

# ROUGE RIVER COLLABORATIVE PUBLIC EDUCATION PROGRAM (PEP) 2020-2021 PROGRESS REPORT



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## A. Purpose

This report summarizes the activities undertaken to implement the Rouge River Collaborative Public Education Program (Plan) which was approved by the Michigan Department of Environment, Great Lakes and Energy (EGLE) in March 2017. The Plan is part of the municipal separate storm sewer system (MS4) permits for several communities in the Rouge River watershed. The report includes activities implemented by or on behalf of members of the Alliance of Rouge Communities (ARC) from January 1, 2020 through December 31, 2021. The permittees participating in the Plan during the reporting period are listed below.

### Participating Permittees

Beverly Hills, Village of	Henry Ford College	Plymouth Township
Bingham Farms, Village of	Inkster, City of	Redford Township
Birmingham, City of	Lathrup Village, City of	Schoolcraft College
Bloomfield Hills, City of	Livonia, City of	Southfield, City of
Bloomfield Township	Melvindale, City of	Troy, City of
Canton Township	Northville, City of	Walled Lake, City of
Dearborn Heights, City of	Northville Township	Wayne, City of
Farmington, City of	Novi, City of	Westland, City of
Farmington Hills, City of	Oakland County*	West Bloomfield Township
Franklin, Village of	Oak Park, City of	Wayne County Airport Authority
Garden City, City of	Plymouth, City of	Wayne County*

*\*Participating in the Plan, but their complete efforts will be reported in their individual progress reports.*

## B. Action Strategy Status

The status of each action strategy includes a description of each activity, progress made during the reporting period and status of each metric.

### **PEP #1: Distribute pollution prevention literature on various topics through brochures, educational materials, and other media**

#### **Description**

ARC members will be provided copies of materials to be displayed at their facilities or used at community events or will be provided electronic material to use on their community website. With ARC oversight, Wayne County and ARC staff will facilitate the selection, procurement and distribution of various watershed restoration and pollution prevention public education materials to support ARC member public education permit compliance. Other or additional copies of some handout materials are available at cost through the Wayne County Publication Clearinghouse. Materials will also be available to view on the ARC's website. The ARC will also promote its message using electronic media outlets which could include cable TV, social media and billboards.

### Goal

- Create at least 2 brochures/materials during permit cycle including one to educate commercial/industrial/educational & institutional entities
- Develop at least 24 Facebook posts
- Materials available at ARC member facilities

### Assessment

METRIC	STATUS
Number of materials distributed/topic/location/event name	<ul style="list-style-type: none"><li>• 2020 – created new brochure titled “When it comes to household chemicals change is a good thing!”</li><li>• 2020 – more than 5,000 materials distributed (COVID-19 impacted distribution numbers)</li><li>• 2021 – designed jar opener made of recycled tires with healthy habits to protect the Rouge River watershed</li><li>• 2021 – designed community fleet vehicle magnet</li><li>• 2021 – more than 11,900 materials distributed</li><li>• See Appendix A – Material Distribution Report for detailed breakdown</li></ul>
Number of posts/views on ARC Facebook	<ul style="list-style-type: none"><li>• 2020 – 70 created posts</li><li>• 2021 – 53 created posts</li><li>• See Appendix B – Electronic Media Report for detailed breakdown</li></ul>
Viewer numbers from electronic (tv, billboard etc.) media when used	<p>In 2021 the ARC developed, in coordination with SEMCOGs One Water Campaign, a six minute video on the ARC and watershed stewardship activities</p> <ul style="list-style-type: none"><li>• Video on ARC website</li><li>• Video on ARC Facebook with more than 2,000 views</li></ul>

### Comment

The ARC redesigned its website in 2020 to include the following topics:

#### ROUGE FRIENDLY BUSINESS PRACTICES

- Facility management
- Pollution prevention
- Proper storage
- Educating employees

**PEP #2: Coordinate and distribute community articles and ad graphics on pollution prevention and watershed restoration and stewardship**

### Description

With ARC oversight, ARC staff will facilitate the selection (based on an annual theme) and distribution of various articles and/or ad graphics that support watershed restoration and pollution prevention public

education themes. Other existing articles or ad graphics will be made available upon request by ARC members. Articles and ad graphics will also be posted on the ARC's website and through social media. ARC members will repost articles and ad graphics to their own social media outlets.

### **Goal**

- Coordinate/distribute existing articles/ad graphics
- Develop 1 new article/1 new ad graphic per year (total of 5 during permit cycle)
- Increase in ARC website traffic and Facebook views

### **Assessment**

<b>METRIC</b>	<b>STATUS</b>
List of articles/ad graphics with title, topic and date	See Appendix C – Articles/Ad Graphic Report for copies of: <ul style="list-style-type: none"> <li>• 2020 – When it Comes to Household Chemicals – Change is a Good Thing (article)</li> <li>• 2020 – Chemical change is a good thing (graphic)</li> <li>• 2021 – Let's All Dispose of Fats, Oils &amp; Grease (FOG) Properly (article)</li> <li>• 2021 – No fats, oils or grease in the drain (graphic)</li> </ul>
List of articles/ad graphics promoted on ARC website/Facebook	<ul style="list-style-type: none"> <li>• 2020 – Chemical change is a good thing (article/graphic)</li> <li>• 2021 – Let's all Dispose of Fats, Oils &amp; Grease (FOG) Properly (article/graphic)</li> </ul>
Number of views on ARC website/Facebook	See Appendix B – Electronic Media Report

### **Comment**

In addition to developing new articles/ad graphics, the ARC website and Facebook page has promoted and reposted various articles by other organizations that support watershed restoration and pollution prevention themes.

## **PEP #3: Provide static displays and posters on pollution prevention and watershed restoration and stewardship**

### **Description**

Wayne County has various pollution prevention and/or watershed awareness displays available for loan to ARC members. The ARC plans to update existing and/or create new static displays during the permit cycle. The ARC may create new static displays using SEMCOGs "What You Can Do . . ." series or other topic that will be made available for loan to ARC member communities to use at their facilities or community events in each of the subwatersheds. ARC staff may also oversee displays at community events. ARC staff may create new displays if a particular topic is deemed necessary. The ARC is also creating seasonal posters covering a variety of the PEP topics which will be provided to ARC members for display in their facilities.

### **Goal**

- Distribute 4 seasonal posters, post and rotate seasonally at least 3 out of 5 years during permit cycle.



- Update/create at least 3 static displays and use at 3-4 ARC member community events per year during the permit cycle with a minimum of 2 events in each of the 7 subwatersheds during the permit cycle.

### **Assessment**

METRIC	STATUS
Report of static display/date/location and title of events where displays were used ( <i>4 events per year, 2 events in each subwatershed during permit cycle</i> )	<ul style="list-style-type: none"> <li>• 2020 – designed two new banners with topic Chemicals – Change is a Good Thing</li> <li>• 2020 – banner at 12 events (COVID-19 impacted, not rotated until fourth quarter of 2020)</li> <li>• 2021 – banner at 56 events</li> <li>• Banners have been at 2 events in each of the 7 subwatersheds during the permit cycle</li> <li>• See Appendix D – Poster/Banner Report</li> </ul>
Number of posters distributed and location ( <i>rotate 3 out of 5 yrs. of permit cycle</i> )	<ul style="list-style-type: none"> <li>• 84 copies of seasonal posters were distributed at community events during the reporting period.</li> <li>• 17 of the 31 permittees displayed posters in 2 of the reporting years and 10 displayed them in 1 of the years in their buildings</li> <li>• See Appendix D – Poster/Banner Report</li> </ul>
Number of static displays created annually ( <i>3 over permit cycle</i> )	1, 2-panel display created “Chemicals – Change is a Good Thing”

### **PEP #4: Promote environmental hotlines to educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4**

#### **Description**

The environmental hotline numbers and collection/disposal information will be advertised by ARC members through available outlets such as the ARC website, county and local community websites, social media, through hotline brochure distribution, as well as being displayed on other topical brochures, distributed at display events and training sessions, electronic media, and other outlets.

#### **Goal**

- Distribute materials annually with hotline referenced
- Promote on ARC and ARC member community website and Facebook

### **Assessment**

METRIC	STATUS
Number of materials distributed annually	<ul style="list-style-type: none"> <li>• 2020 – 3,919 brochures distributed with hotline and collection/disposal information referenced (Waterfront Wisdom, Watershed Wisdom, When it Comes to Chemicals – Change is a Good Thing)</li> <li>• 2021 – 5,209 brochures distributed with hotline and collection/disposal information referenced (Waterfront Wisdom,</li> </ul>

	Watershed Wisdom, When it Comes to Chemicals – Change is a Good Thing)
Number of views on ARC website and Facebook	<ul style="list-style-type: none"> <li>• 2020 – Brochures added to website that reference the hotline and collection/disposal information.</li> <li>• See Appendix B – Electronic Media Report</li> </ul>

### Comments

In 2020 the ARC redesigned its website to include the below topics:

#### THINGS YOU CAN DO

- Proper use and disposal of chemicals
- Household hazardous waste/Illegal dumping
- Recognize illegal dumping & report it
- Application & Disposal of chemicals

#### **PEP #5: Distribution of “homeowner” materials to promote the importance of pollution prevention and watershed restoration and stewardship**

### Description

Homeowner educational materials will be available to ARC members and the public through the ARC website and the ARC’s Facebook. A homeowner educational brochure will be distributed and made available to ARC members to use as part of their welcome to the community new resident packets.

### Goal

- Develop homeowner materials within 1 year of permit approval

### Assessment

METRIC	STATUS
Completion of brochure	Completed in 2019 “Watershed Wisdom for Homeowners-Healthy Habits for Clean Water”
Number of materials distributed annually	<ul style="list-style-type: none"> <li>• 2020 – 3,818 copies of “Watershed Wisdom for Homeowners – Healthy Habits for Clean Water”</li> <li>• 2021 – 858 copies of “Watershed Wisdom for Homeowners – Healthy Habits for Clean Water”</li> </ul>
Number of materials distributed to new homeowners by ARC member communities	<ul style="list-style-type: none"> <li>• 2020 – 524 distributed through realtors</li> <li>• 2020 – 549 distributed through homeowner’s associations</li> <li>• 2021 – 100 distributed through League of Women Voters</li> </ul>
Number of views on ARC website and Facebook	See Appendix B – Electronic Media Report

**PEP #6: Develop and promote educational workshops and presentations****Description**

With ARC oversight, Friends of the Rouge (FOTR) and ARC staff will determine the topics, coordinate content, and present 6 workshops during the permit cycle. Workshop topics will vary based on annual education themes and/or needs as determined by the ARC. Workshops and presentations to business associations, chamber of commerce, business organizations, and focus groups could also be included. ARC members may host and participate in these workshops and presentations.

**Goal**

- Conduct six workshops/presentations during the permit cycle, 1 or more per year and at least 1 per subwatershed.
- Each event will average at least 15 participants.
- ARC member communities will promote and/or host events
- One or more will target businesses

**Assessment**

METRIC	STATUS
Number and topics of materials handed out and presented	<ul style="list-style-type: none"><li>• 2020 – ARC conducted 1 “Stewards of the Rouge – How You can Protect Water Quality!” Webinar on 10/29/20 with 17 participants</li><li>• 2021 – ARC conducted 1 “Septic System Maintenance” webinar on 11/17/21 with 17 participants</li><li>• Both webinar recordings were added to the ARC’s website</li><li>• 2020 – Due to COVID-19 FOTR had limited in-person activities which included an artwork contest, compiled at-home environmental education activities and conducted sampling through the Rouge Education Project. See Appendix E for details.</li><li>• 2021 – Due to COVID-19 FOTR conducted a virtual Rain Garden Workshop with 197 live viewers through Zoom</li></ul>
Workshop sign-in sheets with number of attendees and survey results when collected	See Appendix E – Workshop/Volunteer Report
Report of ARC member communities promoting/hosting events	See Appendix E – Workshop/Volunteer Report and Appendix B – Electronic Media Report for additional activities by FOTR that were hosted or promoted by ARC communities

**PEP #7: Promote and support volunteer activities****Description**

The ARC members, Wayne, Oakland and Washtenaw County, FOTR and other partners will promote and implement Rouge River awareness and restoration projects such as Rouge Rescue, River Day, workdays, water festivals and green schools programs through websites, social media, distribution of materials and presentations. In addition, four (4) workdays may be organized and coordinated to implement watershed restoration stewardship activities at new or existing green infrastructure project sites during the permit cycle. ARC members are encouraged to promote FOTR’s Rouge Rescue and workdays that are held throughout the watershed.

### **Goal**

- Coordinate 4 workdays during permit cycle
- ARC member communities will promote, participate or host volunteer and other watershed events

### **Assessment**

METRIC	STATUS
Workday sign-in sheets documenting volunteer attendance	2020 – FOTR conducted 2 workdays, one at Plymouth Township Park with 6 volunteers and one at Plymouth Canton Educational Park – Canton High School with 15 students 2021 – FOTR conducted 1 workday on 8/21/21 at Merriman Hollow with 32 participants (See Appendix E – Workshop/Volunteer Report)
Workday survey results	No surveys were conducted
Report of ARC member communities that hosted, participated or promoted events	ARC member communities hosted, participated or promoted events more than 267 times during the reporting period. (See Appendix E – Workshop/Volunteer Report)
Number of views on ARC website and Facebook annually	See Appendix B – Electronic Media Report

## **PEP #8: Promotion of and support for volunteer monitoring activities within the Rouge River Watershed**

### **Description**

The ARC and Oakland and Washtenaw County will promote and support Wayne County and the Friends of the Rouge to implement a watershed-wide volunteer monitoring program through websites, social media, distribution of materials, and presentations. ARC members will actively promote public and business participation and lend support to FOTR as appropriate. ARC members will host monitoring activities at their facilities when appropriate.

### **Goal**

- Conduct 1 winter stonefly search, 1 bug hunt and 2 other volunteer monitoring training exercises annually
- ARC member communities will promote, participate or host volunteer events

### **Assessment**

METRIC	STATUS
Monitoring events	Completed annually, see Appendix E – Workshop/Volunteer Report
Number of views on ARC website and Facebook	See Appendix B – Electronic Media Report
Sign-in sheets showing number of volunteers	See Appendix E – Workshop/Volunteer Report
Survey results	
Report of ARC member communities that hosted, participated or promoted events	

## PEP #9: Rouge River Watershed Signage

### Description

Watershed signage will continue to be made available to ARC members including River/Road Crossing signs, Don't Feed the Geese/Waterfowl signs, and Grow Zone signs. ARC Staff will create one new sign and/or sticker for community use during the permit cycle regarding disposal practices of animal waste or other pollution prevention topic. ARC Staff, with assistance from Wayne County, Oakland County and ARC member communities, surveyed the watershed to 1) document current signage to determine if maintenance is needed, and 2) document where future signage placement would be beneficial. This activity helps to educate and increase public awareness about the interconnectedness of the watershed and the storm sewer system.

### Goal

- Develop at least 1 new sign or sticker during permit cycle
- During first 2 years survey watershed signage for maintenance and future sign needs
- Create map during permit cycle documenting survey results
- Implement maintenance and/or new signage at high-priority locations during the first permit cycle

### Assessment

METRIC	STATUS
Complete at least 1 new sign/sticker or other item during permit cycle	2021 – New vehicle magnet designed with distribution in 2022
Number of signs/stickers or other items distributed annually	Planned for 2022
Survey results, map and recommendations during permit cycle	2020 – Survey completed 2021 – recommendations completed See Appendix F – Rouge River Watershed Signage Report
Number of signs maintained and new signage installed during permit cycle	Planned for 2022/2023

## C. Overall Effectiveness

This report summarizes the effectiveness of the Rouge River Collaborative Public Education Program (Plan.) The ARC analyzes survey results from workshops, presentations, workdays and other activities and makes necessary adjustments to the information presented at the ARC supported workshops and presentations during the permit cycle. The ARC continues to participate in regional partnership activities which assist with implementing and improving the PEP.

The assessments detailed in this plan show continued overall effectiveness of the plan including:

- Increased distribution of educational materials
- Increased Facebook Likes and Followers
- Increased website content
- Increased educational materials available
- Increased website visitors

## **Appendix A**

### **Material Distribution Report**

ARTWORK FOR RECYCLED TIRE JAR OPENER:

**IF YOU LIVE HERE**  
**YOU LIVE IN A WATERSHED!**



**Healthy Habits to Protect the Rouge River Watershed**

- Take your car/boat to a local car wash where the wash water is treated.
- Take cleaners, paint, fertilizers, etc., to a Household Hazardous Waste collection event.
- Pick up pet waste & dispose of it in the trash.
- Don't put "flushable" wipes down the toilet - they clog pipes & get stuck in machinery.
- Report dumping in the river, side of the road or down the storm drain to 800-292-4706.
- Have your septic system inspected every 3 years & pumped out every 3-5 years.

**To Learn More Visit:**  
[allianceofrougecommunities.com](http://allianceofrougecommunities.com)



*This jar opener was made from recycled tires!*

*Working together, restoring the river*

ARTWORK FOR FLEET VEHICLE MAGNET:

**IF YOU LIVE HERE**  
**YOU LIVE IN A WATERSHED!**



[allianceofrougecommunities.com](http://allianceofrougecommunities.com)



# Why Change Your Chemical Habits?

Your actions with fertilizers, pesticides, cleaners, vehicle fluids and other household chemicals directly affect the health of the water quality in the Rouge River watershed- which impacts you, everyone around you, wildlife and their habitat, and even the communities downstream.

A **watershed**, also referred to as a **drainage basin**, is the land area that delivers rain & snow/ice melt to a stream or lake. Everyone who lives in Michigan, lives in a watershed!



When rain and snow/ice melt travel across the land (watershed) and into storm drains, it is called stormwater or runoff. As this runoff travels, it picks up trash, animal waste, chemicals, sediments and dissolved substances along the way until it discharges into the nearest waterbody. Small streams join to form rivers and flow across sloping land, eventually flowing into a lake. These bodies of water impacted by runoff provide recreational opportunities, habitat for wildlife, and even drinking water for communities. By using chemical alternatives, changing how you use chemicals, and disposing of chemicals correctly, you are protecting the health of the Rouge River watershed!



# Household Hazardous Waste Collection Event Information

Wayne County	<a href="http://bit.ly/ARC-WCHHW">http://bit.ly/ARC-WCHHW</a>
Macomb County	<a href="http://bit.ly/ARC-MCHHW">http://bit.ly/ARC-MCHHW</a>
Oakland County	<a href="http://bit.ly/ARC-OCHHW">http://bit.ly/ARC-OCHHW</a>
St. Clair County	<a href="http://bit.ly/ARC-SCHHW">http://bit.ly/ARC-SCHHW</a>
Washtenaw County	<a href="http://bit.ly/ARC-WashCHHW">http://bit.ly/ARC-WashCHHW</a>
DEA Prescription Take-back	<a href="http://bit.ly/ARC-DEA">http://bit.ly/ARC-DEA</a>

## Alliance of Rouge Communities

The Alliance of Rouge Communities, or ARC, is a 501(c)(3) non-profit organization consisting of local municipalities, counties, educational institutions and stewardship groups working together to improve the Rouge River. Founded in 2005, the ARC is funded by membership dues from local governments and supported by grants. The ARC and its partners work cooperatively to protect the Rouge River while meeting water quality requirements mandated by the state's stormwater permit and restoring beneficial uses, such as canoeing, fishing and other recreational activities, to the Rouge River. The ARC delivers better water quality for less cost to its members!

Visit our website at [www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com) to learn other ways you can make a difference in the water quality of the Rouge River by practicing healthy habits like:

- Recognizing illegal dumping & how to report it
- Maintaining your septic system
- Properly disposing of fats, oils & grease (FOG)
- Landscaping with native trees & plants
- Properly cleaning your boat to stop invasive species
- Volunteering in your community



Find us on Facebook  
[@allianceofrougecommunities](https://www.facebook.com/allianceofrougecommunities)

# when it comes to household CHEMICALS

# CHANGE IS A GOOD THING!

## change your habits to help protect water quality in the Rouge River

- Change to a chemical alternative
- Change the way you use chemicals
- Change how you dispose of chemicals



For more information, visit:

[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)

[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)

## CHANGE TO A CHEMICAL ALTERNATIVE

### In Your Home

- Peroxide works great to clean the inside of the refrigerator, coffee pot and even your cutting boards.
- Baking soda and vinegar can be used in the bathroom or for kitchen appliances.
- Olive oil together with vinegar works well as a furniture polish.
- Tackle lingering smells on upholstery by combining baking soda, water and any essential oil and spray.
- Castile soap, found at your local grocery store, can be mixed with water for an all-purpose cleaner.
- The acidity of lemon juice is strong and can break down some tough stains on clothing.

### In Your Yard

- Mulch your grass and leaves into your yard to act as a natural fertilizer and keep grass at a 3-inch height which encourages deeper roots which resists pests and weeds.
- Look for a compost-based lawn food instead of a chemical-based fertilizer.
- Native plants are adapted to local soil and climate conditions requiring less fertilizer and naturally resist pests and diseases eliminating the need for pesticides.
- Use horticultural soaps or oils and spot spray instead of using pesticides.
- To deter rodents, use cedar chips, lavender or white peppercorns instead of mothballs. Mothballs contain chemicals and are considered poisonous.

### With Your Vehicles

- Wash cars and boats with a phosphate-free soap and avoid solvent-based cleaners.
- Use water, a coarse cloth and elbow grease to clean your vehicles.
- Natural cleaners like baking soda, borax and lemon or lime juice can be used on cars and boats.
- If your car leaks on pavement, clean it up promptly using an appropriate absorbent material, such as cat litter, and dispose of it properly.
- Use your local car wash which sends the wash water to the sewer system to be treated instead of in your driveway where the wash water goes to the storm drain and into the rivers and streams.

## CHANGE THE WAY YOU USE CHEMICALS

### In Your Home

- Follow the directions on the cleaning products- a little usually goes a long way!
- Properly store unused chemicals in their original container.
- Use rechargeable batteries when possible to reduce disposal of batteries which contain harmful chemicals.
- Septic system owners should avoid rinsing chemicals down the sink drain which can actually kill the beneficial bacteria, reducing the efficiency of your system.
- Supplements and additives in septic systems generally do not improve operation and some may actually harm your system and can cause groundwater contamination.

### In Your Yard

- Don't overuse pesticides which contain hazardous chemicals that can travel through the soil and contaminate groundwater.
- Consider fertilizing only once a year, late summer or early fall, when roots store nutrients over the winter months for future use in the spring growth season.
- Sweep excess fertilizer particles off paved surfaces and back onto the lawn.
- Don't fertilize right before a heavy rain, use your sprinkler or hose to lightly water after fertilizing to move the nutrients into the root zone of the soil.
- Use less salt in winter by shoveling early and often, or spray a brine (mix 1 1/2 gals. hot water with 3-4 cups rock or table salt) before it snows.

### With Your Vehicles

- Wash your car on the grass which acts as a filter instead of the driveway where the wash water goes to the storm drain and directly to the river.
- Use appropriate containers to store gas, used oil, transmission fluid and power steering fluid.
- Sweep your garage and dispose of debris in the trash to clean the floor instead of hosing it down where the water, with any contaminants, go into the storm drain.
- Work rags soaked with car fluids, which can cause spontaneous combustion fires, can be stored in a large container with a lid like a drywall compound bucket. Fill it halfway with water and a cup or two of powdered or liquid laundry detergent and mix completely. Keep the lid on at all times and submerge used rags in the solution.

## CHANGE HOW YOU DISPOSE OF CHEMICALS

### In Your Home

- Never dump cleaners, paints, or oils down a storm drain.
- Read the label of cleaners for disposal instructions, some can be disposed of in the same way that they are used, like down a toilet or sink (don't do if you have a septic system).
- Look for take-back programs to dispose of prescription medication. Never flush them down the toilet which can end up polluting water, impacting fish and wildlife, and contaminating food and water supplies.
- Check local hardware stores for take-back programs for fluorescent light bulbs and batteries.
- Dispose of cleaning supplies, paints/stains, oven cleaners, aerosol cans, etc. at a Household Hazardous Waste collection event in your community.

### In Your Yard

- Never dump excess fertilizer or pesticides down a storm drain. They should be disposed of through your community's Household Hazardous Waste collection event or check with stores that sell the product to see if they have a disposal program.
- Don't dump chemicals on the ground or into your septic system, this could cause materials to seep into soils and contaminate the groundwater supply.
- Always pick up pet waste promptly and dispose of it in the trash - even in the winter. When it rains or the snow melts, bacteria from pet waste that isn't picked up can wash directly into storm drains and drainage ditches and eventually into the streams and rivers.

### With Your Vehicles

- Dispose of used vehicle fluids like oil, transmission fluid and brake & power steering fluids at a participating collection site like a car repair shop, or you can take the fluids to a Household Hazardous Waste collection event.
- Excess antifreeze and windshield washer fluid should be taken to a Household Hazardous Waste collection event.
- Those rags you use when changing car fluids should also be disposed of at a Household Hazardous Waste collection event.
- Old car or boat batteries may be taken back to the retailer you bought it from for a refund of the core deposit.



## ARC 2020 PIE Material Reporting

[illegible]

ARC 2020 PIE Material Reporting

			PET BAGS	ALL SEASONS POSTERS				MANUALS						GOODIES			HANDOUTS/TIPCARDS/BANNERS											
Community	Name/Location of Event	Event Date	Pet Bags	Spring Poster	Summer Poster	Fall Poster	Winter Poster	Detention Pond	Member Brochures	Waterfront Wisdom	Watershed Wisdom Homeowners	Homeowner Septic System	FOG Brochure	Clips	Kneeling Pad	Keychains	Bookmark	ARC Fact Flyer	Value of Trees	Black Eyed Susan Card	Banners	SE MI Partner DVD	Working for CW DVD	Pet Tip Card	Storm Drains Tip Card	Fertilize Tip Card	Chemical Tip Card	Car Care Tip Card
Troy	Realtor sent	2/1/2020									22																	
Van Buren Twp	Member Request	2/1/2020									75																	
Van Buren Twp	Realtor sent	2/1/2020									2																	
Village of Franklin	Member Request	2/1/2020									75																	
Village of Franklin	Realtor sent	2/1/2020									21																	
Walled Lake	Banner reservation	11/9/20-11/20/20																			1							
Walled Lake	Member Request	2/1/2020									75																	
Washtenaw County	Member Request	2/1/2020									50																	
Wayne	Member Request	7/17/2020		1	1	1	1	60					100	100			100		100									
Wayne	Member Request	2/1/2020									75																	
Wayne	Realtor sent	2/1/2020									22																	
Wayne County	Member Request	2/1/2020									50																	
Wayne County-WCP Implementation	EPA GLRI Award Event	7/28/2020									50			50			50			50								
WCAA	Member Request	2/1/2020									20																	
West Bloomfield	Public Request	6/5/2020									14																	
West Bloomfield	Public Request	6/5/2020									45																	
West Bloomfield	Public Request	6/29/2020									1																	
West Bloomfield	Public Request	6/29/2020									5																	
West Bloomfield	Banner reservation	10/26/20-11/6/20																			1							
West Bloomfield	Member Request	2/1/2020									75																	
West Bloomfield	Realtor sent	2/1/2020									22																	
Westland	Public Request	6/5/2020									30																	
Westland	Member Request	2/1/2020									75																	
Westland	Realtor sent	2/1/2020									23																	
TOTAL 2020			0	4	4	4	4	161	1	101	3818	1	201	250	0	0	151	1	201	90	9	0	0	1	1	1	1	1

2021 ARC PIE Material Distribution Report

Community	Name/Location of Event	Event Date	Pet Waste Containers	Spring Poster	Summer Poster	Fall Poster	Winter Poster	Detention Pond	Member Brochures	Waterfront Wisdom	Watershed Wisdom Homeowners	Homeowner Septic System	Chemical Brochures	FOG Brochure	Clips	Kneeling Pad	Keychains	Bookmark	ARC Fact Flyer	Value of Trees	Black Eyed Susan Card	Banners	SE MI Partner DVD	Working for CW DVD	Pet Tip Card	Storm Drains Tip Card	Fertilize Tip Card	Chemical Tip Card	Car Care Tip Card
			PET BAGS	ALL SEASONS POSTERS				MANUALS						GOODIES			HANDOUTS/TIPCARDS/BANNERS												
Barb Goryca	League of Women Voters	1/5/2021									100		1	1				1	1										
Auburn Hills	Distribution of new brochure	3/2/2021											100																
Beverly Hills	Distribution of new brochure	3/2/2021											100																
Bingham Farms	Distribution of new brochure	3/2/2021											100																
Birmingham	Distribution of new brochure	3/2/2021											100																
Bloomfield Hills	Distribution of new brochure	3/2/2021											100																
Bloomfield Twp	Distribution of new brochure	3/2/2021											100																
Canton	Distribution of new brochure	3/2/2021											100																
Commerce Twp	Distribution of new brochure	3/2/2021											100																
Dearborn Heights	Distribution of new brochure	3/2/2021											100																
Farmington	Distribution of new brochure	3/2/2021											100																
Farmington Hills	Distribution of new brochure	3/2/2021											100																
Franklin	Distribution of new brochure	3/2/2021											100																
Garden City	Distribution of new brochure	3/2/2021											100																
Inkster	Distribution of new brochure	3/2/2021											100																
Lathrup Village	Distribution of new brochure	3/2/2021											100																
Livonia	Distribution of new brochure	3/2/2021											100																
Melvindale	Distribution of new brochure	3/2/2021											100																
Northville	Distribution of new brochure	3/2/2021											100																
Northville Twp	Distribution of new brochure	3/2/2021											100																
Novi	Distribution of new brochure	3/2/2021											100																
Oak Park	Distribution of new brochure	3/2/2021											100																
Oakland County	Distribution of new brochure	3/2/2021											100																
Orchard Lake	Distribution of new brochure	3/2/2021											100																
Plymouth	Distribution of new brochure	3/2/2021											100																
Plymouth Twp	Distribution of new brochure	3/2/2021											100																
Redford Twp	Distribution of new brochure	3/2/2021											100																
Rochester Hills	Distribution of new brochure	3/2/2021											100																
Romulus	Distribution of new brochure	3/2/2021											100																
Southfield	Distribution of new brochure	3/2/2021											100																
Troy	Distribution of new brochure	3/2/2021											100																
Van Buren Twp	Distribution of new brochure	3/2/2021											100																
Walled Lake	Distribution of new brochure	3/2/2021											100																
Washtenaw County	Distribution of new brochure	3/2/2021											100																
Wayne	Distribution of new brochure	3/2/2021											100																
Wayne County	Distribution of new brochure	3/2/2021											100																
West Bloomfield Twp	Distribution of new brochure	3/2/2021											100																
Westland	Distribution of new brochure	3/2/2021											100																
Southfield	Earth Day event	4/13/2021																			50								
Friends of the Rouge	Rain Barrel sale	4/24/2021	100													200													
Friends of the Rouge	Rain Barrel sale	5/15/2021	100													100													
Friends of the Rouge	Rain Barrel sale	8/28/2021	100													100													
Sarah Roberts	Citizen										45		1	1						1	1								
Farmington	Member request													50															
Auburn Hills	Member request		25	2	2	2	2			25		50	25	50	25					25									
Beverly Hills	Member request		50	1	1	1	1									10				50									50
Commerce Twp	Member request		10	2	2	2	2				50	50	50		210	50				50									
Novi	Member request			1	1	1	1	10					20		20	20													
Washtenaw County	Member request							25			10	10			20	10													
Friends of the Rouge	Rain Barrel sale	8/28/2021	100													100													
Beverly Hills	Member request		50								50					50													
Bingham Farms	Family Festival	8/14/2021	450												420					400							400		
Plymouth Twp	Member request		100																										
Walled Lake	Member request												100			25		100											
Garden City	Member request			1	1	1	1				50		50		50				50	50						50	50	50	50
Beverly Hills	Member request		50								50		50																50
Northville Twp	Member request		100					50			100			50	100	100													
Troy	Member request		50	2	2	2	2	1							25	50		25											
Auburn Hills	Member request		25	2	2	2	2			2	20				25				25										
Redford Twp	Member request		100	4	4	4	4				200		200		100	150		100											
Plymouth	Member request		30												25														
Romulus	Member request		30								10				25					25									
Bloomfield Twp	Member request		300	2	2	2	2				200		100		60	100		100											
Farmington Hills	Member request		450																										
Southfield	Member request		150													25													
			2370	17	17	17	17	86	0	27	885	110	4297	152	1105	1090	0	326	51	601	51	0	0	0	0	50	450	50	150

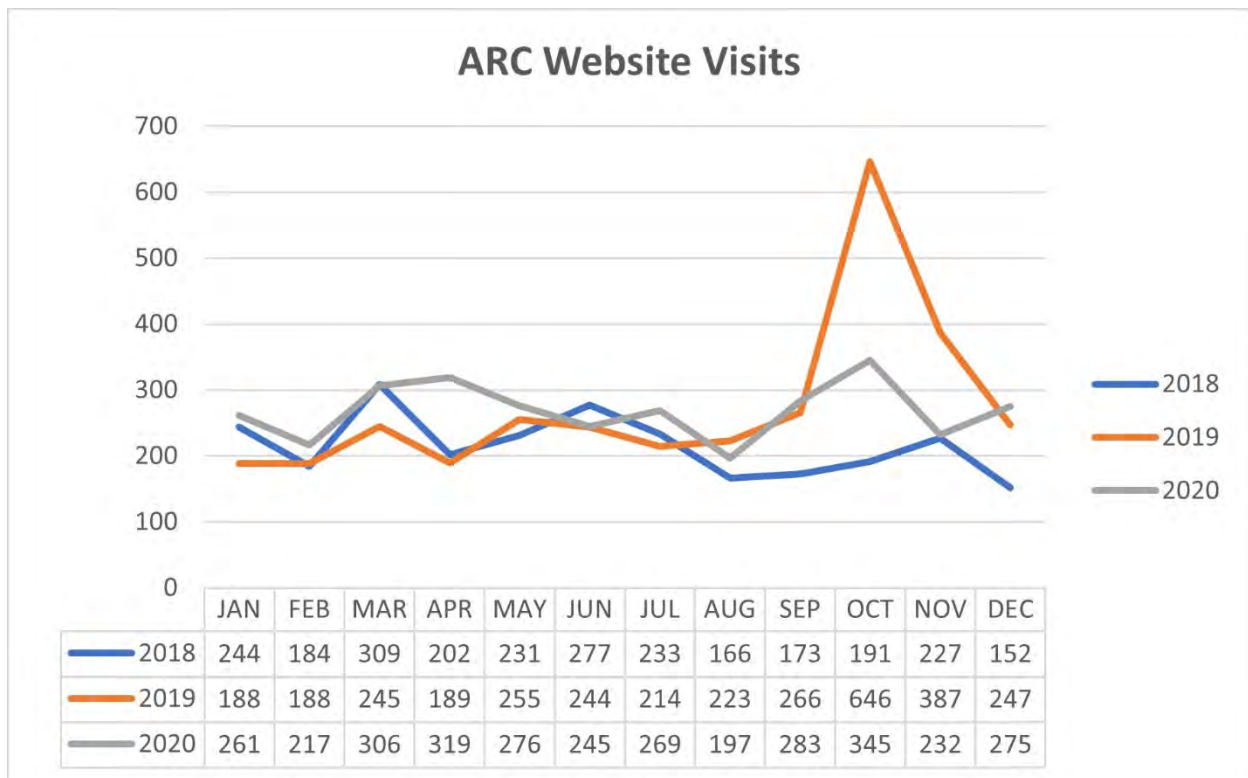
Total item: 11,919

**Appendix B**  
**Electronic Media Report**

# ARC ELECTRONIC MEDIA REPORT

## ARC WEBSITE VISITORS IN 2020

Page impressions	8,363
Pageviews / Visit	2.59
Visitors	3,225
Average Duration per Visit	168
Bounce Visits	1,965
New Visitors	2,641



*\*note that in 2019 the ARC hosted the Great Lakes Restoration Celebration in October and registration for the event was done through the ARC's website which increased the traffic during October and November. If those months were adjusted to an average amount of previous months there was an overall increase to visitors to the ARC's website in 2020.*

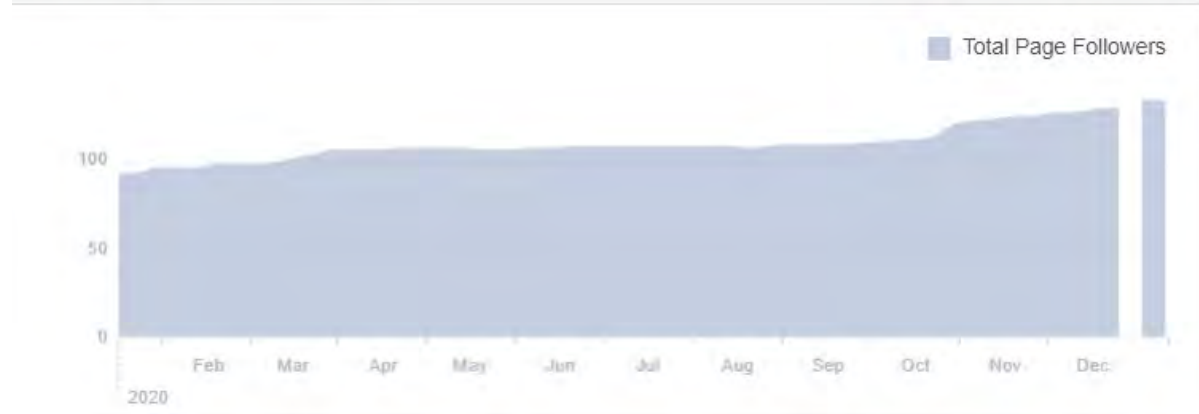


## ARC FACEBOOK POSTS

- ARC created posts in 2020: 70

## ARC FACEBOOK FOLLOWERS 2020

Total Page Followers: 134








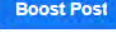










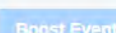











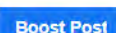






















































































## ARC FACEBOOK LIKES 2020












































Total Page Likes: 127




































































## 2020 Posts

All Posts Published							Create Post
<span>Reach: Organic / Paid</span> <span>Post Clicks</span> <span>Reactions, Comments &amp; Shares</span>							
Published	Post	Type	Targeting	Reach	Engagement	Promote	
03/01/2021 11:16 AM	 With this upcoming spring weather remember to sweep your garage			2	0 0		
02/26/2021 10:17 AM	 Check out this great project in the Rouge River watershed! Those fish			21	3 2		
12/22/2020 11:21 AM	Learn something new and what to do!			26	1 1		
12/22/2020 11:02 AM	 Attend this virtual training to learn more about stoneflies, why Friends			25	0 1		
12/22/2020 11:00 AM	 Get involved in this great educational - OUTDOOR - event			29	0 3		
12/21/2020 12:34 PM	 In 2021, Tamarack Creek in City of Southfield, Michigan USA -			67	2 11		
12/17/2020 3:04 PM	 Why Change Your Household Chemical Habits? Your actions with			53	0 3		
12/14/2020 10:24 AM	 The Johnson Creek Restoration Project at Fish Hatchery Park in			1.8K	51 57		
11/18/2020 10:57 AM				31	0 0		
11/18/2020 10:50 AM	 Check out the great information about how you can protect the			23	0 0		
11/18/2020 10:46 AM	 Alliance of Rouge Communities updated their phone number.			26	1 1		

11/04/2020 8:54 AM		The Johnson Creek Restoration Project at Fish Hatchery Park in			24		0 0		
11/04/2020 8:46 AM		The Fishway project at Fair Lane, Home of Clara and Henry Ford has			30		1 1		
11/04/2020 8:20 AM					20		0 4		
11/02/2020 9:15 AM		If you were unable to attend the ARC's recent webinar "Stewards of			25		1 1		
10/29/2020 3:33 PM		Don't forget to watch the ARC's free webinar tonight at 7:00 p.m. to learn			14		0 0		
10/20/2020 11:01 AM		Looks amazing!			38		0 6		
10/16/2020 10:48 AM		The ARC is collaborating with Wayne County, Michigan's			105		4 10		
10/15/2020 3:54 PM		With funding from the U.S. Environmental Protection Agency's			178		11 15		
10/15/2020 3:48 PM		With funding from U.S. Environmental Protection Agency			91		4 14		
10/14/2020 11:41 AM		Looking for ways you can help protect water quality in the Rouge			19		4 0		
10/14/2020 11:17 AM		The restoration of Johnson Creek at Fish Hatchery Park in Northville is			1.8K		50 46		
10/13/2020 2:33 PM		With Great Lakes Restoration Initiative funding from U.S.			31		3 3		

10/13/2020 2:23 PM		The Rouge River oxbow restoration in bloom. This Habitat Restoration			229		15 28		<a href="#">Boost Post</a>
10/12/2020 8:49 AM		Our FREE webinar, Stewards of the Rouge River Watershed, can help			772		9 10		<a href="#">Boost Post</a>
10/12/2020 8:20 AM		We have all seen it in the Rouge River Watershed - learn why it is			28		1 1		<a href="#">Boost Post</a>
10/09/2020 9:18 AM		Oakland County kids! Create your masterpiece and learn about water			24		0 0		<a href="#">Boost Post</a>
10/08/2020 1:48 PM		The Fishway restoration work at Fair Lane, Home of Clara and			58		11 7		<a href="#">Boost Post</a>
10/02/2020 11:26 AM		Alliance of Rouge Communities updated their website address.			26		1 1		<a href="#">Boost Post</a>
09/25/2020 11:18 AM		Some great information on the water cycle, watershed and so			23		1 1		<a href="#">Boost Post</a>
09/25/2020 11:13 AM		Calling all Oakland County 4th and 5th graders! Get involved and learn			22		1 1		<a href="#">Boost Post</a>
09/16/2020 4:03 PM		Check out the ARC's new website! We have some great information			27		3 0		<a href="#">Boost Post</a>
09/14/2020 12:10 PM		Become a Master Rain Gardener with Friends of the Rouge's Hybrid			20		4 1		<a href="#">Boost Event</a>
08/20/2020 10:27 AM		Rain gardens help protect water quality in the Rouge River. Learn			29		2 1		<a href="#">Boost Post</a>
08/19/2020 3:34 PM		Check out the restoration work that is beginning at Johnson Creek in			39		6 5		<a href="#">Boost Post</a>
08/13/2020 2:35 PM		Learn what to look for in this new site!			129		14 8		<a href="#">Boost Post</a>



08/04/2020 9:54 AM	 More great things happening in the Detroit River! Learn more at a			33		1 1		<b>Boost Post</b>
07/29/2020 11:38 AM	 A great day for the Rouge River and Wayne County Parks . The Alliance			140		20 22		<b>Boost Post</b>
07/29/2020 10:15 AM	 Calling all Washtenaw County residents! Bring your household			25		1 3		<b>Boost Post</b>
07/29/2020 10:14 AM				33		0 4		<b>Boost Post</b>
07/20/2020 10:12 AM	 Keeping the Rouge River Watershed clean! Turkey vultures,			36		1 2		<b>Boost Post</b>
07/15/2020 9:49 AM	 Shoreline owners - check out the below webinar for helpful			17		0 1		<b>Boost Event</b>
07/02/2020 2:05 PM	 The Alliance of Rouge Communities (ARC) was awarded a grant from			51		5 4		<b>Boost Post</b>
07/02/2020 10:57 AM	 With more people spending time on the water don't forget about the			17		2 2		<b>Boost Post</b>
06/10/2020 10:54 AM	 Can you tell which storm drain had paint, wet concrete or something			522		51 25		<b>Boost Post</b>
05/19/2020 3:30 PM	 Exciting restoration activities coming to the Rouge!			37		5 4		<b>Boost Post</b>
05/14/2020 11:28 AM	 This heavy rain is a good reminder to get your rain barrel out and ready			116		4 9		<b>Boost Post</b>
04/30/2020 10:59 AM	 As you start cutting your lawn make sure you dispose of the clippings			243		11 21		<b>Boost Post</b>
04/16/2020 11:05 AM	 Awesome work in the Detroit River!			31		0 1		<b>Boost Post</b>

04/16/2020 11:04 AM				25		1 2		Boost Post
04/16/2020 10:57 AM	 Check this out this weekend from our partner Friends of the Rouge!			6		0 0		Boost Post
04/02/2020 9:22 AM	 Some more great online learning!			21		1 1		Boost Post
04/02/2020 9:21 AM	 Looking for something to do at home? Join Friends of the Rouge			21		0 1		Boost Event
03/30/2020 3:14 PM	 OneWater: COVID-19			26		1 4		Boost Post
03/18/2020 2:14 PM	 Flushing Caution: Oakland County Water Resources Commissioner			31		5 1		Boost Post
03/16/2020 12:16 PM	 If you are one of those short on toilet paper . . . DON'T flush			32		0 0		Boost Post
02/24/2020 9:03 AM	 Marsh Volunteer Collaborations: Buckthorn Removal			35		2 1		Boost Event
02/24/2020 9:02 AM	 Invasive Forest Pests in Michigan - What's here, What's happening,			26		3 0		Boost Post
02/24/2020 9:01 AM	 Native Plants, What Are They Anyway?: A Lecture by Rick Meader			39		5 0		Boost Event
02/12/2020 11:22 AM	 If you live in Canton, Michigan, Northville Township - Government,			37		6 0		Boost Post
02/11/2020 9:24 AM	 Get out in the Rouge River and look for the bugs that thrive in a healthy			47		5 3		Boost Event

02/11/2020 9:19 AM		Lots of great learning on the horizon to help protect water quality in the			42		2 4		<a href="#">Boost Event</a>
02/11/2020 9:18 AM		Integrated pest management in vegetable gardens			24		3 1		<a href="#">Boost Post</a>
02/11/2020 9:16 AM		Fisheries Workshop			27		0 1		<a href="#">Boost Event</a>
02/11/2020 9:11 AM		Program/Schedule			25		0 1		<a href="#">Boost Post</a>
01/30/2020 9:57 AM		Those of you in Washtenaw County Government don't forget to check			33		0 4		<a href="#">Boost Post</a>
01/30/2020 9:53 AM		Those of you in Oakland County, Michigan Government can visit			31		1 3		<a href="#">Boost Post</a>
01/30/2020 9:50 AM		Don't pour chemicals down storm drains which lead to the Rouge			29		0 3		<a href="#">Boost Post</a>
01/23/2020 11:22 AM		Are you responsible for salting public areas, parking lots, or			161		11 13		<a href="#">Boost Post</a>
01/17/2020 9:04 AM		Snows coming! Pick up the pet waste in your yard before the snow			41		0 3		<a href="#">Boost Post</a>
01/16/2020 12:56 PM					37		2 2		<a href="#">Boost Post</a>
01/16/2020 12:49 PM		When a large rain event is in the forecast - make sure your street			263		6 4		<a href="#">Boost Post</a>



## **2020 ARC Facebook Posts**

1/16/20 When a large rain event is in the forecast - make sure your street storm drains are clear of leaf and other debris that may block drainage - which leads to street flooding.

1/17/20 Snows coming! Pick up the pet waste in your yard before the snow comes to prevent the bacteria from washing into storm drains and straight to the Rouge River when the snow starts to melt.

1/23/20 Are you responsible for salting public areas, parking lots, or residences when it snows? Over-salting can cause piles of salt in the middle of the road, parking lots or walkways. When unchecked, this can contribute substantially to increased chloride entering our waterways through storm drains.

1/30/20 Don't pour chemicals down storm drains which lead to the Rouge River, instead recycle them at a household hazardous waste collection event. Wayne County, Michigan residents can learn what else to take to your local collection event. <https://www.waynecounty.com/.../household-hazardous-waste.aspx>

1/30/20 Those of you in Oakland County, Michigan Government can visit <https://www.oakgov.com/.../Hazardous-Materials-and-Household-...> to learn where to take your household hazardous waste including chemicals, batteries, paint and aerosols to protect water quality in the Rouge River!

1/30/20 Those of you in Washtenaw County Government don't forget to check out <https://www.washtenaw.org/278/How-Do-I-Dispose-Of> to find out where to dispose of things like old computers, appliances and even unused prescription drugs which are considered household hazardous waste!

2/12/20 If you live in Canton, Michigan, Northville Township - Government, Plymouth Township , or Redford Township Department of Public Services and would like to review and comment on the recently approved Stormwater Management Plan please visit: <http://www.allianceofrougecommunities.com/swplanreview.html>

3/16/20 If you are one of those short on toilet paper . . . DON'T flush "disposable wipes," they do not dissolve and will clog pipes and be costly to your community to remove.

4/30/20 As you start cutting your lawn make sure you dispose of the clippings through your community yard waste collection service - the below is considered ILLEGAL dumping and harmful to the Rouge River!

5/14/20 This heavy rain is a good reminder to get your rain barrel out and ready for the summer season in the Rouge River Watershed. Use this free water in your garden or flower beds.

6/10/20 Can you tell which storm drain had paint, wet concrete or something else that went right to the Rouge River? Please don't pour excess liquids of any kind in the storm drains!

7/2/20 The Alliance of Rouge Communities (ARC) was awarded a grant from the U.S. Environmental Protection Agency for habitat restoration projects at Colonial Park and Venoy Dorsey Park along the Lower Rouge River in Wayne County, Michigan. Thank you to Congresswoman Rashida Tlaib and Debbie Dingell for supporting this project! <https://tlaib.house.gov/.../tlaib-dingell-applaud-epa...>

7/20/20 Keeping the Rouge River Watershed clean! Turkey vultures, native to Michigan, provide a useful service to the watershed by feeding on dead animals that might transmit disease. Seen here roosting along the Lower Rouge Trail in Canton. You can do your part as well! Help keep our river clean by picking up trash around your neighborhood and picking up after your pet and disposing of it in the trash.

7/29/20 A great day for the Rouge River and Wayne County Parks . The Alliance of Rouge Communities received a \$4.2 Million grant from U.S. EPA Region 5 (Great Lakes Region) to restore 122 acres in 5 Wayne County Parks to beneficial use in the Rouge River AOC! Thank you to USEPA Regional Administrator Thiede for making the announcement yesterday at Riverview Park, one of the 5 sites in Livonia. EPA's announcement: [https://www.epa.gov/newsreleases/epa-announces-42-million-habitat-restoration-work-rouge-river-area-concern?fbclid=IwAR0EjTcq4SACMI\\_MPjntNjZrDekNv2Y6-3e-bIZ1v0TLIP-nXP3kLUWw4zA](https://www.epa.gov/newsreleases/epa-announces-42-million-habitat-restoration-work-rouge-river-area-concern?fbclid=IwAR0EjTcq4SACMI_MPjntNjZrDekNv2Y6-3e-bIZ1v0TLIP-nXP3kLUWw4zA) Learn more about the project here: [https://www.allianceofrougecommunities.com/PDFs/press/publicedpiece.pdf?fbclid=IwAR1ifqZeBLIJmCI\\_xjPX7G5KcTZKFiW8mArDG-dP7HfWH2wvI7IJ5xJVNC](https://www.allianceofrougecommunities.com/PDFs/press/publicedpiece.pdf?fbclid=IwAR1ifqZeBLIJmCI_xjPX7G5KcTZKFiW8mArDG-dP7HfWH2wvI7IJ5xJVNC)

8/19/20 Check out the restoration work that is beginning at Johnson Creek in Northville City Hall, Michigan being funded by U.S. Environmental Protection Agency. Thank you to all of our partners! <https://tinyurl.com/yblvy6bf>

9/16/20 Check out the ARC's new website! We have some great information that can help you become a steward of the Rouge River and protect water quality in your home, yard, with your vehicles and in your business! <http://www.allianceofrougecommunities.com>

10/8/20 The Fishway restoration work at Fair Lane, Home of Clara and Henry Ford is coming to a close in City of Dearborn Government . New asphalt has been placed along the Gateway Trail and it was reopened for use. Public cooperation is essential for the successful completion of this natural area restoration project. As construction work finishes and while plants and other natural elements become established over the next year, we need the community's cooperation by not entering the restoration zone. Any foot and/or bicycle traffic will cause degradation to the area, impeding the natural restoration. Partners include U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration (NOAA) Michigan Department of Natural Resources , Michigan Department of Environment, Great Lakes and Energy, and Wayne County Department of Public Services. To learn more about the project visit: [https://www.allianceofrougecommunities.com/PDFs/general/HFE%20Dam%20Fishway%20Public%20Education%20Handout.pdf?fbclid=IwAR0oZTYsQC72VI4og1uBswDKy1mXvmWm\\_p1TY7Ly8t8EvvVvccXZb1gHxDo](https://www.allianceofrougecommunities.com/PDFs/general/HFE%20Dam%20Fishway%20Public%20Education%20Handout.pdf?fbclid=IwAR0oZTYsQC72VI4og1uBswDKy1mXvmWm_p1TY7Ly8t8EvvVvccXZb1gHxDo)

10/8/20 ARC's free webinar – 10/29/20 at 7:00 p.m. Stewards of the Rouge River Watershed – what you can do to protect water quality!

10/12/20 Our FREE webinar, Stewards of the Rouge River Watershed, can help all of us in any watershed learn what we can do to keep our lakes, rivers and streams healthy! When: October 29, 2020 - 7:00 – 8:30 p.m. Please join the webinar on 10/29/20 at 7:00 p.m. from your computer, tablet or smartphone. <https://global.gotomeeting.com/join/737361781> Hosted by the Alliance of Rouge Communities

10/13/20 The Rouge River oxbow restoration in bloom. This Habitat Restoration Project is located on the campus of The Henry Ford in Dearborn which completed the reconnection of the oxbow to the Rouge River. Learn more:

[https://www.allianceofrougecommunities.com/PDFs/PI/public%20ed%20piece.pdf?fbclid=IwAR0ddKyORdxgJQugJt4pxNT\\_425kyTFFYZhw2zQOcWx--tWTrrvmveeOoTE](https://www.allianceofrougecommunities.com/PDFs/PI/public%20ed%20piece.pdf?fbclid=IwAR0ddKyORdxgJQugJt4pxNT_425kyTFFYZhw2zQOcWx--tWTrrvmveeOoTE) Partners include: National Oceanic and Atmospheric Administration (NOAA) U.S. Environmental Protection Agency, The Henry Ford and Wayne County DPS

10/13/20 With Great Lakes Restoration Initiative funding from U.S. Environmental Protection Agency, the ARC is restoring Tamarack Creek on the Rouge River in the City of Southfield, Michigan USA - Government. Project design is complete and construction is expected to start in early 2021. Learn more:

[https://www.allianceofrougecommunities.com/PDFs/general/Tamarack%20Creek%20Public%20Education%20Handout.pdf?fbclid=IwAR3Y9\\_rhaTD75JmopJJEL0cOo9bz3b4UMnU6i3EqXjlw7ExecoWCW4uG4k8](https://www.allianceofrougecommunities.com/PDFs/general/Tamarack%20Creek%20Public%20Education%20Handout.pdf?fbclid=IwAR3Y9_rhaTD75JmopJJEL0cOo9bz3b4UMnU6i3EqXjlw7ExecoWCW4uG4k8)

10/14/20 The restoration of Johnson Creek at Fish Hatchery Park in Northville is underway! The ARC received a grant from the Great Lakes Restoration Initiative U.S. Environmental Protection Agency. The old concrete wall along the creek has been removed, the streambank is being naturalized, and the contractor is beginning to remove sediment from the pond. For more information:

[https://www.allianceofrougecommunities.com/PDFs/general/Johnson%20Creek%20public%20ed%20piece.pdf?fbclid=IwAR32e93OUMr0EBDyV7B8qDeQ7LOVwxksEalQsr\\_43S9pjXY9HmJsFOFcOUA](https://www.allianceofrougecommunities.com/PDFs/general/Johnson%20Creek%20public%20ed%20piece.pdf?fbclid=IwAR32e93OUMr0EBDyV7B8qDeQ7LOVwxksEalQsr_43S9pjXY9HmJsFOFcOUA) Other partners include Northville Township - Government, Northville City Hall, Michigan

10/14/20 Looking for ways you can help protect water quality in the Rouge River watershed? Request our FREE brochure to learn things you can do in your home, yard, with your vehicles and in your community and business! Get enough for your neighbors too!

<https://www.surveymonkey.com/r/HOAorder>

10/15/20 With funding from U.S. Environmental Protection Agency through the Great Lakes Restoration Initiative the ARC is in the process of collecting data and designing restoration of 5 acres of riparian wetland and 1,600 feet of Seeley Creek in the City of Farmington Hills, Michigan - Municipal Government. It is anticipated that construction will take place in summer 2021. For more information visit:

[https://www.allianceofrougecommunities.com/PDFs/general/Seeley%20ck%20public%20ed%20piece.pdf?fbclid=IwAR3QJMWKl\\_VsHdUUerRrd3gMkpVqsoUQbB09mS5jWBWtRkyQUsO1JJMbQAo](https://www.allianceofrougecommunities.com/PDFs/general/Seeley%20ck%20public%20ed%20piece.pdf?fbclid=IwAR3QJMWKl_VsHdUUerRrd3gMkpVqsoUQbB09mS5jWBWtRkyQUsO1JJMbQAo) Other partners include Oakland County Water Resources Commissioner (WRC) and City of Farmington Hills, Michigan - Municipal Government

10/15/20 With funding from the U.S. Environmental Protection Agency's Great Lakes Restoration Initiative the ARC is excited to start the field investigation work that will be used in the restoration of habitat at Colonial and Venoy Parks in the Wayne County Parks System. For more information visit:

[https://www.allianceofrougecommunities.com/PDFs/general/colonial%20venoy%20public%20ed%20piece.pdf?fbclid=IwAR3MtoGfpNoSfHHC0xz7CEe7XDuzBj1pfXKpDS9\\_-Ew0OysTXqc-WU8PaU](https://www.allianceofrougecommunities.com/PDFs/general/colonial%20venoy%20public%20ed%20piece.pdf?fbclid=IwAR3MtoGfpNoSfHHC0xz7CEe7XDuzBj1pfXKpDS9_-Ew0OysTXqc-WU8PaU) Additional partners include Wayne County, Michigan Department of Public Services

10/16/20 The ARC is collaborating with Wayne County, Michigan's Department of Public Services and Wayne County Parks in the design of habitat restoration at Riverview (Levan Knoll), Sherwood, Lola Valley, and Bell Creek Parks and along the Lower Rouge River. The design work is underway through an

U.S. Environmental Protection Agency Great Lakes Restoration Initiative grant to Wayne County. Building on Wayne County's grant, the ARC received over \$4M in Great Lakes Restoration Initiative grant funding from EPA for the construction work at the above parks to restore 122 acres of habitat, eliminate 10 debris jams, and create 10 fish habitat structures at the parkland sites. Construction is anticipated to begin on the Sherwood Park site in summer 2021. For more information visit:

<https://www.allianceofrougecommunities.com/PDFs/general/wc%20parkland%20public%20ed%20piece.pdf?fbclid=IwAR0iUAN0vaqS53g22vtm6NQF4CYnEslQrVG8q5a5880rGh8gOhvV9glMsOU>

10/29/20 Don't forget to watch the ARC's free webinar tonight at 7:00 p.m. to learn what you can do to help protect water quality in the Rouge River!

11/2/20 If you were unable to attend the ARC's recent webinar "Stewards of the Rouge River" you can view it here to learn what you can do to protect water quality in the Rouge River in your home, yard, with your vehicles and in your community and business.

11/4/20 The Fishway project at Fair Lane, Home of Clara and Henry Ford has now entered the establishment phase of the project in the City of Dearborn Government. Please help be a steward of this exciting project. Because vegetation development is critical for this project, we ask everyone to please respect the restoration efforts and do not enter the project area. Foot and bicycle traffic will cause degradation to the area, impeding the natural restoration. Public cooperation is essential for the successful completion of this natural area restoration project. To learn more about the project visit: <https://www.allianceofrougecommunities.com/PDFs/general/HFE%20Dam%20Fishway%20Public%20Education%20Handout.pdf?fbclid=IwAR1r119OvM4FXRJBzubElpeJT4eLZ-qZEKikw9zIXcgY6KM1E4WJ-Sd3HC4>

11/4/20 The Johnson Creek Restoration Project at Fish Hatchery Park in Northville City Hall, Michigan is nearing completion. Dredging of the pond has been completed. The site restoration will begin shortly, with planting of trees and shrubs and cleanup of the parking lot area. For more information: <https://www.allianceofrougecommunities.com/PDFs/general/Johnson%20Creek%20public%20ed%20piece.pdf?fbclid=IwAR16-i3bVEhEtUKMEMqzOuxVBd6odJUe6N2QRAJd103FavucDPm6E9IK1Vo>

12/14/20 The Johnson Creek Restoration Project at Fish Hatchery Park in Northville City Hall, Michigan is COMPLETE! There will be some minor maintenance work and touch up items to be completed next spring, but the pond has been dredged, the streambank naturalized, and a step pool outlet has been installed to facilitate fish migration between the creek and the pond. The project provides habitat improvements and enhancements to this reach of Johnson Creek. For more information: <https://www.allianceofrougecommunities.com/PDFs/general/Johnson%20Creek%20public%20ed%20piece.pdf?fbclid=IwAR1lig6OWPyQHUiYK2Jy2bUrqauU7xZIF-0D96WQWMkAS5L9Uckeuly-IYwI>

12/17/20 Why Change Your Household Chemical Habits?

Your actions with fertilizers, pesticides, cleaners, vehicle fluids and other household chemicals directly affect the health of the water quality in the Rouge River watershed - which impacts you, everyone around you, wildlife and their habitat, and even the communities downstream. Visit our website to learn more: <https://www.allianceofrougecommunities.com/chemapp.html>

12/21/20 In 2021, Tamarack Creek in City of Southfield, Michigan USA - Government will be getting restored with funding from Great Lakes Restoration Initiative grants from the U.S. Environmental

Protection Agency. The project will realign, stabilize and diverse habitat along a stretch of the creek, while restoring adjacent wetland. The project design is complete and it is anticipated that construction will start in early 2021. For more information visit:

[https://www.allianceofrougecommunities.com/PDFs/general/Tamarack%20Creek%20Public%20Education%20Handout.pdf?fbclid=IwAR2FX19SqkShaATyViWZ3pI3jZ78eAotimlrXxof\\_08YjedHNaA3kXuxbnQ](https://www.allianceofrougecommunities.com/PDFs/general/Tamarack%20Creek%20Public%20Education%20Handout.pdf?fbclid=IwAR2FX19SqkShaATyViWZ3pI3jZ78eAotimlrXxof_08YjedHNaA3kXuxbnQ)

## **2020 ARC Facebook Reposts**

1/16/20 Washtenaw County Water Resources Commissioner - Learn more about Serviceberry's interesting cultural history, how this plant earned its name, and think about enhancing your yard with this native tree this spring!<https://www.terrenlandscapes.com/.../how-the-serviceberry-got...>

2/11/20 MSU QAS offers opportunities to learn more about outdoor clubs, friends groups, watershed protection activities, boat-building skills, outfit . . . .

2/11/20 Southeast Michigan Fisheries Workshop 2/11/20 6-8 pm Wyndotte Boat Club

2/11/20 MSU Integrated pest management in vegetable gardens IPM is an integral part of a smart garden.

2/11/20 Lots of great learning on the horizon to help protect water quality in the Rouge River! Native Plant Discussion 3/7/20 at 12 p.m.

2/11/20 Get out in the Rouge River and look for the bugs that thrive in a healthy river system with Friends of the Rouge! – Rouge Spring Bug Hunt

2/24/20 Belle Isle Conservancy – Native Plants, What are they anyway? A lecture by Rick Meader

2/24/20 Invasive Forest Pests in Michigan - What's here, What's happening, and what's next? Join Michigan State University for this day-long workshop to learn from researchers and forest health professionals about the latest news on invasive forest pests and diseases that threaten Michigan's forest health.

2/24/20 Marsh Volunteer Collaborations: Buckthorn Removal event on 3/7/20

3/18/20 Greatlakesnow.org – Flushing Caution: Oakland County Water Resources commissioner asks people to properly dispose of cleaning products

3/30/20 OneWater: youtube COVID-19 Don't flush "flushable wipes" and only buy as much toilet paper as you need.

4/2/20 Looking for something to do at home? Join Friends of the Rouge for some spring planning to benefit your yard and the watershed! Rain Gardens 101 Get Your Lawn a Job free live stream 4/11/20

4/2/20 Some more great online learning! Washtenaw County Water Resources Commissioner's Office Online Master Rain Gardener Course is now FREE! Staying at home can be tough. Gardening is an excellent way to enjoy the outdoors while staying at home! While Washtenaw County Water Resources is honoring the COVID-19 stay-at-home executive order, the online version of the Master Rain Gardener Course is FREE TO YOU! To access the course visit- <https://www.washtenaw.org/2456/Online-Certification>

4/16/20 Check this out this weekend from our partner Friends of the Rouge!

4/16/20 City of Rochester Hills - Check out this Bullfrog Tadpole captured by our naturalist. Bullfrog tadpoles take 2-3 years to fully transform into little froglets. If you look closely you can see small legs starting to form on this one. As tadpoles, they are fully aquatic. As adults, they spend their time sitting on land near the water's edge waiting for a meal. This life cycle, consisting of two stages, is called

amphibious. Their diet consists primarily of insects but they will also eat other small frogs, toads, snakes, fish, and small mammals. This one was photographed and quickly returned to its aquatic environment. If you or your at-home learner have questions about local wildlife, send them to our Naturalist at [outdoors@rochesterhills.org](mailto:outdoors@rochesterhills.org). Ask away!

4/16/20 Awesome work in the Detroit River! [Hourdetroit.com](http://Hourdetroit.com) – “Belle Isle Has Emerged From Neglect — but Its List of Needs is Daunting” article

5/19/20 Exciting restoration activities coming to the Rouge! [https://www.epa.gov/newsreleases/epa-announces-over-18-million-habitat-restoration-work-rouge-river-area-concern?fbclid=IwAR3LWDvM3W2P9CEMMYz3HHmB3TE-\\_dFJurW1UZEiSPGvz1RqEmKfq1FTFBQ](https://www.epa.gov/newsreleases/epa-announces-over-18-million-habitat-restoration-work-rouge-river-area-concern?fbclid=IwAR3LWDvM3W2P9CEMMYz3HHmB3TE-_dFJurW1UZEiSPGvz1RqEmKfq1FTFBQ)

7/2/20 With more people spending time on the water don't forget about the risks of spreading aquatic invasive species! Review this important information from the Great Lakes Commission before you head out! <https://www.glc.org/work/blitz>

7/15/20 Shoreline owners - check out the below webinar for helpful information. Stabilize and protect Great Lakes shorelines 7/22/20

7/28/20 City of Rochester Hills: Check out this Great Horned Owl spotted at the Harding Green Space. These nocturnal birds can be seen at dusk sitting on fence posts or limbs looking over open areas. Owls in general have some amazing adaptations to help them be efficient hunters at night. The distinctive facial disc of concave feathers helps funnel sound to their asymmetrical ears. One ear is higher than the other, which allows them to pinpoint the exact location of their prey. Besides these hearing superpowers, they also have large eyes, adapted to see in low light, and they can rotate their neck up 270 degrees around. They also have special feathers that alter air turbulence and absorbing noise, creating a near-silent flight. We have some amazing creatures that call our green spaces in Rochester Hills home! Learn more about our natural resources at [rochesterhills.org/outdoors](http://rochesterhills.org/outdoors).

7/29/20 Calling all Washtenaw County residents! Bring your household hazardous waste! Our Home Toxics Center has plenty of opportunities for you to safely dispose of or recycle your home toxics in August! Our Saturday Collection Events will run on August 1st, 8th, and 15th at our Zeeb Road facility. Visit our website to learn about weekday appointments and view our accepted materials list. <https://www.washtenaw.org/.../Home-Toxics-Center-Paint> ... Our August 8th clean up day at EMU can also take home toxics, as well as electronics, appliances, bulky waste, and more! Visit our event page for more details: <https://www.facebook.com/events/952248021888191/>

8/4/20 More great things happening in the Detroit River! Learn more at a virtual public meeting on the restoration project. Friends of the Detroit River - [https://www.thenewsherald.com/news/friends-of-detroit-river-to-host-meeting-on-hennepin-point-habitat-restoration-project/article\\_1e66b528-d1cb-11ea-9c2b-837da571ea3b.html?fbclid=IwAR3QJMWKl\\_VsHdUUerRrd3gMkpVqsoUQbB09mS5jWBWtRkyQUsO1JJMbQAo](https://www.thenewsherald.com/news/friends-of-detroit-river-to-host-meeting-on-hennepin-point-habitat-restoration-project/article_1e66b528-d1cb-11ea-9c2b-837da571ea3b.html?fbclid=IwAR3QJMWKl_VsHdUUerRrd3gMkpVqsoUQbB09mS5jWBWtRkyQUsO1JJMbQAo)

8/13/20 Learn what to look for in this new site! Article <https://www.clickondetroit.com/news/michigan/2020/08/13/new-website-helps-identify-woody-invasive-plants-in->



[michigan/?\\_vfbz=medium%3Dsharebar&fbclid=IwAR2gX2\\_72\\_jj91KUkngdukCEAgca2U0pF\\_s9SIV-N2kw9It4eNGsps5fwUA](https://www.facebook.com/friends.of.the.rouge/?vfbz=medium%3Dsharebar&fbclid=IwAR2gX2_72_jj91KUkngdukCEAgca2U0pF_s9SIV-N2kw9It4eNGsps5fwUA)

8/20/20 Rain gardens help protect water quality in the Rouge River. Learn how to incorporate one in your yard – join Friends of the Rouge on 8/25/20 for Rain Gardens 101 Free Live Stream.

9/14/20 Become a Master Rain Gardener with Friends of the Rouge's Hybrid class! 10/27/20 Master Rain Gardener! Hybrid, virtual classroom and in-person optional tour.

9/25/20 Calling all Oakland County 4th and 5th graders! Get involved and learn about what you can do to help promote clean water! Oakland County Water Resources Commissioner (WRC) The 16th Annual Kids' Clean Water Calendar Contest Art Entry Deadline is October 9th. Oakland County's 4th and 5th Graders are Encouraged to Submit Entries! Application and Contest Information is Available at [www.oakgov.com/calendarcontest](http://www.oakgov.com/calendarcontest).

9/25/20 Some great information on the water cycle, watershed and so much other great stuff! Check out the video from the Oakland County Water Resources Commissioners Office! Youtube video on enviroscape Watershed Model Demonstration [https://www.youtube.com/watch?v=ipllqxs1Zvc&feature=share&fbclid=IwAR0cYIPm-gnyLclhBPIHB1mcqzXOrnXBd9\\_rV5oRGnkB\\_LXSQRcDVA-mx4I](https://www.youtube.com/watch?v=ipllqxs1Zvc&feature=share&fbclid=IwAR0cYIPm-gnyLclhBPIHB1mcqzXOrnXBd9_rV5oRGnkB_LXSQRcDVA-mx4I)

10/9/20 Oakland County kids! Oakland County Water Resources Commissioner Create your masterpiece and learn about water quality in the 2020 Kids' Clean Water Calendar Contest. New Calendar Contest Entry Deadline, October 16 We have extended the deadline for our annual Kids' Clean Water Calendar Contest. There's still time to submit your artwork! Entries for the 2021 calendar contest will now be accepted digitally through Friday, October 16, and winners will be notified in mid-November. To view the 2021 calendar contest details and to submit an entry, click here <https://www.oakgov.com/.../Pages/Calendar-Contest.aspx>

10/12/20 We have all seen it in the Rouge River Watershed - learn why it is bad for water quality. Washtenaw County Water Resources Commissioner's Office Why should we be concerned about soil entering water? "Most pollutants like to take a ride on a piece of dirt". When loose soils enter waterways, the pollutants enter the water too. Listen to Water Resources Commissioner, Evan Pratt, speak more about pollution, infrastructure, and the results of some recent water quality projects at a recent Water Resources Round Table. <https://youtu.be/3pYjD1D0Kd8?t=625>

10/20/20 Looks amazing! Washtenaw County Water Resources Commissioner's Office - Have you seen the beautiful new rain garden on Carpenter Rd? Stormwater runoff from a section of Carpenter Rd. will enter the rain garden where native plants help the water infiltrate back into the ground. Rain gardens like this one will help filter stormwater of roadway pollutants like heavy metals from brake dust, oil, gasoline, and exhaust particles from cars!

11/4/20 Extension Master Gardener LEAVE LEAVES ALONE Cornell Cooperative Extension Master Gardeners have developed an educational program with the mission to remind landscape companies and homeowners on the value of leaves and leaf mulch. Environmental benefits include enriching the soil with nutritious leaf litter and reducing the use of leaf blowers that contribute to noise pollution. Leave Leaves Alone is part of the Healthy Yard Campaign that helps build and support healthy ecosystems. Find all the ways to use leaves in your landscape. <https://bit.ly/3mJSoQQ> ~ tw Photo

credit: HealthyYards.org Contact your local Extension office to find information specific to your location. To find the office nearest you, click on this link and follow the prompts: <http://bit.ly/2OuheHX>

11/18/20 Check out the great information about how you can protect the Rouge River Watershed from our friends at Michigan Water Stewardship Program!

[https://miwaterstewardship.org/?fbclid=IwAR35A51xYRPOJ1BEpfyWV9nMeVOE2tot\\_DrGe4Uz7q-z33OI9agTc6NtU](https://miwaterstewardship.org/?fbclid=IwAR35A51xYRPOJ1BEpfyWV9nMeVOE2tot_DrGe4Uz7q-z33OI9agTc6NtU)

11/18/20 We all love bird and butterflies. But wasps, grubs and the larvae that eat the leaves of our favorite plants, all of them are needed to create a healthy yard as well. The advantage of a healthy yard is that the cute and the not so cute together prevent real pests. A yard with many different species is also more resilient to diseases and weather events. Try it! [www.healthyyards.org](http://www.healthyyards.org)

12/22/20 Get involved in this great educational - OUTDOOR - event with Friends of the Rouge to help determine the water quality of the Rouge River in your community! 1/23/21 Winter Stonefly Search

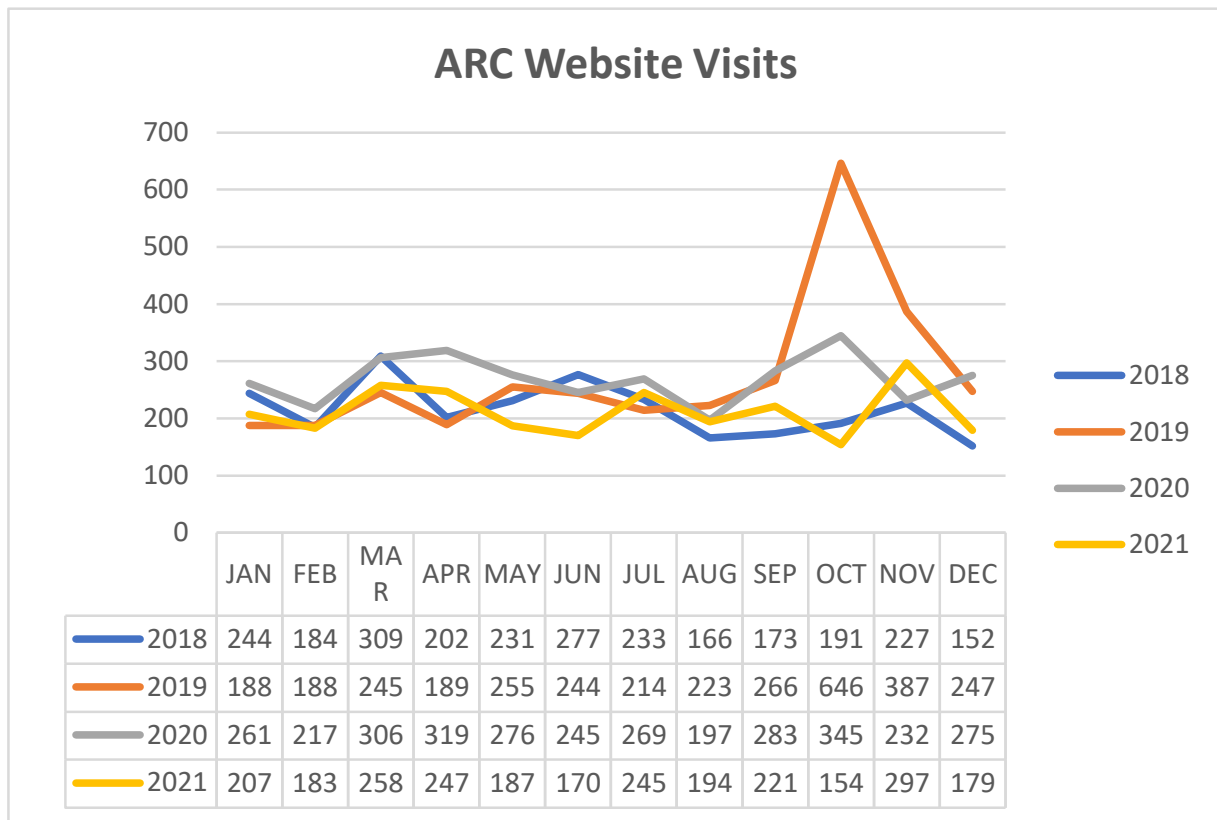
12/22/20 Attend this virtual training to learn more about stoneflies, why Friends of the Rouge looks for them in winter, how to identify them and what to expect on a Stonefly Search. 1/11/21 Stonefly Refresher

12/22/20 Learn something new and what to do! Michigan.gov EGLE – NotMISpecies Webinar Series

# 2021 ARC ELECTRONIC MEDIA REPORT

## ARC WEBSITE VISITORS IN 2021

Page impressions	7,567
Pageviews / Visit	2.06
Visitors	3,679
Average Duration per Visit	118
Bounce Visits	2,410
New Visitors	3,587



*\*note that in 2019 the ARC hosted the Great Lakes Restoration Celebration in October and registration for the event was done through the ARC's website which increased the traffic during October and November. If those months were adjusted to an average amount of previous months there was an overall increase to visitors to the ARC's website in 2021.*

## ARC FACEBOOK POSTS

- ARC created posts in 2021: 53

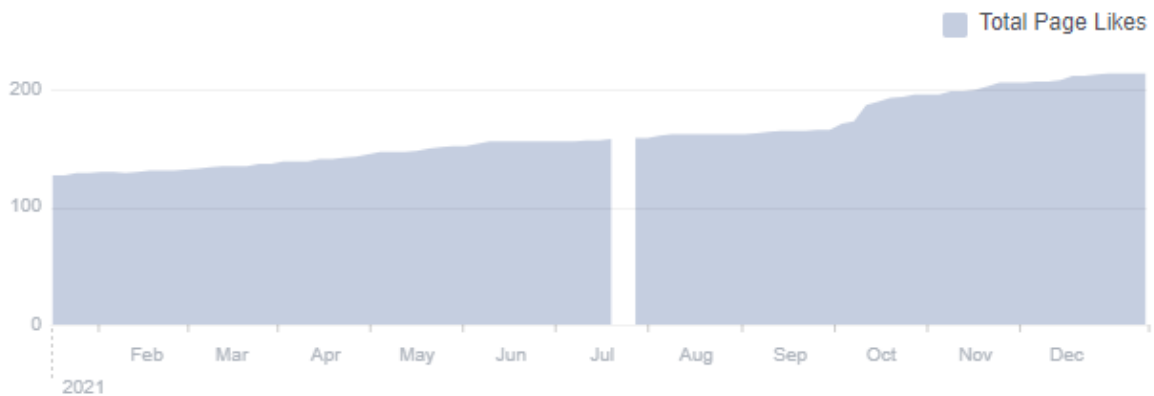
## ARC FACEBOOK FOLLOWERS 2021

Total Page Followers: 238

















































































































## ARC FACEBOOK LIKES 2021

Total Page Likes: 214




































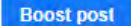





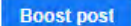





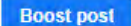











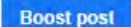





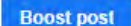





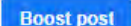





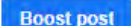









## 2021 Posts

<div> <span>Reach: Organic / Paid</span> <span>Post Clicks</span> <span>Reactions, Comments &amp; Shares</span> </div>									
Published	Post	Type	Targeting	Reach		Engagement		Promote	
03/01/2022 12:11 PM	 Check out all the great work in the Great Lakes funded by the Great			28	<div></div>	1 3	<div></div>	<a href="#">Boost post</a>	
02/21/2022 8:44 AM	 Keep an eye out for those spring Household Hazardous Waste (HHW)			25	<div></div>	0 1	<div></div>	<a href="#">Boost post</a>	
02/08/2022 10:49 AM	 With funding provided through an AOC U.S. EPA Great Lakes			52	<div></div>	3 3	<div></div>	<a href="#">Boost post</a>	
02/04/2022 9:20 AM	The Oakland County Water Resources Commissioner's office is			74	<div></div>	2 2	<div></div>	<a href="#">Boost post</a>	
01/25/2022 12:32 PM	 Some great information about the ARC's Tamarack Creek project in			40	<div></div>	2 2	<div></div>	<a href="#">Boost post</a>	
01/13/2022 12:12 PM	 Oakland County! Check out some great activities coming up through			55	<div></div>	1 1	<div></div>	<a href="#">Boost post</a>	
01/05/2022 10:31 AM	 Get involved! Friends of the Rouge is looking for volunteers to help look			464	<div></div>	5 2	<div></div>	<a href="#">Boost post</a>	
12/10/2021 4:20 PM	 The wildlife habitat offerings at Inkster Park will be improving as a			109	<div></div>	2 10	<div></div>	<a href="#">Boost post</a>	
12/06/2021 3:46 PM	 The ARC's efforts to reduce and treat stormwater runoff within the			521	<div></div>	13 17	<div></div>	<a href="#">Boost post</a>	
12/03/2021 2:44 PM	 As part of the U.S. EPA Great Lakes Restoration Initiative (GLRI) funded			608	<div></div>	105 95	<div></div>	<a href="#">Boost post</a>	
12/03/2021 2:19 PM	 The major portion of construction is wrapping up for the U.S. EPA Great			714	<div></div>	32 42	<div></div>	<a href="#">Boost post</a>	
11/23/2021 12:09 PM	 To help protect water quality in the Rouge River, don't pour kitchen fats,			813	<div></div>	14 26	<div></div>	<a href="#">Boost post</a>	

11/11/2021 9:53 AM		More great things happening in the Rouge River Watershed!			39		1 1		Boost post
11/09/2021 8:47 AM		Do you have a septic system? Go to <a href="https://bit.ly/ARCseptic">bit.ly/ARCseptic</a> to join our FREE			31		0 0		Boost post
11/09/2021 8:28 AM		So excited to partner with the City of Southfield, Michigan USA -			104		18 11		Boost post
11/09/2021 8:47 AM		Do you have a septic system? Go to <a href="https://bit.ly/ARCseptic">bit.ly/ARCseptic</a> to join our FREE			31		0 0		Boost post
10/05/2021 11:50 AM		Great family activity happening this weekend in Plymouth Township!			48		0 0		Boost post
10/05/2021 11:45 AM		The ARC was awarded a \$785,100 U.S.EPA Great Lakes Restoration			1.4K		28 65		Boost post
10/05/2021 11:40 AM		U.S.EPA has awarded a \$125,000 Great Lakes Restoration Initiative			58		1 3		Boost post
10/05/2021 11:01 AM		The ARC's effort to reduce and treat stormwater runoff within the Rouge			99		5 8		Boost post
09/28/2021 1:09 PM		The ARC has awarded a contract, as part of the U.S.EPA Great Lakes			58		2 8		Boost post
09/28/2021 12:55 PM		The ARC has completed the U.S.EPA Great Lakes Restoration			61		2 3		Boost post
09/28/2021 9:52 AM		Fish Hatchery Pond in Northville City Hall, Michigan is a spring-fed pond			218		4 6		Boost post
09/27/2021 4:30 PM		We are excited to announce that construction has begun on the			963		19 40		Boost post
09/27/2021 10:32 AM		SPREAD THE WORD!! The U.S.EPA Great Lakes Restoration			2.8K		165 137		Boost post
09/14/2021 12:43 PM		Still time to get involved to help plant a rain garden in Southfield			48		1 0		Boost post
09/14/2021 12:42 PM		The Rouge River could use this! Learn what you can do to help with			49		0 0		Boost event



09/13/2021 8:33 AM		Rouge River Watershed communities wondering about septic			58		5 0		
09/10/2021 1:02 PM		Check out our great video created with the help of the SEMCOG.			2.1K		34 32		
09/02/2021 10:30 AM		Big things are happening to improve the watershed! Read on to learn			56		2 1		
08/30/2021 11:55 AM		Oakland County kids! Check out this chance to get your art and			61		0 1		
08/02/2021 2:47 PM		More exciting things happening in the Detroit River!			70		7 4		
07/06/2021 11:55 AM		The site walk location has been finalized for the GLRI-funded project			895		5 12		
06/14/2021 3:57 PM		With funding through a U.S. Environmental Protection Agency			88		9 6		
06/10/2021 9:21 AM		Study up on these invasive species to keep an eye out for in the Rouge			37		2 0		
06/08/2021 9:03 AM		SPREAD THE WORD!! The U.S. Environmental Protection Agency			35		3 1		
06/07/2021 9:28 AM		The Alliance of Rouge Communities received funding from the U.S.			52		1 4		
06/02/2021 8:49 AM		The ARC received over 4 million dollars in U.S. Environmental			58		7 9		
05/21/2021 11:27 AM		Funded by an U.S. Environmental Protection Agency Great Lakes			31		0 2		
05/21/2021 9:18 AM		Maintenance and touch ups will be occurring this summer at the U.S.			35		0 4		

05/21/2021 8:15 AM	 Many communities in the Rouge River Watershed are checking to			37		0 0		<a href="#">Boost post</a>
05/20/2021 3:48 PM	 Construction will begin in early June on the U.S. Environmental			41		5 7		<a href="#">Boost post</a>
04/19/2021 7:55 AM	 Check out this great activity being funded by the Alliance of Rouge			20		2 1		<a href="#">Boost post</a>
04/06/2021 3:31 PM	 Maintenance and touch ups will continue through the summer at the			41		5 3		<a href="#">Boost post</a>
04/06/2021 3:23 PM	 A construction contractor has been selected for the U.S. Environmental			48		2 7		<a href="#">Boost post</a>
04/06/2021 2:53 PM	 The Fishway at Fair Lane, Home of Clara and Henry Ford funded			184		4 17		<a href="#">Boost post</a>
04/01/2021 10:04 AM	 The ARC is partnering with the City of Northville to find funding for this			20		2 0		<a href="#">Boost post</a>
04/01/2021 8:47 AM	There are some great webinars from Michigan Environment, Great Lakes			25		0 0		<a href="#">Boost post</a>
03/31/2021 9:07 AM	 Some great activities on the Detroit River - come out to help!			29		0 1		<a href="#">Boost post</a>
03/24/2021 8:20 AM	 All over the watershed! Spring is coming!			21		1 0		<a href="#">Boost event</a>
03/24/2021 8:19 AM	 Prepare for the spring rains!			26		0 1		<a href="#">Boost event</a>
03/24/2021 8:08 AM	 Some great events coming up in the Rouge this spring with Friends of the			32		1 1		<a href="#">Boost post</a>
03/09/2021 4:44 PM	 The Alliance of Rouge Communities has received funding from the USDA			140		5 10		<a href="#">Boost post</a>
03/09/2021 4:38 PM	 The design has been completed for the wildlife habitat restoration at			69		2 5		<a href="#">Boost post</a>
03/09/2021 4:30 PM	 The design has been completed for the wildlife habitat improvements at			35		4 6		<a href="#">Boost post</a>
03/08/2021 10:06 AM	 The ARC has completed the design of 5 acres of riparian wetland and			43		5 5		<a href="#">Boost post</a>
03/08/2021 9:52 AM	 The Tamarack Creek Habitat Restoration project in the City of			77		5 13		<a href="#">Boost post</a>
03/08/2021 9:38 AM	 The Fishway project is in the establishment phase at Fair Lane,			82		5 9		<a href="#">Boost post</a>
03/01/2021 11:16 AM	 With this upcoming spring weather remember to sweep your garage			36		3 4		<a href="#">Boost post</a>
02/26/2021 10:17 AM	 Check out this great project in the Rouge River watershed! Those fish			24		4 2		<a href="#">Boost post</a>



## **2021 Posts**

3/1/21 With this upcoming spring weather remember to sweep your garage and dispose of it in the trash to clean the floor instead of hosing it down where the water, with any contaminants including salt, go into the storm drain and directly to the Rouge River!

3/8/21 The Fishway project is in the establishment phase at [Fair Lane, Home of Clara and Henry Ford](#) in [City of Dearborn Government](#) in [Wayne County, Michigan](#). PLEASE help be a steward of this exciting project by not cutting the fences and entering the area. Because vegetation development is critical for this project, we ask everyone to please respect the restoration efforts. Foot and bicycle traffic will cause damage to the area, endangering the natural restoration. Public cooperation is essential! For more information on the project visit: <https://www.allianceofrougecommunities.com/.../HFE%20Dam...>

3/8/21 The Tamarack Creek Habitat Restoration project in the [City of Southfield, Michigan USA - Government](#) in [Oakland County, Michigan Government](#) is currently selecting construction contractors for a spring start. The project will realign, stabilize and diversify habitat along a stretch of the creek, while restoring adjacent wetlands in the Rouge River Watershed. This project is funded through a [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative grant. For more information visit: <https://www.allianceofrougecommunities.com/.../Tamarack...>

The ARC has completed the design of 5 acres of riparian wetland and 1,600 feet of Seeley Creek in the [City of Farmington Hills, Michigan - Municipal Government](#) in [Oakland County, Michigan Government](#). This project will improve and diversify the habitat within the stream corridor for fish and wildlife. It is anticipated that the [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative funded construction will take place in summer 2021. For more information visit: <https://www.allianceofrougecommunities.com/.../Seeley...>

3/9/21 The design has been completed for the wildlife habitat improvements at Colonial and Venoy Parks in [Wayne County Parks](#). Funded by a [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative grant, these projects will improve and create wetland habitat and diversify native plant species within the parks. Construction will begin during the summer of 2021. The area in the below photo at Colonial Park and will be transformed into a restored wetland with diverse native plantings. For more information on this project visit: <https://www.allianceofrougecommunities.com/.../colonial...>

3/9/21 The design has been completed for the wildlife habitat restoration at Sherwood Recreation Area which is one of five parks getting improvements funded by an [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative grant. Activities at Sherwood in [Wayne County Parks](#) include converting turf areas pictured below to native planting areas, improving and creating wetland habitat and diversifying native plant species within the park setting. Construction will begin during the summer of 2021. For more information visit: <https://www.allianceofrougecommunities.com/.../wc...>

3/9/21 The Alliance of Rouge Communities has received funding from the [USDA Forest Service](#) through the Great Lakes Restoration Initiative to install trees and other forms of green stormwater infrastructure within the Rouge River Watershed to capture and treat stormwater which improves the quality of the stormwater runoff before it reaches the river. Planning has started, with planting and implementation to occur at various locations starting this spring, with other locations in the fall of 2021 and spring of 2022.

3/29/21 oxbow photo

4/1/21 The ARC is partnering with the City of Northville to find funding for this exciting project in the Middle Rouge in [Northville City Hall, Michigan](#)

What lurks in eerily-dark tunnel that guides 1,200 feet of river under Northville Downs?

<https://www.hometownlife.com/.../daylighting.../4629523001/>

4/6/21 The Fishway at [Fair Lane, Home of Clara and Henry Ford](#) funded through a [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative grant is in the establishment stage. This means the vegetation is growing and stabilizing the project area. We need your help - please be a steward of this exciting project by not cutting the fences and entering the area. Foot and bicycle traffic will cause degradation to the area, impeding the natural restoration. Public cooperation is essential for the successful completion of this natural area restoration project. For more information visit:

<https://www.allianceofrougecommunities.com/.../HFE%20Dam...>

4/6/21 A construction contractor has been selected for the [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative (GLRI) funded Tamarack Creek Habitat Restoration project in the [City of Southfield, Michigan USA - Government](#). Construction crews will begin to mobilize this spring to start the stream realignment and wetland restoration project that will provide more diversity for habitat within this reach of Tamarack Creek. For more information visit:

<https://www.allianceofrougecommunities.com/.../Tamarack...>

4/6/21 Maintenance and touch ups will continue through the summer at the [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative funded Johnson Creek Restoration Project at Fish Hatchery Park in Northville. The construction fence will remain temporarily to provide a reminder to please keep off the newly planted areas. Vegetation establishment is a key component to this project. Keeping off these areas will help the project flourish and continue to be a success. For more information visit: <https://www.allianceofrougecommunities.com/.../Johnson...>

5/20/21 Construction will begin in early June on the [U.S. Environmental Protection Agency](#) funded Great Lakes Restoration Initiative Tamarack Creek Habitat Restoration project in [City of Southfield, Michigan USA - Government](#). Tree clearing and earth moving will occur for the stream realignment and wetland restoration project that will provide more diversity for habitat within this reach of Tamarack Creek. For more information visit: <https://www.allianceofrougecommunities.com/.../Tamarack...>

5/21/21 Many communities in the Rouge River Watershed are checking to make sure you are recycling only what is allowed, the wrong items will slow the recycling process and potentially damage equipment. Check the label on the top of your recycle bin for what is acceptable and what is not - rinse out the food items and cut the cardboard to a manageable size. Check your communities website for more information so you don't get a bad report card!

5/21/21 Maintenance and touch ups will be occurring this summer at the [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative funded Johnson Creek Restoration Project at Fish Hatchery Park in [Northville City Hall, Michigan](#). The construction fence will remain temporarily to provide a reminder to please keep off the newly planted areas. Vegetation establishment is a key component to this project. Keeping off these areas will help the project flourish and continue to be a success! For more information visit: <https://www.allianceofrougecommunities.com/.../Johnson...>

5/21/21 Funded by an [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative grant, these low-lying, wet grassy areas in Venoy Park will be transformed into useful habitat utilizing a diverse

palette of native plants benefitting a wide range of wildlife, including birds and pollinators. Construction bids will soon be solicited and construction of the habitat improvements at both Venoy and Colonial Parks in [Wayne County Parks](#) is anticipated to start this summer. For more information visit: <https://www.allianceofrougecommunities.com/.../colonial...>

6/2/21 The ARC received over 4 million dollars in [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative grant funding for restoration of 122 acres of habitat and elimination of 10 debris jams like the one shown here on the Lower Rouge River. The 5 [Wayne County Parks](#) sites include Sherwood, Riverview, Lola Valley, Bell Creek, and Lower Rouge River. Construction bids will soon be solicited for the habitat improvements at Sherwood Park with construction anticipated for late summer.

6/2/21 The Alliance of Rouge Communities received funding from the [U.S. Department of Agriculture U.S. Forest Service](#) through the Great Lakes Restoration Initiative to install trees and other forms of green stormwater infrastructure within the Rouge River Watershed which will capture and treat stormwater, improving the quality annually of 1.3 million gallons of stormwater runoff before it reaches the river. Coordination has begun for the planting of over 800 trees in 17 Rouge River Watershed communities like this one in [City of Novi - Government & Community Services](#) and installation of green stormwater infrastructure in 5 communities.

6/7/21 SPREAD THE WORD!! The [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative funded fishway project at [Fair Lane, Home of Clara and Henry Ford](#) in Dearborn is in the establishment phase. This means no activity is allowed within the project area and we again are asking that the public please help be a steward of this exciting project by not cutting the fences and entering the area. Because vegetation development is critical for this project, we ask everyone to please respect the restoration efforts. Foot and bicycle traffic will cause degradation to the area, slowing the natural restoration. Public cooperation is essential for the successful completion of this natural area restoration project! For more information visit: <https://www.allianceofrougecommunities.com/.../HFE%20Dam...>

6/14/21 With funding through a [U.S. Environmental Protection Agency](#) Great Lakes Restoration Initiative grant to the Johnson Intercounty Drain Board being managed by [Washtenaw County Water Resources Commissioner's Office](#) an exciting habitat restoration project is in the works for Johnson Creek.

7/6/21 The site walk location has been finalized for the GLRI-funded project to design habitat restoration in a portion of Johnson Creek. Please wear appropriate footwear for hiking outdoors, Long pants, insect repellent, and sun protection. The stream walk will be held even if raining unless thunder is heard. Location to meet is Ridge Rd., just north of Five Mile Rd. For more information visit: <https://therouge.org/johnson-creek/>

9/10/21 Check out our great video created with the help of the [SEMCOG, Southeast Michigan Council of Governments](#) One Water Campaign. So much great information about the Alliance of Rouge Communities, our mission and the projects we are working on with the help of our partners and federal funding agencies!

9/27/21 SPREAD THE WORD!! The [U.S.EPA](#) Great Lakes Restoration Initiative (GLRI) funded fishway project at the nationally historic [Fair Lane, Home of Clara and Henry Ford](#) Estate Dam is in the establishment phase. Having withstood the historic June 2021 flooding, the vegetation developing is instrumental for this project to be a success. We continue to need the public's assistance and are again

asking for the public's help on this exciting project. Please do not cut the fences and enter the area. Foot and bicycle traffic will cause damage to the area, slowing the natural growing process. Public cooperation is essential for the successful completion of this natural area restoration project! For more information please visit: <https://www.allianceofrougecommunities.com/.../HFE%20Dam...>

9/27/21 We are excited to announce that construction has begun on the [U.S.EPA](#) Great Lakes Restoration Initiative (GLRI) grant funded Tamarack Creek Habitat Restoration project in [City of Southfield, Michigan USA - Government](#). The project will restore and enhance existing wetlands and 1,800 feet of the creek. Currently the construction contractor is working on creating new stabilized sections of the creek and the associated floodplain. This restored floodplain will reduce erosion and sedimentation providing better stream water quality and habitat benefits in this area of the Rouge River. For more information visit: <https://www.allianceofrougecommunities.com/.../Tamarack...>

9/28/21 Fish Hatchery Pond in [Northville City Hall, Michigan](#) is a spring-fed pond which flows into the adjacent Johnson Creek. Before the implementation of the [U.S.EPA](#) Great Lakes Restoration Initiative (GLRI) grant funded Johnson Creek Restoration Project at Fish Hatchery Park, the outlet of the pond was steep and filled with debris (first photo). To restore the connection between the pond and the creek, a series of step pools were designed to pass the water from the pond so that small fish are able to "step" up and down the pools and access the habitat benefits within the pond (second photo). For more information visit: <https://www.allianceofrougecommunities.com/.../Johnson...>

9/28/21 The ARC has completed the [U.S.EPA](#) Great Lakes Restoration Initiative (GLRI) funded design of 5 acres of riparian wetland and 1,600 feet of Seeley Creek in [City of Farmington Hills, Michigan - Municipal Government](#) and anticipates GLRI-funded construction will begin this fall. This project will improve and diversify the habitat within the stream corridor for fish and wildlife. A large component of this project is to treat vegetative invasive species - one of which is phragmites (seen in the photo) which likely arrived from Europe via ships' ballasts during the 1700s & 1800s. Phragmites grow so thick they take over and choke out all other plants. This robs fish, plants and wildlife of nutrients and space, blocks access to the water for recreation, spoils shoreline views, accumulates sediment which decreases flood water capacities, and poses a fire hazard. Targeted application of herbicides have proven to be successful and will be utilized on this project, allowing a more diverse native plant species to re-establish improving the habitat within the Seeley Creek corridor. For more information visit: <https://www.allianceofrougecommunities.com/.../Seeley...>

9/28/21 The ARC has awarded a contract, as part of the [U.S.EPA](#) Great Lakes Restoration Initiative (GLRI) funded habitat restorations within [Wayne County Parks](#), to [Friends of the Rouge](#) to install thousands of tree seedlings as part of a reforestation effort along the Lower Rouge River. Other activities under this grant-funded project will begin later this fall and include wetlands restoration and native plantings. For more information visit: <https://www.allianceofrougecommunities.com/.../wc...>

10/5/21 The ARC's effort to reduce and treat stormwater runoff within the Rouge River Watershed is underway! This project, funded by a [USDA Forest Service](#) Great Lakes Restoration Initiative grant, will install over 800 trees in 17 Rouge River Watershed communities and install green stormwater infrastructure in 5 communities. Trees will be planted through spring 2022 and some of the green stormwater improvements have recently been completed by [Friends of the Rouge](#) volunteers in Plymouth Township (see photo - credit: Lara Edwards) which added to the capacity of an existing rain garden and expanded the native planting areas. More stormwater runoff will now be captured and treated before it reaches the river, thanks to these efforts!

10/5/21 [U.S.EPA](#) has awarded a \$125,000 Great Lakes Restoration Initiative grant to the Alliance of Rouge Communities (ARC) to design 1 acre of wildlife habitat improvements and wetland creation on a portion of the Rouge River that runs through [Lawrence Technological University's](#) (LTU) campus in [City of Southfield, Michigan USA - Government](#). Once implemented, these wetlands and habitat will contribute towards reaching the watershed and regional goals for improving fish and wildlife habitat in the Rouge River.

10/5/21 The ARC was awarded a \$785,100 [U.S.EPA](#) Great Lakes Restoration Initiative grant to design 16.5 acres of habitat improvements, including lake, wetland/wet meadow, and riparian restoration at Wilcox Lake (pictured here), Phoenix Lake, and Inkster Park in [Wayne County Parks](#). Once implemented, these designs will make substantial progress towards watershed and regional goals for improving fish and wildlife habitat and their populations within the Rouge River Watershed.

10/11/21 Free ARC Septic System Maintenance Webinar 11/17/21

11/1/21 Do you have a septic system? Go to [bit.ly/ARCseptic](https://bit.ly/ARCseptic) to join our FREE webinar on November 17, 2021 at 7:00 p.m. to learn about the importance of maintaining your septic system and how you can help protect the water quality in the Rouge River! Go to [bit.ly/ARCseptic](https://bit.ly/ARCseptic) from any device or scan the QR code below from your phone to attend.

11/8/21 Free Webinar: Septic System Maintenance

11/23/21 To help protect water quality in the Rouge River, don't pour kitchen fats, oils and grease down the drain! Dispose of it in the trash. To learn more changes you can make, visit: [www.allianceofrougecommunities.com/steward.html](https://www.allianceofrougecommunities.com/steward.html)

12/3/21 The major portion of construction is wrapping up for the [U.S.EPA](#) Great Lakes Restoration Initiative (GLRI) grant funded Tamarack Creek Habitat Restoration project in [City of Southfield, Michigan USA - Government](#). The project has enhanced existing wetlands and 1,800 feet of creek. With invasive species removed within the wetland areas and the creek re-aligned and stabilized, the construction contractor is currently installing thousands of native plants within the floodplain and wetlands. This restoration project will result in reduced erosion and sedimentation providing better stream water quality and habitat benefits in this area of the Rouge River. For more information visit: <https://www.allianceofrougecommunities.com/.../Tamarack...>

12/3/21 As part of the [U.S.EPA](#) Great Lakes Restoration Initiative (GLRI) funded habitat restoration projects within [Wayne County Parks](#), a contract was awarded to Inland Lake Landscaping, Corp. to remove log jams along the Lower Rouge River. This work is scheduled to begin this fall. Though some element of woody debris is healthy for a river, large debris jams in urban watersheds (as seen in this photo) can be an impediment to fish passage and be detrimental to habitat value within the river system. For more information visit: <https://www.allianceofrougecommunities.com/.../wc...>

12/6/21 The ARC's efforts to reduce and treat stormwater runoff within the Rouge River Watershed continues! Funded by a [USDA Forest Service](#) Great Lakes Restoration Initiative (GLRI) grant, trees are being planted in multiple communities (Bicentennial Park in [Livonia Community](#) shown here). Thank you to the [City of Southfield, Michigan USA - Government](#) and [Friends of the Rouge](#) and their volunteers for

the improvements made at the rain gardens at Beech Woods Park in Southfield shown (photo shown here).

12/10/21 The wildlife habitat offerings at Inkster Park will be improving as a result of an upcoming restoration project! The ARC was awarded a \$785,100 [U.S.EPA](#) Great Lakes Restoration Initiative (GLRI) grant to design 16.5 acres of habitat improvements, including lake, wetland/wet meadow, and riparian restoration at Wilcox Lake, Phoenix Lake, and Inkster Park (pictured here) in [Wayne County Parks](#). Inkster Park currently has a lot of open space that is not being utilized and routinely floods. Converting some of the existing grass areas to a wetland and wet meadow through some grading and a new palette of native plantings, will provide habitat for wading birds, waterfowl, amphibians, reptiles, and pollinators. In addition to the wetland and wet meadow areas, a section of eroding streambank will be stabilized.

## **2021 Reposts**

2/26/21 Check out this great project in the Rouge River watershed! Those fish are going to really enjoy this! <https://www.glri.us/node/373>

3/24/21 Some great events coming up in the Rouge this spring with Friends of the Rouge! Ready to get your hands dirty this spring? Life's more rewarding with a rain barrel!

Check out the upcoming Rain Barrels 101 virtual lunch and learn on Apr 7th: <https://therouge.org/rain-barrels-101/>. Then, explore Friends of the Rouge's 2021 bulk pre-order options, with sliding scale prices as low as \$52 for rain barrels, plus native plant kits delivered to your door. <https://therouge.org/store> Each purchase makes a difference at your home, and helps restore clean water for the Rouge River!

3/24/21 Prepare for the spring rains! – FOTR Beverly Hills Rain Barrel Sale 3/31/21

3/24/21 All over the watershed! Spring is coming! – FOTR Redford Native Plant and Rain Barrel Sale

4/21/21 There are some great webinars from Michigan Environment, Great Lakes and Energy (EGLE) available that can educate all of us on invasive plants and animals in the Rouge River watershed. Attend one of these to learn to recognize them, reduce their spread and help to eliminate them!

[https://www.michigan.gov/.../0,9429,7-135-3308\\_3333...](https://www.michigan.gov/.../0,9429,7-135-3308_3333...)

4/19/21 Check out this great activity being funded by the Alliance of Rouge Communities! Get a beautiful rain garden going in your yard and help protect water quality with Friends of the Rouge! FOTR Earth Day: Rain Gardens 101-Get Your Lawn a Job!

6/8/21 SEMCOG One Water Campaign - Let's Celebrate Great Lakes and Fresh Water Week!

June 5-13: Help highlight water quality, recreation, and stewardship opportunities! Beginning June 5, communities throughout Southeast Michigan are celebrating Great Lakes and Fresh Water Week. This annual celebration reminds us of the immense benefits that come with living in the heart of the world's greatest freshwater resource. It is also an opportunity to reflect on the responsibility we share in protecting water quality for ourselves and future generations. There is only One Water, and it is ours to protect. Here are a few resources to share with your community this Great Lakes and Fresh Water Week: [mionewater.org](http://mionewater.org)

6/10/21 Study up on these invasive species to keep an eye out for in the Rouge River Watershed. Clickondetroit.com 11 invasive species to watch out for in Michigan

8/2/21 More exciting things happening in the Detroit River! – Greatlakesnow.org Great Lakes Moment: Sugar Island is getting an ecological makeover – Great Lakes Now

8/30/21 Oakland County kids! Check out this chance to get your art and knowledge of the importance of water quality in print!

The 2022 Kids' Clean Water Calendar Contest is accepting artwork entries! Oakland County 4th and 5th graders are encouraged to submit their artwork. We want to provide a platform for young people to share their ideas on how we can best prevent pollution of our freshwater resources. Entries are being accepted through October 8, 2021. Winners will be notified in mid-November.



To learn about the contest and submit an entry, go to

<http://www.oakgov.com/.../reso.../education/calendar-contest>

[#wrc](#) [#oaklandcounty](#) [#kidsalendarcontest](#) [#contest](#) [#prevntionpollution](#) [#cleanwater](#) [#freshwater](#)

9/2/21 Big things are happening to improve the watershed! Read on to learn about these first steps in the process to remediate, restore and revitalize the Detroit and Rouge rivers, eventually delisting them as Areas of Concern (AOC). Learn more at: <https://www.michigan.gov/.../Detroit-Rouge-River-Sediment...> Content.govdelivery.com New release: Sediment sampling to begin in Detroit, Rouge rivers

9/13/21 Rouge River Watershed communities wondering about septic systems? Here is some great information to help determine which septic system is right for your property from the [Michigan State University Extension](#). **Michigan Inland Lakes Partnership**

[Smtgpa0te6mmnbesh2ho 8, 2026r1edg](#) ·

Picking the right septic system for your site is important for protecting water quality. A new article from [Michigan State University Extension](#) experts Beth Clawson and Terry Gibb in [Lakefront Lifestyles Magazine](#) describes options for conventional and challenging situations. <https://www.oaklandlakefront.com/.../home-sewage.../>

9/14/21 The Rouge River could use this! Learn what you can do to help with our cooperating partner [Friends of the Rouge](#). FOTR Logjam Opening Workshop on 9/25/21

9/14/21 Still time to get involved to help plant a rain garden in Southfield tomorrow! FOTR Southfield Beech Woods Park – sign-up to plant a rain garden

10/5/21 Great family activity happening this weekend in Plymouth Township! FOTR - Come out to Plymouth Township this SUNDAY from 1-3 to Celebrate Fall Colors with Trees, Bees & Butterflies! 🌳🐝  
🦋 Friends will be out with our canoe, so stop by our table and take a photo in it, learn about pollinators and trees and have a ton of fall FUN!

Plymouth Township [Miller Woods Nature Preserve Trailwood Garden Club Plymouth Artist Collective](#)

11/9/21 So excited to partner with the City of Southfield on this exciting project in the Rouge River watershed! City of Southfield - The City of Southfield has partnered with the [Alliance of Rouge Communities](#) (ARC) and the Great Lakes Restoration Initiative (GLRI) to restore Tamarack Creek Stream & Wetland. Grant funds totaling \$2,718,183 were provided by GLRI through the Environmental Protection Agency (EPA) for design and implementation of the project to rejuvenate the wetland and stream to manage invasive species, as well as to provide habitat for fish and wildlife.

The Rouge River watershed is considered a designated Area of Concern (AOC) under the Great Lakes Water Quality Agreement (GLWQA). It has three Beneficial Use Impairments (BUIs) associated with fish and wildlife habitat: Degraded Fish and Wildlife Populations; Degradation of Benthos; and Loss of Fish and Wildlife Habitat.

Cityofsouthfield.com – Tamarack Creek Stream & Wetland Habitat Restoration Project underway, City of Southfield.

11/11/21 More great things happening in the Rouge River watershed! FOTR - For those of you who have been following the Johnson Creek Restoration project we have an important update to share. The project is currently in the 60% design phase and on December 14, 2021, from 7:00 p.m. – 8:00 p.m. an informational session will be hosted in-person at the Northville Township offices in the Assembly Room or virtually through Zoom by the Johnson Creek Intercounty Drainage Board and experts from



Environmental Consulting & Technology, Inc. (ECT). Project progress and specifics concerning the project will be discussed in addition to answering any questions attendees may have.  
We hope to see you there in person or online!

## **Appendix C**

### **Articles/Ad Graphic Report**

## When It Comes to Household Chemicals – Change Is A Good Thing!

You know that age-old phrase - “change is a good thing!” When it comes to household chemicals, changing your habits in your home, yard, and with your vehicles can help protect water quality in the Rouge River watershed. Everyone who lives in Michigan lives in a watershed! When rain and snow/ice melt travel across the land (watershed) and into storm drains, it is called stormwater or runoff. As this runoff travels, it picks up trash, animal waste,

chemicals, sediment, and dissolved substances along the way until it empties into streams, rivers, and lakes. These bodies of water impacted by runoff provide recreational opportunities, habitat for wildlife, and even drinking water for communities.



**When it comes to household chemicals, changing your habits can help protect water quality in the Rouge River!**

- **Change to a chemical alternative**  
There are many natural options that work just as well!
- **Change the way you use chemicals**  
Follow directions - a little usually goes a long way!
- **Change how you dispose of chemicals**  
Never dump down a storm drain - take them to a Household Hazardous Waste collection event.

To learn more changes you can make, visit:  
[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



Change is a good thing! Reduce the amount of chemicals you use by finding a natural alternative to your household cleaners like peroxide, olive oil or lemon juice. When washing your vehicles use your local car wash which sends the wash water to the sewer system to be treated or just use water, a coarse cloth and elbow grease! In your yard seek alternatives to fertilizers like mulching your grass which acts as a natural fertilizer. In addition to finding chemical alternatives, change how you use chemicals. This can help improve water quality by ensuring you are applying them as directed, in the proper amount, and storing them safely to reduce risk of leaks. Finally, and maybe most importantly, dispose of chemicals through a take-back program or at a Household Hazardous Waste collection event. Never dump fertilizers/pesticides, vehicle fluids, excess windshield washer fluid or other chemicals down a storm drain or onto the ground. By incorporating these healthy habits, you are protecting not only the health of our watershed but also ourselves and everything downstream. For more healthy habits related to household chemicals and other ways you can protect water quality in the Rouge River visit [www.allianceofrougecommunities.com/watershed.html](http://www.allianceofrougecommunities.com/watershed.html).

## Let's all Dispose Of Fats, Oils & Grease (FOG) Properly

Never pour kitchen fats, oils and grease (FOG) down your sink drain. Pouring or washing FOG down your kitchen drain can build up and block pipes which is costly to you and the Rouge River. FOG enters sewer pipes through restaurant, residential and commercial sink drains. Once in the sewer, FOG sticks to the inside of the pipe, thickens, and can eventually block the entire pipe.



Keep kitchen fats, oils and grease (FOG) out of the Rouge River. Pouring FOG down the drain can cause sewer backups and overflows that are messy, costly and a potential threat to your health and the environment.

Put it in the trash after . . .

- Pouring FOG into a container or jar allowing it to cool & solidify.
- Using a paper towel or scraper to wipe FOG off dishes & pans.
- Mixing liquid FOG with cat litter or coffee grounds in a sealable container.

Blockages in sewer pipes can send sewage backwards and up through floor drains and toilets into homes or businesses, and/or out of manholes into streets and rivers. These sewage overflows pollute our homes, businesses and our environment. Cleanup costs can be expensive, and the cost can be much higher if your home has a septic system.

Preventing sewer backups from FOG blockages saves residents and business owners money and protects the water quality of the Rouge River. Residents and business owners can help control the problem by properly disposing of fats, oils and grease.

Practice and share these healthy habits with your family, friends, and neighbors:

- **DO** pour or scrape greasy or oily food waste into a container or jar and allow grease to cool or solidify in the container before throwing in the trash.
- **DO** use a paper towel or a scraper to remove residual grease from dishes and pans prior to washing.
- **DO** mix liquid vegetable oil with an absorbent material such as cat litter or coffee grounds in a sealable container before throwing it in the trash.
- **Do** keep drains clean by pouring 1/2 cup baking soda down the drain followed by 1/2 cup vinegar, wait 10 to 15 minutes and then rinse with hot water.
- **DO NOT** pour fats, oils or grease down drains or garbage disposals.
- **DO NOT** use hot water to rinse grease off cookware, utensils, dishes, or surfaces.
- **DO NOT** put 'disposable' wipes down a drain or toilet - they do not dissolve and will cause clogs.

FOG buildup in sewer pipes requires your local public works staff to go to the site and remove the blockage. Cleaning FOG buildup from sewers increases maintenance costs for you and everyone else in your community. Keep our environment clean and avoid unnecessary maintenance costs by keeping fats, oils and grease out of our sewers. For more healthy habits you can practice at home or work to protect water quality in the Rouge River, visit [www.allianceofrougecommunities.com/watershed.html](http://www.allianceofrougecommunities.com/watershed.html).



# Rouge in The News!

Here you can find information, press announcements on projects and pertinent articles and videos related to the Rouge River Watershed along with our partner organizations and watersheds in Southeast Michigan.

## Exciting Things in & Around The Rouge River

- 

C & G Newspapers: [Southfield Tamarack Creek restoration project makes headway, to continue into 2022](#) Fore More info [check out this PDF](#)

December 9, 2021

- 

ARC Newsletter Article: [Let's All Dispose of Fats, Oils & Grease \(FOG\) Properly](#)

November 23, 2021

- 

EGL: [Sediment sampling to begin in Detroit, Rouge rivers](#) Fore More info [check out this PDF](#)

September 1, 2021

- 

Greatlakesnow.org: [Great Lakes Moment: Sugar Island is getting an ecological makeover](#)

August 2, 2021

- 

Hometown Life: [What lurks in eerily-dark tunnel that guides 1,200 feet of river under Northville Downs?](#)

March 26, 2021

- 

GLRI: [Oxbow Wetland Restoration Project Completed in Rouge River Area of Concern](#)

February 23, 2021

- 

ARC Newsletter Article: [When It Comes to Household Chemicals – Change Is A Good Thing!](#)

December 2020

- 

City of Northville: [Johnson Creek restoration at Fish Hatchery Park-Native plants, fish passage will make a difference](#)

October 5, 2020

- 

Northville Twp.: [Million-dollar Makeover Begins on Johnson Creek at Fish Hatchery Park](#)

August 18, 2020

- 

GLRI: [EPA announces \\$4.2 million for habitat restoration work at Rouge River Area of Concern](#)

July 28, 2020

- 

GLRI: [Tlaib, Dingell Applaud EPA Funding of Rouge River Restoration](#)

June 10, 2020

- 

GLRI: [EPA announces over \\$1.8 million for habitat restoration work at Rouge River Area of Concern](#)

May 19, 2020

- 

ARC Newsletter Article: [Brine instead of Rock Salt to Protect Water Quality!](#)

December 2019

- 

ARC Newsletter Article: [What is a Watershed & What Does it Have to do with Me?](#)

December 2019

-

Detroit News: [Officials celebrate restoration of southeast Michigan river systems](#)

October 2019

- 

Detroit News: [Michigan's Senators Push for Hike in Great Lakes Cleanup Aid](#)

August 2019

- 

[Tamarack Creek Slated for Restoration](#)

December 2018

- 

GLRI: [More Success in the Rouge River AOC: Oxbow Restoration Phase 3](#)

November 28, 2018

- 

GLRI: [Restoration of Fish Passage at the Henry Ford Estate Dam – Rouge River Area of Concern](#)

November 2018

- 

GLRI: [Dredging the Lower Rouge River Old Channel to Begin in 2019](#)

October 2018

- 

US Army Corps of Engineers: [Environmental cleanup to remove sediment, debris in Lower Rouge River will begin soon](#)

October 2018

- 

This Week in Dearborn with Mayor O'Reilly - [Fishway Project at The Henry Ford Estate](#)

August 3, 2018

- 

Detroit Free Press: [Rouge River fish to get exclusive freeway at Ford's Fair Lane Estate](#)

July 3, 2018

- 

Hometown Life: [Stabenow visits Wayne to highlight success in improving waterways like the Rouge River](#)

August 7, 2017

- 

Issue Media Group: [Battling pollution's legacy in metro Detroit's 'Areas of Concern' waterways](#)

March 24, 2016

- 

[Aquatic Invasive Species Newsletters](#) - Michigan's Invasive Species Program has developed a [comprehensive website](#) providing information about existing and potential invasive species threatening our natural resources. The website, a collaborative effort of the Michigan Departments of Natural Resources, Environmental Quality, and Agriculture & Rural Development, includes a catalog containing identifying photos and reporting information.

March 2016

- 

Detroit News: [Two Detroit area rivers get aid to restore habitats](#)

August 21 2015



**Appendix D**  
**Poster/Banner Report**

**Appendix D  
Banner (Static Display) Report**

				Rouge River Subwatershed						
Static Display Topic	Date Displayed	Community/Entity	Location or Event Where Displayed	Main 1-2	Main 3-4	Upper	Middle 1	Middle 3	Lower 1	Lower 2
2020										
You can Protect Water Quality in the Rouge River!	2/10/20-2/21/20	Bloomfield Twp.	Senior Center Open House & Twp. Offices	1						
You can Protect Water Quality in the Rouge River!	10/26/20-11/6/20	W. Bloomfield Twp.	Township office	1		1				
You can Protect Water Quality in the Rouge River!	10/26/20-11/6/20	Farmington	DPW take to City Hall	1		1				
You can Protect Water Quality in the Rouge River!	11/9/20-11/20/20	Walled Lake	City Hall and Library				1			
You can Protect Water Quality in the Rouge River!	11/9/20-11/20/20	Dearborn Heights	City Hall					1		1
You can Protect Water Quality in the Rouge River!	11/23/20-12/4/20	Inkster	DPS (City Hall closed due to Covid)							1
You can Protect Water Quality in the Rouge River!	12/7/20-12/18/20	Lathrup Village	City Hall	1						
You can Protect Water Quality in the Rouge River!	12/7/20-12/18/20	Redford Twp	Township lobby		1			1		
Number of times in subwatershed in 2020 (Covid)				4	1	2	1	2	0	2
2021										
You can Protect Water Quality in the Rouge River!	2/1/21-2/12/21	Novi	Civic Center			1	1			
You can Protect Water Quality in the Rouge River!	2/1/21-2/12/21	Garden City	City Hall					1		1
You can Protect Water Quality in the Rouge River!	2/15/21-2/26/21	Walled Lake	City Hall				1			
You can Protect Water Quality in the Rouge River!	2/15/21-2/26/21	Walled Lake	Library				1			
You can Protect Water Quality in the Rouge River!	3/1/21-3/12/21	Lathrup Village	City Hall	1						
You can Protect Water Quality in the Rouge River!	3/29/21-4/2/21	Plymouth Twp	Twp Hall				1		1	
You can Protect Water Quality in the Rouge River!	3/29/21-4/2/21	Westland	City Hall					1		1
You can Protect Water Quality in the Rouge River!	4/12/21-4/23/21	Lathrup Village	City Hall	1						
You can Protect Water Quality in the Rouge River!	4/12/21-4/23/21	Redford Twp (chemical)	Twp Hall		1	1		1		
You can Protect Water Quality in the Rouge River!	4/26/21-5/7/21	Schoolcraft (chemical)	College (Sports Arena)			1				
You can Protect Water Quality in the Rouge River!	5/10/21-5/21/21	Northville	City Hall				1			
You can Protect Water Quality in the Rouge River!	5/10/21-5/21/21	West Bloomfield (chemical)	Town Hall	1		1				
You can Protect Water Quality in the Rouge River!	5/24/21-6/4/21	Plymouth Twp (chemical)	Twp Hall				1		1	
You can Protect Water Quality in the Rouge River!	6/7/21-6/18/21	Walled Lake (chemical)	City Hall				1			
You can Protect Water Quality in the Rouge River!	6/7/21-6/18/21	West Bloomfield	Twp Hall	1		1				
You can Protect Water Quality in the Rouge River!	6/21/21-7/2/21	Troy	City Hall	1						
You can Protect Water Quality in the Rouge River!	6/21/21-7/2/21	Redford Twp	Twp Hall		1	1		1		
You can Protect Water Quality in the Rouge River!	6/21/21-7/2/21	Novi (chemical)	Civic Center			1	1			
You can Protect Water Quality in the Rouge River!	7/5/21-7/16/21	Farmington	City Hall and Founders Festival (7/19)	1		1				
You can Protect Water Quality in the Rouge River!	7/5/21-7/16/21	Northville Twp	Twp Hall			1	1			
You can Protect Water Quality in the Rouge River!	7/5/21-7/16/21	Northville (chemical)	City Hall				1			
You can Protect Water Quality in the Rouge River!	7/19/21-7/30/21	Canton Twp	Twp Hall				1		1	
You can Protect Water Quality in the Rouge River!	7/19/21-7/30/21	Canton Twp (chemical)	Twp Hall				1		1	
You can Protect Water Quality in the Rouge River!	8/2/21-8/13/21	Farmington Hills	City Hall	1		1	1			
You can Protect Water Quality in the Rouge River!	8/2/21-8/13/21	Bingham Farms	City Hall and Family Festival (8/14)	1						
You can Protect Water Quality in the Rouge River!	8/16/21-8/27/21	Southfield	Library	1						
You can Protect Water Quality in the Rouge River!	8/16/21-8/27/21	Bloomfield Twp	DPS	1						
You can Protect Water Quality in the Rouge River!	8/30/21-9/3/21	Beverly Hills	Twp Hall	1						
You can Protect Water Quality in the Rouge River!	9/27/21-10/1/21	Livonia	City Hall			1	1	1		

**Appendix D**  
**Banner (Static Display) Report**

STATIC DISPLAY TOPIC	DATE DISPLAYED	COMMUNITY/ENTITY	LOCATION OR EVENT WHERE DISPLAYED	Rouge River Subwatershed						
				Main 1-2	Main 3-4	Upper	Middle 1	Middle 3	Lower 1	Lower 2
You can Protect Water Quality in the Rouge River!	9/27/21-10/1/21	Livonia (chemical)	DPS			1	1	1		
You can Protect Water Quality in the Rouge River!	10/11/21-10/22/21	Plymouth	City Hall				1			
You can Protect Water Quality in the Rouge River!	11/8/21-11/19/21	West Bloomfield	Twp Hall	1		1				
You can Protect Water Quality in the Rouge River!	12/6/21-12/17/21	Bloomfield Twp (chemical)	Senior Center	1						
<b>Number of times in subwatershed in 2021 (Covid)</b>				<b>13</b>	<b>2</b>	<b>13</b>	<b>16</b>	<b>6</b>	<b>4</b>	<b>2</b>

## APPENDIX D POSTER REPORT

Permittee	Year Poster Displayed			Location Poster Displayed	
	2020	2021	2022	City/Twp. Office	Community Bldg.
Beverly Hills, Village of	1	1		X	
Bingham Farms, Village of		1		X	X
Birmingham, City of				X	
Bloomfield Hills, City of	1	1		X	
Bloomfield Township	1			X	X
Canton Township	1	1		X	
Dearborn Heights, City of	1			X	
Farmington, City of	1			X	
Farmington Hills, City of	1	1		X	X
Franklin, Village of		1		X	
Garden City, City of		1		X	
Henry Ford College					X
Inkster, City of	1	1		X	X
Lathrup Village, City of	1	1		X	
Livonia, City of	1	1		X	X
Melvindale, City of	1	1		X	
Northville, City of		1		X	X
Northville Township	1	1		X	X
Novi, City of		1		X	
Oakland County*	1	1		X	
Oak Park, City of					
Plymouth, City of	1	1		X	
Plymouth Township	1	1		X	
Redford Township	1	1		X	
Schoolcraft College		1			X
Southfield, City of				X	X
Troy, City of	1	1		X	X
Walled Lake, City of	1	1		X	X
Wayne County*					
Wayne County Airport Authority					
Wayne, City of	1	1		X	X
Westland, City of		1		X	X
West Bloomfield Township	1	1		X	

**Appendix E**  
**Workshop/Volunteer Report**

**2020-2021 ARC MEMBER COMMUNITIES HOSTING/PROMOTING  
WORKSHOPS & PRESENTATIONS/VOLUNTEER/MONITORING ACTIVITIES**

EVENT	TOPIC	DATE	ARC COMMUNITY	ROUGE RIVER SUBWATERSHED						
				Main 1-2	Main 3-4	Upper	Middle 1	Middle 3	Lower 1	Lower 2
FOTR Stonefly Search	Stonefly monitoring	1/25/2020	Plymouth				1			
Bloomfield Twp.	Open house event	2/12/2020	Bloomfield Twp.	1						
FOTR Frog and Toad	Training & introduction	3/7/2020	Livonia			1		1		
EPA GLRI Announcement at Riverview Park	Wayne County 5-Parks Implementation Announcement at Hines Park	7/28/2020	Wayne County					1		
Stwards of the Rouge Webinar	Activities that you can do at home, in your yard, with your vehicles and at work to protect water quality	10/29/2020	Webinar	1	1	1	1	1	1	1
Full ARC Meeting	Update on ARC activities and grants, GLWA presentation on Wastwater Master Plan	3/30/2020	Video call	1	1	1	1	1	1	1
Full ARC Meeting	Update on ARC activities and grants	9/24/2020	Video call	1	1	1	1	1	1	1
Washtenaw County Master Rain Gardener Course	Master Rain Gardener certification	ongoing	Online training							1
Fall Bug Hunt	Macroinvertebrate monitoring	10/17/2020	Plymouth				1			
FOTR UM-D student sampling	Macroinvertebrate monitoring	10/10/2020	Farmington	1		1				
FOTR sampling	Macroinvertebrate monitoring	10/15-10/20	Novi & Northville				1			
FOTR Rouge Rescue	Virtual event	5/1-5/31/20	watershed	1	1	1	1	1	1	1
IDEP Alert Observer	IDEP training	11/10/2020	webinar	1	1	1	1	1	1	1
Pollution Prevention/Good Housekeeping	Prevention and housekeeping training	11/10/2020	Webinar	1	1	1	1	1	1	1
Native Plants 101	Using native plants	5/19/2020	West Bloomfield Twp.	1		1				
Earth Day Everyday Celebration	Earth Day	9/10/2020	West Bloomfield Twp.	1		1				
FOTR Fall Bug Hunt	Volunteer monitoring event	10/7/2020	Plymouth Twp.				1			
FOTR Fall Bug Hunt	Volunteer monitoring event at Shiawassee Park	10/17/2020	Farmington	1		1				
Master Rain Gardener Class	FOTR 6-week class	9/29/2020	Southfield	1						
Fall Bug Hunt	Volunteer monitoring event	10/17/2020	Southfield	1						
Rouge River Water Festival	Watershed education	10/20/2020	Oakland County	1		1	1			
FOTR Stonefly Search	Volunteer monitoring event	1/25/2020	Wayne County		1	1	1	1	1	1
FOTR Fall Bug Hunt	Volunteer monitoring event	10/17/2020	Wayne County		1	1	1	1	1	1
FOTR Student Sampling	Student monitoirng event	10/10/2020	UM-Dearborn					1		
Rain Garden Workday	Volunteer rain garden maintenance	5/6/2020	Northville Twp.			1	1			
FOTR Rain Gardens 101	Rain Garden workshop	1/25/2020	Livonia			1		1		
FOTR Take me to the River	YouTube education video	8/5/2020	Dearborn Heights							
FOTR REP Fall Monitoring	Crestwood High School student monitoring	10/7/2020	Dearborn Heights							
FOTR Native Plant and Rain Barrel Sale	Native plant and rain barrel sale	8/28/2020	Plymouth				1			



**2020-2021 ARC MEMBER COMMUNITIES HOSTING/PROMOTING  
WORKSHOPS & PRESENTATIONS/VOLUNTEER/MONITORING ACTIVITIES**

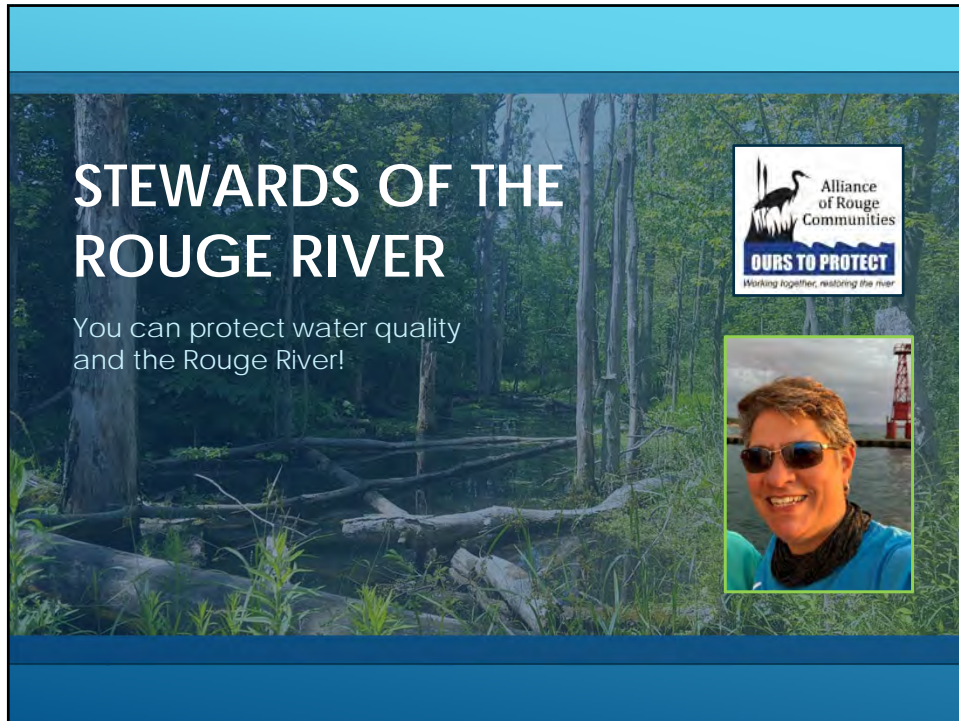
EVENT	TOPIC	DATE	ARC COMMUNITY	ROUGE RIVER SUBWATERSHED						
				Main 1-2	Main 3-4	Upper	Middle 1	Middle 3	Lower 1	Lower 2
Rouge Rescue event	River clean up event	5/16/2020	Plymouth				1			
Master Rain Gardener Class	Rain Garden training	2020	Washtenaw County				1		1	
Rain Garden Stewardship Program	Volunteer rain garden work days	2020	Washtenaw County				1		1	
River Day	River clean up activities	5/15/2021	Canton Twp.						1	
Volunteer Clean-up Day	River clean up activities	5/8/2021	West Bloomfield Twp.	1		1				
Household Hazardous Waste Day	HHW event	5/1/2021	West Bloomfield Twp.	1		1				
Master Rain Gardener Class	FOTR Rain Garden class	10/21/2021	Plymouth Twp.				1			
Earth Day Park Cleanup	Clean up event	4/24/2002	Plymouth Twp.				1			
Township Park Rain Garden Workday	Volunteer rain garden planting	6/18/2021	Plymouth Twp.				1			
FOTR Bug Hunt	FOTR volunteer monitoring	4/17/2021	Plymouth Twp.				1			
FOTR Native Plant & Rain Barrel Sale	FOTR native plant and rain barrel sale	5/15/2021	Redford Twp.		1			1		
Rain Garden Planting	Volunteer rain garden planting	5/15/2021	Redford Twp.		1			1		
Rouge Clean up event	Volunteer clean up event in Lola Valley Park	5/15/2021	Redford Twp.		1			1		
Rain Garden Planting	Volunteer planting at CSO facility	6/5/2021	Redford Twp.		1			1		
Rain Garden Planting	Volunteer planting at CSO facility	5/24/2021	Redford Twp.		1			1		
Rain Garden Planting	Volunteer planting at CSO facility	5/19/2021	Redford Twp.		1			1		
Rain Garden Planting	Volunteer planting at Claude Allison Park	6/5/2021	Redford Twp.		1			1		
Rain Garden Planting	Volunteer planting at Claude Allison Park	7/5/2021	Redford Twp.		1			1		
Rain Garden Planting	Volunteer planting at Claude Allison Park	7/8/2021	Redford Twp.		1			1		
Rain Garden Planting	Volunteer planting at Claude Allison Park	7/10/2021	Redford Twp.		1			1		
Rain Garden Planting	Volunteer planting at Claude Allison Park	10/5/2021	Redford Twp.		1			1		
FOTR Spring Bug Hunt	Volunteer monitoring event at Shiawassee Park	4/17/2021	Farmington	1		1				
Rouge Clean up event	Volunteer clean up event	5/15/2021	Southfield	1						
Family Fishing Day	Community event	6/12/2021	Southfield	1						
FOTR Spring Bug Hunt	Volunteer monitoring event	4/17/2021	Southfield	1						
FOTR Fall Bug Hunt	Volunteer monitoring event	10/16/2021	Southfield	1						
Virtual Johnson Creek Coffee Hour	Public comment event for Johnson Creek project	7/7/2021	Northville				1			
Regional Stormwater Summit	Stormwater initiatives	10/29/2021	Oakland County	1		1	1			
Rouge River Water Festival	Watershed education	10/12/2021	Oakland County	1		1	1			
FOTR Dry Dock Pop Up	Rouge watershed terrain model and paddling the Rouge	7/15/2021	Westland					1		1
FOTR REP Fall Monitoring	Crestwood High School student monitoring	5/20/2021	Dearborn Heights							
Rouge Recue	Volunteer clean up event	5/15/2021	Westland					1		1
FOTR Work Day	Clean up event at Merriman Hollow	5/15/2021	Westland					1		1
FOTR Dry Dock Pop Up	Rouge watershed terrain model and paddling the Rouge	7/12/2021	Westland					1		1
FOTR Dry Dock Pop Up	Rouge watershed terrain model and paddling the Rouge	6/5/2021	Canton Twp.						1	
Tonquish Creek Drain Board of Determination Meeting	Creek alternatives	9/2/2021	Wayne County		1	1	1	1	1	1
Johnson Creek Coffee Hour	Public comment event for Johnson Creek project	7/7/2021	Wayne County		1	1	1	1	1	1
Johnson Creek Site Walk	Public tour of Johnson Creek project area	7/9/2021	Wayne County		1	1	1	1	1	1

**2020-2021 ARC MEMBER COMMUNITIES HOSTING/PROMOTING  
WORKSHOPS & PRESENTATIONS/VOLUNTEER/MONITORING ACTIVITIES**

EVENT	TOPIC	DATE	ARC COMMUNITY	ROUGE RIVER SUBWATERSHED						
				Main 1-2	Main 3-4	Upper	Middle 1	Middle 3	Lower 1	Lower 2
Johnson Creek Coffee Hour	Public comment event for Johnson Creek project	12/14/2021	Wayne County		1	1	1	1	1	1
CLEAN program dumpsters	Provided dumpster for volunteer clean ups	6/7/2021	Wayne County		1	1	1	1	1	1
CLEAN program dumpsters	Provided dumpster for volunteer clean ups	4/17/2021	Wayne County		1	1	1	1	1	1
CLEAN program dumpsters	Provided dumpster for volunteer clean ups	4/24/2021	Wayne County		1	1	1	1	1	1
CLEAN program dumpsters	Provided dumpster for volunteer clean ups	9/10/2021	Wayne County		1	1	1	1	1	1
CLEAN program dumpsters	Provided dumpster for volunteer clean ups	7/7/2021	Wayne County		1	1	1	1	1	1
CLEAN program dumpsters	Provided dumpster for volunteer clean ups	4/24/2021	Wayne County		1	1	1	1	1	1
FOTR Winter Stonefly Search	Volunteer monitoring event	1/23/2021	Wayne County		1	1	1	1	1	1
FOTR Spring Bug Hunt	Volunteer monitoring event	4/17/2021	Wayne County		1	1	1	1	1	1
FOTR REP Fall Monitoring	Troy High School student monitoring	10/6/2021	Troy	1						
FOTR Fall Bug Hunt	Volunteer monitoring event	10/16/2021	Wayne County		1	1	1	1	1	1
FOTR Garlic Mustard Removal	Volunteer invasive species workday	5/15/2002	Northville Twp.			1	1			
Johnson Creek Coffee Hour	Public comment event for Johnson Creek project	7/7/2021	Northville Twp.			1	1			
Johnson Creek Site Walk	Public tour of Johnson Creek project area	7/9/2021	Northville Twp.			1	1			
Johnson Creek Coffee Hour	Public comment event for Johnson Creek project	12/14/2021	Northville Twp.			1	1			
Rouge Rescue	Volunteer clean up event	5/15/2021	Livonia			1		1		
FOTR Spring Bug Hunt	Volunteer monitoring event	4/17/2021	Plymouth				1			
Earth Day Celebration	Earth day event	4/24/2021	Lathrup Village	1						
Adopt-a-road	Volunteer clean up event	6/12/2021	Lathrup Village	1						
Adopt-a-road	Volunteer clean up event	7/17/2021	Lathrup Village	1						
Rouge Rescue Event	Volunteer clean up event	5/15/2021	Birmingham	1						
FOTR Water Trail Canoe Tour	Canoe tour to raise awareness	7/10/2021	Melvindale		1					
ARC Septic System Webinar	Septic system maintenance	11/17/2021	Watershed-wide	1	1	1	1	1	1	1
IDEP Alert Observer Webinar	IDEP training	10/27/2021	Watershed-wide	1	1	1	1	1	1	1
Pollution Prevention/Good Housekeeping Webinar	IDEP training	10/28/2021	Watershed-wide	1	1	1	1	1	1	1
Master Rain Gardener Class	Rain Garden training	2021	Washtenaw County				1		1	
FOTR Rain Barrel Sale	Rain Barrel sale	4/24/2021	Beverly Hills							
Rain Garden Stewardship Program	Volunteer rain garden work days	2021	Washtenaw County				1		1	
IDEP Investigator Webinar	IDEP training	10/27/2021	Watershed-wide	1	1	1	1	1	1	1

**Total Promoted/Hosted Events**

**32      37      43      49      45      31      30**



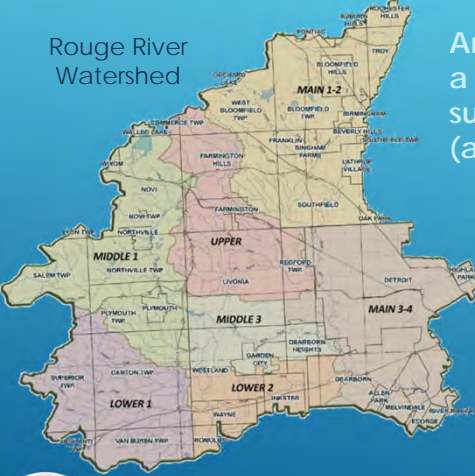
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2

# WE ALL LIVE IN A WATERSHED

Rouge River Watershed



An area of land that drains to a common body of water, such as a lake, river or stream (and even groundwater)





[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)


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# WE ALL LIVE IN A WATERSHED

- ▶ Pollutants travel from upstream to downstream areas
- ▶ Pollutants travel at the junction between groundwater and surface water
- ▶ As land becomes altered or developed it increases the amount of pollutants traveling



Rouge River Watershed



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)

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## WHAT IS STORMWATER?

- ▶ Water that originates during rain events and snow/ice melt
- ▶ Travels over land or through storm drains, catch basins or pipes (called outfalls)
- ▶ Carries the pollutants
- ▶ Ends up untreated in our rivers, streams and lakes



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## WHAT IS WASTEWATER?

- ▶ Water that has been used in the home, in a business, or as part of an industrial process
- ▶ Is treated before it is released back to the environment



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



6

## WHY PROTECT WATER QUALITY IN THE ROUGE RIVER?

- Understanding allows us to comprehend that we can have an impact on water quality far beyond our own back door



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IMPROVED WATER QUALITY MEANS

- Better habitat
- More aquatic species
- More canoeing and recreational activities
- More fishing and swimming
- Healthier Rouge River!



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



8

## WHAT YOU CAN DO . . .

- ▶ In your home
- ▶ In your yard
- ▶ With your vehicles
- ▶ In your community
- ▶ In your business



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



9

## IN YOUR HOME

- ▶ Minimize use of your washing machine, dishwasher or shower
- ▶ Pour greasy or oily food waste into a jar – not the sink
- ▶ Recycle your chemicals at a Household Hazardous Waste (HHW) collection event in you community



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



10



## IN YOUR HOME

### ► What can you take to a HHW event?

- Acids
- Aerosols
- Antifreeze
- Batteries (household & auto)
- Brake fluid
- Bug sprays
- Car wax
- Caulk
- Cell phones
- Computer equipment
- Cleaning solvents
- Drain cleaners
- Fertilizer/weed killer
- Floor care products
- Fluorescent light bulbs
- Oil & diesel fuel
- Gasoline
- Glue
- Ink cartridges
- Kerosene
- Light bulbs
- Lighter fluid
- Medicine
- Mercury waste
- Moth balls
- Oils (fuel, cooking & cutting)
- Paint
- Paint stripper & thinner
- Polishes (auto, furniture, metal & nail)
- Pool chemicals
- Primer
- Propane tanks (from grills)
- Rat poison
- Sealant
- Sharps (in metal/plastic containers)
- Smoke detectors
- Stereos/TVs
- Turpentine
- Varnish/Wood preservatives



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



11

## IN YOUR HOME

- Do not put "disposable wipes" down a drain or toilet
- Recycle your holiday greenery



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)

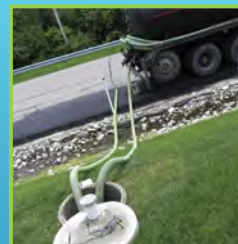


12

## IN YOUR HOME

### ► Maintain your septic system

- Have it inspected every 3 years
- Have your tank pumped every 3-5 years



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



13

## IN YOUR HOME

### ► Why are we concerned about septic systems?

- Significant contributing source of pollution in the Rouge River Watershed
- Often neglected and not routinely maintained after the initial installation
- A malfunctioning system can contaminate our waterways and groundwater supply



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



14

## IN YOUR HOME

### ► A properly functioning septic system will:

- Properly dispose of your wastewater
- Help protect and enhance the quality of surface and groundwater resources
- Protect public health from disease causing organisms and nuisance conditions
- Preserve the waterways, including the Rouge River, for recreational enjoyment
- Save you money!



Check out our recorded septic webinar:  
<https://www.allianceofrougecommunities.com/septic.html>



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



15

## QUESTIONS?



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



16

## IN YOUR YARD

- ▶ Winterize your pool, spa or fountain
  - ▶ Allow the chlorine to dissipate for several days
  - ▶ Drain it to a landscaped area



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17

## IN YOUR YARD

- ▶ Cut grass to a height of no less than 3 inches
- ▶ Don't over-water
- ▶ Mulch your grass and leaves



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## IN YOUR YARD

- ▶ Don't overuse fertilizer
- ▶ Use slow release, phosphorous-free fertilizer
- ▶ Use a broom to sweep fertilizer and grass clippings back onto your yard
- ▶ Avoid weed & feed products



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19

## IN YOUR YARD

- ▶ Pick up after your pet (even in the winter)
- ▶ Don't feed the geese



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20



## IN YOUR YARD

- ▶ Install a rain barrel to capture rainwater
- ▶ Winterize rain barrel to extend use
- ▶ Disconnect downspouts and direct them into your garden
- ▶ Install a compost bin



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR YARD

- ▶ Use non-toxic cleaning alternatives such as white vinegar, baking soda and hydrogen peroxide
- ▶ During winter months shovel often to reduce salt use or choose an environmentally-friendly alternative



### HOME RECIPE FOR BRINE

#### What you need:

- \* 1 1/2 gallons hot water
- \* 3-4 cups rock or table salt
- \* Bucket
- \* Sprayer

#### Directions:

Combine salt and hot water (which helps dissolve the salt) in bucket until all salt is dissolved completely (so salt chunks don't clog sprayer). Pour mixed brine into a sprayer and apply to sidewalk and driveway prior to a snowfall. Each gallon should cover 1,000 square feet of surface (about 200 feet of sidewalk).



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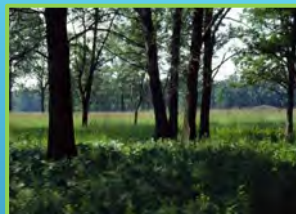
22



## IN YOUR YARD

### ► Use native trees and plants

- Do not require fertilizers
- Require less water
- Provide wildlife habitat
- Promote biodiversity
- Reduce maintenance costs
- Improve water quality



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR YARD

### ► Michigan Native Plant Producers Association – [www.mnppa.org](http://www.mnppa.org)

- American Roots – [www.americanrootswildflowers.com](http://www.americanrootswildflowers.com)
- Hidden Savanna Nursery – [www.hiddensavanna.com](http://www.hiddensavanna.com)
- Michigan Wildflower Farm – [www.michiganwildflowerfarm.com](http://www.michiganwildflowerfarm.com)
- Native Connections – [www.nativeconnections.net](http://www.nativeconnections.net)
- The Native Plant Nursery, LLC – [www.nativeplant.com](http://www.nativeplant.com)
- Wetlands Nursery, Inc. – 231-848-4202
- WILDTYPE Design, Native Plant & Seed, LTD – [www.wildtypeplants.com](http://www.wildtypeplants.com)



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



24

## IN YOUR YARD

- Install a rain garden to reduce stormwater runoff



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



25

## IN YOUR YARD

- Rain gardens
  - Filter runoff pollution
  - Recharge local groundwater/conserves water
  - Improve water quality/ protect rivers & streams
  - Remove standing water
  - Reduce mosquito breeding
  - Habitat creation
  - Reduce potential home flooding



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR YARD

### ► Shoreline buffers

- Provide shade & moderate water temperature
- Stabilize stream banks & reduce erosion
- Filter & trap sediment from runoff
- Absorb nutrients from runoff
- Slow runoff & reduce flooding
- Provide food & habitat for invertebrates, fish, & wildlife
- Deter Canada Geese



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR YARD

### ► Include pollinators

- Bees & butterflies
- Essential to health of the environment
- How plants reproduce & produce fruit
- Great ecosystem health



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR YARD

### ► Planting trees

- Increases property values
- Combats climate change
- Improves air quality
- Conserves energy
- Conserves water
- Reduces stormwater runoff
- Improves habitat



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## QUESTIONS?



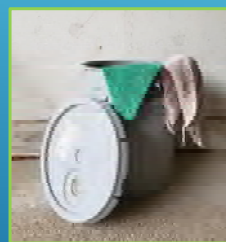
[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



30

## WITH YOUR VEHICLES

- ▶ Use your local car wash so built-up road salt, oil and other pollutants don't go down storm drains
- ▶ When cleaning your garage, sweep it and dispose of it in the garbage
- ▶ Prevent fluid leaks from reaching paved surfaces
- ▶ Keep used oily rags in a closed tub half full of water with 1-2 cups of laundry detergent and dispose of at a HHW event



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## WITH YOUR VEHICLES

- ▶ **Boat owners**
  - ▶ Wash your boat to remove plants & aquatic animals after every use
  - ▶ Dump unused bait in the trash not the water
  - ▶ Drain water from equipment before transporting
  - ▶ Dispose of your boat waste properly
- ▶ **RV owners**
  - ▶ Dispose of sanitary waste at a drop-off location – never down a storm drain or roadside ditch



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## QUESTIONS?



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR COMMUNITY

### ► Detention ponds

- Plant a variety of native species
- Remove invasive species
- Remove trash around detention ponds
- Install bat boxes & bird houses
- Regular inspections



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR COMMUNITY

- ▶ Keep storm drains clear of debris
- ▶ Don't pour chemicals or other liquids down a storm drain



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR COMMUNITY

- ▶ Report illegal dumping



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)

Michigan's Pollution Alert System	800-292-4706
Macomb County	877-679-4337 IDEP@macombcountymi.gov
Oakland County	248-858-0931
St. Clair County	877-504-SWIM
Washtenaw County	734-222-3800
Wayne County	888-223-2363



36

## IN YOUR COMMUNITY

### ► Get involved!

PROMOTING RESTORATION AND  
STEWARDSHIP OF THE ROUGE RIVER  
SINCE 1986

**Friends  
of the ROUGE**



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR COMMUNITY

**Friends  
of the ROUGE**

### EXPLORE—ROUGE RIVER WATER TRAIL



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR COMMUNITY

**Friends  
of the ROUGE**

- Explore together
  - Bug hunts
  - Frog & toad survey



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR COMMUNITY

**Friends  
of the ROUGE**

- Restore
  - Rouge Rescue
  - Restoration workdays



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40

## IN YOUR COMMUNITY

## RESTORE—RAIN GARDENS










[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



41

## IN YOUR COMMUNITY

## SPEAK UP FOR THE OUTDOORS!





- ▶ VOLUNTEER
- ▶ BECOME A MEMBER
- ▶ [www.therouge.org](http://www.therouge.org)



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR BUSINESS

- ▶ Personal satisfaction whether you are the owner, employee or patron
- ▶ Easier and less costly to prevent pollution than to try to clean it up
- ▶ Get employees involved!



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR BUSINESS

- ▶ May be polluting if businesses
  - ▶ Rinse washwater down a storm drain
  - ▶ Spill materials or wastes in parking lot without cleaning them up
  - ▶ Allow materials or wastes stored outside to leak



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## IN YOUR BUSINESS

- ▶ Facility management
- ▶ Cleaning paved surfaces
- ▶ Cleaning up spills & leaks
- ▶ Storing & handling inventory
- ▶ Storing & disposing wastes
- ▶ Dumpster & loading dock maintenance
- ▶ Cleaning equipment
- ▶ Maintaining landscaped areas
- ▶ Employee training & education



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## QUESTIONS & THANK YOU!

HOW DID WE DO? – PLEASE TAKE OUR SURVEY:

[HTTPS://WWW.SURVEYMONKEY.COM/R/ROUGESTEWARD](https://www.surveymonkey.com/r/rougesteward)

IF YOU WOULD LIKE MORE INFORMATION MAILED TO YOU, PLEASE  
EMAIL YOUR ADDRESS TO:

[info@allianceofrougecommunities.com](mailto:info@allianceofrougecommunities.com)

For more information on how you can protect water quality and to  
download a copy of the webinar slides visit:

<https://www.allianceofrougecommunities.com/steward.html>

Follow us on Facebook: [@allianceofrougecommunities](https://www.facebook.com/allianceofrougecommunities)



[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



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## **Stewards of the Rouge Webinar Attendance**

**October 29, 2020**

Tennille Newsome

Chris O'Meara

Annette DeMaria

Adrienne Roach

Dan Stedem

Jan Malaniak

Jim Prest

Linda

Lisa Denys

Olivian DeSouza

Sue

Dorrie Milan

Toni L.

Chris D.

Julie C.

Khaya

John O'Meara



#1

COMPLETE

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**Last Modified:** Thursday, October 29, 2020 8:01:55 PM  
**Time Spent:** 00:02:59  
**IP Address:** 69.14.194.173

---

Page 1: Current Activities

**Q1**

What community do you live in?

Lincoln Park

---

Page 2

**Q2**

Facebook

How did you hear about tonight's webinar?

---

Page 3

**Q3**

Webinar

Which type of presentation do you prefer?

---

Page 4

**Q4**

Yes

Did you know what a watershed was before the webinar?

---

Page 5

**Q5**

Yes

Did you know where the rain water/snow melt went before the webinar?

---

Page 6

**Q6**

**Yes**

Do you think over the last 15 years that the water quality of the Rouge River is getting better?

---

Page 7

**Q7**

**Fair**

How would you rate the water quality of the Rouge River?

---

Page 8

**Q8**

**Yes**

Did this webinar provide you with the information you were expecting?

---

Page 9

**Q9**

**Yes**

Did you learn anything new from this webinar?

---

Page 10

**Q10**

**Yes,**

Based on tonight's webinar, do you intend to change your habits in your home, yard, business and with your vehicles?

If yes, in what way?:

Being more conscious of animal waste.

---

Page 11

**Q11**

Are you interested in the ARC doing a webinar on any of the below topics in the future?

**Benefits of green infrastructure including rain gardens and managing lake/river-front land to protect water quality.**

,

**How business practices can protect water quality.,**

Other topic:

Pollutants that water treatment doesn't remove and how to prevent this kind of pollution

---

Page 12

Q12

If you would like to receive FREE information on how you can protect water quality, please provide your address and we will mail you additional handouts.

Name	Adrienne
Address	2062 LeBlanc St
City	Lincoln Park
State	MI
ZIP Code	48146

---

#2

COMPLETE

**Collector:** Web Link 2 (Web Link)  
**Started:** Thursday, October 29, 2020 7:56:54 PM  
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**Time Spent:** 00:08:25  
**IP Address:** 97.70.83.131

---

Page 1: Current Activities

**Q1**

What community do you live in?

Farmington Hills

---

Page 2

**Q2**

How did you hear about tonight's webinar?

Other (please specify):

Asked about it at your website

---

Page 3

**Q3**

**In-person Workshop**

Which type of presentation do you prefer?

---

Page 4

**Q4**

**Yes**

Did you know what a watershed was before the webinar?

---

Page 5

**Q5**

**Yes**

Did you know where the rain water/snow melt went before the webinar?

---

Page 6

**Q6**

**Yes**

Do you think over the last 15 years that the water quality of the Rouge River is getting better?

---

Page 7

**Q7**

**Fair**

How would you rate the water quality of the Rouge River?

---

Page 8

**Q8**

**Yes**

Did this webinar provide you with the information you were expecting?

---

Page 9

**Q9**

**Yes,**

Did you learn anything new from this webinar?

If yes, please explain:

Not to empty the spa into the storm system.

---

Page 10

**Q10**

**Yes,**

Based on tonight's webinar, do you intend to change your habits in your home, yard, business and with your vehicles?

If yes, in what way?:

Wash the car more frequently at a car wash.

---

Page 11

**Q11**

**Respondent skipped this question**

Are you interested in the ARC doing a webinar on any of the below topics in the future?

---

Page 12

**Q12**

**Respondent skipped this question**

If you would like to receive FREE information on how you can protect water quality, please provide your address and we will mail you additional handouts.

---



The slide features a stylized house icon with a septic tank and pipe system. The text "Septic System Maintenance Webinar" is in green. Below it, "Annette DeMaria, P.E. Executive Director" is in blue. The Alliance of Rouge Communities logo, featuring a bird and the text "OURS TO PROTECT Working together, restoring the river", is on the right. A URL "www.allianceofrougecommunities.com" is at the bottom.

Septic System Maintenance Webinar

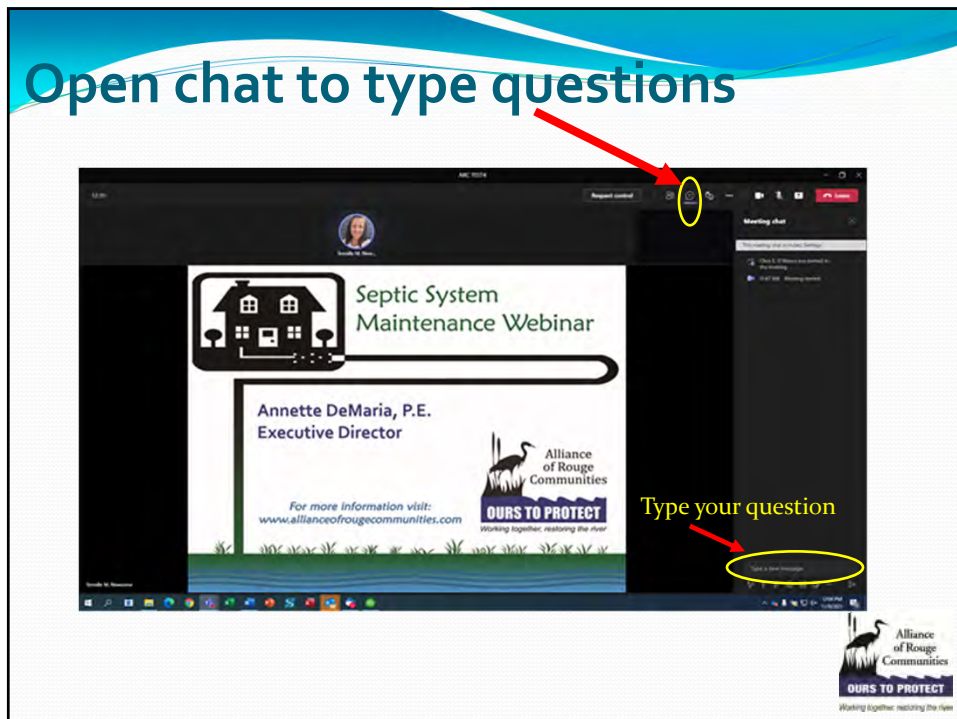
Annette DeMaria, P.E.  
Executive Director

For more information visit:  
[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)

Alliance of Rouge Communities  
**OURS TO PROTECT**  
Working together, restoring the river

1

Open chat to type questions



The image shows a Zoom chat window. A red arrow points to the "Open chat" button in the top right corner. Another red arrow points to the "Type your question" input field in the bottom right corner. The chat window displays the same webinar slide as in the first image.

Type your question

2





## Septic System Maintenance Webinar

**Meghan Price**  
Environmental Scientist

For more information visit:  
[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)



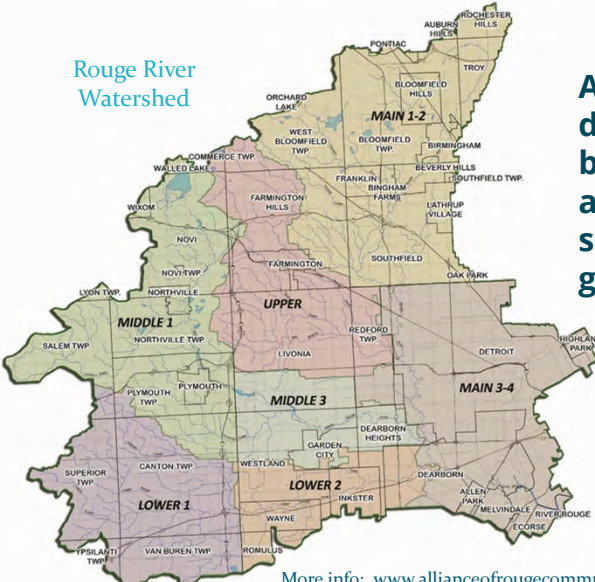
Alliance  
of Rouge  
Communities

**OURS TO PROTECT**  
Working together, restoring the river

3


## We all live in a watershed

Rouge River Watershed



An area of land that drains to a common body of water, such as a lake, river or stream (and even groundwater)

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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Communities

**OURS TO PROTECT**  
Working together, restoring the river

4

## We all live in a watershed

- Pollutants travel from upstream to downstream areas
- As land becomes altered or developed it increases the amount of pollutants traveling



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



5

## What is stormwater?

- Water that originates during rain events and snow/ice melt
- Carries the pollutants
- Travels over land or through storm drains, catch basins or pipes (called outfalls)
- Ends up untreated in our rivers, streams and lakes



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



6

## What is wastewater?

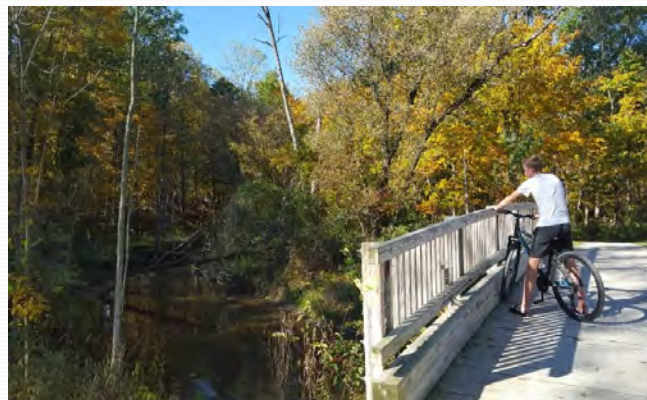
- Water that has been used in the home, in a business, or as part of an industrial process
- Is treated before it is released back to the environment

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



7

## Why protect water quality?



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



8



## What does Improved water quality mean?



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



9

## Sources of bacteria (*E. coli*)

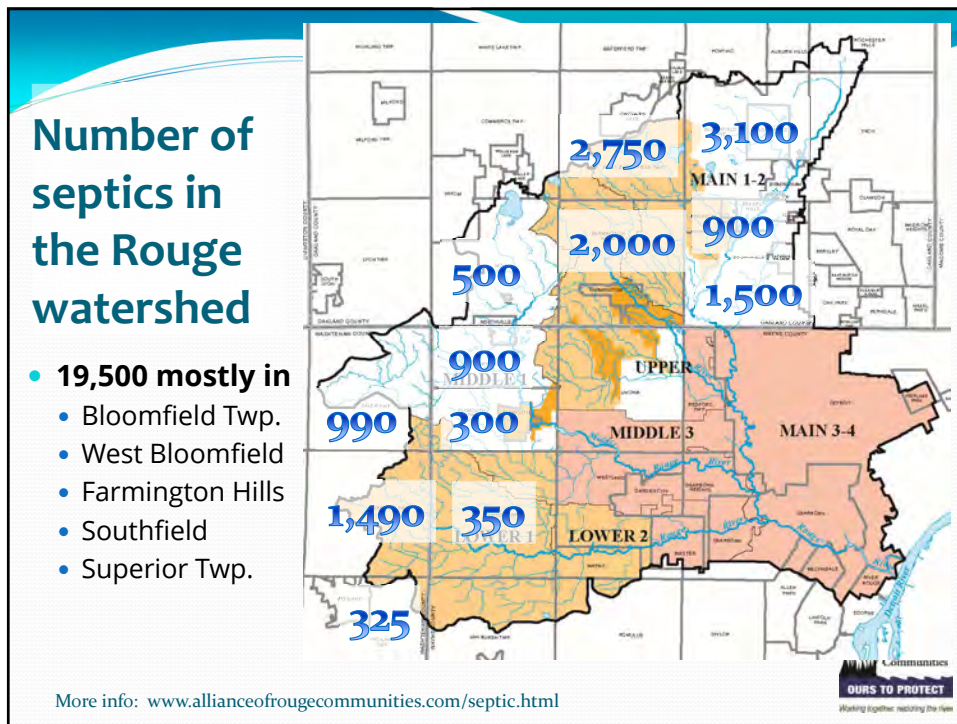
- **Humans**
  - Illicit connections
  - Failing septic systems
  - Sanitary sewer overflows
- **Pets**
  - Lack of waste pick-up
- **Wildlife**
  - Don't feed them



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



10



11

## Pollution Complaint Lines

Michigan's Pollution Alert System	800-292-4706
Macomb County	877-679-4337 IDEP@macombcountymi.gov
Oakland County	248-858-0931
St. Clair County	877-504-SWIM
Washtenaw County	734-222-3880
Wayne County	888-223-2363

**Illegal Dumping**  
What to Do and Who to Call

? ? ? ?

**Emergencies**  
9-1-1

**Non-emergency issues**  
(734) 222-3880  
[www.washtenaw.org](http://www.washtenaw.org)

**TOXIC WASTE ALERT GARBAGE CASE**  
OAKLAND COUNTY HOTLINE (517) 241-1111

**Alliance of Rouge Communities**  
OUR TO PROTECT  
Working together, restoring the river

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)

12

*Meghan Price*

*Environmental Consulting & Technology, Inc.*

[mprice@ectinc.com](mailto:mprice@ectinc.com)



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Septic System Maintenance Webinar

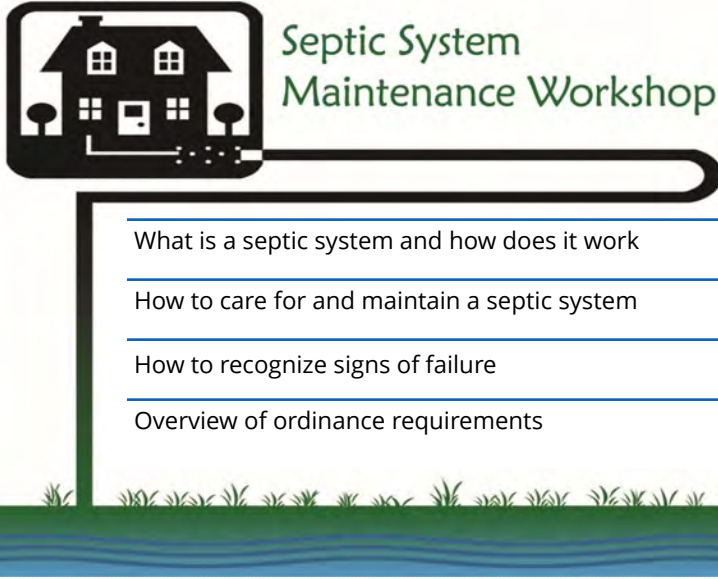
**Alice Bailey, P.E.**  
**Environmental Engineer**

*For more information visit:*  
[www.allianceofrougecommunities.com](http://www.allianceofrougecommunities.com)




14





## Septic System Maintenance Workshop

- What is a septic system and how does it work
- How to care for and maintain a septic system
- How to recognize signs of failure
- Overview of ordinance requirements



15

## Why are we concerned about septic systems?



- Failing septic systems are suspected to be a significant contributing source of pollution in the Rouge River Watershed.
- Septic systems are often neglected and not routinely maintained after the initial installation.
- A malfunctioning system can contaminate our waterways and groundwater supply.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## What is a septic system?



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)

Individual wastewater treatment systems that use the soil to treat small wastewater flows, usually from individual homes.

Treats the wastewater from household plumbing by bathrooms, kitchen drains, dishwasher and laundry.

Common in rural areas without centralized sewer systems.



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## Do you have a septic system?



You use well water.

The waterline coming into your home doesn't have a meter.

You show a "\$0.00 Sewer Amount Charged" on your water bill.

Your neighbors have a septic system.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## How to find your septic system

Look on your home's "as built" drawing.

Checking your yard for lids and manhole covers.

Contacting a septic inspector/pumper to help you locate it.



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## How it works - Overview

1. Drainage Pipe
2. Septic Tank
3. Drain Field
4. Soils



Please note: Septic systems vary. Diagram is not to scale.

[www.epa.gov](http://www.epa.gov)

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



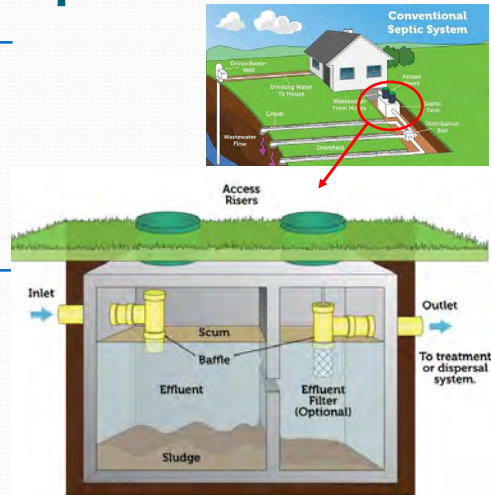
20



## How it works- Septic Tank

Temporarily holds wastewater in the septic tank to separate heavy solids and lighter scum, this process is called primary treatment.

The solids are stored in the tank and are decomposed by bacteria and later removed by a professional septic tank pumper.



[www.epa.gov](http://www.epa.gov)

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



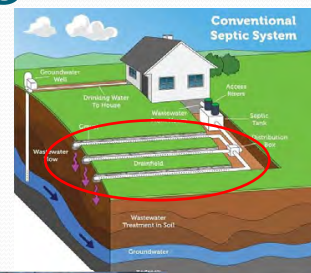
21

## How it works- Discharge

Once the wastewater leaves the tank it flows into a distribution box which separates this flow evenly into a network of drainfield trenches.

Drainage holes at the bottom of each line allow the wastewater to drain into gravel trenches for temporary storage.

This effluent slowly seeps into the subsurface soil where it is further treated and purified. This process is known as secondary treatment.



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## A properly functioning septic system will:



Help protect and enhance the quality of the County's surface and groundwater resources.

Protect public health from disease causing organisms and nuisance conditions.

Properly dispose of your wastewater.

Preserve the County's waterways, including the Rouge River, for recreational enjoyment.

Saves you money!

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Caring for your septic system

As the homeowner, it is your responsibility to maintain the septic system.

### **Neglect or abuse of your septic system can cause it to fail and:**

Can cause a serious health threat to your family and neighbors.

Can degrade the environment, especially lakes, streams and groundwater.

Can reduce the value of your property.

Can be very expensive to repair.

Can put thousands of water supply users at risk if you live in a public water supply watershed and fail to maintain your system.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Caring for your septic system

- ✓ Inspect and Pump
- ✓ Watch for signs of failure
- ✓ Use water efficiently
- ✓ Take care what is sent down the drain.  
"Think at the Sink"
- ✓ Take care what is flushed.  
"Don't overload the commode."
- ✓ Landscape properly

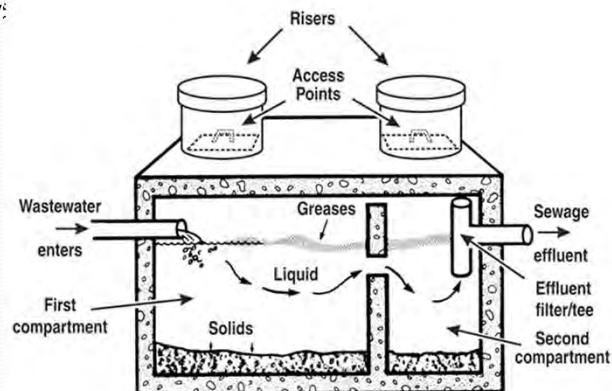
More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Inspect and Pump

The accumulated solids in the bottom of the septic tank should be pumped out every 3-5 years to prolong the life of the sy:



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Additives

Companies make a lot of claims to sell their products, even promoting and claiming that no pumping is ever required.

The effectiveness of additives is not always agreed on (break down sludge).

We already give tanks all they need.

Every tank needs periodic pumping.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Watch for signs of failure

Sewage surfacing over the drainfield (especially after storms).

Sewage back-ups in the house.

Lush, green growth over the drainfield.

Slow draining toilets or drains.

Sewage odors.



More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Use water efficiently



Leaky fixtures can add hundreds of extra gallons of water to your system every day.

Overloading with water is a leading cause of failure.



Replacing existing toilets with high-efficiency models is an easy way to reduce the amount of household water entering your septic system.

Faucet aerators and high-efficiency showerheads help reduce water use as well as the volume of water entering your septic system.



Washing small loads of laundry on the large-load cycle wastes water and energy. Use the proper load size to reduce water waste.

Spread your laundry task throughout the week instead of all on one day to allow your septic tank time to adequately treat waste and reduce the possibility of flooding your drainfield.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Take care at the drain

Whether you're at the kitchen sink, bathtub or utility sink:



Avoid chemical drain openers for clogged drains, use boiling water or a drain snake.

Never pour cooking oil or grease down the drain.

Never pour oil-based paints, solvents or toxic cleaners down the drain.

Eliminate or limit the use of a garbage disposal which will reduce the amount of fats, grease and solids that enter your septic tank and can clog its drainfield.

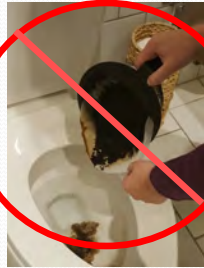
More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Toilets aren't trash cans

Never flush:



- Disposable wipes
- Feminine hygiene products
- Condoms
- Dental floss
- Diapers
- Cigarette butts
- Coffee grounds
- Cat litter
- Household chemicals like gasoline, oil and paint
- Pharmaceuticals

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Use proper landscaping on and around your septic system

Locate your septic tank and drainfield and make sure the area is clear of:

- Underground sprinkler lines
- Driveways, decks and patios
- Sports courts
- Storage sheds
- Swing sets, sandboxes
- Vehicles, swimming pools

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Use proper landscaping on and around your septic system

Plant native, drought-tolerant plants.

Direct all surface drainage away from the septic system.

Use shallow-rooted plants, tree and shrub roots can grow into the drainlines, clogging and breaking them.

Avoid water-loving plants and trees.

Make sure the tank lid is secure.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Ordinances

- Find the ordinances that apply to you
- [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)

CHAPTER 1 GENERAL PROVISIONS	
Section 101.	TITLE
This Ordinance shall be known and may be cited as the "Wayne County On-Site Sewage Disposal System Evaluation and Maintenance Ordinance."	
Section 102.	FINDINGS, POLICIES AND PURPOSES
A.	County Commission Findings
The Wayne County Commission finds as follows:	
1.	Wayne County's Rouge River National Wet Weather Demonstration Project and other recent studies have plainly and consistently demonstrated that surface waters of the County are being impacted by point and nonpoint source pollution.
2.	Nonpoint source pollution is contamination of which cause or source cannot be easily identified. Failing on-site sewage disposal systems are traditional contributors to point and nonpoint source pollution. Research indicates that at least twenty percent of Wayne County's on-site sewage disposal systems are failing or manifest indications of probable failure.
3.	These failures result in sewage discharges to ditches, drains or directly to surface waters. To minimize the water quality problems that originate from failing on-site sewage disposal systems, and to reduce premature failure of these systems, a program to regularly evaluate on-site sewage disposal systems and effect their periodic maintenance is necessary.
4.	Wayne County's National Pollutant Discharge Elimination System Certificate of General Permit Coverage No. MD610040, issued June 1, 1999 by the Michigan Department of Environmental Quality, provides for implementation, in cooperation with local communities, of a County-wide evaluation and maintenance program for on-site sewage disposal systems.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)

### OAKLAND COUNTY HEALTH DIVISION SANITARY CODE

#### ARTICLE III SEWAGE DISPOSAL AND TREATMENT

To protect the public health and safety from nuisances, hazards and causes of illness resulting from improper sewage disposal and treatment, there are hereby provided the following rules and regulations relating to the design, location, construction, operation and maintenance of Onsite Wastewater Treatment Systems within the County of Oakland.

#### SECTION 1 - DEFINITIONS:

- 1.1 **Acceptable Soils** - Acceptable Soils are those which consist of sand, sand and silt mixture, or clay silt sand mixture with the sand comprising at least fifty (50) percent of the mixture.
- 1.2 **Available Public Sewer** - The term Available Public Sewer shall mean a public system, which is under the jurisdiction of 1994 PA 451, as amended, specifically MCL 324.4341 et seq., and is located not more than two hundred (200) feet at its nearest point to a structure from which Sanitary Sewage originates and the use of which is permitted by the responsible governmental entity.
- 1.3 **Code** - The term Code shall mean the Oakland County Sanitary Code.
- 1.4 **Commercial** - The term Commercial shall mean all public, semi-public, and non-residential premises, including structures or buildings not herein defined as a single or two-family residence.
- 1.5 **Failure** - The term Failure shall mean one of the following conditions:
  - 1.5.1 The discharge of sewage to the surface of the ground.



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## As a homeowner under the ordinance

Maintain your septic system to prevent failure.



Septic tank overflow

Notify the health department of any known or suspected disposal system failure.

Remedy any disposal system failure.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Building a house under the ordinance



A site/soil evaluation is required before building a home that is not served by a municipal or centralized sewage treatment facility.

The evaluation, also referred to as a "perk test", is an assessment performed by the County Environmental Health Department.

The evaluation determines a site's suitability for installing a new onsite sewage system.

County building inspectors require either proof of municipal sewer connection or a sewage permit before building permits can be issued.

The evaluation must be **completed and approved** before you can construct your sewage system.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Selling a house under the ordinance



Have your disposal system evaluated by a registered evaluator.

Cooperate with the registered evaluator by providing pertinent information and paying the costs for the evaluation.

Obtain an authorization for sale or transfer prior to closing from the County Health Department

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## What is included in a septic system evaluation



Identification of your septic tank and drainfield locations.

Pumping out of your septic tank at the time of evaluation.

Exposing the drainfield for inspection.

Determining if your disposal system is functioning satisfactorily, is in a state of failure or contains potential failure conditions.

The evaluation may also identify recommendations which may prevent premature failure of your disposal system.

Educational materials are provided as part of the evaluation.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Disposal system evaluation report



A report must be provided to the owner within a certain number of days of the evaluation.

The registered evaluator must send the report to the health department within a certain time frame of evaluation and a minimum amount of days prior to closing on a sale of a house.

Disposal system evaluation reports are maintained by the County and are available to prospective buyers or other interested persons.

Reports are valid for certain number of months.

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)

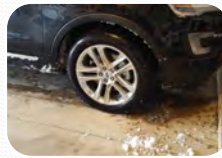


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## Above and beyond



In your yard



With your vehicles



In your community



In your business

### Report Illegal Dumping

Michigan's Pollution Alert System	800-292-4706
Macomb County	877-679-4337 IDEP@macombcountymi.gov
Oakland County	248-858-0931
St. Clair County	877-504-SWIM
Washtenaw County	734-222-3880
Wayne County	888-223-2363



**Alice Bailey, P.E.**  
Environmental Consulting & Technology, Inc.  
[abailey@ectinc.com](mailto:abailey@ectinc.com)

More info: [www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)



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## Questions & thank you!

**How did we do? – please take our survey:**

**[www.surveymonkey.com/r/septicsys](https://www.surveymonkey.com/r/septicsys)**



**For more information on septic systems and to download a copy of the webinar slides visit:**

**[www.allianceofrougecommunities.com/septic.html](http://www.allianceofrougecommunities.com/septic.html)**

**If you would like septic system information mailed to you, please email your address to:**

**[info@allianceofrougecommunities.com](mailto:info@allianceofrougecommunities.com)**



**ARC Septic System Maintenance Webinar Attendance**  
**11/17/2021**

<u>Full Name</u>	<u>User Action</u>	<u>Timestamp</u>
Chris E. O'Meara	Joined	11/17/2021, 7:42:18 PM
Md (Guest)	Joined before	11/17/2021, 6:45:40 PM
Grace	Joined before	11/17/2021, 6:45:40 PM
Tennille M. Newsome	Joined	11/17/2021, 6:47:45 PM
Annette DeMaria	Joined	11/17/2021, 6:48:09 PM
Annette Rozek (Guest)	Joined	11/17/2021, 6:56:44 PM
Cindy (Guest)	Joined	11/17/2021, 7:02:42 PM
James Johnson (Guest)	Joined	11/17/2021, 7:04:15 PM
Siedlaczek, Brandy	Joined	11/17/2021, 7:04:31 PM
ALLAN WHITTEMORE (Guest)	Joined	11/17/2021, 7:05:44 PM
Suzanne (Guest)	Joined	11/17/2021, 7:05:59 PM
Lee (Guest)	Joined	11/17/2021, 7:06:18 PM
Ben (Guest)	Joined	11/17/2021, 7:07:07 PM
+1 586-268-5139	Joined	11/17/2021, 7:08:37 PM
John O'Meara	Joined	11/17/2021, 7:15:18 PM
Alice Bailey	Joined	11/17/2021, 7:19:34 PM
(Guest)	Joined	11/17/2021, 7:21:08 PM

#3

COMPLETE

**Collector:** Web Link 1 (Web Link)  
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**Last Modified:** Wednesday, November 17, 2021 7:39:46 PM  
**Time Spent:** 00:06:28  
**IP Address:** 99.39.137.167

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Page 1: Current Activities

**Q1**

What community do you live in?

Birmingham

---

Page 2

**Q2**

Facebook

How did you hear about tonight's webinar?

---

Page 3

**Q3**

15+ years old

How old is your septic system?

---

Page 4

**Q4**

Yes

Do you know the location of your septic system on your property?

---

Page 5

**Q5**

Every 5+ years

How often do you have your septic system pumped out?

---

Page 6

**Q6**

**Webinar**

Which type of presentation do you prefer?

---

Page 7

**Q7**

**Yes**

Did this webinar provide you with the information you were expecting?

---

Page 8

**Q8**

**Yes**

Did you learn anything new from this webinar?

---

Page 9

**Q9**

**Yes,**

Based on tonight's webinar, do you intend to change how you care for your septic system?

If yes, in what way?:

I am going to have my system pumped more often

---

Page 10

**Q10**

Are you interested in the ARC doing a webinar on any of the below topics in the future?

**Watershed stewardship education and how you can project water quality at home.**

,

**Benefits of green infrastructure including rain gardens and managing lake/river-front land to protect water quality.**

,

Other topic:

Eco friendly lawns- turf grass alternatives, planting for pollinators, reducing use of polluting equipment and chemicals etc.

---

Page 11

**Q11**

If you would like to receive more information on septic system maintenance please provide your address and we will mail you additional handouts.

Name	<b>Drieka DeGraff</b>
Address	<b>1711 Latham St.</b>
City/Town	<b>Birmingham</b>
State/Province	<b>MI</b>
ZIP/Postal Code	<b>48009-3021</b>

---



## #4

COMPLETE

**Collector:** Web Link 1 (Web Link)  
**Started:** Wednesday, November 17, 2021 7:34:47 PM  
**Last Modified:** Wednesday, November 17, 2021 7:42:49 PM  
**Time Spent:** 00:08:02  
**IP Address:** 99.9.120.142

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Page 1: Current Activities

### Q1

What community do you live in?

North field Twp

---

Page 2

### Q2

Friend/Neighbor

How did you hear about tonight's webinar?

---

Page 3

### Q3

New-5 years old

How old is your septic system?

---

Page 4

### Q4

Yes

Do you know the location of your septic system on your property?

---

Page 5

### Q5

It has never been pumped out

How often do you have your septic system pumped out?

---

Page 6

**Q6**

**Webinar**

Which type of presentation do you prefer?

---

Page 7

**Q7**

**Yes**

Did this webinar provide you with the information you were expecting?

---

Page 8

**Q8**

**Yes**

Did you learn anything new from this webinar?

---

Page 9

**Q9**

**Yes**

Based on tonight's webinar, do you intend to change how you care for your septic system?

---

Page 10

**Q10**

Are you interested in the ARC doing a webinar on any of the below topics in the future?

**Benefits of green infrastructure including rain gardens and managing lake/river-front land to protect water quality.**

---

Page 11

**Q11**

**Respondent skipped this question**

If you would like to receive more information on septic system maintenance please provide your address and we will mail you additional handouts.

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**Friends of the Rouge  
Annual Reports for 2020 & 2021**

# 2020

## Annual Report for the Alliance of Rouge Communities



Friends of the Rouge

January 1, 2020 through

December 31, 2020

**FRIENDS OF THE ROUGE  
ANNUAL REPORT 2020  
(January 1, 2020 through December 31, 2020)  
For the  
ALLIANCE OF ROUGE COMMUNITIES**

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**EDUCATION**

Rouge Education Project	Page 1
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**MONITORING**

Benthic Macroinvertebrate Sampling	Pages 2-3
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Frog and Toad Survey	Pages 4-5
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Fish Surveys	Page 6
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**RESTORATION**

Rouge Rescue	Page 7
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Rain Gardens	Pages 8-9
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Rainsmart	Pages 10-11
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**WATER TRAIL**

Rouge River Water Trail	Pages 12-13
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**OUTREACH**

Local and Regional Outreach	Pages 14-16
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Friends of the Rouge 2020 Annual Report for ARC  
EDUCATION  
January 1, 2020 through December 31, 2020

Schools - Spring Monitoring 2020				
Community	School	# Teachers	# Students	Monitoring Location
1 Dearborn Heights	Crestwood High School	1	0	Parr Recreation Area, Wayne Co Parks/Hines Dr, Dearborn Heights
TOTALS		1	0	

Schools - Fall Monitoring 2020				
Community	School	# Teachers	# Students	Monitoring Location
1 Allen Park	Inter-City Baptist High School	1	26	Ford Field Park, Dearborn
2 Dearborn Heights	Crestwood High School	1	5	Parr Recreation Area, Wayne Co Parks/Hines Dr, Dearborn Heights
3 Plymouth	Steppingstone School	2	5	Riverside Park, Wayne Co Parks/Hines Dr, Plymouth
4 Westland	Huron Valley Lutheran High School	1	12	Nankin Mill, Wayne Co Parks/Hines Dr, Westland
TOTALS		5	48	

Workshop - Advanced Chemical Training			
March 7, 2020 - 9:00AM-1:30PM FOTR Office, Plymouth			
Community	Affiliation	# Teachers	# Volunteers
1 Allen Park	Eastern Michigan University		1
2 Livonia	Volunteer		1
	Schoolcraft College		1
3 Plymouth	University of Michigan-Dearborn		1
TOTALS		0	4

Workshop - Bug Identification & Sampling Techniques
March 21, 2020 / April 4, 2020 / September 2020 - CANCELLED (COVID)

Workshop - Summer Institute
August 3-7, & 10 2020 - CANCELLED (COVID)

Student Symposium
November 13, 2020 - CANCELLED (COVID)

Lessons, Water Festivals, & Conferences - 2020
Lesson
N/A
Partner Event
N/A
Conference
N/A



**Friends of the Rouge**  
**2020 Report for ARC**  
**MONITORING - BENTHIC MACROINVERTEBRATE SAMPLING**  
**January 1, 2020 through December 31, 2020**

<b>Event</b>	Stonefly Refresher	Stonefly Search	Spring Sampling	Fall Bug Hunt	UM-D student sampling	Fall Additional Sites
<b>Date</b>	1/11/2020	1/25/2020	5/18/2020	10/17/2020	10/10/2020	10/15, 10/19, 10/20
<b>Time</b>	10am-12pm	9am-3pm	10am-11am	9am-4pm	10am-1pm	10am-2pm
<b>City/Township</b>	Plymouth	Plymouth	Dearborn Heights	Plymouth	Farmington	Northville, Novi
<b>Location</b>	FOTR Lab	Arts & Cultural Center	Facebook Live (participants are viewers)	PARC	Shiawassee Park	
<b>Attendee Residency</b>						
Allen Park		1				
Ann Arbor		2		4		
Belleville						
Beverly Hills		2		1		
Birmingham						
Bloomfield Hills		1		1		
Brighton						
Brownstown Twp						
Canton	1	2		1		
Commerce	1	1		1		
Dearborn	1	4			1	
Dearborn Heights	1	3		3	1	
Detroit		1		2	1	
Erie						
Farmington		1		1	1	
Farmington Hills		2		3		
Ferndale						
Garden City		1				
Grosse Pte		1				
Grosse Pointe Pk						
Hamtramck		1		1		1
Imlay City				1		
Lake Orion						1
Lansing		1				
Lincoln Park						
Livonia	1	5		9		1
Mayville				1		

**Friends of the Rouge**  
**2020 Report for ARC**  
**MONITORING - BENTHIC MACROINVERTEBRATE SAMPLING**  
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<b>Time</b>	10am-12pm	9am-3pm	10am-11am	9am-4pm	10am-1pm	10am-2pm
<b>City/Township</b>	Plymouth	Plymouth	Dearborn Heights	Plymouth	Farmington	Northville, Novi
<b>Location</b>	FOTR Lab	Arts & Cultural Center	Facebook Live (participants are viewers)	PARC	Shiawassee Park	
<b>Attendee Residency</b>						
Mount Clemens						
New Baltimore					1	
Northville		5		4		
Novi				3		
Oak Park				1		
Plymouth	4	6		4		6
Redford	2	7		2	1	
Richmond						
Royal Oak		1			1	
Saint Clair Shores		2				
Shelby Twp		1				
Southfield						
South Lyon		2				
Sterling Heights		1				
Taylor						
Troy		1				
Warren		2				
Waterford						
Wayne				2		
West Bloomfield				1		
Westland	3	6		5		1
Wixom				2		
Wyandotte	2					
Unknown		2	1300	5	9	
<b>TOTALS</b>	<b>16</b>	<b>65</b>	<b>1300</b>	<b>58</b>	<b>16</b>	<b>10</b>

**Friends of the Rouge**  
**2020 Report for ARC**  
**MONITORING - FROG AND TOAD SURVEY**  
**January 1, 2020 through December 31, 2020**

Event	Frog & Toad Survey Training Workshop	Self-Train after Plymoth Workshop Cancelled	Self-Train	Webinar	Frog & Toad Survey Veterans	Save the Frogs Presentation
Date	3/7/2020			4/8/2020	March thru June	4/24/2020
Time	2 hours	2 hours	2 hours	1 hour	after dark	4:00 PM
City/Township	Livonia			online	same as home	virtual
Location	Library			Zoom		
Allen Park	1					
Ann Arbor			4			
Belleville	1				1	
Berkley						
Beverly Hills					2	
Birmingham	3				5	
Bloomfield Hills			2	1	9	
Bloomfield Twp						
Brownstown Twp						
Canton	8	12	1	2	19	
Carleton		1				
Dearborn	8	4		2	10	
Dearborn Heights	3				2	
Detroit	3	2			2	
Eastpointe						
Farmington	2				2	
Farmington Hills	1		3		6	
Ferndale				1	4	
Fenton		1		1		
Franklin	1					
Garden City	2	3		1	1	
Hamtramck					1	
Hazel Park						
Huntington Woods					2	
Lincoln Park		1				
Livonia	11	6			6	
Melvindale					1	
Milford		1		1		
Monroe		1				
New Boston						
New Hudson						
Northville	3	4		2	11	
Novi		2			2	
Oak Park	2				1	
Plymouth	6	11		1	4	

**Friends of the Rouge**  
**2020 Report for ARC**  
**MONITORING - FROG AND TOAD SURVEY**  
**January 1, 2020 through December 31, 2020**

Event	Frog & Toad Survey Training Workshop	Self-Train after Plymoth Workshop Cancelled	Self-Train	Webinar	Frog & Toad Survey Veterans	Save the Frogs Presentation
<b>Date</b>	3/7/2020			4/8/2020	March thru June	4/24/2020
<b>Time</b>	2 hours	2 hours	2 hours	1 hour	after dark	4:00 PM
<b>City/Township</b>	Livonia			online	same as home	virtual
<b>Location</b>	Library			Zoom		
Plymouth Township						
Redford	10	7			6	
Riverview						
Royal Oak	1			1	6	
Romulus	1					
Saint Clair Shores	2					
South Lyon	1					
Southfield					1	
Southgate					1	
Sterling Heights	1					
Troy	1				4	
Trenton						
Walled Lake						
Waterford					2	
Wayne					3	
West Bloomfield			2	3	5	
Westland	6	4			4	
Wyandotte		1			2	
Ypsilanti	1					
Unknown				1	1	515
<b>TOTALS</b>	<b>79</b>	<b>61</b>	<b>12</b>	<b>17</b>	<b>126</b>	<b>515</b>

<b>2020 Blocks Surveyed</b>	
<b>Subwatershed</b>	<b># blocks</b>
Lower 1	42
Lower 2	15
Main 1-2	36
Main 3-4	13
Middle 1	45
Middle 3	16
Upper	16
<b>TOTAL</b>	<b>183</b>

**Friends of the Rouge**  
**2020 Report for ARC**  
**MONITORING - FISH SURVEYS**  
**January 1, 2020 through December 31, 2020**

Fish Surveys													
Date	7/17/2020	7/20/2020	7/24/20	7/29/20	7/30/20	7/31/20	8/6/20	8/7/20	8/19/20	8/20/20	8/21/20	10/10/20	
City/Township	Northville	West Bloomfield	Bloomfield Twp	Farmington Hills	Southfield	Detroit	Canton	Dearborn	Canton	Wayne	Inkster/Dearborn	Farmington	
Attendee Residency													TOTALS
Beverly Hills	1	1	1	1	1	1	1	1	1	1	1	1	12
Canton													0
Dearborn													0
Dearborn Heights	1	1	1	1	1	1	1	1	1	1	1	1	12
Farmington													0
Ferndale													0
New Baltimore	1	1	1	1	1	1	1	1	1	1	1	1	12
Plymouth													0
Northville													0
Royal Oak	1	1	1	1	1	1	1	1	1	1	1	1	12
Sterling Heights	1	1	1	1	1	1	1	1	1	1	1		11
Westland													0
Unknown													0
TOTALS	5	5	5	5	5	5	5	5	5	5	5	4	59

**Friends of the Rouge 2020 Annual Report for ARC**  
**ROUGE RESCUE**  
**January 1, 2020 through December 31, 2020**

Date	Rouge Rescue Site Coordinator Meetings	Location	City	Attendance
3/18/2020	Rouge Rescue Kick-off Meeting Call	Via Conference Call	-	26

Date	Rouge Rescue Work Sites	Sponsoring Community or Organization	City/Twp/Village	2020 Participation
3/7/2020	Smith Elementary School/ Byron Creek	Plymouth YMCA, City of Plymouth	Plymouth	13
4/1/2020 - 6/1/2020	Rouge Rescue ONLINE via Wespire	Bosch, Community Financial, National Kidney Foundation of Michigan, Waste Manangement, Roeper School, Erb Family Foundation	-	324
5/16/2020	Fair Lane, Henery Ford Estate	Fair Lane Estate	Dearborn	1 (staff member)
5/16/2020	Tonquish Creek (Holliday Nature Preserve)	Holliday Nature Preserve Association	Westland	4
5/16/2020	Lola Valley	-	Redford Twp	15
5/13/2020	Berberian Woods	City of Southfield	Southfield	7
6/25/2020	Merriman Hollow	-	Westland	5
			Total Participation	355

Volunteer Residency	
City/Township	Total Number of Volunteers
Allen Park	2
Auburn Hills	1
Birmingham	6
Beverly Hills	4
Bloomfield Hills	2
Bloomfield twp	3
Canton	18
Commerce Twp	1
Dearborn	96
Dearborn Heights	5
Detroit	19
Farmington	4
Farmington Hills	23
Garden City	2
Livonia	39
Northville	9
Novi	6
Oak Park	1
Plymouth	23
Redford	24
Rochester Hills	2
Southfield	19
Troy	3
Walled Lake	1
Wayne	2
West Bloomfield	5
Westland	18
Wixom	1
Ypsilanti	3
Unknown/ not stated	20

Rouge Rescue 2020 was adapted due to Covid-19 to an online learning and action platform for volunteers through April and May. Some individuals and small groups got together for restoration or cleanup activities on their own.



**Friends of the Rouge 2020 Annual Report for ARC  
RESTORATION  
January 1, 2020 through December 31, 2020**

<b>Rain Gardens to the Rescue (RGttr)</b>					
<b>Date</b>	<b>Event</b>	<b>City</b>	<b>Location</b>	<b>Audience</b>	<b>Participation</b>
6/20/2021	RGttr Workshop Series	Detroit	Virtual Zoom Course	Detroit residents	
	6/1/2020 Workshop 1 - Introduction to Rain Gardens				19
	6/8/2020 Workshop 2 - Native Plants, Site Conditions and Garden Sizing				17
	6/15/2020 Workshop 3 - Rain Garden Design				12
	6/22/2020 Workshop 4 - Just Weed It! Maintenance Workshop				13
	6/29/2020 Workshop 5 - Design Reveal				12
8/20/2021	RGttr Installations 11 sites, listed below)	Detroit	Multiple locations, Detroit	Detroit residents and their friends and family	
	8/13/2020 Rain Garden Installation_ Joseph Campau		Residential site		16
	8/15/2020 Rain Garden Installation_ Longfellow		Residential site		11
	8/15/2020 Rain Garden Installation_ Hartford		Residential site		6
	8/18/2020 Rain Garden Installation_ W Grand Blvd		Residential site		6
	8/22/2020 Rain Garden Installation_ Seyburn		Residential site		4
	8/22/2020 Rain Garden Installation_ King		Residential site		7
	8/27/2020 Rain Garden Installation_ Taylor		Residential site		8
	8/29/2020 Rain Garden Installation_ Chicago Blvd		Residential site		6
	8/29/2020 Rain Garden Installation_ Clairmount		Public site		6
	Leadership Driven Rain Garden Installations				
	6/17/2020 Rain Garden Installatio_ Birwood		Residential site		8
	10/25/2020 Rain Garden Installation_ Voices for Earth Justice		Semipublic site		6
12/4/2020	RGttr Celebration	Detroit	Virtual Zoom Event	RGttr Participants & guests	34
Multiple	Rain Barrel Workshops and Educational Events (6)	Detroit	Multiple locations, Detroit	Public	183
4/22/2020	Earth Week Virtual Webinar, Detroit Office of Sustainability	Detroit	Virtual Zoom Event	Public	Unknown
9/4/2020	Rain Gardens to the Rescue Self-guided GSI Tour	Detroit	Multiple locations, Detroit	Public	30
Residency for the RGttr program and events were Detroit residents and partner organizations working in Detroit				<b>Total</b>	<b>404</b>

<b>Land + Water WORKS Coalition</b>					
<b>Date</b>	<b>Event</b>	<b>City</b>	<b>Location</b>	<b>Audience</b>	<b>Participation</b>
	Ambasssador training_ Intro to Rain Gardens	Detroit	Virtual Zoom Event	LWW Ambassadors	30
	Ambassador training_ Downspout Disconnect	Detroit	Virtual Zoom Event	LWW Ambassadors	same as above

**Friends of the Rouge 2020 Annual Report for ARC  
RESTORATION  
January 1, 2020 through December 31, 2020**

<b>Land + Water WORKS Coalition</b>					
<b>Date</b>	<b>Event</b>	<b>City</b>	<b>Location</b>	<b>Audience</b>	<b>Participation</b>
6/10/2020	Intro to Rain Gardens Workshop	Detroit	Hope House, Meditation Missionary Baptist Church	Public	7
6/20/2020	Rain Garden Design Workshop	Detroit	Hope House, Meditation Missionary Baptist Church	Public	6
8/20/2020	Rain Garden Maintenance Workshop	Detroit	Hope House, Meditation Missionary Baptist Church	Public	7
9/12/2020	Rain Garden Instillation	Detroit	Hope House, Meditation Missionary Baptist Church	Public	12
8/10/2020	Intro to Rain Gardens & Garden Design Workshop	Detroit	Bandhu Gardens	Public and Hamtramck High Env. Club	14
8/20/2020	Rain Garden Maintenance Workshop	Detroit	Bandhu Gardens	Public and Hamtramck High Env. Club	11
9/19/2020	Rain Garden Installation	Detroit	Bandhu Gardens	Public and Hamtramck High Env. Club	38
7/20/2020	Intro to Rain Gardens & Garden Design Workshop	Detroit	In Memory of Community Garden (Minock & Whitlock Park)	Public	6
8/11/2020	Rain Garden Maintenance Workshop	Detroit	In Memory of Community Garden (Minock & Whitlock Park)	Public	9
9/10/2020	Rain Garden Installation	Detroit	In Memory of Community Garden (Minock & Whitlock Park)	Public	20
<i>Residency for the LWW program and events were Detroit residents and partner organizations working in Detroit</i>				<b>Total</b>	<b>160</b>

**Friends of the Rouge**  
**2020 Annual Report for ARC**  
**RESTORATION - RAINSMART**  
**January 1, 2020 through December 31, 2020**

Event	Rain Gardens 101	Master Rain Gardener Training Program	Master Rain Gardener Training Program	Master Rain Gardener Training Program	Master Rain Gardener Training Program	Master Rain Gardener Training Program	Master Rain Gardener Training Program	Rain Gardens 101	Rain garden Maintenance Workday	Rain garden Maintenance Workday	Rain garden Maintenance Workday	Rain garden Maintenance Workday	Rain Barrel Pick-up Event	Rain garden Maintenance Workday	Rain Barrel Pick-up Event	Rain garden Maintenance Workday	Rain Gardens 101	Rain Gardens 101	Rain Gardens 101
Date	43855	43883	43890	43897	43904	43911	43918	43932	43980	43987	43994	44001	44002	44014	44030	44029	44068	44069	44070
City/Township	Livonia	Livonia	Livonia	Livonia	Livonia	Livonia	Livonia	Dearborn	Plymouth	Plymouth	Northville / Salem Twp	Canton	Plymouth	Canton	Dearborn	Canton	Southfield	Southfield	Southfield
Location	Livonia Civic Center Public Library	Kirksey Recreation Center	Kirksey Recreation Center	Kirksey Recreation Center	Kirksey Recreation Center	Kirksey Recreation Center	Kirksey Recreation Center	Virtual (14,000 minutes watched for a 120 minute broadcast)	PARC	Plymouth Township Park	Moraine & Salem	Geneva Presbyterian Church	Plymouth Municipal Yard	PCEP Canton High School	Dearborn Municipal Yard	Hulsing Elementary School	Virtual	Virtual	Virtual
Attendee Residency																			
Allen Park	1	1	1	1	1	1	1						1		4		1	1	
Beverly Hills		2	2	2	2	2	2						4		1		1		
Bingham Farms																		1	
Birmingham	1																1	4	
Bloomfield Hills													1				2	2	
Bloomfield Township																			
Canton	8	1	1	1	1	1	1		2	3			8		2	1	2	3	
Dearborn	7	1	1	1	1	1	1						11		15		3	2	
Dearborn Heights													2						
Detroit	2	2	2	2	2	2	2						1		8		2	6	
Farmington	5												3				1	2	
Farmington Hills	2	3	3	3	3	3	3			1	1		2	1			3	1	
Garden City	3												2		2				
Inkster	1												1				1	1	
Lathrup Village															1		2	2	
Livonia	27											1	10		3		1		
Northville	1												6		1			2	
Northville Township																			
Novi	1												1		1		2	3	
Plymouth	5	1	1	1	1	1	1						31		7		2	2	
Plymouth Township	5	2	2	2	2	2	2			3									
Redford	6												6		2				
Rochester Hills																		1	
Romulus	1																		
Salem Township																			
Southfield	2												1		1		2	1	
Troy																			
Van Buren Twp.																			
Wayne															1				
Walled Lake																			
Westland	2	1	1	1	1	1	1						3		1		2	1	
West Bloomfield																	1	1	
Wixom																	1		
Outside watershed	13	4	4	4	4	4	4						14		14		14	16	
Unknown	14							116									1	22	48
<b>Total</b>	<b>107</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>116</b>	<b>2</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>108</b>	<b>1</b>	<b>64</b>	<b>1</b>	<b>45</b>	<b>74</b>	<b>48</b>

**Friends of the Rouge**  
**2020 Annual Report for ARC**  
**RESTORATION - RAINSMART**  
**January 1, 2020 through December 31, 2020**

Event	Rain Barrel Pick-up Event	Rain Barrel Pick-up Event	Rain garden Maintenance Workday	Master Rain Gardener Training Program	Master Rain Gardener Training Program	Master Rain Gardener Training Program Tour	Master Rain Gardener Training Program	Master Rain Gardener Training Program	Master Rain Gardener Training Program Tour	Master Rain Gardener Training Program	Presentation to Bloomfield Hills Garden Club	Rain garden Maintenance Workday	TOTALS
Date	44072	44092	44100	44103	44110	44113	44117	44124	44130	44131	44137	44506	
City/Township	Plymouth Township	Livonia	Canton	Southfield	Southfield	Southfield	Southfield	Southfield	Plymouth	Southfield	Bloomfield Hills	Salem Township	
Location	Plymouth Township Municipal Yard	Ford Field	PCEP Canton High School	Virtual	Virtual	Multiple Locations	Virtual	Virtual	Multiple Locations	Virtual	Virtual	Salem Township Hall	
Attendee Residency													
Allen Park	2	3											19
Beverly Hills	5	5		1	1		1	1		1			33
Bingham Farms													1
Birmingham		3											9
Bloomfield Hills	1	1									8		15
Bloomfield Township		2											2
Canton	4	5											44
Dearborn	7	4		1	1		1	1		1			60
Dearborn Heights	1	2											5
Detroit	4	9		2	2		2	2		2			54
Farmington	4	4		2	2		2	2		2			29
Farmington Hills	7	2		2	2		2	2		2		1	49
Garden City	1	2		1	1		1	1		1			15
Inkster	1	15											20
Lathrup Village	1												6
Livonia	13			2	2		2	2		2			65
Northville	4	4		1	1		1	1		1			23
Northville Township													0
Novi	6	3		2	2		2	2		2			27
Plymouth		6		1	1		1	1		1		1	65
Plymouth Township	35												55
Redford	2	2											18
Rochester Hills													1
Romulus													1
Salem Township												1	1
Southfield	1	4		2	2		2	2		2			22
Troy		1		3	3		3	3		3			16
Van Buren Twp.													0
Wayne	2												3
Walled Lake													0
Westland		7											22
West Bloomfield				1	1		1	1		1			7
Wixom													1
Outside watershed	21	30	1	3	3		3	3		3		1	163
Unknown			14			13			10				238
<b>Total</b>	<b>122</b>	<b>114</b>	<b>15</b>	<b>24</b>	<b>24</b>	<b>13</b>	<b>24</b>	<b>24</b>	<b>10</b>	<b>24</b>	<b>8</b>	<b>4</b>	<b>1089</b>

**Friends of the Rouge  
2020 Report for ARC  
ROUGE RIVER WATER TRAIL  
January 1, 2020 through December 31, 2020**

Date	1/16/20	2/3/20	5/21/20	6/16/20	6/17/20	6/17/20	7/16/20	7/25/20	10/15/20	12/17/20	10/24/20
Event	Committee Meeting	Presentation to Inkster City Council	Committee Meeting	Connections meeting with Inkster	Connections meeting with Westland	Connections meeting with Wayne	Committee Meeting	WDM Work Day	Committee Meeting	Committee Meeting	Group Paddle
City/Township	Westlan	Inkster	Zoom	Zoom	Zoom	Phone	Zoom	Dearborn	Zoom	Zoom	Melvindale to Dearborn
Attendee Residency											
Allen Park											
Berkley											
Birmingham											
Bloomfield Hills	1								1	1	
Canton											
Dearborn	3		3				3	7	2	4	
Dearborn Heights	1	1	1	1		1	1	1	1	1	
Detroit	2		3	2	2		3			1	
Farmington								1			
Farmington Hills	1								1	1	
Flat Rock			1								
Gibraltar	1										
Howell	1										
Huntington Woods											
Inkster	1	50	1	2			2				
Lansing							2				
Livonia	1		1					2	2	1	
Melvindale								1		1	
Milford											
New Baltimore											
Northville							1				
Novi								1			
Plymouth	1		2							2	

**Friends of the Rouge  
2020 Report for ARC  
ROUGE RIVER WATER TRAIL  
January 1, 2020 through December 31, 2020**

<b>Date</b>	1/16/20	2/3/20	5/21/20	6/16/20	6/17/20	6/17/20	7/16/20	7/25/20	10/15/20	12/17/20	10/24/20
<b>Event</b>	Committee Meeting	Presentation to Inkster City Council	Committee Meeting	Connections meeting with Inkster	Connections meeting with Westland	Connections meeting with Wayne	Committee Meeting	WDM Work Day	Committee Meeting	Committee Meeting	Group Paddle
<b>City/Township</b>	Westlan	Inkster	Zoom	Zoom	Zoom	Phone	Zoom	Dearborn	Zoom	Zoom	Melvindale to Dearborn
<b>Attendee Residency</b>											
Royal Oak											
Sterling Heights											
Southgate	1									1	
Traverse City											
Van Buren											
Warren											
Wayne						1		1			
Westland	1	1	1		2		1	1		1	
West Bloomfield											
Unknown	1		1				2	8	1	1	42
<b>TOTALS</b>	16	52	14	5	4	2	15	23	8	15	42



**Friends of the Rouge 2020 Annual Report for ARC**  
**LOCAL AND REGIONAL OUTREACH**  
**January 1, 2020 through December 31, 2020**

Date	Event/Meeting Name	Location	FOTR Staff	Display	Participation	Presentation	Viewers
5/12/2020	Take Me to the River - Facebook Live	Birmingham	Edwards			Y	
6/23/2020	Take Me to the River - Facebook Live	Birmingham	Edwards			Y	
1/22/2020	Blue Planet Jobs meeting	Bloomfield Hills	Cassady		Y		
6/19/2020	Rain garden maintenance workday	Canton	Bertrand		Y		1
7/17/2020	Rain garden maintenance workday	Canton	Bertrand		Y		1
9/26/2020	Rain garden maintenance workday	Canton	Bertrand		Y		15
4/21/2020	Take Me to the River - Facebook Live	Dearborn	McCormick			Y	699
5/5/2020	Take Me to the River - Facebook Live	Dearborn	Heikkila			Y	468
6/2/2020	Take Me to the River - Facebook Live	Dearborn	McCormick			Y	826
7/22/2020	NOAA B-WET GLOBE Training	Dearborn	Cassady		Y		
9/1/2020	Rouge Uncruise - Zoom	Dearborn	Petrella, McCormick, Edwards, Hannna		Y	Y	167
9/8/2020	Rouge Uncruise - Zoom	Dearborn	Petrella, McCormick, Edwards, Hannna		Y	Y	178
7/18/2020	Rain Barrel Pick-up Event	Dearborn	Bertrand		Y		64
4/7/2020	Take Me to the River - Facebook Live	Dearborn Heights	Petrella			Y	651
5/19/2020	Take Me to the River - Facebook Live	Dearborn Heights	Petrella			Y	3200
10/7/2020	Fall Monitoring School Site Visit - Crestwood High School	Dearborn Heights	Cassady		Y		
6/30/2020	Take Me to the River - Facebook Live	Detroit	Petrella			Y	629
8/4/2020	Take Me to the River - Facebook Live	Detroit	Petrella			Y	357
8/25/2020	Rouge Uncruise - Zoom	Detroit to Dearborn	Petrella, McCormick, Edwards, Hannna		Y	Y	189
6/25/2020	REP Teacher APHS Meeting	Google Meet	Cassady		Y		
6/16/2020	Take Me to the River - Facebook Live	Inkster	Heikkila			Y	646
2/29/2020	Quiet Adventure Symposium	Lansing	Vallender	Y			
1/25/2020	Rain Gardens 101	Livonia	Bertrand	Y	Y	Y	107
2/22/2020	Master Rain Gardener Training Program	Livonia	Bertrand	Y	Y	Y	18
2/29/2020	Master Rain Gardener Training Program	Livonia	Bertrand	Y	Y	Y	18

**Friends of the Rouge 2020 Annual Report for ARC**  
**LOCAL AND REGIONAL OUTREACH**  
**January 1, 2020 through December 31, 2020**

Date	Event/Meeting Name	Location	FOTR Staff	Display	Participation	Presentation	Viewers
3/7/2020	Master Rain Gardener Training Program	Livonia	Bertrand	Y	Y	Y	18
3/14/2020	Master Rain Gardener Training Program	Livonia	Bertrand	Y	Y	Y	18
3/21/2020	Master Rain Gardener Training Program	Livonia	Bertrand	Y	Y	Y	18
3/28/2020	Master Rain Gardener Training Program	Livonia	Bertrand	Y	Y	Y	18
5/26/2020	Take Me to the River - Facebook Live	Livonia	Ross			Y	429
9/18/2020	Rain Barrel Pick-up Event	Livonia	Bertrand		Y		114
6/12/2020	Rain garden maintenance workday	Northville / Salem Twp	Bertrand		Y		1
5/29/2020	Rain garden maintenance workday	Plymouth	Bertrand		Y		2
6/5/2020	Rain garden maintenance workday	Plymouth	Bertrand		Y		7
6/20/2020	Rain Barrel Pick-up Event	Plymouth	Bertrand		Y		108
8/29/2020	Rain Barrel Pick-up Event	Plymouth	Bertrand		Y		122
10/7/2020	Fall Monitoring School Site Visit - Steppingstone School	Plymouth	Cassady		Y		
10/26/2020	MRG Tour	Plymouth	Bertrand		Y	Y	10
5/6/2020	Spring Monitoring Day Facebook Video	Plymouth, recording on Facebook & YouTube	Cassady			Y	
4/14/2020	Take Me to the River - Facebook Live	Redford	Ross			Y	503
7/28/2020	Take Me to the River - Facebook Live	River Rouge	Heikkila			Y	484
8/11/2020	Rouge Uncruise - Zoom	River Rouge to Detroit	Petrella, McCormick, Edwards, Hannna		Y	Y	271
8/18/2020	Rouge Uncruise - Zoom	River Rouge to Detroit	Petrella, McCormick, Edwards, Hannna		Y	Y	178
10/9/2020	MRG Tour	Royal Oak, Detroit	Bertrand		Y	Y	13
11/6/2020	Rain garden maintenance workday	Salem Twp	Bertrand		Y		4
8/19/2020	Community Water Day	St. Suzanne Cody Rouge CRC, Detroit	Ross, Heikkila	Y	Y		
4/11/2020	Rain Gardens 101	Virtual	Bertrand		Y	Y	116

**Friends of the Rouge 2020 Annual Report for ARC**  
**LOCAL AND REGIONAL OUTREACH**  
**January 1, 2020 through December 31, 2020**

Date	Event/Meeting Name	Location	FOTR Staff	Display	Participation	Presentation	Viewers
8/25/2020	Rain Gardens 101	Virtual	Bertrand		Y	Y	45
8/26/2020	Rain Gardens 101	Virtual	Bertrand		Y	Y	74
8/27/2020	Rain Gardens 101	Virtual	Bertrand		Y	Y	48
9/29/2020	Master Rain Gardener Training Program	Virtual	Bertrand		Y	Y	24
10/6/2020	Master Rain Gardener Training Program	Virtual	Bertrand		Y	Y	24
10/13/2020	Master Rain Gardener Training Program	Virtual	Bertrand		Y	Y	24
10/20/2020	Master Rain Gardener Training Program	Virtual	Bertrand		Y	Y	24
10/27/2020	Master Rain Gardener Training Program	Virtual	Bertrand		Y	Y	24
11/2/2020	Presentation to Bloomfield Hills Garden	Virtual	Bertrand		Y	Y	8
7/14/2020	Take Me to the River - Facebook Live	Westland	Hanna			Y	969
10/7/2020	Fall Monitoring School Site Visit - Huron Valley Lutheran High School	Westland	Cassady		Y		
4/28/2020	Take Me to the River - Facebook Live	Westland, recording on Facebook & YouTube	Cassady			Y	547
6/9/2020	Take Me to the River - Facebook Live	Westland, recording on Facebook & YouTube	Cassady			Y	524
7/21/2020	Take Me to the River - Facebook Live	Westland, recording on Facebook & YouTube	Cassady			Y	623
2/17/2020	Blue Planet Jobs meeting	Zoom	Cassady		Y		
4/1/2020	Water School Meeting	Zoom	Cassady, Petrella, McCormick		Y		
4/13/2020	Southeast Michigan Stewardship (SEMIS) Coalition Town Hall	Zoom	Cassady		Y		
5/18/2020	SEMIS Community Forum, Youth Fishbowl	Zoom	Cassady		Y		
6/4/2020	SEMIS Student Presentations	Zoom	Cassady		Y		
6/25/2020	REP Teacher Group Meeting	Zoom	Cassady		Y		
5/20/2020	Annual Meeting Presentation Video Recording	Zoom, recording on YouTube	Bertrand, Cassady, Edwards, Hanna, Heikkila, McCormick, Petrella, Ross			Y	

**Organization Name:** Friends of the Rouge  
**Project Title:** FOTR-2021-1 PIE Activities  
**Period Covered:** January 1, 2021 - September 30, 2021  
**Date Submitted:** 10/27/2021



## **ACTIVITY REPORT**

### **BMP6 – Rain Garden Workshop**

On 4/22/2021, Friends of the Rouge hosted the ARC-funded Rain Gardens 101 course through a virtual format on the Zoom platform (recording available here: <https://www.youtube.com/watch?v=26ugxW6epE>).

- The event saw 197 unique live viewers on Zoom
- For the [live simulcast to Facebook](#), 1,175 people viewed the presentation
- The recording has seen an additional 87 views (as of 10/27/2021)

- **Marketing Results**

<b>Date</b>	<b>Activity</b>	<b>Impressions</b>	<b>Reach</b>
Apr-21	Facebook paid advertisements	119,372	37,760
3/23/2021	Facebook event page	16253	16253
4/13/2021	Facebook post	1357	1357
4/21/2021	Rouge Rundown	1200	1200
4/22/2021	Facebook post	1495	1495
4/22/2021	Facebook post	620	620
4/23/2021	Facebook post	330	330
		<b>140,627</b>	<b>59,015</b>

- Course evaluation results available here:  
<https://docs.google.com/forms/d/e/1FAIpQLSfGSu0snYQHPms7xaCSz5wQo497G9A7oYxo4FAOpOxdYKAYzA/viewanalytics>
  - 135 responses
  - 131/135 rated the course as exceeding expectations
  - 134/135 indicated that the facilitator made the information easy to understand
  - 127/135 indicated the course helped them work towards their goals

Additional follow-ups will occur in 2022 to track results for rain garden installations.

**Organization Name:** Friends of the Rouge  
**Project Title:** FOTR-2021-1 PIE Activities  
**Period Covered:** January 1, 2021 - September 30, 2021  
**Date Submitted:** 10/27/2021



### **ACTIVITY REPORT**

#### **BMP7 – Green Infrastructure Maintenance Workday**

On 8/21/21 FOTR led a GSI maintenance workday on the grow zone located in Wayne County Parks' property Merriman Hollow. The workday engaged 32 volunteers to perform woody invasive species management, as well as weeding, for the grow zone.





# ROUGE RESCUE 2019 OFFICIAL REGISTRATION FORM

Date: 8/20/21

Site: Merriman Hollow

Start time: 9:00am

End time: 12pm

In consideration of the acceptance of my entry, I for myself, my executors, administrators and assigns do hereby release and discharge Friends of the Rouge and all sponsors and supporters, including their officers, directors, employees, and agents for all claims of injury or damage to my participating in said event. I attest and verify I have full knowledge of the risks involved in this event and am physically fit. I have also read the posted health advisory. I hereby authorize Friends of the Rouge to use photographs and/or video that were taken of me during my activities. I understand that this material may be used in various publications, the internet, public television, recruitment materials, organization presentations, or for other related endeavors. This authorization is continuous and may only be withdrawn by my specific rescission. The Organization may publish materials, use my name, photograph, video and/or make reference to me in any manner that the Organization deems appropriate in order to promote/publicize the restoration of the Rouge River.

PLEASE PRINT CLEARLY

	NAME	SIGNATURE	CHECK IF UNDER 18	TIME IN	TIME OUT	EMAIL	STREET ADDRESS	CITY	ZIP
1	Sandy Wallace	Sandy Wallace		8:AM	1pm				
2	Jenny Petoskey	Jenny Petoskey		8am	1pm				
3	Jared Petoskey	Jared		8:30am	1pm				
4	Renato Narimon	Renato Narimon		8:15	12:00				
5	Alice Chen	Alice Chen	✓	8:53	11:41				
6	Kathryn Tumovitch	Kathryn Tumovitch	✓	8:57					
7	Karena Lam	Karena	✓	9:00	11:41				
8	Simran Jagtap	Simran	✓	9:00	11:41				
9	Lexi Maxton	Lexi Maxton	✓	8:59	11:41				
10	Nianna Abiad	Nianna Abiad	✓	8:59	11:41				
11	Vaughan Regoli	Vaughan Regoli	✓	8:01	11:41				





# ROUGE RESCUE 2019 OFFICIAL REGISTRATION FORM

Date: 8/24/21

Site: Merriman Hollow

Start time: 9

End time: 12

In consideration of the acceptance of my entry, I for myself, my executors, administrators and assigns do hereby release and discharge Friends of the Rouge and all sponsors and supporters, including their officers, directors, employees, and agents for all claims of injury or damages, demands of action my participating in said event. I attest and verify I have full knowledge of the risks involved in this event and am physically fit. I have also read the posted health advisory. I hereby authorize Friends of the Rouge to use photographs and/or video that were taken of me during my participation in Friend activities. I understand that this material may be used in various publications, the internet, public television, recruitment materials, organization presentations, or for other related endeavors. This authorization is continuous and may only be withdrawn by my specific rescission of this authorization. C the Organization may publish materials, use my name, photograph, video and/or make reference to me in any manner that the Organization deems appropriate in order to promote/publicize the restoration of the Rouge River.

PLEASE PRINT CLEARLY

	NAME	SIGNATURE	CHECK IF UNDER 18	TIME IN	TIME OUT	EMAIL	STREET ADDRESS	CITY	ZIP	GROUP/AFFI
1	Jeewan P.	<i>Jeewan P.</i>	✓	9:00	12					
2	Maxwell Li	<i>Maxwell Li</i>	✓	8:55	12:01					
3	Ann Sandomierski	<i>Ann Sandomierski</i>		9:00	12					
4	Gail Sanders Braun	<i>Gail Sanders Braun</i>		9:00	12:00					
5	Arjun Sehgal	<i>Arjun Sehgal</i>	✓	9:10	11:41					
6	Wenbo Xu	<i>Wenbo Xu</i>	✓	9:00	11:41					
7	Aakash Sinha	<i>Aakash Sinha</i>	✓	9:10	11:41					
8	Surya Takawale	<i>Surya Takawale</i>	✓	9:10	11:53					
9	Nirvan Daram	<i>Nirvan</i>	✓	9:10	11:53					
10	Eashan Daram	<i>Eashan</i>	✓	9:10	11:53					
11	Anish Mander	<i>Anish</i>	✓	9:10	12					









[www.therouge.org](http://www.therouge.org)  
650 Church Street, Suite 209  
Plymouth, MI 48170

## Rouge River Benthic Macroinvertebrate Monitoring Program Fall 2021 Report

This report contains benthic macroinvertebrate sampling results from 36 Rouge tributary and river sites. The Fall Bug Hunt on October 16, 2021 had 43 attendees that sampled 21 sites in 11 teams. A number of students in Wayne State University's Transformative Research in Urban Sustainability Training program participated. Additional sites were sampled by volunteers, during Team Leader training sessions, Wayne County Department of

Public Services Environmental Services Division, and by Sue Thompson for a total of 36 sites. Funding for the monitoring was provided by the Michigan Department of Environment, Great Lakes and Energy (EGLE) through an Area of Concern Great Lakes Restoration Initiative (GLRI) Grant, Michigan Clean Water Corps (MiCorps) and Washtenaw County.

### 2021 Changes and Challenges

This was one of the most challenging fall monitoring events since FOTR started the program in 2001. In June, MiCorps, the statewide network of volunteer water quality monitoring programs announced major changes to the monitoring protocols. All of the Team Leaders had to be retrained and sampling equipment had to be updated. The massive downpours that southeast Michigan experienced this summer into fall caused us to repeatedly reschedule training and monitoring to avoid dangerous high water. And the ever-changing status of the pandemic kept us updating measures to keep our participants as safe as possible.

The MiCorps changes include the goal of collecting at least 100 organisms at each site and a metric to replace the Stream Quality Index Scores (SQI) called Water Quality Rating (WQR) that should better predict the degree of organic pollution than SQI. Since the old system and new system are not compatible, we will be calculating scores both ways as we transition to the new WQR. WQR can be calculated at the order level or family level. Family level is expected to be more robust but we calculated it both ways.

### Overall Scores

Of the 36 sites sampled this fall, the average Stream Quality Index (SQI) was FAIR (30) (map p.7-9, Table 1 & 5). Sites averaged 13 taxa and 2 EPT. One site had an EXCELLENT SQI – John8. Twelve sites rated GOOD; 21 sites were FAIR and two sites scored POOR. Under the new WQR system (see box), scores averaged FAIR - 5.98 at the family level and 6.25 at the order level. The number of taxa found at sites was highest at John8 (22) and lowest at Evan3 (2). Some mayfly, stonefly and caddisfly families (EPT) were found at all but two sites with an average of 2 of these families per site. Three sites had the highest number of EPT (5) – John7, John8 and MR-3.

#### Understanding Benthic Scores

Each site is given a **Stream Quality Index (SQI)** which is determined by weighting each type and number of organisms found by their sensitivity ratings. A higher proportion of sensitive organisms such as mayflies and caddisflies results in a higher **SQI**. A greater number of different organisms also results in a high **SQI**. The **SQI** has four different levels: **>48=EXCELLENT, 34-48=GOOD, 19-33=FAIR, <19=POOR**.

**Number of taxa** represents the number of different families of organisms. Like **SQI**, a higher number of taxa indicate a healthier site.

**Number of insect taxa** – insects are more sensitive than the non-insect taxa.

**EPT** refers to the number of mayfly, caddisfly and stonefly families found; these three orders contain some of the most sensitive organisms.

#### NEW in Fall 2021

**WQR – Water Quality Rating** is a measure of the degree of organic pollution similar to **SQI**. Organisms are rated based on the Hilsenhoff Index of Biotic Integrity and scores are weighted by the number of individuals found. Unlike **SQI**, a **LOWER** score is indicative of less pollution. There are seven categories rather than four. 0.0-3.50=excellent, 3.51-4.50=very good, 4.51-5.50=good, 5.51-6.50=fair, 6.51-7.50=fairly poor, 7.51-8.50=poor, 8.51-10.0=very poor. **WQR** is calculated based on order level or family level identification. Family level will be more accurate.

Table 1: Averages

Average SQI	Average # of taxa	Average # EPT	WQR, Family Level	WQR, Order level
30 fair	13	2	5.98 fair	6.25 fair

## Data Trends

Thirty-two sites sampled had three or more years of past data. Of these, 72% were stable, 22% were improving and 6% were declining (Chart 1). Compared to last fall, fewer sites are stable, more are improving, and more are declining.

To compare change over time, we analyzed the trends by subwatershed, with Johnson Creek analyzed separately as it is a coldwater tributary (Table 2 and graphs p. 12-18). The Middle 3 subwatershed and Johnson Creek had significant positive trends. The Main 1-2, the Upper and the Lower 1 subwatersheds had significant negative trends. These trends are similar to last year.

<b>Table 2: Fall Bug Hunt Trend Summary All Sites 2001-2021</b>					
<b>Subwatershed</b>	<b>slope</b>	<b>p -value</b>	<b>True trend</b>	<b>Subwatershed average score</b>	<b>Water Quality Rating</b>
Main 1-2	-0.4421	0.0005	yes, negative	29	Fair
Upper	-0.3005	0.0024	yes, negative	24	Fair
Johnson Creek	0.3399	0.0143	yes, positive	35	Good
Middle 1	-0.1001	0.4449	No trend	32	Fair
Middle 3*	0.4603	0.0007	yes, positive	22	Fair
Lower 1	-0.3936	0.0042	yes, negative	28	Fair
Lower 2**	-0.3116	0.1007	no trend	26	Fair
Main3-4**	-0.5329	0.2181	no trend	28	Fair
* no sites sampled in fall 2020, 2021					
**no sites sampled in fall 2019-2021					

The data was further analyzed for trends by tributaries and subareas. Table 3 contains a summary of this analysis; the graphs are on p. 12-18. None of the tributaries that were analyzed separately had significant trends.

<b>Table 3: Fall Bug Hunt Trend Summary Branches/Tributaries 2001-2021</b>					
<b>Branch</b>	<b>slope</b>	<b>p -value</b>	<b>True trend</b>	<b>Branch average score</b>	<b>Water Quality Rating</b>
Main combined (Main 1/2 and Main 3/4)	-0.4482	0.0002	yes, negative	29	Fair
Bell Creek only	-0.0673	0.7009	no trend	23	Fair
Upper only	-0.3366	0.0633	no trend	26	Fair
Middle 1 and 3 combined	0.2466	0.0375	yes, positive	30	Fair
Tonquish Creek only	0.3040	0.2063	no trend	31	Fair
Johnson Creek and Middle Rouge	0.3453	0.00003	yes, positive	31	Fair
Middle without Tonquish Creek	0.1379	0.29300	no trend	29	Fair
Lower 1 and Lower 2 combined	-0.3876	0.0001	yes, negative	27	Fair

Individual sites were examined for long term trends (Table 4). Of the sites sampled in fall 2021, one had a significant positive trend and one was negative.

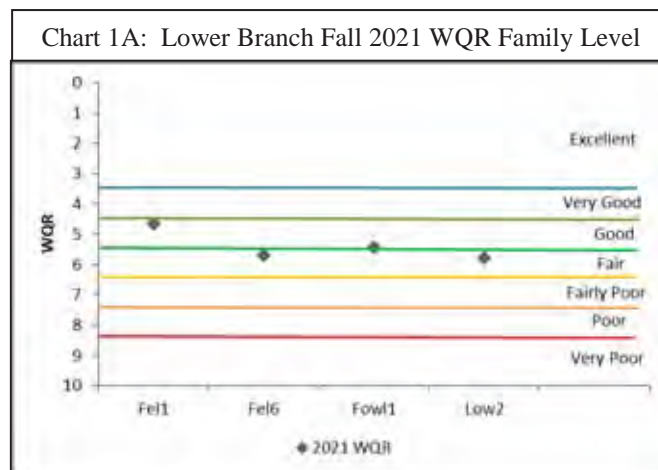
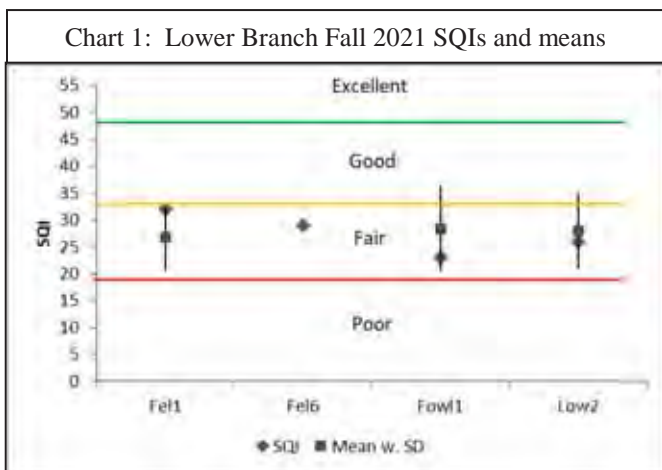
Table 4: Fall Bug Hunt Data Trend 2001-2021 by site - significant trends only					
Site	slope	p-value	Statistically significant trend	Site average score	Water Quality Rating
Ton2	0.7134	0.0241	yes, positive	22	Fair
Low2	-0.6860	0.0374	yes, negative	28	Fair

## Salt Watch

Since 2020, Team Leaders have been testing sites for the effects of road salt. We started this through the Izaak Walton League's Salt Watch program and use simple test strips that test for NaCl. After finding some sites with very high levels in the winter, we decided to investigate what the background levels in spring and fall are when salt is not being applied to roads. While much of the watershed had low levels this fall, there continued to be some hot spots with levels high enough to be toxic to life in the stream. Below 100 ppm is most likely just background, over 100 ppm can be detrimental to life in the stream and 230 ppm and above is considered toxic. The Walled Lake and Upper branches continued to have sites at the toxic level. Check out the map on p. 10 to see the results. FOTR is going to continue to monitor salt concentrations during future bug hunts and is reporting its findings to the municipalities.

## Lower Branch

Four sites were sampled on the Lower Branch (Table 5, Chart 1 and 1A), including two tributaries: Fellows and Fowler Creeks. SQIs averaged FAIR (27.5) for all four sites and all four sites had FAIR SQIs. In the new WQR system, sites averaged GOOD – 5.39 at the family level and FAIR at the order level – 5.63 (Chart 1A).

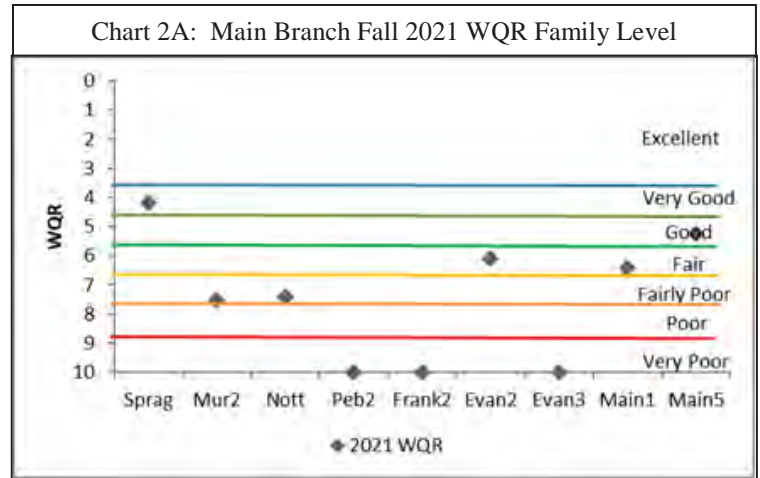
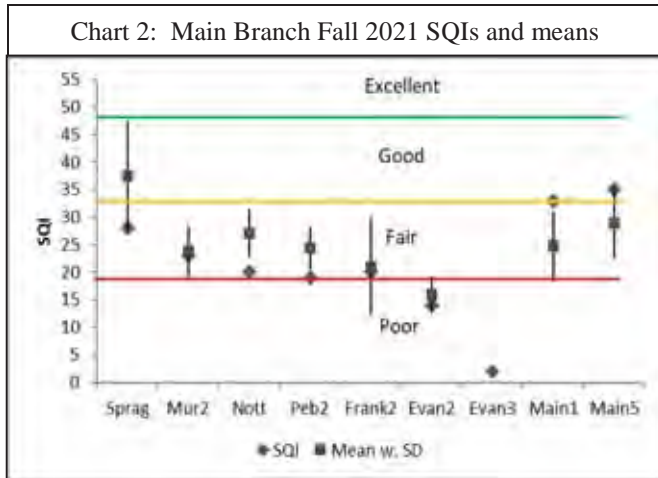


For the three sites with past data (Chart 1), all were within a standard deviation of the average for the site. Long term trend analysis showed a significant negative trend for the Lower 1 and for all of the Lower when the subwatersheds are combined (Table 2-3 above, graphs p. 17-18).

The Low2 site had a significant negative trend like last year (Table 4). This site has changed dramatically this year as a subdivision is being built on the west side of the river and the former pedestrian bridge at the site is now a road bridge.

## Main Branch

Nine sites on the Main Branch were sampled, including six tributaries: Sprague, Murphy, Nottingham, Pebble, Franklin and Evans Creeks (Table 5, Chart 2 and 2A). SQIs averaged FAIR (22). One rated GOOD, six FAIR, and two POOR. WQRs averaged fairly poor (7.43-7.47) with three very poor, 2 fairly poor, 2 fair, one good and one very good. Sprag was the only “very good” WQR score this fall.



In comparing averages and past data (Chart 2), one site was above a standard deviation of the mean (Main1) and two were below (Nott & Peb2). Long term trend analysis shows a significant negative trend for the Main 1-2 subwatershed as well as for all of the Main when the subwatersheds are combined (Table 2-3 above, graphs p. 12). No sites considered separately had significant trends (Table 4).

## Middle Branch

Seventeen sites were sampled on the Middle Branch including Johnson (7), Tonquish (3) and the Walled Lake drainage (4 – includes Bishop and Ingersoll Creeks) (Table 5, Charts 3, 3A, 4, 4A). SQI scores averaged GOOD (36). There was one EXCELLENT score, 11 GOOD, and five FAIR SQIs. WQRs averaged good (5.28) to fair (5.65).

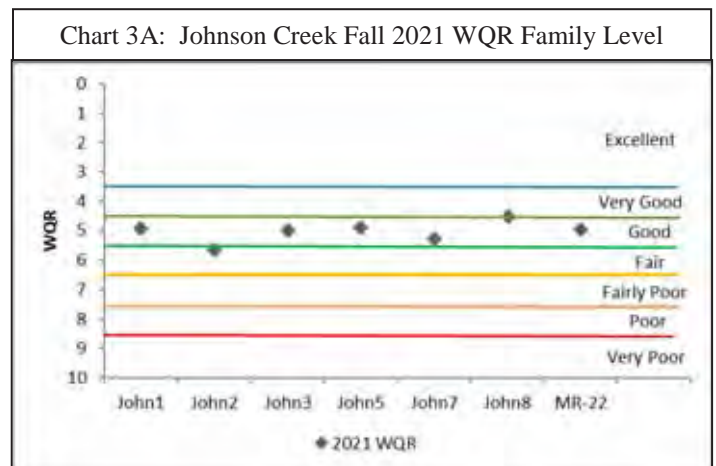
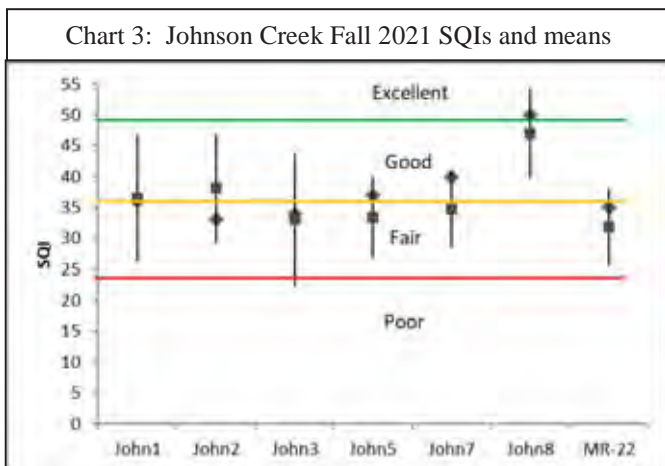




Chart 4: Middle Branch Fall 2021 SQIs and means

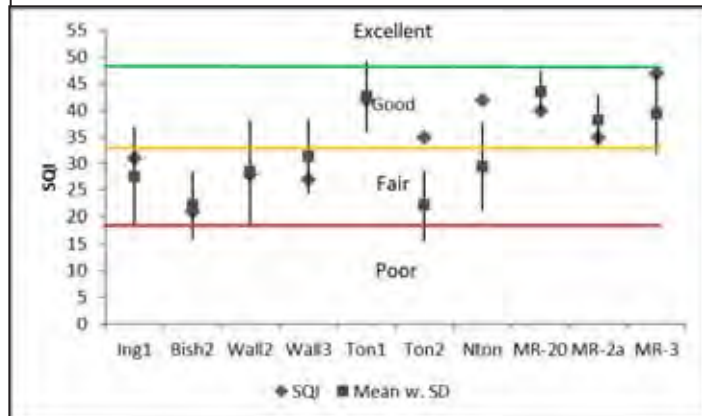
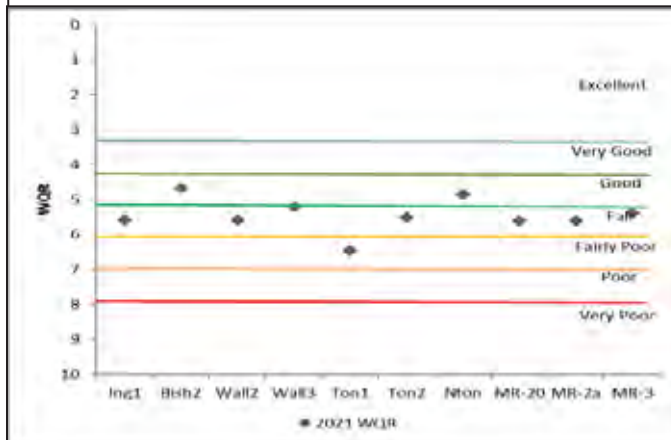


Chart 4A: Middle Branch Fall 2021 WQR Family Level



In comparing averages and past data (Chart 3 & 4), three sites were above a standard deviation of the mean (Ton2, Nton & MR-3).

In long term trend analysis, the Middle 3 and Johnson Creek had positive trends (Table 2 above, graphs p. 14-17). When the Middle 1 and Middle 3 subwatersheds were combined, there a significant positive trend (Table 3 above, graphs p. 14-16). When Johnson Creek was combined with the Middle branch, there was also a significant positive trend. Ton2 had a positive trend when considered by site (Table 4).

## Upper Branch

Six Upper branch sites were sampled including Bell (3), Minnow Pond, and Seeley Creeks. SQIs averaged FAIR (28). All six sites were FAIR. WQR averaged fair (6.16) to fairly poor (6.53) with one fairly poor, one fair, and four good.

Chart 5: Upper Branch Fall 2021 SQIs and means

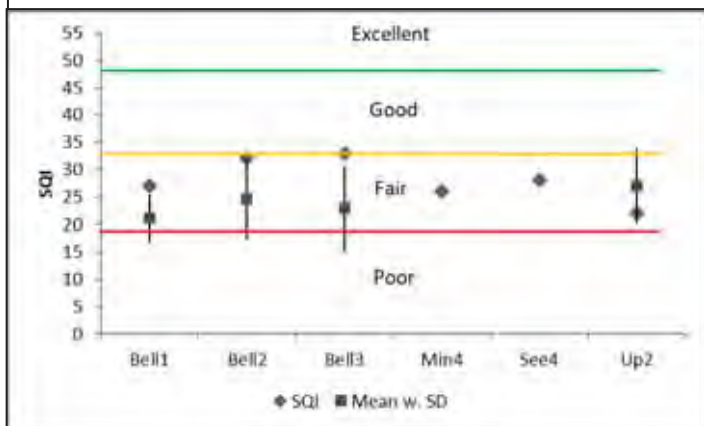


Chart 5A: Upper Branch Fall 2021 WQR Family Level



In comparing averages and past data (Chart 5), all three Bell Creek sites were above a standard deviation of the average. Long term trend analysis shows a significant decline in scores for the Upper Branch but not for Bell Creek or the Upper considered without Bell Creek (Table 2 & 3, graphs p. 13-14).

## THANK YOU!!!!

Thank you to all the **volunteers** and **Team Leaders**, **Sue Thompson** for sampling additional sites, helping with identification, trend analysis and reviewing the report, biologist **Bruce McCulloch** for SQL comparison graphs and reviewing the report, and **EGLE, MiCorps, Washtenaw County Water Resources Department**, and **individual donations** for funding the program.

## Join us for the **Winter Stonefly Search**

Sat. Jan. 22, 2022 9 am – 3 pm

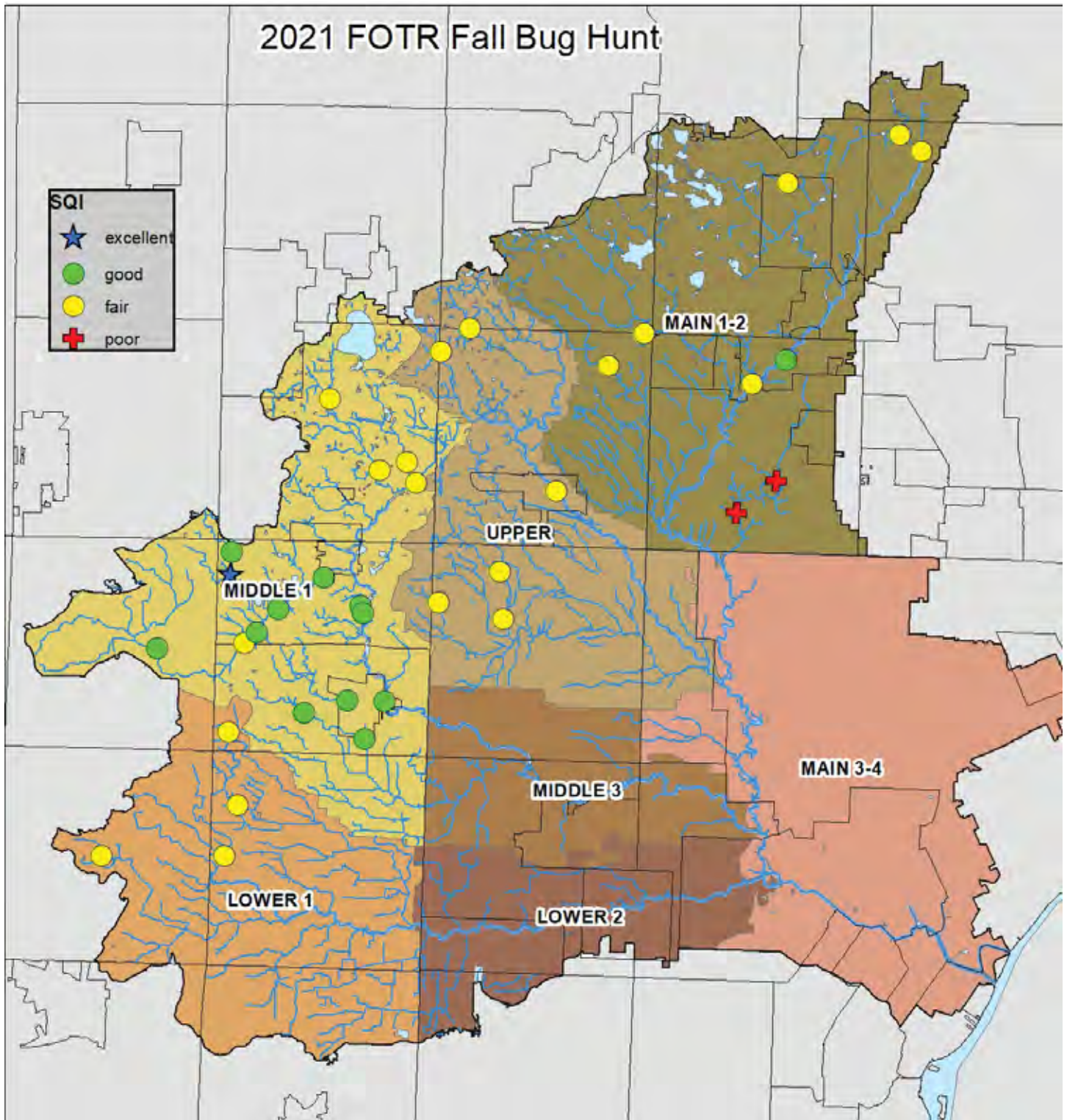
Register at [www.therouge.org](http://www.therouge.org) by Jan. 7, 2022

Attend the virtual Stonefly Primer Thurs. Jan. 13 6-7:00 pm on Zoom to get ready



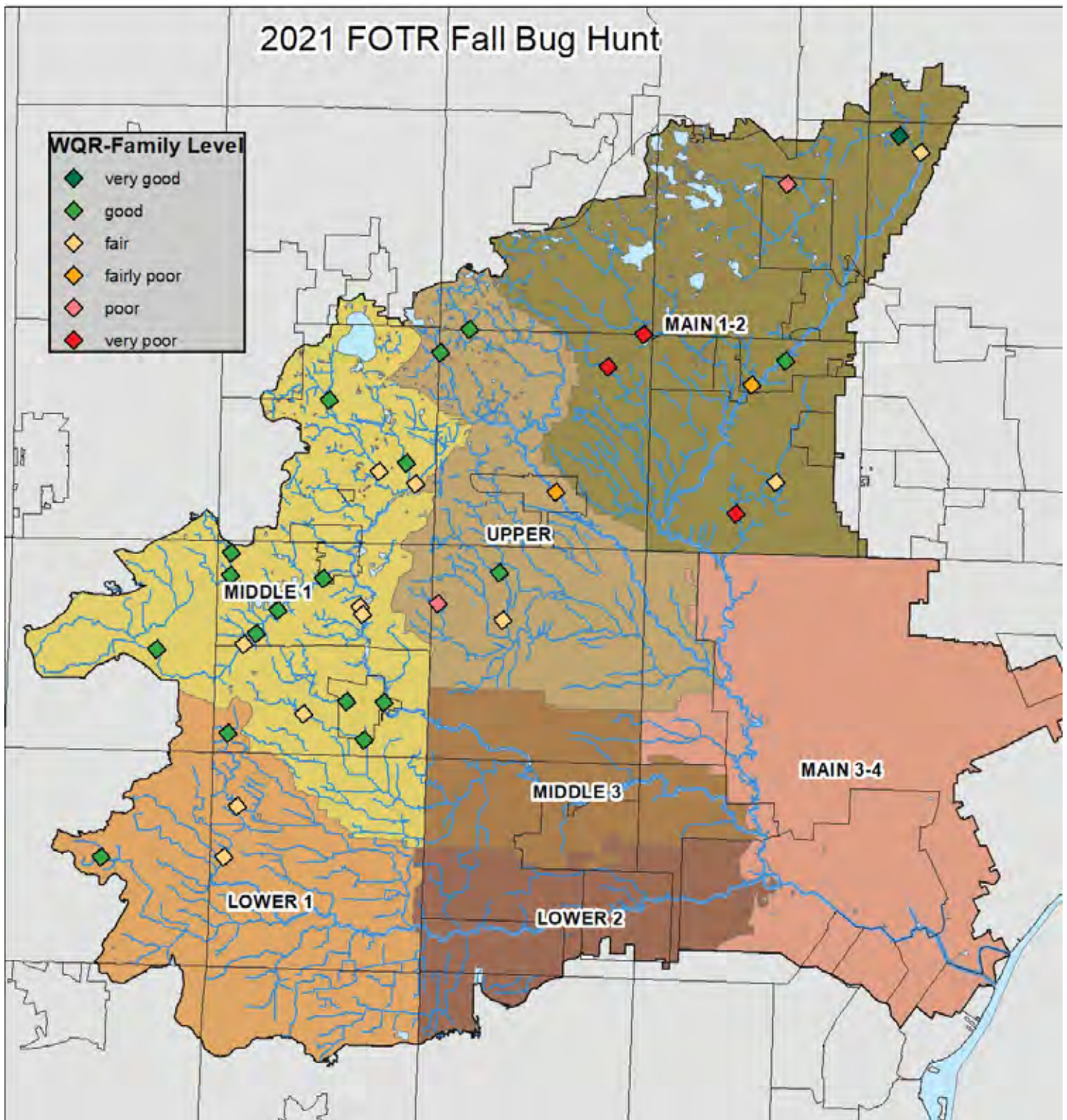


# 2021 FOTR Fall Bug Hunt





## 2021 FOTR Fall Bug Hunt





## 2021 FOTR Fall Bug Hunt

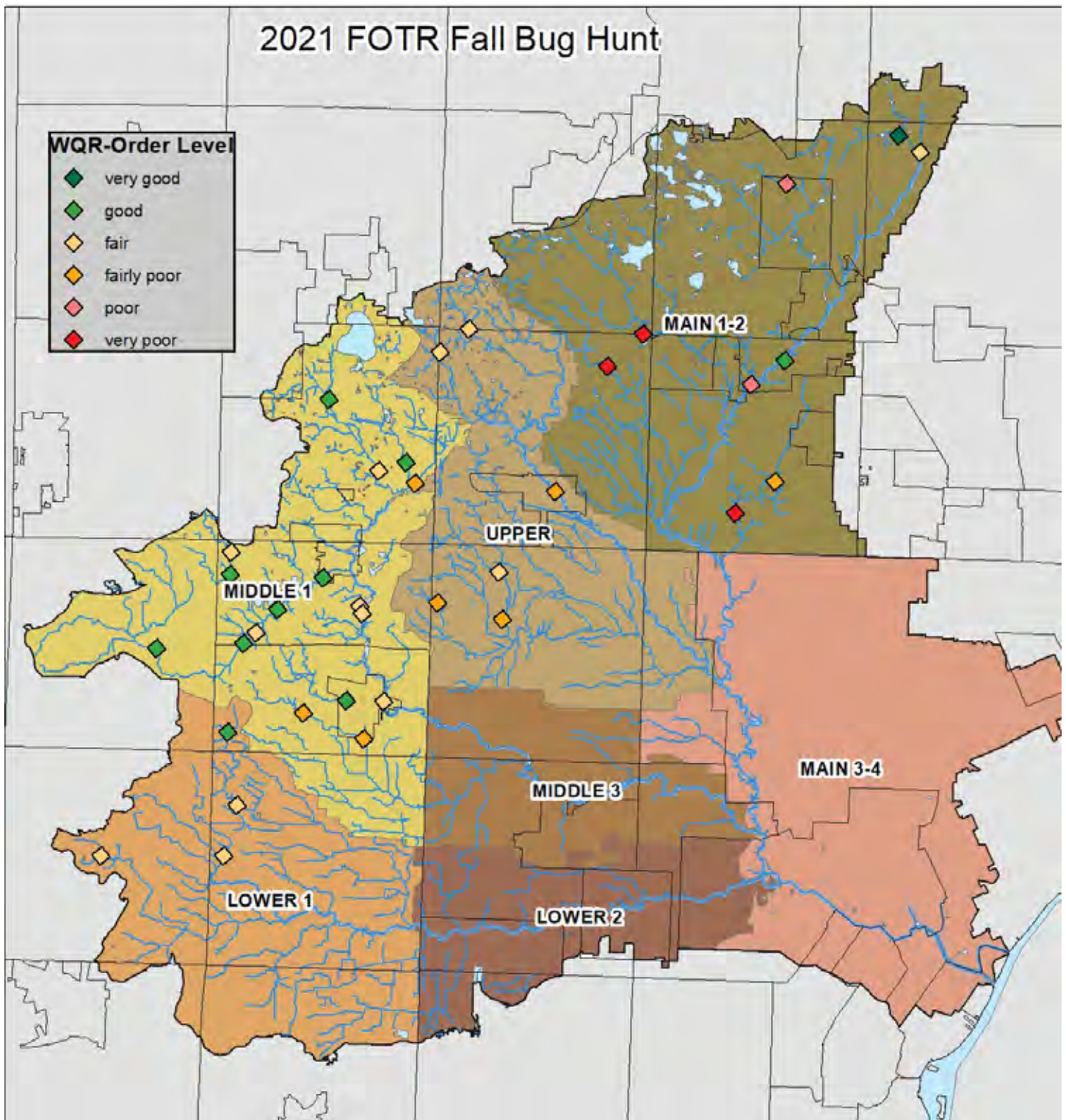
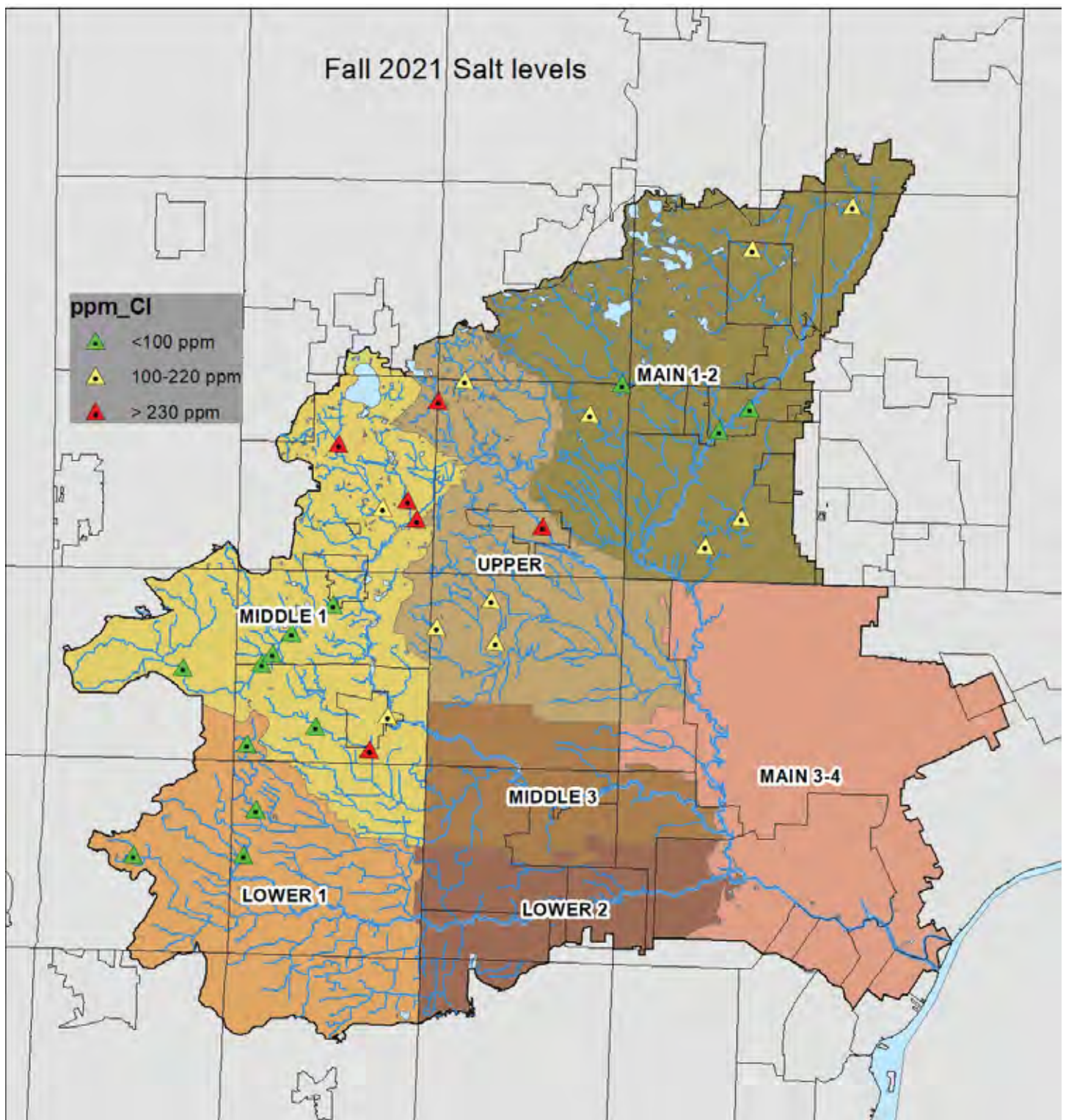




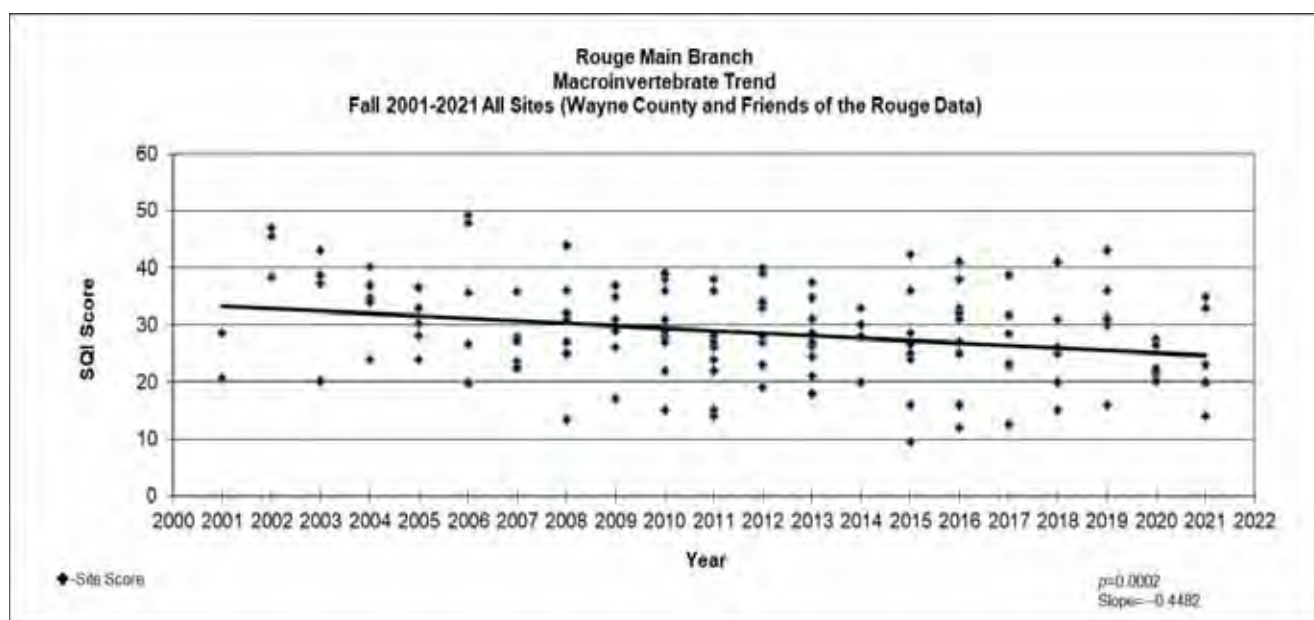
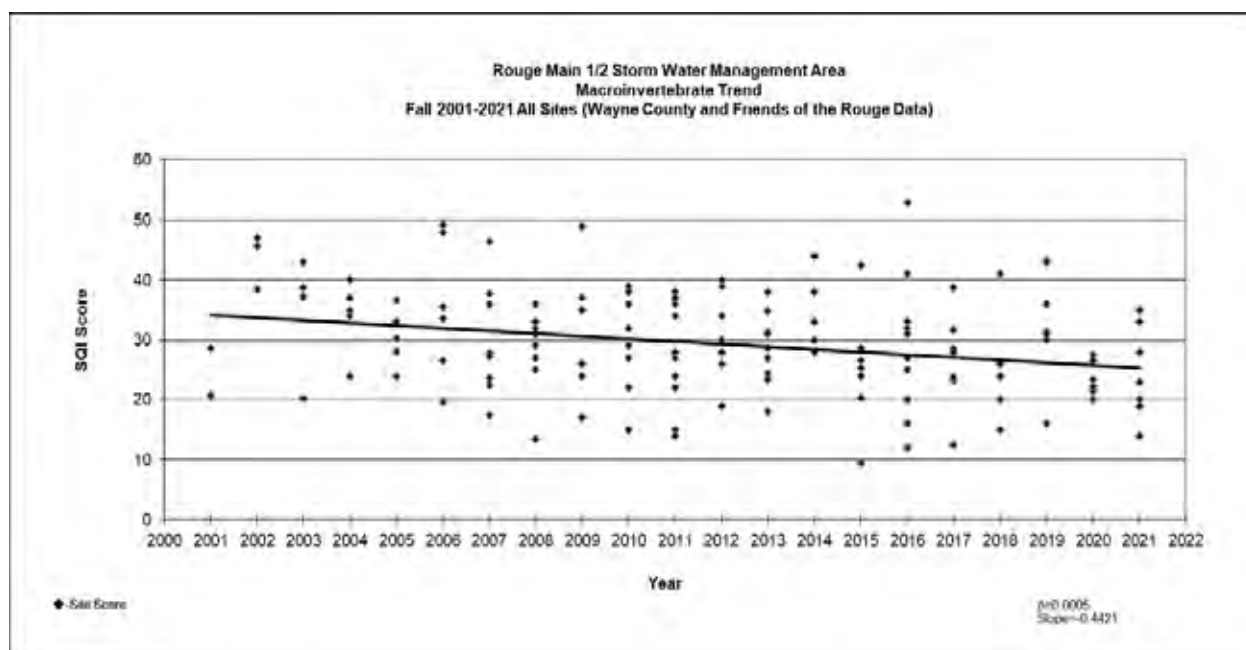
Table 5: Fall 2021 Data

Branch	Stream Name	FIELDID	Site Description	SQI	SQI rating	taxa	EPT	WQR family level	WQR family score	WQR order level	WQR order score
Lower	Fellows Creek	Fel1	Top of Hill Ct	32	fair	14	1	4.65	good	5.1	good
Lower	Fellows Creek	Fel6	Hanford	29	fair	10	2	5.69	fair	5.97	fair
Lower	Fowler Creek	Fowl1	Prospect	23	fair	10	1	5.44	good	5.78	fair
Lower	Lower Rouge	Low2	Cherry Hill	26	fair	12	2	5.77	fair	5.64	fair
Main	Evans Creek	Evan2	LTU	14	poor	8	1	6.1	fair	6.71	fairly poor
Main	Evans Creek	Evan3	9 Mile Road	2	poor	2	0	10	very poor	10	very poor
Main	Franklin Creek	Frank2	Ink Pump Sta	20	fair	8	1	10	very poor	10	very poor
Main	Main Rouge	Main1	FF Pk	33	fair	15	2	6.43	fair	6.24	fair
Main	Main Rouge	Main5	Douglas Evans	35	good	15	2	5.23	good	5.05	good
Main	Murphy Creek	Mur2	Roeper School	23	fair	8	1	7.51	poor	7.58	poor
Main	Nottingham Creek	Nott	Country Day	20	fair	9	0	7.42	fairly poor	7.72	poor
Main	Pebble Creek	Peb2	Pebble 13 Mile	19	fair	6	1	10	very poor	10	very poor
Main	Sprague Creek	Sprag	Main Lloyd Stage	28	fair	13	2	4.19	very good	3.89	very good
Middle	Bishop Creek	Bish2	Scarborough	21	fair	9	1	4.67	good	5.09	good
Middle	Ingersoll Creek	Ing1	Brookfarm Park	31	fair	14	1	5.58	fair	6.72	fairly poor
Middle	Johnson Creek	John1	5M Salem	36	good	17	4	4.95	good	4.88	good
Middle	Johnson Creek	John2	5M NV	33	fair	20	4	5.66	fair	5.48	good
Middle	Johnson Creek	John3	6M NV	34	good	16	3	5	good	5.12	good
Middle	Johnson Creek	John5	Fish Hatchery Pk	37	good	15	2	4.91	good	4.62	good
Middle	Johnson Creek	John7	Arcadia	40	good	20	5	5.28	good	5.57	fair
Middle	Johnson Creek	John8	Maybury Angell	50	excellent	22	5	4.52	good	4.9	good
Middle	Johnson Creek	MR-22	Maybury south	35	good	15	2	4.96	good	6.13	fair
Middle	Middle Rouge	MR-20	Waterford Bd	40	good	21	4	5.6	fair	6.16	fair
Middle	Middle Rouge	MR-2a	Reservoir Rd W	35	good	15	4	5.61	fair	5.6	fair
Middle	Middle Rouge	MR-3	Plym Riverside	47	good	19	5	5.39	good	5.7	fair
Middle	Tonquish Creek	Nton	S Evergreen St	42	good	16	2	4.85	good	5.32	good
Middle	Tonquish Creek	Ton1	Plym Twp Pk	42	good	17	3	6.45	fair	7	fairly poor
Middle	Tonquish Creek	Ton2	Ann Arbor Rd	35	good	17	2	5.5	good	6.82	fairly poor
Middle	Walled Lk Drainage	Wall2	WL 10 M	28	fair	15	2	5.59	fair	5.77	fair
Middle	Walled Lk Drainage	Wall3	WL 12 M	27	fair	12	1	5.2	good	5.23	good
Upper	Bell Branch	Bell1	Bicentennial Park	27	fair	12	2	5.37	good	5.6	fair
Upper	Bell Branch	Bell2	Schoolcraft College	32	fair	12	1	8.3	poor	7.42	fairly poor
Upper	Bell Branch	Bell3	Livonia 6 Mile	33	fair	13	1	5.7	fair	7.29	fairly poor
Upper	Minnow Pond	Min4	14 Mile	26	fair	15	1	5.22	good	6.38	fair
Upper	Seeley Creek	See4	Haggerty Rd	28	fair	8	2	5.38	good	5.51	fair
Upper	Upper Rouge	Up2	Shiawassee Park	22	fair	8	1	7	fairly poor	7	fairly poor

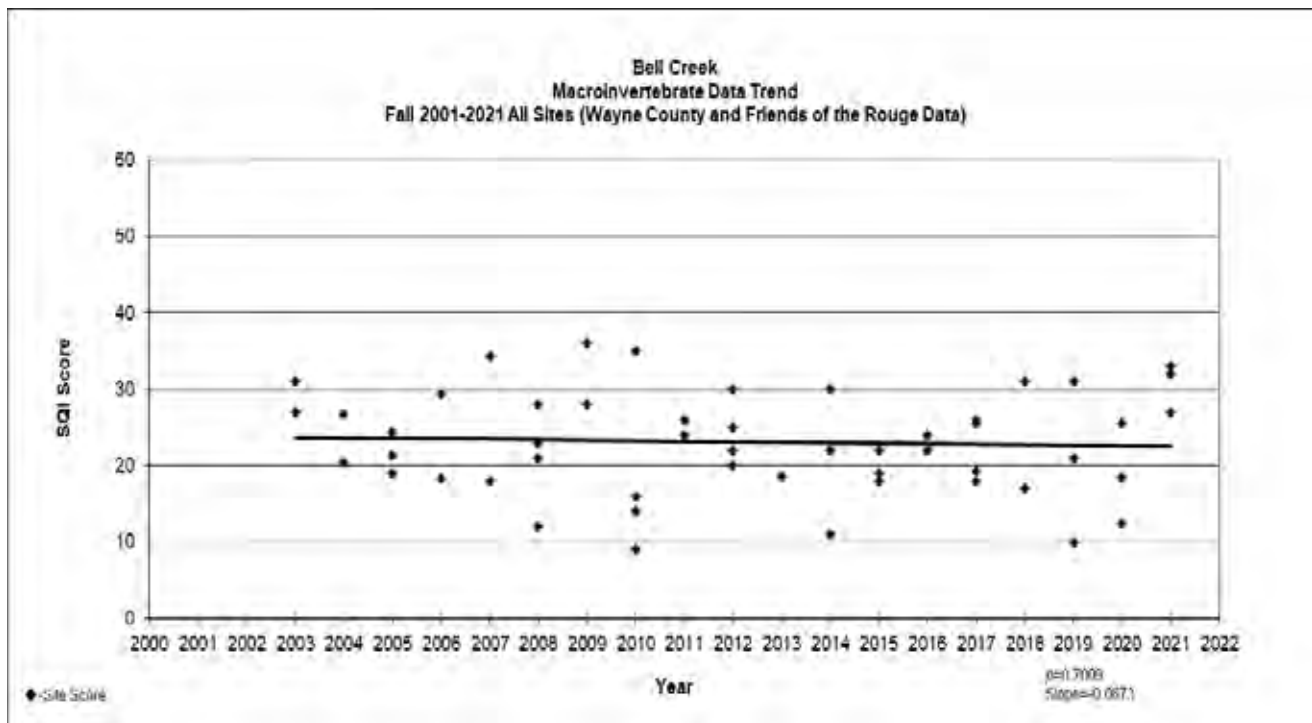
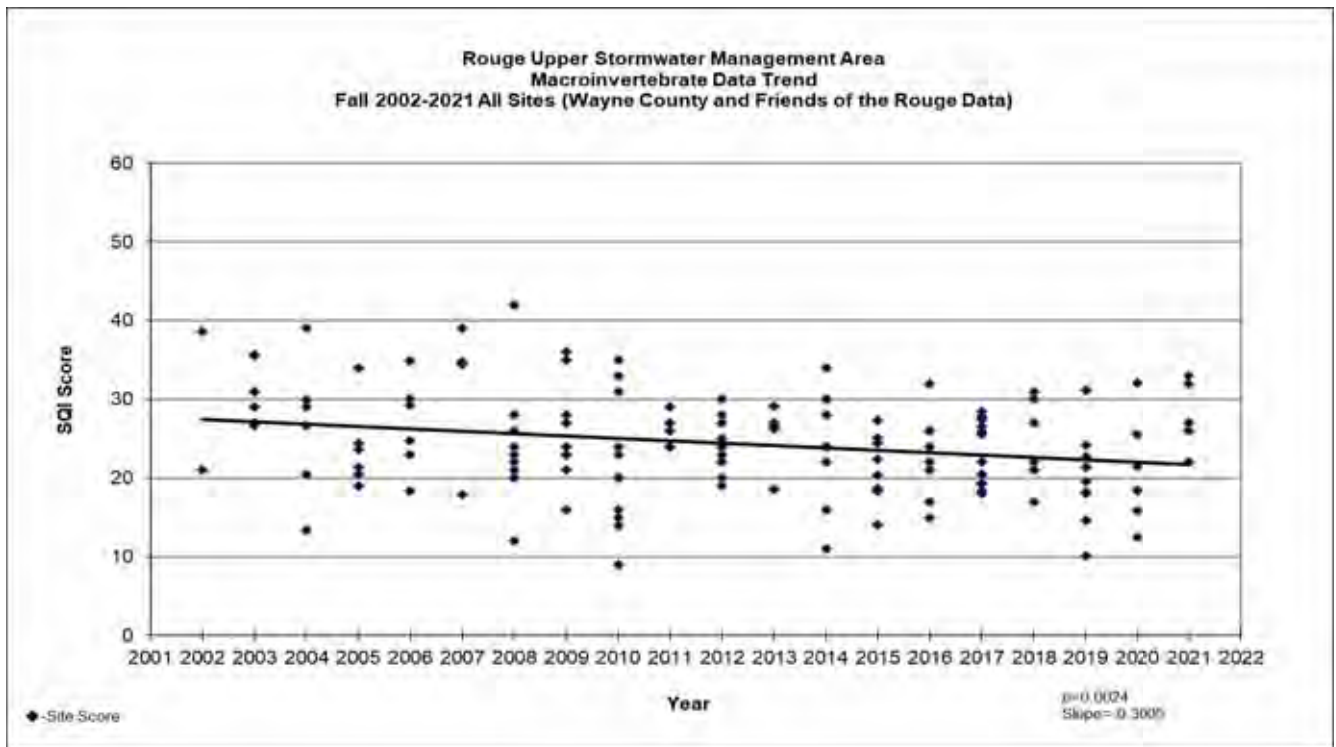


## Data Trend Tables

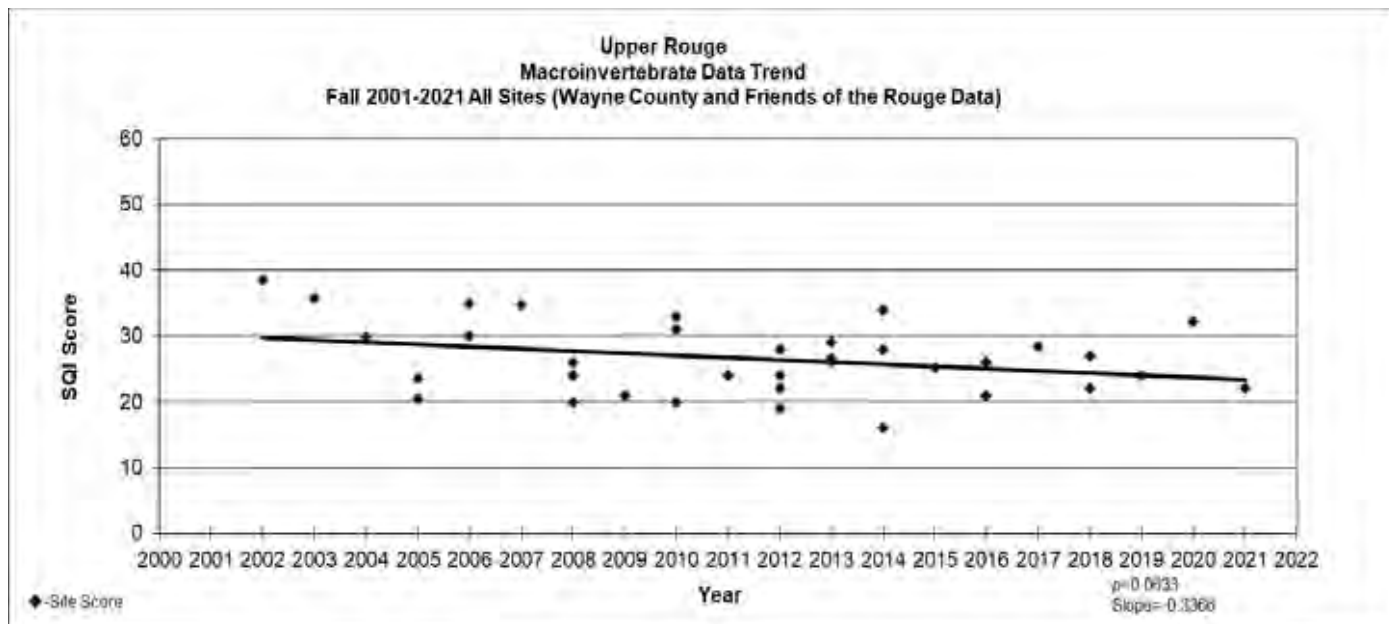
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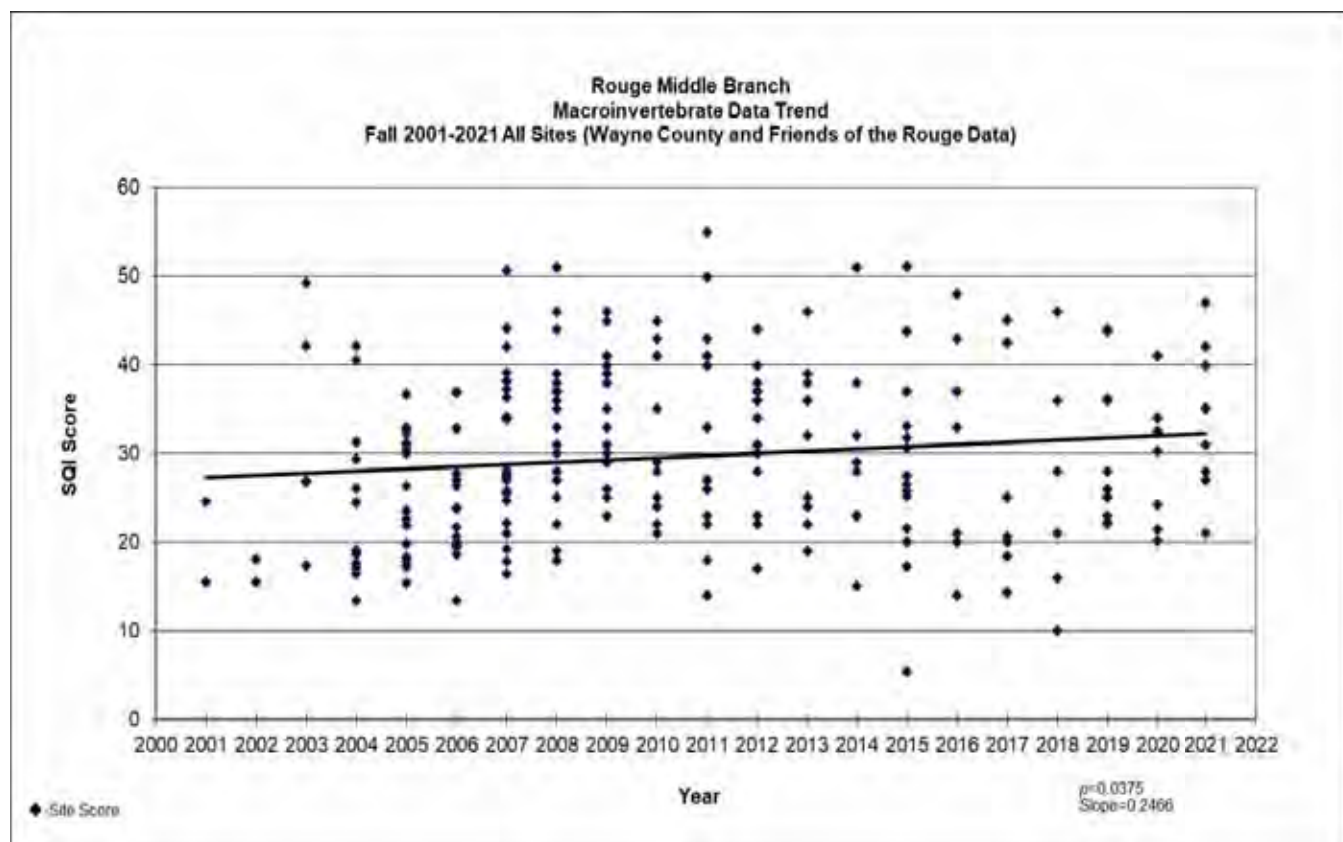
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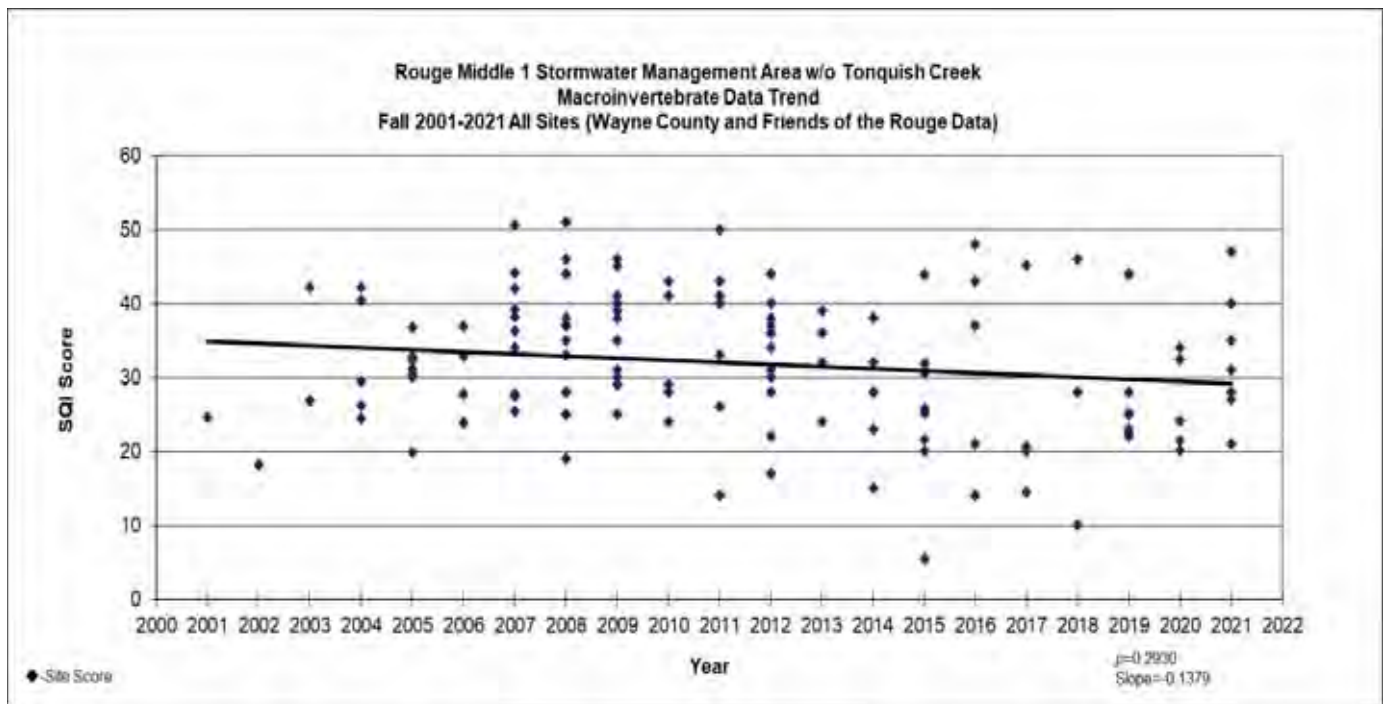
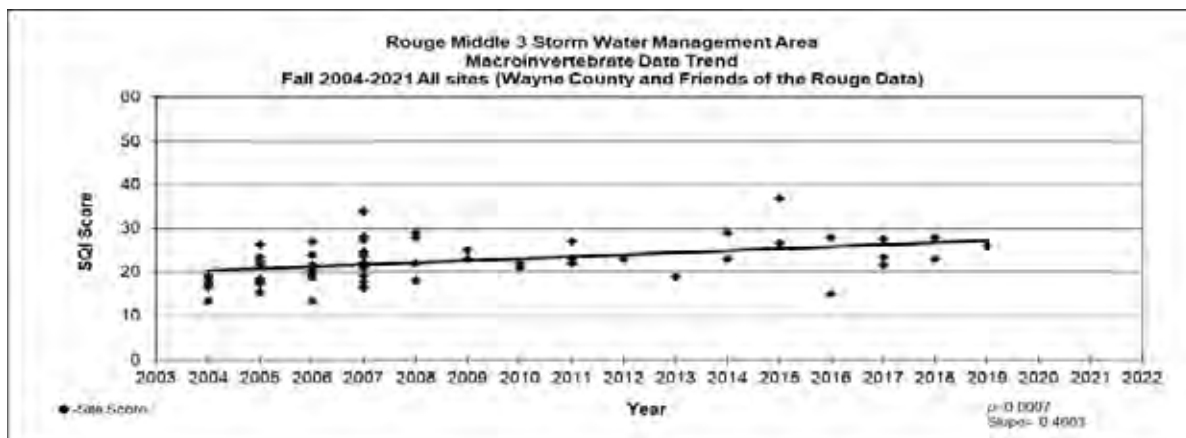
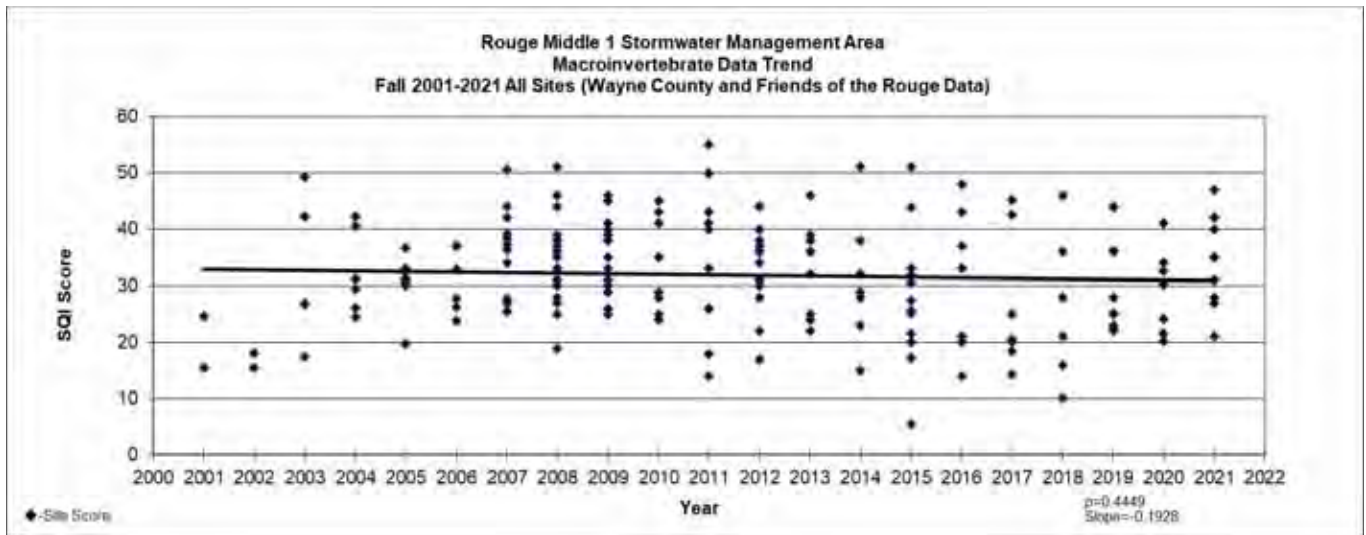




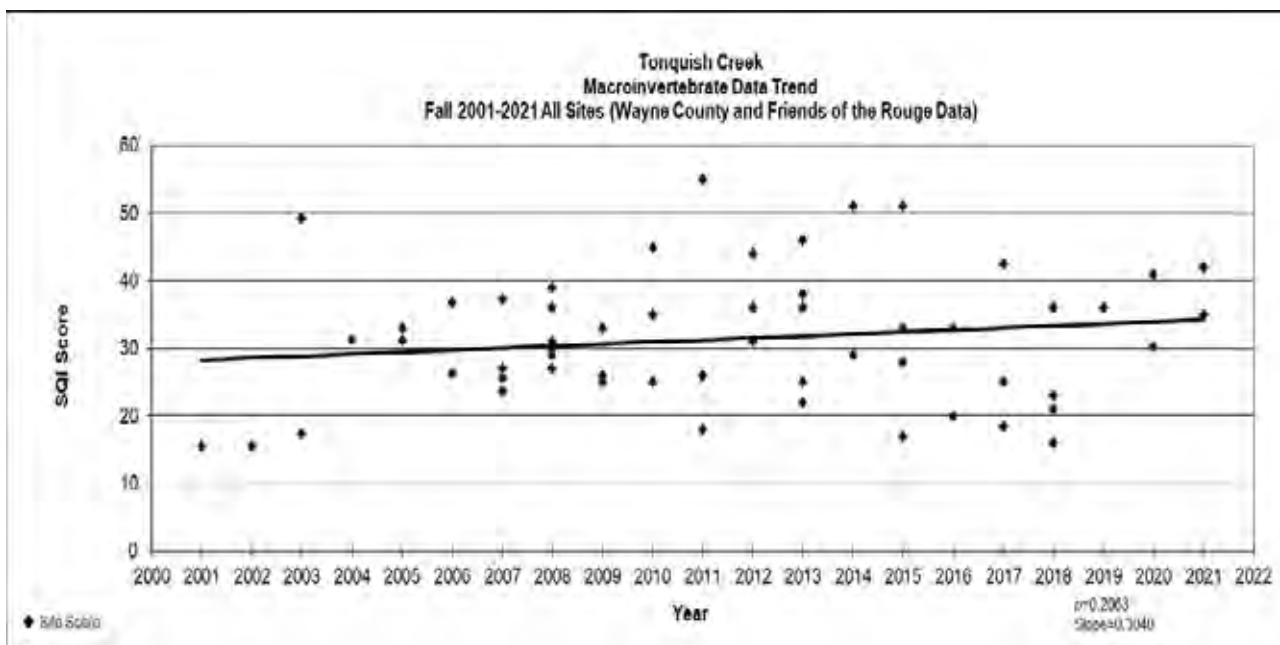
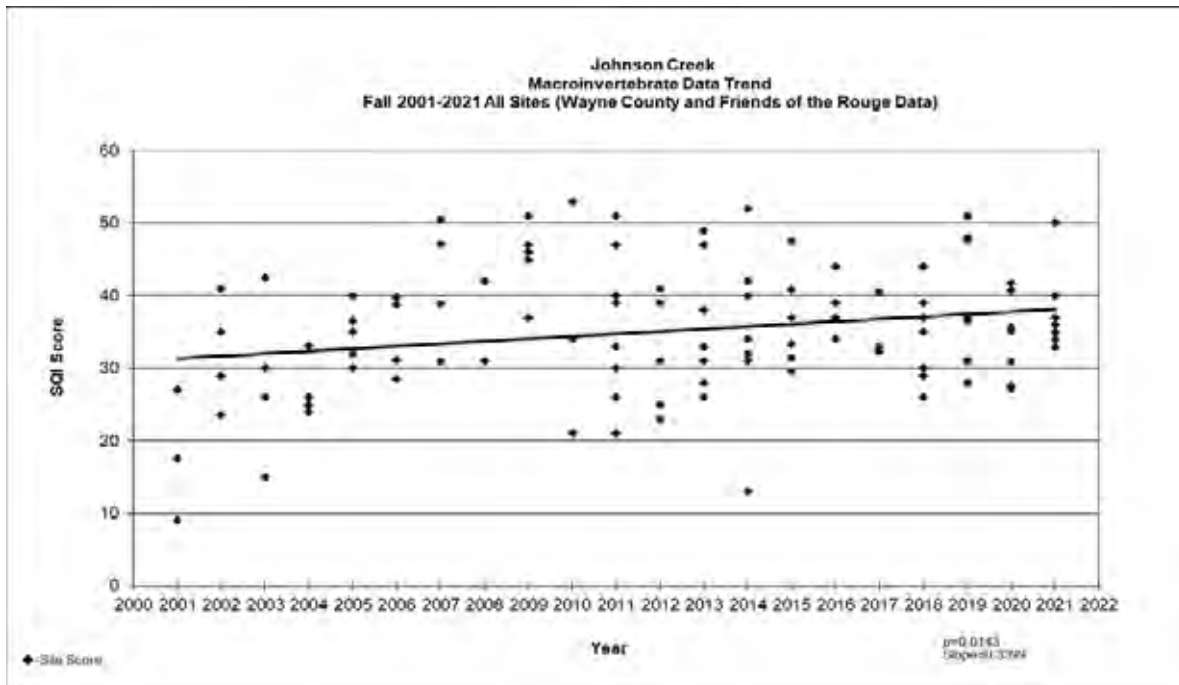


Middle

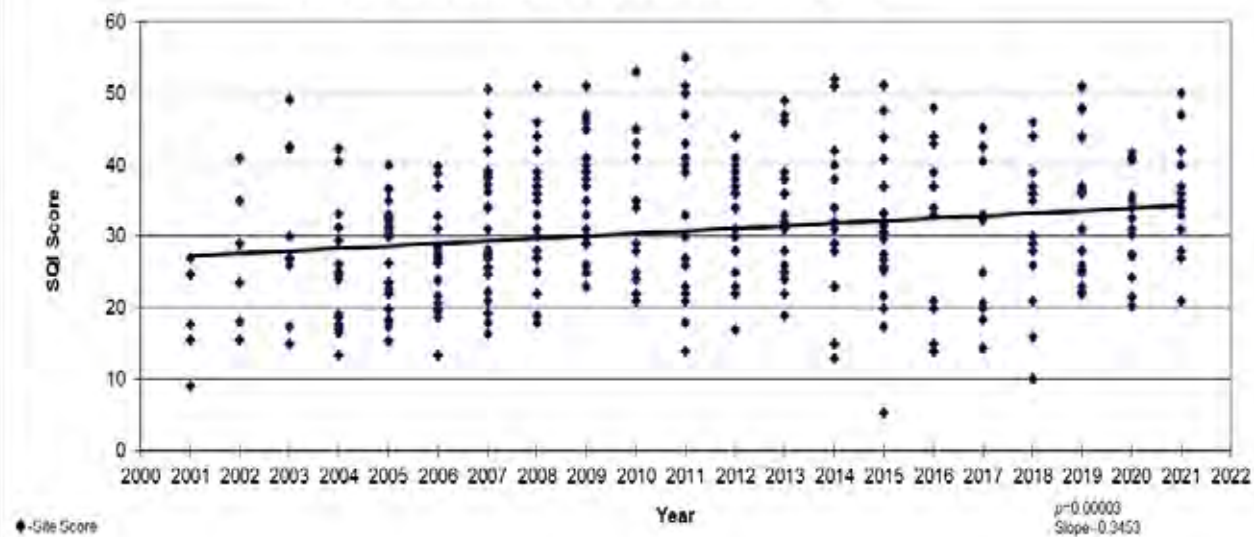




## Middle Tributaries

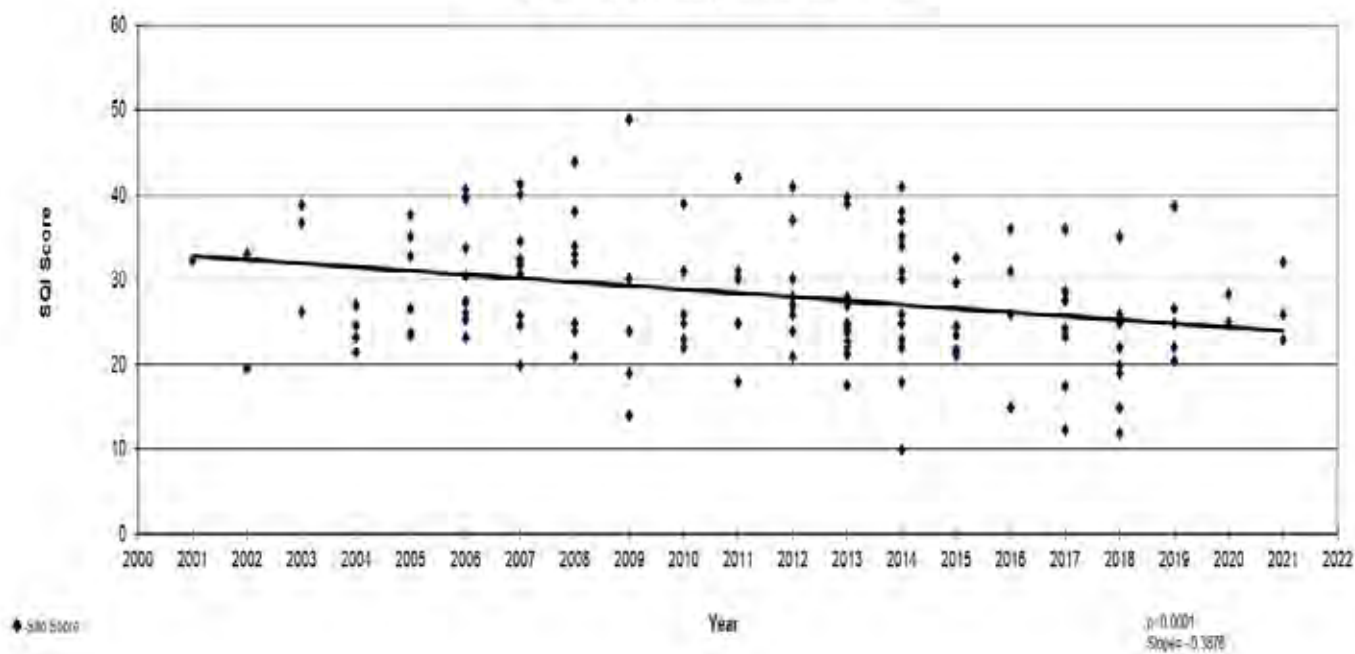


Rouge Middle Branch and Johnson Creek  
Macroinvertebrate Data Trend  
Fall 2001-2021 All Sites (Wayne County and Friends of the Rouge Data)



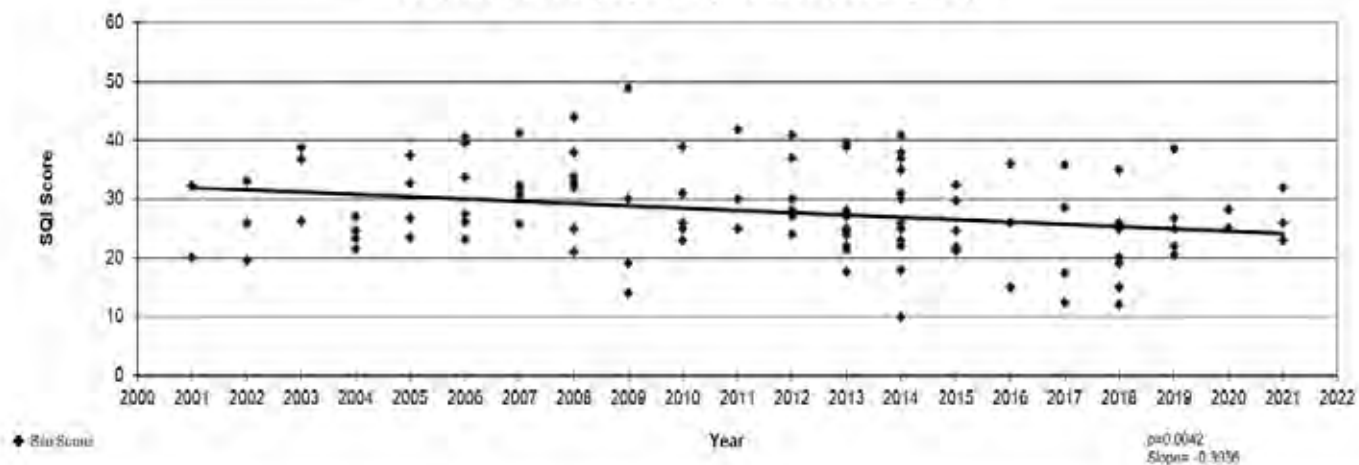
Lower

Rouge Lower Branch  
Macroinvertebrate Data Trend  
Fall 2001-2021 (Wayne County and Friends of the Rouge Data)

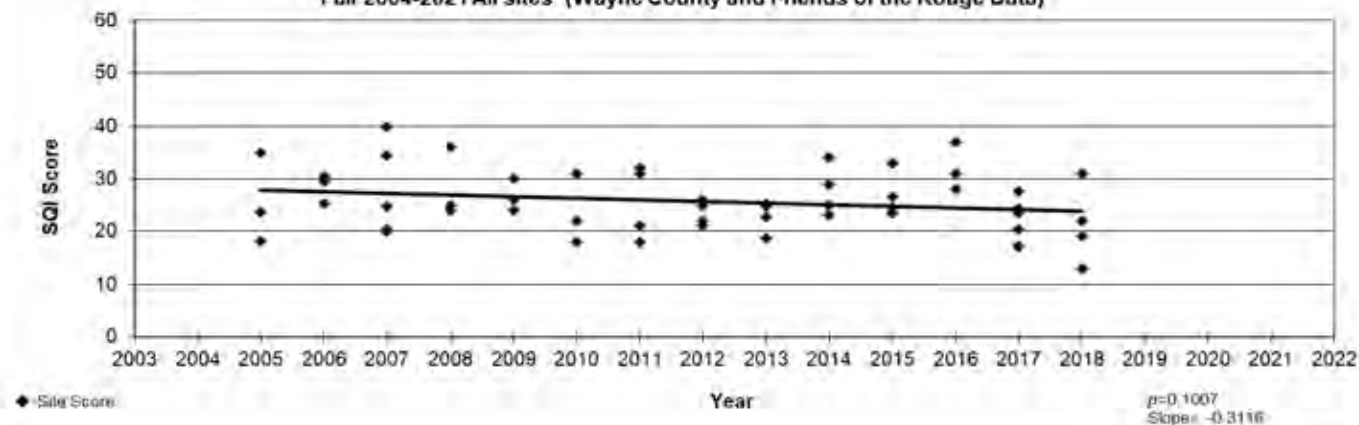




Rouge Lower 1 Storm Water Management Area  
Macroinvertebrate Data Trend  
Fall 2001-2021 All sites (Wayne County and Friends of the Rouge Data)



Rouge Lower 2 Storm Water Management Area  
Macroinvertebrate Data Trend  
Fall 2004-2021 All sites (Wayne County and Friends of the Rouge Data)





**www.therouge.org**  
650 Church Street Suite 209  
Plymouth, MI 48170  
734-927-4904

## Rouge River Benthic Monitoring Program Spring 2021 Report

This report covers benthic macroinvertebrate monitoring at 35 sites on Rouge River tributaries and branches in the spring of 2021. Most were sampled during the Spring Bug Hunt on April 17, 2021 where 101 attendees sampled 25 sites in 13 teams. Two sites were sampled as part of the spring training for Team Leaders on April 10. An additional eight sites were sampled by Sue Thompson on her own and leading teams of FOTR volunteers.

### FRIENDS OF THE ROUGE BENTHIC MONITORING PROGRAM

FOTR's benthic monitoring program was started in 2001 to involve a large number of volunteers in monitoring the health of the watershed by sampling the creeks of the Rouge River. The types and number of benthic macroinvertebrates found can be used to assess water quality. Each team of volunteers samples two sites under the direction of a trained team leader. Samples of each organism are collected and field identifications are verified in the lab.

### Stream Quality Index, Taxa, EPT and Sensitive Families

Each site is given a **Stream Quality Index (SQI)** which is determined by weighting each type and number of organisms found by their sensitivity ratings. A higher proportion of sensitive organisms such as mayflies and caddisflies results in a higher score. A number of different organisms also results in a high score. The SQI is then given a rating:

>48 = EXCELLENT  
34-48 = GOOD  
19-33 = FAIR  
<19 = POOR

Number of **taxa** represents the number of different families of organisms. A higher number of taxa indicate a healthier site.

**EPT** refers to the number of mayfly, caddisfly and stonefly families found; these three orders contain some of the most sensitive organisms.

**Sensitive Families** refers to insects that are rated 1 on the Hilsenhoff Sensitivity Index.

## Overall Scores

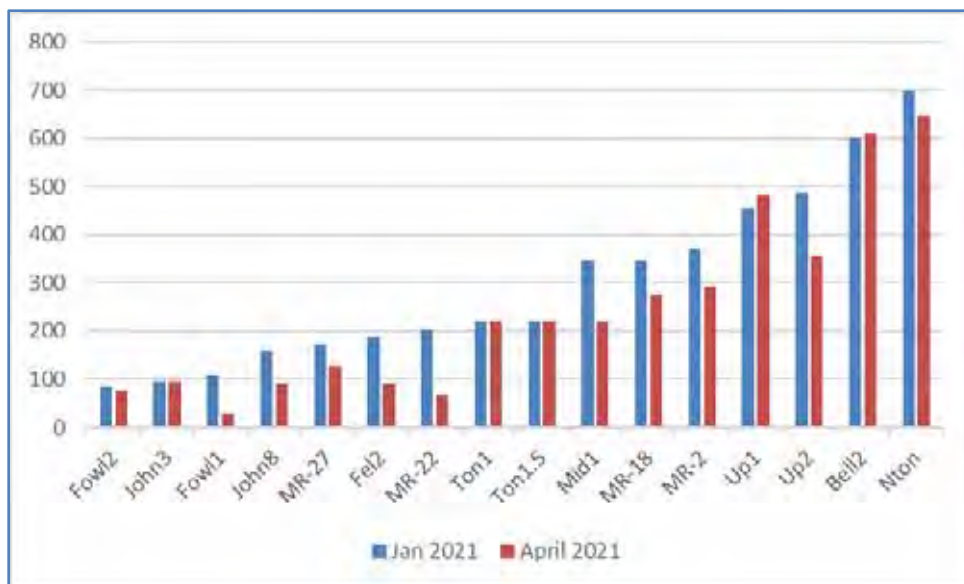
Fifty-four percent of the sites (19/35) had FAIR Stream Quality Index scores (SQI) with an average score of 30 (Table 3 p. 10, map p. 8). Eleven sites rated GOOD and four sites had POOR scores. There was one EXCELLENT score. The number of taxa at each site ranged from a low of four to a high of 21, with an average of 12. The number of insect taxa ranged from 2-15 with an average of eight. The number of EPT (see sidebar) ranged from zero to five with an average of two. Nine sites had sensitive families including Rhyacophilidae, Corydalidae, Leptophlebiidae, Lepidostomatidae, and Perlodidae and Nemouridae.

## Road Salt

FOTR began testing sites for road salt during the Winter Stonefly Search in 2020 at the request of the Izaak Walton League using their simple test strip for chloride. After finding levels that would affect aquatic life at many sites in 2020 and 2021, FOTR decided to test the sites in the spring and fall to see how levels change when roads are no longer being salted. While a few sites showed a reduction in levels in spring, many were

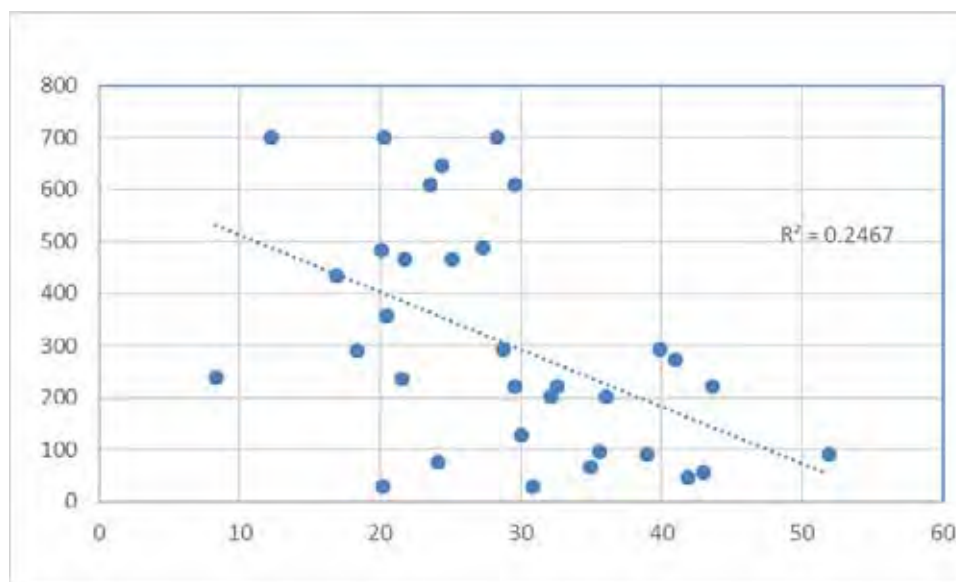
similar to their January reading or slightly increased (Chart 1)

**Chart 1: Chloride ppm Winter vs. Spring 2021**



Is the chloride affecting aquatic life? According to the EPA, chloride levels above 230 ppm in freshwater systems kill fish slowly and levels above 860 ppm kill fish quickly. We plotted the chloride levels against the Stream Quality Index score and found a significant negative relationship between high chloride levels and Stream Quality Index scores. All sites with SQI scores above 30 or GOOD had chloride readings below 300 ppm.

**Chart 2: Chloride ppm vs Stream Quality Index**



## Data Trends

We compared the spring 2021 scores to the average for each site. We did not include Wall1 since major construction in the stream prevented the team from fully sampling. Of the 34 sites, four (12%) scored above a standard deviation of the mean, four (12%) were below and 26 (76%) were stable.

To compare trends over time, we analyzed the trends in SQIs over time (Table 1, p. 3; graphs p. 12-15). The Middle 1 and the Middle 3 subwatersheds are showing significant positive trends, even when combined. No other subwatershed had significant trends.

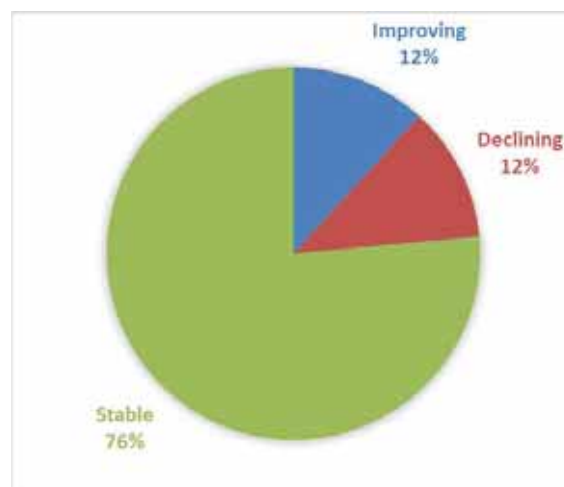


Table 1: Spring Data Summary 2001-2021					
Branch	slope	p-value	True trend	Subwatershed average score	Water Quality Rating
Main 1-2	0.0217	0.8535	no trend	27	Fair
Main3-4*	-0.1351	0.7504	no trend	25	Fair
Upper	-0.0953	0.4177	no trend	24	Fair
Johnson Creek	0.2493	0.1248	no trend	39	Good
Middle 1	0.6546	0.0002	yes, positive	30	Fair
Middle 3*	0.5756	0.0110	yes, positive	20	Fair
Lower 1	0.0885	0.5356	no trend	30	Fair
Lower 2*	-0.1050	0.6097	no trend	26	Fair
Middle 1 and Middle 3 combined	0.689	0.000005	yes, positive	27	Fair
*no sites sampled in spring 2021 in these subareas					

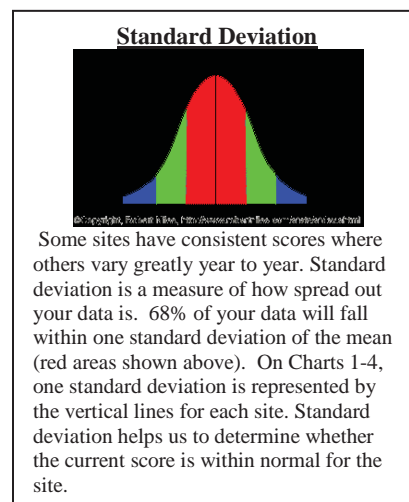
In addition to the trend analysis by subwatershed, a site-by-site analysis of all the sites was done (Table 2). Two sites had significant trends for the individual sites. MR-22 had a negative trend in 2019 and this continues. MR-27 just started to show a negative trend this spring. New development upstream is most likely affecting these sites.

Table 2: Spring Bug Hunt Trends by Site 2001-2021						
Site	p-value	Slope	True trend	Average SQI	Water Quality Rating	notes
MR-22	0.0190	-1.0085	yes, negative	40	Good	continues negative trend
MR-27	0.0148	-3.6774	yes, negative	46	Good	new negative trend

## Lower Branch

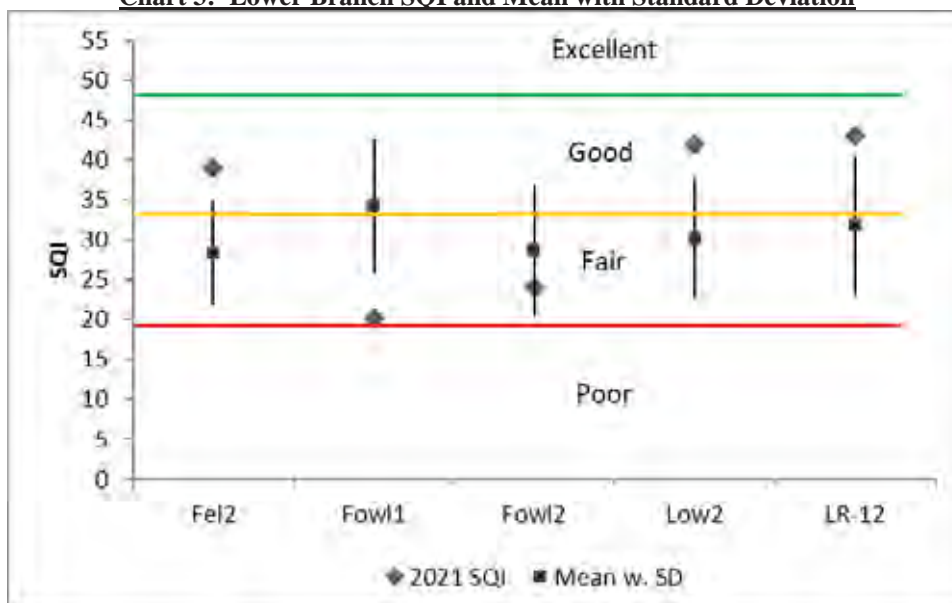
Five sites were sampled on the Lower Branch of the Rouge (see Table 3): two sites on Fowler Creek, one on Fellows Creek and two main branch sites. Two sites scored FAIR and three GOOD. The average SQI was 34, GOOD. The number of taxa ranged from 8-16 and EPT 2-6. Two sensitive families were found at Low2: Free-living caddisflies (Rhyacophilidae) and Perlodid stoneflies (Perlodidae). Free-living caddisflies were also found at Fowl1. Chloride levels were low in all Lower sites (30-91 ppm, map p. 8).

The Lower1 and Lower 2 subwatersheds did not have significant trends though the slope was positive for the Lower 1 and negative for the Lower 2 (Table 1, graphs p. 12). In comparison to past data, three sites (Fel2, Low2 and LR-12) were above a standard deviation of the mean (Chart 3), one was below (Fowl1) and one average (Fowl2).





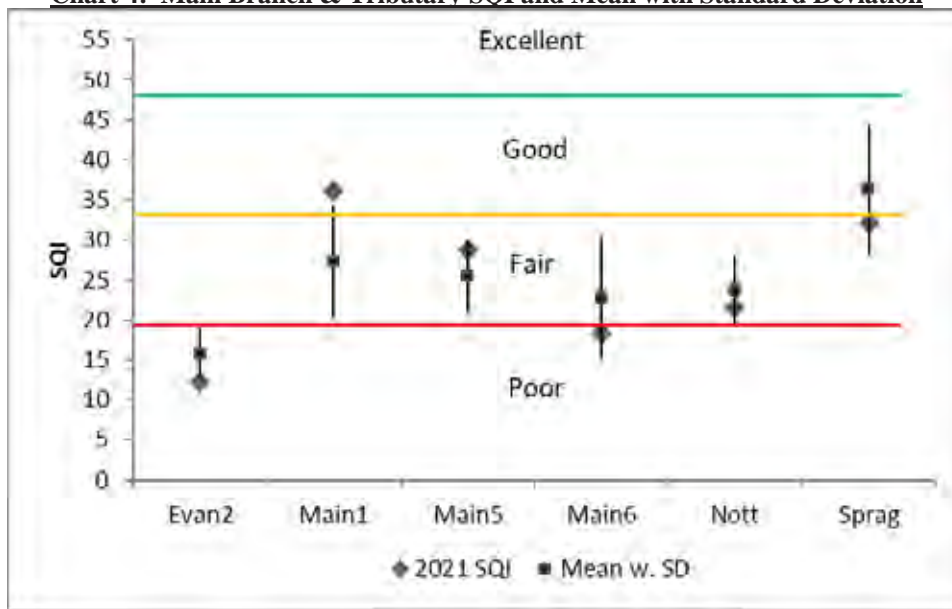
**Chart 3: Lower Branch SQI and Mean with Standard Deviation**



### Main Branch

Six sites on the Main Branch were sampled, including Evans Creek, Sprague and Nottingham Creeks. One scored GOOD, three FAIR and two POOR with an average score of 25 (FAIR). The number of taxa ranged from 6-14 and EPT 1-3. No sensitive families were found. The Main 1/2 subwatershed did not show any significant trend (Table 1, graph p. 13). In comparison with past data (Chart 4) four sites were average, one was above a standard deviation of the mean (Main1) and one was below a standard deviation of the mean (Evan2). When analyzed by site (Table 2), no site had a significant trend. Chloride levels were all above 200 in the Main branch sites and Evan2 was at 700 ppm (map p. 8).

**Chart 4: Main Branch & Tributary SQI and Mean with Standard Deviation**



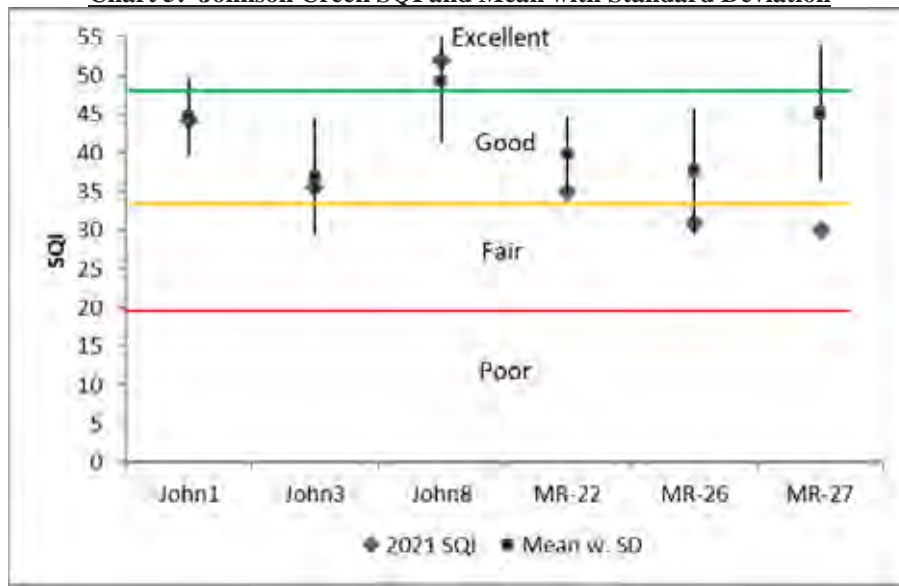
## Middle Branch

Nineteen sites were sampled on the Middle branch including three tributaries: Johnson, Tonquish and Walled Lake Branch (includes Bishop and Ingersoll) Creeks. The average score for the Middle Branch was FAIR (32). One site scored EXCELLENT (John8), seven sites scored GOOD, nine FAIR, one and two POOR. The number of insect taxa ranged from 2-15 and EPT 0-6. Sensitive families were found at seven sites. Most (five) of these sites were on the Johnson Creek. Lepidostomatid casemaker caddisflies were a surprise find at MR-18 as were dobsonflies (Corydalidae) at Bish2. For both of these sites, this was a first time for any sensitive species.

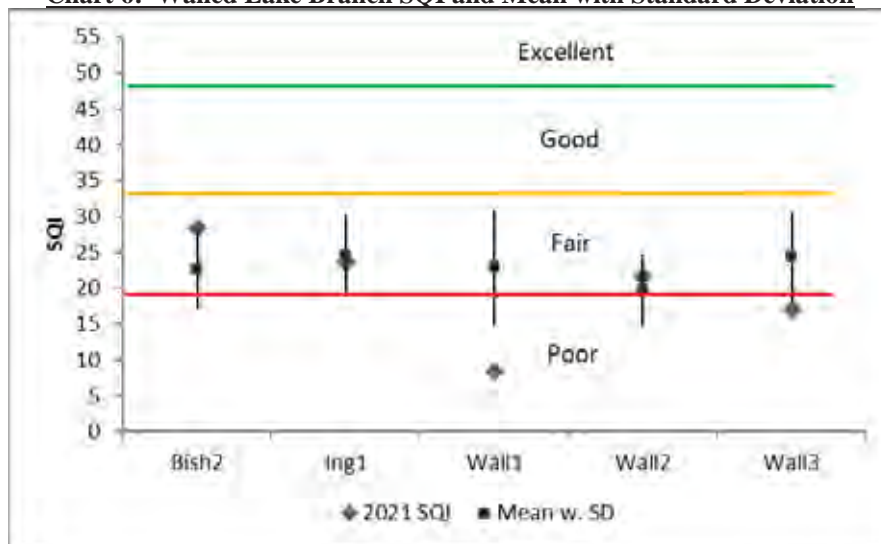
Salt levels were low in the Johnson Creek (30-129), high in the Tonquish Creek and Walled Lake branches (222-700) and medium downstream in the Middle Branch (222-293) (map p. 8).

Average scores for the Middle1 and the Middle3 subwatersheds had significant positive trends (Table 1, graphs p. 14-15). In comparison with past data (Chart 5-8), most sites were within a standard deviation of the mean with the exception of MR-27 on the Johnson Creek and Wall3 which were both below. Sediment from upstream development was noted at MR-27. Wall1 was also very low but construction in the creek limited the sampling. When sites were analyzed individually, MR-22 continues a significant negative trend and MR-27 has started to decline this spring (Table 2).

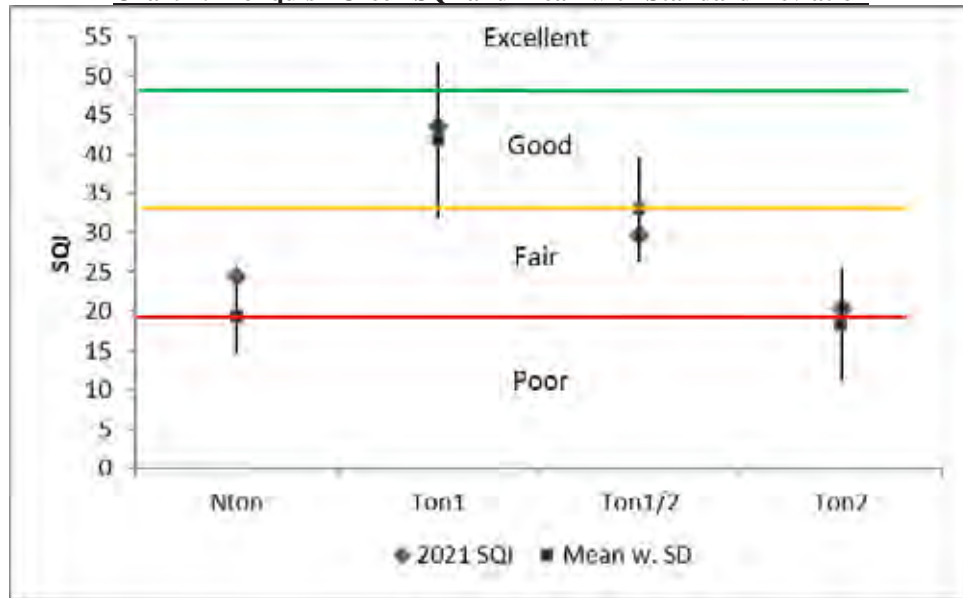
**Chart 5: Johnson Creek SQI and Mean with Standard Deviation**



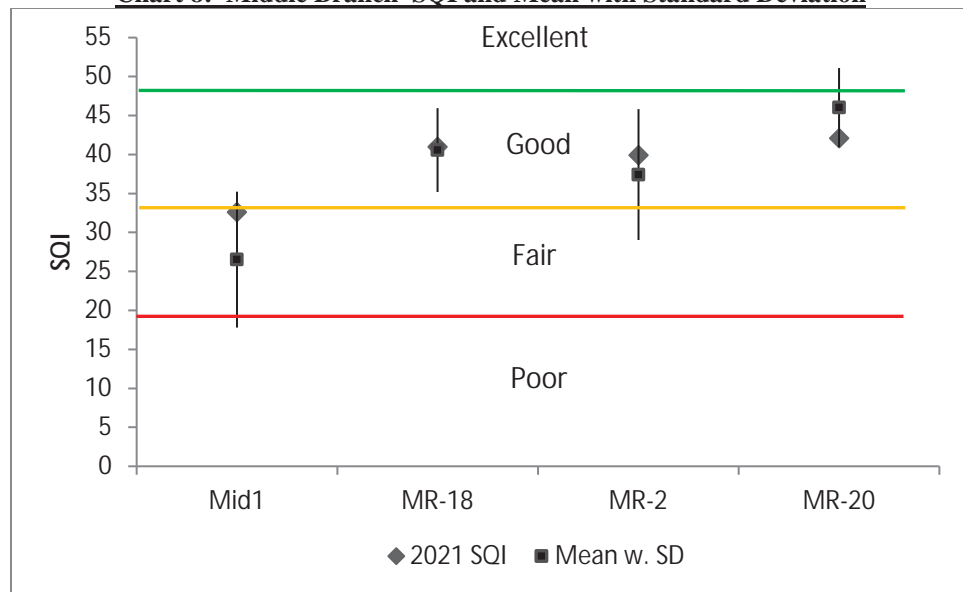
**Chart 6: Walled Lake Branch SQI and Mean with Standard Deviation**



**Chart 7: Tonquish Creek SQI and Mean with Standard Deviation**



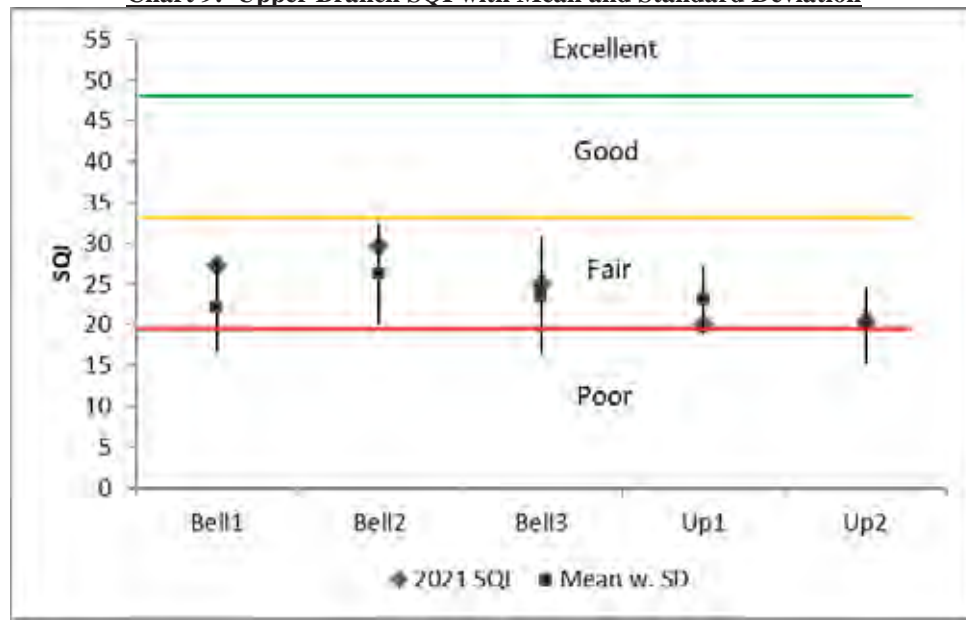
**Chart 8: Middle Branch SQI and Mean with Standard Deviation**



## Upper Branch

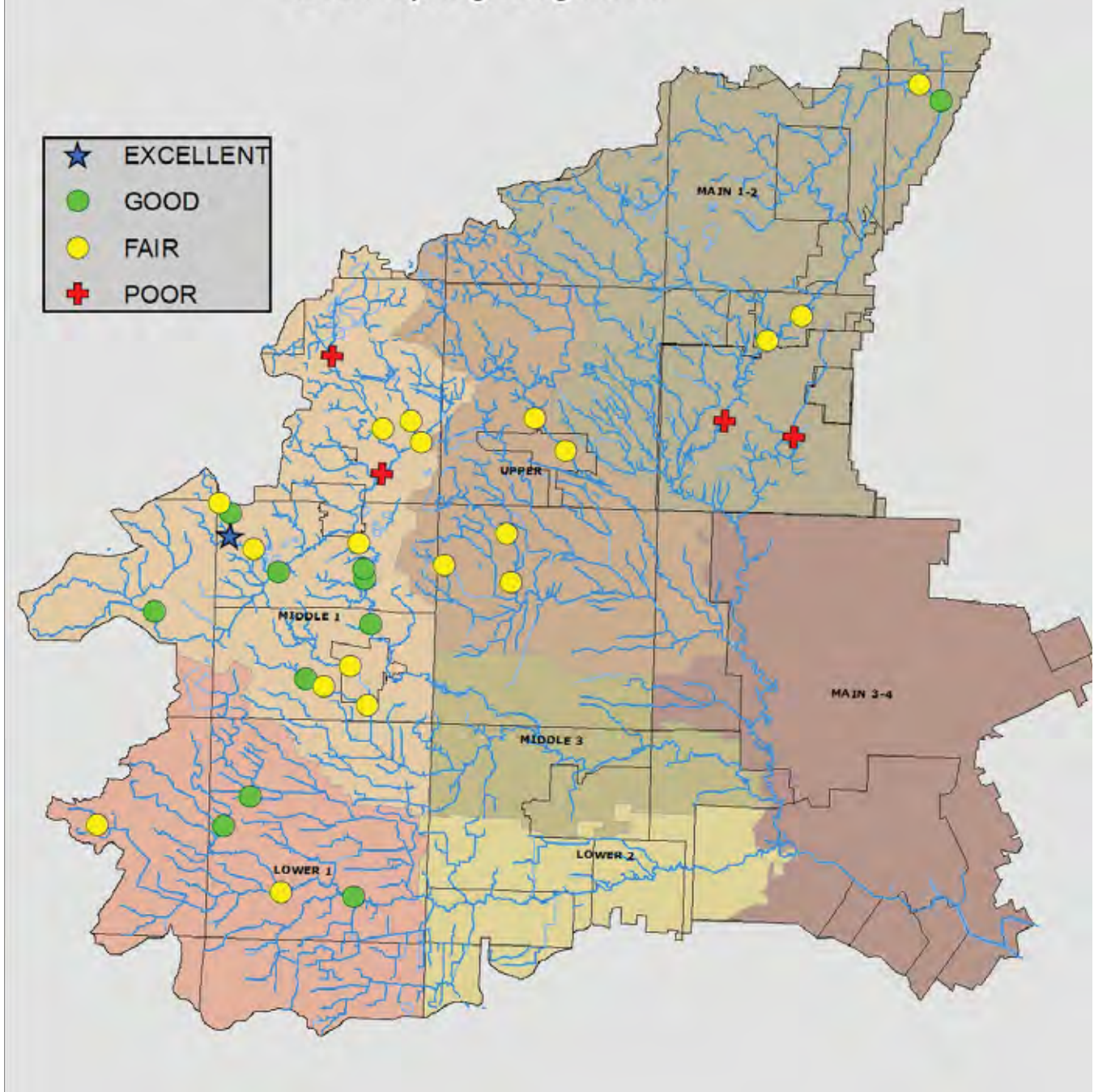
Five Upper branch sites were sampled this spring, including the Bell Branch. The average score for the Upper branch was FAIR (25) and all scored FAIR. The number of taxa ranged from 8-14 and EPT 0-1. No sensitive families were found. The Upper Subwatershed did not show any overall trend though the slope was negative (Table 1, graphs p. 15). In comparison to past data, all five sites were within a standard deviation of the mean (Chart 9). Chloride levels were at harmful levels for all Upper sites (358-610).

**Chart 9: Upper Branch SQI with Mean and Standard Deviation**





## 2021 Spring Bug Hunt



## 2021 Spring Chloride Levels

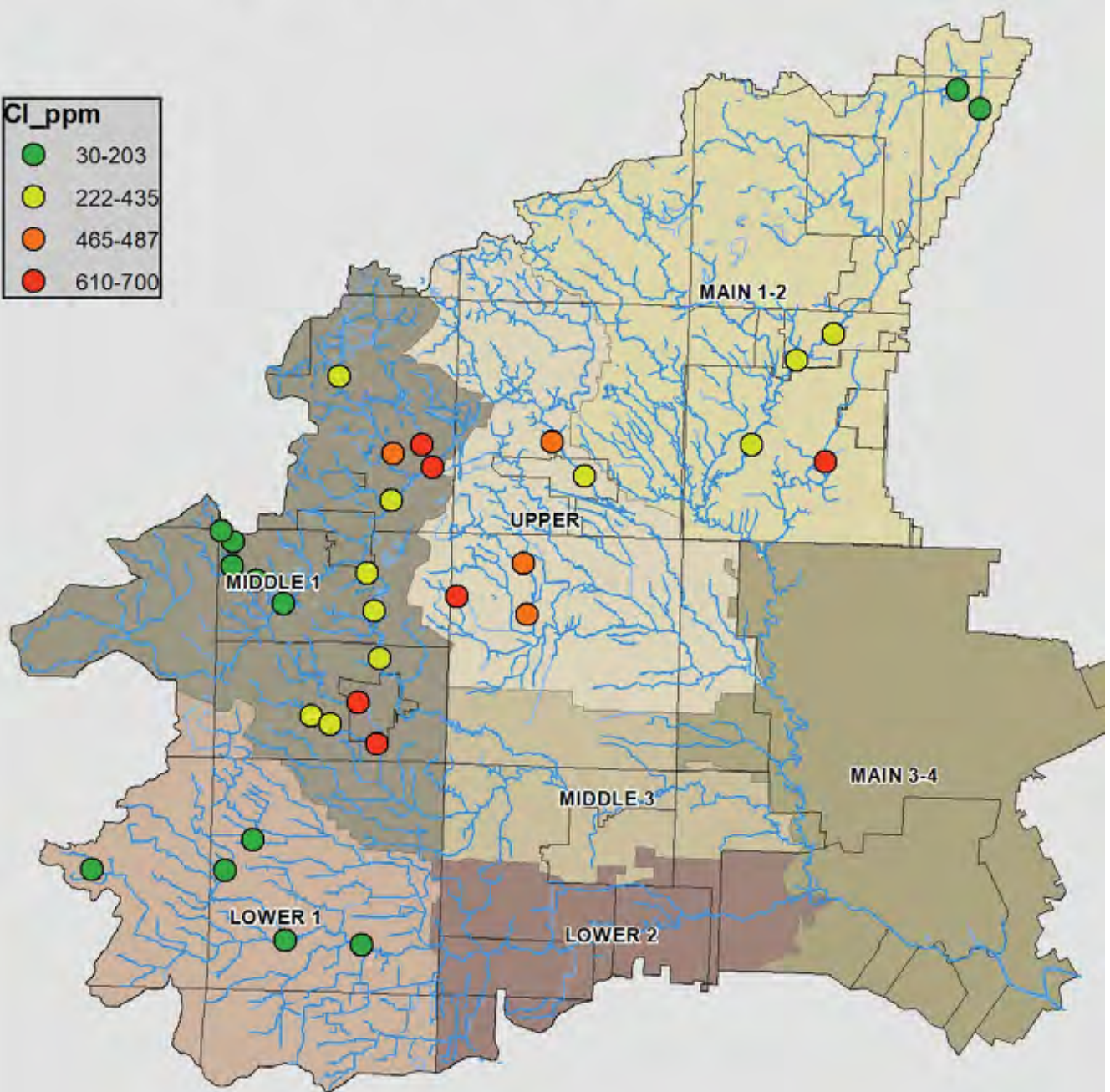
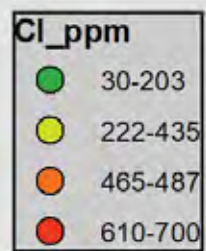


Table 3: Sites, Scores and Chloride										
Stream Name	FIELDID	City or Township	SQL	score	taxa	insect taxa	EPT	sensitive families found	sensitive families	Cl ppm
Lower Branch										
Fellows Creek	Fel2	Canton Twp	39	GOOD	15	10	2	0		91
Fowler Creek	Fowl1	Superior Twp	20	FAIR	9	7	2	1	Rhyacophilidae	30
Fowler Creek	Fowl2	Canton Twp	24	FAIR	8	4	2	0		76
Lower Rouge	Low2	Canton Twp	42	GOOD	16	12	6	2	Perlodidae, Rhyacophilidae	46
Lower Rouge	LR-12	Canton Twp	43	GOOD	15	10	3	0		56
Main Branch										
Evans Creek	Evan2	Southfield	12	POOR	6	3	1	0		700
Nottingham Creek	Nott	Beverly Hills	22	FAIR	9	4	1	0		237
Sprague Creek	Sprag	Troy	32	FAIR	14	10	2	0		203
Main Rouge	Main1	Troy	36	GOOD	13	8	3	0		203
Main Rouge	Main5	Beverly Hills	29	FAIR	10	6	2	0		293
Main Rouge	Main6	Southfield	18	POOR	8	4	2	0		290
Middle Branch										
Johnson Creek	John1	Salem Twp	44	GOOD	17	12	5	2	Rhyacophilidae, Perlodidae	
Johnson Creek	John3	Northville Twp	36	GOOD	16	11	4	1	Leptophlebiidae	97
Johnson Creek	John8	Northville Twp	52	EXCELLENT	21	15	6	2	Nemouridae, Perlodidae	91
Johnson Creek	MR-22	Northville Twp	35	GOOD	14	11	4	2	Perlodidae, Leptophlebiidae	67
Johnson Creek	MR-26	Northville Twp	31	FAIR	14	7	2	1	Leptophlebiidae	30
Johnson Creek	MR-27	Northville	30	FAIR	12	9	3	0		129
Tonquish Creek	Ton1	Plymouth Twp	44	GOOD	16	11	4	0		222
Tonquish Creek	Ton1/2	Plymouth Twp	30	FAIR	11	8	3	0		222
Tonquish Creek	Ton2	Plymouth Twp	20	FAIR	8	5	2	0		700
Tonquish Creek	Nton	Plymouth	24	FAIR	8	5	2	0		646
Bishop Creek	Bish2	Novi	28	FAIR	10	7	1	1	Corydalidae	700
Ingersoll Creek	Ing1	Novi	24	FAIR	10	5	0	0		610
Walled Lk Drainage	Wall1	Novi	8	POOR	4	2	0	0		240
Walled Lk Drainage	Wall2	Novi	22	FAIR	10	5	1	0		465
Walled Lk Drainage	Wall3	Novi	17	POOR	7	4	1	0		435
Middle Rouge	Mid1	Northville Twp	33	FAIR	13	8	1	0		222
Middle Rouge	MR-20	Northville Twp	42	GOOD	19	13	4	0		
Middle Rouge	MR-2	Northville Twp	40	GOOD	16	10	4	0		293
Middle Rouge	MR-18	Plymouth Twp	41	GOOD	17	10	5	1	Lepidostomatidae	273
Upper Branch										
Bell Branch	Bell1	Livonia	27	FAIR	12	7	1	0		487
Bell Branch	Bell2	Livonia	30	FAIR	14	8	0	0		610
Bell Branch	Bell3	Livonia	25	FAIR	10	6	1	0		465
Upper Rouge	Up1	Farmington Hills	20	FAIR	8	6	1	0		482
Upper Rouge	Up2	Farmington	21	FAIR	8	6	1	0		358

Thank you to all the **volunteers, Wayne County** and **Sue Thompson** for sampling additional sites, identifying difficult specimens and doing the trend analysis, **Bruce McCulloch** for data analysis and report review, **Deirdre Devlin** and **Schoolcraft College** students for sampling one site.

This program is supported by the Erb Family Foundation, Washtenaw County, the City of Southfield, the City of Troy, the Village of Beverly Hills, the City of Plymouth, Plymouth Township, the City of Novi, the City of Livonia and the City of Farmington.

**Fall Bug Hunt**  
**Oct. 16, 2021 10 am-4pm**

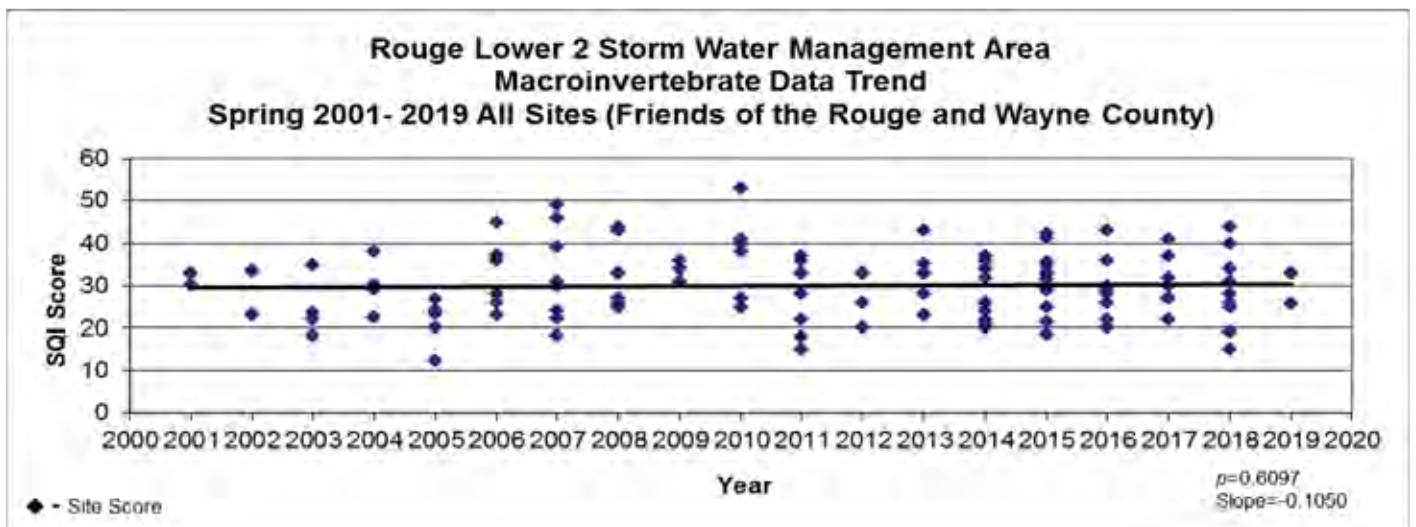
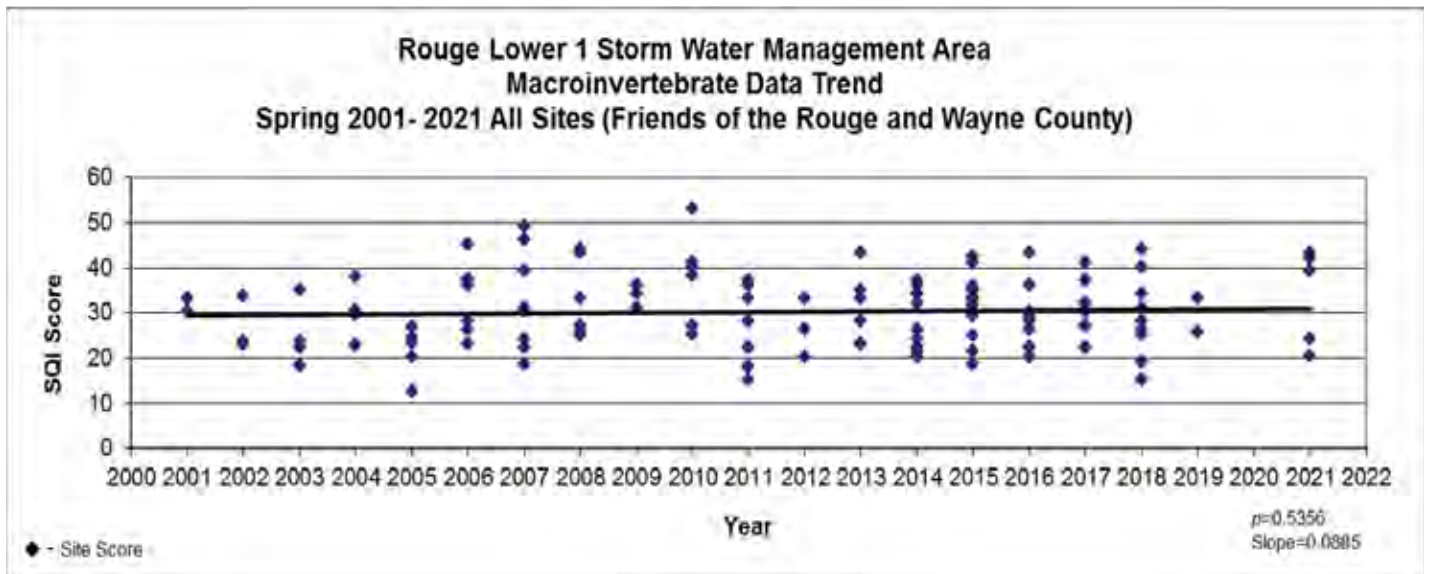
**Sign up online today (deadline Oct. 1, 2021 at [www.therouge.org](http://www.therouge.org))**

**Team Leader Training – Sat. Oct. 2, 2021 9am-3pm (must have participated in a previous event)**

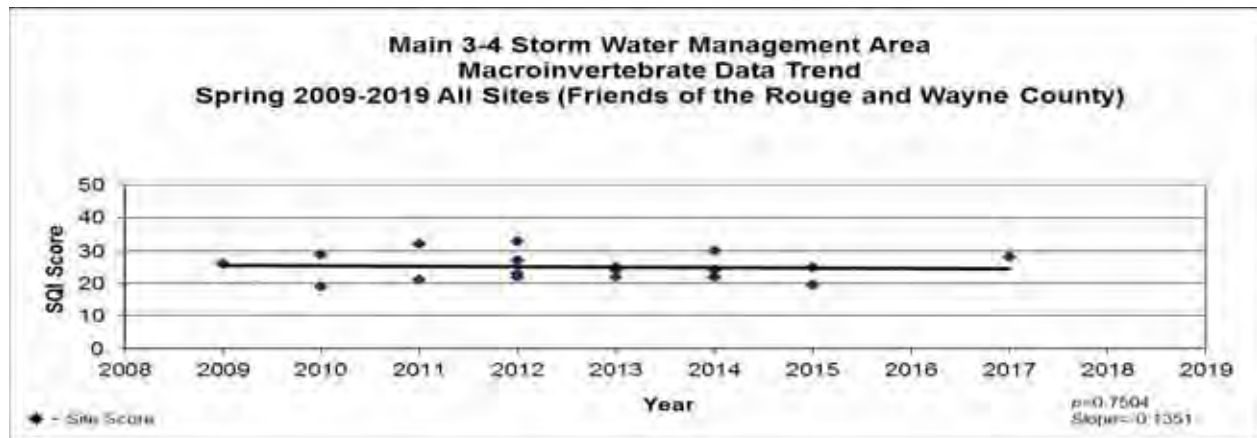
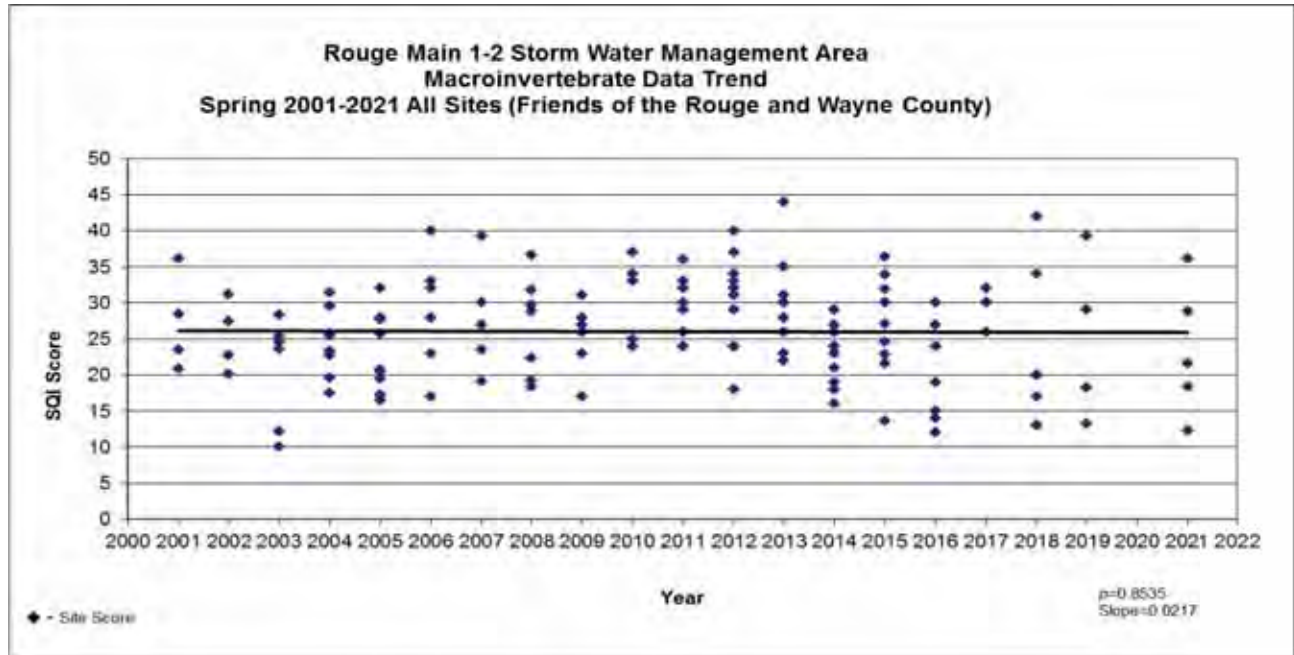


## Trend Graphs

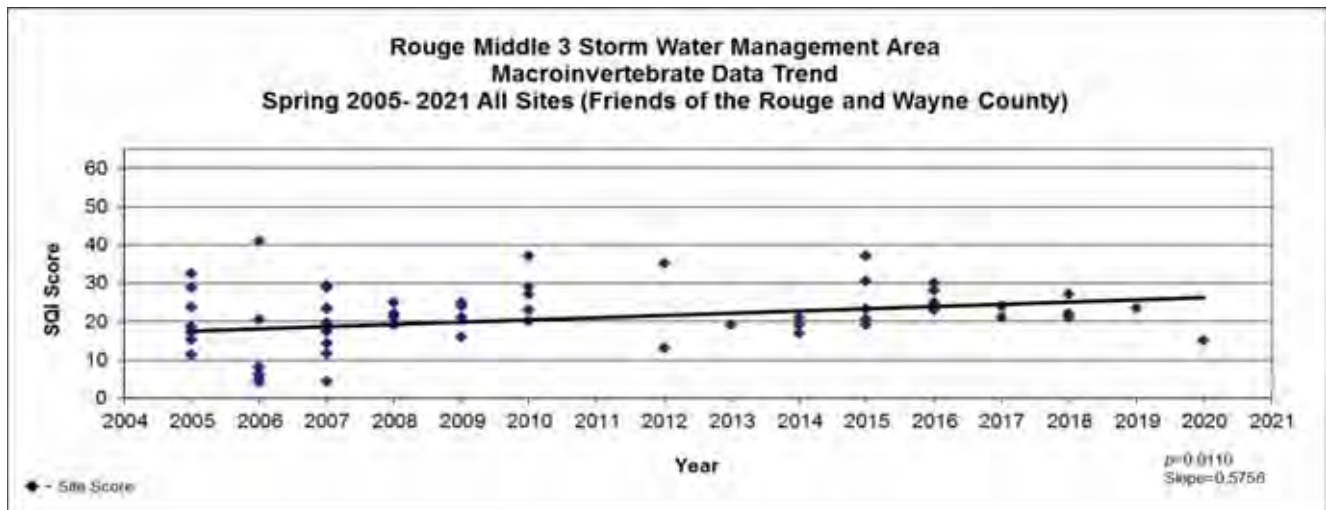
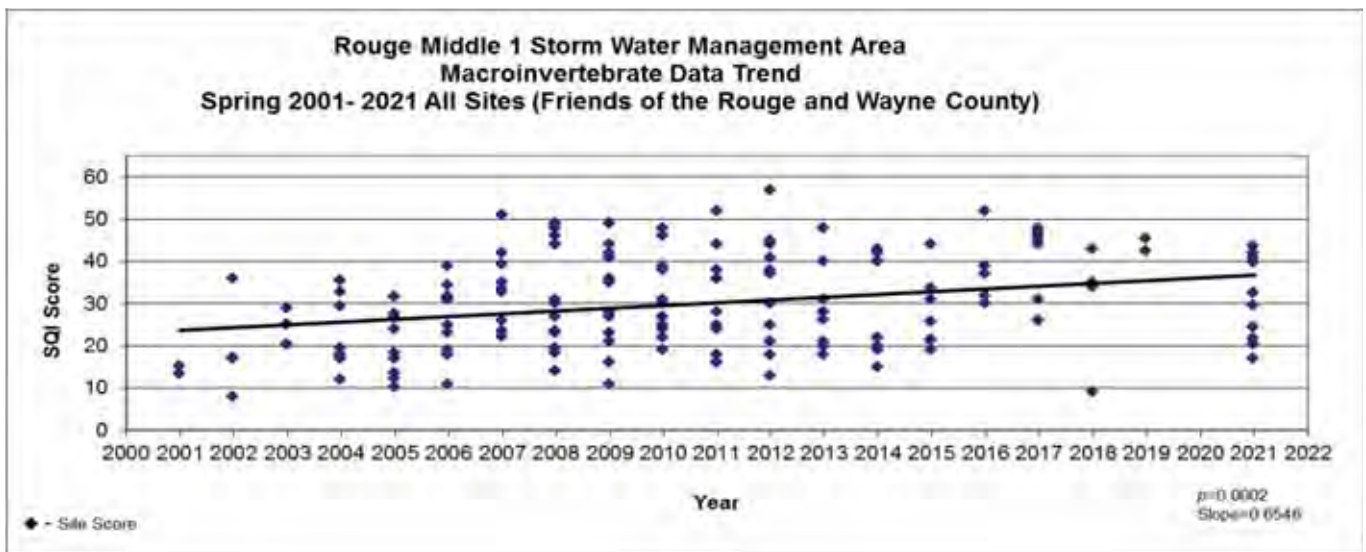
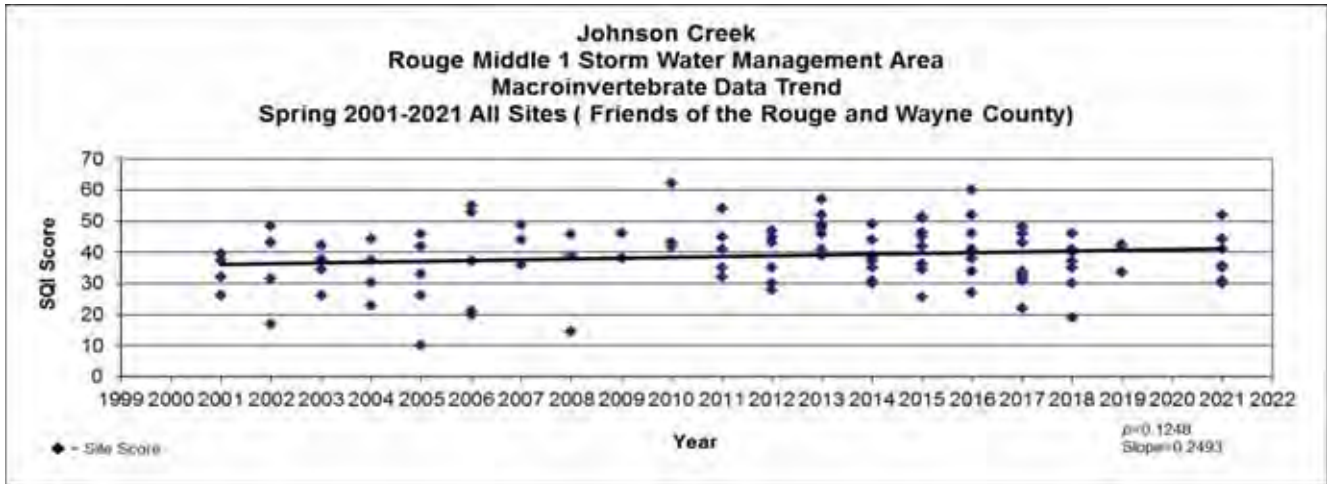
### Lower Branch



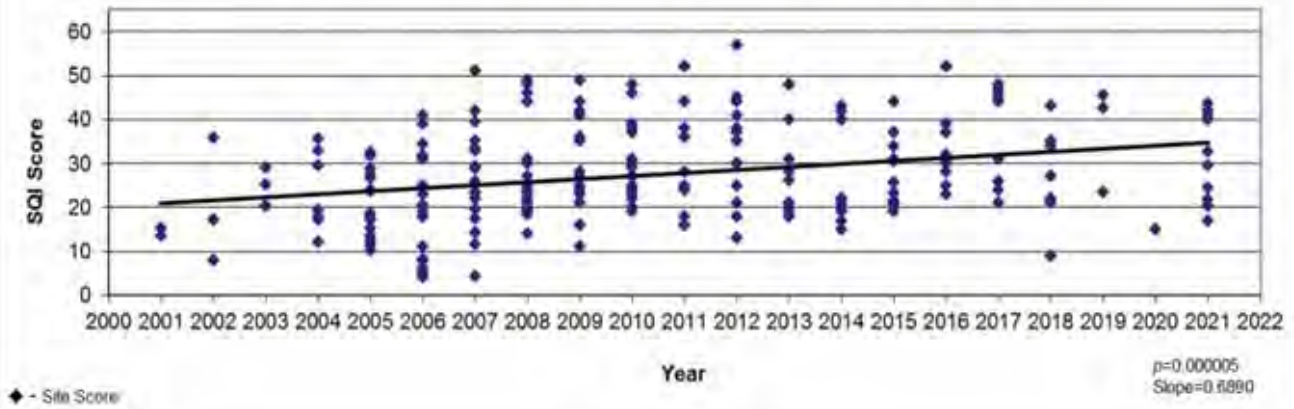
## Main Branch



## Middle Branch

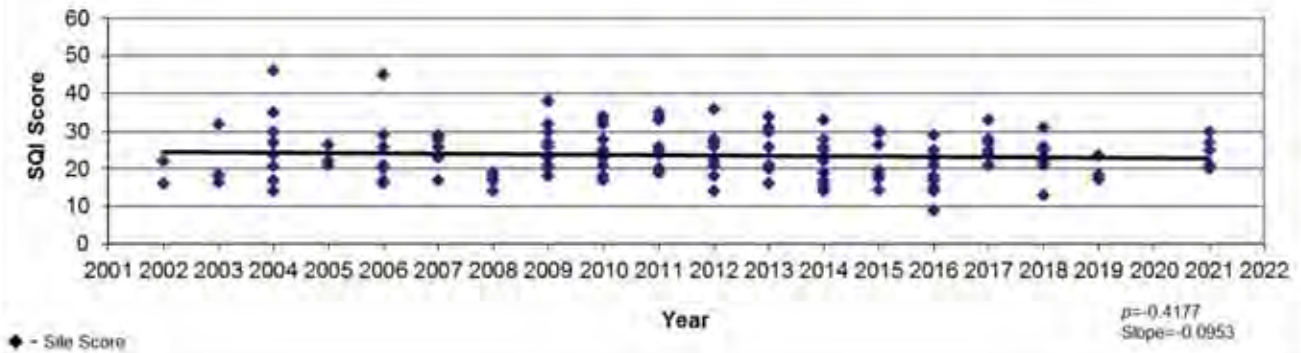


**Rouge Middle 1 and 3 Storm Water Management Area  
Macroinvertebrate Data Trend  
Spring 2001- 2021 All Sites (Friends of the Rouge and Wayne County)**



### Upper Branch

**Upper Rouge Storm Water Management Area  
Macroinvertebrate Data Trend  
Spring 2002- 2021 All Sites (Friends of the Rouge and Wayne County)**



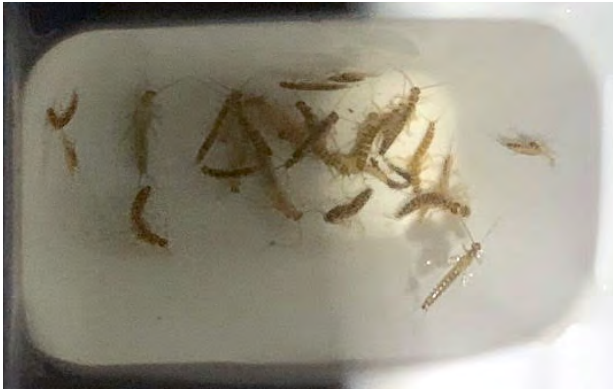




## Rouge River Watershed 2021 Winter Stonefly Search

[www.therouge.org](http://www.therouge.org)

Seventy-five people participated in Friends of the Rouge's 2021 Winter Stonefly Search on January 23 in eleven teams that sampled 20 sites. Due to the pandemic, Team Leaders met their volunteers at the sites and all volunteers completed health screenings, wore masks and practiced social distancing. To prepare volunteers for the event, we held a Stonefly Refresher on January 11. This former lab class was held



<https://youtu.be/Y3GZH3QJJ0>.

as a virtual Zoom webinar with 36 attendees. While we were disappointed that we could not offer the opportunity for participants to examine live materials and use microscopes, more people could participate in the virtual class than our small lab could accommodate in person. Thank you to Sue Thompson for co-presenting and adapting to virtual. The majority of the attendees were new to the search and had lots of good questions. We recorded the webinar and it is available here:

*Stoneflies are sensitive indicators of healthy streams. Unlike other insects, winter stoneflies develop into adult flies in the winter. The Winter Stonefly Search is part of Friends of the Rouge volunteer benthic macroinvertebrate monitoring program.*

This report contains data for a total of 25 sites. Eleven volunteer teams sampled 20 sites on January 23 during the Stonefly Search. An additional four sites were sampled by Sue Thompson (Wayne County Department of Public Services) and additional volunteers and FOTR staff. Sue Thompson sampled one additional site in Maybury State Park (MR-22).

Stoneflies were found at ten of the twenty five-sites (40%) (map and Table 1) on the Middle, Lower and Upper branches. All stoneflies found were slender winter stoneflies (Capniids-family Capniidae) with the exception of one site that also had Perlodids (family Perlodidae). This was John8. Stoneflies were rare at most of sites where they were found with the exception of three Johnson Creek sites.

### Lower Branch

On the Lower Branch, four sites were sampled on Fellows Creek, two on Fowler Creek and one on the main branch of the Lower (photo at right shows the Fowler Creek team). Thick ice prevented one team from sampling two sites on the main Lower branch so they sampled a site further downstream. The Lower had stoneflies at two of the seven sites (29%). One site with stoneflies was in Fellows Creek and the other in Fowler Creek.





## Middle Branch

On the Middle Branch, thirteen sites were sampled: eight on Johnson Creek, two on Tonquish Creek, and three on the Middle branch (photo at left showing Team Leader Steve Weis sampling the Middle branch).

Six (46%) of the sites had stoneflies and five of those sites were on the Johnson Creek and one on the main Middle Branch. All sites had slender winter stoneflies (Capnids) and one site (John8) also had Perlodids. Three of the Johnson Creek sites with stoneflies had healthy populations with over 11 individuals (John3, John8 and MR-22). Stoneflies have not been found at MR-18, the Middle branch site, since 2010.

## Upper Branch

Five Upper Branch sites were sampled including one site on Minnow Pond Creek, one site on Seeley Creek and two on the main Upper branch (photo at right shows Upper Branch team). Stoneflies were found at two sites (40%) - Min4, and Up2. Both sites had slender winter stoneflies (Capnids). Stoneflies are very rarely found in the Upper Branch. Min4 is the first site on any tributary of the Upper to have stoneflies and this is the second year in a row for stoneflies to be found there and at Up2.



For the second year, our teams participated in the Izaak Walton League's Winter Salt Watch program and tested each stonefly site for chloride to look for the presence of road salt. Road salt helps to keep us safe but can cause serious damage to water quality. According to the Environmental Protection Agency, in freshwater systems, chloride levels above 230 ppm kill fish slowly and levels above 860 ppm kill fish quickly. More information on the Winter Salt Watch program can be found here: <https://www.iwla.org/water/stream-monitoring/winter-salt-watch>.

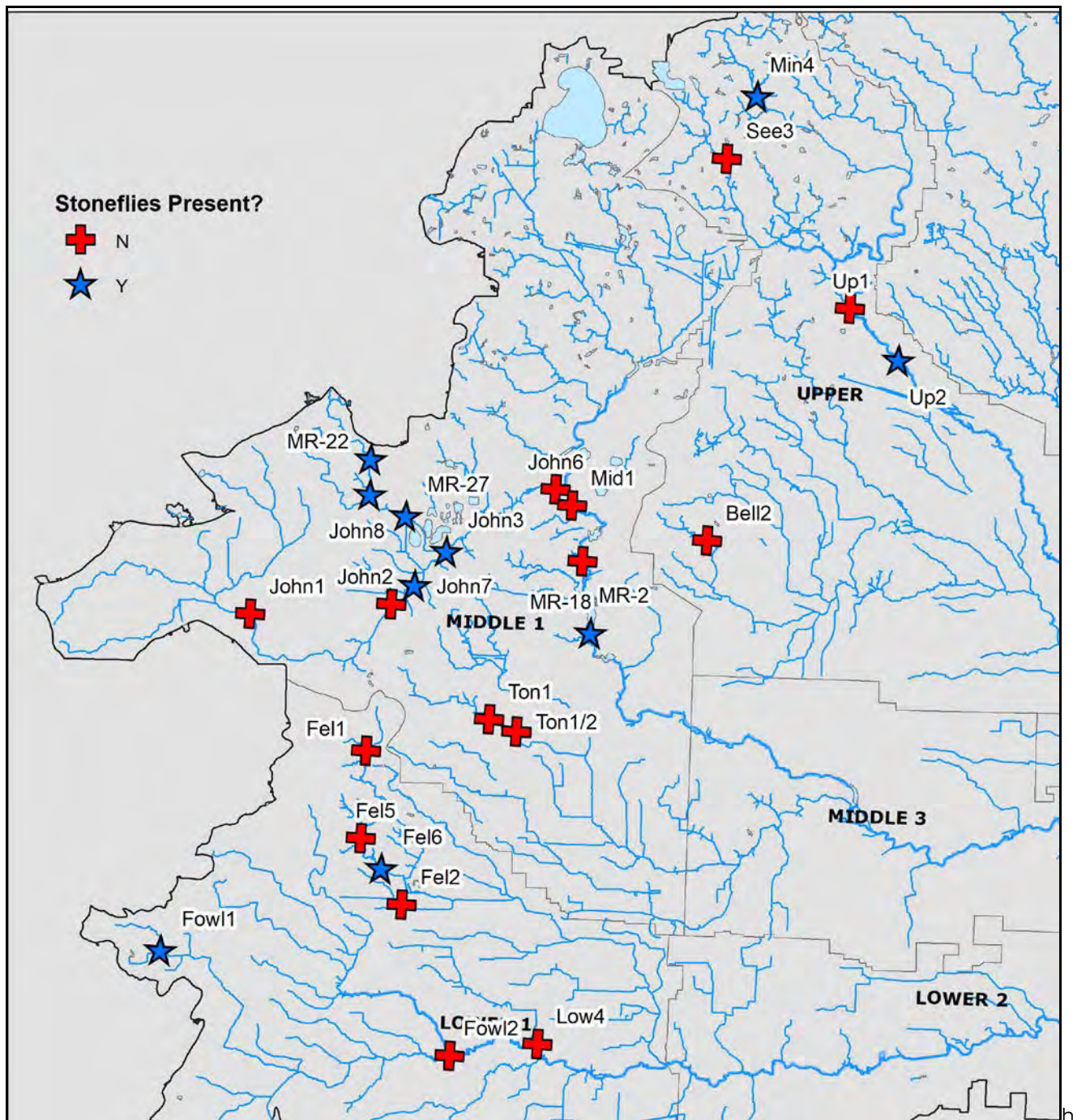
Most of our sites were below 230 ppm with the exception of all five Upper branch sites and the Middle branch. In comparison to 2020, all sites that were sampled in 2020 had higher levels of chloride in 2021 when compared to 2021 values. January 2021 had very little snow with less than a quarter inch (0.22 inch) falling within the week before the event while in 2020 there was ¾ of an



inch of snow the week before and rain falling the day of and day before the search, likely diluting any runoff. We are planning to take baseline chloride measurements in the fall.

Thank you to all the volunteers, Team Leaders, and Wayne County and Sue Thompson for additional sampling. The Winter Stonefly Search is part of the Friends of the Rouge long term volunteer monitoring program and is funded through the Alliance of Rouge Communities, Washtenaw County Water Resources Commission, the Erb Family Foundation and individual donations.

Map 1: 2021 Stonefly Search Results



Map 2: 2021 Chloride Readings

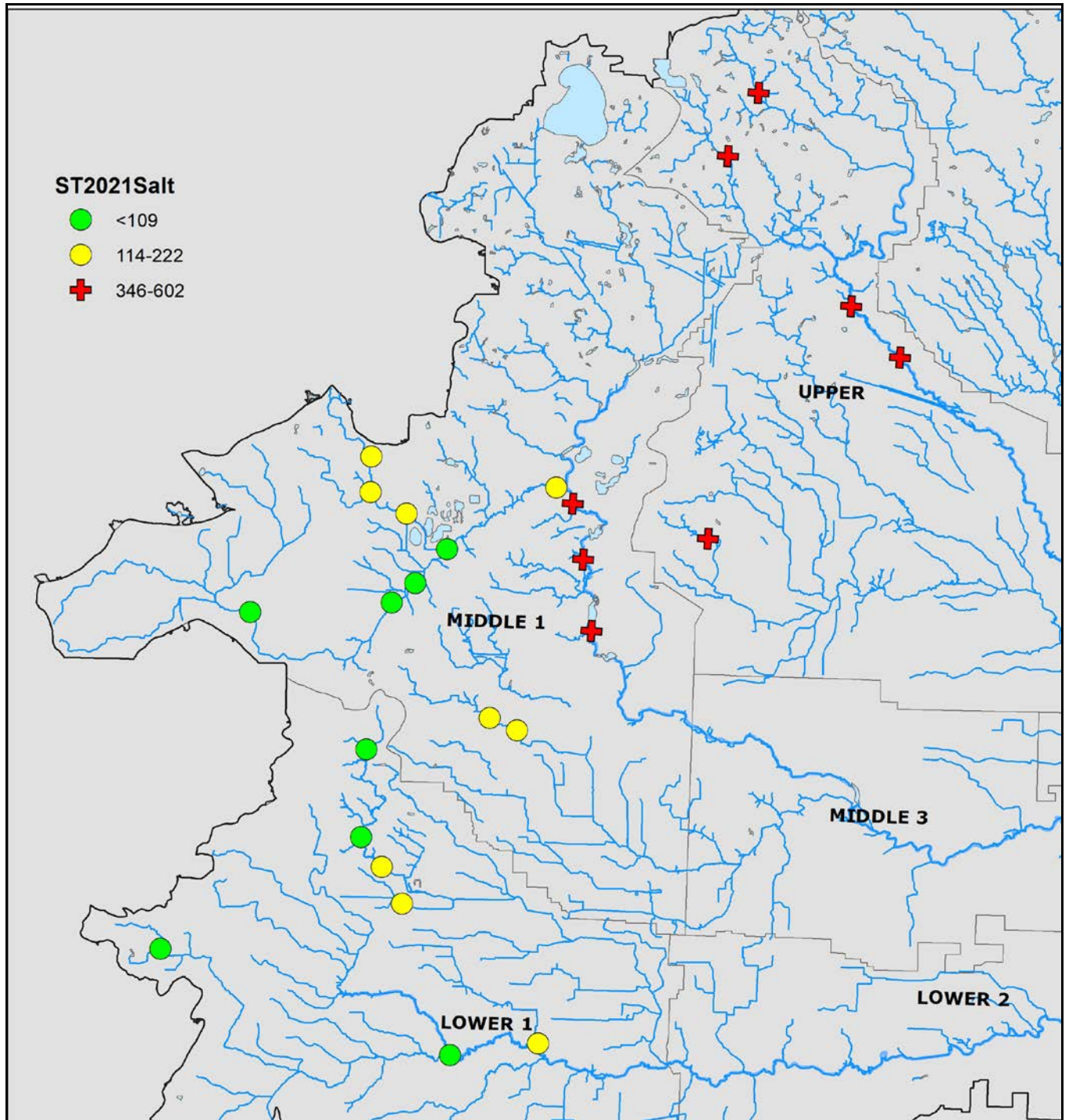




Table 1: Stonefly and Chloride Findings								
Branch	Stream Name	FIELDID	Site Name	Stoneflies?	date	Family	2021 Salt, ppm	2020 Salt, ppm
Lower	Fellows Creek	Fel1	Top of Hill Ct	N	1/23/2021		86	56
Lower	Fellows Creek	Fel2	Vintage Valley	N	1/23/2021		189	91
Lower	Fellows Creek	Fel5	Warren Ridge	N	1/23/2021		43	46
Lower	Fellows Creek	Fel6	Hanford	Y	1/23/2021	Capnids	126	
Lower	Fowler Creek	Fowl1	Prospect	Y	1/23/2021	Capnids	108	20
Lower	Fowler Creek	Fowl2	Fowler Beck	N	1/23/2021		86	
Lower	Lower Rouge	Low4	Sheldon Rd	N	1/23/2021		145	
Middle	Johnson Creek	John8	Maybury Angell	Y	1/13/2021	Capnids, Perlodids	159	20
Middle	Johnson Creek	MR-22	Maybury south	Y	1/14/2021	Capnids	203	
Middle	Johnson Creek	MR-27	Ridge	Y	1/13/2021	Capnids	174	
Middle	Johnson Creek	John1	5M Salem	N	1/23/2021		86	30
Middle	Johnson Creek	John2	5M NV	N	1/23/2021		108	25
Middle	Johnson Creek	John3	6M NV	Y	1/14/2021	Capnids	97	56
Middle	Johnson Creek	John6	Hines	N	1/23/2021		114	
Middle	Johnson Creek	John7	Arcadia	Y	1/14/2021	Capnids	97	46
Middle	Middle Rouge	Mid1	Northville Rec E	N	1/23/2021		346	
Middle	Middle Rouge	MR-2	Reservoir Rd	N	1/23/2021		370	
Middle	Middle Rouge	MR-18	Springbrook Rec	Y	1/23/2021	Capnids	346	
Middle	Tonquish Creek	Ton1	Plym Twp Pk	N	1/23/2021		222	187
Middle	Tonquish Creek	Ton1/2	Canton Ctr Rd	N	1/23/2021		222	187
Upper	Bell Branch	Bell2	Schoolcraft College	N	1/23/2021		602	
Upper	Minnow Pond	Min4	14 Mile	Y	1/23/2021	Capnids	455	335
Upper	Seeley Creek	See3	Kennedy Ct	N	1/23/2021		487	
Upper	Upper Rouge	Up1	Heritage Park	N	1/23/2021		455	
Upper	Upper Rouge	Up2	Shiawasee Park	Y	1/23/2021	Capnids	487	
red indicates chloride levels harmful to freshwater life								

## Spring Bug Hunt: Sat. April 17 10 am-4 pm

Volunteers needed to help look for bugs in Rouge streams.

Register at [therouge.org/bug-hunt-events-and-trainings](https://therouge.org/bug-hunt-events-and-trainings)

Contact Sally Petrella with any questions  
or if you would like to sign up for Team Leader Training  
[spetrella@therouge.org](mailto:spetrella@therouge.org) or call 734 927-4904



## **Appendix F**

### **Rouge River Watershed Signage Report**

## “Ours to Protect” Rouge River Sign Survey

### Alliance of Rouge Communities

ARC Staff, with assistance from Wayne County, Oakland County, and ARC member communities, performed a survey of the watershed to 1) document current signage, 2) assess maintenance needs, and 3) document where future signage placement would be beneficial. An interactive Google My Map will be created to document type of sign, location, and condition of signs in the watershed. Current locations of signs and their condition will determine what maintenance is needed. ARC Staff, Wayne County, Oakland County, and ARC member communities will implement maintenance needs and/or new signage at high-priority locations, consistent with the findings of the survey.

### Watershed sign survey

Watershed signage was surveyed by first requesting known sign locations from the municipalities. These locations were then confirmed using Google Street View. Condition of the sign was noted, and signs not found in the location provided were also noted. Second, likely sign locations were identified based on street maps showing stream and creek crossings. These locations were checked using Google Street View; if a sign was found, it was added to the spreadsheet as an unreported sign. If no sign was found at those stream crossing location and if the location was appropriate (not hindering traffic signs or flow) the location was added to a list of potential future sign locations (see below).

Following the desktop review of sign locations and condition, a field visit was performed to find signs that were “missing,” i.e. reported at a location by the municipality but not found in Street View. Staff drove to the locations to see if the sign had fallen over or was covered by vegetation. This was also an opportunity to identify locations for new sign installations.

The spreadsheet developed during this survey included several tabs: ARC Member Communities; Reported Sign Locations; Unreported Sign Locations; and Recommended Sign Locations. The reported and unreported sign locations were verified using Google Street View as described above and conditions, date of Street View imagery, wording on the sign, and other notes were recorded. Field investigation for the reported signs that were not observed on Street View determined if the sign was missing, hidden by vegetation, or fallen over. 267 signs were reported by the member communities. An additional 96 signs were found during the Street View task and recorded.

### Sign Maintenance

During the sign survey desktop review, the condition of the signs was recorded as “Good,” “OK,” and “Poor.” Signs that were recorded as poor should likely be replaced. Signs with an OK rating

may have a bent corner, covered partially by vegetation, or are leaning at an angle. Maintenance activities for these would depend on current condition and include vegetation trimming or resetting of the signpost. Good condition implies that no maintenance is needed at this time.

## New Sign Installation Locations

As mentioned above, during the desktop review of sign locations, potential locations for future signs were marked. These locations were picked along well-trafficked roads at stream crossing locations. Locations were not selected that would obstruct view of traffic signs or at extremely busy locations. 130 locations were marked as potential locations for new signs to be installed. Each of these locations could be candidates for signs in either direction, i.e. a sign on the north-bound and south-bound sides of the road.

These signs were also ranked by priority for installation. Prioritization was first based on installing signs in sub-watersheds and communities with lower numbers of existing signs. The locations at which signs were reported but missing in Street View would be prioritized above any new location.

## Attachments

### Figures:

1. ARC Sign Locations
2. ARC Sign Locations High Priority Maintenance
3. Recommended Locations for New Signage

### Tables:

1. List of ARC Members and Provided Sign Locations
2. List of Reported Signs and Condition
3. List of Unreported Signs and Condition
4. List of Recommended New Sign Locations

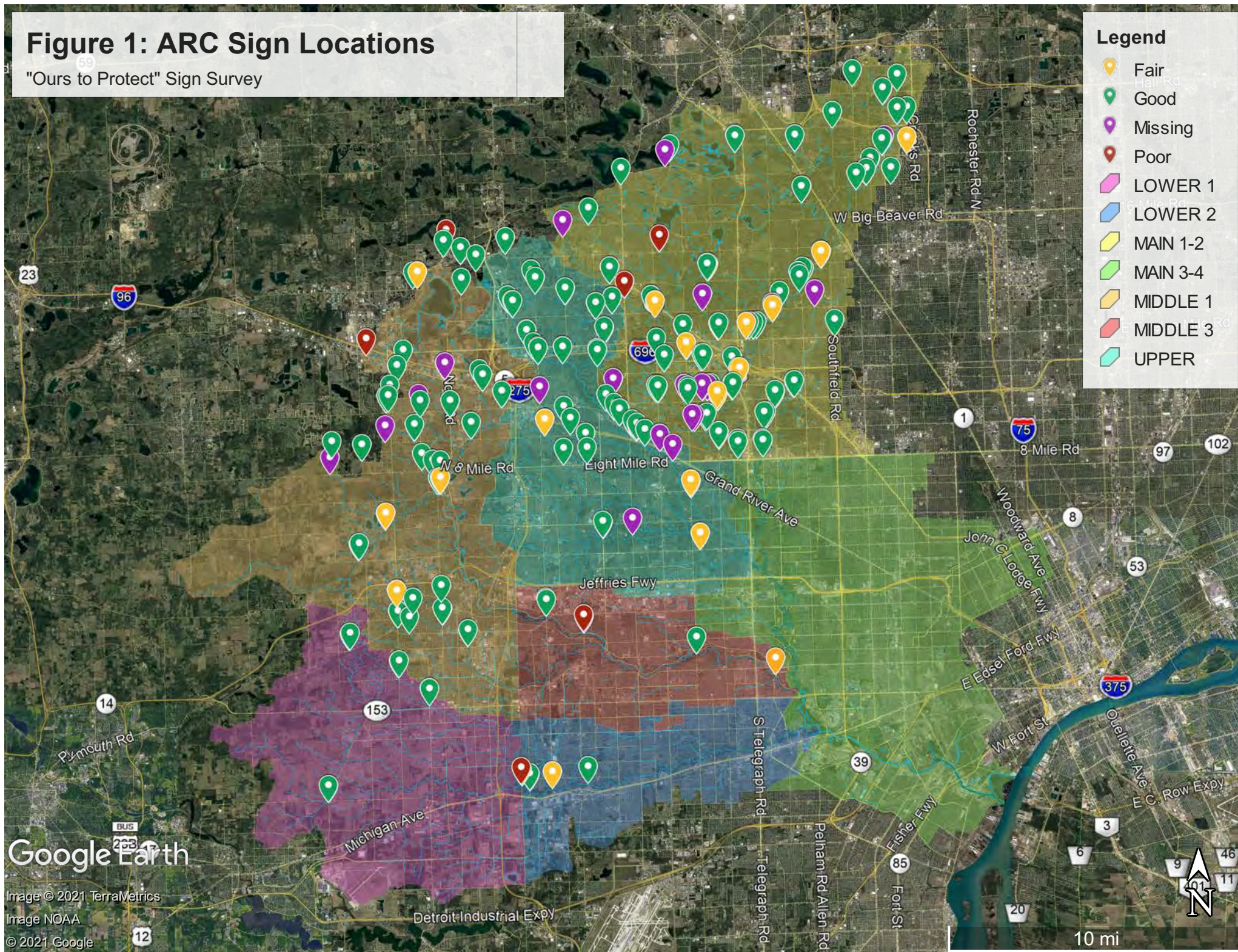


# Figure 1: ARC Sign Locations

"Ours to Protect" Sign Survey

## Legend

- Fair
- Good
- Missing
- Poor
- LOWER 1
- LOWER 2
- MAIN 1-2
- MAIN 3-4
- MIDDLE 1
- MIDDLE 3
- UPPER



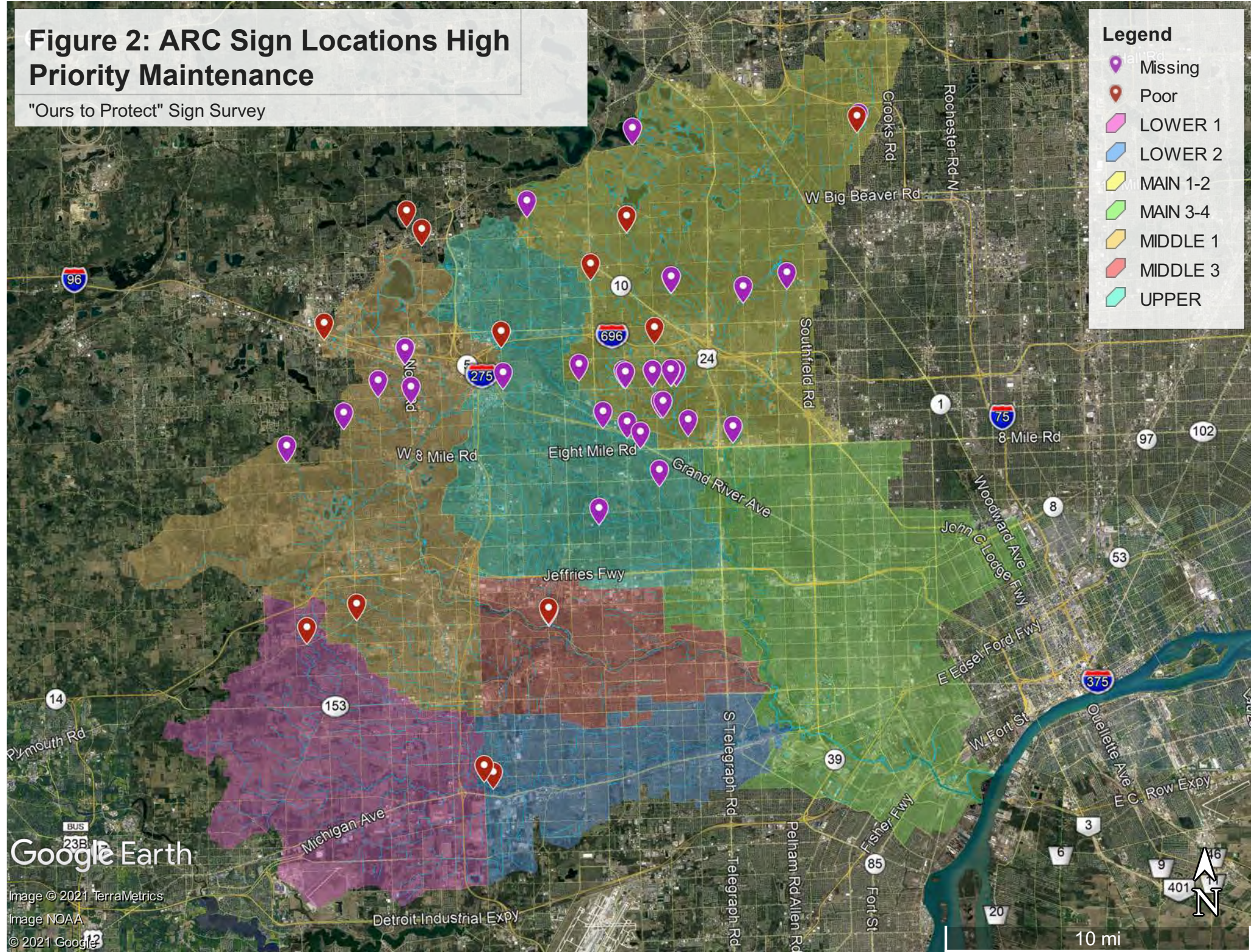


## Figure 2: ARC Sign Locations High Priority Maintenance

"Ours to Protect" Sign Survey

### Legend

- Missing
- Poor
- LOWER 1
- LOWER 2
- MAIN 1-2
- MAIN 3-4
- MIDDLE 1
- MIDDLE 3
- UPPER



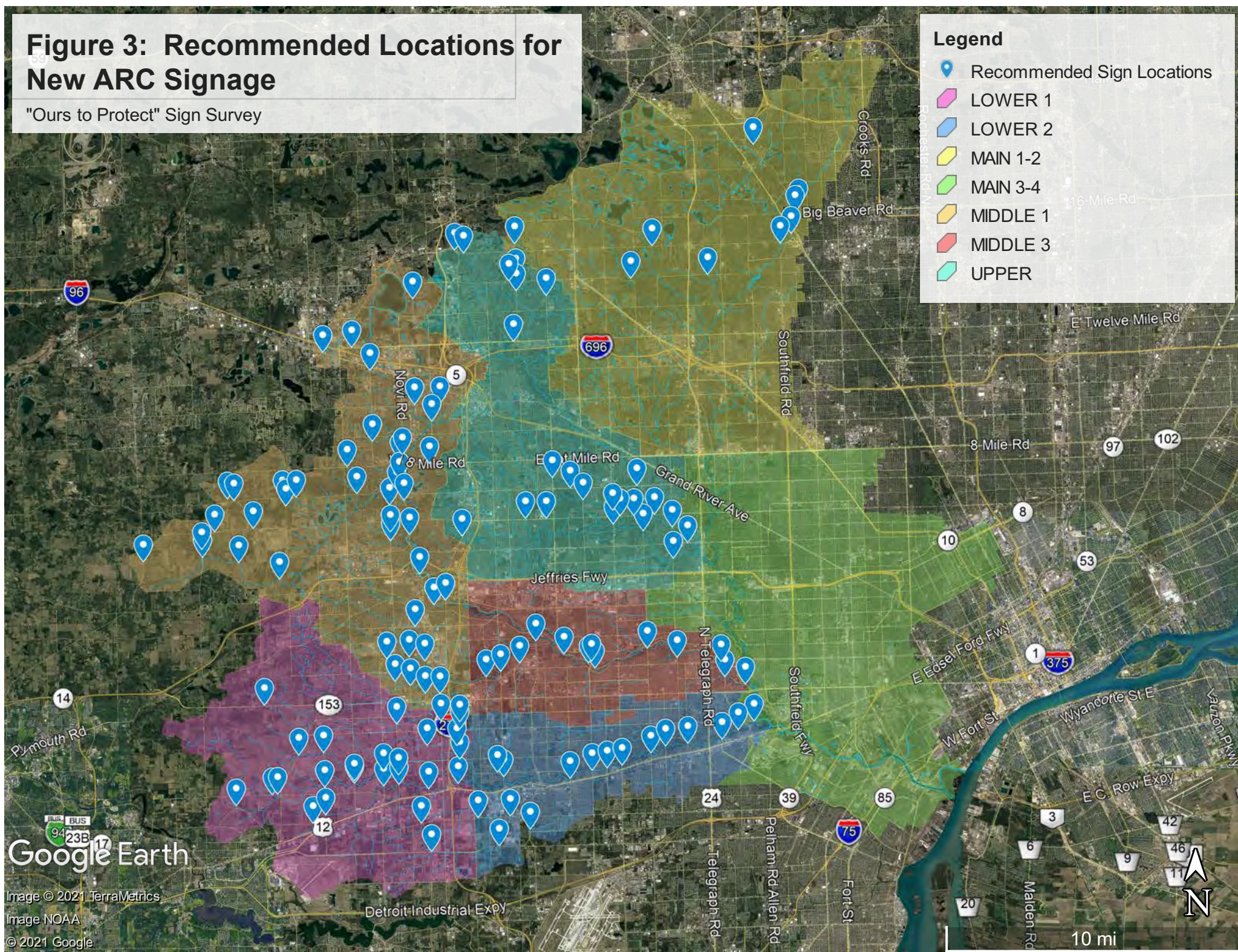


# Figure 3: Recommended Locations for New ARC Signage

"Ours to Protect" Sign Survey

## Legend

- Recommended Sign Locations
- LOWER 1
- LOWER 2
- MAIN 1-2
- MAIN 3-4
- MIDDLE 1
- MIDDLE 3
- UPPER



Google Earth

Image © 2021 TerraMetrics

Image NOAA

© 2021 Google



Table 1: ARC Member Communities and Provided Sign Locations

ARC Member	Provided sign locations	Signs located/logged	Notes
Auburn Hills	N	Done	
Beverly Hills	Y	Done	
Bingham Farms	N	Done	No signs found
Birmingham	N	Done	No signs found
Bloomfield Hills	N	Done	
Bloomfield Twp.	Y	Done	
Canton Twp.	N	Done	
Commerce Twp.	N	Done	
Dearborn Heights	N	Done	All signs are for Ecrose Creek
Farmington	N	Done	
Farmington Hills	Y	Done	
Franklin	N	Done	No signs found
Garden City	N	Done	No signs found
Inkster	N	Done	No signs found
Lathrup Valley	N	Done	No signs found
Livonia	Y	Done	
Melvindale	N	Done	No signs found
Northville	Y	Done	Reproted and ureported signs
Nothville Twp.	N	Done	No signs found
Novi	Y	Done	Reproted and ureported signs
Oakland County	Y		
Oak Park	N	Done	No signs found
Orchard Lake	N	Done	No signs found
Plymouth	N	Done	
Plymouth Twp.	N	Done	
Redford Twp.	N	Done	
Rochester Hills	Y	Done	ALL SIGNS ARE FOR THE CLINTON RIVER WATERSHED, NOT THE ROUGE
Romulus	N	Done	
Southfield	Y	Done	MAJORITY ARE CLINTON RIVER WATERSED SIGNS, ONLY A FEW ARE ROUGE WATERSHED SIGNS
Troy	Y	Done	
Van Buren Twp.	N	Done	No signs found
Walled Lake	N	Done	Reproted and ureported signs
Washtenaw County	N	Done	Only searched for signs within the Rouge Watershed
Wayne	N	Done	
Wayne County Airport Authority	N	NA	
Westland	N	Done	No signs found
West Bloomfield Twp.	N		
Wixom	N		

## Reported Sign Locations

Location Area	Street	Sign ID	Condition	Street View Date	Sign Wording	Notes	Field Observation (For Missing Signs)
Beverly Hills	Riverside Dr./Chelsea	BH.1	Good	2018 Sep	Rouge River Main Branch		
Beverly Hills	Riverside Dr./Pond	BH.2	Good	2018 Sep	Rouge River Main Branch		
						*From Beverly Hills Village Clerk: this sign has recently been damaged and should be replaced	
Beverly Hills	Evergreen Rd./Village Dr.	BH.3	Poor	2018 Aug	Rouge River Main Branch		
Beverly Hills	Evergreen Rd./Old Pond	BH.4	Good	2018 Aug	Rouge River Main Branch		
Beverly Hills	13 Mile Rd./Stafford St.	BH.5	Good	2018 Aug	Rouge River Main Branch	South Side Only	
Bloomfield Twp	Squirrel Rd./Square Lake Rd.	BF.1	Good	2018 Aug	Sprague Drain	Double sided sign	
Bloomfield Twp	Adams Rd./Wattles Rd.	BF.2	Good	2018 Aug	Rouge River Main Branch	South side	
Bloomfield Twp	Northlawn Blvd./Fairway Dr.	BF.3	OK	2018 Aug	Rouge River Main Branch	Partially blocked by vegetation	
Bloomfield Twp	Northlawn Blvd./Fairway Dr.	BF.4	OK	2018 Aug	Rouge River Main Branch	Sign is leaning slightly	
Bloomfield Twp	Franklin Rd./14 Mile Rd.	BF.5	Good	2018 Aug	Franklin Branch		
Bloomfield Twp	Franklin Rd./14 Mile Rd.	BF.6	Good	2018 Sep	Franklin Branch		
Bloomfield Twp	Franklin Rd./Club Dr.	BF.7	Good	2018 Aug	Forest Lake Outlet	Partially blocked by vegetation	
Bloomfield Twp	Franklin Rd./Club Dr.	BF.8	Good	2018 Aug	Forest Lake Outlet		
Farmington Hills	9 Mile/Elena Dr.	FH.1	Good	2018 Nov	Bell Creek		
Farmington Hills	9 Mile/Elena Dr.	FH.2	OK	2017 Jun	Bell Creek	Sign is leaning slightly, Nov 2018 google street image view is foggy	
Farmington Hills	Freedom Rd./Woodhaven Ct.	FH.3	Good	2018 Aug	Tarabusi Creek	East side	
Farmington Hills	9 Mile/Drake Rd.	FH.4	Good	2018 Sep	Tarabusi Creek	Corner of Intersection	
Farmington Hills	Gill Rd./Colfax St.	FH.5	Good	2018 Aug	Tarabusi Creek		
Farmington Hills	Gill Rd./Colfax St.	FH.6	Good	2018 Aug	Tarabusi Creek		
Farmington Hills	Halsted Rd./North of Grand River A	FH.7	Missing	2018 Aug	Tarabusi Creek	Unable to locate with Google Street View	Not found
Farmington Hills	Tuck Rd./Archwood Cir	FH.8	Good	2018 Aug	Upper River Rouge		
Farmington Hills	Tuck Rd./Timberidge Cir	FH.9	Good	2018 Aug	Upper River Rouge		
Farmington Hills	Folsom Rd./East of Orchard Lake	FH.10	Missing	2018 Aug	Upper River Rouge	Unable to locate with Google Street View	Not found
Farmington Hills	Freedom Rd./East of Orchard Lake	FH.11	Good	2018 Sep	Upper River Rouge		
Farmington Hills	Power Rd./Dohany Dr.	FH.12	Good	2018 Aug	Noble Creek	North bound	
Farmington Hills	Power Rd./Dohany Dr.	FH.13	Missing	2018 Aug	Noble Creek	Unable to locate with Google Street View, South bound	Field recogn found a post, but
Farmington Hills	11 Mile Rd./Beecham	FH.14	Good	2018 Aug	The Ravine		
Farmington Hills	11 Mile Rd./Beecham	FH.15	OK	2018 Aug	The Ravine	Partially blocked by vegetation	
Farmington Hills	14 Mile Rd./Club House Lane	FH.16	Good	2018 Sep	Pebble Creek		
Farmington Hills	14 Mile Rd./Club House Lane	FH.17	Good	2018 Sep	Pebble Creek		
Farmington Hills	13 Mile Rd./Middlebelt	FH.18	Good	2018 Aug	Pebble Creek		
Farmington Hills	13 Mile Rd./Middlebelt	FH.19	Good	2018 Aug	Pebble Creek		
Farmington Hills	Farmington Rd./Quaker Valley Rd.	FH.20	Good	2018 Aug	Minnow Pond Creek		
Farmington Hills	Farmington Rd./Biddeston Ln.	FH.21	Good	2018 Aug	Minnow Pond Creek		
Farmington Hills	Drake Rd./Dewberry	FH.22	Good	2018 Aug	Minnow Pond Creek		
Farmington Hills	Drake Rd./Dewberry	FH.23	Good	2018 Aug	Minnow Pond Creek		
Farmington Hills	14 Mile Rd./Halsted Rd.	FH.24	Good	2018 Sep	Minnow Pond Creek		
Farmington Hills	14 Mile Rd./Halsted Rd.	FH.25	Good	2018 Sep	Minnow Pond Creek		
Farmington Hills	Halsted Rd./Emerald Forest	FH.26	Good	2018 Jul	Minnow Pond Creek		
Farmington Hills	Halsted Rd./Emerald Forest	FH.27	Good	2018 Jul	Minnow Pond Creek		
Farmington Hills	Farmington Rd./Kendallwood	FH.28	Good	2018 Aug	Minnow Pond Creek		
Farmington Hills	Farmington Rd./Kendallwood	FH.29	Good	2018 Aug	Minnow Pond Creek		
Farmington Hills	13 Mile Rd./Chesterbrook	FH.30	Good	2018 Aug	Minnow Pond Creek		
Farmington Hills	13 Mile Rd./Chesterbrook	FH.31	Good	2018 Aug	Minnow Pond Creek		
Farmington Hills	Drake Rd./Howard Rd.	FH.32	Good	2018 Aug	Seeley Creek		
Farmington Hills	Drake Rd./Howard Rd.	FH.33	Good	2018 Aug	Seeley Creek		
Farmington Hills	Halsted Rd./Valhalla Dr.	FH.34	OK	2018 Aug	Seeley Creek	Sign is leaning slightly	
Farmington Hills	Halsted Rd./Valhalla Dr.	FH.35	Poor	2018 Aug	Seeley Creek	Blocked by vegetation	
Farmington Hills	Hills Tech Dr./West of Halsted Rd.	FH.36	Good	2018 Aug	Seeley Creek		
Farmington Hills	13 Mile Rd./Strathmore Dr.	FH.37	Good	2018 Aug	Seeley Creek		
Farmington Hills	13 Mile Rd./Fountain Blvd.	FH.38	Good	2018 Aug	Seeley Creek		
						City of Livonia went to location for a visual inspection and did not find any signs on either side of the road	Not found
Livonia	Merriman Rd./Myrna St.	LV.1	Missing	2018 Jul	Bell Creek		
Livonia	Newburgh Rd./Hines Dr.	LV.2	Good	2018 Sep	Middle Rouge		
Livonia	Newburgh Rd./Hines Dr.	LV.3	Good	2018 Sep	Middle Rouge		
Livonia	Wayne Rd./Hines Dr.	LV.4	Poor	2018 Sep	Middle Rouge	Blocked by vegetation, South bound	
Livonia	Wayne Rd./Hines Dr.	LV.5	Missing	2018 Sep	Middle Rouge	Could not locate with Google Maps Street View, North bound	Northbound Not found
Livonia	Farmington Rd./Myrna St.	LV.6	Good	2018 Aug	Bell Creek		
Livonia	Farmington Rd./Myrna St.	LV.7	Good	2018 Aug	Bell Creek		
Livonia	Inkster Rd./Margareta St.	LV.8	OK	2018 Aug	Upper Rouge	Partially blocked by vegetation, South bound	
Livonia	Inkster Rd./Margareta St.	LV.9	Missing	2018 Aug	Upper Rouge	Could not locate, North bound	Not found
Northville	7 Mile Rd./Sheldon Rd.	NV.1	OK	2018 Aug	Johnson Creek	Partially blocked by trees	

Northville	7 Mile Rd./Sheldon Rd.	NV.2	OK	2018 Aug	Johnson Creek	Partially blocked by trees	
Novi	Napier Rd./Chamberlin Court	NI.1	Good	2018 Sep	Rouge River Watershed	Only one side, reported by Novi to be both sides	
Novi	Garfield Rd./Veneto Ct.	NI.2	Good	2018 Jul	Huron River/Rouge River	Double sided sign	
Novi	9 Mile Rd./West of Beck Rd.	NI.3	Missing	2009 Oct		Old Google Maps street view	Found "Entering Watershed" sign
Novi	10 Mile Rd./West of Beck Rd.	NI.4	Good	2018 Jul	Huron River Watershed		
Novi	10 Mile Rd./East of Alpine Dr.	NI.5	Good	2018 Jul	Rouge River Watershed		
Novi	Beck Rd./North of Cider Mill Dr.	NI.6	Poor	2018 Jul	Rouge River Watershed	Bent	
Novi	Beck Rd./South of Sider Mill Dr.	NI.7	Good	2018 Jul	Huron River Watershed		
Novi	11 Mile Rd./Mandalay Cir.	NI.8	Good	2018 Jul	Huron River Watershed		
Novi	11 Mile Rd./Mandalay Cir.	NI.9	Good	2018 Jul	Rouge River Watershed		
Novi	Grand River Ave./12 Mile Rd.	NI.10	Poor	2018 Jul	Huron River Watershed	Bent	
Novi	Grand River Ave./East of Beck Rd	NI.11	Good	2018 Jul	Huron River Watershed	West bound	
Novi	Pontiac Trail/Westgate Blvd.	NI.12	OK	2018 Sep	Huron River Watershed	Partially blocked by vegetation	
Novi	Pontiac Trail/Springlake Blvd.	NI.13	Good	2018 Sep	Huron River Watershed		
Auburn Hills	Adams Rd./N. South Blvd.	OC.1	Good	2018 Aug	Rouge River Watershed		
Beverly Hills	Lahser Rd./Normandale St.	OC.2	OK	2018 Sep	Rouge River Main Branch	Partially blocked by vegetation, North bound side	
Beverly Hills	Lahser Rd./Normandale St.	OC.3	Missing	2018 Aug	Rouge River Main Branch	Google Maps Street View showed construction - may have been temporarily removed	Not found
W. Bloomfield	Haggerty Rd./North of Maple Rd.	OC.4	Good	2018 Aug	Rouge River Watershed		
Farmington Hills	8 Mile/East of Halsted	OC.5	Good	2018 Nov	Bell Creek		
Farmington Hills	12 Mile/East of Farmington Rd.	OC.6	Good	2018 Aug	Minnow Pond Creek	West bound	
Farmington Hills	12 Mile/East of Farmington Rd.	OC.7	Good	2018 Aug	Minnow Pond Creek	East bound	
Farmington Hills	Middlebelt Rd./South of 10 Mile	OC.8	Good	2018 Sep	Noble Brook	South bound	
Farmington Hills	Middlebelt Rd./South of 10 Mile	OC.9	Missing	2018 Sep	Noble Brook	Reported by Oakland County to be on the North bound	Not found
Farmington Hills	10 Mile/West of Middlebelt Rd.	OC.10	Good	2018 Aug	Noble Brook	East bound	
Farmington Hills	10 Mile/West of Middlebelt Rd.	OC.11	Missing	2018 Aug	Noble Brook	Reported by Oakland County to be on the West bound	Not found
Farmington Hills	Orchard Lake/South of 14 Mile	OC.12	Good	2018 Aug	Pebble Creek	North bound	
Farmington Hills	Orchard Lake/South of 14 Mile	OC.13	Poor	2018 Aug	Pebble Creek	Blocked by vegetation, South bound	
Farmington Hills	12 Mile/West of Inkster	OC.14	Good	2018 Sep	Pebble Creek	West bound	
Farmington Hills	12 Mile/West of Inkster	OC.15	Good	2018 Sep	Pebble Creek	East bound	
Farmington Hills	Middlebelt Rd./South of 13 Mile	OC.16	Good	2018 Aug	Pebble Creek	South bound	
Farmington Hills	Middlebelt Rd./South of 13 Mile	OC.17	OK	2018 Aug	Pebble Creek	Leaning over, North bound	
Farmington Hills	Haggerty Rd./North of 13 Mile	OC.18	Good	2018 Aug	Seeley Creek		
Farmington Hills	12 Mile/West of Halsted	OC.19	Good	2018 Aug	Seeley Creek	West bound	
Farmington Hills	12 Mile/West of Halsted	OC.20	Good	2018 Aug	Seeley Creek	East bound	
Farmington Hills	8 Mile/West of Farmington	OC.21	Good	2018 Nov	Tarabusi Creek		
Farmington Hills	Middlebelt/South of 12 Mile	OC.22	Good	2018 Sep	The Ravine	South bound	
Farmington Hills	Middlebelt/South of 12 Mile	OC.23	Good	2018 Sep	The Ravine	North bound	
Farmington Hills	Middlebelt/North of 8 Mile	OC.24	Good	2018 Sep	Upper Branch	South bound	
Farmington Hills	Middlebelt/North of 8 Mile	OC.25	Missing	2018 Sep	Upper Branch	Reported by Oakland County to be on the East side facing South, 300 ft north of Belfast St. Could not locate with Google Maps Street View (Sep 2018)	Not found
Farmington Hills	8 Mile/West of Inkster	OC.26	Missing	2018 Sep	Upper Branch	Reported by Oakland County to be on the North side, 140' west of Village Green driveway	Not found
Farmington Hills	Orchard Lake/South of Grand River	OC.27	OK	2018 Nov	Upper Branch	Leaning, North bound	
Farmington Hills	Orchard Lake/South of Grand River	OC.28	Good	2018 Nov	Upper Branch	South bound	
Bloomfield Twp	14 Mile/East of Franklin	OC.29	OK	2018 Sep	Rouge River Main Branch	Partially blocked by vegetation; Incorrectly labeled Rouge River Main Branch, should read Franklin Branch	
Franklin	13 Mile/West of Franklin	OC.30	Missing	2018 Aug	Rouge River Main Branch	Reported by Oakland County to be on the North side, east of the river crossing	Not found
Franklin	13 Mile/West of Franklin	OC.31	Missing	2018 Aug	Rouge River Main Branch	Reported by Oakland County to be on the South side, west of the river crossing	Post found fallen over, no sign
Novi	Grand River Rd./East of Meadowbrook	OC.32	Good	2018 Jul	Bishop Creek	East bound	
Novi	Meadowbrook Rd./North of Grand	OC.33	Good	2018 Aug	Bishop Creek	North bound	
Novi	Novi Rd./South of 10 Mile	OC.34	Good	2018 Jul	Chapman Creek	South bound	
Novi	Novi Rd./South of 10 Mile	OC.35	Missing	2018 Jul	Chapman Creek		northbound not found
Novi	10 Mile/Haggerty Rd.	OC.36	Good	2018 Jul	Ingersol Creek	East bound	
Novi	10 Mile/Haggerty Rd.	OC.37	Good	2018 Jul	Ingersol Creek	West bound	
Novi	Taft Rd./South of 10 Mile	OC.38	Good	2018 Jul	Miller Creek		
Novi	10 Mile Rd./West of Taft	OC.39	Missing	2018 Jul	Miller Creek		Not found



Novi	8 Mile Rd./East of Napier Rd.	OC.40	Missing	2016 Jul	Rouge River	Reported by Oakland County to be 1/4 Mile West of Napier Rd. Sign On Napier Rd, north of 8 Mile - could be the same (NI.1)	Not found
Novi	Grand River Rd./Novi Rd.	OC.42	Missing	2018 Jul	Walled Lake Branch	Reported by Oakland County to be 1/8 mi W of Novi Rd.	Not found
Novi	Grand River Rd./Novi Rd.	OC.43	Missing	2018 Jul	Walled Lake Branch	Reported by Oakland County to be 1/8 mi W of Novi Rd.	Not found
Southfield	Lahser Rd./South of 10 Mile	OC.44	Good	2018 Jul	Evans Branch		
Southfield	Lahser Rd./South of 10 Mile	OC.45	Good	2018 Jul	Evans Branch		
Southfield	10 Mile Rd./West of Northwestern	OC.46	Good	2018 Aug	Evans Branch		
Southfield	10 Mile Rd./West of Northwestern	OC.47	Good	2018 Aug	Evans Branch		
Southfield	12 Mile Rd./West of Streamwood	OC.48	OK	2018 Sep	Franklin Branch		
Southfield	12 Mile Rd./West of Streamwood	OC.49	Good	2018 Sep	Franklin Branch		
Southfield	12 Mile Rd./West of Bell	OC.50	Good	2018 Sep	Rouge River Main Branch		
Southfield	12 Mile Rd./West of Bell	OC.51	Good	2018 Sep	Rouge River Main Branch		
Southfield	10 Mile Rd./East of Beech	OC.52	OK	2018 Aug	Rouge River Main Branch	Partially blocked by vegetation	
Southfield	10 Mile Rd./East of Beech	OC.53	Good	2018 Aug	Rouge River Main Branch		
Southfield	12 Mile Rd./East of Southfield	OC.54	Good	2018 Aug	Rouge River Watershed		
Southfield	9 Mile Rd./East of Greenfield	OC.55	Missing	2018 Aug	Rouge River Watershed	Reported by Oakland County to be East of Greenfield, next to bus stop. Reported by Southfield to be east of Providence Dr. - may not have been installed due to hospital signs nearby	n/a - location as reported outside ARC
Southfield	10 Mile Rd./West of Beech	OC.56	Good	2018 Aug	Pebble Creek		
Southfield	10 Mile Rd./West of Beech	OC.57	Missing	2018 Aug	Pebble Creek	Reported by Oakland County to be 1500' west of Beech Rd. Reported by Southfield to be 1585' W of Beech on Wood Pole	Not found/wood utility pole nearby
Southfield	10 Mile Rd./East of Inkster	OC.58	Missing	2018 Aug	Pebble Creek		Not found
Southfield	10 Mile Rd./East of Inkster	OC.59	Missing	2018 Aug	Pebble Creek		Not found
Southfield	12 Mile Rd./West of Case	OC.60	OK	2018 Sep	Pernick Creek	Sign face slightly rusted	
Southfield	12 Mile Rd./West of Case	OC.61	Good	2018 Sep	Pernick Creek		
Troy	Long Lake Rd./East of Coolidge	OC.62	Good	2018 Aug	Rouge River Main Branch	East bound	
Troy	Long Lake Rd./East of Coolidge	OC.63	Poor	2018 Aug	Rouge River Main Branch	West bound	
W. Bloomfield	Maple Rd./East of Middlebelt	OC.64	Poor	2018 Aug	Franklin Branch	East bound	
W. Bloomfield	Maple Rd./East of Middlebelt	OC.65	Poor	2018 Aug	Franklin Branch	West bound	
W. Bloomfield	Drake Rd./N of Maple	OC.66	Missing	2018 Aug	Rouge River Watershed		Not found
W. Bloomfield	Orchard Lake/S of Pontiac Trail	OC.67	Good	2018 Aug	Clinton River	Different design than the other signs, east side of Orchard Lake Rd.	
W. Bloomfield	Walnut Lake/E of Drake	OC.68	Good	2018 Aug	Rouge River Watershed		
W. Bloomfield	Middlebelt/N of Long Lake Rd.	OC.69	Good	2018 Aug	Rouge River Watershed		
W. Bloomfield	Long Lake Rd./W of Middlebelt	OC.70	Missing	2018 Aug	Rouge River Watershed	Reported by Oakland County to be 850 ft west of Middlebelt, south side	Not found (no obvious stream crossing)
Walled Lake	14 Mile Rd./ Decker	OC.71	Missing	2018 Sep			"Ours to Protect" sign found 50' N of Crestview Blvd northbound
Walled Lake	Pontial Trail/Fawn Lake Dr.	OC.72	Good	2019 May	Huron River Watershed		
Commerce Twp.	Welch Rd./S of Maple Rd.	OC.73	Good	2015 Aug	Rouge River Watershed		
Rochester Hills	Crooks/N of Hamlin	RH.1	Good	2018 Sep	Clinton River	South bound	
Rochester Hills	Crooks/N of Hamlin	RH.2	Good	2018 Sep	Clinton River	North bound	
Rochester Hills	Adams/N of Hamlin	RH.3	Good	2018 Sep	Clinton River	South bound	
Rochester Hills	Adams/N of Hamlin	RH.4	Good	2018 Sep	Clinton River	North bound	
Rochester Hills	Livernois/S of Avon	RH.5	Good	2018 Aug	Clinton River	North bound	
Rochester Hills	Livernois/at Avon	RH.6	Missing	2018 Aug	Clinton River	Reported by Rochester Hills to be at Avon and Livernois (in addition to RH.5)	n/a - location as reported outside Rogue
Rochester Hills	Avon/Dequinder	RH.7	Good	2018 Sep	Clinton River	Avon Rd., East side of bridge	
Rochester Hills	Adams/Charlwood Dr.	RH.8	Good	2018 Sep	Saregent Creek	South bound	
Rochester Hills	Adams/Charlwood Dr.	RH.9	OK	2018 Sep	Saregent Creek	Partially blocked by vegetation, North bound	
Rochester Hills	Adams/ N of Avon	RH.10	Good	2018 Sep	Tributary to Galloway Creek	North bound	
Rochester Hills	Adams/ N of Avon	RH.11	Good	2018 Sep	Tributary to Galloway Creek	South bound	
Rochester Hills	Avon/Dequinder	RH.12	Good	2018 Sep	Clinton River	Avon Rd., West side of bridge	
Rochester Hills	Livernois/N of Walton	RH.13	Good	2018 Sep	Saregent Creek	North bound	
Rochester Hills	Livernois/N of Walton	RH.14	OK	2018 Sep	Saregent Creek	Partially blocked by vegetation, South bound	
Rochester Hills	Butler/W od Adams	RH.15	Good	2018 Sep	Galloway Creek	West bound	
Rochester Hills	Butler/W od Adams	RH.16	Missing	2018 Sep	Galloway Creek	Reported by Rochester Hills be West of Adams, facing West	n/a - location as reported outside Rogue
Rochester Hills	Auburn/W of John R Rd.	RH.17	Good	2018 Sep	Gibson Drain	East bound	
Rochester Hills	Auburn/W of John R Rd.	RH.18	Good	2018 Sep	Gibson Drain	West bound	

Rochester Hills	Dutton Rd/E of Livernois	RH.19	Good	2018 Aug	Paint Creek	West bound	
Rochester Hills	Dutton Rd/E of Livernois	RH.20	Good	2018 Aug	Paint Creek	East bound	
Rochester Hills	Tienken Rd/E of Livernois	RH.21	Good	2018 Oct	Paint Creek	West bound	
Rochester Hills	Tienken Rd/E of Livernois	RH.22	Good	2018 Oct	Paint Creek	East bound	
Rochester Hills	Tienken Rd/E of Brewster	RH.23	Good	2018 Oct	Saregent Creek	West bound	
Rochester Hills	Tienken Rd/E of Brewster	RH.24	Good	2018 Oct	Saregent Creek	East bound	
Rochester Hills	Tienken Rd/E of Sheldon	RH.25	Good	2018 Oct	Stony Creek	West bound	
Rochester Hills	Tienken Rd/E of Sheldon	RH.26	Good	2018 Oct	Stony Creek	East bound	
Rochester Hills	Brewster/S of Dutton	RH.27	Good	2018 Oct	Saregent Creek	South bound	
Rochester Hills	Brewster/S of Dutton	RH.28	Good	2018 Oct	Saregent Creek	North bound	
Village of Clarkston	Dixie/N of Davisburg	RH.29	Missing	2015 Oct	Dixie Lake	Reported by Rochester Hills but not located on google maps street view	n/a - location as reported outside Rogue
Village of Clarkston	Dixie/N of Davisburg	RH.30	Missing	2015 Oct	Susin Lake	Reported by Rochester Hills but not located on google maps street view	n/a - location as reported outside Rogue
Oxford Twp.	S Baldwin/N of Stanton	RH.31	Poor	2018 Aug	Paint Creek Subwatershed, C	North bound	
Oxford Twp.	N Baldwin/N of Sunkist Dr.	RH.32	Good	2015 Sep	Paint Creek Subwatershed	North bound	
Pontiac	MLK Jr/N of M-59	RH.33	Good	2018 Oct	Clinton River	North bound	
Pontiac	MLK Jr/N of M-59	RH.34	Good	2018 Oct	Clinton River	South bound	
Pontiac	N Paddock St/N of University	RH.35	Good	2018 Aug	Clinton River	South bound	
Pontiac	N Paddock St/N of University	RH.36	Good	2018 Aug	Clinton River	North bound	
Pontiac	Orchard Lake Rd./S of Voorheis	RH.37	Good	2018 Aug	Clinton River	South bound	
Pontiac	Orchard Lake Rd./S of Voorheis	RH.38	Good	2018 Aug	Clinton River	Not alongside the road, located along Clinton River Trail	
Pontiac	Giddings Rd/ N of Walton	RH.39	Good	2018 Aug	Galloway Creek	South bound	
Pontiac	Giddings Rd/ N of Walton	RH.40	Good	2018 Aug	Galloway Creek	North bound	
Pontiac	Giddings Rd/ N of Perry	RH.41	Good	2018 Sep	Galloway Creek	South bound	
Pontiac	Giddings Rd/ N of Perry	RH.42	Good	2018 Sep	Galloway Creek	North bound	
Pontiac	Cesar Chavez Ave/S of Kennett	RH.43	Good	2018 Aug	Pontiac Creek Ext.	South bound	
Pontiac	Cesar Chavez Ave/S of Kennett	RH.44	Poor	2018 Aug	Pontiac Creek Ext.	North bound	
Pontiac	M-59/E of MLK Jr Blvd	RH.45	Missing	2018 Aug	Clinton River	Could not locate with Google Maps Street View- reported by Rochester Hills to be on M-59, E of MLK	n/a - location as reported outside Rogue
Pontiac	M-59/E of MLK Jr Blvd	RH.46	Missing	2018 Aug	Clinton River	Could not locate with Google Maps Street View- reported by Rochester Hills to be on M-59, E of MLK	n/a - location as reported outside Rogue
Leonard	Rochester Rd/S of Lakeville Rd	RH.47	Poor	2009 Jul	Clinton River	Condition unknown due to outdated, blurry picture	
Leonard	Rochester Rd/S of Lakeville Rd	RH.48	Poor	2009 Jul	Clinton River	Condition unknown due to outdated, blurry picture	
Rochester	Main/N of South Blvd.	RH.49	Missing	2018 Sep	Clinton River	Could not locate with Google Maps Street View- reported by Rochester Hills to be on N of south blvd.	n/a - location as reported outside Rogue
Rochester	Main/N of South Blvd.	RH.50	Missing	2018 Sep	Clinton River	Could not locate with Google Maps Street View- reported by Rochester Hills to be on N of south blvd.	n/a - location as reported outside Rogue
Rochester	Main/N of University	RH.51	Missing	2018 Sep	Paint Creek	Could not locate with Google Maps Street View- reported by Rochester Hills to be on N of University	n/a - location as reported outside Rogue
Rochester	Main/N of University	RH.52	Missing	2018 Sep	Paint Creek	Could not locate with Google Maps Street View- reported by Rochester Hills to be on N of University	n/a - location as reported outside Rogue
Rochester	Parkdale/W of Dequinder	RH.53	Good	2018 Sep	Stony Creek	North side, facing East	
Southfield	13 Mile Rd./E of Eldridge Ln.	SF.1	Missing	2018 Sep	Evans Branch	Could not located with Google Maps Street View - reported by Rochester Hills to be E of Eldridge	n/a - location as reported outside Rogue
Farmington Hills	Inkster Rd./North of 11 Mile	SF.2	OK	2018 Aug	Pebble Creek	South bound	
Farmington Hills	Inkster Rd./North of 11 Mile	SF.3	Poor	2018 Aug	Pebble Creek	North bound	
Farmington Hills	Inkster Rd./South of 10 Mile	SF.4	Good	2018 Aug	The Ravine	North bound	
Farmington Hills	Inkster Rd./South of 10 Mile	SF.5	Good	2018 Aug	The Ravine	South bound	
Southfield	11 Mile/E of Inkster	SF.6	Good	2018 Aug	Pebble Creek	East bound	
Southfield	11 Mile/E of Inkster	SF.7	Good	2018 Aug	Pebble Creek	West bound	
Southfield	9 Mile/W of Beech	SF.8	Good	2018 Aug	Rouge River Main Branch	East bound	
Southfield	9 Mile/W of Beech	SF.9	Good	2018 Aug	Rouge River Main Branch	West bound	
Southfield	9 Mile/E of Inkster	SF.10	Missing	2018 Aug	The Ravine	Could not located with Google Maps Street View - reported by Southfield to be 100' E of Inkster	Not found

Southfield	9 Mile/E of Inkster	SF.11	Missing	2018 Aug	The Ravine	Could not located with Google Maps Street View - reported by Southfield to be 1150' E of Inkster west bound	Not found
Southfield	Beech Rd. N of Shiawassee	SF.12	Good	2018 Aug	Rouge River Main Branch	South bound	
Southfield	Beech Rd. N of Shiawassee	SF.13	Missing	2018 Aug	Rouge River Main Branch	Could not located with Google Maps Street View - reported by Southfield to be 950' N of Shiawassee at end of guardrail	Northbound not found; Southbound visible
Southfield	Beeck Rd./S of 10 Mile	SF.14	OK	2018 Aug	Rouge River Main Branch	Partially blocked vegetation	
Southfield	Beeck Rd./S of 10 Mile	SF.15	OK	2018 Aug	Rouge River Main Branch	Partially blocked vegetation	
Southfield	10 Mile/W of Beech	SF.16	Missing	2018 Aug	Pebble Creek	Could not located with Google Maps Street View - reported by Southfield to be 0.5 miles W of Beech	Not found
Southfield	10 Mile/W of Beech	SF.17	Missing	2018 Aug	Pebble Creek	Could not located with Google Maps Street View - reported by Southfield to be 0.5 mi W of Beech on wood pole	Not found/wood utility pole nearby
Southfield	Bridge St./N of 8 Mile	SF.18	Good	2018 Aug	Rouge River Main Branch	North bound	
Southfield	Bridge St./N of 8 Mile	SF.19	Good	2018 Aug	Rouge River Main Branch	South bound	
Southfield	Berg Rd./N of 8 Mile	SF.20	Good	2019 May	Rouge River Main Branch	North bound	
Southfield	Berg Rd./N of 8 Mile	SF.21	Missing	2019 May	Rouge River Main Branch	South bound	Not found
Southfield	9 Mile/ W of Lahser	SF.22	Good	2016 Oct	Rouge River Main Branch	East bound	
Southfield	9 Mile/ W of Lahser	SF.23	Good	2016 Oct	Rouge River Main Branch	West bound	
Southfield	Civic Center/ E of Telegraph	SF.24	OK	2018 Aug	Rouge River Main Branch	West bound, slightly leaning	
Southfield	Civic Center/ E of Telegraph	SF.25	Good	2018 Aug	Rouge River Main Branch	East bound	
Southfield	Franklin/W of Swanson	SF.26	Good	2018 Aug	Pernick Creek	South bound	
Southfield	Franklin/N of Swanson	SF.27	Good	2018 Aug	Pernick Creek	North bound	
Troy	South Blvd./W of John R	TR.1	Good	2018 Aug	Ferry Drain	South side, double sided sign	
Troy	South Blvd./W of Crooks	TR.2	Good	2018 Oct	Sprague Branch	West bound	
Troy	Coolidge/S of South Blvd.	TR.3	Good	2018 Aug	Sprague Branch	South bound	
Troy	Coolidge/S of South Blvd.	TR.4	Good	2018 Aug	Rouge River Watershed	North bound	
Troy	Square Lake/E of Coolidge	TR.5	Good	2019 May	Sprague Branch	East bound	
Troy	Square Lake/E of Coolidge	TR.6	Good	2019 May	Sprague Branch	West bound	
Troy	Square Lake/W of Crooks	TR.7	Good	2019 May	Rouge River Watershed	West bound	
Troy	Livernois/N of Square Lake	TR.8	Good	2018 Oct	Gibson Renshaw Drain	South bound	
Troy	Livernois/N of Square Lake	TR.9	Good	2018 Oct	Gibson Renshaw Drain	North bound	
Troy	Square Lake/E of Rochester	TR.10	Good	2018 Sep	Renshaw Drain	West bound	
Troy	Square Lake/E of Rochester	TR.11	Good	2018 Sep	Renshaw Drain	East bound	
Troy	Square Lake/W of John R	TR.12	Good	2018 Sep	Fetterly Drain	East bound	
Troy	Square Lake/W of John R	TR.13	OK	2018 Sep	Fetterly Drain	Partially blocked by vegetation, West bound	
Troy	Rochester Rd/S of Square Lake	TR.14	Good	2018 Oct	Nelson Drain	South bound	
Troy	Rochester Rd/S of Square Lake	TR.15	Good	2018 Oct	Nelson Drain	North bound	
Troy	John R/N of Long Lake	TR.16	Good	2018 Sep	Nelson Drain	North bound	
Troy	John R/N of Long Lake	TR.17	Good	2018 Sep	Nelson Drain	South bound	
Troy	Long Lake/E of John R	TR.18	Good	2018 Sep	Nelson Drain	East bound	
Troy	Long Lake/E of John R	TR.19	Good	2018 Sep	Nelson Drain	West bound	
Troy	Dequindre/S of Long Lake	TR.20	Good	2018 Sep	Nelson Drain	South bound	
Troy	Wattles/E of Livernois	TR.21	Good	2018 Oct	Sturgis Drain	West bound	
Troy	Wattles/E of Livernois	TR.22	Good	2018 Oct	Sturgis Drain	East bound	
Troy	Livernois/S of Long Lake	TR.23	Good	2018 Oct	Sturgis Drain	North bound	
Troy	Long Lake/W of Crooks	TR.24	OK	2018 Aug	Rouge River Watershed	West bound	
Troy	Coolidge/N of Long Lake	TR.25	Missing	2018 Sep	Rouge River Main Branch	Could not locate with Google Maps Street View	simple "Rogue River" sign found; no "ours to protect" sign
Troy	Beach Rd./N of Wattles	TR.26	Good	2018 Aug	Rouge River Main Branch	South bound	
Troy	Beach Rd./N of Wattles	TR.27	Good	2018 Aug	Rouge River Main Branch	North bound	
Troy	Wattles/E of Adams	TR.28	OK	2018 Sep	Rouge River Main Branch	Partially blocked vegetation, East bound	
Troy	Wattles/E of Adams	TR.29	Good	2018 Sep	Rouge River Main Branch	West bound	
Troy	Wattles/E of Coolidge	TR.30	Good	2018 Sep	Rouge River Watershed	West bound	
Troy	Crooks/N of Wattles	TR.31	Good	2019 May	Lane Drain	North bound	
Troy	Crooks/N of Wattles	TR.32	OK	2019 May	Lane Drain	Could not locate with Google Maps Street View, reported by Troy	
Troy	Wattles/E of Crooks	TR.33	Good	2018 Oct	Lane Drain	East bound	
Troy	Wattles/E of Crooks	TR.34	Good	2018 Oct	Lane Drain	West bound	
Troy	Livernois/N of Big Beaver	TR.35	Good	2018 Oct	Lane Drain	South bound	
Troy	Livernois/N of Big Beaver	TR.36	Good	2018 Oct	Lane Drain	North bound	
Troy	Rochester/N of Big Beaver	TR.37	Good	2018 Oct	Sturgis Drain	South bound	
Troy	Stephenson/S of Maple	TR.38	Good	2017 Oct	Barnard Drain	South bound	
Troy	Stephenson/S of Maple	TR.39	Good	2017 Oct	Barnard Drain	North bound	
Troy	Dequindre/S of Maple	TR.40	Good	2018 Sep	Spencer Drain	South bound	

Table 3: Unreported Sign Locations

Location Area	Street	Sign ID	Condition	Street View	Sign Wording	Notes
Northville	6 Mile Rd./Lake View Cir	XX.1	OK	2016 Aug	Johnson Creek	West bound
Northville	6 Mile Rd./Lake View Cir	XX.2	OK	2016 Aug	Johnson Creek	East bound
Northville	Taft Rd./8 Mile Rd.	XX.3	Good	2018 Jul	Randolph Drain	
Orion Charter Township	Indianwood Rd./W of Absecon Rd	XX.6	Good	2018 Aug	Paint Creek	West bound
Orion Charter Township	Indianwood Rd./W of Absecon Rd	XX.7	Good	2018 Aug	Paint Creek	East bound
Rochester Hills	Winkler Mill Rd./N of Washington Rd	XX.8	Good	2018 Sep	Stony Creek	North bound
Clinton Twp	Garfield Rd/S of Clinton River Rd	XX.9	Good	2018 Sep	Clinton River	South bound
Clinton Twp	Garfield Rd/S of Clinton River Rd	XX.10	Good	2018 Sep	Clinton River	North bound
Mt. Clemens	Gratiot Ave/N of Wellington Cres	XX.11	Good	2018 Aug	Clinton River	North bound
Auburn Hills	Auburn Rd/E of Opdyke Rd	XX.12	Poor	2018 Sep	Clinton River	East bound
Auburn Hills	Auburn Rd/E of Opdyke Rd	XX.13	Poor	2018 Sep	Clinton River	West bound
Auburn Hills	Opdyke Rd/N of Auburn	XX.14	OK	2013 Aug	Clinton River	North bound, old street view image - sign condition may have worsened
Auburn Hills	Opdyke Rd/N of Auburn	XX.15	Good	2017 Aug	Clinton River	South bound
Auburn Hills	Auburn Rd/W of S Squirrel Rd	XX.16	Good	2019 May	Clinton River	East bound
Auburn Hills	Auburn Rd/W of S Squirrel Rd	XX.17	Good	2019 May	Clinton River	West bound
Auburn Hills	Squirrel Rd/N of Auburn	XX.18	Good	2019 May	Clinton River	North bound
Auburn Hills	Squirrel Rd/N of Auburn	XX.19	Good	2018 Oct	Clinton River	South bound
Auburn Hills	University Dr/W of Opdyke	XX.20	Good	2018 Sep	Galloway Creek Branch	South bound
Auburn Hills	University Dr/W of Opdyke	XX.21	Good	2018 Sep	Galloway Creek Branch	North bound
Auburn Hills	Hamlin Rd/E of N Squirrel Rd	XX.22	Good	2019 May	Clinton River	East bound
Auburn Hills	Hamlin Rd/E of N Squirrel Rd	XX.23	Good	2019 May	Clinton River	West bound
Auburn Hills	N Squirrel Rd/S of Cross Creek Pk	XX.24	Good	2018 Oct	Galloway Creek Branch	North bound
Auburn Hills	N Squirrel Rd/S of Cross Creek Pk	XX.25	Good	2019 May	Galloway Creek Branch	South bound
Bloomfield Hills	Opdyke Rd/S of E Hickory Grove	XX.26	Good	2018 Aug	Main 1-2	North bound
Bloomfield Hills	Opdyke Rd/S of E Hickory Grove	XX.27	Good	2018 Aug	Main 1-2	South bound
Bloomfield Hills	Long Pine Rd/Cranbrook Rd	XX.28	Good	2018 Aug	Main 1-2	East bound
Bloomfield Hills	Long Pine Rd/Cranbrook Rd	XX.29	Good	2018 Aug	Main 1-2	West bound
Canton Twp	Ann Arbor Rd/Joy Rd	XX.30	Good	2018 Aug	Fellows Creek	West bound
Canton Twp	Ann Arbor Rd/Joy Rd	XX.31	Poor	2018 Aug	Fellows Creek	Blocked by vegetation, East bound
Plymouth	Beck Rd/N of Ann Arbor Rd	XX.32	Good	2018 Aug	Tyler Creek	North bound
Plymouth	Beck Rd/N of Ann Arbor Rd	XX.33	Poor	2018 Aug	Tyler Creek	Blocked by vegetation, South bound
Plymouth	Ann Arbor Rd/W of McClumpha	XX.34	Good	2018 Aug	Tyler Creek	West bound
Plymouth	Ann Arbor Rd/W of McClumpha	XX.35	Good	2018 Aug	Tyler Creek	East bound
Canton Twp	Beck Rd/ N of Warren	XX.36	Good	2018 Aug	Fellows Creek	South bound
Canton Twp	Beck Rd/ N of Warren	XX.37	Good	2018 Aug	Fellows Creek	North bound
Canton Twp	Joy Rd/W of Lilley Rd	XX.38	Good	2018 Aug	Tonquish Creek	West bound
Canton Twp	Joy Rd/W of Lilley Rd	XX.39	Good	2018 Aug	Tonquish Creek	East bound
Canton Twp	N Canton Cetner Rd/N of Ford	XX.40	Good	2018 Aug	Fellows Creek	South bound
Canton Twp	N Canton Cetner Rd/N of Ford	XX.41	Good	2018 Aug	Fellows Creek	North bound
Commerce Twp.	Commerce Rd/E of S Commerce	XX.42	OK	2017 Jul	Hayes Creek	Partially blocked by vegetation, Double sided
Commerce Twp.	Commerce Rd/W of S Commerce	XX.43	OK	2017 Jul	Huron River	Bent, West bound
Commerce Twp.	Commerce Rd/W of S Commerce	XX.44	OK	2017 Jul	Huron River	Bent, partially blocked by vegetation, East bound
Commerce Twp.	Benstein Rd/N of W Oakley Park	XX.45	Poor	2009 May	?	Condition unknown, old Google Street View
Commerce Twp.	Benstein Rd/N of W Oakley Park	XX.46	Poor	2009 May	?	Condition unknown, old Google Street View
Commerce Twp.	Glengary Rd/W of S Commerce R	XX.47	Good	2017 Jul	Wolverine Lake	Double sided
Commerce Twp.	Union Lake Rd/N of Richardson R	XX.48	OK	2018 Aug	Lower Straits Lake	Slightly bent, double sided
Commerce Twp.	S Commerce Rd/N of Pontiac Tra	XX.49	Poor	2018 Jul	Wolverine Lake	Blocked by vegetation, double sided
Dearborn Heights	S Gulley Rd/S of Amherst St	XX.50	Poor	2018 Aug	North Branch of Ecorse Cree	Blocked by vegetation, South bound
Dearborn Heights	S Gulley Rd/S of Amherst St	XX.51	Poor	2018 Aug	North Branch of Ecorse Cree	Blocked by vegetation, North bound
Dearborn Heights	Beech Daly Rd/S of Amherst St	XX.52	Good	2018 Aug	North Branch of Ecorse Cree	South bound
Dearborn Heights	Beech Daly Rd/S of Amherst St	XX.53	OK	2018 Aug	North Branch of Ecorse Cree	Blocked by vegetation, North bound
Dearborn Heights	Monroe St/Hanover St	XX.54	Good	2018 Aug	North Branch of Ecorse Cree	North bound
Farmington	Shiawassee St/E of Farmington R	XX.55	Good	2019 Jun	Upper Rouge	East bound
Farmington	Power Rd/N of Grand River Ave	XX.56	Good	2019 May	Upper Rouge	South bound



Farmington	Power Rd/N of Grand River Ave	XX.57	Good	2019 May	Upper Rouge	North bound
Farmington	Grand River Ave/E of Rower Rd	XX.58	Good	2019 May	Upper Rouge	East bound
Farmington	Grand River Ave/E of Rower Rd	XX.59	Good	2019 May	Upper Rouge	West bound
Northville	Hutton St/S of Rayson St	XX.60	Good	2019 May	Randolph Drain	North bound
Northville	Sheldon Rd/S of 7 Mile	XX.61	Good	2018 Aug	Johnson Creek	South bound
Northville	High St/N of Randolph St	XX.62	Good	2017 Jun	Randolph Drain	South bound
Northville	High St/N of Randolph St	XX.63	Good	2017 Jun	Randolph Drain	North bound
Novi	9 Mile Rd/W of Taft Rd	XX.64	Good	2018 Jul	Thornton Creek	East bound
Novi	9 Mile Rd/W of Taft Rd	XX.65	Good	2018 Jul	Thornton Creek	West bound
Novi	9 Mile Rd/W of Meadowbrook Rd	XX.66	Good	2019 May	Walled Lake Branch	East bound
Novi	9 Mile Rd/W of Meadowbrook Rd	XX.67	Good	2019 May	Walled Lake Branch	West bound
Plymouth	Sheldon Rd/N of Ann Arbor Trail	XX.68	Good	2018 Sep	Tonquish Creek	North bound
Plymouth	Sheldon Rd/N of Ann Arbor Rd	XX.69	Good	2018 Aug	Byron Creek	South bound
Plymouth	Sheldon Rd/N of Ann Arbor Rd	XX.70	Good	2018 Aug	Byron Creek	North bound
Plymouth Twp	5 Mile Rd/W of Ridge Rd	XX.71	Good	2018 Aug	Johnson Creek	West bound
Plymouth Twp	5 Mile Rd/W of Ridge Rd	XX.72	Good	2018 Aug	Johnson Creek	East bound
Plymouth Twp	Ann Arbor Trail/E of McClumpha	XX.73	Good	2018 Aug	Byron Creek	West bound
Plymouth Twp	Beck Rd/S of N Territorial Rd	XX.74	Good	2018 Aug	Byron Creek	South bound
Plymouth Twp	Beck Rd/S of N Territorial Rd	XX.75	OK	2018 Aug	Byron Creek	Partially blocked by vegetation, North bound
Redford Twp	5 Mile Rd/E of Inkster	XX.76	OK	2018 Aug	Upper Rouge	Leaning, East bound
Romulus	Beverly Rd/W of Henry Ruff	XX.77	Good	2018 Aug	Black Creek	West bound
Walled Lake	Decker Rd/S of Maple Rd	XX.78	Good	2019 May	Huron River	South bound
Walled Lake	Decker Rd/S of Maple Rd	XX.79	Poor	2019 May	Huron River	Blocked by vegetation, North bound
Canton Twp	Hannan Rd/S of Glendwood	XX.80	Poor	2018 Aug	Lower Rouge	Blocked by vegetation, South bound
Canton Twp	Hannan Rd/S of Glendwood	XX.81	OK	2018 Aug	Lower Rouge	Partially blocked by vegetation, North bound
Superior Charter Twp	Ridge Rd/S of Geddes	XX.82	Good	2016 Oct	Fowler Creek	North bound
Superior Charter Twp	Ridge Rd/S of Geddes	XX.83	Good	2016 Oct	Fowler Creek	South bound
Wayne	S John Hix Rd/N of Michigan Ave	XX.84	Good	2018 Aug	Lower Rouge	South bound
Wayne	S John Hix Rd/N of Michigan Ave	XX.85	Poor	2018 Aug	Lower Rouge	Blocked by vegetation, North bound
Wayne	S Newburgh Rd/N of Michigan Ave	XX.86	OK	2018 Aug	Lower Rouge	Partially blocked by vegetation, South bound
Wayne	S Wayne Rd/N of Michigan Ave	XX.87	Good	2018 Aug	Lower Rouge	South bound
Dearborn Heights	Inkster Rd/S of Edward N Hines Dr	XX.88	Good	2018 Sep	Middle Rouge	North bound
Dearborn Heights	Outer Dr/SW of Edward N Hines Dr	XX.91	OK	2019 Jun	Middle Rouge	SW bound
Auburn Hills?	E. Long Lake/SW of Kensington Rd	XX.92	OK	2018 Aug	Main 1-2	SW bound
Auburn Hills?	E. Long Lake/SW of Kensington Rd	XX.93	Poor	2018 Aug	Main 1-2	NE bound, blocked by vegetation
Birmingham?	Willits St/ E of Greenwood	XX.94	Good	2019 Aug	Main 1-3	West bound
	Farmington Rd./N of Simsbury Dr	XX.95	Good	2019 Jun		South bound
	Farmington Rd./N of Simsbury Dr	XX.96	Good	2019 Jun		North bound

Table 4: Recommended New Sign Locations

Location Area	Street	Sign ID	Priority	Sign Wording	Notes
Bloomfield Hills	Kensington R/N of Kingsley Trail	REC.01	Low	Main 1-2	
Birmingham	W Maple R/W of Southfield Rd	REC.02	Low	Main 1-2	
Birmingham	N Old Woodward Ave/N of E Maple Rd	REC.03	Low	Main 1-2	
Birmingham	W Big Beaver Rd/E of Woodward Ave	REC.04	Low	Main 1-2	
Bloomfield Townshi	Kensington Rd/N of W Big Beaver	REC.05	Low	Main 1-2	
West Bloomfield	Drake Rd/N of W Maple Rd	REC.06	Low	Main 1-2	
Farmington Hills	N Inkster Rd/N of W 14 Mile Rd	REC.07	Medium	Main 1-2	
Bloomfield Townshi	W Maple R/ W of Franklin Rd	REC.08	Medium	Main 1-2	
Southfield	W 14 Mile Rd/W of Lahser Rd	REC.09	Low	Main 1-2	
Commerce Townshi	W Maple Rd/W of Haggerty Rd	REC.10	Low	Upper	
West Bloomfield	W Maple Rd/E of Haggerty Rd	REC.11	Low	Upper	
West Bloomfield	Drake Rd/N of W 14 Mile Rd	REC.12	Low	Upper	
Farmington Hills	W 14 Mile Rd/W of Drake Rd	REC.13	Low	Upper	
Farmington Hills	Drake Rd/S of W 14 Miles Rd	REC.14	Low	Upper	
Farmington Hills	Farmington Rd/S of W 14 Mile Rd	REC.15	Low	Upper	
Farmington Hills	Twelve Mile Rd/W of Drake Rd	REC.16	Low	Upper	
Livonia	W Seven Mile Rd/W of N Inkster Rd	REC.17	Medium	Upper	
Livonia	W Seven Mile Rd/W of Meriman Rd	REC.18	Low	Upper	
Livonia	Farmington Rd/N of W Seven Mile Rd	REC.19	Low	Upper	
Livonia	Six Mile Rd/W of Farmington Rd	REC.20	Low	Upper	
Livonia	Six Mile Rd/W of Farmington Rd	REC.21	Low	Upper	
Livonia	Meriman Rd/S of W Seven Mile Rd	REC.22	Low	Upper	
Livonia	Six Mile Rd/E of Middlebelt Rd	REC.23	Low	Upper	
Livonia	Middlebelt Rd/N of Six Mile Rd	REC.24	Low	Upper	
Livonia	Six Mile Rd/W of N Inkster Rd	REC.25	Low	Upper	
Redford	Six Mile Rd/E of N Inkster Rd	REC.26	Low	Upper	
Redford	Beech Daly Rd/S of Six Mile Rd	REC.27	Medium	Upper	
Redford	5 Mile Rd/W of Telegraph Rd	REC.28	Medium	Upper	
Redford	Beech Daly Rd/S of 5 Mile Rd	REC.29	Medium	Upper	
Livonia	Middlebelt Rd/S of Six Mile Rd	REC.30	Low	Upper	
Redford	N Inkster Rd/N of 5 Mile Rd	REC.31	Medium	Upper	
Northville	Haggerty Rd/N of 5 Mile Rd	REC.32	Low	Upper	
Novi	Novi Rd/N of W 13 Mile Rd	REC.33	High	Middle 1	
Novi	Twelve Mile Rd/W of W Park Dr	REC.34	High	Middle 1	
Novi	Grand River Ave/E of Wixom Rd	REC.35	High	Middle 1	
Novi	Taft Rd/S of Grand River Ave	REC.36	High	Middle 1	
Novi	W 10 Mile Rd/E of Meadowbrook Rd	REC.37	High	Middle 1	
Novi	W 10 Mile Rd/E of Novi Rd	REC.38	Low	Middle 1	Update Sign
Novi	Meadowbrook Rd/S of W 10 Mile Rd	REC.39	High	Middle 1	
Northville	Novi Rd/N of W 8 Mile Rd	REC.40	High	Middle 1	
Northville	Novi Rd/N of W 8 Mile Rd	REC.41	High	Middle 1	
Novi	Taft Rd/S of W 9 Mile Rd	REC.42	High	Middle 1	
Northville	W Seven Mile Rd/E of Napier Rd	REC.43	High	Middle 1	
Salem Township	7 Mile Rd/W of Napier Rd	REC.44	Low	Middle 1	
Salem Township	Currie Rd/N of 7 Mile Rd	REC.45	Low	Middle 1	Update Sign

☞ Salem Township	7 Mile Rd/E of Currie Rd	REC.46	Low	Middle 1	
☞ Salem Township	Six Mile Rd/W of Currie Rd	REC.47	Low	Middle 1	Update Sign
☞ Salem Township	Six Mile Rd/W of Chubb Rd	REC.48	Low	Middle 1	Update Sign
☞ Salem Township	Pontiac Trail/N of 5 Mile Rd	REC.49	Low	Middle 1	Update Sign
☞ Salem Township	Curtis Rd/N of 5 Mile Rd	REC.50	Low	Middle 1	Update Sign
☞ Salem Township	Curtis Rd/N of 5 Mile Rd	REC.51	Low	Middle 1	Update Sign
☞ Salem Township	5 Mile Rd/W of Salem Rd	REC.52	High	Middle 1	
☞ Salem Township	Napier Rd/N of N Territorial Rd	REC.53	High	Middle 1	
☞ Northville	Napier Rd/S of 7 Mile Rd	REC.54	High	Middle 1	
☞ Northville	W Seven Mile Rd/E of N Beck Rd	REC.55	High	Middle 1	
☞ Northville	8 Mile Rd/E of Beck Rd	REC.56	High	Middle 1	
☞ Northville	W 8 Mile Rd/W of Meadowbrook Rd	REC.57	Low	Middle 1	
☞ Northville	Northville Rd/E of Griswold St	REC.58	Low	Middle 1	
☞ Northville	W Seven Mile Rd/E of Edward N Hines Dr	REC.59	Low	Middle 1	
☞ Northville	Northville Rd/S of W Seven Mile Rd	REC.60	Low	Middle 1	
☞ Northville	Sheldon Rd/N of Six Mile Rd	REC.61	High	Middle 1	
☞ Northville	Sheldon Rd/S of Six Mile Rd	REC.62	High	Middle 1	
☞ Northville	Sheldon Rd/N of 5 Mile Rd	REC.63	High	Middle 1	
☞ Northville	Northville Rd/N of 5 Mile Rd	REC.64	High	Middle 1	
☞ Plymouth	Northville Rd/S of Edward N Hines Dr	REC.65	High	Middle 1	
☞ Plymouth	Edward N Hines Dr/W of Haggerty Rd	REC.66	High	Middle 1	
☞ Plymouth	Haggerty Rd/N of Edward N Hines Dr	REC.67	High	Middle 1	
☞ Canton	Lilley Rd/N of Warren Rd	REC.68	High	Middle 1	
☞ Plymouth	Ann Arbor Rd/W of N Lilley Rd	REC.69	High	Middle 1	
☞ Canton	Morton Taylor Rd N/N of Warren Rd	REC.70	High	Middle 1	
☞ Canton	Haggerty Rd/N of Ford Rd	REC.71	High	Middle 1	
☞ Canton	N Lilley Rd/N of Ford Rd	REC.72	High	Middle 1	
☞ Canton	Morton Taylor Rd N/S of Warren Rd	REC.73	High	Middle 1	
☞ Canton	Sheldon Rd/S of Warren Rd	REC.74	High	Middle 1	
☞ Canton	Sheldon Center Rd/N of N Canton Center	REC.75	High	Middle 1	
☞ Superior Township	N Harris Rd/S of Geddes Rd	REC.76	High	Lower 1	
☞ Superior Township	Geddes Rd/W of Ridge Rd	REC.77	Medium	Lower 1	
☞ Superior Township	Geddes Rd/W of Ridge Rd	REC.78	Medium	Lower 1	Update Sign
☞ Canton	Ridge Rd S/S of Cherry Hill Rd	REC.79	High	Lower 1	
☞ Superior Township	Ford Rd/E of Gotfredson Rd	REC.80	High	Lower 1	
☞ Canton	Denton Rd/S of Geddes Rd	REC.81	High	Lower 1	
☞ Canton	Denton Rd/N of Proctor Rd	REC.82	High	Lower 1	
☞ Canton	S Beck Rd/N of Geddes Rd	REC.83	High	Lower 1	
☞ Canton	S Beck Rd/N of Geddes Rd	REC.84	High	Lower 1	
☞ Canton	S Canton Center Dr/S of Palmer Rd	REC.85	High	Lower 1	
☞ Canton	S Canton Center Dr/N of Geddes Rd	REC.86	High	Lower 1	
☞ Canton	S Sheldon Rd/S of Palmer Rd	REC.87	High	Lower 1	
☞ Canton	S Sheldon Rd/N of Geddes Rd	REC.88	High	Lower 1	
☞ Canton	S Lilley Rd/N of Michigan Ave	REC.89	High	Lower 1	
☞ Canton	S Lotz Rd/N of Michigan Ave	REC.90	High	Lower 1	
☞ Canton	Palmer Rd/E of S Lotz Rd	REC.91	High	Lower 1	
☞ Canton	S Lotz Rd/S of Cherry Hill Rd	REC.92	High	Lower 1	

☞ Canton	Cherry Hill Rd/E of S Lotz Rd	REC.93	High	Lower 1	
☞ Canton	N Lotz Rd/N of Cherry Hill Rd	REC.94	High	Lower 1	
☞ Canton	Haggerty Rd/N of Cherry Hill Rd	REC.95	High	Lower 1	
☞ Canton	S Lilley Rd/S of Cherry Hill Rd	REC.96	High	Lower 1	
☞ Canton	Sheldon Rd/N of Cherry Hill Rd	REC.97	High	Lower 1	
☞ Van Buren Township	Van Born Rd/W of S Lilley Rd	REC.98	High	Lower 1	
☞ Van Buren Township	Ecorse Rd/W of Haggerty Rd	REC.99	High	Lower 1	
☞ Canton	Denton Rd/N of Mott Rd	REC.100	High	Lower 1	
☞ Canton	Mott Rd/E of Barr Rd	REC.101	High	Lower 1	
☞ Wayne	Glenwood Rd/W of S Newburgh Rd	REC.102	High	Lower 2	
☞ Wayne	Van Born Rd/E of Hannan Rd	REC.103	Medium	Lower 2	
☞ Romulus	Ecorse Rd/E of Cogswell St	REC.104	Medium	Lower 2	
☞ Wayne	Van Born Rd/W of Treadwell St	REC.105	Medium	Lower 2	
☞ Wayne	S Newburgh Rd/S of Glenwood	REC.106	High	Lower 2	
☞ Romulus	Wayne Rd/N of Beverly Rd	REC.107	Medium	Lower 2	
☞ Wayne	Venoy Rd/N of Michigan Ave	REC.108	High	Lower 2	
☞ Westland	Meriman Rd/N of Michigan Ave	REC.109	High	Lower 2	
☞ Inkster	Henry Ruff Rd/N of Michigan Ave	REC.110	High	Lower 2	
☞ Inkster	Middlebelt Rd/N of Michigan Ave	REC.111	High	Lower 2	
☞ Inkster	Inkster Rd/N of Michigan Ave	REC.112	High	Lower 2	
☞ Inkster	John Daly St/N of Michigan Ave	REC.113	High	Lower 2	
☞ Dearborn Heights	S Gulley Rd/S of Avondale St	REC.114	High	Lower 2	
☞ Dearborn	W Outer Dr/N of Michigan Ave	REC.115	High	Lower 2	
☞ Dearborn	S Military St/N of Michigan Ave	REC.116	High	Lower 2	
☞ Dearborn	S Brady St/S of Cherry Hill St	REC.117	High	Lower 2	
☞ Dearborn Heights	Edward N Hines Dr/N of Ford Rd	REC.118	Medium	Middle 3	
☞ Dearborn Heights	Outer Dr W/S of Edward N Hines Dr	REC.119	Medium	Middle 3	
☞ Dearborn Heights	W Warren Ave/W of Edward N Hines Dr	REC.120	Medium	Middle 3	
☞ Dearborn Heights	Beech Daly Rd/N of Warren Rd	REC.121	Medium	Middle 3	
☞ Dearborn Heights	N Inkster Rd/S of Edward N Hines Dr	REC.122	Medium	Middle 3	
☞ Westland	Edward N Hines Dr/E of N Merriman Rd	REC.123	Medium	Middle 3	
☞ Westland	N Merriman Rd/N of Edward N Hines Dr	REC.124	Medium	Middle 3	
☞ Westland	Edward N Hines Dr/W of N Merriman Rd	REC.125	Medium	Middle 3	
☞ Westland	Edward N Hines Dr/S of Ann Arbor Trail	REC.126	Medium	Middle 3	
☞ Westland	N Wayne Rd/S of Joy Rd	REC.127	Medium	Middle 3	
☞ Westland	Central City Pkwy/N of Warren Rd	REC.128	Medium	Middle 3	
☞ Westland	N Newburgh Rd/N of Warren Rd	REC.129	Medium	Middle 3	
☞ Westland	N Hix Rd/N of Warren Rd	REC.130	Medium	Middle 3	