

Kalamazoo River Area of Concern: Overview and Request for Removal of the “Beach Closings” Beneficial Use Impairment

The Kalamazoo River Watershed Council* requests the removal of the “Beach Closings” Beneficial Use Impairment (BUI) from the eight listed impairments of the Kalamazoo River Watershed Area of Concern (AOC). An assessment of this BUI conducted by the Council reveals that this use is not currently impaired based on recently adopted State of Michigan guidelines for delisting Michigan AOCs (MDEQ, 2006b). The basis of the original listing of this BUI for the Council is the 1991 International Joint Commission (IJC) General Delisting Guideline, “When waters commonly used for full or partial body contact recreation exceed standards, objectives, or guidelines for such use”.

Removing this listed BUI of the Kalamazoo River AOC does not mean that the Council is not concerned that future problems with instream pathogens or water column polychlorinated biphenyls (PCBs) could arise. On the contrary, we are very concerned with the potential for concentrated animal feeding operation wastes, degraded wastewater infrastructure, impervious surface runoff, and failing septic systems to release pathogens to surface waters. And we remain concerned about PCB release from source areas, contaminated sediments, streambanks, and floodplains currently located in the river corridor, and the potential for natural disturbance or disturbance during Superfund related remedial river work. Either of these concerns could trigger future human contact restrictions or “beach closings”. Despite these concerns, we feel it is justifiable and desirable to remove this listed impairment of Kalamazoo River AOC. We feel confident that existing non-regulatory and regulatory watershed programs and groups of subwatershed stakeholders will detect, define, and correct such resource impairments in the future by working collaboratively with management agencies and other diverse partners. Finally, we feel that the Area of Concern program by its very nature must rely on existing watershed programs restoration (e.g., Superfund) and pollution prevention programs (e.g., Clean Water Act nonpoint source and TMDL) for tackling issues related to this impairment or getting ahead of these problems in the future with more effective land use planning and public education.

*The Kalamazoo River Watershed Public Advisory Council (PAC) is now functionally known as the Kalamazoo River Watershed Council (KRWC).

Background

In 1987, amendments to the Great Lakes Water Quality Agreement (GLWQA) were adopted by the federal governments of the U.S. and Canada. Annex 2 of the amendments listed 14 different beneficial use impairments (BUIs) which are caused by a detrimental change in the chemical, physical, or biological integrity of the Great Lakes system (International Joint Commission, 1988). The Annex directed the two countries to identify AOCs that did not meet the objectives of the GLWQA. Remedial Action Plans (RAPs) addressing the BUIs were to be prepared for all 43 AOCs identified, including the

Kalamazoo River. The BUIs provided a tool for describing effects of the contamination or other kinds of impairments, and a means for focusing remedial actions.

In February, 2006, the Kalamazoo River Watershed Council adopted the delisting targets included in the Michigan Department of Environmental Quality Guidance for Delisting Michigan's Great Lakes Areas of Concern (2006). The KRWC agreed to follow the guidelines to evaluate the status of Kalamazoo River BUIs and remove BUIs where appropriate. The Kalamazoo River AOC has eight BUIs determined under Annex 2 of the GLWQA, including: Restrictions on Dredging, Loss of Fish and Wildlife Habitat, Degradation of Fish and Wildlife Populations, Degradation of Aesthetics, Bird and Animal Deformities, Restrictions on Fish Consumption, Beach Closings, and Degradation of Benthos.

The KRWC, state, and federal agencies recognize the Area of Concern boundary as described below, although we feel that the "river" should include the 100-year floodplain and any former impoundment sediments that may lie above that level.

The Kalamazoo River AOC includes the lower portion of the river from Morrow Dam in Kalamazoo County near Galesburg to the mouth of the River in Allegan County at Saugatuck, as well as three miles of Portage Creek from its confluence with the Kalamazoo River (MDEQ, 2006a).

KRWC recognizes the primary resource problem, and original reason for listing as an "Area of Concern", as the presence of PCB contaminated water, residuals, soils, and sediments.

The portion of the Kalamazoo River Valley impacted by contaminated residuals, soils, and sediments includes the former landfill and disposal properties (source areas), river impoundments and formerly impounded areas (depositional areas), and the Portage Creek and Kalamazoo River mainstem river channel and nearby floodplains (depositional areas). Contaminated site characterization is ongoing within the Superfund cleanup program and may need to be reconsidered in the future.

Secondary ecosystem or watershed scale resource issues identified in the RAP are currently subject to several regulatory and non-regulatory based programs that were not in place at the time the RAP was originally drafted (MDNR, 1987; Kalamazoo River PAC, 1998). These programs include the NPDES Phase II stormwater permitting program, County level water resource monitoring with State oversight, and the Lake Allegan/Kalamazoo River Phosphorus Total Maximum Daily Load program. These programs are tackling problems associated with polluted runoff (nutrients, sediments, pathogens, hydrocarbons, and floatable trash) and wise land use planning. In addition, in the Kalamazoo River Watershed, numerous local groups have assembled to implement resource management solutions identified by working groups of citizens, agencies, and public and private sector partners, often working at the subwatershed level. Planning and implementation efforts have been ongoing in the Kalamazoo River watershed intended to reduce the risk of contamination from polluted runoff, including pathogens, from various land uses. A new role for the KRWC has been to shepherd the people, plans, and

programs that have developed across the watershed and help to ensure their continued success by serving as an umbrella organization for watershed partners, serving as a communication center, and developing a partnership agreement.

Significance of the Beach Closing Beneficial Use Impairment in the Kalamazoo River Area of Concern

This impairment was most recently listed due to three concerns explained as (Kalamazoo River PAC, 1998):

1. Swimming and other full body contact activities are not advisable because of poor sediment quality.
2. Concentrations of fecal bacteria exceeding full body contact standards result from storm runoff from livestock waste and septic systems.
3. Localized, seasonal blooms of potentially toxic algae in area lakes may make full body contact activities inadvisable. Zebra mussel colonization suspected as the primary cause of the bloom.

At that time the scope of the impairments was detailed and actions were recommended.

Assessment Results

KRWC reviewed technical reports, reviewed real-time websites, and contacted resource experts. The results of this assessment are summarized here as justification for BUI removal.

Beach Closings

The Delisting Guidance criteria require that no waterbodies within the AOC are included on the list of impaired waters due to contamination with pathogens in the most recent Integrated Report (Edly and Wuycheck, 2006). A second tier of guidelines from the Delisting Guidance do not apply in this AOC because combined or sanitary sewer overflows do not occur in the Kalamazoo River AOC.

The 2006 Integrated Report was reviewed. No human contact restrictions are listed in the AOC. Thus, known pathogen levels are not currently resulting in agency determined human contact restrictions in the Area of Concern. This fact alone is enough to justify removal of the “Beach Closings” BUI based on the specifications of the Delisting Guidance (MDEQ, 2006). Similarly, water column PCB concentrations are not currently resulting in agency determined human contact restrictions in the Area of Concern.

The 2008 Draft Integrated Report was reviewed. The only pathogen listing in the report is for Davis Creek, an upstream tributary to the Kalamazoo River, outside of the Area of Concern. This tributary does not impact public beaches, as there are none downstream of this tributary. Davis Creek is a highly urbanized and significantly industrialized tributary

in the watershed. Pathogen exceedances here, while a concern to the KRWC and other watershed partners, are not likely to be significantly different than similar Great Lakes subwatersheds experiencing typical negative impacts of urban runoff. This impairment will be addressed through a TMDL scheduled for 2016.

There are no public beaches in the Area of Concern in Kalamazoo County. The nearest monitored public beach in Kalamazoo County is Swimmer's Beach at Markin Glen Park, but the waterbody there is not hydrologically connected to the Kalamazoo River Mainstem (Reichert, personal communication, 2008).

Kalamazoo County maintains an extensive, annual bacteria monitoring program in County surface waters. Exceedances do occur, particularly in tributary streams, but these do not typically result in routine public notices calling for no human contact in County surface waters or the AOC. The suspected causes of these exceedances are typical of any Great Lakes surface water and include polluted runoff, illicit discharge, septic systems, ambient *E. coli*, and wildlife sources. These typical watershed problems are being addressed by existing regulatory and non-regulatory programs and partnerships. See <http://www.kalcounty.com/eh/lake-stream-monitoring.php> for county reports on surface water monitoring.

There are no public beaches in the Area of Concern in Allegan County. The nearest monitored public beach is Oval Beach, located on Lake Michigan, approximately one mile south of the mouth of the Kalamazoo River in Saugatuck. Monitoring results available on the Michigan Beach Monitoring website maintained by MDEQ are the best available indicator that exceedance levels of pathogens from the Kalamazoo River are not resulting in significant beach closings at this nearby, downstream beach, and that exceedances that have occurred in the past are relatively low compared to other Great Lakes public beaches impacted by severe contamination by combined or sanitary sewer overflow issues (2008a). Bill Hinz, Allegan County Director of Environmental Health, indicated that no public beaches are present or monitored for pathogens in the Area of Concern and the bacteriological quality of the Kalamazoo River is "quite good" (personal communication, 2008).

The Tri Community Plan for the City of Saugatuck, Saugatuck Township and the City of the Village of Douglas (2005) states:

"The Allegan County Health Department regularly tests Lake Michigan beaches, including some of those in the Saugatuck/Douglas area. The three communities contribute to the cost of water quality testing. Testing in past years has revealed levels of *e coli* high enough to close some beaches. Testing in 2003 was at six sites on the Kalamazoo River, eight sites upstream from Saugatuck/Douglas on the river, six county drains in Saugatuck Township, four creeks and streams that run into the Kalamazoo River and Lake Michigan, Oval Beach, Douglas Beach and Mueller Beach near the 126th Avenue Township Park. While one test resulted in levels exceeding 300 colonies per 100 ml on one occasion at Veteran's Park, tests were generally well in the safe zone. Other samples at streams had somewhat high levels following rains, but then the rates dropped quickly to safe levels. Some drains were so clean that testing was stopped at those sites."

PCB Concentrations in Surface Waters

Water column concentrations of PCB regularly exceed PCB Rule 57 water quality value of 0.026 ng/L (Aiello, 2006). Among stations for which total PCB loading rates were estimated, the Lower Kalamazoo River contributed (16 kg/year) in 2005 (Aiello, 2006). Despite evidence that water column PCB concentrations in the Lower Kalamazoo River are generally the highest in the State of Michigan, agencies have not recommended human contact restrictions and recent reviews conclude that normal recreational activity on the river is safe.

The Kalamazoo River Watershed Council asked the Michigan Department of Community Health (MDCH) to evaluate the health hazards from the PCBs present in the water and sediment of the Kalamazoo River. Following the Council's review of the then available public health assessment the Council requested responses to specific questions regarding dermal contact with and incidental ingestion of water and sediments during recreational use of the river. In response, the MDCH, in consultation with Agency for Toxic Substances and Disease Registry (ATSDR) investigated risks associated with ingestion of water and sediment associated with recreational activities. Their investigations found that there is no apparent health hazard regarding dermal contact with or incidental ingestion of water and sediments during recreational use of the river (MDCH, 2002).

The purpose of the Kalamazoo River Human Health Risk Assessment (2003) is to identify potential risks and hazards associated with exposures to PCBs released into the Kalamazoo River system. Section 3.2 of the Kalamazoo River Human Health Risk Assessment for the river, as it relates to contact with surface water, states:

“During hunting or fishing activities, contact with river surface water and sediment may occur. Contact with surface water and sediment may also occur during other recreational activities such as swimming and boating. In general, contact with sediment and surface water does not result in significant risks or hazards. This assumption is consistent with the findings presented in Health Consultation for Allied Paper / Portage Creek / Kalamazoo River (MDCH 1997). In that document, it is stated that "moist sediments might adhere more strongly to skin than drier soil, but river water would tend to wash the sediments off before the soiled skin reaches the mouth or food." In addition, the quantity of water consumed during swimming has been estimated to be significantly less than that consumed when water is used for drinking water (50 milliliters/hour, which is a typical swimming event versus 2 liters/day) (EPA 1989, 1992). For this reason, the ingestion of surface water is not considered a significant pathway.”

Finally, Current and future superfund remedial activities along the Kalamazoo River and Portage Creek are expected to disturb substantial sediment. Controls are required that minimize the risk of significant downstream transport of re-suspended contaminated sediments. And response guidelines are in place to reduce the impact of downstream transport of contaminated sediments should site monitoring indicate that turbidity and PCB water column exceedances are occurring (Bucholtz, personal communication 2007)

Toxic Algae

No human contact restrictions are present in the AOC due to toxic algal blooms in 2006 or Draft 2008 Integrated Reports. In addition, the original concern in the early RAP

documents stemmed from concerns with this issue in Gull Lake, located on a tributary upstream of the AOC.

Conclusions

An assessment of the “Beach Closings” Beneficial Use Impairment (BUI) conducted by the KRWC reveals that this use is not currently impaired based on State of Michigan guidelines for delisting Michigan AOCs. Thus, the Kalamazoo River Watershed Council requests the removal of this BUI from the eight listed impairments of the Kalamazoo River Watershed Area of Concern (AOC).

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