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July 16, 2015

Mr. Chris Korleski, Director
Great Lakes National Program Office
U. S. Environmental Protection Agency
77 West Jackson Boulevard (G-17J)
Chicago IL 60604-3507

Subject: Removal of the Restrictions on Dredging Activities Beneficial Use Impairment in the Sheboygan River Area of Concern

Dear Mr. Korleski:

I am writing to request the U.S. Environmental Protection Agency (U.S. EPA) Great Lakes National Program Office's (GLNPO's) concurrence with the removal of the Restrictions on Dredging Activities Beneficial Use Impairment (BUI) in the Sheboygan River Area of Concern (AOC).

The Wisconsin Department of Natural Resources (DNR) has assessed the status of the Restrictions on Dredging Activities BUI relative to the delisting target that was established in 2008. We are pleased to report that all actions associated with this impairment have been completed and the target has been met. A public review of the recommendation has been conducted, with a 15-day public comment period and an open house event held on September 16, 2014. No concerns were expressed in opposition of the BUI removal. As a result, we are requesting that the Restrictions on Dredging Activities BUI be removed from the list of impairments in the Sheboygan River AOC.

Please find enclosed documentation to support this recommendation, including the Restrictions on Dredging Activities Beneficial Use Impairment Removal Recommendation document prepared by DNR and letters of support from the City of Sheboygan, Sheboygan County, and Sheboygan River Basin Partnership.

We value our continuing partnership in the AOC Program and look forward to working closely with the GLNPO in the removal of BUIs and the delisting of Wisconsin's AOCs.

If you need additional information, please contact Camille Bruhn, DNR, at 920-893-8527, Vic Pappas, DNR, 920-893-8512, or you may contact me.

Sincerely,



Stephen Galarneau, Director
Office of the Great Lakes and Sediment Management Unit
Wisconsin Department of Natural Resources
608-266-1956
Stephen.Galarneau@Wisconsin.gov

Enclosures

cc: John Perrecone, U.S. EPA
Tom Short, U.S. EPA
Ted Smith, U.S. EPA
Marc Tuchman, U.S. EPA
Kendra Axness, Wisconsin DNR
Camille Bruhn, Wisconsin DNR
Vic Pappas, Wisconsin DNR



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

0 7 AUG 2015

REPLY TO THE ATTENTION OF:

Mr. Stephen Galarneau, Director
Office of the Great Lakes and Sediment Management Unit
Wisconsin Department of Natural Resources
101 S. Webster Street, Box 7921
Madison, Wisconsin 53707-3507

Dear Mr. Galarneau: *Steve*

Thank you for your July 16, 2015 request to remove the "Restrictions on Dredging" Beneficial Use Impairment (BUI) at the Sheboygan River Area of Concern (AOC) located in the Sheboygan, WI area. As you know, we share your desire to restore all of the Great Lakes AOCs and to formally delist them.

Based upon a review of your submittal and the supporting data, the U.S. Environmental Protection Agency hereby approves your BUI removal request at the Sheboygan River AOC. In addition, EPA will notify the International Joint Commission of this significant positive environmental change at this AOC.

We congratulate both of you and your staff, as well as the many federal, state, and local partners who have worked so hard and been instrumental in achieving this important environmental improvement. This progress will benefit not only the people who live and work in the Sheboygan River AOC, but all the residents of Wisconsin and the Great Lakes basin as well.

We look forward to the continuation of this important and productive relationship with your agencies and the Sheboygan River Basin Partnership as we work together to delist this AOC in the years to come. If you have any further questions, please contact me at (312) 353-4891, or your staff may contact John Perrecone, at (312) 353-1149.

Sincerely,

A handwritten signature in blue ink, appearing to read "Chris".

Chris Korleski, Director
Great Lakes National Program Office

cc: Kendra Axness, WDNR
Camille Bruhn, WDNR
Vic Pappas, WDNR
Matthew Child, IJC
Wendy Carney, EPA, GLNPO
Ted Smith, EPA, GLNPO
John E. Nelson, Sheboygan River Basin Partnership

Sheboygan River Area of Concern

Beneficial Use Impairment Removal Recommendations
[Restrictions on Dredging Activities]

Submitted to

U.S. EPA-Region 5
77 W. Jackson Boulevard
Chicago, IL 60604

By

Wisconsin Department of Natural Resources

July 2015

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Purpose

The purpose of this document is to recommend removal of the Restrictions on Dredging Activities Beneficial Use Impairment (BUI) in the Sheboygan River Area of Concern (AOC). This document provides information supporting the recommendation and documents the actions completed to meet the BUI removal target.

Background

In 1987, the lower 14 miles of the Sheboygan River from the Sheboygan Falls Dam to the harbor of Lake Michigan was designated as an Area of Concern (AOC) under the Great Lakes Water Quality Agreement due to pollutants including polychlorinated biphenyls (PCBs) polynuclear aromatic hydrocarbons (PAHs), heavy metals, phosphorus, nitrogen, suspended solids, and fecal coliform bacteria. The primary sources of pollution were municipal treatment plants, industries, and agricultural and urban runoff.

A 1989 Stage I Remedial Action Plan (WDNR, 1989) identified the following nine beneficial use impairments (BUIs) in the AOC:

- Restrictions on fish and wildlife consumption
- Eutrophication or undesirable algae
- Degradation of fish and wildlife populations
- Fish tumors or other deformities
- Bird or animal deformities or reproduction problems
- Degradation of benthos
- Degradation of phytoplankton and zooplankton populations
- Restrictions on dredging activities
- Loss of fish and wildlife habitat

Rationale for BUI Listing

Throughout the 20th century, various municipalities and industries (Picture 1) developed and prospered along the Sheboygan River. River discharges of waste disposal were considered acceptable and the increase of municipal and industrial effluent contributed to the impairment of the river's natural resources. Historical sediment sampling showed high levels of contaminants and provided the rationale for BUI listing in the 1989 RAP (WDNR, 1989) stating that the listing was a consequence of the introduction of pollutants:

“Primary sources of pollution are those which manufacture, use, or produce the materials which subsequently become pollutants. Sources of pollution include municipal treatment plants, industries, and agricultural and urban runoff.”

“Polychlorinated biphenyls (PCBs) contained in the sediment are the most widespread and environmentally significant contaminant in the AOC. Their presence is primarily attributable to industrial sources.”



Picture 1.
Industry located
along the
Sheboygan River
in 1940-50s.
(Photo courtesy
of Sheboygan
County
Historical
Research Center,
Sheboygan Falls)

Primary sources of contamination were spread out across the entire 14 mile length of the AOC (Figure 1). Flow and sediment accumulation dynamics also change within the different reaches of the river. For this reason, the location and concentrations of contaminants varied in the river segments.

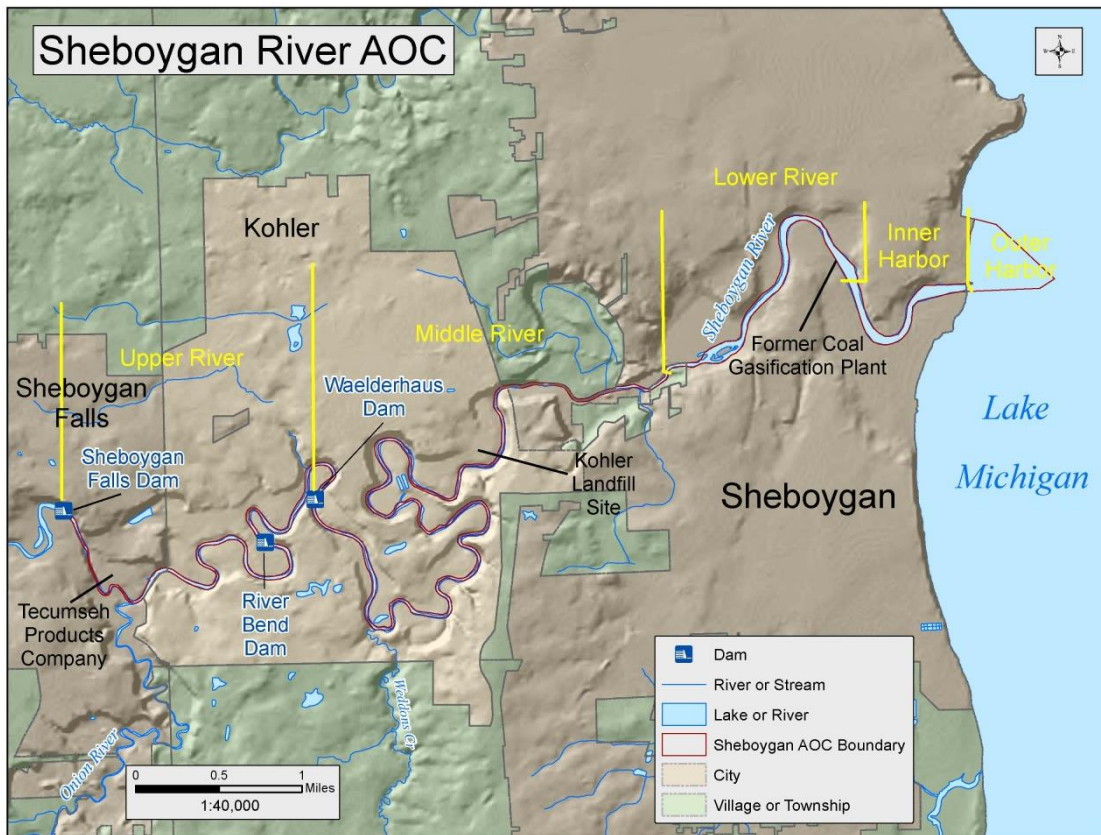
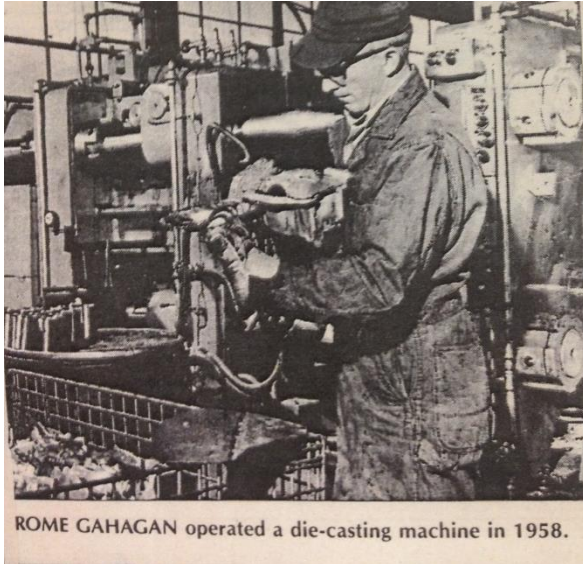


Figure 1. Landmarks located along river segments of the Sheboygan River Area of Concern. (WDNR Map)

Polychlorinated biphenyls (PCBs) are linked to many adverse health effects, including cancer, and are persistent in the environment. The primary source of PCB contamination in the river sediment is considered to originate from Tecumseh Products Company. The former manufacturing plant was located on the river (Figure 1) in Sheboygan Falls. The firm made die cast aluminum parts (Picture 2) and the hydraulic fluid used in the manufacturing processes contained PCBs. Prior to its ban, PCB contaminated material was discharged on the plant site.

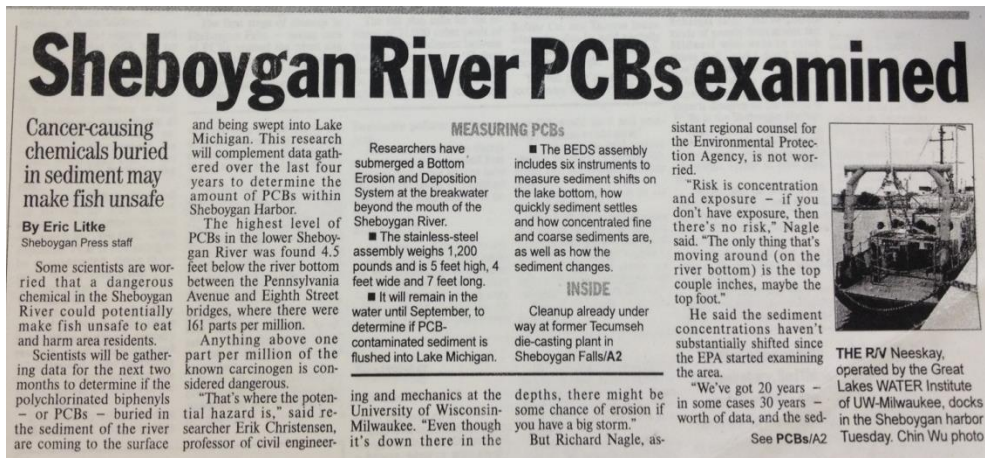


Picture 2. Operator and die-casting machine at Tecumseh Products Company in 1958. (Photo courtesy of Sheboygan County Historical Research Center, Sheboygan Falls)

Polynuclear aromatic hydrocarbons (PAHs) are also associated with harmful health effects and can be present in asphalt roads, roofing tars, and grilled food. Waste from a former coal gasification plant known as Camp Marina was the primary source of PAHs present in the AOC. The plant was located on the north bank of the lower river (Figure 1) at 732 N. Water Street in Sheboygan and was owned and operated by Wisconsin Public Service Corporation from 1872 until 1929. The plant provided fuel and electricity from coal and included a process called coal gasification. The by-products from the process, known as coal tar, made their way into the groundwater and the river. Much of this waste included hazardous oily tars that are composed primarily of PAHs. The Camp Marina plant was dismantled in the 1950s and 60s.

Heavy metals were associated with waste from the Kohler Company Landfill located in the middle river (Figure 1) in Sheboygan County. The landfill used 40 acres of land between 1950 and the mid-1970s primarily for disposal of foundry and manufacturing wastes produced by Kohler's manufacturing facilities. Certain waste streams disposed of in the landfill, such as chrome plating wastes and enamel powder, contained heavy metals. Consequently, eight metals, phenols, and PAHs, were present in groundwater and may have found their way into the Sheboygan River over the years of operation.

Due to the presence of contaminated sediments from various sources throughout the AOC (Picture 3), dredging in the lower Sheboygan River and Harbor were restricted. Although the harbor is a U.S. Army Corps of Engineers (U.S. ACE) federally authorized navigational channel from the harbor to just downstream of Pennsylvania Avenue, it was not dredged for navigation purposes since 1969 because of contaminated sediment disposal concerns.



Picture 3. Newspaper article addressing contaminants in sediment throughout the Sheboygan River AOC (Sheboygan Press, July 2005)

BUI Removal Objectives

In addition to defining the problems and the sources of problems with the Sheboygan River AOC, the 1989 RAP (WDNR, 1989) also developed long term goals for restoring beneficial uses in the AOC. The goal that relates to contamination was to "protect the ecosystem (including humans, wildlife, fish, and other organisms) from the adverse effects (on the reproduction, survival, and health of individuals, and the integrity of interspecies relationships) of toxic substances." The 1995 RAP update document (WDNR, 1995) then provided detailed objectives to achieve each goal. Objectives listed for this goal included significantly reducing inputs of toxic substances from all point and nonpoint sources, improving and maintaining sediment quality for organisms and elimination of sediment disposal restrictions, and increasing public understanding of sources of pollution and prevention.

Summary of Remedial Actions

Since designation as an AOC, much progress has occurred to address pollutant sources. Remediation, initially led by Superfund, has occurred over several time periods within the last 30 years. Three Superfund projects are present within the AOC, including the former Camp Marina site in the lower river (U.S. EPA, 2013), the Kohler Company Landfill in the middle river (U.S. EPA, 2014a), and the Sheboygan River and Harbor Superfund encompassing the 14 miles of the Sheboygan River AOC (U.S. EPA, 2014b).

The following is a summary of events, Superfund projects, and remediation efforts on the Sheboygan River AOC:

- 1976 DNR discovers PCBs in river
- 1984 Kohler Company Landfill listed as Superfund site
- 1985 Sheboygan River designated as an AOC
- 1986 Sheboygan River and Harbor listed as Superfund site
- 1986 Camp Marina site listed as Superfund site
- 1995-1998 Superfund remediation of Kohler Company Landfill, including treatment of groundwater and leachate
- 2002 Superfund remediation of upland portion of Camp Marina
- 2004 Superfund Phase I of remediation in the upper river of soils, groundwater, and adjoining riverbank soils of Sheboygan River and Harbor Superfund site
- 2006-2007 Superfund Phase II of remediation in the upper river of PCB contaminated sediment of the Sheboygan River and Harbor Superfund site
- 2009 Superfund characterization and sediment sampling in the lower river of the Sheboygan River and Harbor
- 2009 Sheboygan River Dredging Workgroup forms
- 2011 Superfund remediation of sediment and shoreline at Camp Marina
- 2011-2012 Superfund remediation of lower river of Sheboygan River and Harbor
- 2013 Great Lakes Legacy Act Dredging Project completed
- 2013 Strategic Navigational Dredging Project completed

In 2009, a Sheboygan River AOC community dredging workgroup was formed to evaluate dredging needs and assess opportunities for removing contamination and alleviating dredging restrictions in the lower Sheboygan River and inner harbor. The workgroup was made up of local, state and federal officials, local stakeholders, and the Superfund project Responsible Parties (RPs). The workgroup pursued dredging of contaminated sediments beyond what was required of the Superfund RPs. The dredging required by the Superfund program did not meet the community's needs for environmental restoration or navigation. A Great Lakes Legacy Act and a Strategic Navigational Dredging project supported through U.S. EPA, Army Corps of Engineers, DNR and local communities were deemed necessary by the workgroup in order to sufficiently address the delisting targets.

Efforts to improve the Sheboygan River accelerated in 2010 when the U.S. EPA selected the Sheboygan River AOC as a priority AOC focused on BUI removal and short-term delisting. Careful planning throughout 2011 led to a great deal of activity to remove contaminated sediments and enhance navigation. Through four dredging projects that occurred in 2011-2013, over 400,000 cubic yards of contaminated sediment were removed from the lower river and inner harbor (Figure 2).

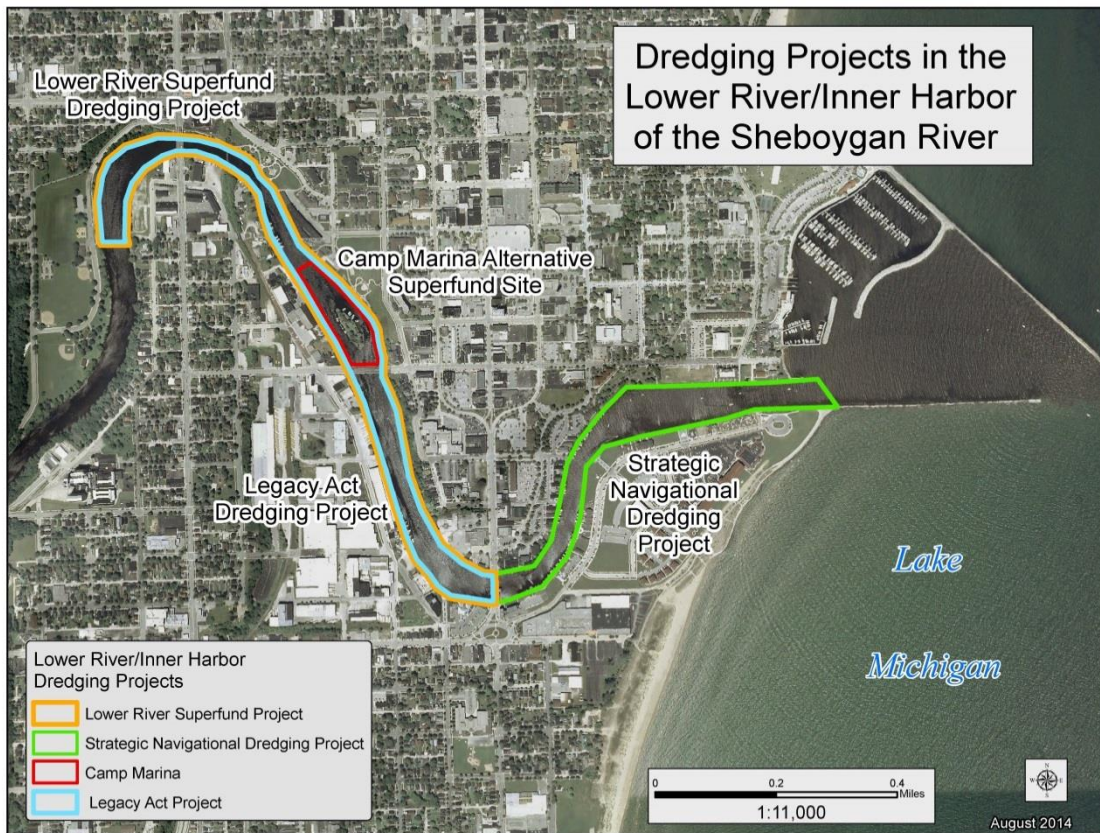


Figure 2. Sediment remediation projects during 2011-2012 along parts of the lower Sheboygan River and inner harbor. (WDNR map)

REMEDIAL INVESTIGATIONS

A number of remedial investigations of sediment contamination occurred throughout the years. A summary of these investigations can be found in the report titled "Final Remedial Investigation Report – Lower River and Inner Harbor of the Sheboygan River, CH2M Hill, June 2011". In addition to past sampling efforts, a total of 112 sediment cores were taken by U.S. EPA contractors during two phases of sampling in 2010 to support the Legacy Act project. This sampling effort revealed

that downstream of 8th street, contamination levels were relatively low. PAH's were essentially not detected, maximum PCB concentrations were 9.74 mg/kg and the average was 0.51 mg/kg. Significant PCB and PAH contamination at depth was found primarily within the authorized federal navigational channel above 8th street. Significant deposits of sediment with greater than 50 mg/kg of PCB's were found upstream of 8th street and PAH concentrations up to 8,000 mg/kg with free coal tar product (known as non-aqueous phase liquid or NAPL) were discovered. It was widely theorized that past Army Corps of Engineers dredging above the 8th Street Bridge back in the 1950's created a deep hole or trap for contaminated sediment to accumulate over the years.

CAMP MARINA ALTERNATIVE SUPERFUND SITE

The Wisconsin Public Service Corporation Camp Marina Superfund site (former coal gasification plant) was split into two separate actions, the upland portion and river portion. While the upland portion of the site was cleaned up in 2002, the river section was dredged in 2011 removing approximately 23,000 cubic yards of PAH-contaminated sediment (Picture 4) from the Camp Marina site (Figure 2). This was considered a Superfund Alternative or emergency action due to the lower river remediation of the Sheboygan River and Harbor Superfund project (labeled "Lower River Superfund Dredging Project" in Figure 2). The project to clean up PCB contamination would expose PAH contamination from Camp Marina during dredging operations, so the two projects were coordinated to address these areas at the same time.



Picture 4. Dredging contaminated sediment at Camp Marina. (Photo taken by Stacy Hron, WDNR)

SHEBOYGAN RIVER AND HARBOR SUPERFUND SITE

The Sheboygan River and Harbor Superfund site included the lower 14 miles of the river from the Sheboygan Falls Dam downstream to the Inner Harbor, therefore, remediation of PCB contaminated sediment was done in segments to maintain proper source control before moving work downstream. The upper river extends from the Sheboygan Falls Dam to the Waelderhaus Dam four miles downstream. The middle river encompasses a segment between the Waelderhaus Dam in Kohler downstream to the Canadian and Northwestern railroad bridge in Sheboygan. The lower

river segment extends from the railroad bridge to the Pennsylvania Avenue Bridge located three miles downstream (see Figure 1).

Tecumseh Products Company and Pollution Risk Services entered into multiple consent agreements to do cleanup work. The upper river work was done in two phases. Phase I included remediation of soils, groundwater, and adjoining riverbank soils of the former Tecumseh Plant and was completed in 2004. Phase II included hydraulic dredging of approximately 20,700 cubic yards of sediments and formerly armored areas which began in 2006 and was completed in 2007. The Superfund goal of removing at least 88% of the PCB mass within soft sediment deposits in the upper river segments was attained. The other goal was to meet a surface weighted average concentration (SWAC) of 0.5 ppm in sediments and to continue to monitor that there has been a significant reduction documented in SWAC concentrations.

The Record of Decision for the Superfund project did not require sediment removal in the middle river based upon sediment characterization measurements completed in 2009. The middle river section contained fewer areas of soft sediment deposition due to its location below dams and how the river channel is configured. The middle river is to be monitored for natural recovery.

A separate consent agreement was reached between U.S. EPA, Tecumseh, and Pollution Risk Services in which remediation of the lower river and inner harbor segments (labeled “Lower River Superfund Project” in Figure 2) removed approximately 63,700 cubic yards of PCB-contaminated sediment during 2011-2012. This was significantly more than had been in the Superfund design for these sections based mainly on interpretation of data and re-dredge after confirmation sampling. The focus of this project was on eliminating risks to human health from exposure to PCBs. A scour model was developed on behalf of the U.S. Army Corps of Engineers, which U.S. EPA utilized as part of the decision making process. As a result, under Superfund, significant PCB contamination could be left at depth with the determination that it would not become available through scour over time. However, it was clear that the Superfund alternative, although addressing human health risks, would not resolve overall environmental or dredging restriction objectives of the WDNR or the community.

GREAT LAKES LEGACY ACT DREDGING PROJECT

Because objectives for environmental restoration and dredging restrictions under the AOC program were not being met by Superfund, a local dredging workgroup formed. As a result, the state and local officials and leaders decided to pursue Great Lakes Legacy Act funding through the U.S. EPA and the Great Lakes Restoration Initiative. Working with the Great Lakes National Program Office (GLNPO), additional sediment characterization occurred in the lower river and inner harbor in 2010. As part of this characterization work, it was determined that the river segment below 8th street did not have significant enough PCB contamination to warrant action under the Legacy Act program. DNR submitted a Legacy Act application to GLNPO on behalf of the dredging workgroup in late 2011. A Legacy Act agreement was initially signed in April 2012 by many of the partners on

the dredging workgroup. A team was formed to work on the feasibility study and the remedial design for the Legacy Act project.

In 2012, The Great Lakes Legacy Act (GLLA) project was implemented and removed approximately 160,000 cubic yards of PCB- and PAH-contaminated sediment in the lower river between Kiwanis Park and the 8th Street Bridge (Figure 2). The project reached its overall objective of removing PCBs to surface weighted average concentrations (SWAC) near 1.09 ppm and for removing PAHs to concentrations near 2.98 ppm (CH2M Hill, 2013). More than 8,500 cubic yards of dredge spoils from this area, containing more than 50 ppm PCBs, were trucked out of state for disposal to a landfill that could accept waste under the Toxic Substance Control Act. Sand cover was used in targeted areas after post dredging sampling of the river to further reduce SWAC associated with dredging residuals (Picture 5). While the Legacy Act Dredging Project addressed the contamination remediation and environmental restoration goals, it also added the benefit of satisfying navigational needs above 8th Street Bridge.



Picture 5.
Application of
clean sand cover.
(Photo taken by
Stacy Hron,
WDNR)

STRATEGIC NAVIGATIONAL DREDGING PROJECT

During the investigation stage of the Legacy Act project, sediment below the 8th Street Bridge was found to have much lower levels of contamination than was previously thought to exist in this area. U.S. EPA sampled the harbor in 2010 (U.S. ACE, 2012) and obtained 40 borings and analyzed PCBs. The maximum value of PCBs was 9.74 ppm and the average was 0.51 mg/kg.. The dredging workgroup sought a solution to dredging this part of the inner harbor to meet the navigational needs of the community and to address BUI removal for dredging restrictions. Great Lakes Restoration Initiative dollars along with funding from the city, county, and state (WDNR and Department of Transportation) were used to retain the U.S. Army Corps of Engineers in a design for a Strategic Navigational Dredging Project (Figure 2). Sediments in the lower portion of the river

between the 8th Street Bridge and the outer harbor were dredged in 2012 and removed approximately 170,000 cubic yards of sediment.

Final 2008 Delisting Target

The development of delisting targets is essential to the development of an overall strategy for restoring the AOC. Therefore, in 2008, the Wisconsin DNR, with input from local partners, drafted delisting targets for BUI removal on the Sheboygan River AOC. Before finalizing and submitting the targets, a public input session was conducted to share information and discuss the targets and future remediation. As stated in the 2008 *Delisting Targets for the Sheboygan River Area of Concern: Final Report*, removal of the Restrictions on Dredging Activities BUI can occur when:

- All remediation actions for contaminated sediments are completed and monitored according to the approved remediation plans; and
- A dredging alternatives plan is developed that includes an evaluation of the following:
 - Restrictions that must remain in place to protect human health and the environment
 - Restrictions that must remain in place due to Superfund or RCRA requirements that are based upon state and federal law
 - Priority areas for navigational use
 - Priority areas where dredging is needed for other purposes (i.e. utilities)
 - Costs associated with removing dredging restrictions in priority areas
 - Funding available to address removing dredging restrictions in priority areas

Additionally, the document called for the following as actions:

- Determine the degree of contamination in the sediment and track trends in the level of contamination as remediation efforts proceed throughout the AOC.
- To the extent feasible, planning and implementation steps to meet this delisting target should be coordinated with Superfund remediation planning and implementation efforts.

Assessment of Restoration - Attainment of Goals and Targets

The following is a summary of actions taken to address the delisting targets developed in 2008 for the removal of the Restrictions on Dredging Activities BUI and the fulfillment of these goals:

1) All remediation actions for contaminated sediments are completed and monitored according to the approved remediation plans

The Superfund projects conducted by Tecumseh, Pollution Risk Services and Wisconsin Public Service Corporation have been completed. Additional evaluation of this work and compliance with requirements under Superfund will continue for some time. Monitoring of fish and sediment will be required by U.S. EPA of the responsible parties to ensure that remedial objectives are continuing to be met. U.S. EPA conducts 5 year reviews for this purpose.

Contaminant levels have been monitored consistently both prior to and after completion of the dredging projects to determine the degree of contamination in the sediment and to design remediation that targets most of the contamination that was present. Continued monitoring by the Superfund responsible parties will continue to track trends in contamination levels following remediation. Post dredging sampling confirmed that remediation actions for contaminated sediment have met the goals of the approved remediation plans.

2) A dredging alternatives plan is developed that includes an evaluation of remaining dredging restrictions, priority areas for navigational use, and priority areas where dredging is needed for utilities and other purposes

It was not anticipated in 2008 that the Sheboygan River AOC would receive AOC priority status and extremely significant funding from the Great Lakes Restoration Initiative. This delisting target anticipated that significant sediment contamination would remain at depth and that a dredging alternatives plan would be needed to focus on dredging priorities with limited opportunity or funding to address many of the dredging restrictions. However, obtaining AOC priority status led to more funding and the capability of additional remediation actions that eliminated the need for a dredging alternatives plan.

The formation of a community dredging workgroup and a series of public informational efforts provided by local, state, and federal agencies resulted in identifying needs beyond the scope of Superfund remediation work. The workgroup coordinated closely with agency staff to develop solutions and eventually led to a Great Lakes Legacy Act Betterment (GLLA) action. While this effort targeted significant contamination that impacted natural resources, it also addressed public navigation needs in the lower river and inner harbor. A strategic navigational dredging project was designed in consultation with the local communities to address water depths in the federally authorized navigational channel below 8th street. The dredging workgroup agreed that certain

“priority navigational areas” needed to be dredged to achieve BUI removal. A map depicting these priority navigational areas and required depths can be found in Appendix A.

Generally speaking, these priority navigational areas mirror the federal authorized navigational channel. Based upon input received via the community Dredging Workgroup, navigational depths in the river had to be at least 16 feet below low water datum (LWD; including over-dredge) from the river mouth to the first bend on the river. This depth would support larger draft vessels such as Great Lakes cruise ships. From the first bend in the river, past the 8th Street Bridge and to the end of the federally authorized channel, required depths were to be at least 11 feet below LWD (including over-dredge). It should be noted that dredging to remove contamination in the lower river areas near Camp Marina, Pennsylvania Avenue and upstream of 8th street resulted in the creation of significantly deeper areas in some portions of the river (over 20 feet). In some areas, the dredging depths attained exceeded the federally authorized channel depth. In addition, a 60 foot wide channel of at least 8 feet of water depth was desired between the Pennsylvania Avenue Bridge and the 14th Street Bridge. Post dredge bathymetry mapping compiled for the projects is available from U.S. EPA.

Upon completion of dredging, navigational depths were confirmed to meet the depths required by the community dredging workgroup. Although dredging depths were not extended to the fully authorized federal navigational depths in all areas, there was consensus from the local communities that the depths required above were adequate for public navigational needs in the community and for BUI removal. It should also be noted that the dredging projects were adjusted to ensure adequate water depth under the 8th Street Bridge. Debris removal in one of the bays at the Pennsylvania Avenue Bridge occurred to allow for barge traffic. This work has improved navigation under this bridge structure. Plans for dredging were evaluated to make sure they addressed sediment deposition at the 8th street public boat launch. The strategic navigational dredging project was adjusted to include a shallow area in the outer harbor just downstream of the river mouth requested by the local community.

Because of the success of the Sheboygan dredging work group in securing action and funding in 2011 and 2012, a dredging alternatives plan has been replaced by a technical memorandum (Appendix B) discussing where dredging may be restrained or prevented for navigation or construction purposes in the future. The technical memorandum also includes a site map of utilities, post-dredging contaminant levels, and water depths taken following dredging activities in 2012.

Achievement of Delisting Target

Ultimately, it was decided that goals set out by the Sheboygan River Community dredging work group would satisfy community and AOC needs for achieving the delisting target for the restrictions on dredging beneficial use impairment. They included the following:

- Dredging of the priority navigational areas to the depths specified by the workgroup (See map in Appendix A)
- Achievement of remediation goals for the Superfund and EPA Great Lakes Legacy Act Project Areas

Dredging of the priority navigational areas were completed in early 2013 by the projects discussed above and they achieved navigational depths sought by the community dredge workgroup upon their completion. Post construction bathymetry data for the Legacy Project and Strategic Navigational Dredging Project is available from U.S. EPA. Bathymetry data taken in the fall of 2013 was obtained from the US Army Corps of Engineers. Maps from CH2M Hill depicting these data are included in Appendix B. These maps depict water depths approximately 9 months after the dredging projects were completed.

The PCB-related remediation design goals in the lower river and inner harbor for the Superfund project that were intended to comply with the 2000 U.S. EPA Record of Decision were met (see second five year review report dated September, 2014 from U.S. EPA).

<http://epa.gov/region5/cleanup/sheboygan/pdfs/sheboygan-fyr-2014.pdf>

The NAPL and PAH remediation goals identified for the Camp Marina superfund alternative site were met (see U.S. EPA no further action fact sheet dated July, 2012).

<http://epa.gov/region5/cleanup/campmarina/pdfs/campmarina-fs-201207.pdf>

The additional remediation goals set forth for the Great Lakes Legacy Act project were also attained (see Legacy Act Cleanup Validation Report by CH2M Hill, August, 2013—and final Legacy Act Construction Report by Ryba-Terra, August, 2013 available from US-EPA). Maps provided by CH2M Hill depicting post dredge sediment conditions can be found in Appendix B.

Therefore, sediment remediation goals for the Sheboygan River Area of Concern have been satisfied.

BUI Removal Process

The BUI removal process includes preparation of a draft BUI removal document with review by state agency staff and U.S. EPA staff, consultation with external partners, a public informational meeting, and a public comment period.

A public informational meeting and open house was held on September 16, 2014 at the Mead Public Library in Sheboygan from 5:00-6:30 p.m. The public was notified through a statewide news release, postcards sent to local residents, and updates to the Sheboygan Press and WDNR event calendars. Copies of the draft BUI removal document, fact sheets, and maps of water depths and post-dredging contaminant levels were available during the meeting and through the public comment period.

WDNR staff reviewed and responded to all comments received during the public comment period from September 16, 2014 to September 30, 2014. Clarification was provided for several comments regarding details of dredging work done in several locations throughout the AOC, but no concerns were expressed in opposition of the BUI removal.

It should be noted that residual PCB and PAH contamination continues to be present in the Sheboygan River outside of the priority navigational areas in the shoreline areas. In addition, residual contamination exists at certain locations within the priority navigational areas below project design dredging depths. It is the belief of the Department that dredging depths attained as part of the projects should be able to be maintained within the priority navigational areas into the future without encountering significantly high sediment contamination. Approximately 6 inches of clean sand cover was placed over residual contamination in priority navigational areas to further reduce surface sediment contaminant concentrations and to speed up ecological recovery.

The Department will maintain information on post dredging contaminant concentrations outside the priority navigational areas for future reference. In addition, the Department will also maintain information on residual contamination in priority navigational areas below the dredging depths that were sought by the community dredge work group. Future dredging will follow the standard state requirements (NR 347, Wisconsin Administrative Code) aimed at assessing the potential for encountering contamination similar to any other developed urban river, harbor or waterway in Wisconsin (See Appendix C). The lower 14 miles of the Sheboygan River will retain its Superfund designation until the requirements of that program are met including sediment surface weighted average concentrations of PCB's of 0.5 ppm or less and specified PCB contaminant levels in fish (See EPA Superfund Record of Decision from May, 2000).

Recommendation

Based upon the completion of the necessary contaminated remediation projects, meeting the community dredge work group water depth goals in priority navigational areas, the continued monitoring as necessary under the Superfund program, and review of the data and technical memorandum developed by CH2M Hill (in lieu of the dredging alternatives plan), the Wisconsin Department of Natural Resources recommends the removal of the Restrictions on Dredging Activities BUI for the Sheboygan River Area of Concern. All management actions established to meet the BUI delisting targets have been completed.

The removal recommendation was shared and discussed with several external partners. Support for this BUI removal was provided by the City of Sheboygan, Sheboygan County, and Sheboygan River Basin Partnership (Appendix D).

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Appendices

- Appendix A: Map Depicting Priority Navigational Areas (DNR, 2015)
- Appendix B: Dredging Restrictions Technical Memorandum (CH2M Hill, 2014)
General Site map of Utilities (CH2M Hill, 2014)
11/2013 Bathymetry maps (CH2M Hill, 2014)
Post Dredge Sediment conditions Map Set (CH2M Hill)
- Appendix C: State of Wisconsin Administrative Code for Dredging Activities
- Appendix D: Letters of Support

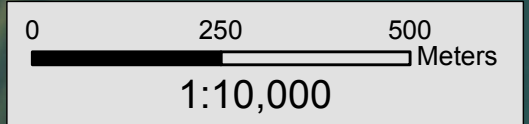
Appendix A

Map Depicting Priority Navigational Areas (DNR, 2015)

Priority Navigational Areas and Required Depths

Designed Depth \geq (Feet)

- 8
- 11
- 16



Appendix B

Dredging Restrictions Technical Memorandum (CH2M Hill, 2014)

General Site Map of Utilities (CH2M Hill, 2014)

11/2013 Bathymetry Maps (CH2M Hill, 2014)

Post Dredge Sediment Conditions Map Set (CH2M Hill)

Sheboygan River Area of Concern, Sheboygan, Wisconsin— Restrictions on Dredging Beneficial Use Impairment Mapping Technical Memorandum

PREPARED FOR: Heather Williams/EPA GLNPO
COPY TO: Vic Pappas/WDNR
Gina Bayer/CH2M HILL
PREPARED BY: Huck Raddemann/CH2M HILL
Adrienne Korpela/CH2M HILL
DATE: October 14, 2014

The purpose of this technical memorandum is to support the removal of the Restrictions on Dredging Beneficial Use Impairment (BUI) in the Sheboygan River Area of Concern (AOC), following the recently performed Superfund, Great Lakes Legacy Act, and strategic navigation dredging projects. Maps and supporting documentation are presented to assist the Wisconsin Department of Natural Resources (WDNR) with dredging restrictions BUI documentation for the Sheboygan River AOC. The work was conducted for the U.S. Environmental Protection Agency (EPA) Great Lakes National Program Office under Contract No. EP-R5-11-09 and as specified in the Statement of Work dated April 2014.

Objective

Dredging within the project reach of the Sheboygan River AOC was completed in 2012 and early 2013 through the EPA Superfund, Great Lakes Legacy Act, and strategic navigation dredging projects. As a result, WDNR believes that the AOC BUI related to “Restrictions on Dredging” has been satisfied and needs to be fully documented. Information regarding the removal of dredging restrictions (removal of the BUI) needs to be shared with the community at large, along with the following interested parties:

- Sheboygan River Community Advisory Committee
- Sheboygan River Fish and Wildlife Technical Advisory Committee
- Sheboygan River AOC stakeholders (riparian landowners, tenants, businesses, etc.)
- Elected officials
- Local government staff

Maps and documentation generated as part of the task order will be used to aid in the discussions with stakeholders regarding the removal of the Restrictions on Dredging BUI.

Approach

This technical memorandum identifies and discusses potential areas where dredging may be restrained or prevented for navigation or construction purposes due to the presence of contamination, utilities, structures, etc.

The following documents were referenced in the preparation of this memorandum:

- Final Superfund Dredging Reports prepared by Pollution Risk Services (PRS) (PRS 2007, 2009, 2013)
- Final Legacy Act Investigation and Dredging Reports prepared by CH2M HILL (CH2M HILL 2011, 2013) and Ryba-Terra Contracting (Ryba-Terra 2012)
- U.S. Army Corps of Engineers (USACE) Hydrographic Survey Data collected in November 2013 (USACE 2013)
- Wisconsin statewide one-call underground utility-locating service, performed in June 2014

Post-Superfund Project Residuals

The following subsection summarizes dredging activities performed within the Sheboygan River, and Superfund dredging activities performed by PRS beginning in 2004. The information provided has been derived from all known final Superfund dredging reports, as referenced herein.

Upper River

For the purposes of the Sheboygan River Superfund Project, the Sheboygan River starting at the Sheboygan Falls Dam and proceeding downstream to the conflux with Lake Michigan was sectioned into the Upper River, the Middle River, and the Lower River and Inner Harbor segments. The Upper River segment includes the former Tecumseh facility and extends 4 miles from Sheboygan Falls Dam downstream to the Waelderhaus Dam. The Upper River consists of discrete soft sediment deposits and non-soft sediment areas, which include a mix of soft sediment, rocks, cobbles, and bare river bottom. Polychlorinated biphenyl (PCB) contamination was primarily found in the soft sediments. Remedial design (RD) and remedial action (RA) work at the Superfund site was implemented by PRS in phases in order to achieve proper source control prior to initiating down river work. Phase I RA work for the Upper River was performed in 2004 and included the former Tecumseh Plant soils, groundwater, and adjoining riverbank soils. Phase II RA work for the Upper River was performed in 2006 and 2007 and included hydraulic dredging of the near-shore sediments, armored areas, and soft sediment deposits. Armored areas refer to 1,200 square yards of contaminated sediments that were “armored” in place by Tecumseh in 1990 (Blasland, Bouck and Lee, Inc. 1995).

During 2006 and 2007, sediment was removed from all nine armored area remedial management units (RMUs) and 122 soft sediment RMUs. The soft sediment RMUs and armored area RMUs removed in 2006/2007 contained the majority of the PCB mass within the Upper River. The RA removed 20,728 cubic yards of sediment and 552 pounds of PCBs for a total mass removal percentage of 94.1 percent. Not all soft sediment deposits were removed. Deposit DEP20B-46 (1.8 milligrams per kilogram [mg/kg] PCBs) was not removed due to close proximity to the Riverbend Dam and the 50-foot setback. In addition, dredging was not conducted in Deposits 21 through 25 and 27 through 33. The rationale for not removing sediment from the deposits was based on the areas having low PCB concentration with limited PCB mass. Undredged RMUs remaining after 2006/2007, since the PCB mass removal objective had already been exceeded. The undredged RMUs are noted as zero volume and mass removed in Table 1 of the *Sheboygan River and Harbor Superfund Site Phase II—Upper River Sediment Removal Final Construction Documentation Report* (PRS 2007).

Following dredging in the Upper River, post-dredge sediment samples were collected in 2007 and again in 2012 as part of the first 5-year review. The sediment sampling results for both years are presented in the *Sheboygan River and Harbor Superfund Site Upper River Sediment Monitoring Report* (PRS 2013). All former armored areas and soft sediment deposits were sampled, including the 11 soft sediment deposits that were not dredged. Remaining PCB concentrations in the Upper River sediments as measured in 2007, shortly after dredging operations, ranged from nondetect with a detection limit at 0.017 mg/kg PCBs to a maximum of 19 mg/kg PCBs. Generally, the sample results above 5 mg/kg PCBs were found in the deposits that have not been dredged. Remaining PCB concentrations in the Upper River sediments as measured in 2012, 5 years after dredging was completed, ranged from nondetect with a detection limit at 0.1 mg/kg PCBs to a maximum of 5.1 mg/kg PCBs. The maximum concentration of PCBs in the deposits that had not been dredged was 2.5 mg/kg PCBs.

An assessment of the post-dredge sediment residual data to the infrastructure identified in Figure 1 (introduced later in this memorandum) generated the following findings within the Upper River:

- Residual sediment PCB concentrations based on the 2012 sampling event in the near vicinity of the Rochester Park and Boat Access area ranged from 0.9 mg/kg to a maximum of 5.1 mg/kg detected in Deposit 6 on the opposite side of the river from the park.

- Residual sediment PCB concentrations in Deposit 20B immediately upstream of the Riverbend Dam, as measured in 2007 shortly after dredging, ranged from 10 to 19 mg/kg PCBs. However, the concentrations had decreased significantly when measured in 2012, ranging from 0.5 to 2 mg/kg PCBs.
- As previously noted, sediment deposits 27 through 33, which lead up to the Waelderhaus Dam, were not dredged. PCB concentrations in Deposit 33B, the deposit closest to the dam, ranged from 0.7 to 1.8 mg/kg in 2007, and from 0.2 to 0.9 mg/kg in 2012. Deposit 33C, which is located immediately upstream of Deposit 33B, contained higher levels of PCBs in 2007, ranging from 2.4 to 12 mg/kg, but in 2012, the measured PCB levels had decreased to 0.4 to 0.8 mg/kg.

Middle River

The Middle River segment extends 11 miles from the Waelderhaus Dam downstream to the Canadian and Northwestern railroad bridge (which is located slightly downstream of the Taylor Drive Bridge).

The Middle River consists of discrete soft sediment deposits and non-soft sediment areas, which include a mix of soft sediment, rocks, cobbles, and bare river bottom. Due to the hydrodynamics of the reach, the areas of soft sediment are shallower and more widely scattered than the Upper River. Information collected during the remedial investigation indicated PCB concentrations ranging from nondetect to 8.8 parts per million (ppm). During the predesign sampling investigation in 2009, 54 deposits were encountered in the Middle River that met the criteria to be sampled for PCBs. The PCB results and summary statistics for the Middle River are provided in Table 2 of the *Sheboygan River and Harbor Superfund Site Lower River Pre-Design Investigation Report* (PRS 2009). In the Middle River deposits, 22 of 30 samples were greater than or equal to 0.5 mg/kg PCBs. As shown in Table 2, only two sample results exceeded 4 ppm: Deposit 26 was 14 mg/kg PCBs, and Deposit 14/15/16 was 10 mg/kg PCBs. No sample results exceeded 26 mg/kg PCBs. A figure showing the deposit locations is located in Volume 2 of the *Sheboygan River and Harbor Superfund Site Lower River Pre-Design Investigation Report* (PRS 2009). The highest concentrations were within approximately 1.5 miles downstream from Waelderhaus Dam. In accordance with the Record of Decision (EPA 2000), no sediment removal occurred in the Middle River segment of the Sheboygan River.

An assessment of the 2009 predesign sediment data to the infrastructure identified in Figure 1 (introduced later in this memorandum) generated the following findings within the Middle River:

- Approximately 500 feet upstream of the Blackwolf Run Cart Path Bridge over Weeden Creek, the 2009 sediment sampling results detected 10 mg/kg PCBs in combined sediment deposits 14, 15, and 16.
- Deposit 26, located along the banks of the Blackwolf Golf Course, contained 14.2 mg/kg PCBs.
- The only additional sediment deposit in the Middle River containing 1 mg/kg PCBs or more and located in close proximity to infrastructure is Deposit 56, located upstream of the County Highway A bridge.

Lower River and Inner Harbor

The Lower River segment extends from the Canadian and Northwestern railroad bridge downstream 3 miles to the Pennsylvania Bridge. The Inner Harbor extends from the Pennsylvania Bridge downstream to the Outer Harbor, which is defined as the area formed by two breakwalls on Lake Michigan. Although PRS conducted predesign sampling, dredging, and post-dredging sampling within the Lower River, and remedial investigation sampling in the Inner Harbor, subsequent sampling and dredging activities were completed by other parties, as described in later sections of this memorandum. For that reason, results of PRS's activities in the Lower River and Inner Harbor are not included here. Great Lakes Legacy Act (GLLA) and strategic navigation dredging projects that were conducted within the Lower River and Inner Harbor are described in the following sections.

Summary of Great Lakes Legacy Act Lower River and Inner Harbor Projects

The following subsections provide a brief summary of the GLLA Lower River and Inner Harbor projects.

Background

The Superfund program projects focused on addressing human and ecological risk threats. As a result, PCB- and polycyclic aromatic hydrocarbon (PAH)-contaminated sediment remained in the Sheboygan River following removal of material required by the Superfund authority. The remaining sediment contamination also contributed to several BUIs in the Sheboygan River AOC, including restrictions on fish and wildlife consumption, degradation of benthos, and restrictions on dredging activities. The GLLA Lower River remedial action project focused on sediment remaining in-place following the PRS and Campmarina manufactured gas plant (MGP) site actions, while the GLLA Inner Harbor project focused on addressing restrictions on navigational dredging and restoring navigation depths.

Volume Summary

Superfund dredging activities performed by PRS resulted in the removal of approximately 65,475 cubic yards of contaminated sediment in the section of the river upstream of the 8th Street Bridge. No sediment was removed from the Middle River and Inner Harbor from the 8th Street Bridge to the mouth of the river as part of the PRS Superfund dredging activities because PCB concentrations did not meet the Superfund remediation criteria (PRS 2013). Approximately 24,000 to 27,000 cubic yards of sediment and shoreline contaminated with PAHs and nonaqueous phase liquid (NAPL) were removed from the Campmarina MGP site in 2011 by Integrys under a Superfund's Emergency Response and Removal (ERR) program (CH2M HILL 2013). A total of 147,822 cubic yards was dredged as part of the GLLA Lower River Project (between Kiwanis Park and the 8th Street Bridge) from August to December 2012 and May 2013. The GLLA Lower River project resulted in the offsite disposal of approximately 8,593 cubic yards (13,641 tons) of TSCA sediment, 147,822 cubic yards (212,575 tons) of non-TSCA sediment, and 1,141 tons of debris. Following dredging, a residual sand cover with a minimum thickness of 5 inches was placed over 9 acres to further reduce post-dredge surface PCB and PAH concentrations (CH2M HILL 2013). The GLLA Outer Harbor project located downstream of the 8th Street Bridge utilized Great Lakes Restoration Initiative (GLRI) funding to conduct a strategic navigational dredging project in conjunction with USACE from 8th Street Bridge downstream to the mouth of the Sheboygan River. In the navigational dredging project, 154,273 cubic yards of sediment was dredged and 224,543 tons was disposed offsite to provide an 11- to 16-foot navigation channel below low water datum.¹

Surface Weighted Average Concentration Summary

Sediment confirmation sampling was conducted as part of the GLLA Lower River project following dredging performed to the specified design elevation. The results were used to determine if additional dredging was required and to document post-dredge PCB and PAH sediment concentrations. The post-dredge sediment surface concentrations were used for sand cover placement considerations and conducting post-remedial action surface weighted average concentration (SWAC) calculations for the GLLA Lower River project.

Based on the post-remediation surface sediment concentrations, the addition of sand was determined to be used by the GLLA Lower River project stakeholders as a cover material. The addition of sand was used to calculate SWAC values that theoretically would be achieved if the sand cover was placed over a portion of the dredged area. Application of the sand cover was calculated to result in a GLLA Lower River project reach SWAC of 1.09 mg/kg total PCB and 2.98 mg/kg total PAH (CH2M HILL 2013).

Based on sampling performed by PRS and the confirmation sampling conducted during the GLLA Lower River project, all three reaches of the Sheboygan River (Middle River, Lower River, and Inner Harbor) met the 3.5 ppm required for the Superfund project's PCB post-dredge SWAC, which was modeled to attenuate to

¹ Cubic yards and tons provided by EPA GLNPO Contracting Officer's Technical Representative during a conference call on October 10, 2014.

0.5 ppm in less than 30 years. As part of the 5-year review required for the Superfund project's post-remediation monitoring, surface sediment sampling will again be conducted in 2017 to document the progression of the SWAC over time (PRS 2013).

Shoreline and Critical Structure Dredge Setbacks

Dredging setbacks from the shoreline and critical structures were designed and implemented during the GLLA Lower River project (CH2M HILL 2012). Prior to construction activities, a qualitative shoreline assessment was performed to document the various types of retaining structures, unimproved natural shoreline, and critical structures. The GLLA project shoreline was broadly classified into two categories:

- Bulkheads consisting of sheet piling or concrete walls (also called “noncritical structures”)
- Sloped shoreline with concrete blocks and debris, riprap, and timber pilings

Additionally, structures were deemed as critical if a structural failure would endanger safety. Removal of soft sediment in the vicinity of shorelines and critical structures was avoided with an offset. In general, dredging was started at a minimum distance (offset) of 10 feet away from the shoreline or critical structure, followed by a 3:1 slope down to the dredge cut elevation. The 3:1 slope was selected because the shorelines have similar slopes, so providing a dredge surface with that maximum side slope was not expected to create instability. Larger offset distances were selected for specific critical structures. Contaminated sediment left in-place due to the setbacks and associated side slopes were intended to be addressed through placement of a residuals management layer. Areas where the dredge surface was expected to require a residuals management layer were sloped at 4:1 (horizontal to vertical) or flatter.

The following critical structures were identified prior to the dredging performed during the GLLA project:

- 8th Street Bridge
- Pennsylvania Avenue Bridge
- Railroad Bridge near Station 28+00
- 14th Street Bridge
- Garton Toy Factory building
- Boathouse, Rockline Industries, and M & H Outboard & Sterndrive buildings

Map Development Approach and Data Summary

The following subsections describe the approaches used in the development of each map set, as well as the data sources displayed.

General Site Map

A site figure of the AOC (Figure 1) presents the locations of public utilities, bridges, dams, public parks, and boat access locations. The Wisconsin statewide utility-locating one-call service was contacted to identify where underground public utilities cross the river. The information from the utility locate was combined with previously known information to identify several utilities located within the AOC. Overhead electric lines that cross the river are not shown on the map.

The following utilities were identified through the Wisconsin one-call service for the area of the Sheboygan River AOC:

- Alliant Energy
- AT&T Distribution
- Charter Communications
- City of Sheboygan
- ExteNet System
- Kohler Company
- Qwest Communications Corp QTC
- School District of Sheboygan Falls
- Sheboygan Falls Utilities
- Thomas G. Belot Private Line
- Town of Sheboygan
- Village of Kohler
- Windstream
- Wisconsin Public Service Corp (Integrus)

Map Set One—Water Depths below Low Water Datum

Map Set One depicts the water level depth below Low Water Datum as 1-foot incremental color-graded contours. Low Water Datum is represented as 577.5 feet above mean sea level (amsl) at Rimouski, Quebec and correlates to the same datum used to represent water levels reported during dredging activities in 2013. Water depth data shown on Map Set One stretches from the upstream extent of Kiwanis Park to the Sheboygan Harbor (approximately 2.25 miles) and uses two sets of water depth data. Within the area from Kiwanis Park to the upstream extent of the 14th Street Bridge, the water depth information depicted represents conditions immediately following dredging completed on December 12, 2012, as provided by dredging contractor (Ryba-Terra Contracting). The remaining portion from the 14th Street Bridge to the Sheboygan Harbor represents the survey results collected on November 19, 2013, by the Lake Michigan Office of USACE. Water depth data depicted within Map Set One can only be considered representative of the general river conditions at the time of the respective surveys and represents the latest hydrographic survey information available at this time.

Map Set Two—Post-dredge Sediment Conditions

Map Set Two represents total PCB and total polycyclic aromatic hydrocarbon sediment concentrations following dredging activities in 2012. Sample concentrations illustrated within circle symbols represent the post-dredge surface sediment concentration, while the rectangle symbol presents analytical results of in situ surface and subsurface sediments. Concentrations presented within areas designated as receiving sand cover placement represent the sediment surface prior placement of a 6-inch clean sand cover material. Sand cover material was analyzed before application within the river to ensure that nondetect levels of chemicals of concern were present. No additional analytical analysis of the sand cover material was performed once placed into the river because of pre-placement sampling activities.

Concentrations presented upstream of the 8th Street Bridge were collected during the 2012 Great Lakes Legacy Act Sheboygan River project following dredge activities and represent post-dredge conditions at the time sampled. Concentration data presented downstream of the 8th Street Bridge to the mouth of the Sheboygan River were collected during investigation sampling in 2010. The investigation sampling goal was to characterize sediments prior to the navigational dredging performed in 2012. No post-dredge confirmation samples were collected following dredge activities downstream of 8th Street Bridge. Therefore, post-dredge surface sediment concentrations were determined by comparing the hydrographic survey data elevations collected by the Lake Michigan Office of USACE in 2013 (see Map Set One) to the equivalent elevation and respective concentration for each sample location collected in 2010.

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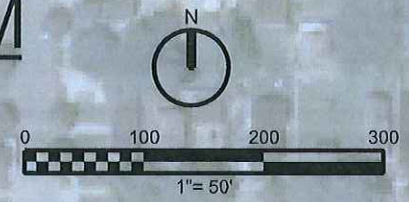
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WATER DEPTHS BELOW LOW WATER DATUM



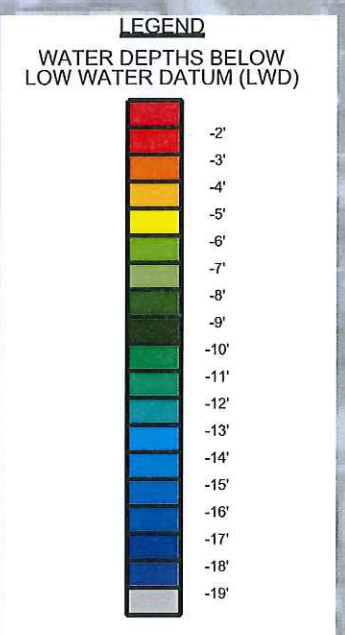
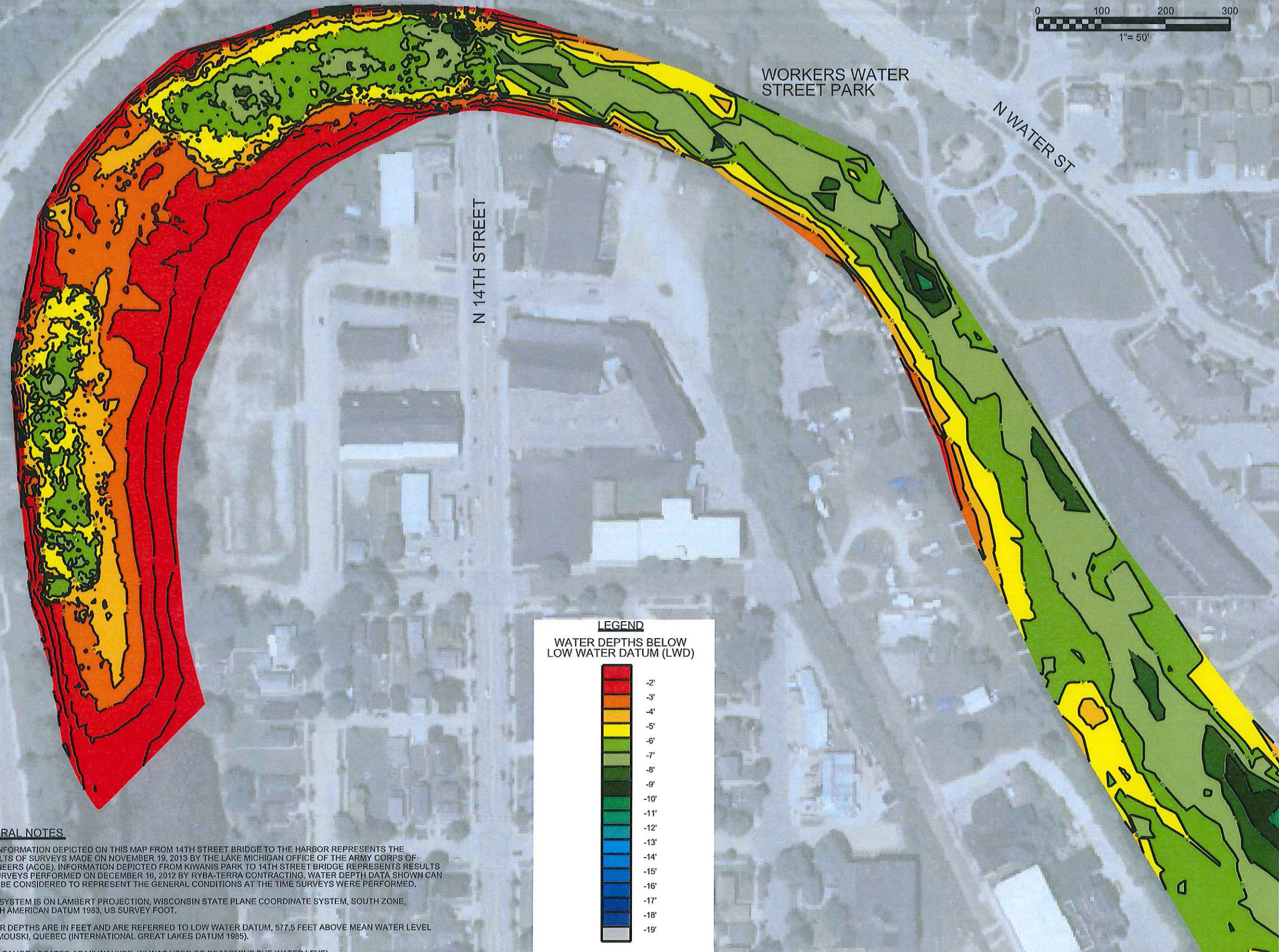
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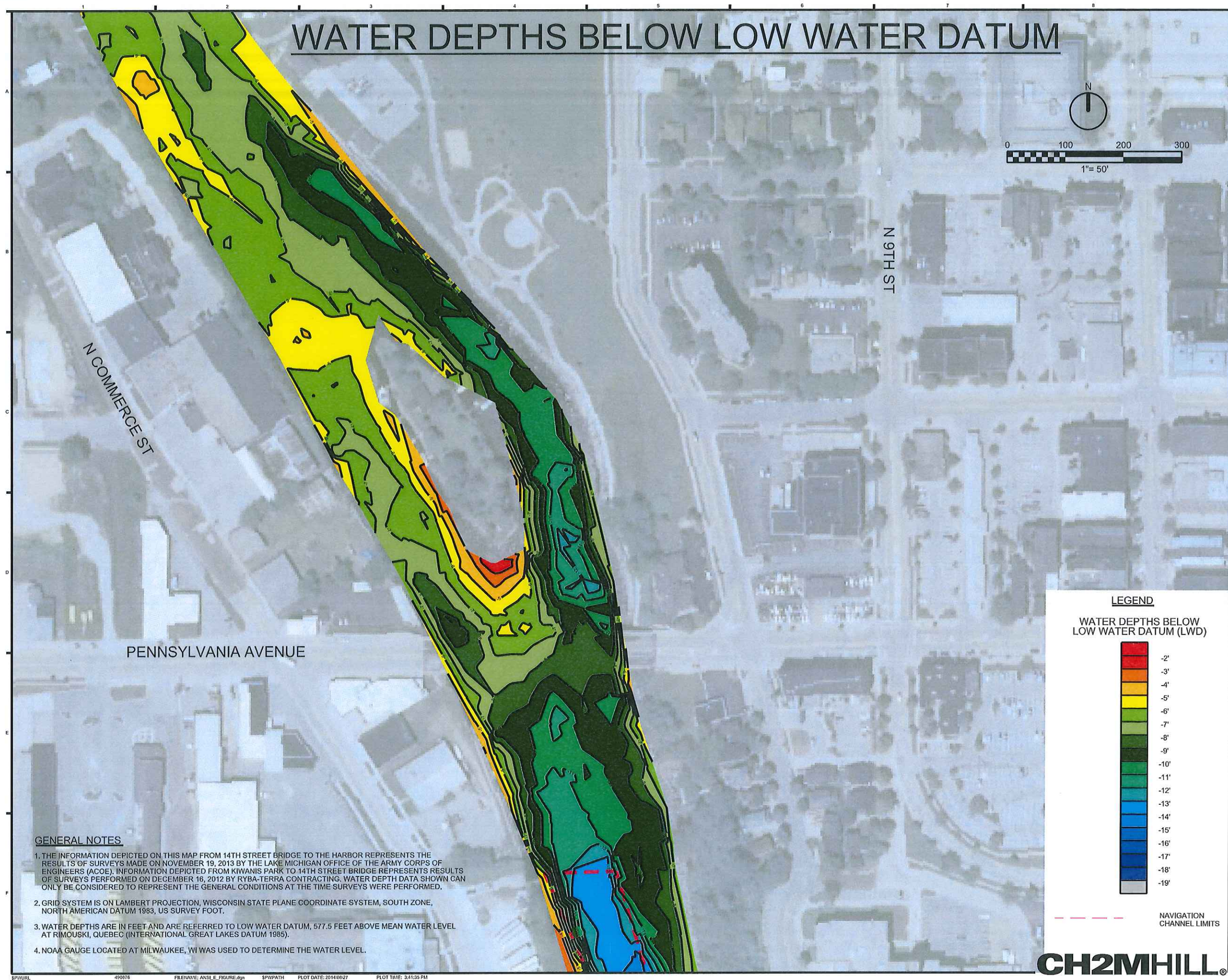
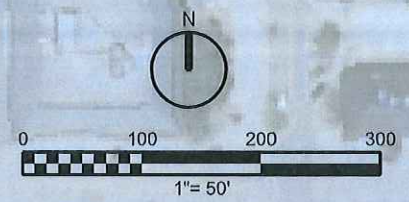


GENERAL NOTES

1. THE INFORMATION DEPICTED ON THIS MAP FROM 14TH STREET BRIDGE TO THE HARBOR REPRESENTS THE RESULTS OF SURVEYS MADE ON NOVEMBER 19, 2013 BY THE LAKE MICHIGAN OFFICE OF THE ARMY CORPS OF ENGINEERS (ACOE). INFORMATION DEPICTED FROM KIWANIS PARK TO 14TH STREET BRIDGE REPRESENTS RESULTS OF SURVEYS PERFORMED ON DECEMBER 16, 2012 BY RYBA-TERRA CONTRACTING. WATER DEPTH DATA SHOWN CAN ONLY BE CONSIDERED TO REPRESENT THE GENERAL CONDITIONS AT THE TIME SURVEYS WERE PERFORMED.
2. GRID SYSTEM IS ON LAMBERT PROJECTION, WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM 1983, US SURVEY FOOT.
3. WATER DEPTHS ARE IN FEET AND ARE REFERRED TO LOW WATER DATUM, 577.5 FEET ABOVE MEAN WATER LEVEL AT RIMOUSKI, QUEBEC (INTERNATIONAL GREAT LAKES DATUM 1985).
4. NOAA GAUGE LOCATED AT MILWAUKEE, WI WAS USED TO DETERMINE THE WATER LEVEL.

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 2014
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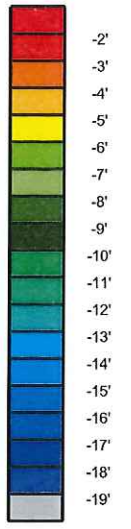
PENNSYLVANIA AVENUE

GENERAL NOTES

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LEGEND

WATER DEPTHS BELOW LOW WATER DATUM (LWD)



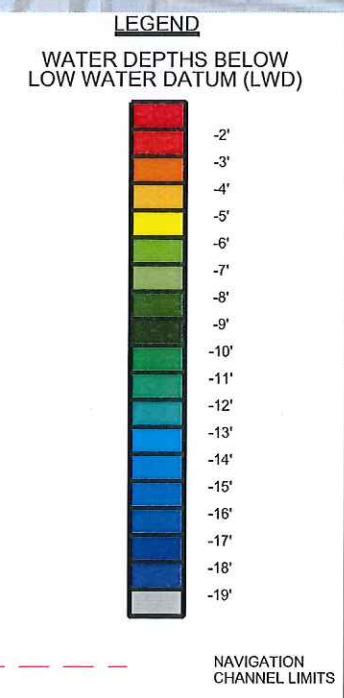
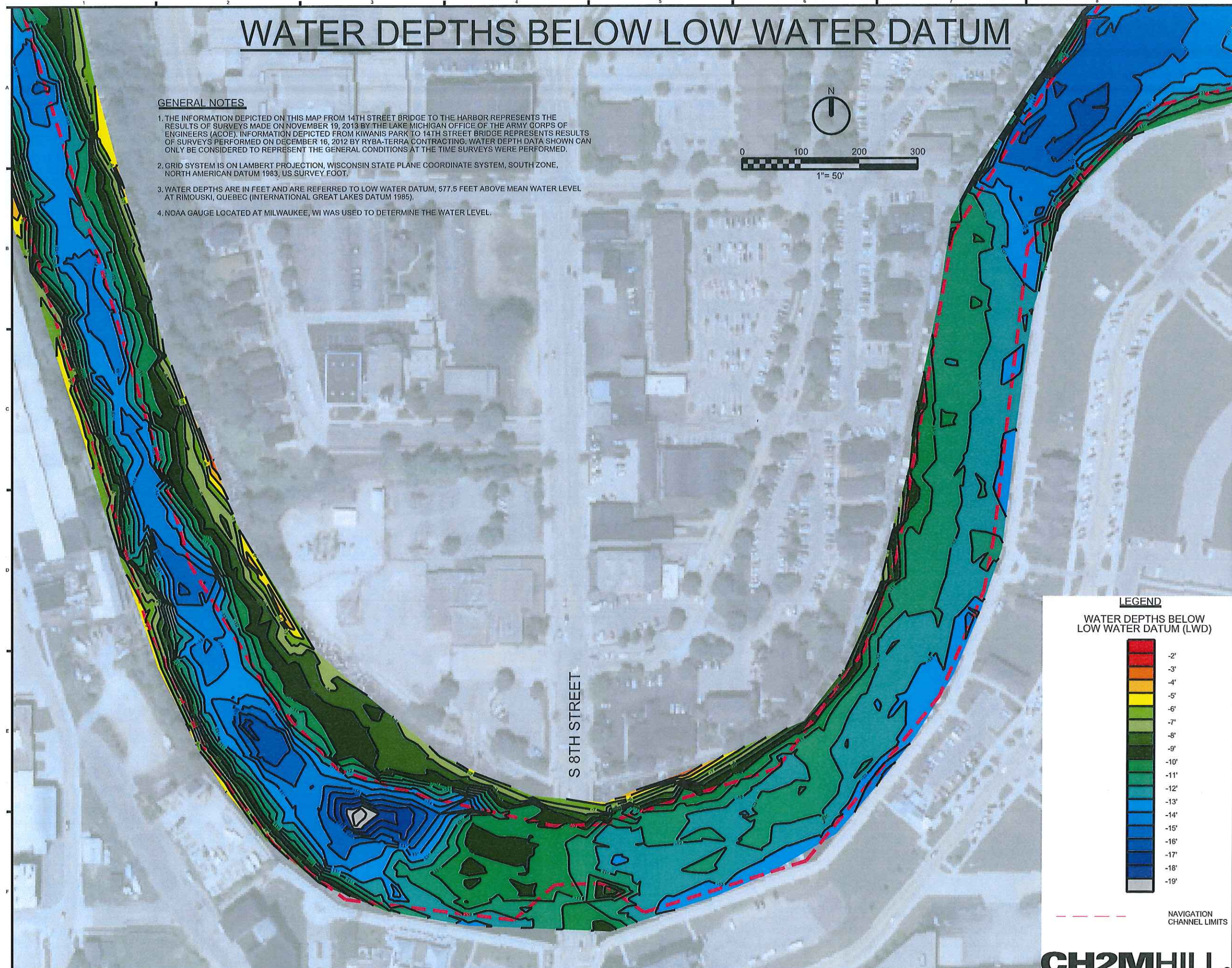
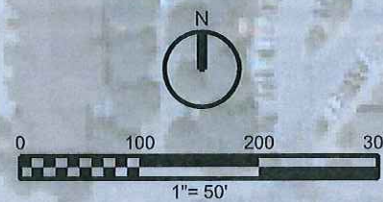
--- NAVIGATION CHANNEL LIMITS

CH2MHILL

WATER DEPTHS BELOW LOW WATER DATUM

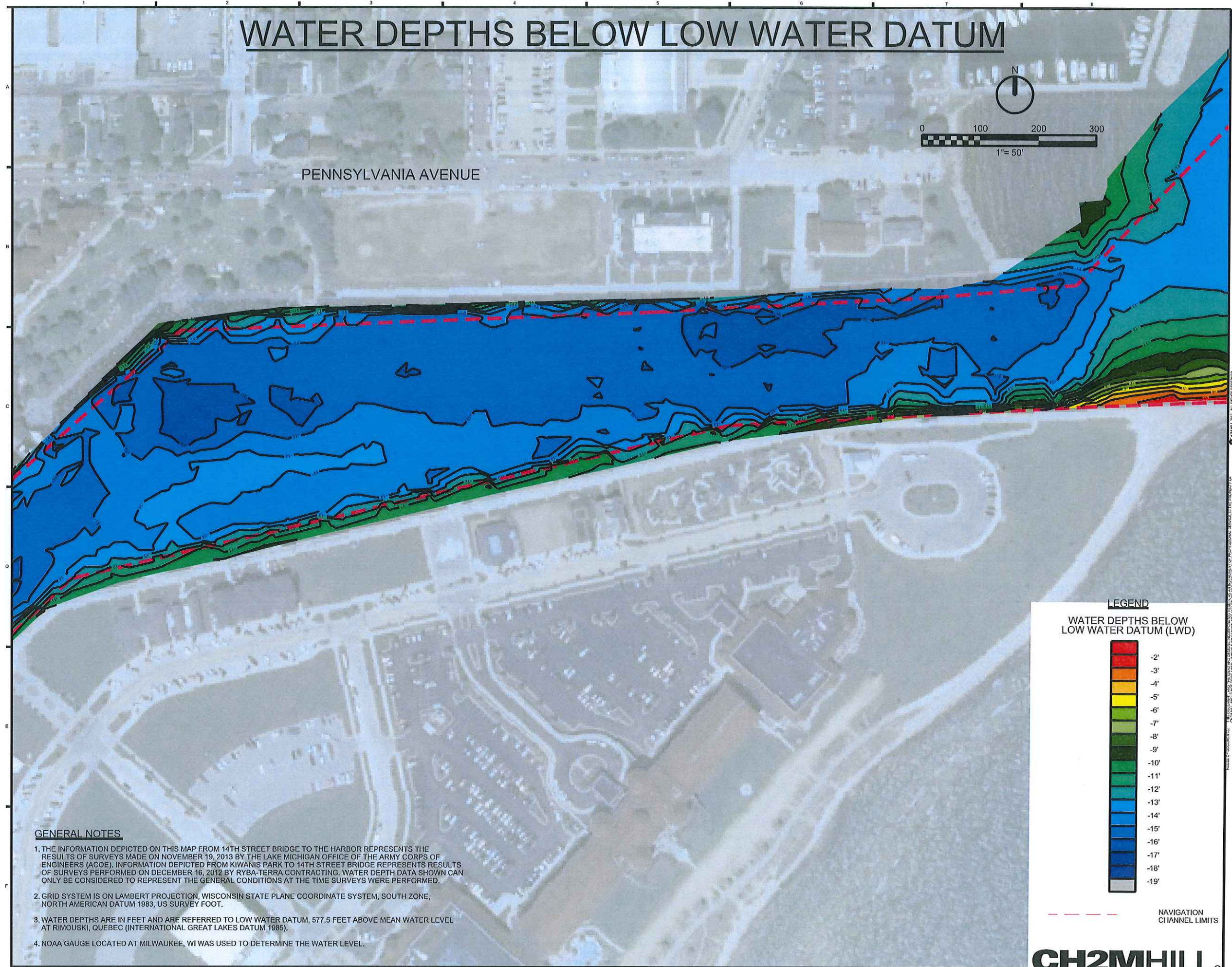
GENERAL NOTES

1. THE INFORMATION DEPICTED ON THIS MAP FROM 14TH STREET BRIDGE TO THE HARBOR REPRESENTS THE RESULTS OF SURVEYS MADE ON NOVEMBER 19, 2013 BY THE LAKE MICHIGAN OFFICE OF THE ARMY CORPS OF ENGINEERS (ACOE). INFORMATION DEPICTED FROM KIWANIS PARK TO 14TH STREET BRIDGE REPRESENTS RESULTS OF SURVEYS PERFORMED ON DECEMBER 16, 2012 BY RYBA-TERRA CONTRACTING. WATER DEPTH DATA SHOWN CAN ONLY BE CONSIDERED TO REPRESENT THE GENERAL CONDITIONS AT THE TIME SURVEYS WERE PERFORMED.
2. GRID SYSTEM IS ON LAMBERT PROJECTION, WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM 1983, US SURVEY FOOT.
3. WATER DEPTHS ARE IN FEET AND ARE REFERRED TO LOW WATER DATUM, 577.5 FEET ABOVE MEAN WATER LEVEL AT RIMOUSKI, QUEBEC (INTERNATIONAL GREAT LAKES DATUM 1985).
4. NOAA GAUGE LOCATED AT MILWAUKEE, WI WAS USED TO DETERMINE THE WATER LEVEL.

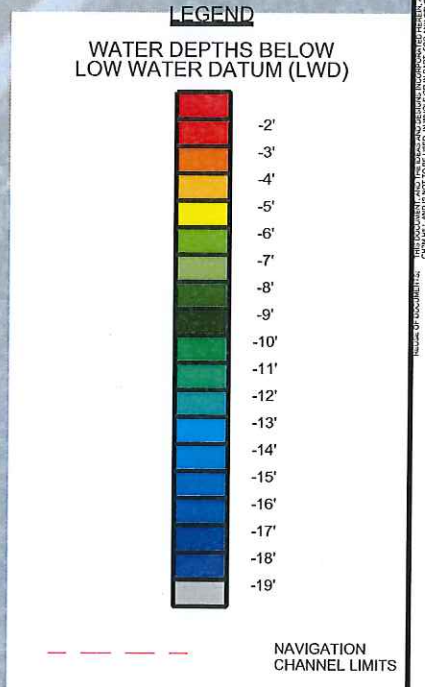
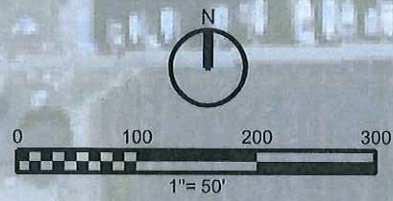


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WATER DEPTHS BELOW LOW WATER DATUM



PENNSYLVANIA AVENUE

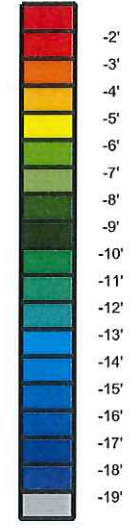


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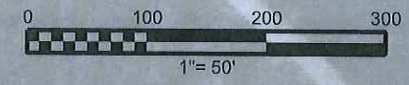
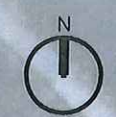
LEGEND

WATER DEPTHS BELOW
LOW WATER DATUM (LWD)

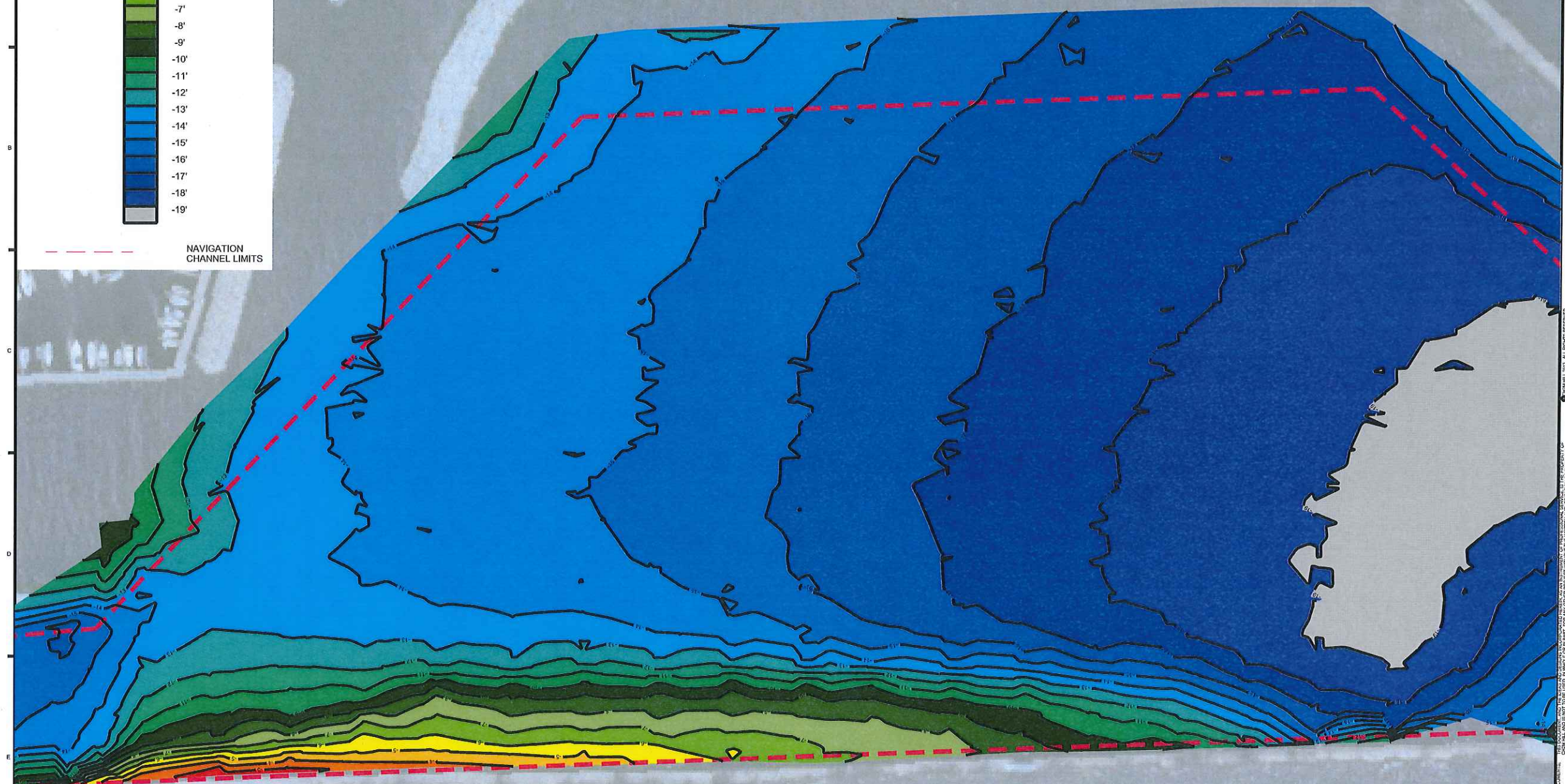


--- NAVIGATION
CHANNEL LIMITS

WATER DEPTHS BELOW LOW WATER DATUM



A
B
C
D
E
F

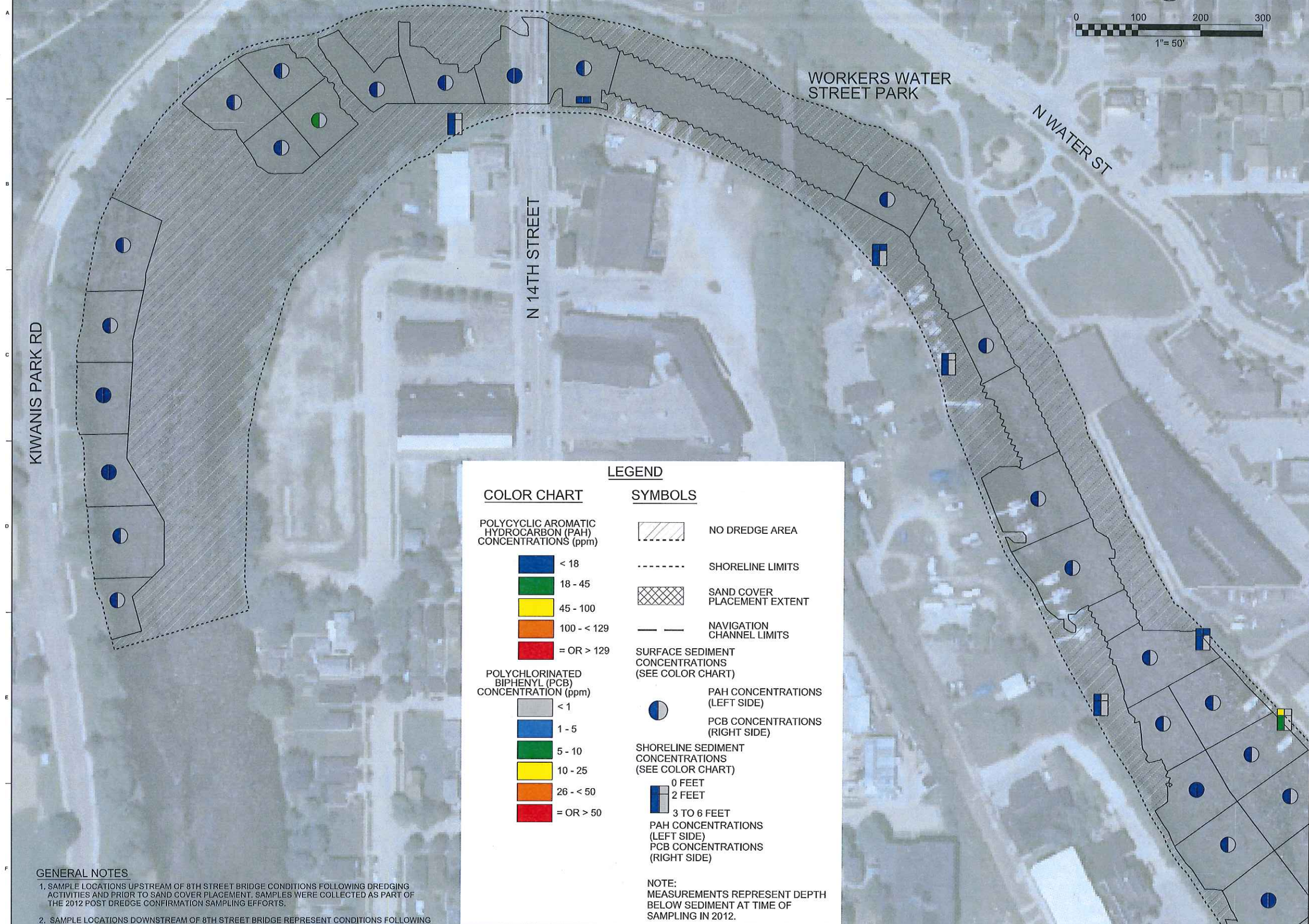
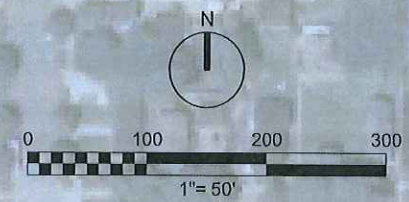


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POST-DREDGE SEDIMENT CONDITIONS



LEGEND

COLOR CHART	SYMBOLS
<p>POLYCYCLIC AROMATIC HYDROCARBON (PAH) CONCENTRATIONS (ppm)</p> <ul style="list-style-type: none"> < 18 18 - 45 45 - 100 100 - < 129 = OR > 129 <p>POLYCHLORINATED BIPHENYL (PCB) CONCENTRATION (ppm)</p> <ul style="list-style-type: none"> < 1 1 - 5 5 - 10 10 - 25 26 - < 50 = OR > 50 	<ul style="list-style-type: none"> NO DREDGE AREA SHORELINE LIMITS SAND COVER PLACEMENT EXTENT NAVIGATION CHANNEL LIMITS <p>SURFACE SEDIMENT CONCENTRATIONS (SEE COLOR CHART)</p> <ul style="list-style-type: none"> PAH CONCENTRATIONS (LEFT SIDE) PCB CONCENTRATIONS (RIGHT SIDE) <p>SHORELINE SEDIMENT CONCENTRATIONS (SEE COLOR CHART)</p> <ul style="list-style-type: none"> 0 FEET 2 FEET 3 TO 6 FEET

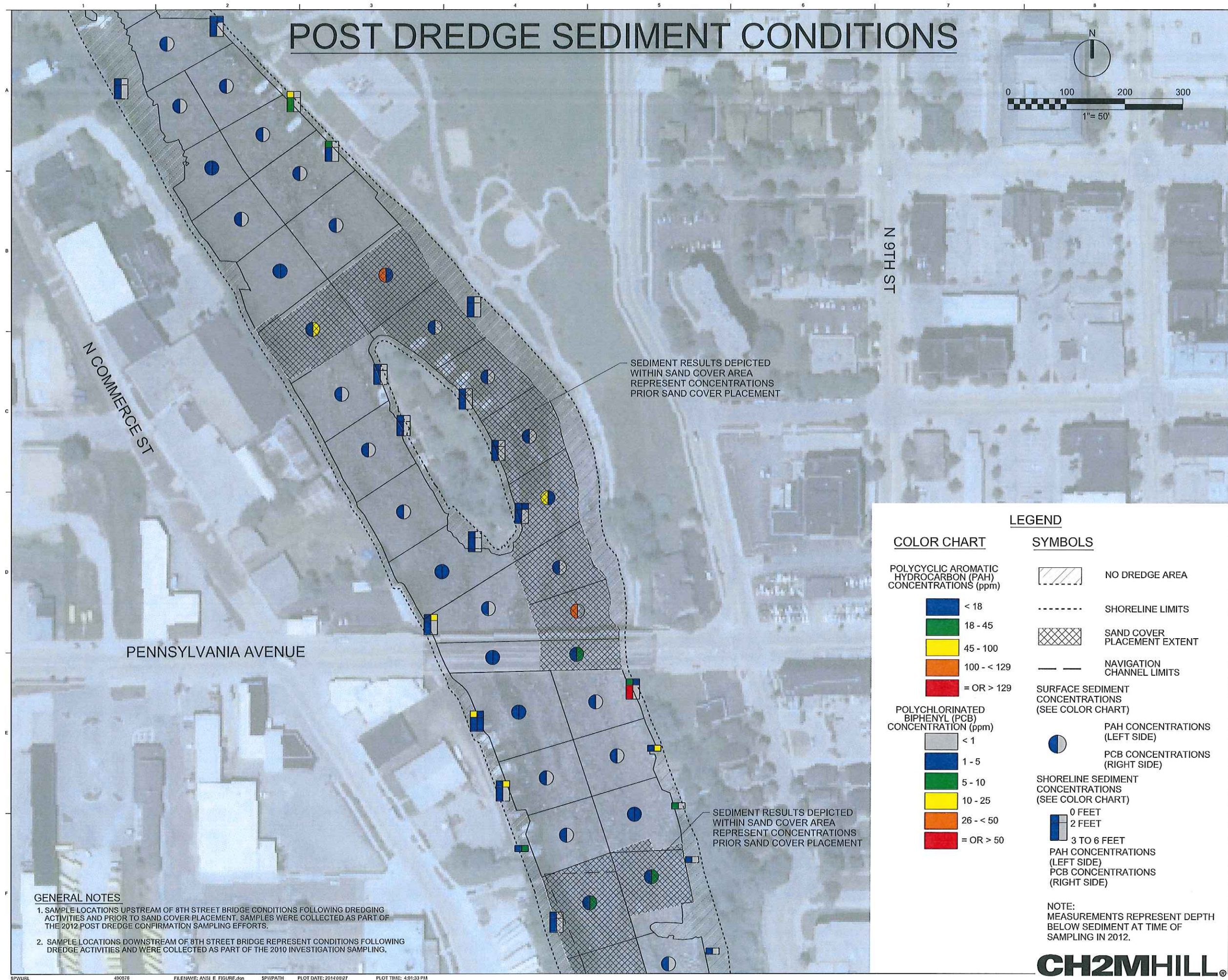
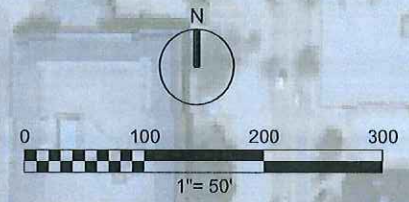
NOTE:
MEASUREMENTS REPRESENT DEPTH BELOW SEDIMENT AT TIME OF SAMPLING IN 2012.

GENERAL NOTES

1. SAMPLE LOCATIONS UPSTREAM OF 8TH STREET BRIDGE CONDITIONS FOLLOWING DREDGING ACTIVITIES AND PRIOR TO SAND COVER PLACEMENT. SAMPLES WERE COLLECTED AS PART OF THE 2012 POST DREDGE CONFIRMATION SAMPLING EFFORTS.
2. SAMPLE LOCATIONS DOWNSTREAM OF 8TH STREET BRIDGE REPRESENT CONDITIONS FOLLOWING DREDGE ACTIVITIES AND WERE COLLECTED AS PART OF THE 2010 INVESTIGATION SAMPLING.

FIGURE OF DOCUMENT: 005-C-9009_490376.dgn
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POST DREDGE SEDIMENT CONDITIONS



COLOR CHART

POLYCYCLIC AROMATIC HYDROCARBON (PAH) CONCENTRATIONS (ppm)

Blue	< 18
Green	18 - 45
Yellow	45 - 100
Orange	100 - < 129
Red	= OR > 129

POLYCHLORINATED BIPHENYL (PCB) CONCENTRATION (ppm)

White	< 1
Blue	1 - 5
Green	5 - 10
Yellow	10 - 25
Orange	26 - < 50
Red	= OR > 50

LEGEND

SYMBOLS	
	NO DREDGE AREA
	SHORELINE LIMITS
	SAND COVER PLACEMENT EXTENT
	NAVIGATION CHANNEL LIMITS
SURFACE SEDIMENT CONCENTRATIONS (SEE COLOR CHART)	
	PAH CONCENTRATIONS (LEFT SIDE)
	PCB CONCENTRATIONS (RIGHT SIDE)
SHORELINE SEDIMENT CONCENTRATIONS (SEE COLOR CHART)	
	0 FEET
	2 FEET
	3 TO 6 FEET
	PAH CONCENTRATIONS (LEFT SIDE)
	PCB CONCENTRATIONS (RIGHT SIDE)

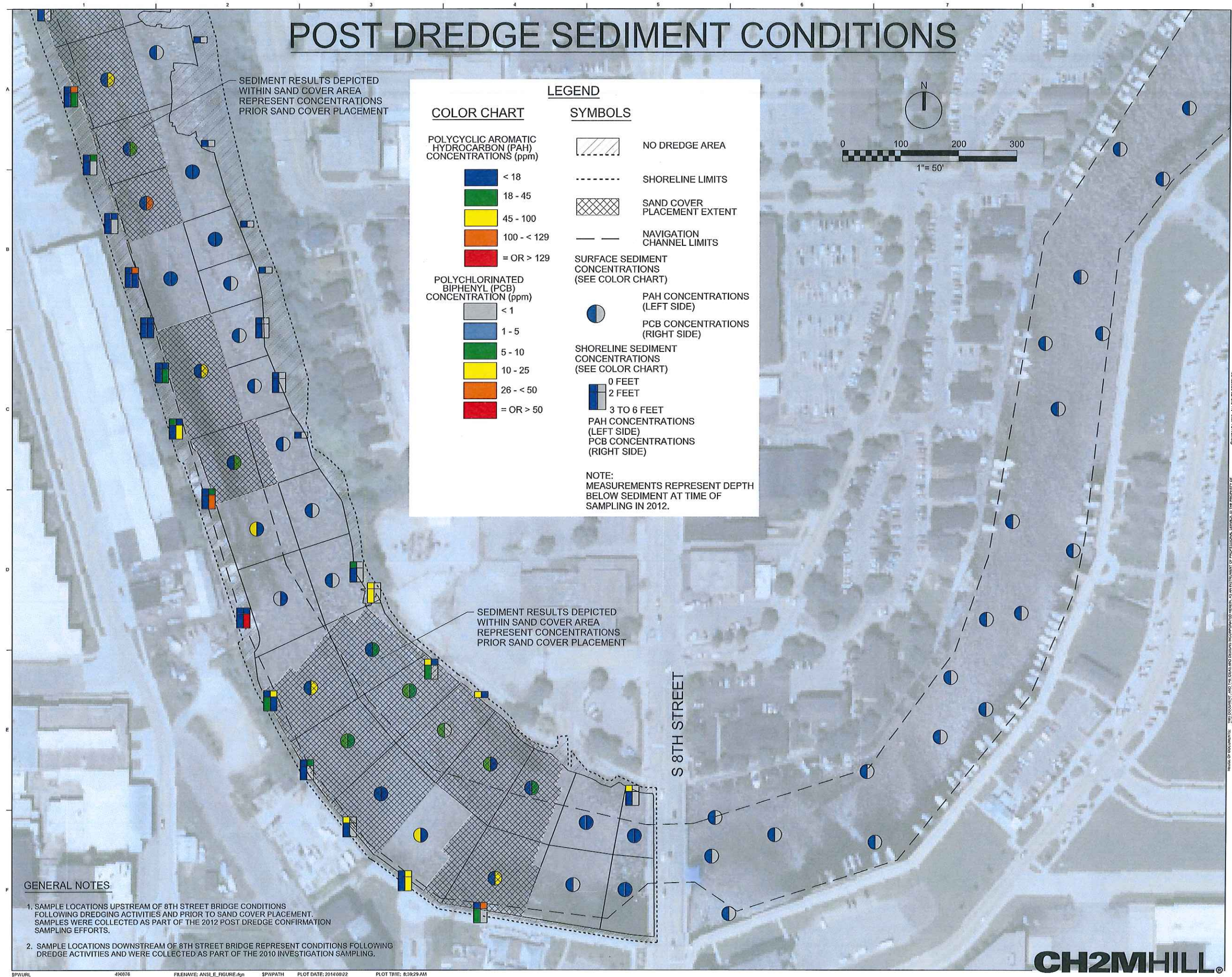
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POST DREDGE SEDIMENT CONDITIONS



SEDIMENT RESULTS DEPICTED WITHIN SAND COVER AREA REPRESENT CONCENTRATIONS PRIOR SAND COVER PLACEMENT

LEGEND

COLOR CHART

POLYCYCLIC AROMATIC HYDROCARBON (PAH) CONCENTRATIONS (ppm)

- < 18
- 18 - 45
- 45 - 100
- 100 - < 129
- = OR > 129

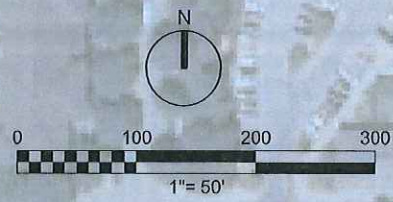
POLYCHLORINATED BIPHENYL (PCB) CONCENTRATION (ppm)

- < 1
- 1 - 5
- 5 - 10
- 10 - 25
- 26 - < 50
- = OR > 50

SYMBOLS

- NO DREDGE AREA
- SHORELINE LIMITS
- SAND COVER PLACEMENT EXTENT
- NAVIGATION CHANNEL LIMITS
- SURFACE SEDIMENT CONCENTRATIONS (SEE COLOR CHART)
- PAH CONCENTRATIONS (LEFT SIDE)
- PCB CONCENTRATIONS (RIGHT SIDE)
- SHORELINE SEDIMENT CONCENTRATIONS (SEE COLOR CHART)
- 0 FEET
- 2 FEET
- 3 TO 6 FEET

NOTE:
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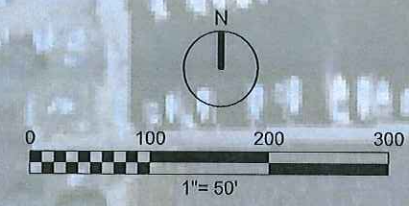


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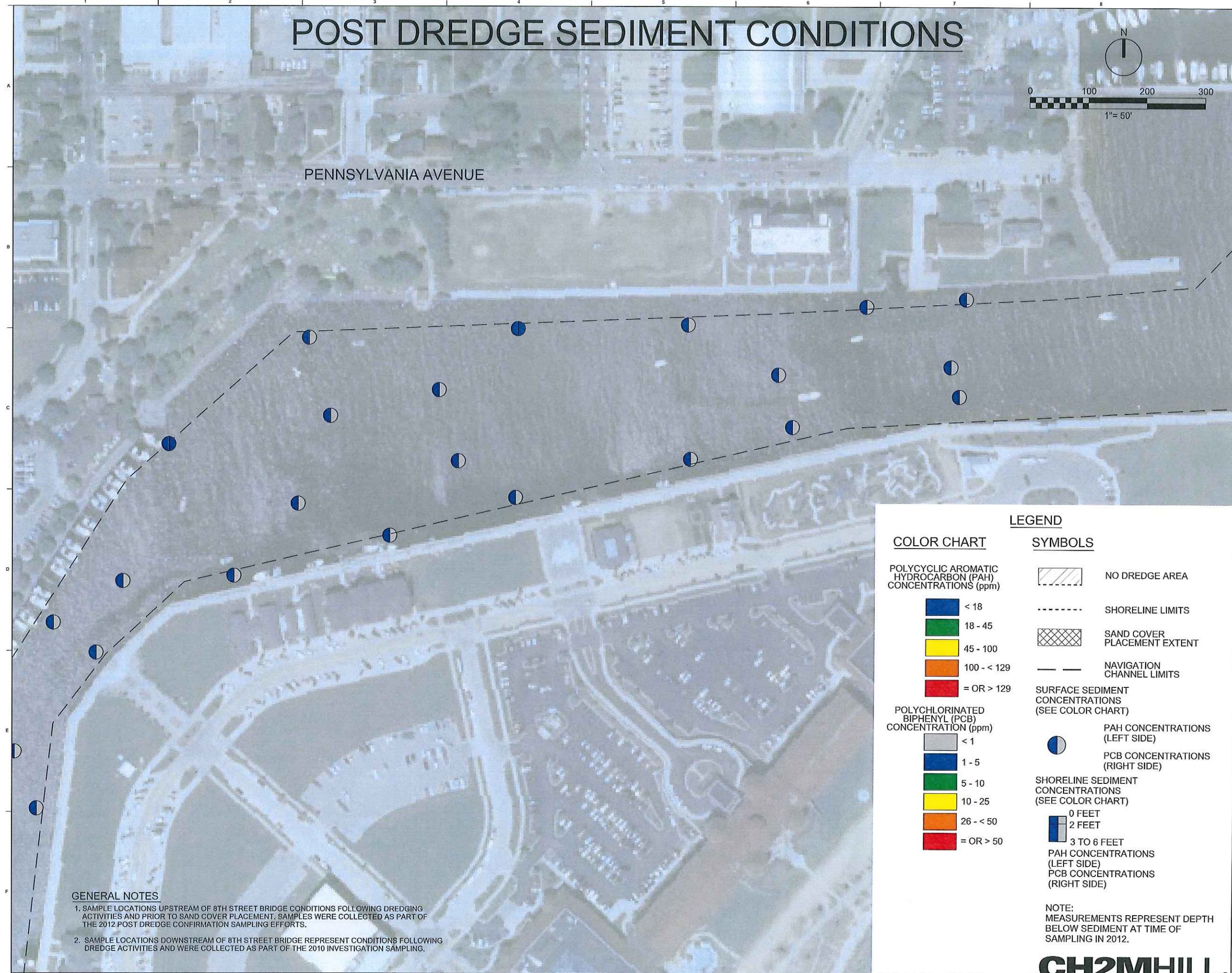
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POST DREDGE SEDIMENT CONDITIONS



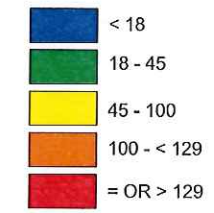
PENNSYLVANIA AVENUE

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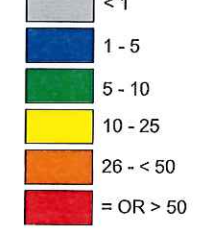


COLOR CHART

POLYCYCLIC AROMATIC HYDROCARBON (PAH) CONCENTRATIONS (ppm)



POLYCHLORINATED BIPHENYL (PCB) CONCENTRATION (ppm)



LEGEND

SYMBOLS

- NO DREDGE AREA
- SHORELINE LIMITS
- SAND COVER PLACEMENT EXTENT
- NAVIGATION CHANNEL LIMITS
- SURFACE SEDIMENT CONCENTRATIONS (SEE COLOR CHART)**
- PAH CONCENTRATIONS (LEFT SIDE)
- PCB CONCENTRATIONS (RIGHT SIDE)
- SHORELINE SEDIMENT CONCENTRATIONS (SEE COLOR CHART)**
- 0 FEET
- 2 FEET
- 3 TO 6 FEET
- PAH CONCENTRATIONS (LEFT SIDE)
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Appendix C

State of Wisconsin Administrative Code for Dredging Activities

Chapter NR 347

SEDIMENT SAMPLING AND ANALYSIS, MONITORING PROTOCOL AND DISPOSAL CRITERIA FOR DREDGING PROJECTS

NR 347.01	Purpose and policy.
NR 347.02	Applicability.
NR 347.03	Definitions.
NR 347.04	Permits, approvals and reviews required.

NR 347.05	Preliminary application and analytical requirements.
NR 347.06	Sampling and analysis.
NR 347.07	Review procedures and review criteria.
NR 347.08	Monitoring, reporting and enforcement.

Note: Chapter NR 347 as it existed on February 28, 1989 was repealed and new chapter NR 347 was created effective March 1, 1989.

NR 347.01 Purpose and policy. (1) The purpose of this chapter is to protect the public rights and interest in the waters of the state by specifying definitions, sediment sampling and analysis requirements, disposal criteria and monitoring requirements for dredging projects regulated under one or more of the following statutes: s. 30.20, Stats., which requires a contract or permit for the removal of material from the beds of waterways; s. 281.41, Stats., which establishes a wastewater treatment facility plan approval program; ch. 289, Stats., which establishes the solid waste management program; ch. 291, Stats., which establishes the hazardous waste program; and ch. 283, Stats., which establishes the Wisconsin pollutant discharge elimination system (WPDES) program.

(2) It is department policy to encourage reuse of dredged material and to minimize environmental harm resulting from a dredging project.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; corrections in (1) made under s. 13.93 (2m) (b) 7., Stats., Register January 2002 No. 553.

NR 347.02 Applicability. The provisions of this chapter apply to the removal and disposal of material from the beds of waterways except where exempted by statute.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89.

NR 347.03 Definitions. (1) "Analyte" means the chemical substance or physical property being tested for in a sample.

(2) "Bathymetry" means the measurement of depth of water in lakes or rivers to determine lake or river bed topography.

(3) "Beach nourishment disposal" means the disposal of dredged material on the beaches or in the water landward from the ordinary high-water mark of Lakes Michigan and Superior for the purpose of adding, replenishing or preventing erosion of beach material.

(4) "Bioassay" means a method for determining the acute or chronic toxicity of a material by studying its effects on test organisms under controlled conditions.

(5) "Bulk sediment analysis" means a test to measure the total concentration of a specific constituent in a sample being analyzed.

(6) "Carriage water" means the water portion of a slurry of water and dredged material.

(7) "Carriage water return flow" means the carriage water which is returned to a receiving water after separation of the dredged material from the carriage water in a disposal, rehandling or treatment facility.

(8) "Connecting waterways" means a portion of a navigable lake or stream which is directly joined to Lake Michigan or Lake Superior and which contains a navigation channel providing access for commercial or recreational watercraft to Lake Michigan or Lake Superior.

(9) "Contamination" means a solid, liquid or gaseous material, microorganism, noise, heat, odor, or radiation, alone or in any combination, that may harm the quality of the environment in any way.

(10) "Contract" means a binding written agreement between the department and a dredging applicant authorizing the removal of material from the bed of a natural navigable lake or outlying water.

(11) "Department" means the department of natural resources

(12) "Disposal facility" means a site or facility for the disposal of dredged material.

(13) "Dredged material" means any material removed from the bed of any waterway by dredging.

(14) "Dredging" means any part of the process of the removal of material from the beds of waterways; transport of the material to a disposal, rehandling or treatment facility; treatment of the material; discharge of carriage or interstitial water; and disposal of the material.

(15) "Grain size analysis" means a method to determine dredged material and disposal site sediment particle size distribution.

(16) "Hazardous waste", as defined in s. 291.01 (7), Stats., means any solid waste identified as a hazardous waste under ch. NR 661.

(17) "Interstitial water" means water contained in the interstices or voids of soil or rock in the dredged material.

(18) "Limit of detection" means the lowest concentration level that can be determined to be statistically different from a blank sample for that analytical test method and sample matrix.

(19) "Limit of quantitation" (LOQ) means the concentration of an analyte at which one can state with a stated degree of confidence for that analytical test method and sample matrix that an analyte is present at a specific concentration in the sample tested.

(20) "Parent material" means the native unconsolidated material which overlies the bedrock.

(21) "PCBs" means those materials defined in s. 299.45 (1) (a), Stats.

(22) "Particle size distribution" means a cumulative frequency distribution or frequency distribution of percentages of particles of specified diameters in a sample.

(23) "Rehandling facility" means a temporary storage site or facility used during the transportation of dredged material to a treatment or disposal facility.

(24) "Treatment facility" in this chapter means a natural or artificial confinement facility used for the separation of dredged material solids from the interstitial or carriage water.

(25) "Upland disposal" means the disposal of dredged materials landward from the ordinary high-water mark of a waterway or waterbody.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; correction in (16) made under s. 13.93 (2m) (b) 7., Stats., Register, October, 1995, No. 478; correction in (16) made under s. 13.93 (2m) (b) 7., Stats., Register May 2013 No. 689.

NR 347.04 Permits, approvals and reviews required. (1) The following are the permit, approval and review requirements for dredging projects:

(a) Except where otherwise provided by law, all private and municipal dredging projects require a permit or contract under s.

30.20, Stats., and ch. NR 346. Dredging in portions of the Mississippi, St. Croix and Black rivers by the U.S. army corps of engineers is governed by s. 30.202, Stats.

(b) All dredging projects require review under ch. 289, Stats., and chs. NR 500 to 520 for disposal of dredged material under the solid waste management program.

(c) All dredging projects shall be reviewed under ss. 1.11 and 23.11 (5), Stats., and ch. NR 150 for compliance with the Wisconsin environmental policy act.

(d) All federally funded, permitted or sponsored dredging projects require water quality certification under ss. 281.11 to 281.36 (12) and 283.001, Stats., and ch. NR 299.

(e) A Wisconsin pollutant discharge elimination system (WPDES) permit under ch. 283, Stats., is required for dredging projects with carriage water return flows to surface water or groundwater.

(f) Plan approval under s. 281.41, Stats., is required for dredging projects which include a dredged material treatment facility.

(g) Sites and facilities for the disposal of hazardous waste and PCBs require review under subch. IV of ch. 291, Stats., and s. 299.45, Stats., and chs. NR 500 to 520 and 660 to 670.

(2) The project application process shall be coordinated by the department. Except as otherwise provided by law, decisions on all applicable department approvals, permits, contracts and licenses relating to a dredging project shall be made concurrently and with the decision on:

(a) Water quality certification under ch. NR 299 for all federally funded, permitted or sponsored projects, or

(b) Permit or contract under s. 30.20, Stats., and ch. NR 346 for all other projects.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; corrections in (1) made under s. 13.93 (2m) (b) 7., Stats., Register, October, 1995, No. 478; corrections in (1) (b), (d), (e), (f), and (g) made under s. 13.93 (2m) (b) 7., Stats., Register January 2002 No. 553; corrections in (1) (d), (g) made under s. 13.93 (2m) (b) 7., Stats., Register May 2013 No. 689.

NR 347.05 Preliminary application and analytical requirements. (1) Prior to submission of a formal application, anyone seeking to remove material from the beds of waterways shall provide the department with preliminary information including:

(a) Name of waterbody and location of project;

(b) Volume of material to be dredged;

(c) Brief description of dredging method and equipment;

(d) Brief description of proposed disposal method and location and, if a disposal facility is to be used, size of the disposal facility;

(e) Any previous sediment sampling (including field observations) and analysis data from the area to be dredged or from the proposed disposal site;

(f) Copy of a map showing the area to be dredged, the depth of cut, the specific location of the proposed sediment sampling sites and the bathymetry of the area to be dredged; and

(g) Anticipated starting and completion dates of the proposed project.

(2) An initial evaluation shall be conducted by the department within 30 business days after receipt of the information under sub. (1) to determine if there is reason to believe that the material proposed to be dredged is contaminated. This initial evaluation shall be used by the department in specifying sediment sampling and analysis requirements to the applicant under s. NR 347.06 and shall be accomplished with existing data. Factors which shall be considered by the department in its evaluation of the dredging site and, if appropriate the disposal site, include, but are not limited to, the following:

(a) Potential that contaminants may be present. Potential routes that may have introduced contaminants into the dredging site shall be identified by examining appropriate maps, aerial photographs, or other graphic materials that show surface water-

courses and groundwater flow patterns, surface relief, proximity to surface and groundwater movement, private and public roads, location of buildings, agricultural land, municipal and industrial sewage and stormwater outfalls, etc., or by making supplemental field inspections.

(b) Previous tests of the material at the dredging site or from other projects in the vicinity when there are similar sources and types of contaminants, water circulation and stratification, accumulation of sediments, general sediment characteristics, and potential for impact on the aquatic environment, as long as nothing is known to have occurred which would render the comparisons inappropriate.

(c) The probability of past introduction of contaminants from land runoff.

(d) Spills of toxic or hazardous substances.

(e) Introduction of contaminants from point sources.

(f) Source and previous use of materials used or proposed to be used as fill.

(g) Natural deposits of minerals and other natural substances.

(h) Any other relevant information available to the department.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89.

NR 347.06 Sampling and analysis. Upon completion of the initial evaluation, the department shall establish sampling and analysis requirements.

(1) **EXCEPTION.** Except as provided in subs. (3) (a) and (6), the applicant shall collect and analyze data on sediments to be dredged in the manner outlined in this section.

(2) **CORRECT METHODS.** Unless otherwise specified, sampling, sample handling and sample analysis to demonstrate compliance with this section shall be in accordance with methods from applicable sources enumerated in ch. NR 149.

(3) **NUMBER OF SAMPLES.** (a) Sediment sampling may be waived by the department if it determines from its review of available information under s. NR 347.05 (2) that sediment contamination is unlikely.

(b) If available information is either insufficient to determine the possibility for sediment contamination, or shows a possibility for sediment contamination, the department shall require the applicant to collect sufficient samples to describe the chemical, physical and biological properties of the sediment. The exact number and location of sediment samples required and analyses to be conducted shall be specified by the department, in consultation with the applicant, based on the initial evaluation and on other factors including, but not limited to, the potential for possibility of contamination, volume and aerial extent of material to be dredged, depth of cut and proposed method of disposal.

(c) For a project involving the disposal of dredged material at an upland disposal site, the department may require samples to be taken from the proposed disposal site and analyzed for parameters found to be elevated in the dredged material sediment samples. The number and location of disposal site samples required shall be specified by the department based on the size and other characteristics of the site.

(d) For a project to be conducted in the Great Lakes with beach nourishment disposal, at least one sample every 250 linear feet of beach with a minimum of 2 samples shall be taken from the proposed beach nourishment disposal site and analyzed for particle size and color. Core or grab samplers may be used.

(4) **METHOD OF TAKING SAMPLES.** (a) All samples shall be taken with a core sampler except as provided in sub. (3) (d). The department may approve other sampling methods if it finds them to be appropriate.

(b) All sampling equipment shall be properly cleaned prior to and following each sample collection.

(c) Samples collected for PCB, pesticide and other organic analyses shall be collected and processed using metallic (stainless

steel preferred) liners, tubs, spoons and spatulas. Samples collected for other chemical analysis, including heavy metals, shall be collected and processed using non-metallic liners, tubs, spoons and spatulas.

(d) Core samples from the dredging site shall be taken to the proposed dredging depth plus 2 feet.

(e) Core samples shall be visually inspected for the existence of strata formation, and a written description including position, length, odor, texture and color of the strata shall be provided to the department.

(5) **SAMPLE HANDLING AFTER COLLECTION AND PRIOR TO ANALYSIS.** Sample handling and storage prior to analysis shall be in accordance with the maximum holding times and container types given in table F of ch. NR 219. Samples shall be preserved at the time of collection by cooling to 4°C.

(6) **ANALYSES TO BE PERFORMED ON SEDIMENT SAMPLES.** Analyses shall be done in accordance with methods from applicable sources enumerated in ch. NR 149. Analyses submitted to the department under this chapter shall be done by a laboratory certified or registered under ch. NR 149.

(a) Samples shall be analyzed from each distinct layer observed in the material to be dredged. If no strata formation exists, core samples shall be divided into 2-foot segments, and each segment shall be analyzed for the required chemicals and characteristics. For cores extending into parent material, analysis of only the top 2-foot segment of parent material is required. The department may approve other subsampling methods if it finds them to be appropriate.

(b) All samples shall be analyzed for those parameters listed in table 1 unless waived by the department as provided in par. (d). Elutriate testing may be required for all chemicals listed in Table 1 unless waived by the department as provided in par. (d).

(c) If previous sampling data or other adequate available information indicates the possibility of contamination by chemicals not listed in table 1, the department may require analysis for those chemicals.

(d) If previous sampling data or other adequate available information demonstrates that the possibility of contamination is negligible, analysis for any chemical may be waived, in writing, by the department.

(e) The department may require additional samples and analyses as specified by law or for other appropriate reasons.

TABLE 1
ANALYSES TO BE PERFORMED ON SEDIMENT SAMPLES

	GREAT LAKES	INLAND WATERS
PCB (Total)	X	X
Total 2,3,7,8 TCDD	X	X
Total 2,3,7,8 TCDF	X	X
	GREAT LAKES	INLAND WATERS
Aldrin	X	X
Dieldrin	X	X
Chlordane	X	X
Endrin	X	X
Heptachlor	X	X
Lindane	X	X
Toxaphene	X	X
DDT	X	X
DDE	X	X
Arsenic	X	X
Barium	X	X
Cadmium	X	X
Chromium	X	
Copper	X	X
Cyanide	X	
Iron	X	
Lead	X	X
Manganese	X	
Mercury	X	X
Nickel	X	X
Selenium	X	X
Zinc	X	X
Oil and Grease	X	X
NO ² , NO ³ , NH ³ -N, TKN	X	X
Total P	X	X
Grain-size	X	X

Percent Solids	X	X
Total Organic Carbon	X	X
Moisture Content	X	X
Settleability (if return water)	X	X

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; am. (5) and (6) (intro.), Register, November, 1992, No. 443, eff. 12-1-92.

NR 347.07 Review procedures and review criteria.

(1) When sediment sampling and analyses have been completed, the applicant shall submit a copy of the testing report to the department. This report shall include raw data for all analyses, a map of the project area showing the specific locations of sediment sampling sites and the name and address of the laboratory which performed the tests. All testing and quality control procedures shall be described and analytical methods, detection limits and quantification limits shall be identified.

(2) The department shall review the information submitted under sub. (1) within 30 business days after receipt and determine the applicable statutory and administrative rule provisions and any additional information required from the applicant under this section.

(3) Based on the submitted testing report the department may after consultation with the applicant require additional sediment sampling and analyses when there is evidence of contamination.

(4) For projects in the Great Lakes involving beach nourishment disposal, grain-size analysis results of the proposed dredged material and the beach shall be compared by the department.

(a) The department may allow beach nourishment disposal if:

1. The average percentage of silt plus clay (material passing a #200 sieve or less than .074 mm dia.) in the dredged material does not exceed the average percentage of silt plus clay in the existing beach by more than 15% and the color of the dredged material does not differ significantly from the color of the beach material.

Note: For example, if the silt plus clay content of the existing beach is 10%, suitable dredged material must have a silt plus clay content of less than 25%.

2. The criteria of any general permit regulating wastewater discharges under the Wisconsin pollutant discharge elimination system is not exceeded.

(5) For all projects where upland disposal is required or planned, the results of sediment sampling and analysis shall be compared by the department to the solid waste disposal standards and criteria specified in chs. NR 500 to 520.

(6) If the bulk sediment analysis criteria in sub. (4) is exceeded, the applicant shall have the option of demonstrating to the department through use of bioassay, or other methods approved by the department, that the dredging and sediment disposal operations will have minimum effects on the environment.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; correction in (5) made under s. 13.93 (2m) (b) 7., Stats., Register, October, 1995, No. 478.

NR 347.08 Monitoring, reporting and enforcement.

(1) SURVEILLANCE. (a) The permittee shall contact the department 5 business days prior to the commencement of dredging to provide an opportunity for the department to review all required

environmental safeguards to ensure they are in place and operable.

(b) The department may inspect the dredging project at any time during operation to determine whether requirements of permits and approvals are being met or to conduct effluent sampling.

(2) MONITORING. (a) For those projects authorized in part by a WPDES permit, monitoring, analyses and reporting shall be performed as specified in the WPDES permit.

(b) For all other projects, monitoring, analyses and reporting shall be performed as specified in ss. NR 347.06 (2) and 347.07 (1).

(c) Project characteristics to be monitored may include, but are not limited to, carriage water return flow, total suspended solids, dissolved oxygen concentrations, effluent and receiving water temperatures, receiving stream flow rates, effluent ammonia-nitrogen concentrations, and pH.

(3) SUSPENSION OF WORK. If the department determines that project performance is not in compliance with permit or contract conditions, the permittee shall suspend work upon written notification from the department. This shall be a condition of any permit or contract issued by the department. The permittee shall be accorded an opportunity for hearing in accordance with s. 227.51 (3), Stats. The issuance of a suspension order under this subsection shall not limit other enforcement actions or penalties. The department and permittee shall analyze operational deficiencies and the department shall prescribe changes necessary to bring project operation into conformance with permit or contract conditions.

(4) PENALTIES. (a) Each violation of the conditions of a permit or contract issued under s. 30.20, Stats., or this chapter, may result in a forfeiture of not less than \$100 nor more than \$10,000 for the first offense and shall forfeit not less than \$500 nor more than \$10,000 upon conviction of the same offense a second or subsequent time. The permit or contract may be rescinded and appropriate restoration orders may be issued as authorized by ss. 23.79, 30.03, 30.12, 30.15, 30.20, 30.292, 30.294 and 30.298, Stats.

(b) The enforcement provisions of s. 283.91, Stats., shall apply to any violations of WPDES permits associated with dredging projects.

(c) The enforcement provisions of ss. 289.97 and 299.97, Stats., and chs. NR 500 to 520 shall apply to violations of solid waste management approvals for this chapter.

(d) The enforcement provisions of ss. 291.95 and 291.97, Stats., shall apply to violations of any hazardous waste approvals for disposal activities associated with dredging projects authorized by this chapter.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; corrections in (4) made under s. 13.93 (2m) (b) 7., Stats., Register, October, 1995, No. 478; corrections in (4) (b) to (d) made under s. 13.93 (2m) (b) 7., Stats., Register January 2002 No. 553.

Appendix D

Letters of Support



October 27, 2014

Ms. April Marcangeli, AOC Coordinator
Wisconsin Department of Natural Resources
1155 Pilgrim Rd
Plymouth, WI 53073

Dear Ms. Marcangeli:

The City of Sheboygan is pleased to join the Wisconsin Department of Natural Resources (WDNR) in initiating the process to remove the Restrictions on Dredging Beneficial Use Impairment (BUI) from the Sheboygan River Area of Concern (AOC).

The Sheboygan River AOC community has partnered with many local, state and federal agencies, non-governmental organizations, business groups, community leaders, and volunteers over the past several years to clean up toxic sediments in the AOC.

In 2010, the EPA selected the Sheboygan River AOC as a priority AOC focused on BUI removal and since then four dredging projects have effectively removed over 400,000 cubic yards of contaminated sediment from the river. These included two Superfund projects, a Great Lakes Legacy Act dredging project, and a navigational dredging project designed by the Army Corps of Engineers. These projects have greatly enhanced usage of the Sheboygan River from a navigational standpoint.

The goals for removing contamination and achieving public navigational depths set out by the community have been met. We concur that the dredging restrictions impairment has been adequately addressed and we are prepared to celebrate the removal of this BUI.

We appreciate all that WDNR, EPA, and many partners have done to achieve this goal.

Sincerely,

Michael Vandersteen
Mayor

OFFICE OF MAYOR

CITY HALL
828 CENTER AVE., SUITE 301
SHEBOYGAN, WI
53081-4495

920/459-3317
FAX 920/459-0256



SHEBOYGAN COUNTY

Adam N. Payne
County Administrator

September 14, 2014

Ms. April Marcangeli, AOC Coordinator
Wisconsin Department of Natural Resources
1155 Pilgrim Road
Plymouth, WI 53073

Dear Ms. Marcangeli,

Sheboygan County supports the Wisconsin Department of Natural Resources (WDNR) efforts to remove the Restrictions on Dredging Beneficial Use Impairment (BUI) from the Sheboygan River Area of Concern (AOC).

Many local, state and federal agencies, non-governmental organizations, business groups, community leaders, and volunteers have partnered over the past several years to clean up toxic sediments in the AOC.

In 2010, the EPA selected the Sheboygan River AOC as a priority AOC focused on BUI removal and since then four dredging projects have effectively removed over 400,000 cubic yards of contaminated sediment from the river. These included two Superfund projects, a Great Lakes Legacy Act dredging project, and a navigational dredging project designed by the Army Corps of Engineers.

The goals for removing contamination and achieving public navigational depths set out by the community have been met. We concur that the dredging restriction impairment has been adequately addressed.

We appreciate all that WDNR, EPA, and the many other partners have done to help achieve this goal, and we're proud to be part of such a successful team.

Sincerely,

Adam Payne, County Administrator

cc: Roger TeStroete, Sheboygan County Board Chairman
Aaron Brault, Sheboygan County Planning & Conservation Director



Improving the Health of our Rivers and Lakes

September 8, 2014

Ms. April Marcangeli, AOC Coordinator
Wisconsin Department of Natural Resources
1155 Pilgrim Rd
Plymouth, WI 53073

Dear Ms. Marcangeli:

The Sheboygan River Basin Partnership is pleased to join the Wisconsin Department of Natural Resources (WDNR) in initiating the process to remove the Restrictions on Dredging Beneficial Use Impairment (BUI) from the Sheboygan River Area of Concern (AOC).

The Sheboygan River AOC community has partnered with many local, state and federal agencies, non-governmental organizations, business groups, community leaders, and volunteers over the past several years to clean up toxic sediments in the AOC.

In 2010, the EPA selected the Sheboygan River AOC as a priority AOC focused on BUI removal and since then four dredging projects have effectively removed over 400,000 cubic yards of contaminated sediment from the river. These included two Superfund projects, a Great Lakes Legacy Act dredging project, and a navigational dredging project designed by the Army Corps of Engineers.

The goals for removing contamination and achieving public navigational depths set out by the community have been met. We concur that the dredging restrictions impairment has been adequately addressed and we are prepared to celebrate the removal of this BUI.

We appreciate all that WDNR, EPA, and many partners, including the Sheboygan River Basin Partnership, have done to help achieve this goal.

Sincerely,

John E. Nelson, President
Sheboygan River Basin Partnership