Let's make one thing
Perfectly Clear.
our water
Genesee County Community Water Quality Consortium

Phase II Municipalities
Program Effectiveness Reporting

On behalf of:

Burton	Clio	Davison
Davison Twp	Fenton	Fenton Twp
Flint Twp	Flushing	Genesee Twp
Genesee County	Grand Blanc	Linden
Mt. Morris	Mt Morris Twp	Swartz Creek
Vienna Twp	Grand Blanc Twp (joined 1/1/2023)	

March 1, 2022 – March 1, 2023
Reporting Period

Prepared by:

The Genesee County Drain Commissioner SWM
On behalf of Genesee County and contracted Communities

This report summarizes activities completed for the period from March 1,2021 to March 1,2022, by the Genesee County Drain Commissioner's Office and the contracted Phase II Municipalities to meet the requirements of their National Pollutant Discharge Elimination System (NPDES) permit. This report is broken into six sections to coincide with the MI Waters website.

- PPP
- PEP
- IDEP
- **General Permit Requirements**

The effectiveness of the PEP program and the IDEP program are evaluated in several ways:

- “Bean counting” are the measurable goals in Table 2 of the permit application (PEP) being met See 2022-2023 PEP
- The outfalls in the IDEP plan being Identified and tested. see 2022-2023 IDEP
- The calls reporting Illicit Discharge being followed up on and eliminated. See 2022-2023 IDEP
- Water chemical testing from Project GREEN
- Benthic Monitoring results indicating overall water quality
- Beach testing results
- Social Survey- done each permit cycle
- Report by Tetra Tech on Program effectiveness and trend analysis. Using monitoring data collected.

GENESEE GREEN

As part of the program, students from local schools learn about water quality and testing procedures by visiting various sites to take water samples and by analyzing the collected data.

Schools are encouraged to participate in a summit, where students can present their findings. This program was disrupted Spring of 2020 due to covid. Due to Covid, collections and the Symposium had challenges. Collections were taken on 15 or more sites. The Symposium was virtual in Spring 2022 and is planned to be virtual for May 2023. Samples for Spring 2023 are being taken and will be reported in next reporting cycle. All results, education and training on www.flintrivergreen.org

As part of the program, students from local schools learn about water quality and testing procedures by visiting various sites to take water samples and by analyzing the collected data. Many of the students get the opportunity to present their results, compare results to other sites, and get additional education at the Summit. This reporting period teachers are doing one of 3 things:

- Mentors taking samples and bringing to school to be tested.
- Mentors taking samples and testing students doing study work online with results.
- Teachers and students along with Mentors doing program as designed, pre-covid.

Each site visited is categorized as excellent, good, fair, poor, or very poor based on the National Sanitation Foundation (NSF) WQI analysis. To determine the WQI, nine tests are performed. Parameters tested include dissolved oxygen, fecal coliform, pH, biochemical oxygen demand (5-day), temperature, total phosphate, nitrates, turbidity, and total solids. After completing the nine tests, results are recorded and transferred to a weighting curve chart where a numerical value is obtained as shown in Table 7-1. For each test, the numerical value or Q-value between 0 and 10 is multiplied by a "weighting factor." For example, dissolved oxygen has a relatively high weighting factor (0.17) and therefore is more significant in determining water quality than the other tests. The nine resulting values are then added together to arrive at an overall WQI. If all nine water quality tests are not available, then the total of those samples available is multiplied by the inverse their total weighting factors.

Water Quality Index Calculation Chart

Test Parameter	Q-Value	Weighting Factor	Total
1. Dissolved oxygen	Q_{DO}	0.17	0.17 x Q_{DO}
2. Fecal coliform	Q_{FC}	0.16	0.16 x Q_{FC}
3. pH	Q_{pH}	0.11	0.11 x Q_{pH}
4.Biochemical oxygen demand	Q_{BOD}	0.11	0.11 x Q_{BOD}
5. Temperature	Q_T	0.11	0.11 x Q_T
6. Total phosphate	Q_P	0.10	0.10 x Q_P
7. Nitrates	Q_N	0.10	0.10 x Q_N
8. Turbidity	Q_{Turb}	0.08	0.08 x Q_{Turb}
9. Total solids	Q_{TS}	0.07	0.07 x Q_{TS}
		Overall WQI	Sum (Q_x)

Table I - WQI Quality Scale	
91-100:	Excellent water quality
71-90:	Good water quality
51-70:	Medium or average water quality
26-50:	Fair water quality
0-25:	Poor water quality

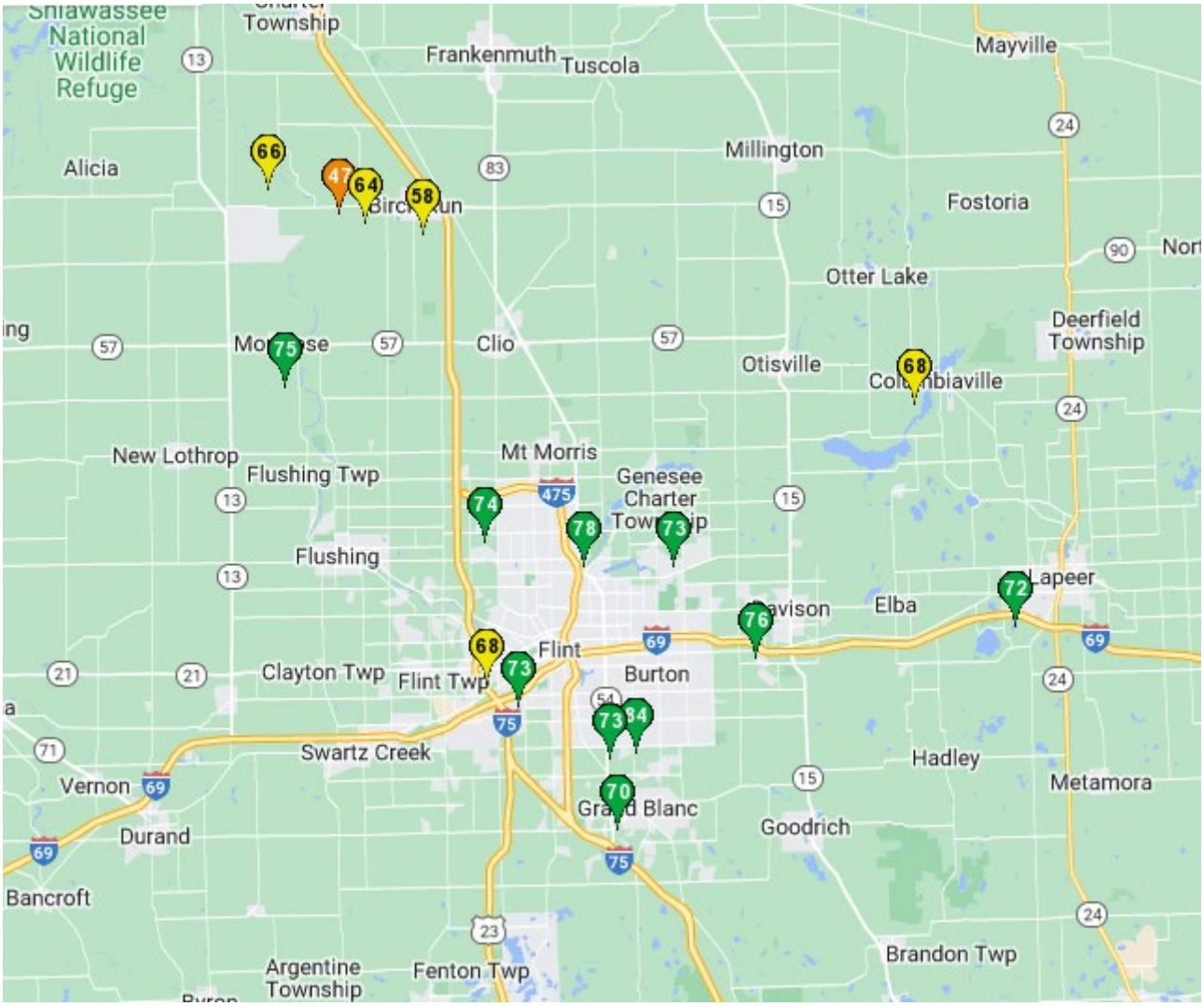
It should be noted that there was no discernible correlation between the Genesee GREEN Results and the Benthic Monitoring Results. Since the benthic monitoring results reflect the macroinvertebrates long term exposure to their environment the results are assumed to be more reflective of the overall health of the water body compared to the one-time sampling associated with Genesee GREEN.

[Reference: *Mitchell, Mark K. and William B. Sharp, 2000. Field manual for Water Quality Monitoring: An environmental education program for schools, (twelfth edition), Kendall/Hunt Publishing Company, Dubuque, Iowa*]

Much effort was spent by Tom Jones from GCDC-SWM to update the Green Website http://flintrivergreen.org/ last reporting period to allow teachers to directly enter the data and make that data available to the public. Through a grant the teacher education has been expanded.

Below are the results from the reporting period. Tetra Tech used the historic data to compile a Program Effectiveness and Trend Analysis report. Attached at end of this Document.

2022 School Year data



LOCATION	SCHOOL	MONTH / YEAR	WQI	WT WQI
	Clio Middle School	4 / 2022	76.93	77
Crampton Drain at Kearsley Armstrong	Armstrong Middle School	4 / 2022	73.34	73
Davison Black Creek	Davison Middle School	4 / 2022	76.37	76
Davison Black Creek	Davison Middle School	4 / 2022	76.37	76
Farmers Creek	Chatfield	10 / 2022	71.51	72
Flint River @ Barber Memorial Park	Montrose Middle School	4 / 2022	74.53	75
Flint River @ Steeping Stone Falls	Mt. Morris Middle School	5 / 2022	69.61	78

Holloway Reservoir Columbiaville	LakeVille Middle School	5 / 2022	67.79	68
Lake Drain at Coldwater Rd.	Hamady High School	5 / 2022	40.68	74
Mott Golf Course Bridge at hole #6	St. John Vianney	5 / 2022	68.35	68
Pierson Drain at Atherton HS	Atherton High School	5 / 2022	70.44	84
Runnels Drain at Dixie Hwy.	Marshall Greene Middle School	4 / 2022	70.62	71
Runnels Drain at Dixie Hwy.	Marshall Greene Middle School	10 / 2022	51.79	58
Runnels Drain at Dixie Hwy.	Marshall Greene Middle School	10 / 2022	43.36	49
Silver Creek	Marshall Greene Middle School	4 / 2022	66.24	66
Silver Creek	Marshall Greene Middle School	10 / 2022	48.95	55
Silver Creek	Marshall Greene Middle School	10 / 2022	57.4	64
Silver Creek Elms Rd.	Marshall Greene Middle School	4 / 2022	69.01	69
Silver Creek Elms Rd.	Marshall Greene Middle School	10 / 2022	49.44	56
Silver Creek Elms Rd.	Marshall Greene Middle School	10 / 2022	56.85	64
Silver Creek Morrish Rd.	Marshall Greene Middle School	4 / 2022	66.42	66
Silver Creek Morrish Rd.	Marshall Greene Middle School	10 / 2022	45.79	51
Silver Creek Morrish Rd.	Marshall Greene Middle School	10 / 2022	42.2	47
Swartz Creek at Swartz Creek M.S.	Swartz Creek Middle School	5 / 2022	66.12	80
Swartz Creek south of Powers	Powers Catholic High School	5 / 2022	73.33	73
Swartz Creek south of Powers	Powers Catholic High School	10 / 2022	74.56	75
Thread Creek at Bristol Road	Bendle High School	5 / 2022	60.2	73
Thread Creek at Rust Park in Grand Blanc	Genesee Area Skill Center	5 / 2022	70.17	70

LOCATION	SCHOOL	MONTH / YEAR	WQI	WT WQI
Swartz Creek South of Powers	Powers Catholic High School	10/2021	80.25	80
	Clio Middle School	4 / 2022	76.93	77
Crampton Drain at Kearsley Armstro	Armstrong Middle School	4 / 2022	73.34	73
Davison Black Creek	Davison Middle School	4 / 2022	76.37	76
Davison Black Creek	Davison Middle School	4 / 2022	76.37	76
Farmers Creek	Chatfield	10 / 2022	66.23	79
Flint River @ Barber Memorial Park	Montrose Middle School	4 / 2022	74.53	75
Flint River @ Steeping Stone Falls	Mt. Morris Middle School	5 / 2022	69.61	78
Holloway Reservoir Columbiaville	LakeVille Middle School	5 / 2022	67.79	68
Lake Drain at Coldwater Rd.	Hamady High School	5 / 2022	40.68	74
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Runnels Drain at Dixie Hwy.	Marshall Greene Middle School	4 / 2022	70.62	71
Silver Creek	Marshall Greene Middle School	4 / 2022	66.24	66
Silver Creek Elms Rd.	Marshall Greene Middle School	4 / 2022	69.01	69
Silver Creek Morrish Rd.	Marshall Greene Middle School	4 / 2022	66.42	66
Swartz Creek at Swartz Creek M.S.	Swartz Creek Middle School	5 / 2022	66.12	80
Swartz Creek south of Powers	Powers Catholic High School	5 / 2022	73.33	73
Thread Creek at Bristol Road	Bendle High School	5 / 2022	60.2	73
Thread Creek at Rust Park in Grand	Genesee Area Skill Center	5 / 2022	70.17	70

Number of Students	Number of Classes	Grade Level/Subject
33	1	Aquatic Biology teacher
23	2	Science
22	3	Math, Science, & Elective teacher
		Science and Academically Talented
32	2	Science
30	9	Science
15	1	Science
32	2	Honors Science
15	3	Teacher/Agriscience
150	5	MS science teacher/department head
4	4	Science Teacher
1	1	Conservation and Ecology (Elective)
1	1	STEM Elective
10	10	Science
5	5	Biology
3	3	AP Sciences
16	1	Science
30	10	Science 7th graders
25	4	Science

Flint River Green Bridges: Connecting Communities, Classroom, Curriculum, and Careers

The following links redirect you to a living Google Drive folder. The Flint River Green Bridges curriculum and accompanying resources are currently under pilot and exist in draft form only. These materials have been made publicly available as a resource to help guide other water quality education endeavors throughout the Great Lakes region and beyond.

School	Grade Level	Class	Mentor Requests	Mentor Organization	Mentor: GREEN TopicsThat Most Interest You
Armstrong Middle School	6-8	3	careers in environmental/STEM fields	Parks - For-Mar	Teaching students water chemistry testing procedures prior to a stream
Atherton Jr/Sr High School	8th	2 Bridges	careers in environmental/STEM fields	General Motors	testing procedures prior to a stream visit, Assisting teachers and students
Bendle High School	9-12	9	water quality and the Flint River		
Clio Middle School	8th	1	students water chemistry testing	District	Assisting teachers and students with identifying and communicating with
Davison Middle School	7th	2	students water chemistry testing	Parks - For-Mar	Teaching students water chemistry testing procedures prior to a stream
Genesee Career Institute	11 and 12	3	careers in environmental/STEM fields	General Motors	Teaching students water chemistry testing procedures prior to a stream
Hamady Middle School	7	5 Bridges	water quality and the Flint River	District	Assisting teachers and students with identifying and communicating with
Kuehn-Haven Middle School	6th	4 Bridges	careers in environmental/STEM fields	Coalition	identifying and communicating with other community partners, anything you
LakeVille Memorial High School	11 and 12	1 Bridges Lite	students water chemistry testing	Coalition	Teaching students water chemistry testing procedures prior to a stream
Marshall Greene Middle	7/8	1 Bridges	students water chemistry testing	Environment, Great	testing procedures prior to a stream visit, Assisting teachers and students
Mt. Morris Middle School	7th and 8th	10 Bridges	water quality and the Flint River	Commission and Flint	Teaching students water chemistry testing procedures prior to a stream
North Branch High School	10th	5 Bridges	careers in environmental/STEM fields	Nicole Kopas	Assisting teachers and students with data analysis following the stream
Powers Catholic High School	11-12	3	students water chemistry testing	Pollution Control	Teaching students water chemistry testing procedures prior to a stream
St. John Vianney	8th	1	students water chemistry testing	General Motors	Teaching students water chemistry testing procedures prior to a stream
Swartz Creek Middle School	7th	10	students water chemistry testing	University Extension	River, Teaching students water chemistry testing procedures prior to a

SUMMIT SCHEDULE:

MAY 16 - 25

Recorded Expert Presentations

MAY 19

LIVE Expert Presentations

MAY 23 - 25

LIVE Student Presentations

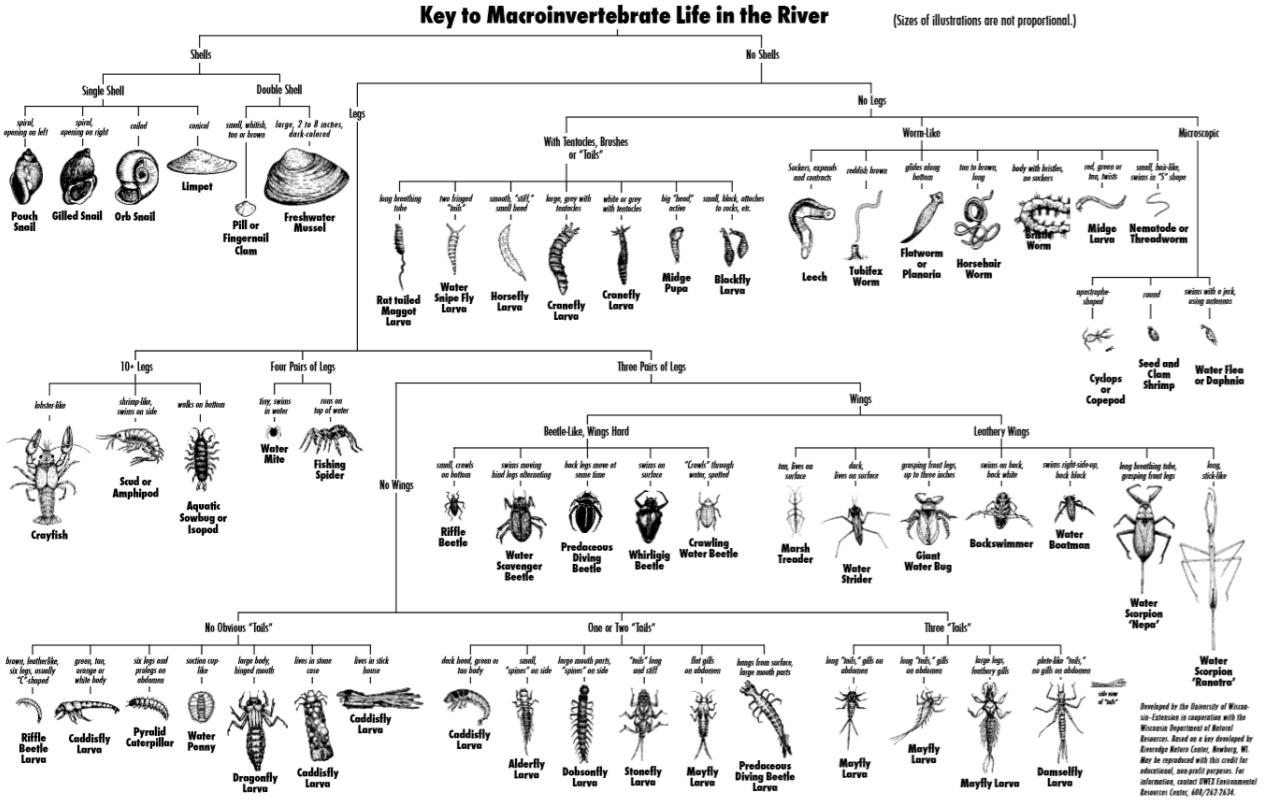
MACROINVERTEBRATE STUDY

Since 1999, the Flint River Watershed Coalition (FRWC) has executed a bi-annual Benthic Monitoring Program that has been designed to meet EGLE. This program has expanded from 18 to 30 sites since its inception.

This program is successful because volunteers who live in the watershed contribute two days, twice a year for training, sample collection and species identification. The scores for each site visit are averaged over the sample years and categorized as either Excellent (>48), Good (34 – 48), Fair (19 – 33.9), and Poor (<19). These scores not only give an indication of macroinvertebrate community health but also provide a good Water Quality Index value.

Below are the results from the reporting period. Tetra Tech used the historic data to compile a Program Effectiveness and Trend Analysis report. Attached at end of this Document.

Benthic monitoring has the benefit that it is not just a snapshot of the river. What "bugs" are found gives a good idea of the general heath of the water and soils allowing the more sensitive bugs to survive or not.



Weather prevented testing at 3 sites where water was too high or fast to safely collect samples.

It should be noted that there was no discernible correlation between the Project GREEN Results (Section 7) and the Benthic Monitoring results. Since the Benthic Monitoring results reflect the macroinvertebrates' long-term exposure to their environment, the results are assumed to be more reflective of the overall health of the water body compared to the one-time sampling associated with Project GREEN (which is more focused on inspiring youth).

Flint River- Fall of 2022 results will be reported in next reporting period. FRWC contract is based on old reporting cycle.

Keepers of the Shiawassee took over the 2 sites within the Shiawassee Watershed in 2020. They have also expanded to 3 to 4 sites. Collection sheets available at Drain Office.

Fall 2021

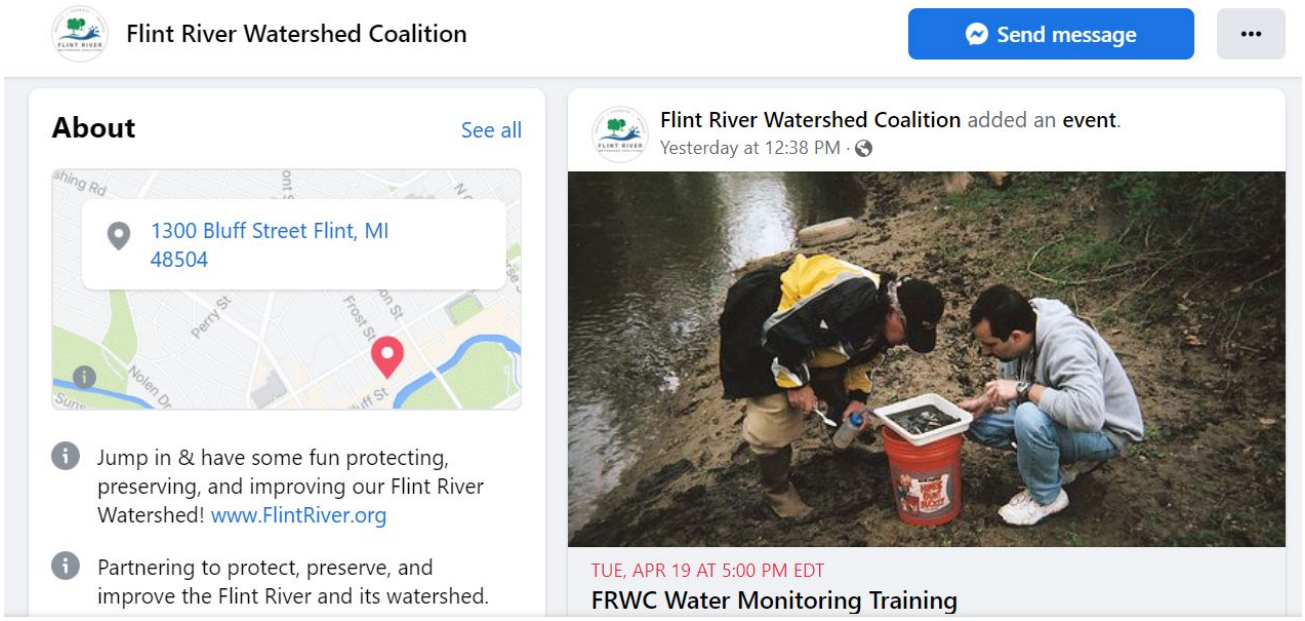
*Due to inclement weather, high/fast water, and unsafe river conditions, 2021 fall monitoring was cancelled for FRWC sites.

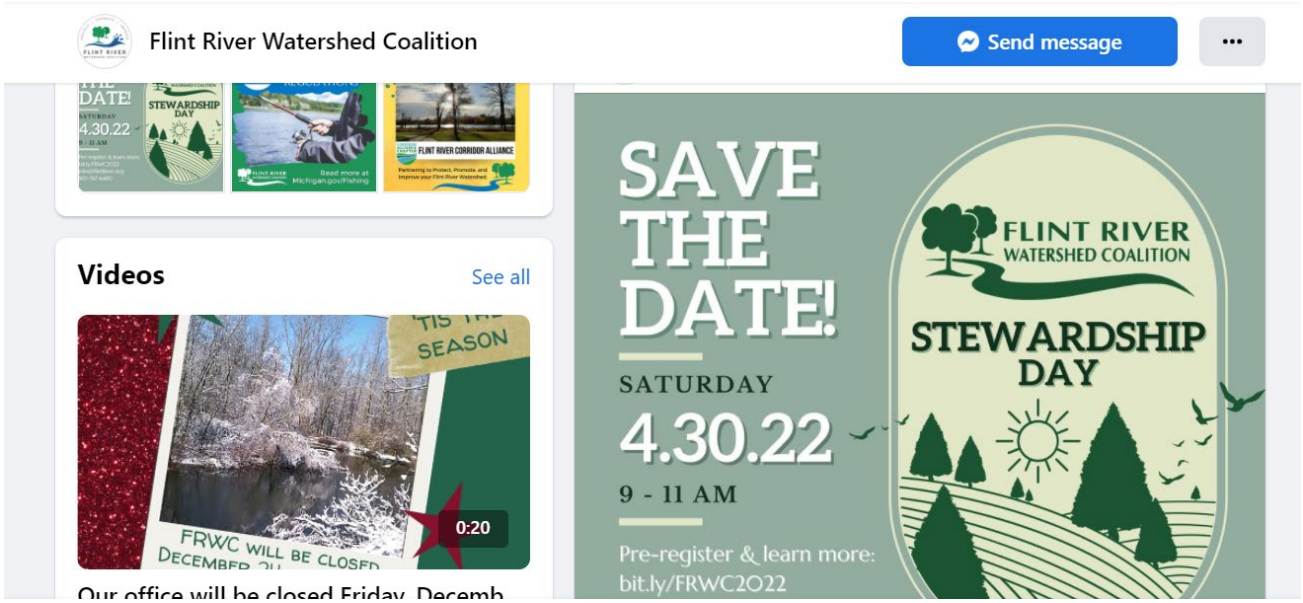
Keepers of the Shiawassee
P.O.Box 22
Linden, MI 48451

Site #	Name	Site Location	Score	Habitat Assessment	Monitors @ site	2021 Fall Volunteers
1	Downtown Linden	City of Linden T5NR6ES19	40.4	Yes	6	Gary Messenger, Pat Cockfield, Janell Tillman Maggie Yerman, Brent Judson , Natalie Guenther
2	Rackham Park	City of Fenton	28.8	Yes	6	Gary Messenger, Pat Cockfield, Jannell Tillman Maggie Yerman, Brent Judson, Natalie Guenther

Spring 2022

# of Sites	Current #	*Previous #*	Site Name	Site Location	Score	Habitat Assessmen	Monitors at Sit	2022, Spring Volunteers
1	**7**	*10*	Flint River, Flushing	Flushing Twp T8NR5ES1	52.4	Yes	4	Molly Dallaire, Jena McMurray, Terra Lochart, Mic
2	**8**	*9*	Swartz Creek	Flint Twp T7NR7E	28.6	Yes	2	Jeff & Jaime Welch
3	**9**	*13*	Gilkey Creek	City of Flint T7NR7E	Discontinued	NA	NA	Discontinued
4	**10**	*11*	Thread Creek	Burton Twp T7NR7ES20	24.3	Yes	2	Rich and Stephanie Miller
5	**11**	*12*	Kearsley Creek (For-Mar)	Burton Twp T7NR7ES2	28.2	Yes	3	Brian Costanza, Justin Franks, Max Buxtor
6	**12**	*6*	Butternut Creek	Genesee Twp T8NR7ES	48	Yes	3	Molly Dallaire, Terra Lochart, Micah Wagner
7	**15**	*15B*	Brent Run	Montrose Twp T9NR5ES	26.6	Yes	1	Darren Bagley
8	**20**	*8B*	Misteguay Creek Headwat	Clayton Twp T7NR5ES8	35	Yes	3	Trent Adams, Sam Torres, Jenna Bemis
9	**21**	*15B*	Brent Run Headwaters	Mt. Morris Twp T8NR6ES	35.7	Yes	4	Kelsey Hempstead, Jade Hamilton, Ben Woerne
10	**22**	*9B*	Swartz Creek Headwaters	Fenton Twp T5NR6ES6	24.8	Yes	2	Alexus Harden, Casey O'Connell
11	**23**	*11B*	Thread Creek Headwaters	Grand Blanc Twp T6NR8	35.6	Yes	4	Brittany, Arianna, Aubrey, Jessica (U of M studen
12	**24**	*12B*	Kearsley Creek Headwate	Atlas Twp T6NR8ES36	39.3	Yes	3	Danielle Henezarek, Kyle Clarke, Thomas Schlo
13	**25**	*13B*	Gilkey Creek Headwaters	Burton Twp T7NR7ES1	30	Yes	3	Danielle Henezarek, Kyle Clarke, Thomas Schlo
14	**26**	*6B*	Butternut Creek, Headwate	Forest Twp T9NR8ES16	48	Yes	2	Jeff & Jaime Welch
15	**30**	*7B*	Pine Run Headwaters	Vienna Twp T9NR6ES13	35.6	Yes	3	Trent Adams, Sam Torres, Jenna Bemis
16	**31**	*20*	Shiawassee River Argentir	Argentine Twp T5NR5ES	Discontinued	Yes	NA	Both Shiawassee sites have been handed over.
17	**32**	*21*	Shiawassee River Linden	Fenton Twp T5NR6ES19	Discontinued	Yes	NA	Mott Park and Stepping Stone Falls will be repla
18	**33**	*16R*	Clark Drain, Richfield Park	Richfield Twp T8NR8ES1	48.6	Yes	4	Nicole Ferguson, Courtney Prout, Kellie & Bronw
19	**35**		Gilkey Creek, Kearsley Par	City of Flint T7NR7E	35.3	Yes	2	Rob & Cathy Cojeen, Jaime Welch
20	**38**		Flint River, Mott Park Landi	City of Flint	22.6	Yes	2	Jaime Welch, Jeff Welch
21	**39b**		Flint River, Stepping Stone	Falls East	31.9	Yes	0.3	Nicole Ferguson, Edie Almasy, Ryan Kelsey




Flint River Watershed Coalition
Send message
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SEASON
0:20
FRWC WILL BE CLOSED
SAVE THE DATE!
SATURDAY
4.30.22
9 - 11 AM
Pre-register & learn more:
bit.ly/FRWC2022
FLINT RIVER WATERSHED COALITION
STEWARDSHIP DAY

BEACH TESTING RESULTS

Blue bell beach in Genesee Township has been tested each summer by the Health Department. Results below. No Closures and Advisories for 2022-2023 reporting period.

Advisory Year	Start Date	Reopen Date	Days Closed	Type	Reason	Source
2019						
	8/27/2019		52	Closure	High bacteria levels	Unknown
	6/4/2019	6/7/2019	3	Closure	High bacteria levels	Unknown
2008						
	9/15/2008	9/30/2008	15	Contamination Advisory	High bacteria levels	Runoff
	7/28/2008	8/4/2008	7	Contamination Advisory	High bacteria levels	Unknown
2007						
	8/9/2007	10/31/2007	83	Closure	High bacteria levels	Unknown
2005						
	8/8/2005	10/1/2005	54	Contamination Advisory	High bacteria levels	Unknown

Sample Year	Sample Date	Sample Type	Analysis Method	Result Value
2022				
Bluebell Beach Mott Lake	08/29/2022 8:05 AM	Individual	Colilert-18 hour	8.6
Bluebell Beach Mott Lake	08/29/2022 8:05 AM	Individual	Colilert-18 hour	10.8
Bluebell Beach Mott Lake	08/29/2022 8:05 AM	Individual	Colilert-18 hour	11
	08/29/2022	Daily Mean	Colilert-18 hour	10.0718
	08/29/2022	30-Day Mean	Colilert-18 hour	35.7141
Bluebell Beach Mott Lake	08/22/2022 8:00 AM	Individual	Colilert-18 hour	67.7
Bluebell Beach Mott Lake	08/22/2022 8:00 AM	Individual	Colilert-18 hour	93.3
Bluebell Beach Mott Lake	08/22/2022 8:00 AM	Individual	Colilert-18 hour	93.2
	08/22/2022	Daily Mean	Colilert-18 hour	83.8099
	08/22/2022	30-Day Mean	Colilert-18 hour	40.6569
Bluebell Beach Mott Lake	08/16/2022 8:00 AM	Individual	Colilert-18 hour	52.9
Bluebell Beach Mott Lake	08/16/2022 8:00 AM	Individual	Colilert-18 hour	51.2
Bluebell Beach Mott Lake	08/16/2022 8:00 AM	Individual	Colilert-18 hour	47.1
	08/16/2022	Daily Mean	Colilert-18 hour	50.3403
	08/16/2022	30-Day Mean	Colilert-18 hour	42.7928

Bluebell Beach Mott Lake	08/08/2022 8:00 AM	Individual	Colilert-18 hour	55.4
Bluebell Beach Mott Lake	08/08/2022 8:00 AM	Individual	Colilert-18 hour	35.9
Bluebell Beach Mott Lake	08/08/2022 8:00 AM	Individual	Colilert-18 hour	43.5
	08/08/2022	Daily Mean	Colilert-18 hour	44.2281
	08/08/2022	30-Day Mean	Colilert-18 hour	27.0933
Bluebell Beach Mott Lake	08/01/2022 8:10 AM	Individual	Colilert-18 hour	27.5
Bluebell Beach Mott Lake	08/01/2022 8:10 AM	Individual	Colilert-18 hour	36.8
Bluebell Beach Mott Lake	08/01/2022 8:10 AM	Individual	Colilert-18 hour	29.2
	08/01/2022	Daily Mean	Colilert-18 hour	30.9163
	08/01/2022	30-Day Mean	Colilert-18 hour	26.668
Bluebell Beach Mott Lake	07/25/2022 8:00 AM	Individual	Colilert-18 hour	20.1
Bluebell Beach Mott Lake	07/25/2022 8:00 AM	Individual	Colilert-18 hour	17.5
Bluebell Beach Mott Lake	07/25/2022 8:00 AM	Individual	Colilert-18 hour	20.3
	07/25/2022	Daily Mean	Colilert-18 hour	19.2565
	07/25/2022	30-Day Mean	Colilert-18 hour	20.412
Bluebell Beach Mott Lake	07/18/2022 10:10 AM	Individual	Colilert-18 hour	107.6
Bluebell Beach Mott Lake	07/18/2022 10:10 AM	Individual	Colilert-18 hour	88.4
Bluebell Beach Mott Lake	07/18/2022 10:10 AM	Individual	Colilert-18 hour	133.4
	07/18/2022	Daily Mean	Colilert-18 hour	108.261
	07/18/2022	30-Day Mean	Colilert-18 hour	12.7306
Bluebell Beach Mott Lake	07/11/2022 7:42 AM	Individual	Colilert-18 hour	5.2
Bluebell Beach Mott Lake	07/11/2022 7:42 AM	Individual	Colilert-18 hour	6.3

Bluebell Beach Mott Lake	07/11/2022 7:42 AM	Individual	Colilert-18 hour	4.1
	07/11/2022	Daily Mean	Colilert-18 hour	5.1212
	07/11/2022	30-Day Mean	Colilert-18 hour	7.0936
Bluebell Beach Mott Lake	07/05/2022 8:00 AM	Individual	Colilert-18 hour	27.8
Bluebell Beach Mott Lake	07/05/2022 8:00 AM	Individual	Colilert-18 hour	38.9
Bluebell Beach Mott Lake	07/05/2022 8:00 AM	Individual	Colilert-18 hour	63.1
	07/05/2022	Daily Mean	Colilert-18 hour	40.864
	07/05/2022	30-Day Mean	Colilert-18 hour	5.3587
Bluebell Beach Mott Lake	06/27/2022 8:16 AM	Individual	Colilert-18 hour	12.1
Bluebell Beach Mott Lake	06/27/2022 8:16 AM	Individual	Colilert-18 hour	10.8
Bluebell Beach Mott Lake	06/27/2022 8:16 AM	Individual	Colilert-18 hour	4.1
	06/27/2022	Daily Mean	Colilert-18 hour	8.122
	06/27/2022	30-Day Mean	Colilert-18 hour	3.6793
Bluebell Beach Mott Lake	06/21/2022 7:30 AM	Individual	Colilert-18 hour	0
Bluebell Beach Mott Lake	06/21/2022 7:30 AM	Individual	Colilert-18 hour	3
Bluebell Beach Mott Lake	06/21/2022 7:30 AM	Individual	Colilert-18 hour	2
	06/21/2022	Daily Mean	Colilert-18 hour	1.8171
	06/21/2022	30-Day Mean	Colilert-18 hour	2.8654
Bluebell Beach Mott Lake	06/13/2022 8:00 AM	Individual	Colilert-18 hour	3.1
Bluebell Beach Mott Lake	06/13/2022 8:00 AM	Individual	Colilert-18 hour	12.2
Bluebell Beach Mott Lake	06/13/2022 8:00 AM	Individual	Colilert-18 hour	5.2
	06/13/2022	Daily Mean	Colilert-18 hour	5.8153
Bluebell Beach Mott Lake	06/06/2022 9:00 AM	Individual	Colilert-18 hour	0

Bluebell Beach Mott Lake	06/06/2022 9:00 AM	Individual	Colilert-18 hour	2
Bluebell Beach Mott Lake	06/06/2022 9:00 AM	Individual	Colilert-18 hour	0
	06/06/2022	Daily Mean	Colilert-18 hour	1.2599
Bluebell Beach Mott Lake	05/31/2022 10:00 AM	Individual	Colilert-18 hour	6.3
Bluebell Beach Mott Lake	05/31/2022 10:00 AM	Individual	Colilert-18 hour	5.2
Bluebell Beach Mott Lake	05/31/2022 10:00 AM	Individual	Colilert-18 hour	7.4
	05/31/2022	Daily Mean	Colilert-18 hour	6.2353
Bluebell Beach Mott Lake	05/23/2022 8:00 AM	Individual	Colilert-18 hour	0
Bluebell Beach Mott Lake	05/23/2022 8:00 AM	Individual	Colilert-18 hour	6.3
Bluebell Beach Mott Lake	05/23/2022 8:00 AM	Individual	Colilert-18 hour	2
	05/23/2022	Daily Mean	Colilert-18 hour	2.327

Silver Lake- City Park beach in Fenton Township has also been tested each summer by the Health Department. Results below. No Closures and Advisories for 2020-2021 reporting period.

Advisory Year	Start Date	Reopen Date	Days Closed	Type	Reason	Source
2021						
	8/25/2021	8/31/2021	6	Closure	High bacteria levels	Unknown
	6/29/2021	7/2/2021	3	Closure	High bacteria levels	Unknown
2019						
	8/20/2019	10/31/2019	72	Closure	High bacteria levels	Unknown
	6/11/2019	6/12/2019	1	Closure	High bacteria levels	Unknown

Sample Year	Sample Date	Sample Type	Analysis Method	Result Value
2022				
Silver Lake	08/29/2022 7:25 AM	Individual	Colilert-18 hour	19.7
Silver Lake	08/29/2022 7:25 AM	Individual	Colilert-18 hour	15.8
Silver Lake	08/29/2022 7:25 AM	Individual	Colilert-18 hour	23.8
	08/29/2022	Daily Mean	Colilert-18 hour	19.494
	08/29/2022	30-Day Mean	Colilert-18 hour	20.8041
Silver Lake	08/22/2022 7:30 AM	Individual	Colilert-18 hour	45.2
Silver Lake	08/22/2022 7:30 AM	Individual	Colilert-18 hour	32.7

Silver Lake	08/22/2022 7:30 AM	Individual	Colilert-18 hour	78.8
	08/22/2022	30-Day Mean	Colilert-18 hour	16.78
	08/22/2022	Daily Mean	Colilert-18 hour	48.8357
Silver Lake	08/15/2022 8:00 AM	Individual	Colilert-18 hour	37.9
Silver Lake	08/15/2022 8:00 AM	Individual	Colilert-18 hour	78.4
Silver Lake	08/15/2022 8:00 AM	Individual	Colilert-18 hour	30.7
	08/15/2022	Daily Mean	Colilert-18 hour	45.0158
	08/15/2022	30-Day Mean	Colilert-18 hour	9.5501
Silver Lake	08/08/2022 7:30 AM	Individual	Colilert-18 hour	14.2
Silver Lake	08/08/2022 7:30 AM	Individual	Colilert-18 hour	45
Silver Lake	08/08/2022 7:30 AM	Individual	Colilert-18 hour	55.2
	08/08/2022	30-Day Mean	Colilert-18 hour	5.4602
	08/08/2022	Daily Mean	Colilert-18 hour	32.7954
Silver Lake	08/01/2022 7:35 AM	Individual	Colilert-18 hour	4.1
Silver Lake	08/01/2022 7:35 AM	Individual	Colilert-18 hour	1
Silver Lake	08/01/2022 7:30 AM	Individual	Colilert-18 hour	5.2
	08/01/2022	Daily Mean	Colilert-18 hour	2.7729
	08/01/2022	30-Day Mean	Colilert-18 hour	4.0449
Silver Lake	07/25/2022 8:00 AM	Individual	Colilert-18 hour	3.1
Silver Lake	07/25/2022 8:00 AM	Individual	Colilert-18 hour	9.7
Silver Lake	07/25/2022 8:00 AM	Individual	Colilert-18 hour	9.8
	07/25/2022	30-Day Mean	Colilert-18 hour	4.5415
	07/25/2022	Daily Mean	Colilert-18 hour	6.6546
Silver Lake	07/18/2022 8:15 AM	Individual	Colilert-18 hour	2
Silver Lake	07/18/2022 8:15 AM	Individual	Colilert-18 hour	2
Silver Lake	07/18/2022 8:15 AM	Individual	Colilert-18 hour	6.2
	07/18/2022	Daily Mean	Colilert-18 hour	2.9162
	07/18/2022	30-Day Mean	Colilert-18 hour	3.4096
Silver Lake	07/11/2022 8:00 AM	Individual	Colilert-18 hour	5.2
Silver Lake	07/11/2022 8:00 AM	Individual	Colilert-18 hour	2
Silver Lake	07/11/2022 8:00 AM	Individual	Colilert-18 hour	2
	07/11/2022	30-Day Mean	Colilert-18 hour	3.261
	07/11/2022	Daily Mean	Colilert-18 hour	2.7501
Silver Lake	07/05/2022 8:15 AM	Individual	Colilert-18 hour	5.2

Silver Lake	07/05/2022 8:15 AM	Individual	Colilert-18 hour	24.3
Silver Lake	07/05/2022 8:15 AM	Individual	Colilert-18 hour	3.1
	07/05/2022	Daily Mean	Colilert-18 hour	7.3168
	07/05/2022	30-Day Mean	Colilert-18 hour	3.3504
Silver Lake	06/27/2022 8:00 AM	Individual	Colilert-18 hour	6.3
Silver Lake	06/27/2022 8:00 AM	Individual	Colilert-18 hour	6.2
Silver Lake	06/27/2022 8:00 AM	Individual	Colilert-18 hour	3.1
	06/27/2022	Daily Mean	Colilert-18 hour	4.9473
	06/27/2022	30-Day Mean	Colilert-18 hour	2.5413
Silver Lake	06/21/2022 8:00 AM	Individual	Colilert-18 hour	2
Silver Lake	06/21/2022 8:00 AM	Individual	Colilert-18 hour	1
Silver Lake	06/21/2022 8:00 AM	Individual	Colilert-18 hour	2
	06/21/2022	30-Day Mean	Colilert-18 hour	3.0489
	06/21/2022	Daily Mean	Colilert-18 hour	1.5874
Silver Lake	06/13/2022 7:50 AM	Individual	Colilert-18 hour	3.1
Silver Lake	06/13/2022 7:50 AM	Individual	Colilert-18 hour	4.1
Silver Lake	06/13/2022 7:50 AM	Individual	Colilert-18 hour	1
	06/13/2022	Daily Mean	Colilert-18 hour	2.3337
Silver Lake	06/06/2022 7:15 AM	Individual	Colilert-18 hour	3
Silver Lake	06/06/2022 7:15 AM	Individual	Colilert-18 hour	5.2
Silver Lake	06/06/2022 7:15 AM	Individual	Colilert-18 hour	2
	06/06/2022	Daily Mean	Colilert-18 hour	3.1481
Silver Lake	05/31/2022 8:00 AM	Individual	Colilert-18 hour	1
Silver Lake	05/31/2022 8:00 AM	Individual	Colilert-18 hour	3.1
Silver Lake	05/31/2022 8:00 AM	Individual	Colilert-18 hour	2
	05/31/2022	Daily Mean	Colilert-18 hour	1.8371
Silver Lake	05/23/2022 8:00 AM	Individual	Colilert-18 hour	9.7
Silver Lake	05/23/2022 8:00 AM	Individual	Colilert-18 hour	7.4
Silver Lake	05/23/2022 8:00 AM	Individual	Colilert-18 hour	25.9
	05/23/2022	Daily Mean	Colilert-18 hour	12.2961

SOCIAL SURVEY

In 2006 GCDC-SWM did a baseline social survey. Through a SAW grant a new survey was performed in 2016 and compiled in 2017. The same survey was not used. The original 2006 survey was custom made. By 2016 there had been many water quality surveys produced and the 2016 survey was revised to follow best practices.

The complete survey results and conclusions for the 2017 survey with in the appendix compiled results for the 2006 survey are located at http://www.gcdcswm.com/PhaseII/Survey%20Results/survey_results.htm

Then next Social survey is planned for the next permit cycle.

The executive Summary and Introduction have been included following:

EXECUTIVE SUMMARY

In late winter and early spring of 2016, the Our Water consortium in conjunction with the Genesee County Drain Commissioner's office conducted a social survey within the urbanized watershed areas of Genesee County. The format was a mail survey with the option given to complete it on-line. Administered by the Genesee County Drain Commissioner's office, and partially funded through a Department of Environmental Quality Stormwater, Asset Management and Wastewater (SAW) Grant, the social survey produced a statistically significant sample for the County. A total of 958 were mailed out and 345 responses were collected for a confidence level of 94.7% for the survey. Individual responses from residential landowners are confidential and anonymous. The survey assessed: public awareness, perception, and knowledge of the watershed and storm pollution issues; current activities impacting water resources; and willingness to take action to protect water resources. Following are some of the key findings revealed by the survey.

RESULTS

Perceptions of Current Water Quality

Thirty-four percent of respondents indicated that they thought that the current water quality had stayed the same over time, all though 32% said they didn't know. Respondents were not required to answer for each of the activities. Hence the high "No Response" rate. When asked whether local water quality was "good" for various activities the following results were reported:

Question #	Poor	Okay	Good	No Response
For canoeing / kayaking / other boating	8%	30%	34%	28%
For eating locally caught fish	29%	21%	15%	35%
For swimming	22%	35%	18%	25%
For picnicking and family activities	6%	31%	44%	19%
For fish habitat	14%	26%	23%	37%
For scenic beauty	6%	36%	48%	10%

The overwhelming majority of respondents perceive the non-contact recreational uses to be 'good' to 'okay'; only a small fraction rated these uses as 'poor.' Non- contact recreational uses include; canoeing, kayaking, boating, picnicking, family activities, and general scenic beauty.

Your Water Resources

About 64% of respondents said they spent leisure time on Genesee County water body in the last year. The activities that they indicated they did, in order of preference were:

1.0	For scenic beauty	74%
2.0	Hiking/walking/cycling along shoreline	46%
3.0	For fish habitat	37%
4.0	For swimming	35%
5.0	For canoeing / kayaking / other boating	35%
6.0	For eating locally caught fish	29%

The six top waterbodies mentioned were the Holloway Reservoir, Mott Lake/Bluebell Beach, the Flint and Shiawassee Rivers and Fenton and Silver Lakes.

If local residents' needs are being met by the currently perceived water quality conditions, then it will be difficult to motivate them to improve conditions. For marketing purposes it would be best to communicate proposed actions as necessary to preserve the current level of amenities for the future rather than improving conditions for activities that may not be supported.

Personal Responsibility

The results of the questions on benefits and responsibilities statements indicate that respondents believe it is their responsibility to help protect local water quality, their actions have an impact, and believe that their quality of life depends on it. They do not appear to be willing to sacrifice water quality even if slows economic development. They are only somewhat inclined to change how they do things and even less likely to want to pay for improvements. These results suggest a slight disconnect between comprehending the importance of water quality and respondents' willingness to take immediate action or pay to ensure its continuance into the future.

A deep analysis through the creation of constructs by combining the answers from multiple questions confirms the above findings. Respondents recognize the importance of having good water quality and that their actions impact it. They also recognize that the cost of protection (economics) influences decisions.

These findings are encouraging since it commonly requires a high level of conviction by individuals to carry through with their intentions (to protect water quality) if the barriers to implementation are high.

Water Impairments, Sources of Pollutants, and Consequences of Poor Water Quality

Water quality testing and expert opinion have identified: sediment, bacteria, oil and grease, arsenic, pesticides, and temperature as key water impairments. These impairments emanate from multiple sources and impact waterbodies in a variety of ways (consequences). Sources of these impairments are located throughout the watershed and have led to the State classifying two area as not attaining some of the designated uses. The survey results indicated a *low* awareness of the sources of water impairments, the impairments themselves, and the consequences associated with the presence of these impairments.

Practices to Improve Water Quality

The survey looked at respondents' awareness of, and willingness to adopt various best management practices (BMPs) designed to protect water quality. Results from this section are complex. In summary, the respondents believe they are doing a good job of implementing BMPs (about 50% reported they were currently using many of the practice), which may or may not be true. Respondents were overwhelmingly willing to adopt the majority of the residential practices surveyed. BMPs requiring construction received the least support, perhaps due to the perceived expense.

Awareness Indicators

Indicators to measure respondent awareness of the "types", "sources" and "consequences" of pollutants were constructed using the respective sections. An indicator for respondent awareness of the "practices to improve water quality" was also constructed. The indicators were calculated by re-coding the answers and then summing the new values for each respondent and dividing by the number of responses that apply.

Respondents indicated an overall awareness of pollutants, sources, consequences and the practices available to improve water quality. The gap between their awareness scores and knowledge scores reported above points to a lack of confidence in what they think they know is true and being confident enough to make decisions. These results indicate that although there needs to be a continued general education effort there is also an emerging need for technical information and support aimed at improving local water quality that people can access and implement behavioral changes and building confidence in their actions.

Making Management Decisions

This section solicited responses on perceived constraints to adopting new management practices. Examples of constraints included cost, skill level required to implement, and available equipment. Only two of the nine constraints pose barriers (out-of-pocket expenses and access to necessary equipment) to roughly one-third of the residential respondents.

The results of questions on constraints were supported by two indicators, one on behavior and the other on adopting key practices that were constructed from a variety of questions. The indicator results suggest that overall, respondents do not perceive themselves having major constraints to changing their behavior (attitude) nor to adopting key practices (structural). There is a substantial standard deviation on these indicators but results (based on valid responses) are fairly robust and therefore reliable.

Septic Systems

Thirty-five percent of residential property owners had septic systems. The average age for respondents' septic systems was 33 years, while the median score was 35 years. The age of the septic systems presents a looming problem.

Information Sources and Policy

The top trusted source indicated by residential respondents was MSU Extension, by about 18% over other sources. The other five sources ranged between 50% - 63% support with no other clear preference. MSU Extension was also the most trusted source in the 2006 survey.

The primary disseminators of information with regard to stormwater management are the Drain Commissioner's Office and the Flint River Watershed Coalition. Both sources were rated by respondents as being in the moderate rage with regard to trust. This has implications with how messages/information is distributed; supporting sources should always be clearly cited, thus lending credibility to the message.

It is also recommended that MSU Extensions and the County Health Department's roles be expanded/strengthened based on the respondent reported trust level. Partnering for the purposes of disseminating information as well as joint events are two possible actions that might be explored.

<u>Information Methods</u>

Newsletters/brochures/fact sheets and the internet, were the methods of communication that were most preferred.

The top two preferred information formats are indeed the primary avenues that the "Our Water" group disseminates information. Cross pollinating between the two is a necessity and should be continued. Other vehicles should refer to these two primary methods of information. Based on the results from the 2006 survey, newspapers/magazines should be a part of the media methods employed. Radio appears to have a declining audience.

RECOMMENDATIONS

The following recommendations are based solely on the results of the Social Survey and the detected changes from the 2016 survey. Furthermore, there are not intended to be any recommendations that duplicate NPDES Phase II storm water permit requirements (e.g. street sweeping). The recommendations are as follows:

1. Move to the next stage in the public education process. Respondents indicated they knew the key actions that need to be taken to protect local water quality. Public education should move towards incorporating more information on impairments and the consequences associated with them; techniques available to protect waterways (e.g. no-mow buffers); and providing technical assistance for the practices such as rain barrels and rain gardens.

2. Focus marketing messages on enjoying the local scenic beauty, and Hiking/walking/cycling along the shoreline. These are the most important activities to respondents.
3. All existing and new programs should be cross referenced with the constraints identified by respondents as documented in this report, and then tailored to help the target audience reach the desired behavior. For example, work with local suppliers to provide technical information for the installation of rain barrels.
4. Institute a proactive septic system program aimed at the inspection and maintenance of existing systems.
5. All information disseminated should refer back to the 'Our Water" website. Information should be coordinated between agencies. Not all information sources carry equal credibility with all stakeholders, so the message and delivery mechanism (e.g. internet) should be coordinated to be most effective.
6. The internet is increasingly becoming the preferred information delivery method. Efforts should be made to strengthen links between the subwatershed program information page and trusted information sources, such as with the MSU Extension.

INTRODUCTION

PURPOSE OF THE STUDY

The social data collected for this project is intended to develop indicators to serve both as intermediate measures for the purpose of performance review, and information to assist in the design of effective outreach and education interventions for Non-Point Source (NPS) pollution management. The purpose of the evaluation is to collect baseline information on environmental awareness and attitudes for the Genesee County watersheds. This project was in part funded through a Department of Environmental Quality Stormwater, Asset Management and Wastewater (SAW) Grant.

PROBLEM DEFINITION AND RATIONALE

Data collection is for socio-behavioral information. Municipal NPS projects, both structural and non-structural, aim to reduce pollution and involve the interaction of humans with their natural environment. Evaluating the effectiveness of programs to reduce NPS water pollution, therefore, needs to include an assessment of the human behavior underlying the pollution. Water quality problems have built up over many decades and may take decades to amend. Even when appropriate practices are put into place, there will be a lag before water quality shows improvement. Confirming the adoption of corrective practices, and beneficial attitudinal changes, are more immediate indicators of anticipated water quality change.

Evaluating the social component of NPS water quality programs and projects involves more than identifying changes in behavior in critical areas of the watershed; it also requires consideration of the continuum of knowledge, awareness, attitudes, constraints, and capacity that eventually leads to behavioral change. Because decisions regarding individual behaviors are influenced by a complex interplay of factors, measuring the precursors or contributing factors leading to the change will give managers additional information that will help insure that funded activities will accomplish water quality goals, and provide direction for future projects. If an NPS project or program positively influences the precursors, it is advancing the goal of achieving the desired behavioral change.

Measuring change in behavioral precursors requires the use of a variety of *social indicators* that represent or reflect those precursors. *Social indicators are measures that describe the capacity, skills, knowledge, values, beliefs, and behaviors of individuals, households, organizations, and communities.* By measuring these indicators, water quality managers can determine whether policies, programs, and initiatives are likely to lead to the intended behavioral change in a watershed's most critical areas and, ultimately, to improvements in water quality.

In 2006 a phone survey was administered prior to the commencement of the public outreach effort. The purpose of the survey focused on determining the publics' current actions and willingness to adopt the *Seven Simple Steps* program (http://www.cleargeneseewater.org/). Since 2006, the science of stormwater management social surveys had advanced significantly, as evidenced by the SIPES program (see below) and although not statistically significant, the information collected will be used for comparison when applicable.

TOOLS

This project used the Social Indicator Planning and Evaluation System (SIPES) for NPS management and an on-line data tool – the Social Indicators Data Management and Analysis (SIDMA) system (both can be found at http://35.8.121.111/si/Projects/ProjectsHome.aspx).

STUDY DESIGN AND ANALYSIS

Questions

The data collected for this project was intended to serve both as an intermediate measure for the purpose of performance review, and as information to assist in the design of effective interventions outreach, and education interventions for NPS pollution management. Data will help to answer a variety of questions related to awareness, attitudes, and behavior related to NPS pollution. Questions in the survey aimed to help determine public awareness or misconceptions about topics such as:

- Connections between storm water and pollution
- The community's level of concern about pollution
- Individual practices that contribute to NPS
- Individual characteristics and barriers to behavior change

Questions and answers have been designed to provide information in order to work towards the following intended outcomes:

- Increased awareness of relevant technical issues and/or recommended practices;
- Changed attitudes to facilitate desired behavior change;
- Reduced constraints to behavior change;
- Increased capacity to leverage resources in critical areas;
- Increased capacity to support appropriate practices;
- Increased adoption of practices to maintain or improve water quality;
- Increased adoption of improved management of septic systems; and
- Increased efficiency and effectiveness in delivery of information to the public.

Sample Size

The project planned to survey a sample population of the target audience, of 383 residential landowners. A total of 958 were mailed out and 345 responses were collected for a confidence level of 94.7% for the survey. Individual responses from residential landowners are confidential and anonymous.

Survey Process

The survey process included a series of mailings. Respondents were given the option to complete the survey on-line or return the survey by mail. Identification numbers, included in the mailed survey packet, were required to access the on-line system in order to ensure that duplication did not occur.

The survey was administered using the following steps:

Step 1: Sent an initial letter of introduction to notify the homeowner that they would be receiving a survey and to stress the importance of completing and returning it.
Returned letters were dropped and replaced on the master list of recipients.
Step 2: Two to two-and-a-half weeks after the introduction letter was mailed, the survey itself was delivered, along with an accompanying letter and pre-paid return envelope.
Step 3: One to two weeks after the survey was delivered, a reminder post card explaining the importance of filling out the survey is sent.
Step 4: Three to four weeks after the first survey is sent out, a second survey and accompanying letter were mailed out.
Step 5: A final survey and letter were mailed out two to three weeks after the second survey was delivered.
Respondents who submit surveys have their names removed from the follow-up list and are not contacted again throughout the process.

SIDMA DATA ANALYSIS AND INTERPRETATION

The SIDMA report presents the frequency of the results and the averages for each survey question. The report also produces calculated scores for the social indicators. Average values for each question provide a quick and easy way to understand how respondents answered each question. The SIDMA report provides an idea of the overall strengths and weaknesses within the watershed. Are people familiar with the practices you are hoping to have installed? Does the population as a whole understand the sources and consequences of the pollutants of concern? These are the sorts of questions answered by frequency and average data. The SIDMA report also helps to find important relationships in the survey results. While the averages will help identify characteristics that may facilitate or impede practice adoption for the watershed, it may miss important trends that can help focus future efforts.

ORGANIZATION OF THIS DOCUMENT

The surveys for the residential land owners contained thirteen (13) categories of questions. This document looks at each questionnaire category. Within each category, information is presented on the specific questions asked, the raw results, and a brief analysis with observations. A copy of the survey instrument used is in Appendix A. A summary of overall recommendations follows the survey categories results.

The following survey question categories are included in this report:

1.0 Rating of Water Quality
2.0 Your Water Resources
3.0 Your Opinions
4.0 Water Impairments
5.0 Sources of Water Pollutants
6.0 Consequences of Water Pollutants
7.0 Practices to Improve Water Quality (residential)
8.0 Septic Systems
9.0 Specific Constraints to Practices
    8.1 Rain Gardens
    8.2 Rain Barrels
10.0 Reported Behavior
11.0 Making Management Decisions
12.0 Information Sources and Policies
13.0 About You (demographics)

Enforcement Response Procedure on behalf of 342 contract members

Each permittee has made their own enforcement response to address violations to compel compliance with an ordinance or regulatory mechanism implimented in the Permit Application. (Storm Water Master Plan), i.e. written notices, citations, fines…The ERP includes procedures for their response tracking and resolution of violations. Ansers to questions 1, 13 & 15.

Many of the permittees rely on Genesee County Drain Commissioner's Office- Surface Water Management to assist them with aspects of the ERP. **Below is the County's ERP commitments /goals from their 2019 adopted permit application.This includes what they will do on behalf of the contracted partners listed on page 1 of this document..**

1. Provide the ERP. The ERP shall include the applicant's expected response to violations to compel compliance with an ordinance or regulatory mechanism implemented by the applicant in the SWMP (e.g., written notices, citations, and fines). The ERP shall contain a method for tracking instances of non-compliance, including, as appropriate, the name of the person responsible for violating the applicant's ordinance or regulatory mechanism, the date and location of the violation, a description of the violation, a description of the enforcement response used, a schedule for returning to compliance, and the date the violation was resolved. The applicant may keep an electronic file or hard copy file of the enforcement tracking.

IDEP
Appendix 2 contains supporting documentation.

The County's procedure is:

- Potential illicit connections to the County's MS4, a Nested Jurisdiction's MS4 or to a Municipalities MS4 that has contracted IDEP services with the County shall be followed up on per page 8 of the Illicit Discharge Elimination Plan (IDEP).
- Written notification policy is on the last paragraph of page 8 of IDEP.
- When an illicit connection is confirmed, written notifications go to all appropriate parties including the MDEQ
- Tracking down and elimination of Illicit Discharges is outlined on page 9 of IDEP
- Each site and illicit discharge are unique it is usually the initial notification gives the property owner 30-days to correct the illicit discharge. At the end of 30-days, the property owner will receive a follow up phone call. Extensions are common based on extenuating circumstances. A temporary fix can be performed to prevent an illicit discharge until the final for corrective action can be taken. The GCDC-SWM or appropriate Governmental Agency with authority over the MS4 will work with the property owner to have an illicit connection removed. Once the connection has been removed, either the correction is witnessed or a follow up test (such as dye) to confirm the disconnection.
- The police through 911 can issue tickets. There is no policy granting authority to issue citations or fines.

Tracking: Illicit connections are tracked through a database. Spills are documented and tracked through a Spill Notification Complain Reporting Form (See page 27-28 of IDEP). Records are kept at the GCDC-SWM Office.

Authority for enforcement is discussed on page 1 & 2 of IDEP.

POST CONSTRUCTION
Appendix 2 and 6 contains supporting documentation.

The County's procedure is:

- Failure of a Post Construction BMP can either be failure to maintain or an actual failure of the BMP itself.
- If the Failure of a Post Construction BMP to the County's MS4 system does not have the potential to release an illicit discharge:
    - Written notification will be sent to the owner of the property and the owner of the MS4.
- If the Failure of a Post Construction BMP to the County's MS4 system has the potential to release an illicit discharge, it shall be considered an illicit discharge for the purposes of notification.
    - Written notification policy is on the last paragraph of page 8 of IDEP.
    - When a failure of a Post Construction BMP to the County's MS4 system is confirmed, written notifications go to all appropriate parties including the MDEQ.
- Each site is unique, usually the initial notification gives the property owner 30-days to correct the Failure of a Post Construction BMP. At the end of 30-days, the property owner will receive a follow up phone call. Extensions are common based on extenuating circumstances. A temporary fix can be performed to prevent any illicit discharge until the final corrective action/ maintenance can be taken. The GCDC-SWM or appropriate Governmental Agency with authority over the MS4 will work with the owner of the MS4 and the property owner to have the failure of a Post Construction BMP corrected/ maintained. The correction/ maintenance will be confirmed.

Tracking: Approved sites with Post Construction BMP's and Failures of Post Construction BMP are tracked through a database. Records are kept at the GCDC-SWM Office.

Authority for enforcement is discussed in the Procedure for Post Construction Stormwater runoff program and Authority for enforcement is discussed on page 1 & 2 of IDEP. And on page 14 & 15 of the Genesee County Design Standard Requirements.

13. Provide the procedure for responding to illegal dumping/spills. The procedure shall include a schedule for responding to complaints, performing field observations, and follow-up field screening and source investigations as appropriate.

- When a County Agency/Nested jurisdiction becomes aware of a potential illicit discharge, a Spill Notification Complain Reporting Form would be filled out based on the information available.
- If it is an emergency or is actively happening, 911 should be called. Only Police can ticket and activate emergency response. General County Agencies/ Nested Jurisdictions are not able to issue fines (pursuant to the individual law(s) each agency or nested jurisdiction operate under).
- Genesee County Drain Commissioner's Office –Surface Water Management (GCDC-SWM) is to be notified based on Spill Notification Complain Reporting Form.
- Based on the information given, GCDC-SWM will have a staff person investigate and

document. Staff shall visit the site of an active suspected discharge within 3 business days for an initial site investigation. Every effort will be made to investigate the same day as the GCDC-SWM office is notified. If the suspected discharge is not active, staff shall visit the site within 30 business days. Based on the type of illicit discharge (see decision making flow chart on page 6 of IDEP), GCDC-SWM will respond with the most appropriate action within the limits of the law.

- Any other Governmental Agencies that need to be notified will be and noted on the Spill Notification Complain Reporting Form or attached to that form. For emergencies, due to time an initial phone call may be given. Emails, copies of documentation or letters will be sent as written notification.
- A follow up investigation may be required based on the actions taken to address the problems. If so, a second investigation may occur either by GCDC-SWM staff or a subcontractor. This second inspection would involve follow-up field screening and source investigations. Depending on what is necessary, this second investigation should occur within 2-weeks.

15.Provide the procedure that includes a requirement to immediately report any release of any polluting materials from the MS4 to the surface waters or groundwaters of the state, unless a determination is made that the release is not in excess of the threshold reporting quantities in the Part 5 Rules, by calling the appropriate MDEQ District Office, or if the notice is provided after regular working hours call the MDEQ's 24-Hour Pollution Emergency Alerting System telephone number: 800-292-4706

We use the Spill Notification form (Page 27-28 of the IDEP plan)