UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GREAT LAKES NATIONAL PROGRAM OFFICE
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

Stephen Galarneau, Director
Office of Great Waters – Great Lakes & Mississippi River
Wisconsin Department of Natural Resources
PO Box 7921
Madison, WI 53707-7921

Dear Mr. Galarneau:

Thank you for your letter dated January 14, 2020 requesting approval of the final management action list needed to remove five sediment-related Beneficial Use Impairments (BUIs) in the Milwaukee Estuary Area of Concern (AOC) - *Restrictions on Dredging Activities, Fish Tumors or other Deformities, Bird or Animal Deformities or Other Reproductive Problems, Restrictions on Fish and Wildlife Consumption,* and *Degradation of Benthos*.

We acknowledge and appreciate the work and the concerted efforts of the partnership made up of the Wisconsin Department of Natural Resources (DNR), City of Milwaukee, Milwaukee Metropolitan Sewerage District, We Energies, Milwaukee County and other stakeholders.

EPA has reviewed your proposed list of sediment Management Actions and agrees that your proposed sediment Management Action List for the Milwaukee Estuary AOC is the complete list of projects needed to remove the five sediment-related BUIs, and that no further Management Actions need be added to the current list.

Thank you very much for the dedication and hard work that the Wisconsin DNR and its partner agencies and organizations have invested in this AOC. We are eager to continue working with the Wisconsin DNR and all the Milwaukee Estuary AOC partners to achieve our mutual goal of completing these final, agreed-upon and approved management actions, pending the availability of funds.

Should you have any questions feel free to me, or have your staff contact Megan O'Brien at (312) 353-3167 or obrien.megan@epa.gov.

Sincerely,

CHRISTOPHER KORLESKI Digitally signed by CHRISTOPHER KORLESKI
Date: 2021.02.04 10:18:50 -06'00'

Chris Korleski, Director
Great Lakes National Program Office

cc: Kendra Axness, WDNR
Brennan Dow, WDNR
Rebecca Fedak, WDNR
Scott Inman, WDNR
Marc Tuchman, USEPA
Scott Cieniawski, USEPA
Heather Williams, USEPA
Kristen Isom, USEPA
Amy Pelka, USEPA
Megan O'Brien, USEPA
Todd Nettesheim, USEPA

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

January 14, 2021

Mr. Chris Korleski, Director
Great Lakes National Program Office
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago IL 60604

Subject: Management Action List for the Sediment-Related Beneficial Use Impairments in the Milwaukee Estuary Area of Concern

Dear Mr. Korleski:

This letter serves to document the Milwaukee Estuary Area of Concern (AOC) management action list for five sediment-related beneficial use impairments (BUIs). The removal criteria for these five BUIs were finalized in April 2020 (Attachment D).

The BUIs that will be addressed by the sediment-related management actions are as follows:

- Restrictions on Dredging Activities
- Fish Tumors or Other Deformities
- Bird or Animal Deformities or Other Reproductive Problems
- Restrictions on Fish and Wildlife Consumption
- Degradation of Benthos

In the past two years, the Wisconsin Department of Natural Resources (DNR) and U.S. Environmental Protection Agency Great Lakes National Program Office (U.S. EPA GLNPO) worked with stakeholders (City of Milwaukee, Milwaukee Metropolitan Sewerage District [MMSD], We Energies, Milwaukee County and others) to identify a final set of actions that would address the remaining sources of contaminated sediment in the Milwaukee Estuary AOC.

In 2018, a Sediment Work Group, facilitated by the City of Milwaukee, formed to begin addressing sediment cleanup efforts through a holistic AOC approach under a Great Lakes Legacy Act (GLLA) application. Through discussions with all parties that participate in the Milwaukee Estuary AOC Sediment Work Group, an application was submitted by the non-federal sponsors listed above to U.S. EPA GLNPO in June 2019. On January 6, 2020, a $29.3 million project agreement was signed (PA550892; Attachment E) allowing certain sites in the AOC to move into their next stages of feasibility and design. This Greater Milwaukee Estuary AOC Cleanup project is the first of its kind to be proposed within the Great Lakes AOCs.

The current estimated total project cost of remedial actions in the Greater Milwaukee Estuary AOC Cleanup is $101.5 million. This estimate does not include construction or in-kind contribution of the Dredged Material Management Facility (DMMF) disposal. Detailed information of the cost estimate can be found in Attachment B

of this management action letter. With the successful implementation of the following projects, the State of Wisconsin determines that all known management actions will be completed for the five BUIs listed above:

Completed Sediment Management Actions

- Moss-American Little Menomonee River Superfund Alternative Site
- Kinnickinnic River Sediment Removal Legacy Project
- Mercury Marine Cedar Creek Superfund Alternative Site
    - Ruck Pond
    - Hamilton Pond
    - Operable Unit – 2A
- Lincoln Park/Milwaukee River Channel Sediments Site Phase I and II
- Lincoln Park/Blatz Pavilion Site

Great Lakes Legacy Act Project Agreement between U.S. EPA and Non-Federal Sponsors

- Menomonee & Milwaukee River (Operable Unit 1, Operable Unit 2)
- Milwaukee River Floodplains (Reaches 1-3)
- Milwaukee River Downtown (Reach 4)
- City of Milwaukee Sewer PCB Cleanout – Near Grand Trunk Wetland
- Basin H PCB Source Control Project
- Solvay Car Ferry Slip
- South Menomonee Canal Site
- Kinnickinnic River (Reaches 1-4)
- Kinnickinnic River Federal Navigation Channel
- Milwaukee Bay (Summerfest Lagoon, Outer Harbor, and Nearshore Areas)

Individual Projects Not Covered under Great Lakes Legacy Act Project Agreement

- Mercury Marine Cedar Creek Superfund Alternative Site (Operable Unit – 2B)
- Burnham Canal Superfund Alternative Site

These remaining management actions (Attachment A) build on the progress that has been made since the 1980s, when sediment investigations and remediation began. Specific areas requiring remedial action within these remaining stretches of the Milwaukee Estuary AOC are being determined and are on track to be identified by the end of 2021.

While important progress has been made, much more work remains. This management action list represents an ambitious sediment remediation effort that will require a coordinated effort by many partners and a key component of the proposed construction of a DMMF. This undertaking of our non-federal partners shows the investment and buy-in to remediate legacy contaminants in the Milwaukee Estuary AOC.

In January 2020, a Feasibility Study (FS) and Remedial Design (RD) project team formed to continue more in-depth conversations around sediment remediation in the AOC. The working group structure in the AOC will facilitate the necessary strong partnerships among DNR, U.S. EPA GLNPO, GLLA Program, City of Milwaukee, MMSD, We Energies, Milwaukee County, and many others, for completing these management actions. With the strong partnerships in place, we are well positioned to complete the actions under the Great Lakes Restoration Initiative (GLRI) Action Plan III (Attachment C).

We look forward to your continued support and collaboration in carrying out the identified management actions. If you have any questions about the management actions, cost estimate, timeline, or BUI removal targets, please contact Brennan Dow, DNR, at (920) 366-1371, Scott Inman, DNR, (608) 576-4912, or you may contact me.

Sincerely,

Stephen Galarneau, Director
Office of Great Waters – *Great Lakes and Mississippi River*
Wisconsin Department of Natural Resources
608-266-1956
Stephen.Galarneau@Wisconsin.gov

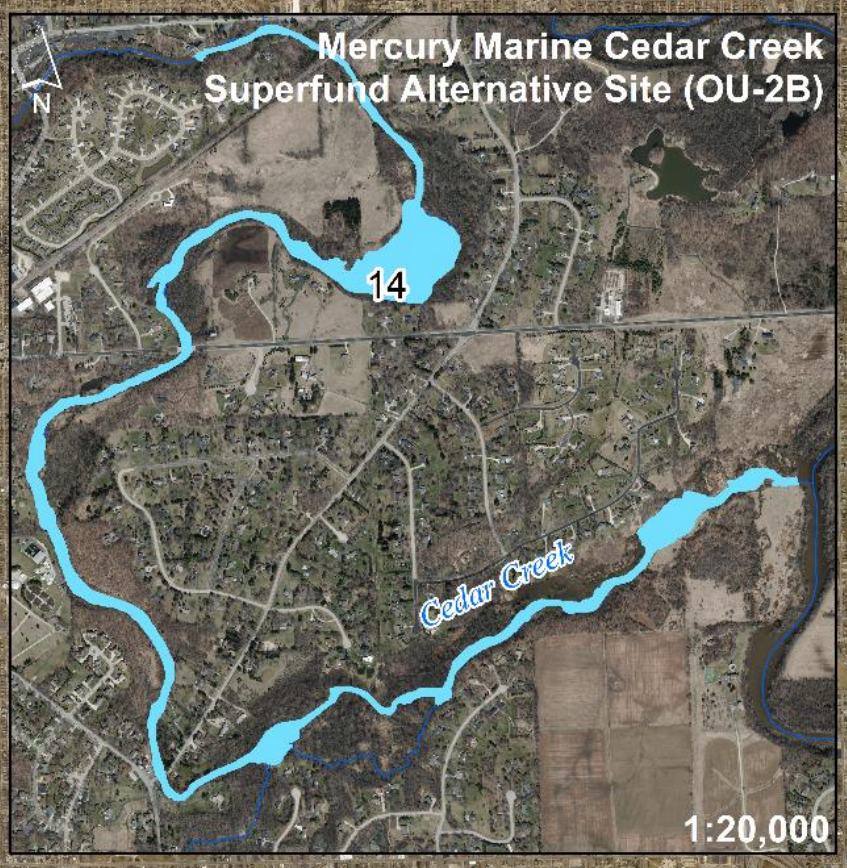
Cc: Kendra Axness, WDNR
Brennan Dow, WDNR
Rebecca Fedak, WDNR
Scott Inman, WDNR
Marc Tuchman, USEPA
Scott Cieniawski, USEPA
Heather Williams, USEPA
Kristen Isom, USEPA
Amy Pelka, USEPA
Megan O'Brien, USEPA
Todd Nettesheim, USEPA

Enclosures:

ATTACHMENT A: Map of Remaining Sediment Project Areas in the Milwaukee Estuary AOC
ATTACHMENT B: Estimated Cost Table and Assumptions for the Greater Milwaukee Estuary AOC Cleanup
ATTACHMENT C: Estimated Status/Timeline for Implementation
ATTACHMENT D: Final Targets from April 2020 BUI Target Revision Document
ATTACHMENT E: Great Lakes Legacy Act Project Agreement Between the United States Environmental Protection Agency and the Wisconsin Department of Natural Resources, City of Milwaukee, Milwaukee County Parks, Milwaukee Metropolitan Sewerage District and We Energies for Focused Feasibility Study, Pre-Design Investigation & Remedial Design of Impacted Sediments, the Remedial Design of the Proposed Dredged Material Management Facility and the Removal of PCB Contaminant Source Material in the Milwaukee Estuary Area of Concern Milwaukee, Wisconsin.

Attachment A: Map of Remaining Sediment Project Areas in the Milwaukee Estuary AOC

Remaining Sediment Management Actions in the Milwaukee Estuary AOC



Lincoln Creek

Lake Michigan

Milwaukee River

Menomonee River

Kinnickinnic River

N
W
E
S

6
3
4
1
8
2
15
13
12
11
5
10
9

Remaining Sediment Management Actions

- 1, Menomonee and Milwaukee River Project Area (OU1)
- 2, Menomonee and Milwaukee River Project Area (OU2)
- 3, Milwaukee River Floodplains (Reaches 1-3)
- 4, Milwaukee River Downtown (Reach 4)
- 5, City of Milwaukee Sewer PCB Cleanout
- 6, Basin H PCB Source Control Project
- 7, Solvay Car Ferry Slip
- 8, South Menomonee Canal (SMC)
- 9, Kinnickinnic River (Reach 1)
- 10, Kinnickinnic River (Reach 2)
- 11, Kinnickinnic River (Reach 3)
- 12, Kinnickinnic River (Reach 4)
- 13, Milwaukee Bay (Summerfest Lagoon; Outer Harbor; Nearshore Areas)
- 14, Mercury Marine Cedar Creek Superfund Alternative Site (OU-2B)
- 15, Burnham Canal Superfund Alternative Site

0 1 Miles

1:42,000

Attachment B: Estimated Cost (DMMF Construction Not Included)

Item	Tasks	Task Total
1.1	Pre-construction work	$420,000
1.2	Mobilization	$3,480,000
1.3	Setup Activities, Support and Administrative Costs	$7,330,000
1.5	Monitoring & Oversight	$8,580,000
1.6	Hydraulic Dredging	$20,390,000
1.8	Floodplain Dredging	$19,630,000
1.9	TSCA Dredging and Disposal	$5,330,000
2.0	Water Treatment	$15,630,000
2.1	Residual Sand Cover	$10,220,000
2.2	Capping	$9,270,000
2.3	Post Remediation Activities	$610,000
2.4	Demobilization	$600,000
	Overall Total	**$101,500,000**

Assumptions:

- Conceptual cost estimate based on known information.
- Dredged Material Management Facility (DMMF) is not included in this estimate for remediation, as it is being paid in full by the non-federal sponsors (NFS). Assumes that the Milwaukee Metropolitan Sewerage District (MMSD) is capable of acquiring of Water Infrastructure Finance and Innovation Act (WIFIA) Loan in the amount of $95 million to cover construction of the facility.
- DMMF can hold 1.9 million CY of material
    - 1.4 million CY of GLLA sediment removed, transported, and contained in the DMMF
    - 200,000 CY of space allocated to City of Milwaukee
    - 300,000 CY of space allocated to MMSD
- Cost estimate is contingent upon DMMF substantial completion. Current estimate is likely middle to end of 2023, allowing remedial action (RA) to begin.
    - Timing of DMMF substantial completion is based on stimulus funding and requires alignment with the WIFIA loan process.

- 10,000 GPM water treatment plant at the DMMF
    - Production rates require an increase of updating consistent with the DMMF design capacity of 15,000 GPM.
    - Production rate estimates will continue to be refined as more information becomes available.
- Dredging production rates and sand cover placement costs are from a dredging contractor.
- No dredging occurs in January to March (Calendar Year Q1).
- Floodplain portion in the Milwaukee River includes significant costs for site security and liberal chain link fencing based on previous experience that vandalism is an issue in Milwaukee for construction sites.
- Line 2.0 (Water Treatment) includes construction and operation costs. These are based on estimates from a water treatment contractor assuming lamella clarifiers, multi-media filers, and granular activated carbon. This assumes specialty media is not needed for PFAS. Carbon will likely be sufficient with PFAS concentrations found in the Milwaukee Estuary AOC.
- No particle separation is performed at the DMMF, this may be included in the future to increase capacity but is conservatively left out.
- While We Energies' in-kind contributions to the GLLA Project Agreement (PA) are included in the Sediment-Related BUI management action list, they are not included in this estimate as We Energies will be executing them. The focus of this estimate was for EPA led remediation.
- Unit prices were derived from the Menomonee and Milwaukee (M&M) River Focused Feasibility Study (FFS). Where unit prices deviated, estimates were used from other remediation projects or directly from consultants.
- A staging pad, water treatment pad, and TSCA pad are all constructed at or near the existing Jones Island CDF. Jacobs' estimate for the unit rates were generated from the M&M project. While these are slightly higher than expected and could eventually be reduced, they were conservatively left as is.
- Roughly 25,000 to 50,000 CY TSCA to TSCA Landfill
- The effective area of remediation is approximately 200 acres. All acreage has a residual cleanup pass included in the estimate.
    - 50-acres of sediment capping (1-foot)
    - 30-acres of cap armoring for habitat improvements & scour protection at bridge abutments
    - 30-acres of shoreline restoration (mostly in the Milwaukee River Floodplains)
    - 120-acres of sand cover (6-inches)
- Potential to get to $15/CY for dredging associated items

Attachment C: Estimated Status/Timeline for Implementation

Waterbody	Area	RI	FS	PDI	RD	RA
Dredged Material Management Facility		-	2019	2020	2020 - 21	2021 -23
Milwaukee River FP & DT	Reach 1-4	2019	s 2020	s 2020	s 2022	2023 - 24
Menomonee & Milwaukee River (M&M)	OU1	2017	2019	s 2020	s 2022	2024
	OU2 (3rd Ward)	2017	2019	s 2020	2020 - 21	2022
Menomonee River	South Menomonee Canal	2019 - 20	2021	s 2020	2023	2024
Kinnickinnic River	Reaches 1 & 2	2020	2021	s 2020	2023	2024
	Navigation Channel	2020	2021	s 2020	2023	2024
	Skipper Buds Slip	2020	2021	s 2020	2023	2024
	Solvay Car Ferry Area	2016	2020	s 2020	2021	2021
	Reaches 3 & 4	2020	2021	s 2020	2022	2024
Milwaukee Bay		2020	2022	2022	2023	2024
Color Coding						
2018 >	2019	2020	2021	2022	2023	2024

Attachment D: Final Targets from April 2020 BUI Target Revision Document

Current Target: Restrictions on Dredging Activities

Target (Updated 2011)	Status
Removal of this BUI can occur when:	
• Contaminated sediment hotspots within and upstream from the AOC have been identified.	In Progress & Action Needed
• Implementation actions to remediate contaminated sites have been completed. As a source control measure and for AOC remediation, known contaminated sites must be addressed before BUI removal is possible.	In Progress & Action Needed
• There are no special handling requirements of material from routine navigational dredging due to contamination originating from controllable sources within the AOC.	In Progress & Action Needed

Revised Target: Restrictions on Dredging Activities

Target (Updated 2020)	Status
Removal of this BUI can occur when:	
• Sediment and adjacent floodplain areas contaminated with legacy pollutants have been identified and remediated within the AOC.	In Progress & Action Needed
• All remedial actions have been implemented following Wisconsin Administrative Code NR 700 rules series and statutory requirements.	In Progress & Action Needed

Revision Determination
Justifiable Reason: Target language needed clarification and format consistency.

Current Target: Fish Tumors or Other Deformities

Target (Updated 2011)	Status
Removal may occur if:	
• All known major sources of PAHs and chlorinated organic compounds within the AOC and tributary watershed have been controlled or eliminated.	In Progress & Action Needed
• A fish health survey of resident benthic fish species, such as white suckers, finds incidences of tumors or other deformities at a statistically similar incidence rate of minimally impacted reference sites.	Assessment Complete (2015) Reassess Post Remediation
OR, in cases where tumors have been reported:	
• A comparison study of resident benthic fish such as white suckers of comparable age and maturity, or of fish species found with tumors in previous fish health surveys in the AOC, with fish at minimally impacted reference sites indicate that there is no statistically significant difference (with 95% confidence) in the incidence of liver tumors or deformities.	Assessment Complete (2015) Reassess Post Remediation

Revised Target: Fish Tumors or Other Deformities

Target (Updated 2020)	Status
Removal of this BUI can occur when:	
• Contaminated sediment sites within the AOC have been identified, and implementation actions to remediate contaminated sites have been completed.	In Progress & Action Needed
• A fish health survey of resident benthic fish species, such as white suckers, finds incidences of liver tumors to be less than the established Great Lakes background rate (5% for white suckers) with 95 percent confidence. OR, in cases where tumor rates exceed the established background rate: • A comparison study of resident benthic fish, such as white suckers, of comparable age and maturity with fish at a reference site indicates that there is no statistically significant difference (with 95% confidence) in the incidence of liver tumor. OR, in cases where tumor rates are representing a decline: • Multiple years of assessments of resident benthic fish, such as white suckers, indicate that incident rate of liver tumors is decreasing such that it can be reasonably expected that incident rate of liver tumors is below Great Lakes background rates or statistically comparable to a minimally impacted reference site, with 95 percent confidence, once all fish exposed to contaminated sediment have been naturally removed from the system.	Assessment Complete (2015); Reassess Post Sediment Remediation

Revision Determination

Justifiable Reason: The scope of achievable activities within the AOC program has become better understood as program implementation has occurred.
New information has become available.

Target Language Changes

- Specific language relating to other deformities was removed because neoplastic liver tumors are closely correlated with contaminants. Other pathogen deformities can have a large list of causes not related to contaminants.
- Removed language related to other fish species separate from our benthic resident indicator, white sucker. Other benthic species that are used for this BUI (brown bullhead) are not available in the Milwaukee Estuary AOC.
- Added a third case in which this BUI can be removed. By comparing rate of decrease between sampling events, the BUI can be removed if data suggests that tumor rates will be at or below the reference site by the time fish that were exposed to contaminated sediment have been removed from the population.

Current Target: Bird or Animal Deformities or Reproduction Problems

Target (Updated 2011)	Status
This BUI can be removed if: • Studies conducted in the AOC indicate that the beneficial use should not be considered impaired, or • If studies conducted in the AOC determine that this use is impaired, then two approaches can be considered for delisting: o Approach 1 – Observational Data and Direct Measurements of Birds and other Wildlife ▪ Evaluate observational data of bird or other animal deformities for a minimum of two successive monitoring cycles in indicator species identified in the initial studies as exhibiting deformities or reproductive problems. If deformity or reproductive problem rates are not statistically different than those at minimally impacted reference sites (at a 95% confidence interval), or no reproductive or deformity problems are identified during the two successive monitoring cycles, then the BUI can be removed. If the rates within the AOC are statistically higher than the reference site, it may indicate a source from either within or from outside the AOC. Therefore, if the rates are statistically higher or the data are insufficient for analysis to achieve agreed upon statistical power, then… ▪ Evaluate tissue contaminant levels in egg, young and/or adult wildlife. If contaminant levels are lower than the Lowest Observable Effect Level (LOEL) for that species for a particular contaminant that are not statistically different than those at minimally impacted reference sites (at a 95% confidence interval), then the BUI can be removed.	In Progress (2010-2018) TBD (based on results of study)

Revised Target: Bird or Animal Deformities or Reproduction Problems

Target (Updated 2020)	Status
Removal of this BUI can occur when:	
• Contaminated sediment sites within the AOC have been identified, and implementation actions to remediate contaminated sites have been completed.	In Progress & Action Needed
• Contaminant levels (PCBs, PAHs, heavy metals) in egg, young, and/or adult tissues for selected species (such as tree swallows AND fish-eating birds or wildlife) are at or below the Lowest Observable Effect Level (LOEL) for contaminants known to cause deformities or reproductive suppression, or if higher than the LOEL, are not statistically different than those at a minimally impacted reference site (with 95% confidence interval) over a 3-year-period. OR, where direct observation of bird and wildlife tissue data are not available: • Fish within the AOC, and of a size and species considered prey for fish-eating birds or other fish-eating wildlife, have tissue contaminant (PCBs, PAHs, heavy metals) concentrations at or below the LOEL for contaminants known to cause deformities or reproductive suppression in fish-eating birds or wildlife, or if higher than the LOEL, are not statistically different than those at a minimally impacted reference site (with 95% confidence interval) over a 3-year period.	Assessment Complete (2015); In-Progress Assessment; Reassess post sediment remediation.

• Where direct observation of wildlife and wildlife tissue data are not available, the following approach should be used: o Approach 2 – Fish Tissue Contaminant Levels as an Indicator of Deformities or Reproductive Problems ▪ If fish tissue concentrations of contaminants known to cause deformities or reproductive suppression identified in the AOC are at or lower than the LOEL known to cause reproductive or developmental problems in fish-eating birds and mammals, the BUI can be delisted, or ▪ If fish tissue concentrations of contaminants known to cause deformities or reproductive suppression identified in the AOC are not statistically different than Lake Michigan (at 95% confidence interval with sufficient and agreed upon statistical power), then the BUI can be removed. Fish of a size and species considered prey for the wildlife species under consideration must be used for the tissue data.	TBD (based on results of Approach 1)

Revision Determination

Justifiable Reason: The scope of achievable activities within the AOC program has become better understood as program implementation has occurred.
New information has become available.

Target Language Changes

- USGS has previously sampled tree swallows in the Milwaukee Estuary AOC. Since 2010, multiple sites in the AOC have been sampled each year. Data from these sampling events show high levels of PAHs and heavy metals.
- Removed the first two bullet points because status of AOC is better understood.
- Included sediment contamination management actions to be implemented – as a source of bird or animal deformities BUI in the AOC.
- Removed the Approach 1 and the first bullet point. The monitoring required to make this determination would be hard to achieve. The first bullet point and the second are now combined and wording revised to make it more possible and meaningful towards representing both birds and wildlife.
- Added clarifications around what type of contaminants are being assessed.
- Added a multi-year monitoring approach that can help show improvement instead of just a single year of sampling.
- Added fish eating birds or wildlife to both sections of the target to allow for sampling multiple trophic levels.
- Added how to address if contaminant levels are found to be higher than the LOEL.

Current Target: Restrictions on Fish and Wildlife Consumption

Target (Updated 2011)	Status
Fish Approach to be used with current level of monitoring for fish consumption advisories within the AOC (every five years):	
• All known man-made sources of BCOCs (including PCBs, mercury, dioxins, and furans) within the AOC and tributary watershed have been controlled or eliminated; and	In Progress & Action Needed
• State fish tissue monitoring confirms that waterbody-specific fish consumption advisories are no longer needed for PCBs for waters in the AOC.	Action Needed
• Waters within the Milwaukee Estuary AOC are not listed as impaired due to fish consumption advisories in the most recent Clean Water Act 303(d) and 305(b) Wisconsin Water Quality Report to Congress (submitted to USEPA every two years).	In Progress (ongoing monitoring)
Approach to be used with funding to support additional monitoring:	
• All known man-made sources BCOCs (including PCBs, mercury, dioxins, and furans) within the AOC and tributary watershed have been controlled or eliminated; and	In Progress & Action Needed
• A multi-year comparison study of fish tissue contaminant levels demonstrates that there is no statistically significant difference (with a 95% confidence interval) in fish tissue BCOC concentrations in the AOC compared to fish tissue BCOC concentrations in a representative non- impacted control site within the Lake Michigan Basin.	TBD (based on results of current monitoring)
Wildlife There are no waterfowl consumption advisories for resident waterfowl due to contamination originating within the AOC.	Assessment Complete (2015) Reassess Post Remediation

Revised Target: Restrictions on Fish and Wildlife Consumption

Target (Updated 2020)	Status
Removal of this BUI can occur when:	
• Contaminated sediment sites within the AOC have been identified, and implementation actions to remediate contaminated sites have been completed.	In Progress & Action Needed
Fish • State fish tissue monitoring confirms that AOC waterbody-specific fish consumption advisories are no longer needed for PCBs, mercury, dioxins, and furans for waters in the AOC. OR • A multi-year comparison study of fish tissue contaminant levels demonstrates that there is no statistically significant difference (with a 95% confidence interval) in fish tissue concentrations in the AOC compared to fish tissue concentrations in a representative non-AOC control site within the Lake Michigan Basin.	In Progress & Action Needed
Wildlife • There are no waterfowl consumption advisories for waterfowl due to contamination originating within the AOC.	Assessment Complete (2015) Reassess Post Remediation

Revision Determination

Justifiable Reason: The target reflects goals that go beyond the AOC program framework.
The scope of achievable activities within the AOC program has become better understood as program implementation has occurred.
New information has become available.

Target Language Changes

- Removed the first sentence about identifying the approach that is currently used to monitor fish consumption advisories within the AOC.
- Removed the acronym BCOCs (Biological Chemicals of Concern) where the contaminants are already referenced.
- Removed 303(d) and 305(b) language because this designation is out of the AOC program framework.
- Removed the “approach to be used with funding to support additional monitoring” and combined the possibility of choosing between two levels of detail for fish consumption advisories (comparing to a reference site or having the Milwaukee Estuary AOC be listed as no longer impaired). If needed, this will allow there to still be a fish consumption advisory in effect when removing this BUI – if the fish tissue contaminant levels show no statistically significant difference between the reference site.
- State fish tissue monitoring confirms that AOC waterbody-specific fish consumption advisories… means that advisories are no more restrictive than statewide (for mercury) or Lake Michigan (for PCBs) advisories.

Current Target: Degradation of Benthos

Target (Updated 2011)	Status
Removal may occur if:	
• Known contaminant sources contributing to sediment contamination and degraded benthos have been identified and control measures implemented; and	In Progress & Action Needed
• All remediation actions for contaminated sediments are completed and monitored according to an approved plan; or	In Progress & Action Needed
• The benthic community within the site being evaluated is statistically similar to a reference site with similar habitat and minimal sediment contamination.	Assessment In Progress (2012-2017)

Revised Target: Degradation of Benthos

Target (Updated 2020)	Status
Removal of this BUI can occur when:	
• Contaminated sediment sites within the AOC have been identified, and implementation actions to remediate contaminated sites have been completed.	In Progress & Action Needed
• The benthic community of the Milwaukee Estuary AOC, excluding the highly modified lower estuary (*downstream of N. Humboldt Avenue on the Milwaukee River; downstream of N 25th Street on the Menomonee River; downstream of S Chase Avenue on the Kinnickinnic River, inner and outer harbors*) is statistically similar to a non-AOC reference site with similar habitat.	In-Progress

Revision Determination

Justifiable Reason: The scope of achievable activities within the AOC program has become better understood as program implementation has occurred. New information has become available.

Target Language Changes

- Removed the second bullet point that references needing the remediation actions to be monitored according to an approved plan for this specific BUI. Contaminated sediment remediation is already referenced in the first bullet point.
- Provided language to separate the highly modified lower estuary from the upper estuary. There is continual disturbance in the lower estuary from dredging operations and other urban activities.