

## **Removal Recommendation Degradation of Aesthetics Beneficial Use Impairment Kalamazoo River and River Raisin Areas of Concern**

### Issue

Based on two cycles of monitoring data collected by Michigan Department of Environmental Quality (MDEQ) staff, the Office of the Great Lakes (OGL), Areas of Concern (AOC) program requests concurrence with its recommendation to remove the Degradation of Aesthetics Beneficial Use Impairment (BUI) in: 1) the Kalamazoo River AOC, and 2) the River Raisin AOC. This request is made with the support of the Kalamazoo River Watershed Council (KRWC) (which serves as the local Public Advisory Council [PAC]), and the River Raisin PAC. This request is made in accordance with the process and criteria set forth in the *Guidance for Delisting Michigan's Great Lakes Areas of Concern* (Guidance) (MDEQ, 2008).

### Background

The following descriptions are paraphrased from historic documents, such as original Remedial Action Plans (RAPs) or subsequent RAP updates, which detailed specific aesthetic problems at the time:

#### **Kalamazoo River**

Degradation of Aesthetics was originally identified as an impaired use due to occasional spills or runoff events that caused odor or visual aesthetics problems (Kalamazoo River PAC, 1998).

#### **River Raisin**

According to the 1987 River Raisin RAP, the Ford Motor Company was a potential source of excessive levels of oil and grease to the AOC by way of direct discharge from its manufacturing operations. Studies conducted in the River Raisin during the 1960s through the 1980s documented poor water quality due in part to high turbidity, high suspended solids (especially from the Monroe WWTP and upstream areas), and total phosphorus loadings (MDNR, 1987).

### 2011 Aesthetics Monitoring

In general, each of the monitoring sites was assessed as follows. The date, time, GPS coordinates, weather conditions and water temperature were recorded. Three water samples were collected in glass jars from below the water surface to assess water color, clarity and turbidity. All three sample jars were photographed together against a white backdrop. Any odors from the sample jars, visible debris, and obvious pollution in the waterbody were recorded. Digital photographs were taken along the shoreline to the left, to the right, straight across, and directly into the water, along with any other condition, debris, etc. worthy of recording. Evidence of recreational activity, such as empty bait containers or people swimming was noted, along with any other observable conditions that may influence the decision as to the presence of an impairment or a designated use being employed. Based on the total of those observations, each site was assessed as to whether it met the criteria for removing the Degradation of Aesthetics BUI.

An initial cycle of aesthetics assessments was conducted in the ten Michigan AOCs that have the Degradation of Aesthetics BUI, between July 6 and September 8, 2011. A second cycle of assessments took place between October 18 and November 30, 2011, during which seven of the ten AOCs were assessed. The assessments were conducted in accordance with the MDEQ 2011 Statewide Aesthetics Assessment Workplan and Monitoring Protocol.

At most monitoring locations, a minimum of five photographs were taken and are available upon request, as are the individual monitoring data sheets completed at each site. Unless otherwise indicated, aerial photos in this document are oriented with north to the top. Specific monitoring locations were chosen based on: historical RAP documents, input received from local Public Advisory Councils, best professional judgment and personal knowledge of MDEQ AOC coordinators, and physical access to the waterbody.

Overall, it appears that aesthetic conditions in most of the AOCs have improved considerably, when compared with historic reports of those conditions from years ago. Many of the aesthetic conditions described in early RAPs and other related documents simply no longer exist. In part, this may be due to the successful implementation of National Pollutant Discharge Elimination System (NPDES) program permitting, an increasing sense of resource stewardship by local resource users, improved environmental practices implemented by commercial and industrial operations around the state, and increased advocacy and educational outreach by organizations that seek to enhance and protect their local water resources.

### Removal Criteria

According to the *Guidance*, this BUI will be considered restored when monitoring data for two successive monitoring cycles indicates that water bodies in the AOC do not have any of the following physical properties in unnatural quantities which interfere with any designated use:

- turbidity
- foams
- color
- settleable solids
- oil films
- suspended solids
- floating solids
- deposits

For the purposes of this criterion, these eight properties impair aesthetic values if they are unnatural – meaning those that are manmade (e.g., garbage, sewage), or natural properties which are exacerbated by human-induced activities (e.g., excessive algae growth from high nutrient loading). Persistent, high levels are those defined as long enough in duration, or elevated to the point of being injurious, to any designated use listed under Rule 323.1100 of the Michigan WQS. Natural physical features which occur in normal ecological cycles (e.g., logjams/woody debris, rooted aquatic plants) are not considered impairments, and in fact serve a valuable ecological role in providing fish and wildlife habitat.

### 2011 Aesthetics Monitoring Results and Analysis

#### ***Kalamazoo River***

Nine sites on the Kalamazoo River were assessed on August 12 and again on October 25, 2011. A total of approximately 93 photos were taken, and 54 water samples were assessed through both monitoring cycles. Assessment locations included sites from Portage Creek in the City of Kalamazoo through the main stem of the river to the Douglas/Saugatuck area (see Figure 1). Invasive purple loosestrife was noted along the shoreline in many of the assessment areas, as was phragmites, another invasive plant species. Submerged and emergent vegetation were both common in the assessment sites, as was evidence of people using the resource for fishing and other recreational activities. Kayakers were observed during assessment of the westernmost monitoring location during the first cycle. Some of the assessment areas were located at sites where the dams are in deteriorating condition. Fish were commonly observed throughout.

Broken concrete, rip rap, and steel sheet piling was observed in limited shoreline areas, along with downed trees and other naturally occurring debris. Small amounts of floating trash were

observed in the water and along the shoreline in places. Occasionally, a faint chloramine odor was detected in water samples, as a result of upstream wastewater treatment methods. However, none of these conditions are unique to AOCs, and none of them were severe or persistent enough to impair a designated use. Water samples collected throughout the AOC were clear of color and not turbid, even though there was a minor rain event the morning of the second assessment. Overall, no evidence of potential aesthetic impairments was observed at any of the nine monitoring locations in either assessment cycle.



**Figure 1. Kalamazoo River Aesthetics Monitoring Locations.**

### ***River Raisin***

The River Raisin was assessed on July 6 and October 18, 2011, see Figure 2 for locations. The River Raisin AOC is largely an industrial area, with hardened shorelines, including large chunks of broken concrete that function as industrial-sized rip rap, and steel sheet piling. People were observed fishing and pleasure boating. There was plenty of evidence (empty bait containers) of people using the river for fishing along the shoreline. Small fish were observed, as was waste from geese along the shoreline. People were also observed playing waist deep in the water at Site 1. Small amounts of floating algae were found at Site 2. Submerged aquatic vegetation was observed at Site 3. A large group of children was observed swimming in Lake Erie at Site 6 in July. A total of approximately 73 photos were taken, and 36 water samples were assessed through both monitoring cycles.

Water samples were consistently clear and colorless, with no detectable turbidity at any of the sites in both monitoring cycles. During the October assessment, water samples at five of the six monitoring locations had a faint chloramine or other chemical odor. Odors were not detected during the initial monitoring cycle. Trash and other debris were minimal throughout the AOC. Overall, MDEQ staff found no evidence to support a continued aesthetic impairment in the River Raisin AOC.



**Figure 2. River Raisin Aesthetics Monitoring Locations.**

### Recommendations

Based on observations, data and photographs collected during two successive monitoring cycles, carried out by MDEQ AOC staff and Water Resources Division Aquatic Biologists, and with the support of the respective PACs, MDEQ program staff recommend removal of the Degradation of Aesthetics BUI from the Kalamazoo River AOC and the River Raisin AOC, and request that the Director of the Office of the Great Lakes submit a letter requesting concurrence from the USEPA to remove this BUI from both.

This proposed action is on public notice for 30 days, from February 13 until March 13, 2012, via posting to the Mich-RAP listserv, listing in the DEQ Calendar, announcements sent to the Kalamazoo River PAC and River Raisin PAC. The relevant documents were posted on the DEQ's AOC program web page. Comments received prior to the end of the comment period will be considered prior to final action.

Submit written comments to John Riley, Michigan Department of Environmental Quality, Office of the Great Lakes, PO Box 30273, Lansing, Michigan, 48909-7773, or to [rileyj2@michigan.gov](mailto:rileyj2@michigan.gov) by midnight on March 13, 2012. If requested in writing, a public hearing may be scheduled. All comments received by March 13, 2012 will be considered prior to final action. Additional details on this proposed action may be obtained from: John Riley, Office of the Great Lakes, 517-335-4122, [rileyj2@michigan.gov](mailto:rileyj2@michigan.gov).

### References

Kalamazoo River Watershed Public Advisory Council, 1998. Kalamazoo River: Beauty and the Beast, Remedial and Preventive Action Plan for the Kalamazoo River Watershed Area of Concern.

Michigan Department of Environmental Quality. 2008. Guidance for Delisting Michigan's Great Lakes Areas of Concern. MI/DEQ/WB-06/001.

Michigan Department of Environmental Quality, 2011. Statewide Aesthetics Assessment Workplan and Monitoring Protocol.

Michigan Department of Natural Resources, 1987. Remedial Action Plan for River Raisin Area of Concern.

Prepared by: John Riley, AOC Coordinator  
Great Lakes Management Unit  
Office of the Great Lakes  
Michigan Department of Environmental Quality  
January 26, 2011