

1. **Funding Opportunity Number:** EPA-R5-GL2010-1  
Focus Area: I.A: Toxic Substances and Areas of Concern  
Program: I.A.1.: Coordinated Implementation of Remedial Action Plan Programs and Processes
2. **Name of Proposal:** Sheboygan AOC Pathway to Delisting Habitat BUI's–Survey and Assessment
3. **Points of contact:**  
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4. **Type of Organization:** State Agency
5. **Proposed Funding Request:** \$222,657
6. **Brief Project Description.** This project is intended to support the development of delisting strategies and a fish and wildlife population and habitat restoration plan to address the “fish and wildlife population” and “fish and wildlife habitat” beneficial use impairments for the Sheboygan River and Harbor Area of Concern. This project includes a rapid ecological assessment using historical and current data, as well as conducting new field surveys, as needed, to fill data gaps or update data needed for the assessment. **This project is part of an overall collaboration with the Sheboygan River Basin Partnership who is also seeking a grant from the Great Lakes Restoration Initiative under the same project name.**
7. **Project Location.** The project location includes the lower 14 miles of the Sheboygan River from the City of Sheboygan Falls to the Sheboygan Harbor. For the fish assessment, it also includes Weedens Creek, Willow Creek and the Onion River to the Hingham Dam. The site is located in Sheboygan County, Wisconsin. The project is in the 8-digit HUC #04030101.

**8. Full Project Description.** The lower Sheboygan River and Harbor were designated a Great Lakes Area of Concern (AOC) in 1985 by the International Joint Commission (IJC). This AOC encompasses the lower river downstream from the Sheboygan Falls Dam including the entire harbor and nearshore area of Lake Michigan. In the Sheboygan River, it is suspected that high levels of nutrients, solids, and toxic chemicals along with land use changes have contributed to the degradation of animal and plant populations and the reduction in fish and wildlife habitat and populations. Two of the Nine Beneficial Use Impairments (BUIs) identified for the Sheboygan River and Harbor AOC include:

- degradation of fish and wildlife populations
- loss of fish and wildlife habitat

The end goal is for all of the Great Lakes Areas of Concern to be restored and protected so that they can be “delisted,” or removed from the list of 43 AOCs within the Great Lakes. This proposal is intended to support a comprehensive restoration planning project with the Sheboygan River Basin Partnership (SRBP). The information supplied and collected by DNR staff will be used to develop a strategy for delisting the fish and wildlife beneficial use impairments (BUI’s) in the Sheboygan River and Harbor AOC.

This project is intended to support the development of delisting strategies and a fish and wildlife population and habitat restoration plan to address the “fish and wildlife population” and “fish and wildlife habitat” beneficial use impairments (BUIs) for the Sheboygan River and Harbor Area of Concern (AOC). This project includes a rapid ecological assessment using historical and current data, as well as conducting new field surveys, as needed, to fill data gaps or update data needed for the assessment. This work will be done in collaboration with the Sheboygan River AOC Fish & Wildlife Technical Advisory Committee (F&W TAC), a sub-committee of the Sheboygan River Basin Partnership’s (SRBP) Sheboygan River AOC Citizen Advisory Committee.

Specifically, this DNR component will support an overall project strategy to develop a fish and wildlife habitat and population restoration plan that will lead to impairment delisting strategies for the Sheboygan AOC. This DNR element includes:

**Ecological Assessment:** Assess changes in biodiversity within the AOC by conducting a review of historical and current data and by conducting targeted field surveys to fill gaps in current data to inform the process of developing a restoration vision and goals, delisting strategies, restoration work plan, and plan for long-term monitoring and re-assessment. The methodology for the Ecological Assessment will follow the WDNR’s Bureau of Endangered Resources template for Rapid Ecological Assessments conducted for property master planning and will be written by the Ecological Assessment Team. The Ecological Assessment will provide research results on the pre-European settlement habitat and species in order to understand the magnitude of changes and the range of improvement possibilities. It will present results of the biological inventory within the study area and information gathered through the Assessment process and compare it to historical conditions. The Ecological Assessment will articulate the specific impairments to fish and wildlife populations and habitats and their causes. The Ecological Assessment Team will determine the importance of unique features that need to be preserved and present this information in the Assessment. The Ecological Assessment will provide maps of the AOC and each potential restoration or protection site, evaluating site conditions and needs, as determined by the Ecological Assessment Team.

**Targeted Field Surveys:** Conduct field studies to fill data gaps and/or update past survey work. It updates old studies done on wildlife contamination within the Sheboygan AOC. Interpretation of information from these field surveys will also provide baseline data for completion of an ecological assessment and will serve in the development of a restoration plan and a final delisting strategy for Fish and Wildlife habitat and population impairments. Field surveys include collection of habitat and population information for the following:

**1. Wintering birds, fish eating bird and small mammal survey**

This element of the project will be lead by Dale Katsma, Plymouth Wildlife Supervisor. It entails surveying of small mammal populations in the floodplains of the AOC to establish a baseline of existing species and relative abundance. Small mammal trapping would be done in the floodplains of the AOC and in non-contaminated segments of the river upstream of the AOC. To determine whether a viable mink population exists in the AOC, experienced mink trappers would be hired to trap segments of the river in the AOC and in similar, but non-contaminated segments, upstream of the AOC. Fish eating birds, primarily kingfishers and great-blue herons, would be collected within the AOC during the breeding season to compare contaminant levels from birds collected in the 1978.

For the mink and small mammals, contaminant analysis would be performed. For fish-eating birds, contaminant levels would be compared to levels prior to remediation. The information collected is intended to update base-line (pre-remediation) levels of contaminants in small mammals collected in 1993 or establish levels the first year after remediation. Wildlife contaminant monitoring is important because it is not a required component of the EPA Superfund action.

**2. Fish Habitat and Population Assessment:**

This survey will be lead by Brad Eggold, Southern Lake Michigan Fisheries Team Supervisor. It will:

- Utilize DNR stream baseline monitoring on the following waters:
  - Sheboygan River from Sheboygan Falls Dam to the Harbor selecting 1 to 4 sites in each section of the river.
    - Sheboygan Falls to Riverbend Dam – 2 sites
    - Riverbend Dam to Walderhaus Dam – 2 sites
    - Walderhaus Dam to Harbor – 3 sites
  - Weedens Creek – 2 sites
  - Willow Creek – 2 sites
  - Onion River up to the Hingham dam – 3 sites
- Conduct additional surveys for specific fish species in these Rivers. These surveys may include smallmouth bass, largemouth bass, northern pike, catfish and trout.
  - Several sites will be selected for assessing the populations of these game fish. Equipment may include fyke nets, boomshocker and stream electrofisher.
- Conduct a fisheries survey of the Wildwood Park and Island Complex to include:
  - Additional baseline monitoring sites for this area – 2 sites
  - Spring northern pike spawning survey – sample using 2 to 3 fyke nets

- Habitat evaluation of spawning and potential spawning areas

**3. River and Stream macro-invertebrate, quantitative habitat assessment**

This survey work will be lead by John Masterson, Water Resource Management Specialist –Plymouth. It involves macroinvertebrate and quantitative habitat assessment utilizing DNR protocols for Wadeable Streams on the main stem of the Sheboygan River, three sites in Willow Creek, 3 sites in Weedens Creek and 5 sites on the Onion River to the Hingham Dam.

**4. Herptile survey**

This element of the project will be lead by Richard Staffen, Assistant Zoologist, WDNR – Bureau of Endangered Resources. The herptile survey effort will focus on inventory of targeted rare or uncommon species, detailed assessments of habitat conditions present relating to reptile and amphibian conservation, and recommendations for habitat management that would enhance herptile populations.

**5. Breeding Bird survey**

This element of the project will be lead by Richard Staffen, Assistant Zoologist, WDNR – Bureau of Endangered Resources. Breeding bird surveys will be performed during the month of June utilizing the point count method. A complete inventory of birds seen and heard will be developed at each point location with associated habitat information. The surveyor will provide a final report noting uncommon species encountered, high-quality habitats observed, and breeding notes.

**6. Natural Community / rare plant / invasive plant survey**

This element of the project will be lead by Christina Isenring, Assistant Ecologist, WDNR – Bureau of Endangered Resources. Moderate and high quality natural communities will be surveyed for rare plants, invasive plants, and to help determine the amount of habitat available to rare species and species of greatest conservation need.

**7. Bat survey**

This element of the project will be lead by Richard Staffen, Assistant Zoologist, WDNR – Bureau of Endangered Resources. Acoustical bat surveys will be done on rivers and streams and / or land routes as appropriate using a mobile bat detection system. This system collects bat occurrence data in a standardized method removing observer bias in identification and is the most cost effective and efficient means of gathering this type of data. The mobile detection system will put a species name, time, date, and location stamp on each bat occurrence and can be used to detect migrant or resident bats dependant upon time of year.

**8. Mussel survey**

This element of the project will be lead by Richard Staffen, Assistant Zoologist, WDNR – Bureau of Endangered Resources. Mussels surveys will focus on noting all species encountered, their distribution, and relative abundance observed. Mussels serve as excellent indicators of water quality and a final report from this survey effort will focus on identifying threats to existing mussel populations and measure the overall mussel community health in these systems.

Data from a separate DNR GLRI proposal on contaminant monitoring of waterfowl and swallows along Lake Michigan can be used for this project as well. The data collected from this effort will be conducted in accordance with Wisconsin DNR protocol, where applicable. The data will be stored electronically within Wisconsin DNR databases. Field data will be interpreted and a final report on findings will also be completed.

**Time Line:** Funds are anticipated to be available July 1, 2010. DNR Project is to be completed by July 1, 2012.

**July, 2010 – April 2011 – DNR Review of historical and current data. This will help guide DNR field survey work and contribute to the development of the ecological assessment.**

**January-October 2011 – DNR Field Surveys ---initial findings available by January 1, 2012. Final ecological assessment report will be completed by June, 30, 2012.**

**January 2012– December 2012 – Work with SRBP Fish & Wildlife Technical Advisory Committee to develop fish and wildlife habitat and population BUI delisting strategies and restoration plan—Plan finalized by SRBP -- December, 2012.**

This work will be used to develop delisting strategies and an AOC restoration plan for fish and wildlife impairments. The project supports an overall strategy that is consistent with the objectives of the Great Lakes Restoration Initiative (GLRI) including two key areas: Toxic Substances and Areas of Concern and Habitat and Wildlife Protection and Restoration for the purpose of strategically targeting restoration and protection efforts in a science-based manner. It also directly addresses key AOC issues as identified in the Great Lakes Regional Collaboration Strategy and the Wisconsin Strategy to protect and restore the Great Lakes. This work will provide direct science-based support of the recommendations contained within the *Delisting Targets Report for the Sheboygan River Area of Concern, December, 2008*.

**Outcomes, Outputs, and Expected Results:** This project includes a rapid ecological assessment using historical and current data, as well as conducting new field surveys, as needed, to fill data gaps or update data needed for the assessment. The data from the field surveys will be finalized within an ecological assessment report for the Sheboygan AOC. Outputs include field survey data reports and an ecological assessment report for the Area of Concern. This information will be used to further refine specific delisting targets for fish and wildlife habitat and populations along with development of a comprehensive AOC fish and wildlife habitat restoration plan.

#### **10. Collaboration, Partnerships, and Overarching Plans:**

This effort to conduct field surveys and an ecological assessment within the Sheboygan AOC is part of an overall collaboration with the Sheboygan River Basin Partnership (SRBP). The SRBP has formed a Fish and Wildlife Technical Advisory Committee (TAC) for the Sheboygan AOC. This committee includes technical representatives from DNR, US Fish and Wildlife Service, UW-Extension, Sheboygan County and SRBP. Through the AOC Technical Advisory Committee process, DNR is collaborating on a GLRI project being sought by the SRBP that seeks to utilize data from the ecological assessment and display it (GIS-based map products that accurately depict existing fish and wildlife habitat, potentially restorable habitat sites, and threats (i.e. stormwater outflows, fish passage barriers, impermeable surfaces, etc.). As part of this overall project, SRBP will also be seeking GLRI funds to conduct public involvement sessions. Lastly,

the collaboration efforts with the F&W TAC and the public are aimed at the development of realistic vision and goals for fish and wildlife population and habitat restoration, strategies for delisting the fish and wildlife BUIs, a work plan for restoration/management of species and habitat sites, and a plan for long-term monitoring and re-assessment.

Sheboygan River Remedial Action Plan update (1995)—

[http://dnr.wi.gov/org/gmu/sheboygan/SHEB\\_RAP.pdf](http://dnr.wi.gov/org/gmu/sheboygan/SHEB_RAP.pdf)

Delisting Targets for the Sheboygan River Area of Concern: Final Report—

<http://dnr.wi.gov/org/water/greatlakes/priorities/SheboyganRiverAOCFinalReport.pdf>

A Fisheries, Wildlife, and Habitat Management Plan for Wisconsin

2007 - 2013, June 2007 Version—

<http://dnr.wi.gov/fish/documents/fwhplan.pdf>

The State of the Sheboygan River Basin (basin plan)—

[http://dnr.wi.gov/org/gmu/sheboygan/sheboygan\\_final\\_10\\_01.pdf](http://dnr.wi.gov/org/gmu/sheboygan/sheboygan_final_10_01.pdf)

Water Resources of the Sheboygan River Basin (supplement to basin plan)—

[http://dnr.wi.gov/org/gmu/sheboygan/WATERRESOURCES\\_JUNE\\_2001.pdf](http://dnr.wi.gov/org/gmu/sheboygan/WATERRESOURCES_JUNE_2001.pdf)

### **11. Programmatic Capability and Past Performance**

### **12. Budget. (SEE ATTACHED SPREADSHEET FOR HOURS/COST BREAKDOWNS)**

#### **a. Personnel/Salaries.**

- Total existing FTE effort (4 programs) = 820 Hours
- Total LTE effort (4 programs)= 3270 Hours

#### **b. Fringe Benefits – LTE Fringe = \$11,239**

#### **c. Travel - \$18,000 (4 programs total)**

#### **d. Equipment - \$0**

#### **e. Supplies- \$6,600**

#### **f. Contract costs - \$117,500**

#### **g. Other Costs - None**

#### **h. Total Direct Charges. - \$194,614**

#### **i. Indirect Charges. - \$28,043**

#### **j. Total Cost. - \$222,657**

### **13. ACORN Statement**

### **14. Attachments (overarching plan, resumes, curriculum vitae, letters of support, scientific peer review, maps, or charts).**

- Sheboygan River Remedial Action Plan (RAP) (1995)
- Sheboygan River – State of the Basin Report (October, 2001)
- Wisconsin Strategy for the Great Lakes Regional Collaboration
- Delisting Targets for the Sheboygan River Area of Concern (December, 2008)