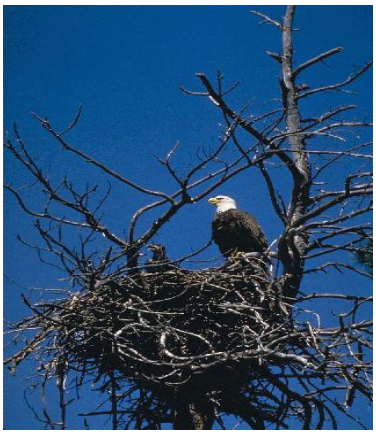
Stage 2 Remedial Action Plan
River Raisin Area of Concern



Office of the Great Lakes
Great Lakes Management Unit
Michigan Department of Environmental Quality

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Acknowledgements

The efforts to restore the River Raisin Area of Concern are the work of many dedicated and caring individuals over more than two decades. The summary information presented here only touches the surface of the good work carried out by those who live in the River Raisin Area of Concern and those who staff the federal and state agencies involved.

Of special note is the work of the members of the River Raisin Public Advisory Council, who have worked tirelessly to restore the place they call home.

It is a privilege to work with my colleagues in the Departments of Environmental Quality and Natural Resources and with our counterparts in U.S. Environmental Protection Agency, among others.

Thank you.

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River Raisin Area of Concern Stage 2 Remedial Action Plan

Purpose of the Stage 2 Remedial Action Plan

The Michigan Department of Environmental Quality (MDEQ) Stage 2 Remedial Action Plan (RAP) for the River Raisin Area of Concern (AOC) is intended to serve as the primary tool for identifying actions needed to restore Beneficial Use Impairments (BUIs), and for documenting and communicating restoration progress, within this AOC. Essential to this purpose is the BUI Tracking Matrix, which is intended to present the most current information available on actions needed, actions in progress, and actions completed toward BUI restoration and removal. This document has been prepared by the MDEQ in consultation with the River Raisin Public Advisory Council (PAC) and the U.S. Environmental Protection Agency (USEPA), Great Lakes National Program Office, and will be updated as needed to ensure that it remains current, relevant, and useful.

The identification of specific, achievable actions needed to restore and remove BUIs is one component of the MDEQ's process for tracking AOC restoration and ultimately delisting AOCs. This process, as well as the state's BUI restoration criteria, are outlined in the MDEQ *Guidance for Delisting Michigan's Great Lakes Areas of Concern* (*Guidance*) (MDEQ, 2008). Additionally, comprehensive background information on the River Raisin AOC is available in previously published RAP documents, which are listed in the Reference section of this publication.

Disclaimer

The Great Lakes Water Quality Agreement (GLWQA) is a non-regulatory agreement between the U.S. and Canada, and criteria developed under its auspices are non-regulatory in nature. The actions identified in this document as needed to achieve BUI restoration criteria are not subject to enforcement or regulatory actions by virtue of being listed in this document.

The actions identified in this Stage 2 RAP do not constitute a list of pre-approved projects, nor is it a list of projects simply related to BUIs or generally to improve the environment. Actions identified in this document are directly related to removing a BUI and are needed to delist the AOC. However, in many AOCs, further information is needed to determine all actions required to remove a BUI. Thus, the AOC-specific BUI Tracking Matrix is not necessarily comprehensive and will be updated to reflect additional actions that are needed.

Introduction

In 1987, amendments to the GLWQA were accepted by the federal governments of the U.S. and Canada. Annex 2 of the amendments listed 14 BUIs which are caused by a detrimental change in the chemical, physical, or biological integrity of the Great Lakes system (International Joint Commission (IJC), 1987). The Annex directed the two countries to identify AOCs that did not meet the objectives of the GLWQA. The RAPs addressing the BUIs were to be prepared for all 43 AOCs identified. The BUIs provided a framework for describing effects of the contamination, and a means for focusing remedial actions.

The River Raisin RAP identified nine of the GLWQA's 14 beneficial uses as being impaired (MDNR, 1987). These impairments have been primarily caused by historical discharges of oils and grease, heavy metals, and polychlorinated biphenyls (PCBs) to the river from industrial facilities in the area. Additionally, industrial and municipal waste disposal sites adjacent to the river were suspected of contaminating the river and have also caused a significant loss of fish and wildlife habitat. Between 2007 and 2008, the River Raisin PAC voted to adopt the

restoration criteria for the non-fish and wildlife habitat-related BUIs included in the *Guidance* to evaluate the status of the AOC BUIs. On February, 16, 2010, the MDEQ (then the Department of Natural Resources and Environment) approved the AOC-specific restoration criteria developed for the habitat-related BUIs (i.e., the Degradation of Fish and Wildlife Populations and Loss of Fish and Wildlife Habitat). Table 1 is a summary of the status of BUI assessments and removals from the River Raisin AOC.

Table 1. River Raisin BUI Status.

Beneficial Use Impairment	Beneficial Use Remains Impaired	Assessment in Progress in 2012	BUI Removed
Restrictions on fish and wildlife consumption	x	x	
Bird or animal deformities or reproductive problems	x	x	
Degradation of benthos	x		
Restrictions on dredging activities	x	x	
Eutrophication or undesirable algae	x	x	
Beach closings	x	x	
Degradation of aesthetics	x	x	
Degradation of fish and wildlife populations	x		
Loss of fish and wildlife habitat	x		

The River Raisin AOC is located in Monroe County, in the southeastern portion of Michigan's Lower Peninsula. The boundary of the AOC includes the lower 2.6 miles of the River Raisin (Figure 1), downstream from Dam No. 6 at Winchester Bridge in the City of Monroe, extending one-half mile into Lake Erie following the federal navigation channel and along the nearshore zone of Lake Erie both north and south, for one mile (MDNR, 1987).

Figure 1. The River Raisin Area of Concern.

1) *Restrictions on Fish and Wildlife Consumption*

Significance in the River Raisin Area of Concern

Due to PCB contamination in the lower River Raisin, there is a do not consume advisory for carp and channel catfish taken from the River Raisin below the Monroe Dam, including the Detroit Edison (DTE) corporate levee. There is also consumption advisories below the Monroe Dam for black buffalo, freshwater drum (for women and children only), smallmouth bass, and white bass (Michigan Department of Community Health [MDCH], 2010).

Restoration Criteria

The River Raisin PAC has accepted the state's criteria for restoring this beneficial use. Because the fish consumption advisory in the River Raisin AOC is more stringent than for Lake Erie, this BUI will be assessed using either a comparison study or trend analysis.

Current Status and Actions to be Undertaken

This BUI is currently impaired. The MDCH and the MDEQ are working jointly on a 2011 USEPA Great Lakes Restoration Initiative (GLRI) funded project to conduct a statewide AOC fish tissue sampling project. A technical committee will be convened when the MDEQ and the River Raisin PAC determine that this BUI is ready for a formal review and assessment. The technical committee will review the results of all remedial actions completed and other supporting documentation to provide a decision on whether or not to support a recommendation to formally remove this BUI.

2) Bird or Animal Deformities or Reproductive Problems

Significance in the River Raisin Area of Concern

Prior to the late 1940's, the River Raisin AOC contained over 800 acres of wetlands and was considered a renowned hunting and fishing destination (MDNR, 1987). However, recognizing the potential for industrial development in the lower reaches, the Monroe Port Commission allowed the filling of most of the wetlands. Industrialization of this area resulted in several contaminated waste sites on both sides of the river (MDNR, 1987). Today, the remaining wildlife habitat, especially the Eagle Island Marsh (formerly the Ford Marsh) and the Port of Monroe Landfill lagoons adjacent to Plum Creek (in the immediate vicinity of the AOC), are home to nesting eagles, a colony of ring billed and herring gulls, a number of wintering bald eagles, and other aquatic birds (D. Best, personal communication, October 24, 2006).

Restoration Criteria

The River Raisin PAC has accepted the state's criteria for restoring this beneficial use. According to the *Guidance*, restoration of this beneficial use will be demonstrated using one of two approaches. The approach taken will depend on the availability of data. The first approach evaluates restoration based on field assessment of birds and/or other wildlife where MDEQ or other state-approved bird and wildlife data are available. The second approach will be applied where bird or other wildlife data are not available. This approach will use levels of contaminated fish tissue known to cause reproductive or developmental problems as an indicator of the likelihood deformities or reproductive problems may exist in the AOC.

Current Status and Actions to be Undertaken

This BUI is currently being assessed. The MDEQ received 2010 GLRI funding from the U.S. Fish and Wildlife Service (USFWS) to complete a statewide status assessment for this BUI. A technical committee will be convened when the MDEQ and the River Raisin PAC determine that this BUI is ready for a formal review and assessment. The technical committee will review the

results of all remedial actions completed and other supporting documentation to provide a decision on whether or not to support a recommendation to formally remove this BUI.

3) *Degradation of Benthos*

Significance in the River Raisin Area of Concern

According to the 1987 RAP, benthic impairments were listed due to PCB contamination from a variety of sources from within and outside of the AOC, including: contaminated sediments, waste disposal sites and industrial point sources located along the river; heavy metals from urban non-point sources; suspended solids from combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs); oil and grease from industrial point sources, and urban non-point sources (MDNR, 1987). Remediation of contaminated sediments continues to be the priority remedial action in this AOC because it is thought to be tied to multiple BUIs, including the fish consumption, bird and animal deformities, restrictions on dredging, and benthos.

Restoration Criteria

The River Raisin PAC has accepted the state's criteria for restoring this beneficial use. According to the *Guidance*, the restoration criteria for this beneficial use requires that all remedial actions for known contaminated sediment sites with degraded benthos are completed (except for minor repairs required during operation and maintenance) and monitored according to the approved plan for the site.

Current Status and Actions to be Undertaken

This BUI is currently impaired. The U.S. Army Corps of Engineers (USACE) completed a GLRI strategic dredging project in the river in August, 2011. The USEPA has an active Great Lakes Legacy Act (GLLA) project with a projected start date in 2012. Once the GLLA project has been completed, a technical committee will be convened to review the results of all remedial actions completed and other supporting documentation to provide a decision on whether or not to support a recommendation to formally remove this BUI.

4) *Restrictions on Dredging Activities*

Significance in the River Raisin Area of Concern

In 1981, samples collected for the USACE revealed elevated levels of PCBs in sediments located from the Monroe WWTP to Lake Erie (MDNR, 1987). The highest concentrations were found in and immediately downstream of the turning basin. Later, in 1983 and 1984, it was noted that PCB concentrations in sediment increased from the turning basin to the Detroit Edison Power Plant water intake (Harding, 2002, as cited in Cyr, 2002). In 1991, a Michigan State University investigation found high levels of PCBs (40,000 parts per million) in sediments located near the outlet of a former Ford Motor Company wastewater discharge pipe. This pipe was located on the north side of the River Raisin just downstream from the turning basin. Subsequent investigations determined the extent of the contamination, and those areas are currently being addressed under the USEPA's GLLA project.

Restoration Criteria

The River Raisin PAC has voted to adopt the state's criteria for restoring this beneficial use. This beneficial use will be considered restored when either there have been no restrictions on routine commercial or recreational navigational channel dredging by the USACE, based on the most recent dredging cycle data available; or, in cases where dredging restrictions exist, a comparison of sediment contaminant data from the commercial or recreational navigation

channel (at the time of proposed dredging) in the AOC indicates that contaminant levels are not statistically different from other comparable, non-AOC commercial or recreational navigation channels.

Current Status and Actions to be Undertaken

The MDEQ received 2010 GLRI funding from the USEPA to complete a statewide status assessment for this BUI. The 2010 data for the sediments from the federal channel in the Raisin River indicate that most of the metals were elevated above statewide default background and PCBs are present at levels above allowable human direct contact. As such, the upland placement of the sediments would be restricted. However, when compared to the Bolles Harbor, the River Raisin metal and PCB concentrations did not differ significantly from the reference site's metal and PCB concentrations. Based on the data collected as part of the statewide assessment, MDEQ program staff is recommending the removal of this BUI in the River Raisin AOC.

5) Eutrophication or Undesirable Algae

Significance in the River Raisin Area of Concern

According to the 1987 River Raisin RAP, water quality in the river between the 1960s and 1970s was considered generally poor (MDNR, 1987). Low flow in the summer months caused nutrients from upstream sources to accumulate in the AOC, causing the water quality to assume a "sludge-like character" and undesirable algae growth (Cyr, 2002). Monitoring during the mid-1970s showed that turbidity and total phosphorus was consistently high, indicative of highly eutrophic conditions, and was likely related more to runoff from agriculture in the upper watershed rather than municipal or industrial discharges in the AOC (South East Michigan Council of Governments, 1978, as cited in MDNR, 1987).

Restoration Criteria

The River Raisin PAC has accepted the state's criteria for restoring this beneficial use. According to the *Guidance*, this beneficial use will be considered restored when there are no waterbodies within the AOC included on the list of impaired waters due to nutrients or excessive algal growths in the most recent Clean Water Act *Water Quality and Pollution Control in Michigan: Section 303(d) and 305(b) Integrated Report* (Integrated Report), which is submitted to USEPA every two years.

Current Status and Actions to be Undertaken

Based on the information provided in the 2010 Integrate Report, the River Raisin is not considered impaired due to nutrients or excessive algal growths. A technical committee will be convened in 2012 to review the results of all remedial actions completed and other supporting documentation to provide a decision on whether or not to support a recommendation to formally remove this BUI.

6) *Beach Closings*

Significance in the River Raisin Area of Concern

The only public beach within the AOC is located at the Sterling State Park. The swimming beach is located within one mile north of the mouth of the River Raisin (Figure 1). Historically, the park was closed to swimming due to *E. coli* contamination from the River Raisin (R. Micka, personal communication, December 11, 2006). Today, because all of the River Raisin water flows through the Detroit Edison Power Plant and is discharged into Plum Creek, which discharges over one mile downstream from the mouth of the River Raisin, the threat of bacterial

contamination at the park has been reduced (R. Micka, personal communication, December 11, 2006). However, recreational contact with surface water contaminated with bacteria is an ongoing concern in the river. Bacterial contamination within the lower river has been attributed to inputs from the upper watershed, including discharges from upstream wastewater facilities, periodic SSOs and CSOs from upstream municipalities, failed septic systems and agricultural inputs from rural areas (D. Stefanski, personal communication, December 11 and 12, 2006).

Restoration Criteria

The River Raisin PAC has accepted the state's criteria for this BUI. The statewide criteria for this BUI was revised in 2008 to account for AOCs listed as having CSOs, or considered impacted by an upstream CSOs. The criteria revision outlines a three tiered approach.

The first tier requires that no waterbodies within the AOC are included on the 303(d) list of impaired waters due to contamination with pathogens in the most recent Integrated Report. If the waterbody is listed due to the presence of CSOs, or are impacted by upstream CSOs, the second criteria states that this BUI will be considered restored when updated information reveals that the CSOs have been eliminated or are being treated. Or, In cases where CSOs still exist and significant progress has been made towards their elimination or treatment, the third tier allows monitoring data to be used to document that water quality standards for *E. coli* are generally met, which enables removal of the BUI.

Current Status and Actions to be Undertaken

This beneficial use is currently impaired. The MDEQ received 2010 GLRI funding from the USEPA to complete a statewide status assessment for this BUI. A technical committee will be convened when the MDEQ and the River Raisin PAC determine that this BUI is ready for a formal review and assessment. The technical committee will review the results of all remedial actions completed and other supporting documentation to provide a decision on whether or not to support a recommendation to formally remove this BUI.

7) *Degradation of Aesthetics*

Significance in the River Raisin Area of Concern

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 (MDNR, 1987). Studies conducted in the River Raisin during the 1960s through the 1980s also 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).

Restoration Criteria

The River Raisin PAC has accepted the state's criteria for restoring this beneficial use. The *Guidance* criteria require that monitoring data be collected for two successive monitoring cycles to determine whether or not the water bodies in the AOC exhibit persistent, high levels of the following "unnatural physical properties" (as defined by Rule 323.1050 of the Michigan Water Quality Standards) in quantities which interfere with the state's designated uses for surface waters:

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

Current Status and Actions to be Undertaken

The MDEQ received 2010 GLRI funding from the USEPA to complete a statewide status assessment for this BUI. The two rounds of the assessment were completed in the River Raisin on July 6 and October 18, 2011. Based on observations, data and photographs collected during two successive monitoring cycles, MDEQ program staff is recommending the removal of this BUI in the River Raisin AOC.

8) *Loss of Fish and Wildlife Habitat*
Degradation of Fish and Wildlife Populations

Significance in the River Raisin Area of Concern

The current sites of Ford Motor Company Stamping Plant (now Automotive Components Holdings, LLC) and DTE's power plant were once the sites of renowned hunting and fishing lodges (MDNR, 1987). As the area underwent intense industrial development in the early and mid-1900s, the extensive fish and wildlife habitat was eliminated. Subsequently, water quality and biota became susceptible to significant point and non-point source contaminants. Fish populations became impaired due to loss of shallow water habitat; CSOs and residual chlorine from the WWTP; oil and grease from industrial point sources; and in particular, PCBs and heavy metals from contaminated sediments, waste disposal sites and other point sources located along both sides of the river (MDNR, 1987).

Restoration Criteria

The River Raisin Fish and Wildlife Technical Committee, comprised of representatives from the MDEQ, MDNR, River Raisin PAC, and other local stakeholders established criteria for restoration of these BUIs, and identified habitat restoration sites to address the need to restore shallow water habitat within and in the vicinity of the AOC (ECT, Inc., 2008).

As outlined in the *Delisting Targets for Fish/Wildlife Habitat & Population Related Beneficial Use Impairments for the River Raisin Area of Concern*, the restoration criteria for the River Raisin AOC are:

- Degradation of Fish and Wildlife Populations BUI - The reach of the River Raisin within the AOC supports a diverse fish community.

- Loss of Fish and Wildlife Habitat BUI - Meet delisting target for Degradation of Fish and Wildlife Populations BUI.

Removal of the fish and wildlife BUIs will be based on achievement of full implementation of remedial actions, including monitoring conducted according to site plans and showing consistent improvement in quantity of habitat addressed in the restoration targets. Habitat values and populations need not be fully restored prior to delisting, as some may take many years to recover after actions are complete.

Current Status and Actions to be Undertaken

The Fish and Wildlife Technical Committee identified four projects that would address the population and habitat impairments in the AOC, including: the William C. Sterling State Park Marsh and Prairie Restoration project, River Raisin Wetland Enhancement and Habitat Evaluation project, Phase 1 and Phase 2 of the Fish Habitat Passage project, and the Sterling Island Habitat project. All four projects are currently being funded through 2010 and 2011 GLRI grants from the USEPA. It is expected that all remedial actions will be completed at the project locations by September 30, 2012.

Actions to Delist: River Raisin AOC BUI Tracking Matrix

The following BUI Tracking Matrix is intended as a simple way to track ongoing progress with the remedial activities identified as being necessary to remove each BUI, and subsequently to delist the AOC entirely. As progress is made, the matrix will be updated to reflect current conditions. Completed activities will remain in the matrix as it is updated, but updates will reflect completed status and completed BUI removals.

The matrix lists each BUI, indicates whether each BUI is scheduled for assessment in the current year, and lists the actions/tasks necessary to advance toward BUI removal. If a funding source has been identified, it is listed along with the targeted start and end dates for each action. Project leads are identified as appropriate, along with the targeted BUI removal date.

The matrix represents the AOC program's current best effort to assess activity in an AOC at the time the document was updated. The matrix does not necessarily commit the listed entities/individuals to any particular activity. Contracts, grant agreements, etc. are the documents governing commitments that have been or will be made.

The dates listed reflect the MDEQ's best estimate of project completion given currently available information. Work does not always proceed as planned, and the MDEQ recognizes that unforeseen circumstances can arise. The MDEQ is dedicated to facilitating the completion of each of the projects listed in the timeliest manner possible.

Acronyms used in the River Raisin AOC BUI Tracking Matrix:
AOC – Area of Concern
BUI – Beneficial Use Impairment
GLLA - Great Lakes Legacy Act
MDCH – Michigan Department of Community Health
MDEQ – Michigan Department of Environmental Quality
USEPA – United States Environmental Protection Agency
GLRI – Great Lakes Research Initiative
MDCH – Michigan Department of Community Health
N/A – Not applicable
TBD – To be determined
USACE – U.S. Army Corps of Engineers

River Raisin AOC BUI Tracking Matrix									Date: 3/5/12
Area of Concern Name	**Beneficial Use Impairment Name**	**Assessment in 2011? (Y/N)**	**Actions/Tasks Needed**	**Funding Source**	**Start Date**	**Targeted Completion Date**	**Project Lead**	**Targeted BUI Removal Date**	**Comments**
River Raisin	Beach Closings	Yes	Identify, if necessary, sources contributing to the Beach Closing BUI	TBD	TBD	TBD	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment
River Raisin	Beach Closings	Yes	Remediate, if necessary, sources contributing to the Beach Closing BUI	TBD	TBD	TBD	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment
River Raisin	Beach Closings	Yes	Monitor reach identified on the 303(d) impaired waterbodies list	TBD	TBD	TBD	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment
River Raisin	Beach Closings	Yes	Assess Beach Closing BUI	TBD	Oct-11	Sep-12	Swart (MDEQ)	TBD	Statewide Assessment
River Raisin	Beach Closings	Yes	Remove Beach Closing BUI	TBD	TBD	TBD	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment
River Raisin	Bird or Animal Deformities or Reproductive Problems	Yes	Identify sources, if necessary, contributing to the Bird or Animal Deformities or Reproductive BUI	TBD	TBD	TBD	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment
River Raisin	Bird or Animal Deformities or Reproductive Problems	Yes	Remediate sources, if necessary, contributing to the Bird or Animal Deformities or Reproductive BUI	TBD	TBD	TBD	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment

Area of Concern Name	Beneficial Use Impairment Name	Assessment in 2011? (Y/N)	Actions/Tasks Needed	Funding Source	Start Date	Targeted Completion Date	Project Lead	Targeted BUI Removal Date	Comments
River Raisin	Bird or Animal Deformities or Reproductive Problems	Yes	Monitor sites, if necessary, related to Bird or Animal Deformities or Reproductive BUI	TBD	TBD	TBD	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment
River Raisin	Bird or Animal Deformities or Reproductive Problems	Yes	Assess Bird or Animal Deformities or Reproductive BUI	2010 USFWS GLRI Grant	Jun-11	Dec-12	Baker (MDEQ)	TBD	Statewide assessment
River Raisin	Bird or Animal Deformities or Reproductive Problems	Yes	Remove Bird or Animal Deformities or Reproductive BUI	TBD	TBD	TBD	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment
River Raisin	Degradation of Aesthetics	Yes	Assess Degradation of Aesthetics BUI		Jun-11	Dec-12	Riley (MDEQ)	Mar-12	Statewide assessment concluded that BUI ready for removal. PAC provided a letter of support.
River Raisin	Degradation of Aesthetics	Yes	Remove Degradation of Aesthetics BUI		Feb-12	Mar-12	Riley (MDEQ)	Mar-12	
River Raisin	Degradation of Benthos	No	Implement GLLA Sediment Remediation Project	GLLA	Sep-11	Jun-12	USEPA	TBD	
River Raisin	Degradation of Benthos	No	Monitor GLLA Sediment Remediation Project		TBD	TBD	USEPA	TBD	
River Raisin	Degradation of Benthos	No	Assess Degradation of Benthos BUI	TBD	TBD	TBD	Selzer (MDEQ)	TBD	
River Raisin	Degradation of Benthos	No	Remove Degradation of Benthos BUI	TBD	TBD	TBD	Selzer (MDEQ)	TBD	

Area of Concern Name	Beneficial Use Impairment Name	Assessment in 2011? (Y/N)	Actions/Tasks Needed	Funding Source	Start Date	Targeted Completion Date	Project Lead	Targeted BUI Removal Date	Comments
River Raisin	Eutrophication or Undesirable Algae	Yes	Assess Eutrophication or Undesirable Algae BUI	N/A	Feb-12	Apr-12	Selzer (MDEQ)	May-12	Preliminary assessment indicates BUI is ready for formal assessment.
River Raisin	Eutrophication or Undesirable Algae	Yes	Remove Eutrophication or Undesirable Algae BUI	N/A	Apr-12	May-12	Selzer (MDEQ)	May-12	
River Raisin	Loss of Fish and Wildlife Habitat	No	Construct Sterling State Park Marsh Project	2010 EPA GLRI	Jun-11	Sep-12	Palmgren (MDNR)	TBD	
River Raisin	Loss of Fish and Wildlife Habitat	No	Construct Sterling State Prairie Restoration Project	2010 EPA GLRI	Jun-11	Sep-12	Palmgren (MDNR)	TBD	
River Raisin	Loss of Fish and Wildlife Habitat	No	Construct Phase 1 Fish Habitat Passage Project	2010 EPA GLRI	Sep-11	Sep-12	City of Monroe	TBD	
River Raisin	Loss of Fish and Wildlife Habitat	No	Construct Phase 2 Fish Habitat Passage Project	2011 EPA GLRI	Jun-12	Sep-12	City of Monroe	TBD	
River Raisin	Loss of Fish and Wildlife Habitat	No	Construct Sterling Island Habitat Project	2011 EPA GLRI	Jun-12	Sep-12	City of Monroe	TBD	
River Raisin	Loss of Fish and Wildlife Habitat	No	Complete River Raisin Wetland Enhancement and Habitat Evaluation Project	2010 EPA GLRI	Jun-11	Dec-11	Palmgren (MDNR)	TBD	
River Raisin	Loss of Fish and Wildlife Habitat	No	Monitor habitat restoration sites		Jun-11	Sep-14	Palmgren/ Braunscheidel (MDNR)	TBD	Habitat and Populations BUI removal dependent on fish community monitoring assessment

Area of Concern Name	Beneficial Use Impairment Name	Assessment in 2011? (Y/N)	Actions/Tasks Needed	Funding Source	Start Date	Targeted Completion Date	Project Lead	Targeted BUI Removal Date	Comments
River Raisin	Loss of Fish and Wildlife Habitat	No	Assess Loss of Fish and Wildlife Habitat BUI		TBD	TDB	Selzer (MDEQ)	TBD	
River Raisin	Loss of Fish and Wildlife Habitat	No	Remove Loss of Fish and Wildlife Habitat BUI		TBD	TDB	Selzer (MDEQ)	TBD	Habitat BUI removal dependent on fish community monitoring assessment
River Raisin	Degradation of Fish and Wildlife Populations	No	Assess Degradation of Fish and Wildlife Population BUI		TBD	TBD	Selzer (MDEQ)	TBD	
River Raisin	Degradation of Fish and Wildlife Populations	No	Remove Degradation of Fish and Wildlife Population BUI		TBD	TBD	Selzer (MDEQ)	TBD	Population BUI removal dependent on fish community monitoring assessment
River Raisin	Restrictions on Dredging Activities	Yes	Implement USACE Strategic Navigation Dredging Project	2010 GLRI	Aug-11	Sep-11	USACE	TBD	Project completed.
River Raisin	Restrictions on Dredging Activities	Yes	Assess Restrictions on Dredging Activities BUI		Aug-11	Oct-12	Swart (MDEQ)	Oct-12	
River Raisin	Restrictions on Dredging Activities	Yes	Remove Restrictions on Dredging Activities BUI		TBD	TDB	Selzer (MDEQ)	Oct-12	
River Raisin	Restrictions on Fish and Wildlife Consumption	Yes	Assess Restrictions on Fish and Wildlife Consumption BUI	2011 EPA GLRI	Aug-11	Jul-14	Bohr (MDEQ) / Bruneau (MDCH)	TBD	Assessment will be commence after the GLLA project is completed
River Raisin	Restrictions on Fish and Wildlife Consumption	Yes	Identify, if necessary, sources contributing to Restrictions on Fish and Wildlife Consumption BUI		TBD	TDB	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment

Area of Concern Name	Beneficial Use Impairment Name	Assessment in 2011? (Y/N)	Actions/Tasks Needed	Funding Source	Start Date	Targeted Completion Date	Project Lead	Targeted BUI Removal Date	Comments
River Raisin	Restrictions on Fish and Wildlife Consumption	Yes	Remediate, if necessary, sources contributing to Restrictions on Fish and Wildlife Consumption BUI		TBD	TDB	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment
River Raisin	Restrictions on Fish and Wildlife Consumption	Yes	Monitor, if necessary, contaminant levels to assess Restrictions on Fish and Wildlife Consumption BUI		TBD	TDB	Selzer (MDEQ)	TBD	Dependent on the results of the statewide assessment
River Raisin	Restrictions on Fish and Wildlife Consumption	Yes	Remove Restrictions on Fish and Wildlife Consumption BUI		TBD	TBD		TBD	Dependent on the results of the statewide assessment

References

Cyr, T. 2002. The River Raisin Remedial Action Plan Update – Draft.

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