STATE OF MICHIGAN
OFFICE OF THE GREAT LAKES
LANSING

RICK SNYDER
GOVERNOR

JON W. ALLAN
DIRECTOR

February 12, 2014

Mr. Chris Korleski, Director
Great Lakes National Program Office
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (G-17J)
Chicago, Illinois 60604-3507

Dear Mr. Korleski:

I am writing to request the United States Environmental Protection Agency (U.S. EPA), Great Lakes National Program Office's (GLNPO) concurrence with the removal of the Degradation of Aesthetics and Restrictions on Drinking Water Beneficial Use Impairments (BUIs) from the White Lake Area of Concern (AOC). The Michigan Department of Environmental Quality (MDEQ), Office of the Great Lakes has assessed the status of the BUIs in accordance with the state's *Guidance for Delisting Michigan's Great Lakes Areas of Concern*, and recommends that the BUIs be removed from the list of impairments in the White Lake AOC.

Enclosed, please find documentation to support these recommendations, including the BUI Removal Recommendation documents prepared by MDEQ staff. The White Lake Public Advisory Council (PAC) submitted letters supporting these recommendations, which are included with this package. The PAC's letter regarding Drinking Water requested a response from MDEQ to acknowledge remaining concerns. We are attaching that letter as well. The proposed BUI removals were public noticed via the Mich-RAP listserv, the MDEQ Calendar, the MDEQ AOC program Web site, and the PAC's e-mail list. No written comments were received in response to the public notice period, which ran from January 13, to February 11, 2014.

We value our continuing partnership in the AOC Program and look forward to working with the GLNPO in the removal of additional BUIs in the near future. If you need further information concerning this request, please contact Mr. John Riley at 517-284-5045, or you may contact me.

Sincerely,

Roger Eberhardt
Acting Deputy Director
517-284-5035

Enclosures
cc: Mr. Greg Mund, White Lake PAC
Mr. Dave Cowgill, U.S. EPA
Mr. Marc Tuchman, U.S. EPA
Mr. John Perrecone, U.S. EPA
Mr. Richard Hobrla, MDEQ
Mr. John Riley, MDEQ

Removal Recommendation
Degradation of Aesthetics Beneficial Use Impairment
White Lake Area 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 recommends removal of the Degradation of Aesthetics Beneficial Use Impairment (BUI) from the White Lake AOC. This request is made with the support of the White Lake Public Advisory Council (PAC) and 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 original Remedial Action Plan (RAP) for White Lake, written in 1987 by the Michigan Department of Natural Resources, briefly mentioned Degradation of Aesthetics as an impairment, generally addressing aesthetics issues in the context of algal blooms resulting from nutrient loading. The following description is from the 1995 RAP update, which provided a more in depth discussion of specific aesthetic problems at the time:

> *The PAC and the RAP Team interpret aesthetics to refer primarily to water clarity and the absence of nuisance algal blooms, oil slicks, and similar visual symptoms of poor water quality. Applying these standards, the aesthetics of White Lake are considered overall to have improved over the last 20 years; nuisance algal blooms are less severe than in the past, oil slicks are not often observed, and the water is clearer.*
>
> *At the confluence of the White Lake outlet channel and Lake Michigan, there is a stark contrast in the appearance of the water of the two bodies; the outlet water is discoloured and often is mentioned by local residents as being of concern. The current and historic sediment loadings of the White River watershed and the urban storm water runoff from around White Lake may account for most of the difference; soil erosion and sedimentation and nonpoint urban and agricultural runoff are notable problems in the White Lake AOC and the White River watershed.*
>
> *Some local residents believe aesthetics also are degraded by continued development of the White Lake shoreline. The upper portion of the lake has been the most extensively developed, and because of the increasing use of the lake for recreational and tourism purposes, the potential for further development is high* (MDEQ, 1995).

In the 2002 RAP update, written by the White Lake PAC in conjunction with the Muskegon Conservation District, the Degradation of Aesthetics BUI is discussed at length, the entirety of which follows here:

> *Impairment History*
> *Degradation of aesthetics has been a volatile and somewhat arbitrary beneficial use impairment for the White Lake community. The original concern of diminishing aesthetics was associated with excessive rooted plant and algae*

growth in the lake. Algal growth within White Lake is still of concern, but eutrophication has been slowed because of nutrient decreases following the elimination of wastewater discharges. The control of nuisance algae remains a high priority for White Lake, yet nutrient inputs from shoreline residents are seldom recognized as a continuing source. Rooted plants also remain high priority as impacting the aesthetic nature of the lake, but specific solutions are less obvious.

Other historical issues related to aesthetics have been directly related to sites where known discharges from chemical and industrial plants entered White Lake. Many of these sites have either eliminated discharges into White Lake or are meeting state and federal regulations. No complaints, regarding color, temperature, or cloudy discharges have been received in recent years.

Area residents are concerned with increases in development surrounding the lake, especially new marinas along the eastern end, as a growing problem. This concern includes the alteration of the shoreline, new marinas removing portions of the lake from public navigable water, increasing hard surface sea-wall construction, and new homes being built in many of the natural areas remaining. With continued recreational boating use, oil slicks around marinas and in certain slow moving bays and beach stretches have also been reported. The White Lake community is undergoing many development pressures as urban sprawl from Muskegon is beginning to dramatically change the landscape.

The Next Steps
The two major issues for aesthetics that needs to be addressed are nutrients and development. Nutrients, as related to aquatic plant growth, must be evaluated as a model for the entire lake system. Evaluating the system, developing a nutrient budget, and providing a lake-wide management plan will be the greatest asset and strength to restoring the aesthetics of White Lake. Implementation of a lake management plan would greatly enhance community development and address specific issues (i.e: oil slicks – likely caused from motor boats and personal watercraft, but problem areas need to be confirmed and addressed).

These issues and impairments impact the entire biological community of White Lake and can only be solved through a combined community effort. The White Lake community must work toward the implementation of a strong management plan to address present development pressures, as well as emerging issues that will arise in the near future.

The White Lake PAC developed numeric nutrient criteria for the removal of the Eutrophication or Undesirable Algae BUI, which were finalized and approved by the MDEQ in 2009. Following analysis of relevant data collected in 2004, 2005 and 2006, and comparing it with data collected in 2011, the locally-developed restoration criteria were met and the BUI was officially removed. As mentioned previously, excessive algal growth was a factor for adding the Aesthetics BUI. There may still be occasional localized algal blooms in White Lake, but through the assessment and removal of the Eutrophication BUI, it's clear that this is no longer an aesthetic issue.

Concerns regarding hardened shoreline development were addressed through the implementation of the Great Lakes Restoration Initiative-funded, ten-site Shoreline

Habitat Restoration project, completed in 2012. The project restored over 8,000 lineal feet of shoreline, roughly equal to a mile and a half, including the removal of almost 500 feet of sheet-pile seawall.

While the Beach Closings BUI was never listed for the White Lake AOC, the presence of *E. coli* has the potential to impact designated uses of the lake, specifically body contact recreation. Because assessment of the Aesthetics BUI ultimately comes down to the question of whether any designated uses are impaired, the White Lake PAC expressed an interest in knowing whether beach monitoring data existed to demonstrate any designated use restrictions based on the presence of *E. coli*. The Muskegon County Health Department collected data for Maple Park on White Lake between June 5 and July 1, 2013. For that period, the geometric mean was reported as 50.11 *E. coli* per 100 ml. The Michigan Water Quality Standards require that surface waters contain less than 130 units per 100 ml to support full body contact recreation (the most restrictive designated use). Therefore, the standard was met and there were no designated use restrictions based on *E. coli* concentrations in White Lake in 2013. See Attachment 1.

Based on information from PAC members and observations from a site visit to Tannery Bay in May 2013, staff from the Muskegon Conservation District, the US Environmental Protection Agency's Great Lakes National Program Office (EPA) and MDEQ determined that aesthetic concerns remained to be addressed in the area. The site visit revealed the presence of burgundy-colored sediments, hair and associated tannery process waste in a limited area of the bay. It was determined that the process waste was impairing water quality and contributing to degraded aesthetic conditions, due to the quantity of unnatural discoloration and likely chemical contamination associated with it.

In September and October 2013, EPA funded and oversaw the removal and disposal of approximately 12,000 tons of discolored sediment and process waste that were not addressed during the Tannery Bay cleanup in 2003. Clean sand cover was placed over the newly dredged area. Over $3 million for the project was provided through the Great Lakes Restoration Initiative.

<u>Removal Criteria</u>
According to the MDEQ's *Guidance for Delisting Michigan's Great Lakes Areas of Concern* (MDEQ, 2008), 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 Water Quality Standards (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.

In 2009, the MDEQ approved local aesthetics criteria, developed by the White Lake PAC, that parallel the state criteria and additionally specify that particular "important public areas" do not exhibit any designated use impairments:

> *The **Degradation of Aesthetics BUI** will be considered restored when monitoring data for two successive monitoring cycles indicates that important public areas in the White Lake AOC do not exhibit persistent, high levels of the following "unnatural physical properties"* (as defined by Rule 323.1050 of the Michigan WQS) *in quantities which interfere with the State's designated uses for surface waters: …*
>
> *Important public locations in White Lake include: the Bush Creek/east bay and Genesco property where hides are present, shallow water areas with submerged debris, and the abandoned Whitehall and Montague dumps in the wetlands* (WLPAC, 2009).

<u>2011 and 2013 Aesthetics Monitoring</u>
Two cycles of assessments were conducted in 2011 and 2013, in accordance with the MDEQ's 2011 Statewide Aesthetics Assessment Workplan and Monitoring Protocol. Five sites were chosen with input from the PAC, including locations specifically called out in the local criteria. Each of the White Lake monitoring sites was assessed as follows.

The date, time, GPS coordinates, weather conditions and water temperature were recorded at each monitoring site. 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 (if any) in the lake 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 a designated use 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.

At each monitoring location, a minimum of five photographs were taken and are available upon request, as are the individual monitoring data sheets completed at each site. Specific monitoring locations were chosen based on: historical RAP documents, input received from the White Lake PAC, best professional judgment and personal knowledge of the MDEQ AOC coordinator, and physical access to the waterbody.

Overall, it appears that aesthetic conditions in the White Lake AOC 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 program permitting, an increasing sense of resource stewardship by local resource users, improved environmental practices implemented by municipal, commercial and industrial operations in the AOC,

and increased advocacy and educational outreach by organizations seeking to enhance and protect the resource.

Aesthetics Monitoring Results and Analysis

The White Lake AOC was assessed on July 12, 2011 and June 27, 2013. See Figure 1 for locations. Five sites were assessed from shore, including: Covell Park, the former Montague dump site, Maple Grove Beach, East Tannery Bay, and Mill Pond Park. The initial assessment was completed prior to the start of any shoreline habitat restoration work. The second assessment was completed following those restoration efforts. Approximately 70 photos were taken and 30 water samples were assessed through both monitoring cycles.

The first assessment near the former Montague Dump site was conducted adjacent to the footbridge where the White River empties into White Lake. The second assessment at that location was moved a couple hundred yards west, to capture the restoration of the former dump site following removal of trees, landfill waste and the re-grading and re-planting of the area. Small pieces of glass and other remnants of trash from the former landfill were observed on top of the soil in the newly restored area.

Covell Park was chosen as a monitoring site for its proximity to the area previously used as a dump on the Whitehall side of the causeway. Apparently, the actual location of the former dump site was capped and made into what is now known as Lions Park. Lions Park was dismissed as a monitoring location due to the wall of vegetation that restricted useful observation to just a few feet, in addition to the absence of any potentially aesthetically impaired conditions.

Figure 1. White Lake Aesthetics Monitoring Locations (North is to the right)

Fish, ducks, swans and other birds were commonly observed at most locations, as were people fishing from boats and evidence of people having fished from shore. Children were observed playing on the Maple Grove Beach shoreline during the second assessment. Sailboats were observed on the lake near Mill Pond Park during the first assessment.

Throughout both assessments, all water samples collected were clear and free of color or any suspended sediment. None of the samples contained any detectable unnatural

odors. A small amount of trash was noted along the shorelines, including empty bait containers, occasional candy wrappers and empty bottles. No oil sheens, foams, films, scum, or discolorations were observed at any monitoring site during either of the assessments.

Slab wood was observed in shallow water in the East Tannery Bay, at Mill Pond Park and to a far lesser degree, at Maple Grove Beach during both assessments. During visits to East Tannery Bay in January and May of 2013 when lake water levels were significantly lower than when the aesthetics assessments took place, tannery hides, bricks, glass, and slab wood were all observed along the exposed shoreline. The debris was less visible and less accessible when the water level was higher, causing it to be largely submerged.

Although there is no doubt that this debris is unsightly and does not belong, there is no evidence to suggest that any of the state's designated uses may be impaired as a result of its presence. In areas where tannery wastes have been found along with liquid process wastes, chemical analyses may result in the presence of metals. However, the scrap hides along the shoreline do not appear to coexist with liquids, sludge or other process waste of any kind. Rooted aquatic vegetation and fish were observed in the water in this area, indicating no impairment to the ability of those organisms to live and thrive. Empty bait containers along the shoreline suggest that people may catch fish in the East Tannery Bay area.

On the other side of the tannery peninsula, EPA completed remedial activities in Tannery Bay in early November 2013. This remediation was done in the area adjacent to remedial work that was completed in 2003, but generally nearer to the shoreline. Apparently, the original project had budget limitations that did not allow for complete removal of contaminants. In 2013, approximately 9,500 cubic yards of discolored sediment, hair and associated tannery process waste were removed, dewatered and disposed. The area was subsequently backfilled with a clean sand cover. Consistent with discussions with the White Lake PAC leading up to the project, the Tannery Bay cleanup was the final on-the-ground remedial activity required to restore the Aesthetics beneficial use.

Michigan's Water Quality Standards list the following designated uses for surface water quality to be protective of: navigation, industrial water supply, agriculture, public water supply at the point of intake, warmwater fishery, other indigenous aquatic life and wildlife, partial body contact recreation, and total body contact recreation during the warm weather months. Following two monitoring cycles, it is the opinion of MDEQ staff that there are no designated use impairments resulting from the existence of debris along the shoreline of East Tannery Bay, nor is there a designated use impairment at any other aesthetics monitoring location in the White Lake AOC.

The MDEQ acknowledges the White Lake PAC's concern regarding residual tannery hides and other debris along the shoreline of the East Tannery Bay area. The position of the MDEQ is that these conditions are not persistent enough to indicate, nor is there any data to support an assertion that one of the state's designated uses is being impaired at this location. However, Genesco remains responsible for the disposal of 1,000 tons of tannery waste in this area, through a consent agreement with the MDEQ. Additionally, the developer and owner of the property intends to improve the property in this area to appeal to potential buyers.

Recommendation

Based on observations, data and photographs collected during two monitoring cycles carried out by MDEQ AOC staff, a Water Resources Division Aquatic Biologist, and staff of the Muskegon County Conservation District, MDEQ program staff recommend removal of the Degradation of Aesthetics BUI from the White Lake AOC. The White Lake PAC discussed the issue in detail at its November 7, 2013 meeting. Members voted to support removal of the BUI. The PAC submitted a letter dated December 14, 2013 expressing support for this action. A public meeting was held at the White Lake Community Library on January 22, 2014 to discuss the issue and inform the community. This proposed action was public noticed for 30 days via the DEQ Calendar and postings to the Mich-RAP listserv, the White Lake PAC email list and the White Lake PAC's newsletter. No written comments were received.

References

Michigan Department of Environmental Quality, 1995. White Lake Area of Concern Remedial Action Plan: 1995 Update.

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 White Lake Area of Concern.

White Lake Public Advisory Council, 2002. White Lake Community Action Plan, Remedial Action Plan Update 2002.

Prepared by: John Riley
Great Lakes Management Unit
Office of the Great Lakes
Michigan Department of Environmental Quality
February 2014

ATTACHMENT 1

Maple Park on White Lake

Inland Lake Beach Monitoring 6/5/2013				
AWRI #	Time	Site ID	*E. coli* mpm/100mls	*E. coli* Geometric Mean mpm/100 mls
39264	10:56 AM	Maple Park L	140	57
39265		Maple Park C	57	
39266		Maple Park R	23	

Lake Michigan Beach Monitoring 6/10/2013				
AWRI #	**Time**	**Site ID**	*E. coli* mpm/100mls	*E. coli* Geometric Mean mpm/100 mls
39345		Maple Park S	16.1	15
39346		Maple Park C	14.6	
39347	12:00	Maple Park N	13.5	

Inland Beach Monitoring 6/17/2013				
AWRI #	**Time**	**Site ID**	*E. coli* mpm/100mls	*E. coli* Geometric Mean mpm/100 mls
39448	11:10	Maple Park S	108	105
39449		Maple Park C	119	
39450		Maple Park N	91	

Inland Beach Monitoring 6/24/2013				
AWRI #	**Time**	**Site ID**	*E. coli* mpm/100mls	*E. coli* Geometric Mean mpm/100 mls
39554	11:29	Maple Park S	46	56

39555		Maple Park C	56	
39556		Maple Park N	70	

Inland Beach Monitoring 7/1/2013				
AWRI #	**Time**	**Site ID**	***E. coli* #/100 mls**	**Geometric Mean *E. coli* #/100 mls**
40115	11:27	Maple Park S	40	63
40116		Maple Park C	49	
40118		Maple Park N	131	
40117		Maple Park C Field Dup	24	

30 Day Mean for Maple Park is 50.1097

Source: Muskegon County Health Department

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

10 MAR 2014

REPLY TO THE ATTENTION OF:

Mr. Roger Eberhardt
Acting Deputy Director, Office of the Great Lakes
Michigan Department of Environmental Quality
525 West Allegan
P.O. Box 30473
Lansing, Michigan 48909-7773

Dear Roger:

Thank you for your February 12, 2014, request to remove the "Degradation of Aesthetics" and "Restrictions on Drinking Water Consumption or Taste and Odor" Beneficial Use Impairments (BUIs) from the White Lake Area of Concern (AOC) in Michigan. As you know, we share your desire to restore all of the Great Lakes AOCs and to formally delist them.

Based upon a review of your submittal and the supporting data, the U.S. Environmental Protection Agency hereby approves your two BUI removal requests for the White Lake AOC. In addition, EPA will notify the International Joint Commission of this significant positive environmental change at this AOC.

We congratulate you and your staff, as well as the many federal, state, and local partners who have worked so hard and been instrumental in achieving this important environmental improvement. Removal of these BUIs will benefit not only the people who live and work in the White Lake AOC, but all the residents of Michigan and the Great Lakes basin as well.

We look forward to the continuation of this important and productive relationship with your agency and the local coordinating committee as we work together to fully restore all of Michigan's AOCs. If you have any further questions, please contact me at (312) 353-4891, or your staff may contact John Perrecone, at (312) 353-1149.

Sincerely,

Chris Korleski, Director
Great Lakes National Program Office

cc: Dan Wyant, Director, MDEQ
Jon W. Allan, MDEQ, Office of Great Lakes
Rick Hobrla, MDEQ, Office of Great Lakes
John Riley, MDEQ, Office of Great Lakes
Greg Mund, White Lake PAC
Stephen Locke, IJC
Wendy Carney, EPA, GLNPO
John Perrecone, EPA, GLNPO