

ROUGE RIVER AOC HABITAT RESTORATION – LTU Wetland Habitat

Project Funding Request: \$700,000

PROJECT ABSTRACT

The Rouge River watershed is a designated AOC under the Great Lakes Water Quality Agreement (GLWQA) and has three Beneficial Use Impairments (BUIs) associated with fish and wildlife habitat: Degraded Fish and Wildlife Populations, Degradation of Benthos, Loss of Fish and Wildlife Habitat. The Rouge River Advisory Council (RRAC), the Public Advisory Council (PAC) for the Rouge AOC, finalized a list of projects that need to be completed in order to remove the habitat BUIs in March 2016. As part of that list, creation/restoration of wetlands on Lawrence Technological University's (LTU) campus in Southfield, Michigan was considered as having significant impact on the removal of the BUIs. The LTU Wetland Restoration project will result in restoration of 1.0 acre of wetland habitat.

PROBLEM STATEMENT

Grant funding for Rouge River Area of Concern (AOC) LTU Wetland Habitat Design Project as part of its effort to delist the AOC is being requested. The Rouge River watershed is a designated AOC under the Great Lakes Water Quality Agreement (GLWQA) and has three Beneficial Use Impairments (BUIs) associated with fish and wildlife habitat: Degraded Fish and Wildlife Populations, Degradation of Benthos, Loss of Fish and Wildlife Habitat.

During the last century, the Rouge River has suffered from declining water quality and increased flood conditions, primarily due to increasing urbanization within the watershed. The flat river slope and the meandering channel could not pass the large flows associated with major precipitation events. Upstream urbanization continued to exacerbate this problem due to increased amounts of impervious surfaces culminating in floods within downstream local communities. Water quality in recent years, though, has improved since 1992 thanks to the federally funded Rouge Project and post construction stormwater control. For example, 89 of the 127 miles of the larger streams and tributaries in the watershed are now free from public health threats associated with uncontrolled combined sewer overflow discharges. Water quality improvement is exhibited by increased dissolved oxygen levels needed to sustain fish and aquatic life. Increased populations and diversity of benthos, fish and wildlife have been measured along the river since 1999. Also, the U.S. EPA Office of Inspector General declared the Rouge Project "a blueprint for success" (EPA OIG report number 2002-P-00012).

The ARC (City of Southfield is a member) is the Rouge River Public Advisory (PAC) fiduciary and coordinating organization. Many of the previously completed reports [Ex: Habitat Delisting Targets (2008), Rouge River Delisting Strategy (2012), Upper Rouge Delisting Strategy (2012), and Rouge River BUI Report Card (2013)] listed project types, in addition to specific projects, that needed to be completed in the watershed in order to remove the Habitat BUIs and delist the AOC. The EPA, MDEQ, MDNR, RRAC, and ARC staff began facilitating the development of the formal list for removal of the Habitat BUIs in 2015. This work resulted in the development of a final Rouge AOC Habitat list that was submitted in March 2016. On that list is LTU Wetland Habitat that was considered a high priority project.

Relevance to Existing Restoration Plans and Priorities - The proposed project, in addition to the Great Lakes Restoration Initiative Action Plan III, responds directly to multiple plans and priorities within the Rouge River AOC:

- The Rouge RAP Advisory Council's *2016 Rouge River Remedial Action Plan Habitat Projects List* identifies these activities as a top priority for delisting the Rouge River AOC.
- The Rouge River Watershed Management Plan prepared by the ARC supports river and lake restoration as a key element in the watershed restoration.
- Activities respond to the *Great Lakes Regional Collaboration Strategy* focus on "Riverine Habitats and Related

Riparian Areas” and its long-term goals including conservation of rivers and sustaining native/ migratory fish and aquatic biota/ wildlife.

The LTU Wetland project is located on Lawrence Technological University's (LTU) campus in Southfield, Michigan. The watershed area upstream of the project location is defined as the Rummell Drain that becomes Evan's Creek on the LTU campus after exiting a box culvert under Northwestern Highway. The discharge from the drain has high velocity rates and carries fine particulates washed off of impervious surfaces. The project plan proposes to create a 1.0-acre wetland adjacent to the creek in the disconnected floodplain. The project will also improve the habitat quality of the creek by diverting a portion of the flow into wetlands from frequent rainfall events while sustaining a permanent pool of water during low flow periods.

A diversion weir on the creek will direct a portion of the creek flows through a created sedimentation basin and subsequently into the wetland. An access road will provide crews the proximity they need to access the forebay for cleaning and maintenance. The forebay will drain into a series of wetland cells with extended detention times. Finally, the diverted flow will drain/overflow back into the creek through a staged outlet structure. The emergent wetland will contain a diversity of wetland plants, providing habitat for wading birds, waterfowl, amphibians, reptiles, and aquatic insects. Small mammals and birds will benefit by the increased habitat diversity and cover.

Once implemented, the project will accomplish the following goals:

- Increase habitat by creation of wetlands
- Increase habitat and plant diversity connectivity in the area
- Capture fine sediments from the Rummel Drain stormwater flow
- Create education opportunities for students of LTU.

RESTORATION OUTPUTS

Great Lakes Restoration Initiative Action Plan III, Measures of Progress (MoPs) for the overall project when implementation has been funded and been completed is:

- **Focus Area 4: Habitats and Species - Objective 4.1. Protect and restore communities of native aquatic and terrestrial species important to the Great Lakes**
 - 4.1.1. Acres of coastal wetland, nearshore, and other habitats restored, protected, or enhanced: 1 acre of habitat