

**Lower Menominee River Area of Concern Remedial Action Plan
Proposed Removal Recommendation
for the
Restrictions on Recreational Contact
Beneficial Use Impairment
October 27, 2010**

PURPOSE

The purpose of this document is to delineate restoration activities and support the recommendation to remove the Restrictions on Recreational Contact (Beach Closings) Beneficial Use Impairment (BUI) in the Lower Menominee River Area of Concern (AOC).

BACKGROUND

The 1990 Lower Menominee River Remedial Action Plan (RAP) recognized that the International Joint Commission (IJC) "Beach Closings" BUI designation was not consistent with the issues present in the Lower Menominee AOC. The RAP indicated that although closings of designated swimming beaches had not occurred within the AOC, elevated bacterial levels in the riverine portion of the AOC were associated with wet weather events. The RAP advisory committees therefore determined that Total or Partial Body Contact Restrictions, now referred to as Restrictions on Recreational Contact, more accurately described the bacteria-related impairment in the AOC. As described in the 1990 and 1996 RAPs, this issue was due primarily to combined sanitary sewer overflows from the cities of Menominee, Michigan and Marinette, Wisconsin. It was determined that once these sources were controlled through sewer separation projects, the issues leading to restrictions on recreational contact under the AOC program would be resolved.

Geographical Description/AOC Boundary

The Menominee River is a river in northwestern Michigan and northeastern Wisconsin. It is approximately 118 miles (190 km) long, draining a primarily rural forested area of northern Wisconsin and the Upper Peninsula of Michigan into Lake Michigan. Combined with its major tributaries, the Brule River and Michigamme River, the Menominee River forms one of the largest watersheds in the Lake Michigan Basin. The entire course of the Menominee forms part of the boundary between Wisconsin and Michigan and therefore the responsibility for the management of the watershed is shared by both states.

The AOC is jointly managed by the Wisconsin Department of Natural Resources (WDNR) and the Michigan Department of Natural Resources and Environment (MDNRE). The AOC is comprised of the lower three miles of the river, from the Upper Scott Dam (also known as the Park Mill Dam), to the river mouth. It also includes the adjacent Green Bay shoreline from the river mouth south to Seagull Bar in Marinette, Wisconsin, and from the river mouth north to John Henes Park in Menominee, Michigan. Green Island in Green Bay is also included in the AOC (RAP, 1990; RAP, 1996).

Area of Concern/Beneficial Use Impairments History

Areas of Concern (AOCs) were identified in the mid 1980s through work completed by the federal governments of the United States and Canada, in cooperation with state and provincial governments under the Great Lakes Water Quality Agreement (GLWQA). The 1987 amendments to the GLWQA further defined the BUIs (IJC, 1987). Identified BUIs for the Lower Menominee River AOC are as follows:

1. Restrictions on fish consumption;
2. Degradation of benthos;
3. Restrictions on dredging activities;
4. Degradation of fish populations;
5. Loss of fish and wildlife habitat; and,
6. Restrictions on recreational contact (also referred to as beach closings or restrictions on total or partial body contact).

The first five of these six BUIs are primarily the result of historic industrial and municipal waste discharges leading to contaminated sediments and water quality degradation. Some known ongoing contamination exists within the AOC and these areas are currently in negotiations with the responsible parties related to source control and associated remedial actions. The primary industrial contaminants identified in the 1990 Lower Menominee River RAP included paint sludge with associated heavy metals (remediated), PCBs, arsenic, and coal tars with associated polycyclic aromatic hydrocarbons (PAHs).

The sixth BUI is primarily the result of bacterial contamination from combined sewer overflows from the cities of Marinette and Menominee. A secondary and relatively minor source of contamination inside the Menominee Marina was thought to be related to wildlife or boat holding tanks (RAP, 1990). The terminology "Beach Closings" remains the accepted designation listed in the 1987 Amendments to the Great Lakes Water Quality Agreement (IJC, 1987).

The 1990 RAP concerns were related to bacterial contamination exceeding the Wisconsin and Michigan water quality standards. The 1996 RAP considered that though bacterial levels in the Menominee Marina were no longer an issue, concerns remained related to combined sewer overflows and sanitary sewer overflows from City of Menominee. These issues were resolved with wastewater and stormwater infrastructure improvements (MDEQ, 2009a).

Beneficial Use Impairment Restoration Targets

The restoration targets developed by the states are described in the *Lower Menominee River BUI Restoration Targets* dated December 22, 2008 (WDNR-MDEQ, 2008). We will follow the BUI removal process outlined in the *Guidance for Delisting Michigan's Great Lakes Areas of Concern (Guidance)* (MDEQ, 2008a) but modified to include approval steps for both states. The BUI removal process includes participation by the public. The Lower Menominee River Citizens Advisory Committee (CAC) has been involved throughout the development of this document. The specified Public Outreach

Meeting was held on November 3, 2010. The public comment period was from _____ to _____. Comments received can be found in Attachment A).

Restrictions on Recreational Contact BUI Restoration Criteria

The restoration criteria for the Restrictions on Recreational Contact BUI in the Lower Menominee River AOC are as follows:

This BUI will be considered restored when:

1. No waterbodies within the AOC are included on the list of non-attaining waters due to contamination with pathogens **from combined sewer overflows**¹ in the most recent Clean Water Act Water Quality and Pollution Control in either states: Section 303(d) and 305(b) Integrated Report (Integrated Report), which are submitted to U.S. EPA every two years.
2. OR, in cases where the waterbodies within the AOC are on the list of non-attaining waters due to the presence of Combined Sewer Overflows (CSOs) or are impacted by upstream CSOs, this BUI will be considered restored when CSOs have been eliminated or are being treated.
3. OR, in cases where CSOs still exist and significant progress has been made towards their elimination or treatment, this BUI will be considered restored when:
 - o All known sources of bacterial contamination to the AOC originating in the AOC and tributary watersheds have been controlled or treated to reduce exposures; and
 - o No unpermitted sanitary sewer overflows have occurred within the AOC during the previous five year period as a result of a less than 25-year precipitation event or snow/ice melt conditions; and
 - o Marinette, WI and Menominee, MI have adopted and are implementing storm water reduction programs including an illicit discharge elimination program

TECHNICAL TEAM

The Lower Menominee River Technical Team is comprised of members of state agency staff and the Lower Menominee River CAC. The technical team worked closely with the United States Environmental Protection Agency (U.S. EPA) Great Lakes National Program Office (GLNPO) to obtain their technical review comments. The Technical Team used the first criteria established in the *BUI Targets* for the Beach Closings/Recreational Use BUI to determine they were ready to proceed with the removal of this BUI. Specifically, the technical team found that no waters within the AOC were proposed for listing by either state on the list of non-attaining waters due to controllable contamination with pathogens in the most recent Section 303(d) and 305(b) Integrated Report submitted to U.S. EPA (MDEQ, 2010; WDNR, 2010).

¹ The CAC voted to add the phrase, "from combined sewer overflows," to bullet 1 of the delisting target at its August 25, 2010 meeting to clarify that delisting could occur when the primary issue of combined sewer overflows identified in the 1990 RAP and 1996 RAP Update had been addressed. The meeting notes are attached as Appendix B.

SUMMARY OF REMEDIAL ACTIONS OR SOURCE CONTROLS IMPLEMENTED TO ADDRESS THE BUI

Since the area was designated as an AOC, there have been several changes that affect the status of the Restrictions on Recreational Contact BUI. Among the most notable changes were upgrades to the wastewater treatment plants for both Marinette and Menominee which have resulted in both facilities operating within their respective state permit allowances (WDNR, 2010a; MDEQ, 2009a). In fact, Menominee has had no direct combined sewer overflows or sanitary sewer overflows following the treatment plant upgrade (MDEQ, 2009a). These upgrades are documented in detail in the 1996 RAP and include the following actions:

- 1974: City of Menominee upgraded their WWTP to a secondary treatment facility with conventional activated sludge with modifications to the primary clarifiers, aeration basins, final clarifiers, new chlorine contact chambers, new high rate diffusers, and new influent and effluent facilities.
- 1989: City of Menominee upgraded their WWTP with the addition of fine bubble diffusers, modifications to the chlorine chambers, and a new intake structure for the blowers.
- 1990: City of Marinette completed a combined sewer separation program to eliminate sewage bypassing by separating its previously combined sewer system. Work included 6.2 miles of new sanitary sewer and 6.5 miles of new storm sewer, rehabilitation of existing sewers, and repairs to deteriorated and leaking manholes.
- 1990: City of Marinette upgraded the wastewater treatment plant with major additions that reduced basement backups and bypasses previously caused by spring rains.
- 1992-1996: City of Menominee upgraded sections of the sewer system to eliminate the use of combined sewer overflow (CSO) pipe and installed almost 13 miles of new sewer pipe. This upgrade addressed the primary concerns related to CSO #2 which had provided the bulk of the overflows resulting from the core area of the city.
- 1996: Menominee Marina bacteria levels no longer considered an issue. Management included actions to reduce duck populations and increase flow by opening the north gates to allow for water to circulate inside the confines of the breakwater.
- 2002-2003: The City of Menominee upgraded their WWTP by completing further updates to facilitate wastewater treatment processes.
- 2005: The City of Menominee upgraded their WWTP through the installation of a 1,000 KW backup diesel generator with automatic switchgear for emergency backup power.
- 2006: The City of Menominee installed a fine screen (auger monster) onto the muffin monster.
- 2008: The City of Menominee installed a 500,000 gallon sludge tank with a truck loading station.

Given the extensive nature of these completed upgrades it is reasonable to assume that Wisconsin and Michigan have addressed the original sources of bacteria contamination that were the basis for listing this use as impaired. Furthermore, neither Wisconsin nor Michigan has proposed to add any part of the AOC to the 303(d) list of impaired waters for pathogen contamination in their most recent Integrated Reports submitted to U.S. EPA. Current *E. coli* monitoring data suggest that the one monitored Michigan beach, John Henes Park, met water quality standards in 2008 and 2009 (MDEQ, 2009b; data available at <http://www.deq.state.mi.us/beach/Default.aspx>). Applicable criteria are based on the federal Water Quality Standards for Coastal and Recreational Waters published in the Federal Register (Vol. 69 – No. 220. pgs. 67218-67243) by U.S. EPA on November 16, 2004. In Wisconsin, no current bacteria data are available for beaches within the Menominee River AOC.

RECOMMENDATION

Based upon review of the Michigan and Wisconsin most recent Integrated Reports submitted to U.S. EPA (MDNRE 2010 and WDNR 2010b) and input from the Technical Team it is agreed that this BUI is meeting the Lower Menominee River AOC Delisting Criteria. Therefore, we recommend removal of the Restrictions on Recreational Contact BUI in the Lower Menominee River AOC.

Prepared by:

Sharon Baker, AOC Coordinator
Office of the Great lakes
MDNRE

Stephen Galarneau, Director
Office of the Great Lakes
WDNR

Acronyms/Glossary

- AOC** **Area of Concern**
Geographic area that fails to meet General or Specific Objectives of the GLWQA where such failure has caused or is likely to cause impairment of beneficial use or the area's ability to support aquatic life.
- BUI** **Beneficial Use Impairment (BUI)**
Those impairments defined in Annex 2 of the November 1987-Great Lakes Water Quality Agreement. Impairment to a beneficial use means a change in the chemical, physical, or biological integrity of the Great Lakes System preventing or restricting the use.
- CAC** **Citizens Advisory Committee**
CACs or Public Advisory Councils (PACs) are groups comprised of local concerned citizens that advise agencies of local concerns and goals.
- CSO** **Combined Sewer Overflow**
A system of waste removal where storm runoff from streets empties into the same pipes as domestic and industrial wastes. In periods of high rain, the wastewater treatment plant cannot handle the increased volume and the wastewater empties through the combined sewer overflows into adjacent waterways without being treated.
- GLWQA** **Great Lakes Water Quality Agreement**
An agreement between the United States and Canada signed in 1978 and amended in 1987, which lays out the commitment by the two countries to cooperate in the management of their shared water resources. The Amended 1987 Protocol described, among other things, Lakewide Management Plans, Areas of Concern, and Beneficial Use Impairments.
- IJC** **International Joint Commission**
Formed by the 1909 Great Lakes Boundary Waters Treaty between the United States and Canada as the independent body overseeing the treaty with Commission appointees from both governments.
- MDNRE** **Michigan Department of Natural Resources and Environment**
- RAP** **Remedial Action Plan**
Plans developed by the states that identify Beneficial Use Impairments and outline the recommended remedial actions to remove the impairments. RAPs set the stage for eventual removal of all of the identified impairments, which will ultimately result in the delisting of AOCs.
- U.S. EPA** **United States Environmental Protection Agency**
- Watershed** All of the land area that drains into a particular waterbody.
- WDNR** **Wisconsin Department of Natural Resources**
- WWTP** **Wastewater Treatment Plant**

REFERENCES

- Great Lakes Water Quality Agreement (GLWQA). 1987. The GLWQA of 1978 is an Agreement with Annexes and Terms of Reference, between the United States and Canada signed Ottawa, November 22, 1978, and Phosphorous Load Reduction Supplement signed October 16, 1983, as amended by Protocol November 18, 1987. Office Consolidation IJC United States and Canada. p.25.
- International Joint Commission (IJC). United States and Canada. Revised Great Lakes Water Quality Agreement (GLWQA) of 1978 is an Agreement with Annexes and Terms of Reference, between the United States and Canada signed Ottawa, November 22, 1978, and Phosphorous Load Reduction Supplement signed October 16, 1983, as amended by Protocol November 18, 1987. Office Consolidation IJC United States and Canada. p.25.
- MDEQ. 2009a. Personal communication to Sharon Baker from Ben Thierry, Environmental Quality Analyst. Upper Peninsula District Office.
- MDEQ. 2009b. Personal communication to Sharon Baker from Shannon Briggs, Toxicologist, MDEQ-Water Bureau Beach Monitoring Program Manager.
- MDEQ. 2008a. Guidance for Delisting Michigan's Great Lakes Areas of Concern. Report MI/DEQ/WB-06/001
- MDEQ. 2008b. Water Quality and Pollution Control in Michigan 2008 Sections 303(d), 305(b), and 314 Integrated Report. Report number MI/DEQ/WB-08/007.
- MDNRE. 2010 Water Quality and Pollution Control in Michigan 2010 Sections 303(d), 305(b), and 314 Integrated Report. Report number MI/DEQ/WB-10/001.
- RAP. 1990. Lower Menominee River Remedial Action Plan: A Water Quality Protection Plan.
- RAP. 1996. Lower Menominee River Remedial Action Plan: A Water Quality Protection Plan Update.
- WDNR-MDEQ. 2008. Lower Menominee River AOC Beneficial Use Impairment Restoration Targets. Submitted to U.S. EPA on December 22, 2008. This document was prepared by the WDNR and MDEQ.

**Appendix A
Summary of Public Comments**

Appendix B

Notes from the August 25, 2010 Citizens Advisory Committee Meeting

Citizens Advisory Committee for the Remedial Action Plan
in the Lower Menominee River Area of Concern
Meeting Minutes
August 25, 2010
7-9 p.m., CDT

Geography/Geology Classroom
University YMCA/Max E. Peterson Field House
UW-Marinette
Corner of University Drive and Shore Drive, Marinette, Wisconsin

Attending: Kendra Axness (UWEX), Sharon Baker (MDNRE), Gail Clark (Resident and member of M&M Great Lakes Sport Fishermen), John Clark (Resident and member of M&M Great Lakes Sport Fishermen), Mike Donofrio (WDNR), Mark Erickson (Lloyd Flanders), John Groleau (Fibrek), Erin Hanson (USFWS), Brian Hinrichs (Foth Infrastructure & Environment), Trygve Rhude (Chappee Rapids Audubon), Rick Stoll (WDNR), Keith West (UW-Marinette), Steve Zander (Place Perfect Realty)
Via Conference Line: Jeff Danko (CH2M Hill), John Perrecone (USEPA-GLNPO)

Summary of Key Points and Action Items:

Prepare and distribute meeting notes – Kendra
Coordinate the September CAC meeting – Kendra
Update the Total & Partial Body Contact (formerly “Beach Closing”) BUI delisting doc per CAC changes – Sharon
Work with co-chairs to generate a letter of support for the TPBC delisting document – Kendra
Explore the possibility of getting GIS layer showing USACE nav channels for Menominee Harbor - Keith
Work with co-chairs to generate a letter of support for the SPAC RFP outreach project - Kendra

Welcome and introductions – Steve Zander, CAC Co-Chair

Steve Z. started the meeting and asked attendees to state name and organization.

Update on Beach Closings BUI Delisting – John Perrecone, USEPA

The basis for delisting is option 1 in the delisting target, “No waterbodies within the AOC are included on the list of non-attaining waters due to contamination with pathogens in the most recent Clean Water Act Water Quality and Pollution Control in either states: Section 303(d) and 305(b) Integrated Report (Integrated Report), which are submitted to U.S. EPA every two years.” A USEPA reviewer observed that there is no Wisconsin data to determine whether any beaches on the Wisconsin side of the river should (or should not) be added to the list of non-attaining waters. A similar comment was offered by a WDNR Office of Great Lakes reviewer.

Bay-Lake Regional Planning Commission received GLRI funds to conduct Beach Health Assessments at a number of beaches in northeast Wisconsin, including Red Arrow Park in City of Marinette. Through this project, data will be collected which would allow WDNR staff to make a determination about whether to add Red Arrow Park beach to the list of non-attaining waters. John pointed out that if the project identifies issues, then they could be addressed through BEACH Act or other programs, not necessarily through the AOC program.

Given the agency reviewers' comments, and the potential to have beach data for Wisconsin, John wanted to check in with the CAC before going ahead with delisting, to make sure that the CAC was aware of the project and the agency comments and still wanted to go ahead with delisting.

Sharon stated that Henes Park beach is not on the list of non-attaining waters, and that conditions at the Wisconsin beach are likely to be similar to those at Henes Park beach. Further, the initial reason for listing the Beach Closings BUI was related to combined sewer overflows (CSOs), not beach closings, and thus delisting should not be tied to beach issues. The CSOs have been resolved by comprehensive sewer separation efforts undertaken by the municipalities in the 1990s. Any problems at the beaches, if they exist, are likely due to waterfowl which is not an AOC-specific issue but instead is a lake-wide issue. Sharon and John both feel that it is appropriate to move ahead with delisting for those reasons.

Trygve noted that he'd seen an article in the local paper within the last few weeks that Henes Park beach had been closed for some amount of time due to the geese problem.

Overview of Bay-Lake RPC Beach Health Assessment Project – Brian Hinrichs, Foth Infrastructure & Environment

The goal of the beach health assessment project is to do a study (collect samples at beaches), identify issues, then look at causes and design best management practices to correct them. Foth will prepare documents that would be bid-ready, so that municipalities can show that they have "shovel-ready" projects for future grant opportunities.

A second Bay-Lake and Foth GLRI proposal that was not funded involved sediment characterization up to the first dam, to identify areas of scouring and deposition. This would help to identify fish habitat and also help to identify where contaminants are collecting. Brian would like to submit this project again when the next GLRI RFP is released. Sharon encouraged him to talk more about the project with herself and Steve Galarneau.

Discussion & Feedback on Beach Closings Delisting Document

Discussion about whether delisting the Beach BUI would hinder the ability of the BMPs identified in the Beach Health project to be funded by grant programs. It was generally thought that the AOC program would be an unlikely source of funding for the BMPs and other sources are available. Brian mentioned that the Wisconsin Coastal Management Program grants would be a possibility. Trygve stated that he was not comfortable holding up delisting if the reason for doing so was only to chase grant funds.

Steve stated that the "beach closing" term is problematic because the original Lower Menominee Remedial Action Plan (RAP) committee had stated the BUI as "Total and Partial Body Contact."

Each of the three options for delisting the BUI were reviewed by the group. None of them are currently a perfect fit because of the way they are written. Kendra suggested modifying option 1 to specify "No waterbodies within the AOC are included on the list of non-attaining waters due to contamination with pathogens **from combined sewer overflows** in the most recent Clean Water Act Water Quality and Pollution Control in either states: Section 303(d) and 305(b) Integrated Report (Integrated Report), which are submitted to U.S. EPA every two years."

Steve made a motion to modify the target in this way, and Mark seconded the motion. All CAC members voted in favor of making the change. John indicated that it would be okay to modify the target in that way so long as the delisting document explicitly identifies the modification with an explanatory footnote referring to the CAC meeting.

CAC members also agreed that they would prefer to see the delisting document use the "total and partial body contact" term instead of "beach closings." Sharon will make the changes to the document. A public informational session about the BUI delisting is expected to be part of the October CAC meeting. Erin recommended that the group be prepared to say a word about the number of beach closings that have occurred to emphasize that the Henes Park closing was an isolated event.

Kendra will work with CAC Co-Chairs to generate a letter of endorsement for the delisting document. The hope is that the BUI could be delisted by the end of the year.

Fish & Wildlife Plan Technical Advisory Committee Update – Kendra Axness, UWEX

Technical Advisory Committee meetings were held on July 13 and 22. Kendra handed out the draft goals/objectives/project summaries that TAC work groups generated on the 22nd and emphasized that they are still works in progress. She will present the TAC's work in more detail at the September CAC meeting. The Habitat TAC will meet again on September 9.

CAC members expressed concern about the statement under Goal 1 on the Habitat and Vegetation Work Group handout that "Green Island was removed from the goal statement..." Attendees did not want Green Island to be left out of the habitat plan altogether. Kendra explained that the habitat plan will include a list of projects that are supportive of AOC goals but not necessary for delisting, and Green Island would fit there. This is because Green Island is privately owned and it is unknown whether it could ever be acquired for public ownership, so the work group didn't want to have eventual delisting contingent upon acquiring Green Island. Steve pointed out that achievement of the objective, "50% of XX acres (to be determined) of natural areas are protected..." would be affected by whether or not Green Island is included in the calculation of total acres of natural areas.

There was discussion about the turning basin & whether it has been used in the recent past and if it should be identified as a project area in the habitat plan. Trygve noted that it was used once earlier this year. Tom Kuber had told Sharon that he uses it up to ten times per year. CAC members used an aerial photo provided by Brian to show where they thought the turning basin was located. The actual area that the U.S. Army Corps of Engineers dredges for navigation is smaller than what folks think of as the "turning basin." The CAC agreed that the dredged area shown on USACE project maps should not be identified as a project area, but that adjacent downstream areas (between nav channel and 6th Street slip) should be considered. Kendra asked Keith if it might be possible to get a GIS layer showing USACE project areas to use in generating habitat plan maps, and he agreed to look into it.

Kendra described a grant application that she, Greg Cleereman, and Sharon are developing to submit for the Michigan SPAC RFP of July 30, 2010. It involves habitat plan outreach as well as purchasing equipment to support future outreach activities. Marinette County Land and Water Conservation will be the applicant and will assist with carrying out the project. The CAC approved the project, and the co-chairs will work with Kendra to generate a letter of support for the application.

Nominate a CAC member to attend AOC Program Meeting in Buffalo, NY – Co-Chairs

The CAC agreed to endorse Trygve as the representative, with Steve Zander as an alternate in case Trygve isn't able to attend.

Exhibit for NAH Fish Passage Open House – Kendra Axness, UWEX

North American Hydro is hosting a fish passage open house on October 9 and Kendra is planning to set up a display for the event. Several CAC members offered to help staff the display and Kendra will send a sign-up sheet around with details of the event.

Announcements and identify agenda items for September 29, 2010

The next meeting is scheduled for September 29th and will include the following:

- Update on Total/Partial Body Contact (Beach Closings) BUI Delisting
- Report on U.S. Areas of Concern Program Annual Meeting
- Presentation on Habitat Plan TAC progress and discussion of draft documents
- Presentation of display materials for fish passage open house & CAC feedback
- Update on fall GLRI RFP, if it has been released

Meetings were scheduled for Oct 27 and Dec 8 and Kendra will send a save the date notice.

Minutes respectfully submitted by Kendra Axness.