mph, the suspended materials can travel up to eight miles. This puts the suspended material within easy range of the Toledo water intake (and the City of Oregon water intake as well). Sediments from open-lake disposal disperse over 100 miles, all the way to Fairport Harbor east of Cleveland.[43] In light of this information, OEPA cannot conclude that the proposal will not prevent or interfere with the attainment or maintenance of the public water supply designated use of Lake Erie.[44]

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[41] U.S. Army Corps of Engineers, *et al*., *The Four Rs of Environmental Dredging: Resuspension, Release, Residual, and Risk*, Feb. 2008, *available at* www.arlis.org/docs/vol1/214277788.pdf.
[42] *Id.*
[43] Letter from Sandy Bihn, Western Lake Erie Association, Mar. 19, 2008 *available at* http://www.westernlakeerie.org/lyngbya_lake_er_com_0308.doc.
[44] OAC 3745-1-31(A).

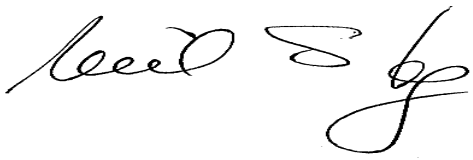
In addition, Ohio EPA estimates potential contaminant loadings of 620 pounds of mercury, 2.5 tons of cadmium, 1.25 tons of selenium, and 312 tons of ammonia.[45] The Corps has failed to demonstrate that these contaminants in these quantities will not prevent or interfere with the attainment or maintenance of WQS. The Corps itself has described the risk of contaminants difficult to predict, stating, "One of the more significant limitations currently associated with predicting the effectiveness of environmental dredging is the uncertainty associated with estimating the nature and extent of residual contamination following removal."[46]

Finally, the Corps has failed to provide data sufficient data for OEPA to determine whether lowering the superior high quality water of Lake Erie is necessary to accommodate important social or economic development. Specifically, the Corps failed adequately to provide information that is necessary for OEPA to consider the important social, economic and environmental benefits to be lost if water quality is lowered, such as lost or lowered recreational opportunities."[47] The Corps merely provided a cursory overview of some of the benefits lost.

Conclusion

For the foregoing reasons, OEPA must deny the Corps' request for certification of its proposed disposal of dredged sediment in the open waters of Lake Erie.

Yours truly,



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[45] Reutter Letter at 3.
[46] Sherman, T. J., Siipola, M. D., Abney, R. A., Ebner, D. B., Clarke, J., Ray, G. and Stevens, J. A., Corbicula fluminea *as a Bioaccumulation Indicator Species: A Case Study at the Columbia and Willamette Rivers* at 49, U.S. Army Engineer Research and Development Center, Vicksburg, MS (2009) *available at* http://el.erdc.usace.army.mil/elpubs/pdf/trel09-3.pdf.
[47] OAC 3745-1-05(B)(3)(g).