

# **Developing Restoration Criteria for the Clinton River AOC**

**AOC Summit II  
Kalamazoo, MI**

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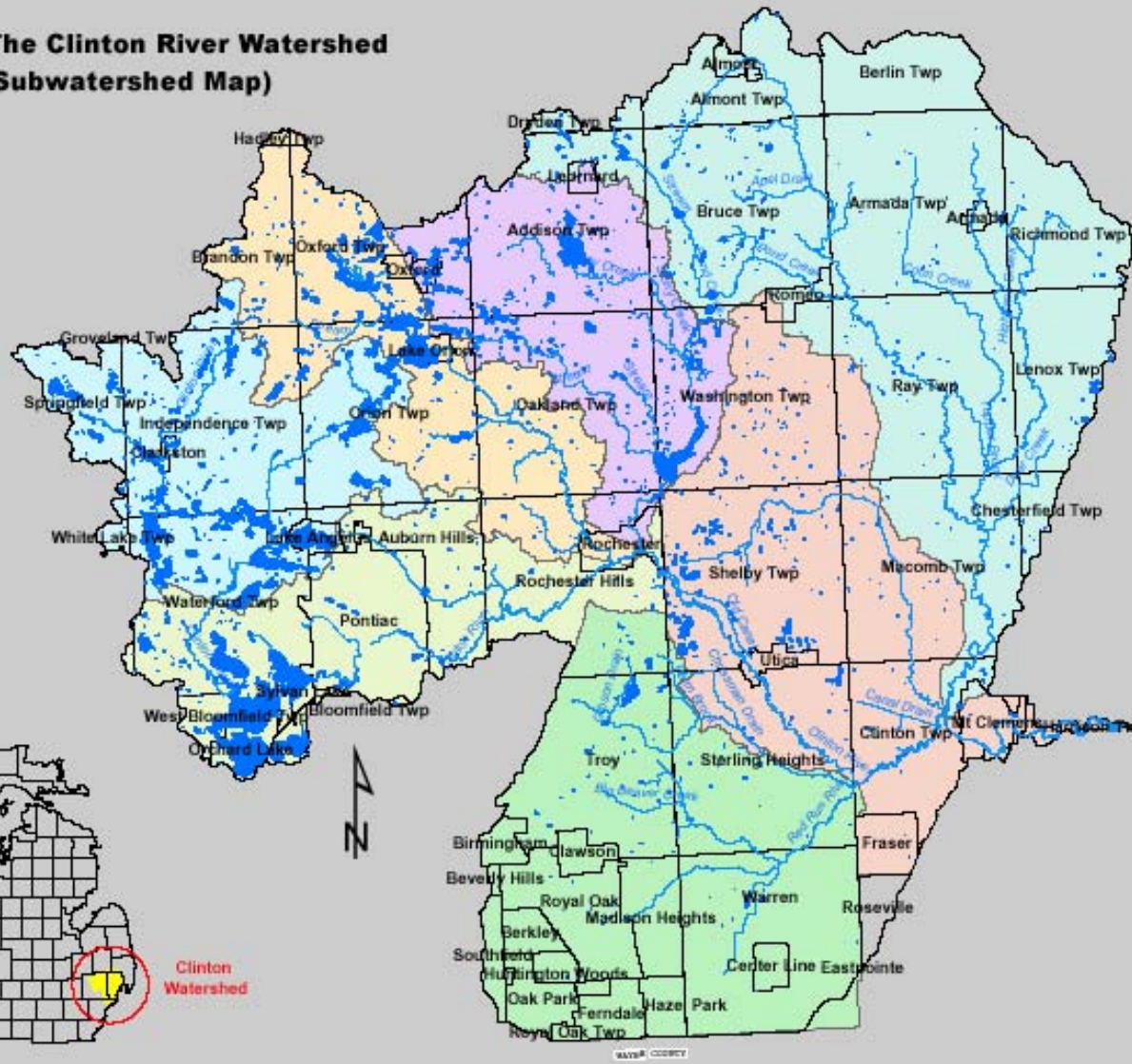
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# Outline

- Project background
- Progress to-date
- Phase II Roadmap
- Discussion



**Figure 3.1: The Clinton River Watershed  
(Subwatershed Map)**



### Subwatersheds

-  Headwaters
-  Paint Creek
-  Stony Creek
-  Main Oakland
-  North Branch
-  Clinton River East
-  Red Run

Source: Basemap files obtained from the Michigan Geographical Framework Website, Data for Population Increase derived from Population Numbers in SEMCOG Document 'SEMCOG Historical Population 1900-2000' \*Data includes only communities of Oakland and Macomb County

Software: ArcGIS 8.3

State Plane NAD 83 Michigan South

August 2003

0 1.5 3 6 Miles

0 3 6 12 Kilometers

**ECT**

Environmental Consulting & Technology, Inc.

# Existing BUIs

- Eight listed BUIs:
  - Three BUIs have impacts restricted to the watershed
    - Degradation of benthos
    - Degradation of aesthetics
    - Restrictions on dredging
  - Three others have impact on the Great Lakes but are confined to the western near-shore areas of Lake St. Clair
    - Restrictions on fish and wildlife consumption
    - Eutrophication or undesirable algae
    - Beach closings and other “full body contact” recreation
  - Remaining two BUIs have Great Lakes-wide impact
    - Degraded fish and wildlife populations
    - Loss of fish and wildlife habitat



# Project Background

## ● Phase I:

- Project funded by a grant from the MDEQ/GLC
- Grant awarded to the Clinton PAC
- CRWC was the grant partner and fiduciary
- Environmental Consulting & Technology, Inc. (ECT) was the project consultant

## ● Phase II:

- Habitat BUIs criteria related funding through U.S. Environmental Protection Agency-GLNPO and National Fish and Wildlife Foundation



# Progress Report – How we got here

## ● Phase I:

- CRWC/PAC/ECT developed first draft Restoration Criteria
  - Several meetings with the PAC
  - Several meetings with a Technical Committee
  - Meetings with every sub-watershed group
- Project concluded on October 30<sup>th</sup>, 2005

## ● Phase II:

- Habitat BUIs project



# Phase I – Degradation of Benthos

- Delisting criteria established under Phase I to be reviewed under Phase II
  - Samples of indicator species (e.g. mayfly, stonefly, caddisfly nymphs) collected in the watershed exceed a certain percentage of total individuals collected. Indicator species, a certain percent increase in species, and diversity should be chosen based on habitat present and habitat restoration that can reasonably be expected within the area of the watershed under consideration.
  - Suggested restoration criteria based on volunteer macroinvertebrate data: Macroinvertebrate assessments conducted by volunteers at sites across the watershed meet or exceed the “good” ranking as established by the Izaak Walton League of America’s Water Quality Index.
  - Pore space water in the sediment is non-toxic to appropriate indicator species



# Phase II – Degradation of Benthos

- Phase II activities
  - Need to review the criteria established under Phase I
  - Need to consider equivalency of the WB-SWAS Rule 51 procedures and their applicability to the Clinton watershed



# Phase I – Loss of Fish and Wildlife Habitat Criteria

- DO levels in the river meet or exceed the minimum Michigan's Water Quality Standards.
- Aquatic and riparian zone habitat are considered to be good to excellent at appropriate locations within the AOC as evaluated by MDEQ GLEAS Procedure 51 and other appropriate guidelines and procedures. Appropriate locations are those areas within the watershed where habitat should be protected or habitat improvement can reasonably be achieved.
- Programs are in place within the AOC to establish minimum sub watershed specific forest cover goals within the riparian corridor for suburban/forested (e.g., 60%), suburban/agricultural (e.g., 40%), urban/suburban (e.g., 25%), and urban (e.g., 15%)
- Impervious surface coverage is at or below an equivalent of 15% average throughout the watershed.



# Phase I – Loss of Fish and Wildlife Habitat Criteria (continued)

- Programs are in place within the AOC to preserve existing wetland areas (no net loss) and restore/increase wetland area within the watershed by 1% to 5% over the next ten years
- Programs are in place within the AOC to acquire and preserve a minimum of 5% of the priority conservation areas within the AOC annually
- River hydrology and temperature fluctuations do not impact indicator fish and wildlife species
- Toxic pollutants in the sediment and water column do not impact indicator fish and wildlife species
- Local Green Infrastructure Plans are being implemented within the AOC
- Habitat restoration goals have been established within the AOC and are being implemented



# Phase I – Degradation of Fish and Wildlife Population Criteria

- This beneficial use will be considered to be restored when the population and diversity of indicator fish and wildlife species within the applicable portions of the AOC are consistent with guidance developed by the MDNR and the USFWS over two consecutive monitoring seasons.
- Assessment of the fish and wildlife populations will be done in accordance with procedures established by, or approved by, the MDNR, MDEQ, and USFWS.



# Phase II – Loss of Fish and Wildlife Habitat, and Degradation of Fish and Wildlife Populations

- Two BUIs but closely linked so approached as one
  - Common causes and solutions
  - Related delisting criteria
- Need to evaluate the Phase I criteria already adopted against the final MDEQ guidance
- Need to refine Phase I criteria under Phase II



# Phase II Roadmap

## ● Task 1

- Assemble currently available data on plants, animals, and habitat within the AOC
- Define problems causing biological impairments in the AOC
- Develop prioritized list of focus areas within the AOC including definition of the prioritization rationale

● This Task will lead to a draft report on the inventory/assessment tabulation and analysis, itemization of the causes of the biological impairments in the AOC, and a prioritized listing of the focus areas.



# Phase II Roadmap

## ● Task 2

- Develop list of recommended actions to restore and manage high priority sites within the AOC defined in Task 1
- Review and, if necessary, revise applicability determinations from Phase I

● Task 2 will result in an expansion of the Phase I Final report to include restoration and management recommendations and revised applicability guidelines for the AOC sub-watershed areas as appropriate



# Phase II Roadmap

- Task 3 will be development of a final Phase II report that can be utilized by the sub-watershed groups in developing and/or revising their watershed plan goals and objectives
- Phase II will utilize comments from
  - Technical Committee
  - RAP PAC
  - Sub-watershed groups
  - Public/stakeholders



# Questions and Discussion

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Clinton AOC Delisting Criteria

Phase I Final Document

<ftp://21clintonpac593:21ect040593@209.208.21.120>



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