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of Engineers**
Buffalo District

Public Notice

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OPERATION AND MAINTENANCE DREDGING AND DREDGED SEDIMENT PLACEMENT

CLEVELAND HARBOR

CUYAHOGA COUNTY,

OHIO

This Public Notice has been prepared pursuant to Section 404(a) of the Clean Water Act (CWA). It is being administered 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. The purpose of this Public Notice 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 provide an opportunity to submit comments, or request a public hearing.

The USACE anticipates the need to dredge and manage sediments excavated from the federal navigation channels of Cleveland Harbor, including the Cuyahoga River, Old River, Lake Approach Channels, and Outer Harbor Channels, in order to maintain sufficient depth for deep-draft commercial vessels. The attached maps (Figure 1a and 1b) show the authorized limits and depths of the federal navigation channels. To insure that the minimum authorized depth in the harbor is maintained throughout the navigation season, an additional four feet of shoal may be removed, including one foot of over depth and three feet of advance maintenance dredging.

A total of approximately 225,000 cubic yards of sediments will be dredged from Cleveland Harbor federal navigation channels during the 2016 dredging operation. This project involves the removal of sediments that have accumulated in the channels since recent maintenance dredging (it does not involve the removal of highly contaminated sediments or sediments requiring environmental cleanup). Sediments will be removed from the channel bottom by mechanical dredge and placed aboard scows for transport to the dredged sediment placement area. In previous years, clamshell bucket and hopper

dredges have been used to complete this maintenance dredging. The 2016 dredging operation at Cleveland Harbor is tentatively scheduled to be performed between April 1 and December 31, and a contractor of the federal government will accomplish the work.

In 2015, USACE dredged the Upper Cuyahoga River Channel (the reach of channel between Stations 799+00 [upstream federal navigation channel limit] and 736+00 [Turning Basin]) (Figure 2) and proposed to discharge the associated dredged sediments at an open-lake area in Lake Erie referred to as CLA-1 (Figure 3). Sediments from this reach represent approximately 80 percent of the sediments dredged from Cleveland Harbor on an annual basis. These dredged sediments are typically uniform and contain residual levels of contaminants similar to those that are already in Lake Erie background sediments offshore of Cleveland. These contaminants, which include metals, nutrients, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs), are not unique to Upper Cuyahoga River Channel sediments and are present in sediments and soils throughout the environment. Once confirmed through appropriate and relevant analyses, open-water placement of dredged sediments is a common, safe, and environmentally acceptable management alternative employed throughout the Great Lakes and Nation. In 2015, sediments dredged from the Upper Cuyahoga River Channel met CWA Section 404(b)(1) Guidelines for open-lake placement. However, like in 2014, the Ohio Environmental Protection Agency (OEPA) did not grant Section 401 water quality certification (WQC) for open-lake placement in 2015. Pursuant to a District Court Order, the dredged sediments last year were placed in confined disposal facilities (CDFs) in the Cleveland Outer Harbor.

The sediments to be dredged from the Cleveland Harbor federal navigation channels consist primarily of silts and clays, with some sands. In response to various OEPA concerns, additional extensive sampling and testing efforts on Upper Cuyahoga River Channel sediments were completed in 2014 and 2015 to further evaluate the suitability of the dredged sediments for open-lake placement. A comprehensive evaluation of these data and other relevant information was conducted in 2015 in accordance with the protocols and guidance contained in the U.S. Environmental Protection Agency (USEPA)/USACE Great Lakes Dredged Material Testing and Evaluation Manual (1998) and Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S.—Testing Manual (1998). This evaluation shows that the dredged sediments are not toxic, would not bioaccumulate PCBs to ecologically meaningful levels relative to lake sediments, and would not release contaminants to the water such as to contravene applicable Ohio applicable water quality standards. Therefore, the evaluation concludes that the discharge of sediments dredged from Upper Cuyahoga River Channel at CLA-1 would not culminate in any contaminant-related, unacceptable adverse effects to the aquatic ecosystem. This conclusion is analogous with the previous dredged sediment evaluation completed in 2013.

Based on this information, it has been concluded that these dredged sediments meet CWA Section 404(b)(1) Guidelines for open-lake placement at 40 CFR 230.11(d). Approximately 180,000 cubic yards of sediments dredged from the Upper Cuyahoga River Channel are proposed to be placed at CLA-1, which was used for the placement of Cleveland Harbor dredged sediments over 45 years ago (Figure 3). USACE proposes to beneficially use Upper

Cuyahoga River Channel sediments by placing them over these existing contaminated sediments within the southeast quadrant of CLA-1 to improve lake bottom (benthic) habitat at impacted locations. Placement of these channel sediments over impacted sites would improve the existing aquatic ecosystem by restoring lake bottom habitat to a condition that is more suitable for the reestablishment of a viable benthic community at those sites.

This is not the first time sediments dredged from the Upper Cuyahoga River Channel would be discharged in the open waters of Lake Erie pursuant to CWA requirements. Sediments dredged from this reach of Cleveland Harbor were previously placed in the open-lake when they formerly met CWA Section 404(b)(1) Guidelines between 1985 and 1993. Through the previous issuance of Section 401 WQC's, open-lake placement of these dredged sediments was supported at two authorized nearshore areas in Lake Erie in the Cleveland Outer Harbor vicinity, for the purposes of littoral nourishment.

Sediments to be dredged from the remaining Cleveland Harbor federal navigation channels, including those in the Lower Cuyahoga River (downstream of the Turning Basin at Station 736+00), Old River, Outer Harbor and Lake Approach, have not yet been determined to meet CWA Section 404(b)(1) Guidelines for open-lake placement. Therefore, in 2016, approximately 45,000 cubic yards of sediments dredged from these reaches of the harbor will be placed in CDF No. 10B (Figure 4).

Several general concerns have been raised with respect to the placement of sediments dredged from Upper Cuyahoga River Channel in the open waters of Lake Erie. A brief summary of how these concerns have been addressed is provided below:

1. *Potential increase in PCB bioaccumulation by fish*—It has been expressed that the open-lake placement of Upper Cuyahoga River Channel dredged sediments would potentially increase the bioaccumulation of PCBs by fish in Lake Erie, including walleye. However, such conclusions are not based on weight-of-the-evidence, which requires consideration of multiple lines of evidence to draw conclusions based on all relevant information. For example, the concentrations of PCBs in the dredged sediments are similar to those in regional Lake Erie sediments offshore of Cleveland. This indicates that open-lake placement of the dredged sediments would not substantially change PCB contamination in Lake Erie sediments from its existing condition. Furthermore, conservative laboratory test data from 2014 (and when combined with laboratory test data from 2012) show that the bioaccumulation of PCBs from the dredged sediments is not statistically higher (and less than a factor of two) in comparison to that which occurs from CLA-1 reference sediments. In addition, these laboratory test and modeling data show that the bioaccumulation of PCBs from the dredged sediments is comparable to that which already occurs from regional background Lake Erie sediments offshore of Cleveland. This indicates that placement of the dredged sediments at CLA-1 would not increase the bioaccumulation of PCBs within Lake Erie, including in fish, in any ecologically meaningful way. Existing information indicates that the bioaccumulation of PCBs from the dredged sediments, as well as from regional lake sediments offshore of Cleveland, is comparably about half of that which occurs from bottom sediments in the Western Lake Erie Basin (WLEB). It is widely accepted by the scientific community that the major source of PCBs to Lake Erie is the

Detroit River which empties into the lake in the north WLEB, and that the trend in PCB contamination in Lake Erie progressively declines eastward to the Niagara River at Buffalo, New York.

2. *Potential toxic effects to aquatic life in Lake Erie*—It has been expressed that the Upper Cuyahoga River Channel dredged sediments may be toxic, and open-lake placement of these dredged sediments would result in adverse effects to aquatic life. Such conclusions are also not based on weight-of-the-evidence. The channel sediments have been rigorously tested by carefully examining sensitive species representative of aquatic life in Lake Erie (benthic and water column organisms) under controlled laboratory conditions. Data from such tests are generally accepted as providing a conservative representation of potential effects in the field. The test results indicated that open-lake placement of the dredged sediments would not result in toxic effects to aquatic life in Lake Erie. Ammonia, a common contaminant and toxicant in sediments, would quickly dissipate in the field after open-lake placement.

3. *Potential impacts on public drinking water supplies*—Placement of sediments dredged from the Upper Cuyahoga River Channel at CLA-1 represents no significant risk to drinking water or human health. The potential impacts from open-lake placement of these dredged sediments to the quality of water at the Crown, Morgan, Baldwin and Nottingham potable water intakes (PWIs) was investigated by the U.S. Army Engineer Research and Development Center (USAERDC) in 2013. This investigation showed that placement of the dredged sediments at CLA-1 would not result in a release of dissolved contaminants that would present any significant risk to human health based on National Primary Drinking Water Regulation Maximum Contaminant Levels (MCLs) and Drinking Water Standards for Ohio Public Water Systems. In fact, the location of CLA-1 was carefully selected through interagency coordination to minimize any concerns relative to the PWIs and fish habitat. Water depths at CLA-1 are too deep for surface waves from storm winds to cause resuspension of deposited dredged sediments, and predominant lake currents are not in the direction of any of the PWIs.

4. *Potential to influence Lake Erie harmful algal blooms (HABs)*—There has been public concern that the open-lake placement of dredged sediments causes or intensifies HABs in Lake Erie. This perception is not supported by existing science and engineering. While dredged sediment does contain a certain amount of phosphorus, only a very small fraction of that phosphorus is actually available for algal growth when it is released from the sediments to the water column during open-lake placement. The small amounts that are released rapidly dilute to concentrations that cannot measurably stimulate or increase algal growth. Conservative modeling predictions performed by USAERDC show that the extent and duration of released phosphorus from this dredged sediment would be very localized and short-lived. Consequently, such conditions would be inadequate to trigger or increase the occurrence of HABs, or to significantly impact water quality in the Central Lake Erie Basin. Following placement, any subsequent release of phosphorus from the deposited dredged sediments would be the same as or less than from existing lake bottom sediments.

5. *Loading of sediments into Lake Erie and associated potential adverse impacts to aquatic life and human health*—There has been concern that open-lake placement of dredged

sediments might load the lake with sediment and result in adverse impacts to aquatic life and human health. Unlike other discharges regulated under the CWA as external sources of pollutants (i.e., point source wastewater discharges), the origin of this dredged sediment is from within the aquatic ecosystem and therefore the sediment is from an internal source, both prior to dredging and after being placed in the open-lake. In other words, the sediment is not new to the aquatic ecosystem. Under formal USEPA/USACE guidance pursuant to Section 404 of the CWA, the dredged sediments are thoroughly sampled and tested to demonstrate that open-lake placement would present no significant increased risk to aquatic life or human health in comparison to the lake bottom sediments on which it is proposed to be placed.

In a mechanical dredging operation, the sediment is excavated from the channel using a clamshell bucket, put into a scow and transported to the designated open-lake area where it is then discharged from a scow and released to the lake environs. The physical composition of the bottom sediments at the open-lake area typically resembles that of the dredged sediments such that the lake bottom substrate would remain similar following placement of the dredged sediments. The dredged sediment falls as a cohesive mass through the water column coming to rest on the lake bottom, typically as a mound with a mild slope. Generally, more than 95 percent of the sediments remain in the cohesive mass while less than five percent are suspended in the water column. This suspended sediment results in short-term, localized turbidity which rapidly dissipates in the water column due to dispersion and settling. The turbidity fades to background conditions within about one hour. This temporary increase in turbidity is limited in spatial extent and typically remains within close vicinity of the point of discharge, well within the boundaries of the open-lake placement area. The dredged sediments are thoroughly sampled and tested to ensure that contaminants are not released from the suspended sediments at concentrations that could be harmful to aquatic life and human health. Further, fish typically avoid these turbidity events and/or are tolerant of the suspended sediment concentrations because they are temporary and rapidly decline.

After settling, the dredged sediment remains in-place along with the surrounding lake bottom sediments. While the newly deposited sediments may be subject to lake bottom currents and waves, open-lake placement areas are selected to be relatively low-energy environments such that they are minimally influenced by currents and waves, offering little potential for erosion and resuspension. If the dredged sediments placed on the lake bottom were resuspended, they would still behave the same as the surrounding lake bottom sediments. Neither scenario results in any measureable increase in suspended sediment in the water column that is harmful to fish and other aquatic life. Placement of these dredged sediments on the lake bottom would adversely affect or smother some benthic organisms, but recovery of the benthic community is relatively rapid following placement operations. This qualitative description of open-lake placement, based on extensive existing information and USACE experience in dredged material handling and management, demonstrates that open-lake placement of dredged sediments is not “toxic,” and does not result in widespread, long-term turbidity or migration of sediments that is harmful to aquatic life in Lake Erie or a risk to human health.

Pursuant to Section 401 of the CWA, WQC, or waiver of WQC, from OEPA is required for the discharge of dredged material. Therefore, a copy of this Public Notice has been provided to

OEPA requesting WQC (or waiver thereof) for the discharge of Upper Cuyahoga River Channel dredged sediments at CLA-1, and resultant discharge of effluent associated with the placement of all other Cleveland Harbor Federal navigation channel dredged sediments in CDF No. 10B.

The environmental effects of the dredging operation are documented in the *Final Environmental Impact Statement (FEIS), Operation and Maintenance, Cleveland Harbor, Ohio (1974)*; and *FEIS, Harbor Maintenance and Confined Disposal Facility Site 10B, Cleveland Harbor, Ohio (1994)*. The environmental effects of open-lake placement of Upper Cuyahoga River Channel dredged sediments have been evaluated in the *Finding of No Significant Impact and Environmental Assessment, and Section 404(B)(1) Evaluation, Operations and Maintenance, Open-Lake Placement of Material Dredged from Cleveland Harbor Federal Navigation Channels in the Upper Cuyahoga River, Cleveland Harbor, Cuyahoga County, Ohio*. These documents are available at <http://bit.ly/cleveland-harbor>.

There are no listed historic properties or properties determined as being eligible for listing 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.

The USACE 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 will be submitted to the Ohio Department of Natural Resources (ODNR) documenting this determination.

The decision whether to perform dredging has been based on an evaluation of the probable impact, including cumulative impacts of the proposed activity on the public interest. That decision reflects the national concern for both protection and utilization of important resources. The benefit which is reasonably expected to accrue from the proposal has been balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal have been considered including the cumulative factors thereof; among those 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 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 these proposed discharges 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 the discharge of this dredged material 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 with their comments regarding the proposed discharge of this Cleveland Harbor dredged sediment. Please review this Public Notice and send your comments in writing within 30 days to the following e-mail address:

ClevelandDredging@usace.army.mil

or via regular mail to:

U.S. Army Corps of Engineers - Buffalo District
1776 Niagara Street
Buffalo, NY 14207-3199
ATTN: Environmental Analysis – Cleveland Harbor 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).

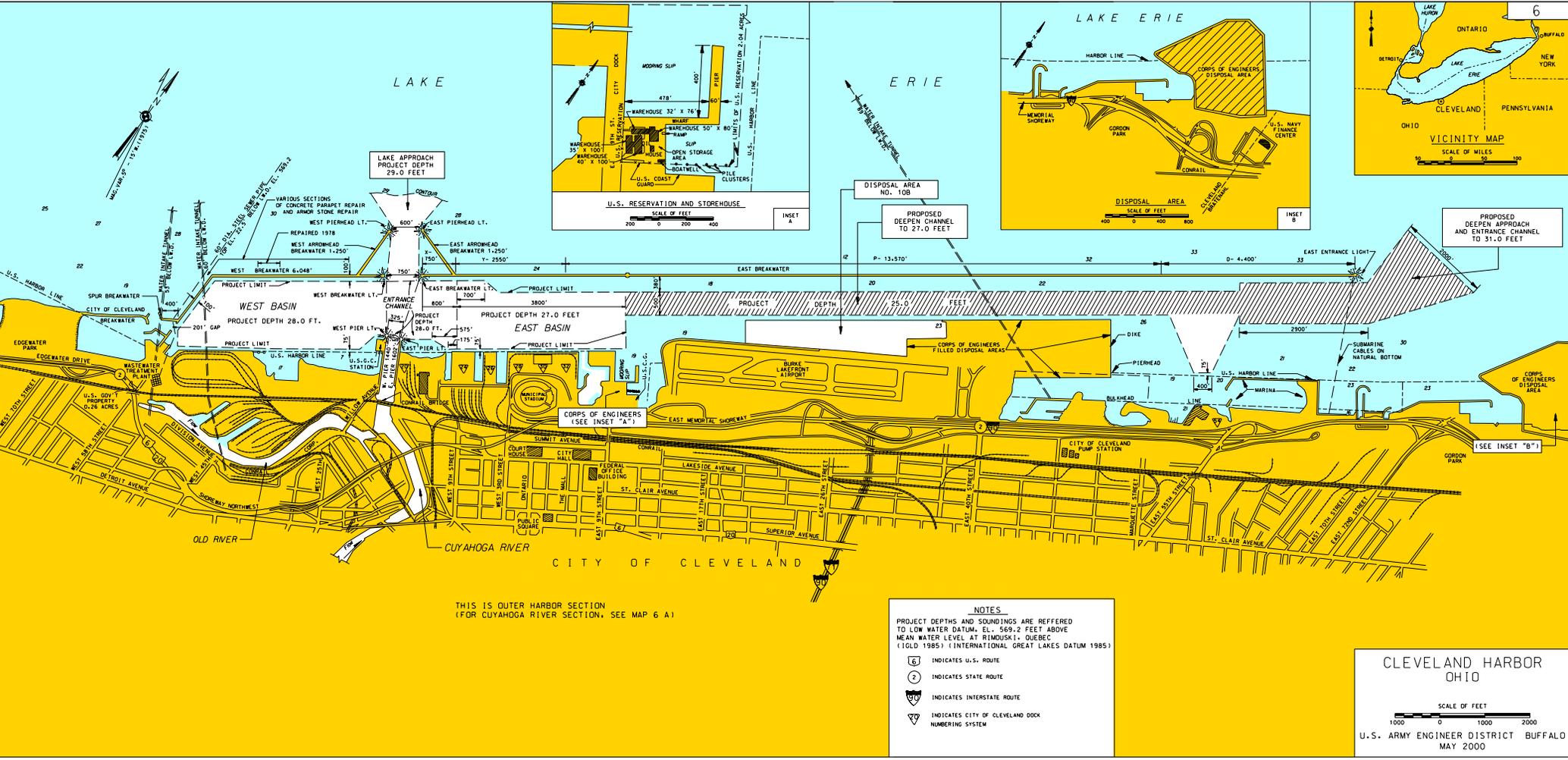
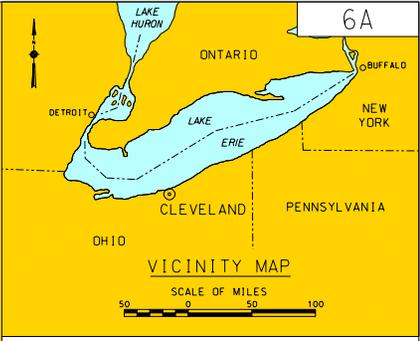
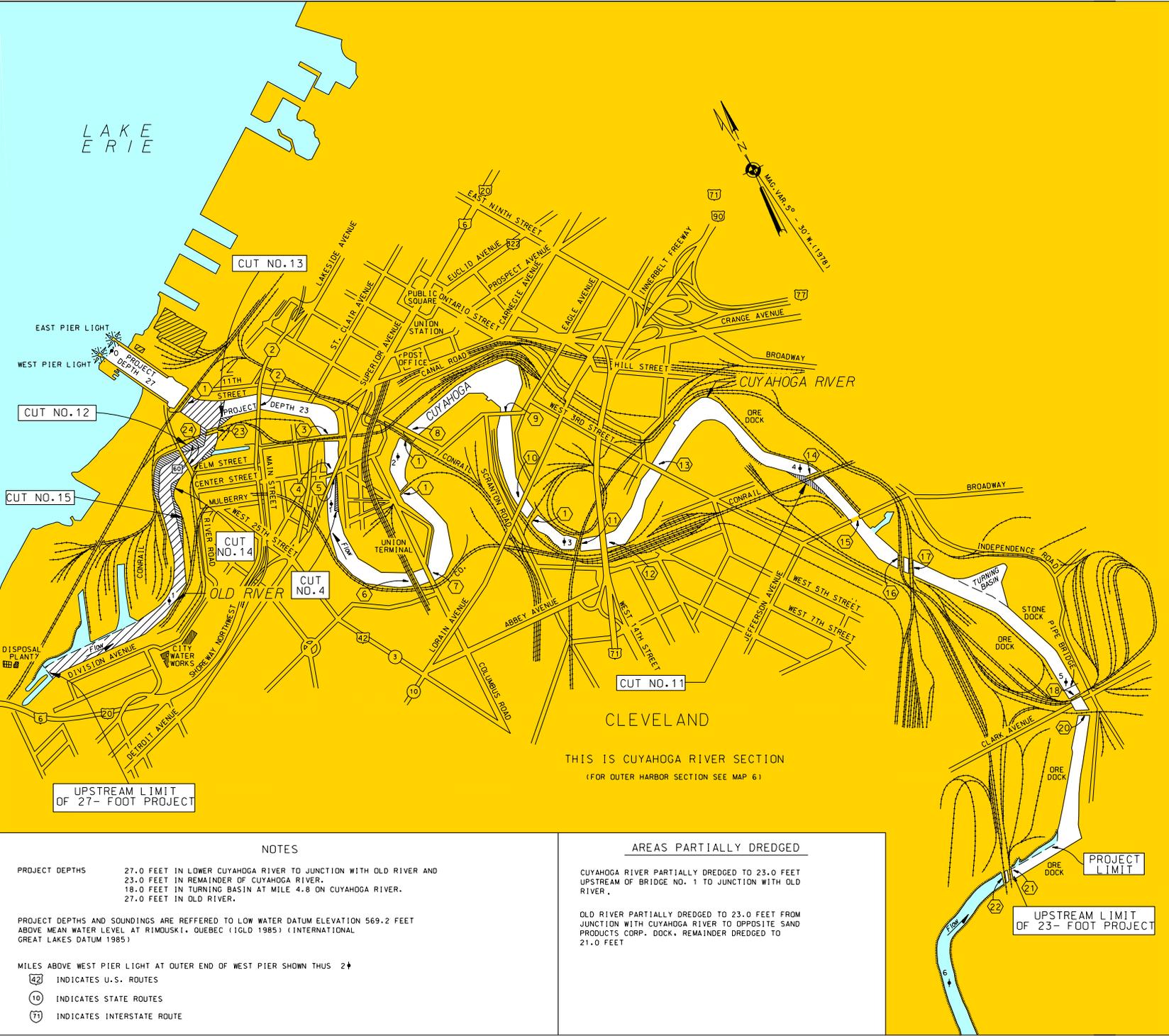


Figure 1a. Cleveland Harbor (Cuyahoga River), Cuyahoga County, Ohio (Outer Harbor)



INDEX TO BRIDGES

SHOWN THUS

- * 1 CONRAIL
- 2 MAIN AVE. HIGH LEVEL BRIDGE
- * 3 FLATS DEVELOPMENT INC.
- 4 CENTER STREET BRIDGE
- 5 DETROIT SUPERIOR HIGH LEVEL BRIDGE
- 6 UNION TERMINAL (RAILWAY) HIGH LEVEL BRIDGE
- 7 COLUMBUS RD. BRIDGE
- 8 CARTER RD. BRIDGE
- 9 EAGLE AVE. BRIDGE
- 10 LORAIN CARNEGIE HIGH LEVEL BRIDGE
- *11 NORFOLK AND WESTERN RAILWAY
- 12 INNER BELT FREEWAY HIGH LEVEL BRIDGE
- 13 3RD. ST. BRIDGE
- *14 CONRAIL
- 15 JEFFERSON AVE. BRIDGE SUPERSTRUCTURE REMOVED
- 16 NEWBURG AND SOUTH SHORE RAILWAY BRIDGE
- 17 BALTIMORE AND OHIO RAILWAY BRIDGE
- 18 RIVER TERMINAL RAILWAY BRIDGE
- *19 NORFOLK AND WESTERN RAILWAY, BRIDGE NO. 2 (L)
- 20 NORFOLK AND WESTERN RAILWAY, BRIDGE NO. 1 (O)
- 20 NORFOLK AND WESTERN RAILWAY, BRIDGE NO. 3 (L)
- WESTERN AND LAKE ERIE RAILROAD (O)
- 21 NEWBURG AND SOUTH SHORE RAILWAY BRIDGE
- *22 FLATS DEVELOPMENT INC. } OLD RIVER
- *23 WILLOW AVE. BRIDGE

NOTE: FEDERAL PARTICIPATION IN REPLACEMENT
 * COMPLETED
 ** AUTHORIZED

NOTES

PROJECT DEPTHS
 27.0 FEET IN LOWER CUYAHOGA RIVER TO JUNCTION WITH OLD RIVER AND 23.0 FEET IN REMAINDER OF CUYAHOGA RIVER.
 18.0 FEET IN TURNING BASIN AT MILE 4.8 ON CUYAHOGA RIVER.
 27.0 FEET IN OLD RIVER.

PROJECT DEPTHS AND SOUNDINGS ARE REFERRED TO LOW WATER DATUM ELEVATION 569.2 FEET ABOVE MEAN WATER LEVEL AT RIMOUSKI, QUEBEC (IGLD 1985) (INTERNATIONAL GREAT LAKES DATUM 1985)

MILES ABOVE WEST PIER LIGHT AT OUTER END OF WEST PIER SHOWN THUS 2 1/2

INDICATES U.S. ROUTES
 INDICATES STATE ROUTES
 INDICATES INTERSTATE ROUTE

AREAS PARTIALLY DREDGED

CUYAHOGA RIVER PARTIALLY DREDGED TO 23.0 FEET UPSTREAM OF BRIDGE NO. 1 TO JUNCTION WITH OLD RIVER.

OLD RIVER PARTIALLY DREDGED TO 23.0 FEET FROM JUNCTION WITH CUYAHOGA RIVER TO OPPOSITE SAND PRODUCTS CORP. DOCK. REMAINDER DREDGED TO 21.0 FEET



Figure 1b. Cleveland Harbor (Cuyahoga River), Cuyahoga County, Ohio (River)



Figure 2: Upper Cuyahoga River Sample Locations and DMMU Boundaries

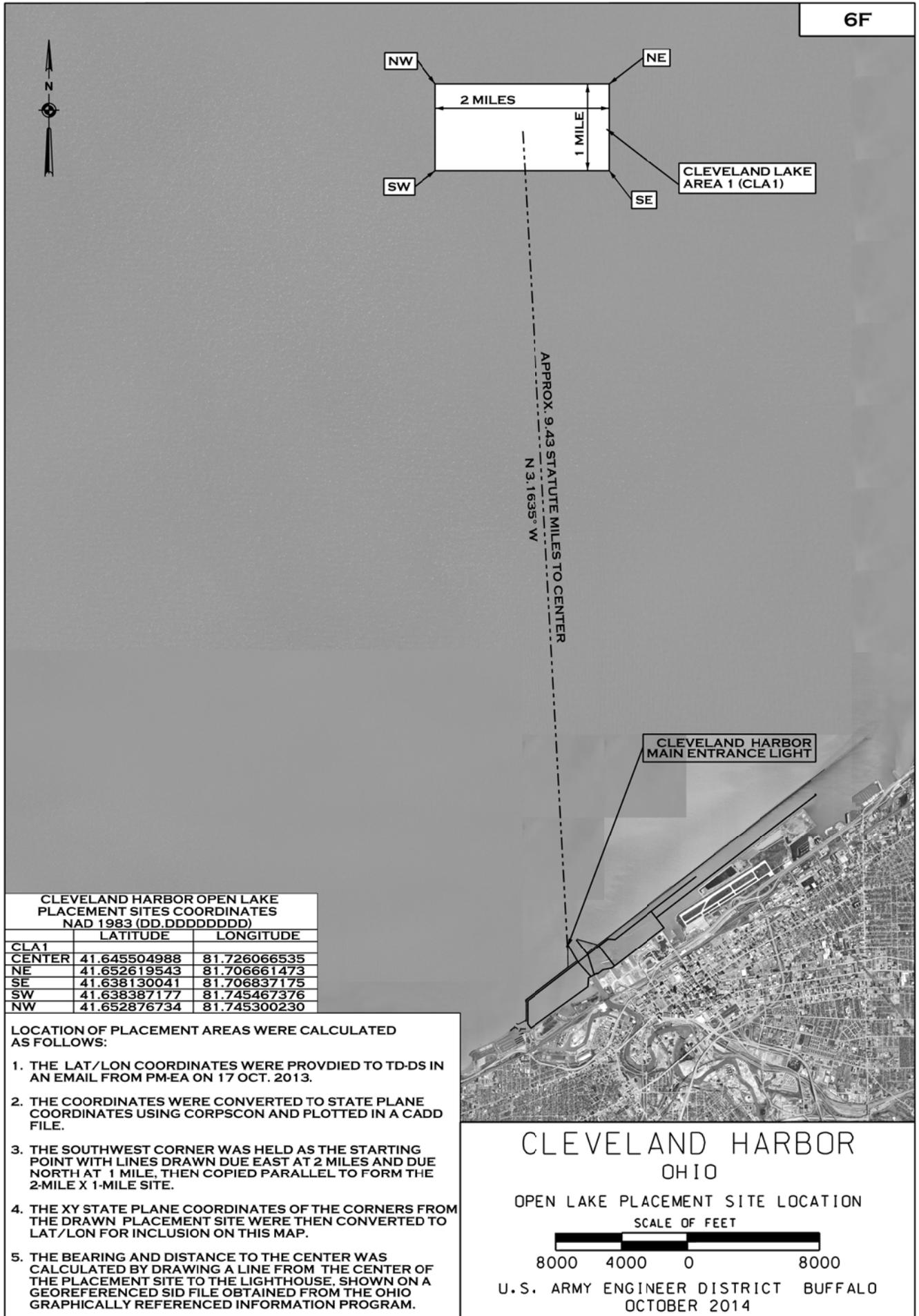


Figure 3 - Location of open-lake area CLA-1

