River Raisin Watershed Plan: Looking Behind and Ahead
Scott Dierks, PE
<table>
<thead>
<tr>
<th>Goal</th>
<th>Cause of Pollutant Impairing and/or Threatening Use</th>
<th>Objectives</th>
<th>Geographic Priorities</th>
</tr>
</thead>
</table>
| 1. Lift Nitrate Impairment    | Poor fertilizer usage  
Lack of proper drain tile & swale management  
Poor manure application practices  
Failing or improperly sited septic systems  
Untreated sanitary, CSO, SSO  
Urban fertilizers                  | Improve fertilization practices  
Improve drain tile & swale management  
Improve manure spreading practices  
Develop better regulation & Management  
Improve treatment of sanitary, CSO, SSO  
Reduce urban fertilizer use       | South Branch of River Raisin  
Black Creek  
Lower River Raisin                  |
| 2. Lift Pathogen Impairments  | Untreated sanitary, CSO, SSO  
Poor manure application practices  
Failing or improperly sited septic systems                  | Fully treat sanitary, CSO & SSO  
Improve manure spreading practices  
Develop better septic system regulation & Management         | South Branch of River Raisin  
Black Creek  
Evans Creek  
Lower River Raisin  
Macon Creek                      |
| 3. Reduce Sedimentation        | Conversion of natural land cover  
Lack of effective farm storm water management  
Cropland Drainage  
Impervious & compacted surface  
Large woody debris (LWD)  
Impoundments  
Inadequate storm water management | Conserve and/or restore natural land cover  
Create more effective farm storm water management systems  
Improve drain tile & swale management  
Reduce impacts of impervious/compacted surfaces  
LWD Management  
Dam Removal  
Develop more comprehensive storm water management ordinances, design and maintenance | South Branch of River Raisin  
Macon Creek  
Saline River  
Evans Creek  
Upper River Raisin  
Lower River Raisin                  |
| 4. Reduce Phosphorus (Total & DRP) Loading | Same causes as Goal #’s 1 & 4 | Same objectives as Goal #’s 1 & 4                                           | South Branch of River Raisin  
Black Creek                  |
| 5. Reduce Hydrologic Variability | Conversion of natural land cover  
Ag runoff  
Cropland Drainage  
Urban runoff                  | Decrease flashiness  
Increase base flow                                                | Monroe area  
South Branch of River Raisin  
Black Creek  
Lower River Raisin  
Macon Creek                      |
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<tbody>
<tr>
<td>6. Remove Bioaccumulative Chemicals of Concern Impairments</td>
<td>Historic dumping</td>
<td>Removal and remediation of sediments</td>
<td>Monroe area</td>
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<td></td>
<td>Smokestack emissions</td>
<td>Join/advocate for regional, national, global initiatives</td>
<td>Goose Creek</td>
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<td>Iron Creek</td>
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<td>South Branch of River Raisin</td>
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<td>Black Creek</td>
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<td>Lower River Raisin</td>
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<td>7. Build RRWC Capacity</td>
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<td>Increase public visibility</td>
<td>Throughout Watershed</td>
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<td>Increase educational capacity</td>
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<tr>
<td>8. Increase Public Awareness and Involvement</td>
<td>Clearing and draining for development</td>
<td>Build public involvement</td>
<td>South Branch of River Raisin</td>
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<td></td>
<td>Lack of understanding</td>
<td>Assist with school programs</td>
<td>Black Creek</td>
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<td></td>
<td>Ignorance &amp; Arrogance</td>
<td></td>
<td>All other subwatersheds</td>
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<td>9. Conserve and restore natural features</td>
<td>Conversion of natural land cover</td>
<td>Identify critical areas</td>
<td>Goose Creek</td>
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<td></td>
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<td>Identify partnerships/funding opps</td>
<td>Iron Creek</td>
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<td>Undertake projects</td>
<td>Upper River Raisin</td>
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<td>Lower River Raisin</td>
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<tr>
<td>10. Increase recreational opportunities</td>
<td>Clearing and draining for development</td>
<td>Increase public awareness</td>
<td>Goose Creek</td>
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<td></td>
<td>Lack of understanding</td>
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<td>Ignorance &amp; Arrogance</td>
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<td>Upper River Raisin</td>
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<td>Lower River Raisin</td>
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<td></td>
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<td>Saline River</td>
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Lenawee Conservation District (LCD) has funding for water quality workshops & Western Lake Erie 'sails' designed to directly connect upstream farmers and landowners with the visible challenges within Lake Erie.

Lenawee and Washtenaw Conservation Districts have implemented River MAEAP work.

LCD has implemented a Nitrate TMDL reduction program, working with farmers in Bear Creek, Black Creek, Nile Ditch, and Lower River Raisin watersheds, encouraging the use of BMP's.

LCD implemented a BMP auction, to support installation of BMP's.
Upper River Raisin Implementation Project Phase 1: Prioritized large parcel owners of natural areas benefitting water quality, hosted six landowner workshops on conservation protection, and 24 workshops on the interface between land and water. Five conservation easements have directly and indirectly resulted from this project. (Legacy Land Conservancy)- protection focus

Upper River Raisin Implementation Project Phase 2: With funding from the Great Lakes Commission, Legacy and Washtenaw County NRCS have received funding to expand the work from Phase 1 to working farms with land located directly on water. (Legacy Land Conservancy)- focus on sediment

The Stewardship Network's Raisin Cluster received Great Lakes Restoration Initiative funding to implement habitat management in the Iron Creek subwatershed.
River Raisin AOC Progress

- The Aesthetics BUI was removed in 2012,
- The Beach Closings and Eutrophication BUlIs were removed last summer (2013).
- Once we get monitoring information from the projects DNR implemented at Sterling State Park, we can assess the Habitat and Populations BUlIs.
- In addition, we still have Benthos, Dredging, Bird or Animal Deformities/Reproduction Problems and Fish Consumption which are still impaired.
Welcome

The mouth of the River Raisin hosts the only Michigan port on Lake Erie and was once home to abundant fish beds and sturgeon. The cost of doing business on the River Raisin in Monroe has included some chronic pollution problems, such as PCBs in river sediments and an ongoing need to dredge the lower channel for ship traffic.

Starting in summer of 2012, an initiative now known as the River Raisin Legacy Project commenced to invest more than $23 million to enhance the environmental and recreational opportunities in the River Raisin and nearby Sturdivant State Park.

By reclaiming the River Raisin for free passage of fish and small boats, we hope this project will play a role in the extensive effort to restore, preserve and improve the natural environments vital to this community. This project will have a cascading effect on wildlife, bringing fish to spawn, freshwater mussels, aquatic insects, waterfowl and other wetland-dependent fauna back to the area. Fishing, wildlife viewing, bird watching, canoeing and kayaking will all emerge as never before in our lifetime.
• Sterling Island Habitat Restoration Project, bank stabilization and fish habitat restoration
• MDNR is restoring 18 acres of emergent and submergent Great Lakes marsh and 32 acres of lakeplain prairie, some of the most threatened habitat in the Great Lakes
• Restoring 310 acres of degraded Ford Marsh along the Raisin with repairs to dikes and installation of a pump station
• Legacy sediment PCB Removal - $17.2M project that has removed 109,000 CY of sediment contaminated with PCBs

• During removal some additional PCB contamination was found in weathered bedrock below the river bed. This area has been temporarily capped while EPA determines the best course of long-term action.
Dam Mitigation Project

- Completely removed two of Monroe’s low head dams
- Constructed four rock arch rapids at the remaining four low head dams
- Created an auxiliary channel around the Waterloo Dam, and
- Removed log jam and old mill debris at Grape Dam to promote fish access up the old mill race
- In total, improved fish access from Lake Erie to the lower 23 miles of the River Raisin
Miscellaneous

- The Nature Conservancy – Great Lakes western Lake Erie Basin geodatabase and pilot project
- Washtenaw County Water Resources Commissioner has just released new stormwater rules that will require infiltration
- River Raisin Institute is going to be starting the Lapointe Drain watershed management plan this spring and will be looking at phosphorus and E. coli problems just south of the mouth of the Raisin
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<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Status</th>
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<tr>
<td>Implementation</td>
<td>Form committee with broad stakeholder representation</td>
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<td>Provide outreach/education to communities on new RR WMP</td>
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<td>RRWC Development</td>
<td>Increase RRWC capacity</td>
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<td>Additional Watershed Assessment</td>
<td>E. coli Source Assessment</td>
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<td>Road Crossing Survey</td>
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<td>Rapid Geomorphic Assessment</td>
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<td>Lower Raisin buffer evaluation</td>
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<td>Natural system inventory</td>
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<td>Significant cultural/agricultural site inventory</td>
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<td>LWD Inventory program</td>
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<td>Public Education and Involvement</td>
<td>Annual River Raisin Watershed Conference</td>
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<td>Demonstration</td>
<td>Connecting Schools to the Great Lakes Program</td>
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<td>River Raisin Watershed History Guide</td>
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<td>River Raisin Film Festival</td>
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<td>Planning</td>
<td>New site and road design standards</td>
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<td>riparian buffer ordinance</td>
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<td></td>
<td>LID ordinance</td>
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| **Agriculture Demonstration Projects** | Nitrogen advisory committee  
Bacteria advisory committee  
Precision Agricultural Equipment Funding Demonstration Program  
Nutrient and manure control demonstration projects  
On-farm dairy manure re-use and anaerobic digestor demonstration projects  
On-farm renewable energy demonstration projects  
Total Nitrogen reductions |
|-------------------------------|--------------------------------------------------------------------------------|
| **Sewage Management** | Improve Illicit discharge elimination programs  
Improve private on-site sewage programs  
Initiate point of sale septic system inspections  
Remediate failing septic and private wastewater systems |
| **Urban/Suburban BMPs** | Rain Garden Initiative  
Large-scale LID new development project  
Large-scale retrofit LID project |
| **Recreation** | Lake Erie access (RR Battlefield site to Sterling State Park)  
Canoe/Fishing access  
River Raisin Fishing Guide  
New Upper Raisin Greenway  
New Lower Raisin Park |
| **Conservation/Restoration** | Natural Rivers Designation for Upper Raisin  
Upper Raisin conservation area  
Lower Raisin wetland restoration  
FRED  
Bank stabilization/stream restoration projects |
Questions/Additions?
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