River Raisin Watershed Plan: Looking Behind and Ahead

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Cardno JFNew
Shaping the Future

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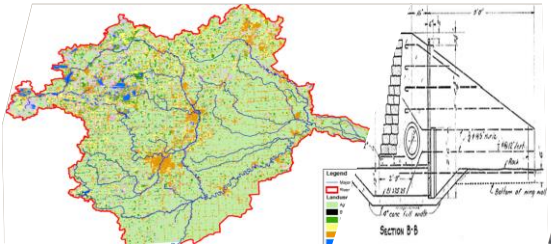
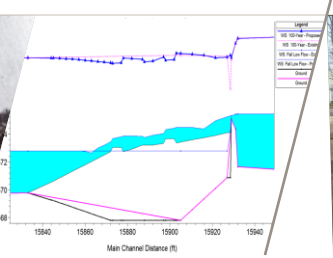
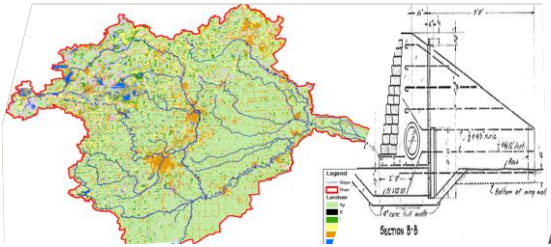
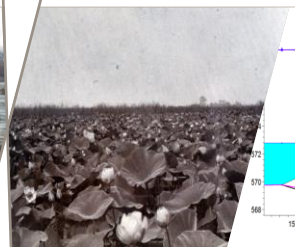
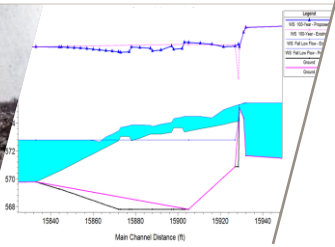
Goal	Cause of Pollutant Impairing and/or Threatening Use	Objectives	Geographic Priorities
1. Lift Nitrate Impairment	Poor fertilizer useage Lack of proper drain tile & swale management Poor manure application practices Failing or improperly sited septic systems Untreated sanitary, CSO, SSO Urban fertilizers	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



Goal	Cause of Pollutant Impairing and/or Threatening Use	Objectives	Geographic Priorities
6. Remove Bioaccumulative Chemicals of Concern Impairments	Historic dumping Smokestack emissions	Removal and remediation of sediments Join/advocate for regional, national, global initiatives	Monroe area Goose Creek Iron Creek South Branch of River Raisin Black Creek Lower River Raisin
7. Build RRWC Capacity		Increase public visibility Increase educational capacity	Throughout Watershed
8. Increase Public Awareness and Involvement	Clearing and draining for development Lack of understanding Ignorance & Arrogance	Build public involvement Assist with school programs	South Branch of River Raisin Black Creek All other subwatersheds
9. Conserve and restore natural features	Conversion of natural land cover	Identify critical areas Identify partnerships/funding opps Undertake projects	Goose Creek Iron Creek Upper River Raisin Lower River Raisin
10. Increase recreational opportunities	Clearing and draining for development Lack of understanding Ignorance & Arrogance	Increase public awareness	Goose Creek Iron Creek Upper River Raisin Lower River Raisin Saline River



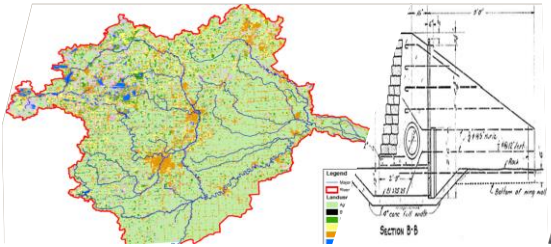



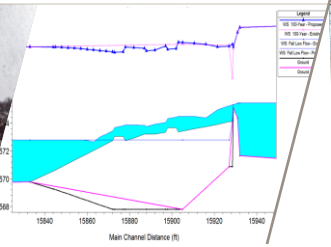

- Lenawee Conservation District (LCD) has funding for water quality workshops & Western Lake Erie 'sails' designed to directly connect upstream farmers and landowners with the visible challenges within Lake Erie.
- Lenawee and Washtenaw Conservation Districts have implemented River MAEAP work.
- LCD 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 BUIs 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 BUIs.
- In addition, we still have Benthos, Dredging, Bird or Animal Deformities/Reproduction Problems and Fish Consumption which are still impaired.




WELCOME PROJECTS THE RIVER

RIVER RAISIN LEGACY PROJECT

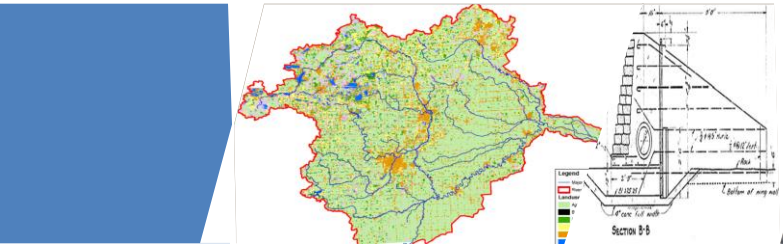
HISTORY MEDIA CONTACT

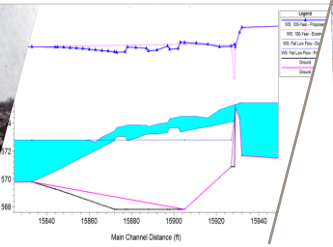
Welcome

The mouth of the River Raisin hosts the only Michigan port on Lake Erie and was once home to abundant lotus 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 Sterling 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.



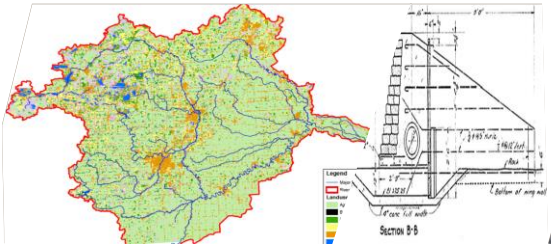




- Sterling Island Habitat Restoration Project, bank stabilization and fish habitat restoration
- MDNR is restoring 18 acres of emergent and submergent Great Lakes marsh and 32 acres of lakeplain prairie, some of the most threatened habitat in the Great Lakes
- Restoring 310 acres of degraded Ford Marsh along the Raisin with repairs to dikes and installation of a pump station

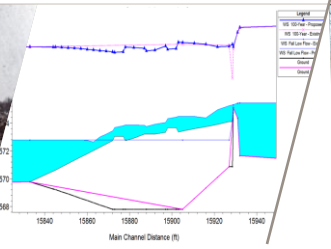
- Legacy sediment PCB Removal - $17.2M project that has removed 109,000 CY of sediment contaminated with PCBs
- During removal some additional PCB contamination was found in weathered bedrock below the river bed. This area has been temporarily capped while EPA determines the best course of long-term 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



Legend
Main
River
Landuse
Ag
Section B-B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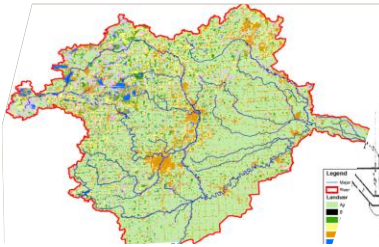
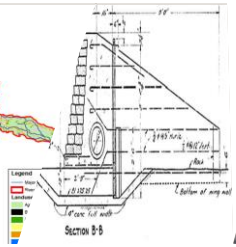
Main Channel Distance (ft)

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Main Channel
Floodplain
Landuse
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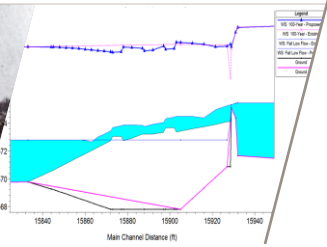
Section B-B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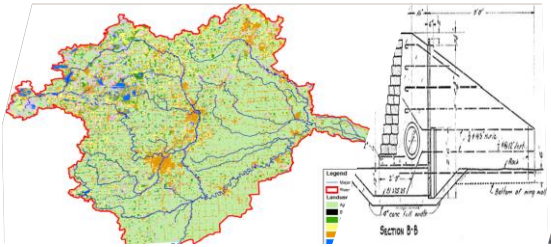

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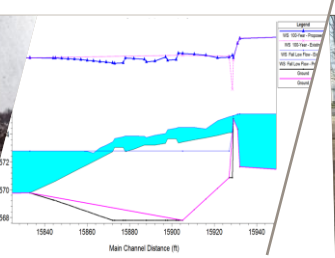
Section B-B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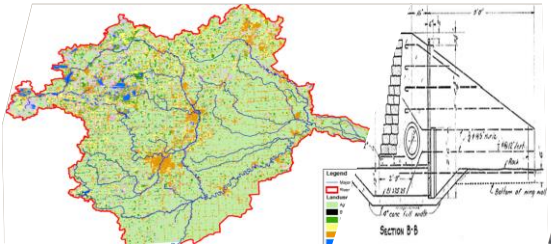
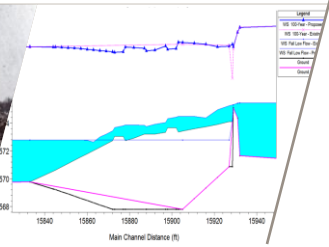
Main Channel Distance (ft)

Miscellaneous

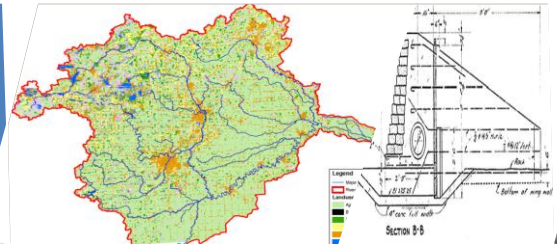
- The Nature Conservancy – Great Lakes western Lake Erie Basin geodatabase and pilot project
- Washtenaw County Water Resources Commissioner has just released new stormwater rules that will require infiltration
- River Raisin Institute is going to be starting the Lapointe Drain watershed management plan this spring and will be looking at phosphorus and E. coli problems just south of the mouth of the Raisin

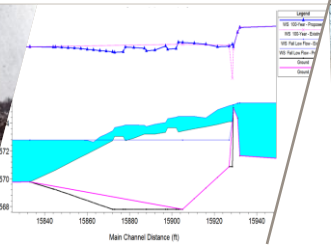




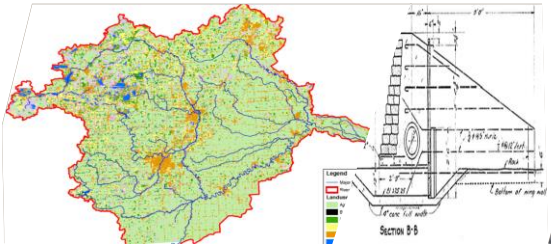

MUNSON PARK TRAIL HEAD
YMCA TRAIL HEAD
N. Custer Pathway 1.4 miles
RIVER RAISIN
S. Custer Rd.
W. Front St.
W. Elm Ave.
.7 mile
MARTIN LUTHER KING JR. FOOT BRIDGE
1 mile
E. Elm Ave.
NEW FISHING
Sidewalk 1.7 miles
N. Monroe St.
S. Monroe St.
Riverwalk 0.5 miles 10' Wide
Riverwalk 0.5 miles 10' Wide
VETERANS PARK TRAIL HEAD
ST. MARY'S PARK TRAIL HEAD
Sidewalk (to E. Elm Ave) 0.7 miles 4' - 5' Wide
S. Dixie Hwy.
S. Telegraph Rd.
WATER FILTRATION PLANT
WINCHESTER STREET BRIDGE
N. Dixie Hwy.
RIVER RAISIN NATIONAL BATTLEFIELD PARK TRAIL HEAD
Battlefield Section 0.6 miles
Wetlands Trail 1.1 miles
E. Front St.
STERLING STATE PARK TRAIL HEAD (AUTO PERMIT REQUIRED)
Sterling State Park Loop Total 2.7 miles
2.3 mile
Connection to parking lot at State park .2 miles
LAKE ERIE
FORD MARSH
DTE Energy
DETROIT EDISON GENERATION PLANT
1 Custer Equestrian Monument
2 Munson Park
3 Veterans Park
4 Monroe Family YMCA
5 River Raisin National Battlefield Park
6 Accessible Fishing Pier
7 Ford Marsh/Detroit River International Wildlife Refuge
8 Wm. C. Sterling State Park

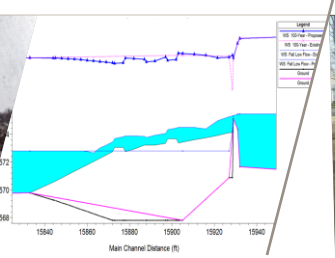
Activity	Description	Status
Implementation	Form committee with broad stakeholder representation	
	Provide outreach/education to communities on new RR WMP	
RRWC Development	Increase RRWC capacity	
Additional Watershed Assessment	E. coli Source Assessment	
	Road Crossing Survey	
	Rapid Geomorphic Assessment	
	Lower Raisin buffer evaluation	
	Natural system inventory	
	Significant cultural/agricultural site inventory	
	LWD Inventory program	
Public Education and Involvement Demonstration	Annual River Raisin Watershed Conference	
	Connecting Schools to the Great Lakes Program	
	River Raisin Watershed History Guide	
	River Raisin Film Festival	
Planning	New site and road design standards	
	riparian buffer ordinance	
	LID ordinance	




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	?

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Questions/Additions?

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