

# Utilizing Visual Media Technology to Enhance AOC Outreach

September 11, 2019

Moderators

Caitie Nigrelli, Illinois-Indiana Sea Grant

Melanie Foose, Michigan Dept Environment, Great Lakes, & Energy

#GLAOC2019

# Agenda

Welcome

Introductions to Moderators and Panelists

Media Showcase

Panelist Interview

Facilitated Discussion

Wrap-Up

# Panelists

Peter Essick, Freelance including National Geographic  
Photographer

Jessica Amico, Buffalo Niagara Waterkeeper  
Senior Digital Marketing Coordinator

Brian James Egen, River Raisin Commission on the Environment and  
Water Quality  
Executive Producer, Commission Chair, Historian

David Ruck, Great Lakes Outreach Media  
President, Videographer

# AOC Outreach Showcase

Visual media technology applied across the AOCs

Color Key	Status
 Great Lakes	 Area of Concern (AOC)
 Great Lakes Watershed	 AOC with Management Actions Completed
	 Delisted AOC



# StoryMaps

Give your maps meaning by harnessing the power of storytelling.

These interactive maps allow the user to learn about AOC history, restoration, recreation, and more while incorporating drone, video, and layers.

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# Detroit River AOC StoryMap

<http://detroitriver.org/story-map.html>



# Milwaukee Estuary AOC StoryMap

<https://refloh2o.com/milwaukee-community-map>



# Video

Search engines love video, and video encourages social media shares.

These videos incorporate drone, time-lapse, microphone modification, professional leadership, and more to create award-worthy AOC coverage.

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# St. Louis River AOC Video

<https://www.youtube.com/watch?v=bQJVo85T510>



# Muskegon Lake AOC Video

<https://www.youtube.com/watch?v=n7HCN0RQK-w>

# River Raisin AOC Video

<https://www.youtube.com/watch?v=UA1WFok6EMs>

# Branding

Branding is the face of your communication campaign.

These brands use memorable designs that incorporate AOC elements like water, birds, fish, and sediment.

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Multiple  
AOCs  
represented

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# Flyers

Get the word out with low-cost, place-based mass-marketing.

These AOC flyers use graphic design to focus the reader's attention on simple, important messages.

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MORGAN PARK COMMUNITY CLUB PRESENTS  
**A CONVERSATION WITH U.S. EPA**

**APRIL 4**  
**7 P.M.**

**SEDIMENT CLEANUP AT THE U. S. STEEL DULUTH WORKS-SPIRIT LAKE SITE**



## INFORMATION

- When?** Tuesday, April 4, 2017  
7 p.m. (Immediately follows the 6 p.m. MPCC meeting)
- Where?** Good Fellowship Community Center, Morgan Park  
1242 88th Avenue West  
Duluth, Minnesota
- Who's Invited?** Morgan Park community members and neighbors of the U. S. Steel Duluth Works-Spirit Lake site



## DISCUSSION TOPICS

-  What impacts neighbors can expect (noise, truck traffic, wildlife affected, etc.)
-  Introduction to new U.S. EPA project manager, Bill Murray
-  Ways to get involved to minimize disruptions and optimize community benefits



Will NOT be discussing the long-term fate of the LSM Railroad at this event. To comment on the railroad, please contact the City of Duluth at (218) 730-4312.



Some members of the outreach team:

For more information, visit:  
[www.greatlakesmud.org](http://www.greatlakesmud.org)



# St. Louis River AOC Flyer

# Buffalo River AOC Flyer

**SPEAKER SERIES**

# **BUFFALO RIVER**

Learn about this influential waterway from the people who rallied for it at its worst, were a part of the economic growth on its shores, and the influential figures who

- 21** \*How I Built It\* Buffalo River Small Business Panel  
FEB Location: Lakeside Spirits at The Barnet Factory - 45 Vandalia St, Buffalo
- 6** Buffalo River History Panel  
MAR Location: Buffalo Heritage Discovery Center - 100 Lee St, Buffalo
- 27** Buffalo River Ecology Tour  
APR Location: Buffalo River Restoration Site  
Prior registration is required for details
- 21** People for the River: Past, Present, Future  
MAY Location: Design Studio at Rigidized Metals, 630 Ohio Street
- 20** Buffalo River Paddle - Safety Tour  
JUNE Location: Prior registration is required - Space is limited!
- 11** Invasive Species Identification and Removal  
JULY Location: Buffalo River Restoration Site  
Prior registration is required for details

All series sessions are FREE  
Prior registration is required

For more information and to view the most up to date schedule visit:  
[www.buwaterkeeper.org/speaker-series](http://www.buwaterkeeper.org/speaker-series)  
Contact: Claudia Rosen - 216.852.7483 x14



**BUFFALO RIVER WATERKEEPER**

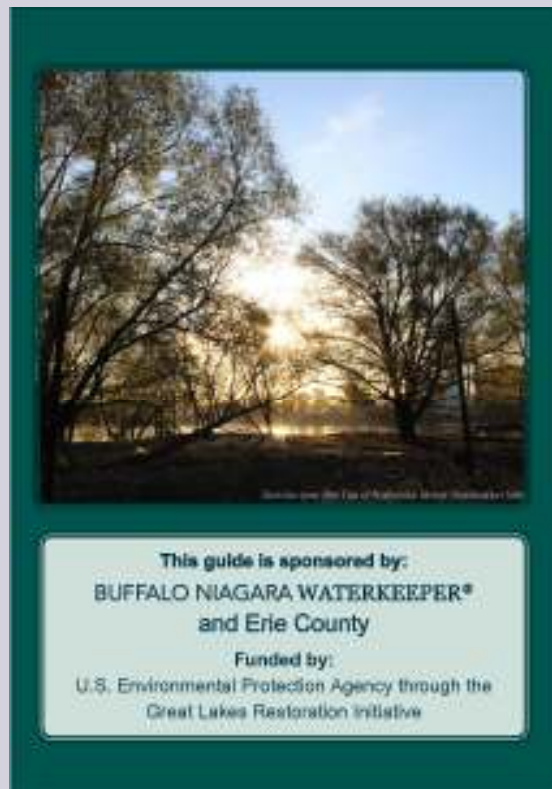


# Pamphlets and such

People still attend things in person and want a reason to put down their phone.

Efficient translations in multiple languages, good artistic design, and plain language make these AOC “pamphlets and such” resonate.

# Buffalo River AOC Booklet





# Rouge River AOC Fact Sheets



United States  
Environmental Protection  
Agency

## Cleanup Activities to Begin in the Lower Rouge River – Old Channel

Lower Rouge River – Old Channel  
Great Lakes Legacy Act Project

Detroit, Michigan      Spring 2015

**Great Lakes Remedial Action Strategy (GLRAS)**

The GLRAS is an EPA Great Lakes Basin cleanup strategy that provides a framework for developing and implementing cleanup actions in the Great Lakes Basin.

- Cleanup of toxic substances in the Great Lakes Basin
- Developing remedial strategy
- Implementing the strategy
- Monitoring progress
- Evaluating results and adjusting the strategy



Figure 1. Lower Rouge River – Old Channel

**GLRI's Legacy Act**

The Great Lakes Legacy Act can provide up to 65 percent of the cost of sediment cleanup and restoration work in an Area of Concern. The rest comes from cities, states, and businesses. Since 2002, Legacy Act partnerships have cleaned up 71 sites in 8 Great Lakes states and remediated about 4.1 million cubic yards of contaminated sediment.

Completed cleanups have been a springboard for communities to build a foundation for future growth by transforming former toxic hot spots into attractive locations. Areas that were obstacles to economic growth are now valuable redevelopment assets.

**Contact EPA**

For more information or questions about the LLRCOP Project, contact the EPA/LLRCOP Project Managers:

Rose Ellison  
312-866-6244  
[Ellison.roseanne@epa.gov](mailto:Ellison.roseanne@epa.gov)

or

Susan Virginia  
312-866-6244  
[Virginia.susan@epa.gov](mailto:Virginia.susan@epa.gov)

The U.S. Environmental Protection Agency's (EPA's) Great Lakes National Program Office is working with its non-federal sponsor, Honeywell, Inc. (Honeywell), to clean up a 0.75-mile stretch of the Lower Rouge River – Old Channel (LLROC), Detroit, Michigan.

This project will include construction of a permanent bulkhead wall along part of the Old Channel and removal of 70,000 cubic yards of sediment from the bottom of the river that is polluted with coal tar and other petroleum products. The project will also involve removal of large debris like metal, wood, tires, and cars that have been discarded in the river. The project is expected to begin this spring and be completed in 2019.

**Project Overview**

The shoreline and channel side slopes of the LLROC are steep and unstable in many areas. To safely remove sediment, Phase I of the project involves the construction of a permanent sheetpile bulkhead wall about 2,500 feet of the shoreline. The permanent wall will be kept in place by a smaller anchor wall buried behind it and connected by steel rods called tie-backs.

Phase II will include the sediment cleanup phase. During Phase II, other places along the shoreline will need stabilization; in those cases, temporary sheetpile walls will be used. After dredging these areas, the channel side slopes will be reconstructed with clean backfill and the temporary sheetpile will be removed and reused in another area.



Agencia de Protección  
Ambiental  
Environmental Protection Agency

# Comenzarán actividades de limpieza en la cuenca baja del río Rouge- Canal Viejo

## Cuenca baja del río Rouge- Canal Viejo

### Proyecto de la Ley de Legado de los Grandes Lagos

Detroit, Michigan

Primavera 2018



El Proyecto de Limpieza de los Grandes Lagos puede proveer hasta el 65 por ciento del costo de la limpieza de los sedimentos y el trabajo de restauración en un Área de Interés. El resto proviene de las ciudades, estados y empresas. Desde 2002, los socios de la Ley de Legado han limpiado hasta 21 sitios en 6 de los estados de los Grandes Lagos y han recuperado cerca de 4 millones de yardas cúbicas de sedimentos contaminados.

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Figura 1. Limpieza del río Rouge - Canal Viejo.

La Oficina del Programa Nacional de los Grandes Lagos de la Agencia de Protección Ambiental (EPA) está coordinando este trabajo con su socio privado, Honeywell, Inc. (Honeywell) para limpiar una franja de 0,75 millas en la cuenca baja del río Rouge-Canal Viejo (LRROC), Detroit, Michigan.

Este proyecto incluirá la construcción de un muro de contención a lo largo de una parte del Canal Viejo y la remoción de 70.000 yardas cúbicas de sedimentos del fondo del río, que están contaminados con alquitran y otros productos de petróleo. El proyecto incluirá también la remoción de escombros grandes como metal, madera, neumáticos y autos que han sido desechados en el río. Se espera que el proyecto comience esta primavera y finalice en 2019.

## Información general del proyecto

La costa y la pendiente de deslizamiento la LRROC son empinadas e inestables en muchas de las áreas. Para remover los sedimentos sin riesgos, la Fase I del proyecto consiste en la construcción de un muro de contención permanente de tablas a lo largo de 2.500 pies de la costa. El muro permanente se fijará por medio de un muro de anclaje más pequeño enterrado por detrás y conectado con varas de acero llamadas refuerzos estructurales.

La Fase II consistirá en la limpieza de los sedimentos. Durante la Fase II, se deberán estabilizar otros lugares de la costa, en esos casos, se utilizarán muros de tablas temporales. Después de dragar estas áreas, se reconstruirán las pendientes de deslizamiento del canal con relleno limpio y se retirarán las tablas temporales para reutilizarlas en otra área.

**Contacte con la EPA**  
Para más información o preguntas sobre el Proyecto LRROC, contacte con las Directoras del Proyecto LRROC de la EPA.

Rose Ellison  
734-862-7859  
[Ellison.rosanne@epa.gov](mailto:Ellison.rosanne@epa.gov)

o  
Susan Vignio  
312-888-4244  
[Vignio.susan@epa.gov](mailto:Vignio.susan@epa.gov)

[illegible]

# Sheboygan River AOC Fact Sheet

## Sheboygan River AOC – Restoration Status Update

Fall 2018

**Restoration has been fast tracked in Sheboygan** thanks to the AOC being identified as a priority by the U.S. Environmental Protection Agency in 2010.

After careful planning, all actions deemed necessary for achieving AOC goals have been completed, including removing more than 400,000 cubic yards of contaminated sediments from the lower river and shore barbs and restoring fish and wildlife habitat.

With target actions complete, the focus is now on monitoring to verify that AOC goals are being met. It will take time for the natural system to recover following cleanup actions and habitat restoration. Several monitoring projects are underway to determine if goals are being met for the remaining impairments. Results are being evaluated by technical experts and will inform next steps.

This update shows the current status of the removal phases for nine impairments in the Sheboygan River AOC. *Impairments under way or not started*—and next steps. Status in parentheses indicates the anticipated calendar year of project completion.



### BUI Removal Phases:

- MA** MONITORING is needed before the problem phase can be removed. This is done with MA.
- DP** DEVELOP AOC PROJECTS to target water bodies (a develop) be not at projects that are suitable for reaching AOC goals.
- IP** IMPLEMENT PROJECTS to target water bodies (a implement) be not at projects that are suitable for reaching AOC goals.
- VR** VERIFY RESULTS after actions have been taken, monitor to determine if target has been met.
- RM** FORMAL BUI REMOVAL: to get back into the river, but removal documentation is being prepared or completed, it has been achieved.

### Status of Each Phase:

Not Started Unknown Complete



Communities of sediment-dwelling organisms are degraded

Next Steps:

- Complete data analysis of toxic studies to compare AOC sediment dwelling organisms to conduct impairment study.
- Determine if sediment dwelling organisms have recovered, and if data impairment can be removed (2019).

MA DP IP VR RM

There are health concerns with eating fish and wildlife

Next Steps:

- Complete wildlife consumption assessments on the river, and up and down the river, and a wildlife study which has a strong consumption advisory listed in the annual Wisconsin Migratory Bird Regulations (2018).
- Issue Fish Consumption Advisory as in 2018 and 2019.

MA DP IP VR RM

Fish and wildlife populations are degraded

Next Steps:

- Continue verification monitoring of fish, aquatic insects, birds, bats, mammals, reptiles, and amphibians to determine if populations are recovering (2019).
- Continue working with Corps to conduct citizen-based monitoring of the AOC biological communities which is providing supporting information for removal (2019).

MA DP IP VR RM

There are increased rates of fish tumors and deformities

Next Steps:

- Repeat fish sampling to determine if fish tumor rates have decreased to levels comparable to upstream sites, with evidence from field Virginia University and U.S. Geological Survey (2019).

MA DP IP VR RM

There is increased potential for land and animal reproductive problems

Next Steps:

- Study of the AOC's new wildlife studies show elevated contaminant levels in the river fish eggs, but below the lower limit at which fish eggs are negatively affected.
- Continue with population monitoring to determine if reproductive problems will (2019).

MA DP IP VR RM



Excessive activities for sediment or navigation are restricted

Next Steps:

- Complete data analysis of toxic studies to compare AOC sediment dwelling organisms to conduct impairment study.
- Determine if sediment dwelling organisms have recovered, and if data impairment can be removed (2019).

MA DP IP VR RM



Excessive nutrients cause undesirable algae

Next Steps:

- Complete data analysis of toxic studies to compare AOC sediment dwelling organisms to conduct impairment study.
- Determine if sediment dwelling organisms have recovered, and if data impairment can be removed (2019).

MA DP IP VR RM



Communities of small organisms living in the water are degraded

Next Steps:

- Complete data analysis of toxic studies to compare AOC sediment dwelling organisms to conduct impairment study.
- Determine if sediment dwelling organisms have recovered, and if data impairment can be removed (2019).

MA DP IP VR RM



Loss of fish and wildlife habitat

Next Steps:

- Complete evaluation of the river habitat to determine if sediment and organic matter removal efforts, to determine if they meet criteria stated in the Fish and Wildlife Act (2019).
- Issue permit results to determine if sediment removal can be removed (2019).

MA DP IP VR RM

Monitor and Assess (MA)

Develop AOC Projects (DP)

Implement Projects (IP)

Verify Results (VR)

Formal BUI Removal (RM)



BUI REMOVED





# Interpretive Signs

They're at your site. Tell them about it while you've got their attention for a minute.

New ways to display poster content with a professional flair are becoming more affordable and used in AOCs.

# River Raisin AOC Display Panels



# Lower Green Bay & Fox River AOC Display Panels



# Lower Menominee River AOC Poster

## MENEKAUNEE HARBOR HABITAT RESTORATION

Sediment quality and fish and wildlife habitat in Menominee Harbor were degraded as a result of many years of industrial and urban activities in the Lower Menominee River Watershed. The City of Marinette and the Wisconsin Department of Natural Resources (WDNR) have been working together to improve the health of the harbor for fish, wildlife, and citizens. Contaminated and excess sediment were dredged from the harbor in 2014, leaving it cleaner and deeper. Then, habitat restoration work in the eastern part of the harbor and nearby wetland was completed in 2015 and early 2016. The work included planting native vegetation, controlling invasive plants, and installing various habitat structures, including rock piles, brush piles, bird nesting boxes, bat houses, and in-water wood structures for fish. The City and WDNR share a vision for the harbor that includes better public access, improved economic and recreational opportunities, a cleaner environment, and improved habitat for fish and wildlife.

### WILD RICE

Wild rice now naturally occurs in the lower Menominee River. Qualitative monitoring is being done to determine the viability, and new opportunities for wild rice are being explored. The seed has been found in depths within 30 feet of water, indicating large volumes of seed are being deposited in the harbor.

### LOG STRUCTURES

Stacking log structures provide cover and habitat for a variety of aquatic species, including fish, birds, and bats. They also provide a place for plants to grow, and they can help to stabilize the riverbank. Log structures are being installed in the harbor and nearby wetlands to improve habitat for fish and wildlife.

### ROCK AND BRUSH PILES

Rock piles and brush piles are important habitat structures for fish and wildlife. They provide cover and shelter for fish, and they also provide a place for plants to grow. Rock piles and brush piles are being installed in the harbor and nearby wetlands to improve habitat for fish and wildlife.

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**Menominee Harbor Fishing Zones and Habitat Structures**

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**For more information:**

Visit [marinette.wisconsin.gov/menkaunee-harbor](http://marinette.wisconsin.gov/menkaunee-harbor), the [www.menkaunee-harbor.com](http://www.menkaunee-harbor.com), or [www.menkaunee-harbor.com](http://www.menkaunee-harbor.com).

Watch the **Menominee Harbor Video** <https://www.youtube.com/watch?v=505>. Find out how you can get involved with the Lower Menominee River Citizens Advisory Committee contact [Bob.Woy@marinette.wi.gov](mailto:Bob.Woy@marinette.wi.gov), 715-735-4300 x4382, [john.woy@marinette.wi.gov](mailto:john.woy@marinette.wi.gov) or Mark Erickson 920-643-1794, [mark@erickson.com](mailto:mark@erickson.com) or visit [www.facebook.com/menkaunee-harbor](http://www.facebook.com/menkaunee-harbor).



# Sheboygan River AOC Poster

## What's been done to help the Sheboygan River heal?

The healing process was given a boost in 2002, with more than \$83 million in tax dollars and private funding. Projects improved fish and wildlife habitat and removed more than 15,000 dump truck loads of contaminated sediment containing more than one ton of PCBs.

With a proven track record in the restoration and protection of the U.S. Environment Protection Agency, the Wisconsin Department of Natural Resources, the City of Sheboygan and Sheboygan County, and the cooperation of Pollution Free Services, Hazardous Products Company and Sheboygan-Polluter Services.

## The Sheboygan: a healing river

**LAND USE**

- Urban/Developed
- Forest
- Water
- Wetland
- Barren
- Grassland
- Other

**PROJECT LOCATIONS**

- City of Sheboygan
- Sheboygan County
- Sheboygan Falls
- Sheboygan River
- Sheboygan Harbor
- Sheboygan Bay
- Sheboygan Point
- Sheboygan Park
- Sheboygan Harbor
- Sheboygan Bay
- Sheboygan Point
- Sheboygan Park

## Projects made the river cleaner & deeper

Dredges scooped or pumped out pockets of sediment contaminated with PCBs and PAHs. The sediment, some toxic, was hauled to special landfills in Wisconsin and other states.

**What are PCBs?**  
Polychlorinated biphenyls (PCBs) are synthetic chemicals that have been used in a wide variety of products. They have been found in sediment, soil, and water. They are toxic to fish and wildlife.

**What are PAHs?**  
Polycyclic aromatic hydrocarbons (PAHs) are a group of chemicals that are found in sediment, soil, and water. They are toxic to fish and wildlife.

## Projects improved fish & wildlife habitat

For more than a century, river habitat has been neglected and injured, resulting in Sheboygan River native fish and wildlife population declines. Projects restored, enhanced and connected wetlands and floodplain forest. This was done by:

- planting native trees, shrubs and other plants
- stabilizing eroded shorelands
- identifying, mapping and controlling invasive plants
- reclaiming historic wetlands
- installing habitat structures, such as nest boxes, boulders and logs

**What's new?**  
Biologists will monitor fish and wildlife resources to assess the progress of the healing process. Biologists will also continue to monitor sediment levels in the river and wildlife populations. The success of the healing process will be measured by the number of fish and wildlife species that return to the river.

## Everything is connected

Healing the river helps restore health to the entire ecosystem. It also helps to protect the health of the people who live along the river. The healing process is a long-term effort that will take many years to complete.

# Rochester Embayment AOC Poster

**REMEDIATION**  
Eliminate or reduce sources of contamination and clean up the pollutants.

**RESTORATION**  
Physically recreate suitable environments for native plants and animals to eat, live, and reproduce.

**REVITALIZATION**  
Enable lakefront and riverfront properties to be sought after destinations for recreation, business, and residential uses.

**THE ROCHESTER EMBAYMENT IS IMPROVING**  
WORKING TO SHED "AREA OF CONCERN" LABEL

**Why is it an Area of Concern?**  
Rochester Embayment was designated as an Area of Concern under the 1987 Great Lakes Water Quality Agreement due to the area being significantly harmed by human activity. Fourteen categories of environmental degradation were identified as needing improvement.



**What has been done so far?**  
One of the categories of damage is loss of fish and wildlife habitat. In order to address this, several key projects have been identified and pursued. The work completed includes: site cleanups, introduction of new wetland areas, adding temporary pools of water, and, in the case of Blacklock Bay, creating a barrier beach.



**Larry says...**  


**Get involved!**  
Visit [www.rock.org](http://www.rock.org) and check out the "Get Involved" link at the bottom of the page. Need to know what of programs and resources available? Contact [info@rock.org](mailto:info@rock.org) and ask for the contact for "Rockingwood".

**Milestones**  




# Artist Renderings

Science and Art.

When discrete attempts to describe and understand the world collide, we create memorable, intelligent beauty picturing ourselves in new AOC landscapes.

#GLAOC2019

# Milwaukee Estuary AOC Artist Rendering





# Muskegon Lake AOC Artist Rendering



# Detroit River AOC Artist Rendering




# Public Meeting Posters

Some of the most complex details of our work are conveyed in this venue.

Good photography, 3D models, and relevant comparisons pump up these AOC posters.

#GLAOC2019


# Maumee AOC Public Meeting Poster




Ottawa River Great Lakes Legacy Act Project, Toledo, Ohio

**Dredging Activities**

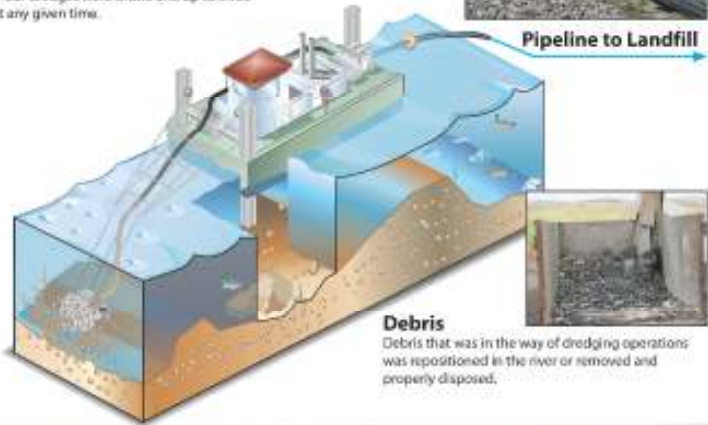
*Ottawa River Group*




**Dredging Barge**  
The dredge removed between 18 and 24-inches of sediment with each pass. The depth of sediment removal was predetermined based on previous sampling data and cleanup goals. Sediment samples were collected after the completion of a dredged section to ensure the cleanup goals were met. Four dredges were onsite and up to three were operating at any given time.



**Dredging Head**  
As the dredging head spins, muddy water and sediment is sucked up, and sent to the onboard barge pump. The barge pump continues moving the sediment and water toward the intermediate pumps and eventually to the landfill.

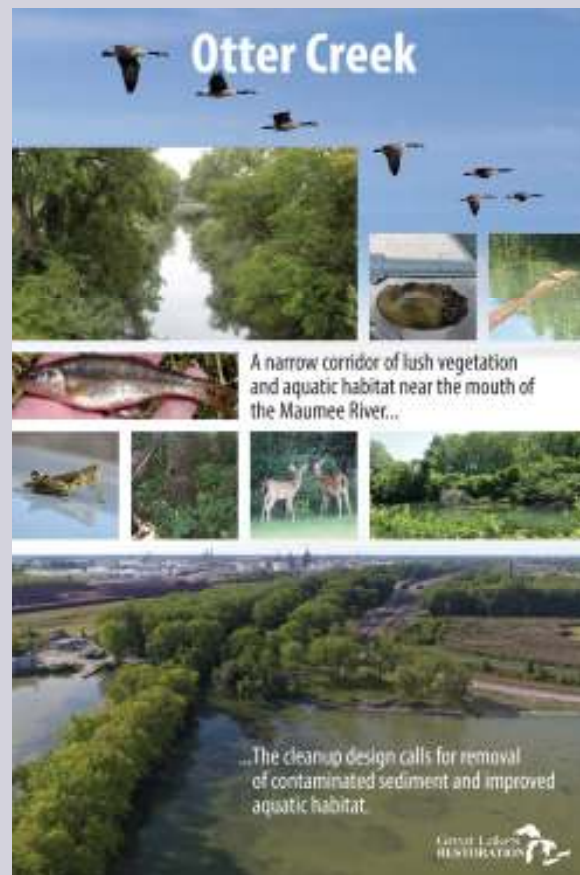


**Pipeline to Landfill**



**Debris**  
Debris that was in the way of dredging operations was repositioned in the river or removed and properly disposed.

# Maumee AOC Public Meeting Poster





# Grand Calumet River AOC Public Meeting Poster



# Photography

360 degree captures, social media to advertise BUI photo contests, and professionals behind the camera elevate the stories told with these AOC photos.

#GLAOC2019

# Black River AOC Photography





# Buffalo River AOC Photography



# Great Lakes AOC Photography

Peter Essick – Great Lakes Sea Grant Network  
AOC Photo Essay Collaboration

<https://iiseagrant.org/great-lakes-resurgence/>