PROGRAM GOALS

• Collect high-quality, scientific data on the local waterways.
• Educate decision-makers and the public.
• Provide necessary data for state stormwater permit reporting.
• Engage members of the public in water resources & cultivate local water stewards.
• Identify impaired areas, provide evidence for funding improvement projects.
Meet up in teams of 2–4 individuals.
• Navigate to sites.
• Collect water samples.
• Measure in-stream water chemistry.
• Record flow measurements.
• Track water level changes.
• Identify any areas of concern or illicit discharges.
• Deliver samples to lab.
PARAMETERS MEASURED

- Nutrients: Phosphorus, Nitrogen
- Sediments: Total Suspended Solids
- Bacteria: E. coli
- Dissolved Oxygen
- pH (Washtenaw)
- Temperature
- Conductivity
- Total Dissolved Solids (Washtenaw)
- Flow: Discharge
- Water Level
2019 Program Overview

- 102 Volunteers
- 30 Sites
- 376 Samples Collected
- 3101 Data Records
- 1060 Volunteer Hours
- 72 Flow Measurements
2019 WASHTENAW CO. MONITORING SITES

16 total sites
5 investigative sites
PHOSPHORUS IN THE MIDDLE HURON OVER TIME

Total Phosphorus (mg/l)
PHOSPHORUS IN MIDDLE HURON BY SITE (2019)
PHOSPHORUS AT HUDSON MILLS NEAR DEXTER

![Graph showing total phosphorus levels from 2014 to 2019. The graph includes data points and a trend line indicating a decrease in phosphorus levels over time. The TMDL Target is represented by a horizontal line at a specific value, showing the target level for phosphorus in the water.](image-url)
PHOSPHORUS TRENDS AT HURON RIVER TRIBUTARIES

• Statistically significant declines in TP at Mill Creek, Honey Creek, Allens Creek, Traver Creek, and Boyden Creek.

• No trends at Fleming Creek, Malletts Creek, Millers Creek, and Swift Run.

• Storm spikes in urban tribs counteracting apparent decline in base flow concentrations.
E. coli in Middle Huron over time

- Partial Body Contact Standard
- Full Body Contact Standard
E. COLI AT HUDSON MILLS NEAR DEXTER
E. COLI AT RIVERSIDE PARK IN YPSILANTI

E. coli (#/100 ml)

Partial Body Contact Single-Sample Standard
Full Body Contact Single-Sample Standard
INVESTIGATIVE DIFFERENCES AT MALLETS CREEK

MH07
Long Term

54.5% difference in E. coli
37.3% difference in TP

Mal03
Investigative
INVESTIGATIVE DIFFERENCES AT MILL CREEK

4% difference in E. coli
-6.5% difference in TP

Mill08
Investigative

MH02B
Long Term
INVESTIGATIVE DIFFERENCES AT FLEMING CREEK

FC08  2019 Investigative
-58.7% difference in TP
166% difference in E. coli

FC07  2018 Investigative
181% difference in TP
1062% difference in E. coli

MH06  Long Term
WATER QUALITY AT SCHOOLS GIRLS GLEN

0.4 inch storm on September 13, 2019

Total Suspended Solids

TSS Single Sample Standard

Phosphorus TMDL Target

0.00
0.01
0.10
1.00

Total Phosphorus

12:00:00 PM
12:10:00 PM
12:20:00 PM
12:30:00 PM
12:40:00 PM
1:00:00 PM
1:10:00 PM
1:20:00 PM
1:30:00 PM
1:40:00 PM
1:50:00 PM
2:00:00 PM
2:10:00 PM
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4:30:00 PM
4:40:00 PM
4:50:00 PM
5:00:00 PM
5:10:00 PM
5:20:00 PM
5:30:00 PM
5:40:00 PM
5:50:00 PM

TSS - SGG01
TP - SGG01
WATER QUALITY AT SCHOOLS GIRLS GLEN

0.2 inch storm on October 11, 2019

Total Phosphorus

Conductivity

Total Suspended Solids

Medical

Cemetery

Medical

Cemetery

Medical

Cemetery
2019 WAYNE CO. MONITORING SITES

13 total sites
4 investigative sites
PHOSPHORUS IN THE ADW OVER TIME

Total Phosphorus (mg/l)

PHOSPHORUS TARGET =
TREND =
PHOSPHORUS IN THE ADW BY SITE (2019)

Total Phosphorus (mg/l)

PHOSPHORUS TARGET =

Frank & Poet  Blakely  Brownstown  S. Ecorse  N. Ecorse  Woods  Silver  Smith  Huron River
PHOSPHORUS AT THE HURON RIVER IN ROCKWOOD

Graph showing the concentration of Total Phosphorus (mg/l) from 2016 to 2019. The graph plots the trend, phosphorus target, mean, and median values over the years. The x-axis represents the years 2016 to 2019, while the y-axis represents the total phosphorus concentration in mg/l.
PHOSPHORUS AT BLAKELY CREEK

![Graph showing total phosphorus (mg/l) over years from 2012 to 2019. The graph includes trend lines for mean and median, as well as a target line for phosphorus.]
PHOSPHORUS TRENDS IN THE ADW

- Statistically significant increase at Blakely Creek.
- No statistically significant change in concentrations at Frank & Poet, Brownstown, S. Ecorse, N. Ecorse, Woods, Silver, and Smith Creeks, nor at the Huron River site.
- Phosphorus high in base flow and storm flow
E. coli in the ADW over time

**TREND =**

**PARTIAL BODY CONTACT STANDARD =**

**FULL BODY CONTACT STANDARD =**
E. coli at Frank & Poet Drain

**Trend** = [green line]
**Partial Body Contact Standard** = [red line]
**Full Body Contact Standard** = [orange line]
E. COLI AT BROWNSTOWN CREEK

TREND =
PARTIAL BODY CONTACT STANDARD =
FULL BODY CONTACT STANDARD =
E. coli at N. Ecorse Creek

TREND =  
PARTIAL BODY CONTACT STANDARD =  
FULL BODY CONTACT STANDARD =  

E. coli (#/100 ml)
E. COLI TRENDS IN THE ADW

• Statistically significant increases in E. coli at Frank & Poet, Brownstown, S. Ecorse, and N. Ecorse Creeks.

• No statistically significant change in concentrations at Blakely, Woods, Silver, and Smith Creeks and the Huron River.

• No declining trends.
INVESTIGATIVE DIFFERENCES AT FRANK & POET DRAIN

19% difference in TP
-90% difference in E. coli
INVESTIGATIVE DIFFERENCES AT BROWNSTOWN CREEK

13% difference in TP
-92% difference in E. coli
INVESTIGATIVE DIFFERENCES AT BLAKELY CREEK

-32% difference in E. coli
43% difference in TP
54% difference in TSS
INVESTIGATIVE DIFFERENCES AT SILVER CREEK

-61% difference in E. coli
40% difference in TP
ADW33
2019 Investigative

-32% difference in E. coli
38% difference in TP
ADW26
2018 Investigative

ADW08
Long Term
CHECK OUT THE ONLINE REPORTS

Program Overview
The Middle Huron Chemistry and Flow Monitoring Program, formerly the Water Quality Monitoring Program, was developed in 2002 as a response to community interest in increasing available data on nutrient contributions to the middle section of the Huron River. The data are intended to lead to a better understanding of pollution contributions from non-point sources in the Middle Huron and, in turn, help the local municipalities focus and track pollution reduction efforts as they strive to meet the phosphorus TMDL for Ford and Belleville lakes.

Results Summary
The following general conclusions can be drawn from the analysis of the data collected under the Middle Huron Chemistry and Flow Monitoring Program from 2002 through 2019:

- Total Phosphorus (TP): In isolation, Total Phosphorus (TP) concentrations show no trend throughout the Middle Huron. However, after accounting for stream flow, there is a significant annual decrease in concentrations. Also, since 2013, concentrations during baseflow conditions at most sites show declining trends in TP and median concentrations are below the original TMDL target of 0.05 mg/L.

- Complete descriptions of methods and findings
- Links to summary charts for parameters by watershed and detailed data charts by sampling site
- 2019 conclusions and much more!
NEXT STEPS

- Follow up on findings
- Complete online monitoring report.
- Prepare for upcoming season
- Identify new investigative sites.

2020 CHEMISTRY & FLOW MONITORING PROGRAM ORIENTATIONS

Saturday, March 21
1:00 to 2:30 PM
NEW Center
Ann Arbor, MI

Saturday, March 28
2:00 to 3:30 PM
Riverview Library
Riverview, MI

REGISTER AT HRWC.ORG/CHEMFLOW
QUESTIONS?