

Factsheets for 17 Combined Sewer Overflow Retention Treatment Basins in the Greater Detroit Region

Supporting Information for the Final Report Watershed Assessment of the Detroit River Phosphorus Loads to Lake Erie

Produced by the University of Michigan Water Center and available at:

www.myumi.ch/detroit-river

September 2019

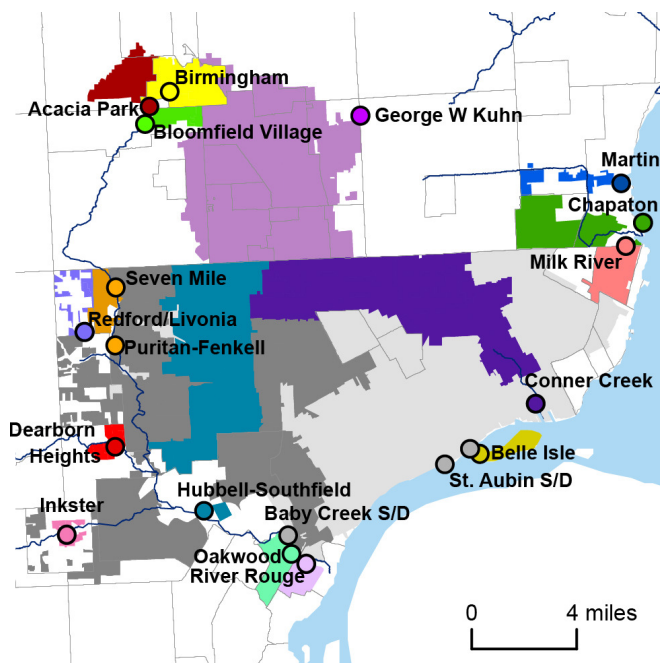
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COMBINED SEWER OVERFLOW RETENTION TREATMENT BASINS IN THE GREATER DETROIT REGION

An appendix to the report “Watershed Assessment of Detroit River Nutrient Loads to Lake Erie,” published by the University of Michigan Water Center in May 2019. Report and other supporting documents available at www.myumi.ch/detroit-river.

We compiled data on treated and untreated combined sewer overflow (CSO) discharges around the greater Detroit region to help quantify urban sources of phosphorus in the St. Clair-Detroit River System watershed. Results regarding total CSO discharge and phosphorus loads and the relative role of CSOs on phosphorus loads to Lake Erie are provided in the full report. Here, we provide factsheets containing further details for the 17 retention treatment basins (RTBs) in the Great Lakes Water Authority’s (GLWA) sewer service area.



This map shows the treated CSO outfalls in GLWA’s sewer service area and their approximate contribution areas. Treated CSOs may come from RTBs or from screening and disinfection (S/D) facilities. Outfalls are represented by circles colored to correspond to the color of their contribution area. Dark gray areas are not controlled by an RTB and are areas where untreated CSO discharges occur. No spatial data delineating the contribution areas of the S/D facilities or the light gray area on the map were available, in part due to the increasing complexity of the system as water travels to these lower reaches. The boundaries for contribution areas are not always strict due to the complexity of the system’s flows and operations. Light gray lines are political boundaries.

Information and data sources

The factsheets that follow contain basic statistics about RTB discharges for long term (2005-2016) and recent (2013-2016) time periods, as well as some spatial information. An overview of the information provided and data sources are in the table below. Further details regarding CSOs are discussed in the full report.

Information provided	Source
Summary statistics including volume and total phosphorus (TP) discharged per year, number of events per year, and average TP concentration of discharge	Michigan Department of Environmental Quality online database (MiWaters ¹) and data provided directly from GLWA
Total amount of water and TP discharged from the RTB each year from 2005-2016	MiWaters and data provided directly from GLWA
A map delineating the approximate area that contributes to the RTB	Most of the map data comes from the Rouge River National Wet Weather Demonstration Project Report ² . Permits and other documents for individual CSO basins obtained from MiWaters were also used.
A map of land use in the contributing area along with proportions of vacant, impervious, and pervious land.	SEMCOG Land Use 2015, provided directly from SEMCOG.

1. Available at <https://miwaters.deq.state.mi.us/miwaters/external/home>

2. Available at http://www.waynecounty.com/documents/environmental/rouge_river_national_wet_weather_demonstration_project.pdf

MILK RIVER CSO RTB FACTSHEET

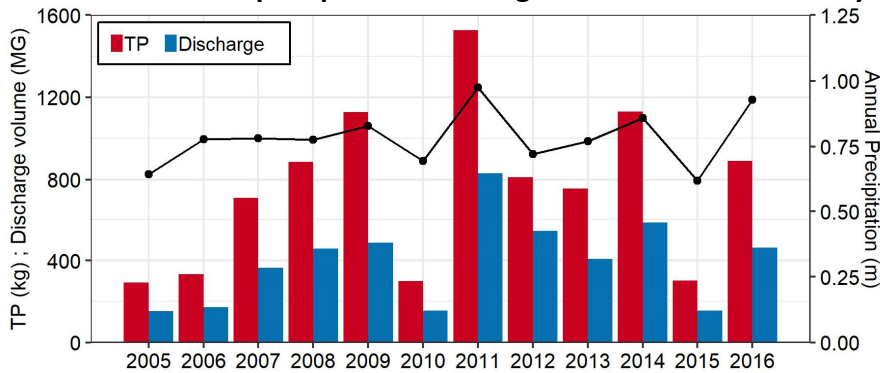
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SUMMARY STATISTICS

All years in this section are waters years (i.e., October through September).

	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	432.7	435.2
Median annual total phosphorus (TP) load (kg)	782.9	823.6
Average number of events per year	14.5	13.8
Average TP concentration (mg/L)	NA	0.50
Most events in a year: 23 in 2008		
Fewest events in a year: 7 in 2005 and 2015		

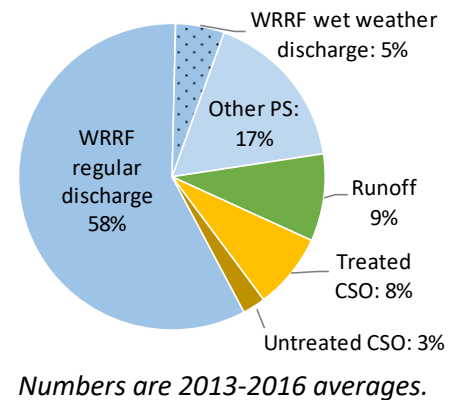
Water and total phosphorus discharged from the RTB annually



CONTEXT

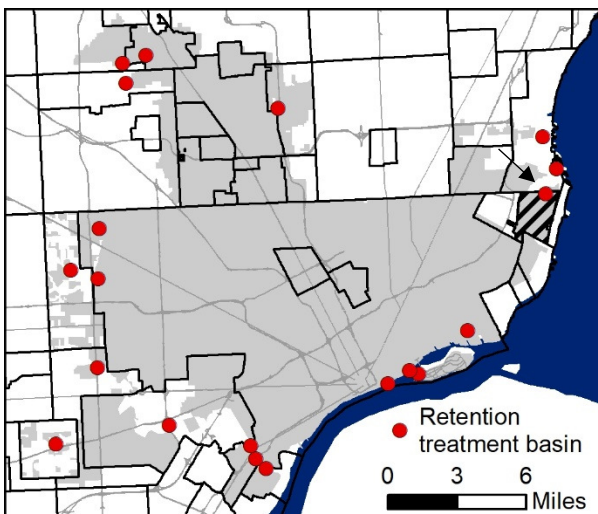
Sources of phosphorus in metro Detroit and significance of CSOs

The metro Detroit urban area¹ contributes 515 metric tons (MTA) of phosphorus annually to the Detroit River through runoff, point sources (PS) (most notably the Great Lakes Water Authority Water Resource Recovery Facility), and combined sewer overflows (CSOs). CSOs make up about 11% (~53 MTA) of that load. Treated CSOs contribute 41 MTA, and untreated CSOs contribute 12 MTA.

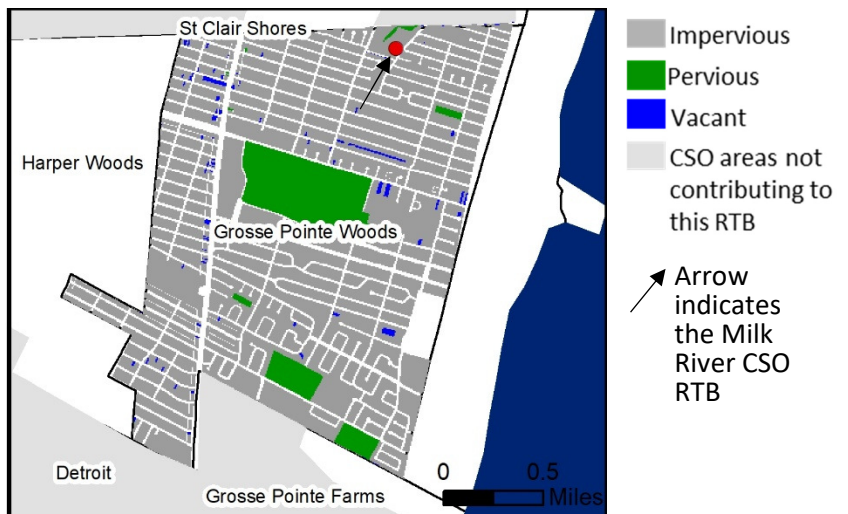


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~3.17 mi²)



Land use³ in area contributing to this RTB. Approximately 90.6% impervious, 8.6% pervious, and 0.8% vacant.



1: This area was delineated based on HUC-12 subwatersheds with more than 80% impervious cover. Map is provided in main report. 2: Data source: Michigan Department of Environmental Quality online database available at miwaters.deq.state.mi.us. 3: Data source: SEMCOG, 2015 land use dataset, provided by SEMCOG by request.

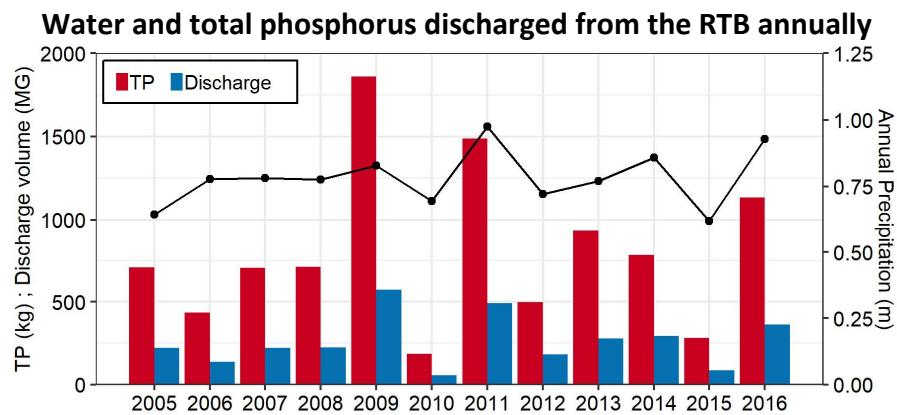
BELLE ISLE CSO RTB FACTSHEET

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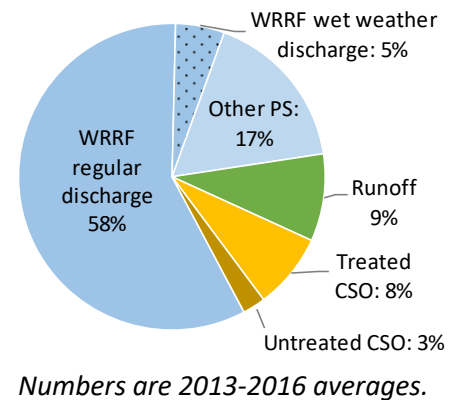
	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	223.2	286.1
Median annual total phosphorus (TP) load (kg)	709.6	855.6
Average number of events per year	7.2	7
Average TP concentration (mg/L)	NA	0.81
Most events in a year: 13 in 2009		
Fewest events in a year: 3 in 2005 and 2010		



CONTEXT

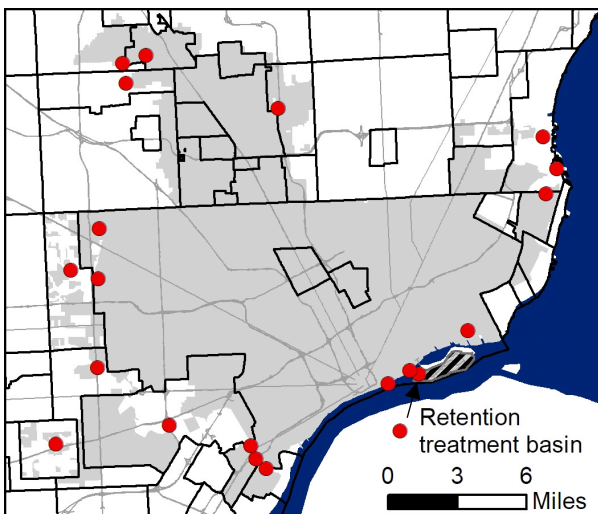
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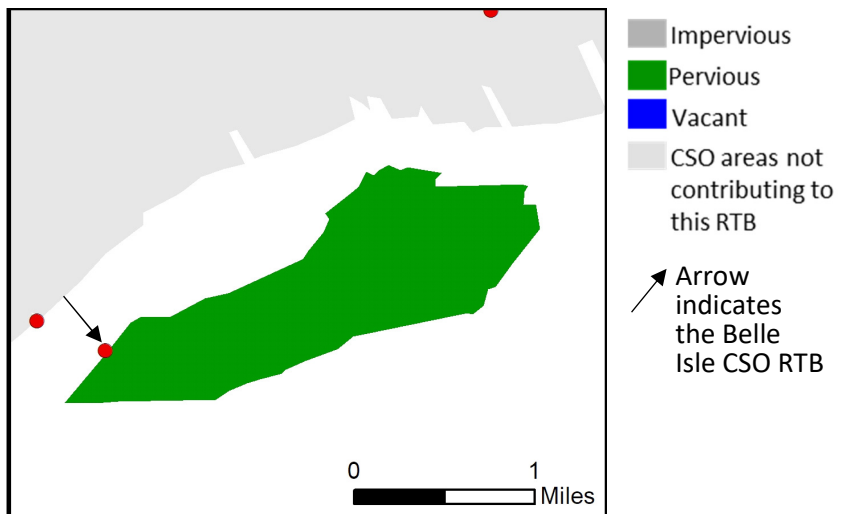


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~1.5 mi²)



Land use³ in area contributing to this RTB. Approximately 0% impervious, 100% pervious, and 0% vacant.



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CONNER CREEK CSO RTB FACTSHEET

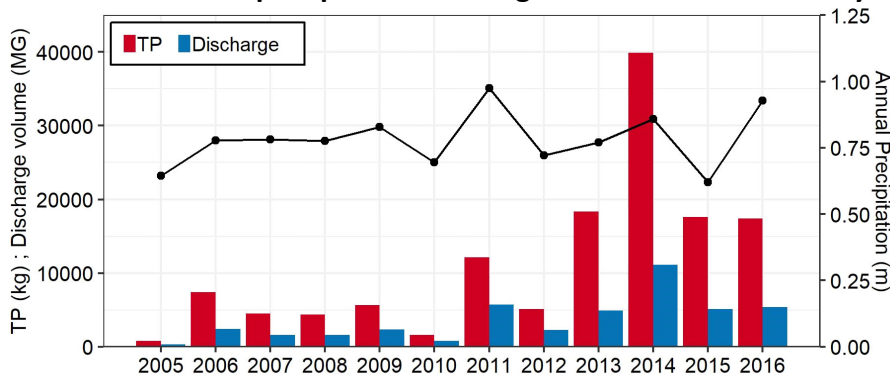
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SUMMARY STATISTICS

All years in this section are waters years (i.e., October through September).

	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	2,393	5,235
Median annual total phosphorus (TP) load (kg)	6,547	17,978
Average number of events per year	12.8	17
Average TP concentration (mg/L)	NA	0.95
Most events in a year: 25 in 2006		
Fewest events in a year: 3 in 2005		

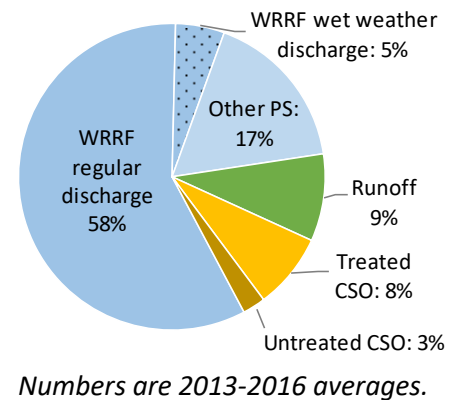
Water and total phosphorus discharged from the RTB annually



CONTEXT

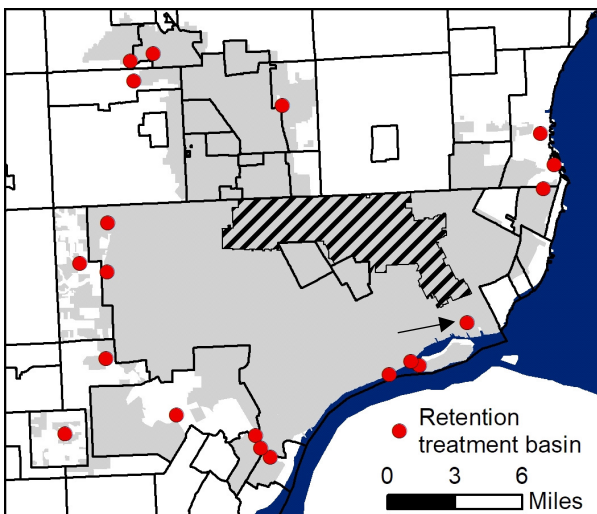
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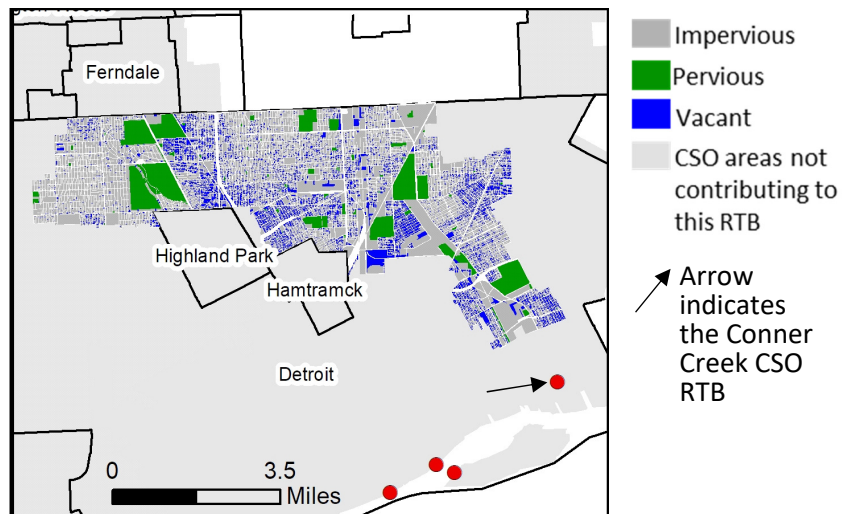


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~26.5 mi²)



Land use³ in area contributing to this RTB. Approximately 75.7% impervious, 11.1% pervious, and 13.2% vacant.



1: This area was delineated based on HUC-12 subwatersheds with more than 80% impervious cover. Map is provided in main report. 2: Data source: Michigan Department of Environmental Quality online database available at miwaters.deq.state.mi.us. 3: Data source: SEMCOG, 2015 land use dataset, provided by SEMCOG by request.

HUBBELL-SOUTHFIELD CSO RTB

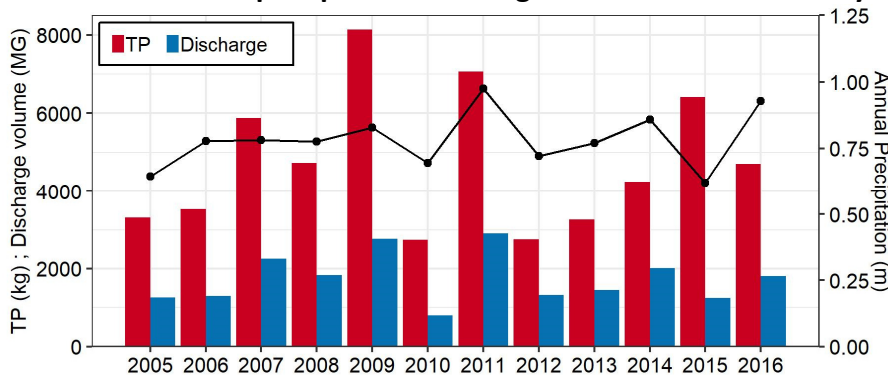
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SUMMARY STATISTICS

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	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	1,630	1,630
Median annual total phosphorus (TP) load (kg)	4,471	4,471
Average number of events per year	14.2	15.5
Average TP concentration (mg/L)	NA	0.64
Most events in a year: 20 in 2011		
Fewest events in a year: 7 in 2012		

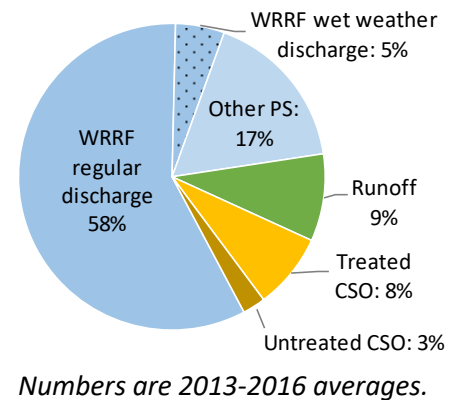
Water and total phosphorus discharged from the RTB annually



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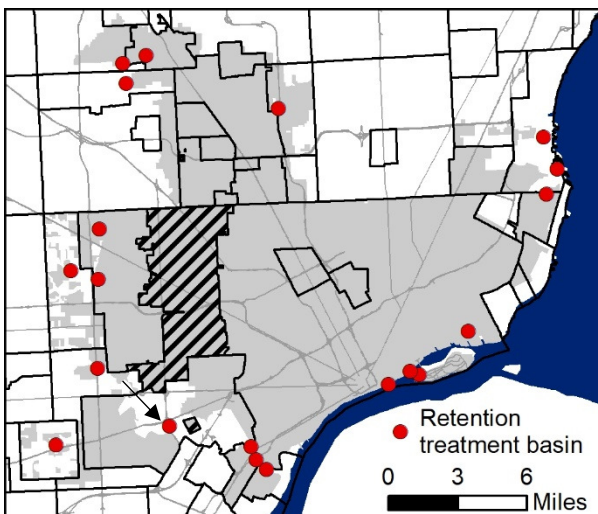
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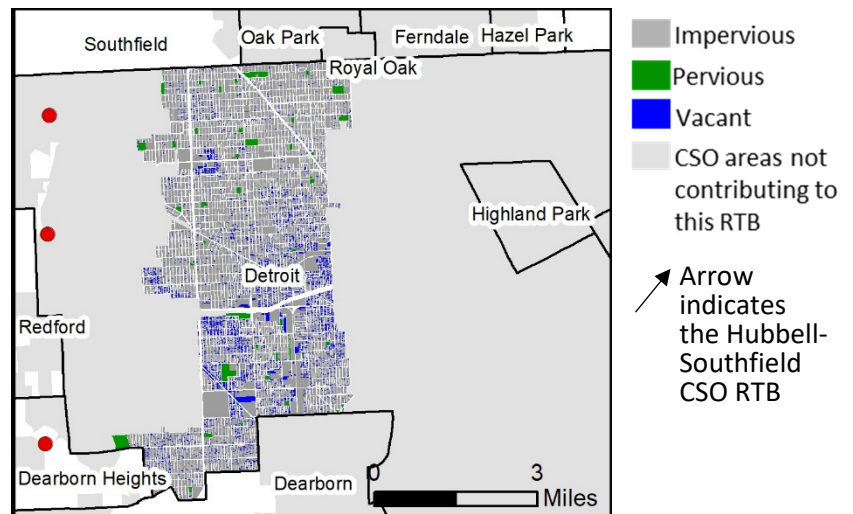


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~22.4 mi²)



Land use³ in area contributing to this RTB. Approximately 90.2% impervious, 2.5% pervious, and 7.3% vacant.



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OAKWOOD CSO RTB FACTSHEET

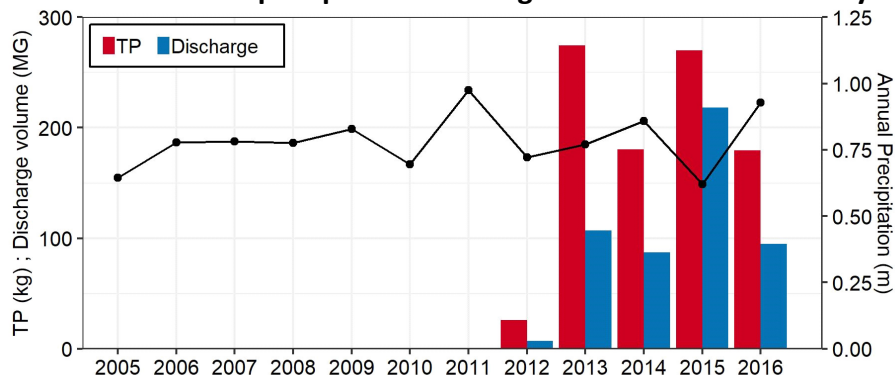
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SUMMARY STATISTICS

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	Long term* (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	NA	101
Median annual total phosphorus (TP) load (kg)	NA	225
Average number of events per year	NA	5.5
Average TP concentration (mg/L)	NA	0.48
Most events in a year: 2 in 2015		
Fewest events in a year: 2 in 2012		
*No data- facility began operation in 2012		

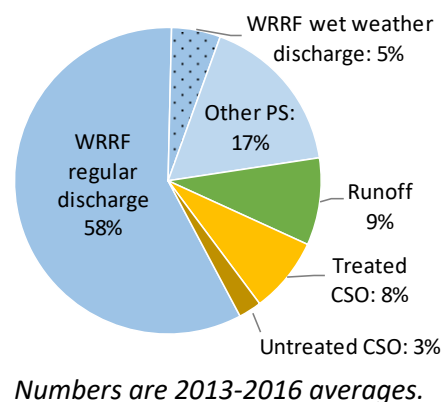
Water and total phosphorus discharged from the RTB annually



CONTEXT

Sources of phosphorus in metro Detroit and significance of CSOs

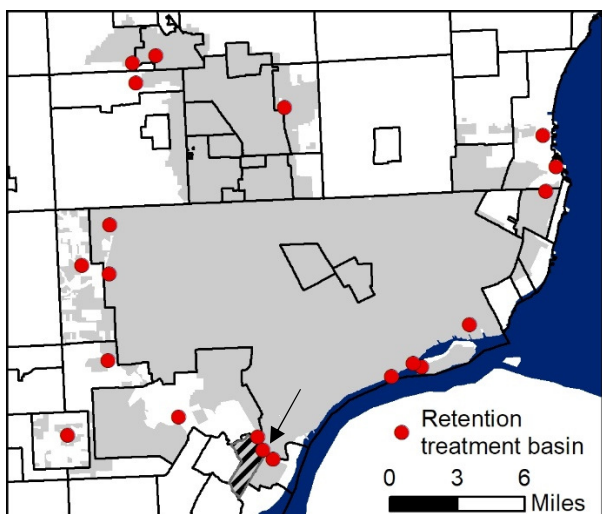
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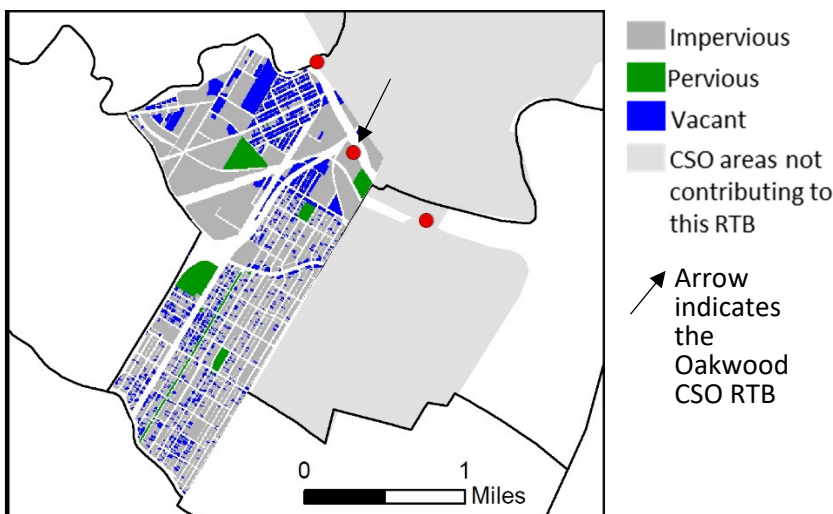
Numbers are 2013-2016 averages.

GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~3.17 mi²)



Land use³ in area contributing to this RTB. Approximately 90.6% impervious, 8.6% pervious, and 0.8% vacant.



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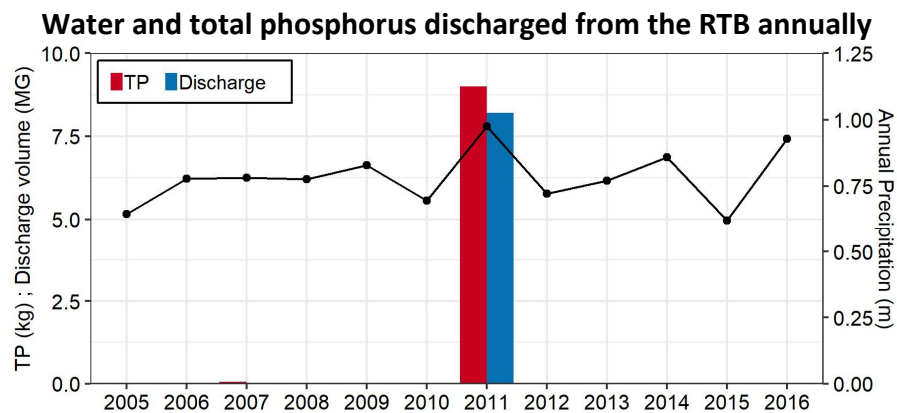
PURITAN FENKELL CSO RTB FACTSHEET

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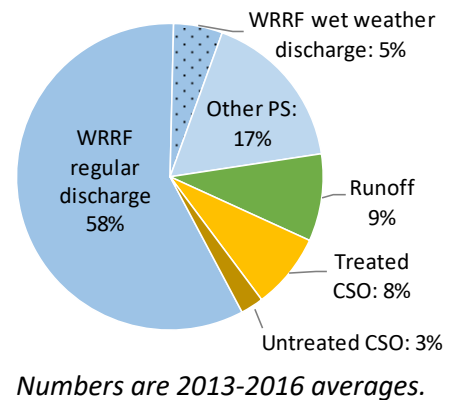
	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	4.1	0
Median annual total phosphorus (TP) load (kg)	4.5	0
Average number of events per year	<1	0
Average TP concentration (mg/L)	NA	NA
Most events in a year: 1 in 2007 and 2011		
Fewest events in a year: 0 in all years besides 2007 and 2011		



CONTEXT

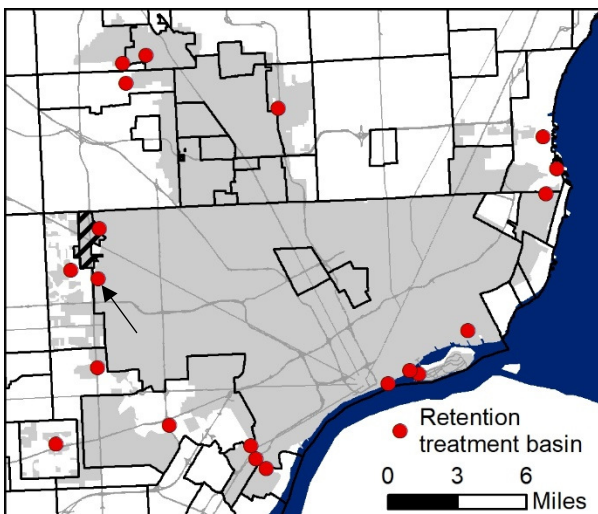
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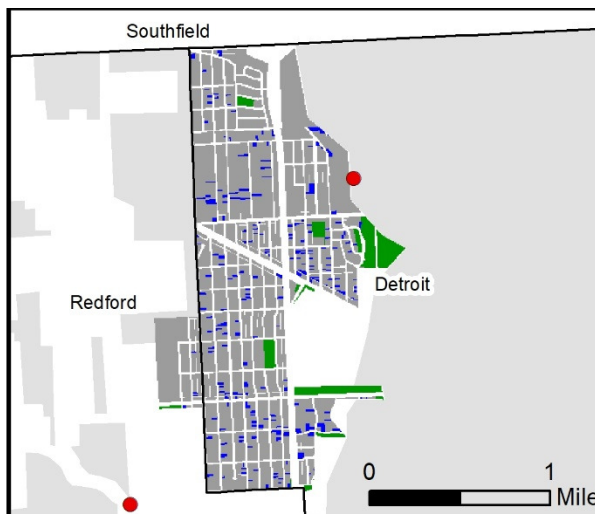


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~1.91 mi²)



Land use³ in area contributing to this RTB. Approximately 91.5% impervious, 4.7% pervious, and 3.7% vacant.



- Impervious
- Pervious
- Vacant
- CSO areas not contributing to this RTB
- Arrow indicates the Puritan-Fenkell CSO RTB

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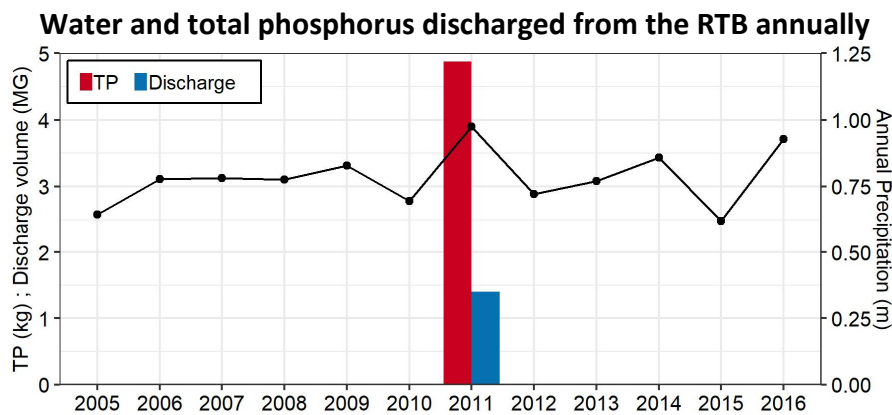
SEVEN MILE CSO RTB FACTSHEET

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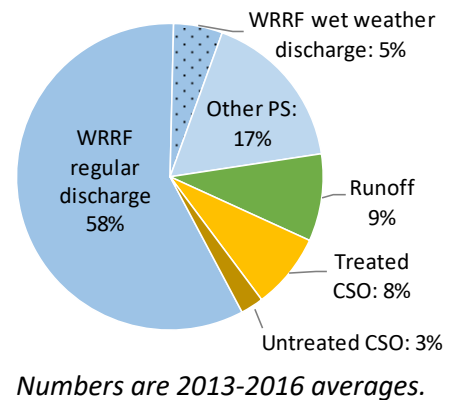
	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	1.4	0
Median annual total phosphorus (TP) load (kg)	4.9	0
Average number of events per year	1	0
Average TP concentration (mg/L)	NA	NA
Most events in a year: 1 in 2011		
Fewest events in a year: 0 in all years besides 2011		



CONTEXT

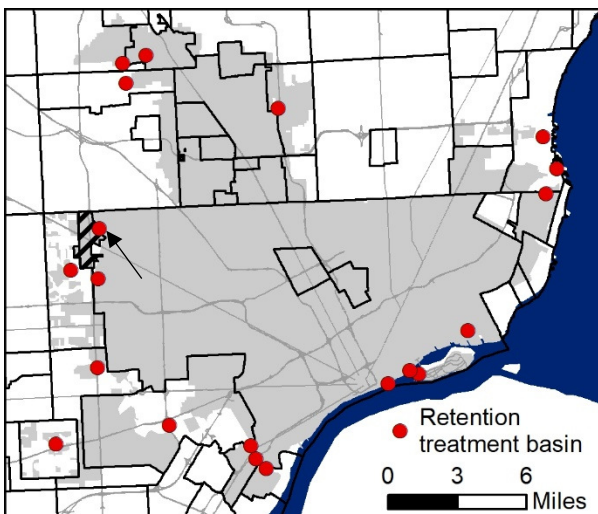
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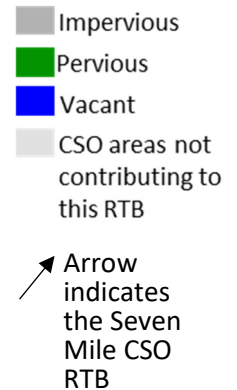
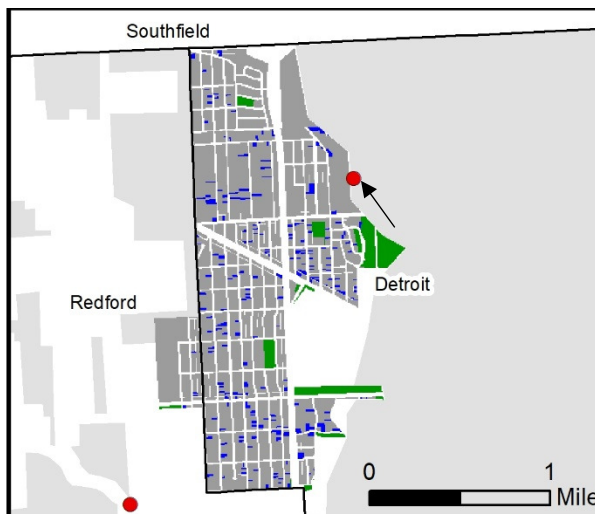


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~1.91 mi²)



Land use³ in area contributing to this RTB. Approximately 91.5% impervious, 4.7% pervious, and 3.7% vacant.



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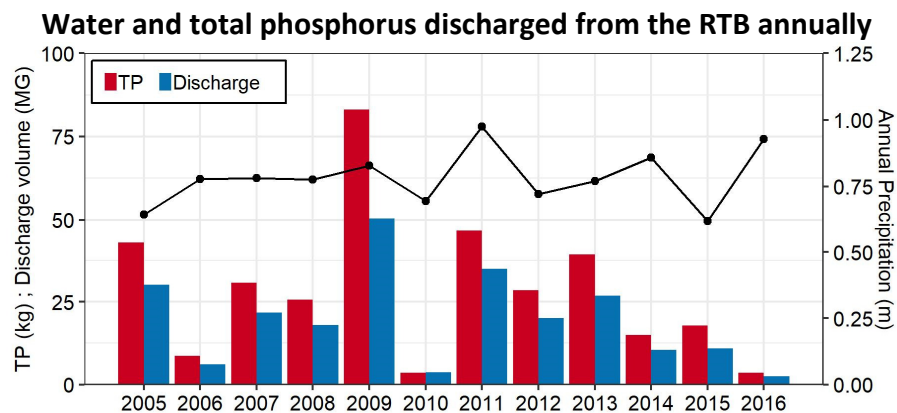
BIRMINGHAM CSO RTB FACTSHEET

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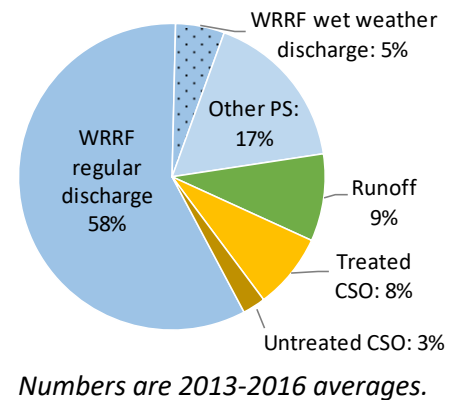
	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	19.1	10.7
Median annual total phosphorus (TP) load (kg)	27	16.4
Average number of events per year	2.7	2
Average TP concentration (mg/L)	NA	0.39
Most events in a year: 6 in 2009		
Fewest events in a year: 1 in 2010, 2012, 2015, and 2016		



CONTEXT

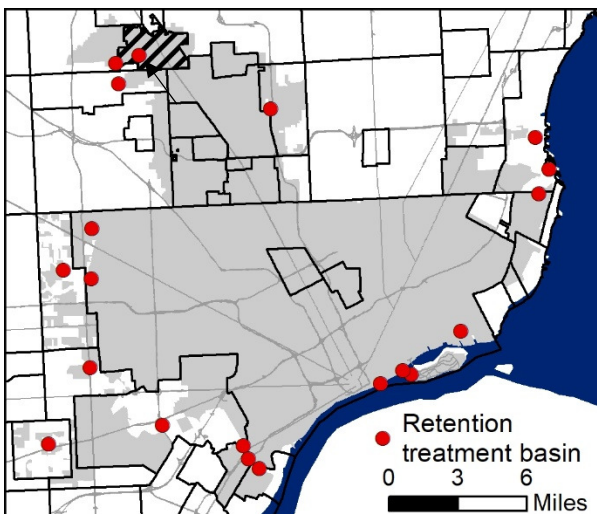
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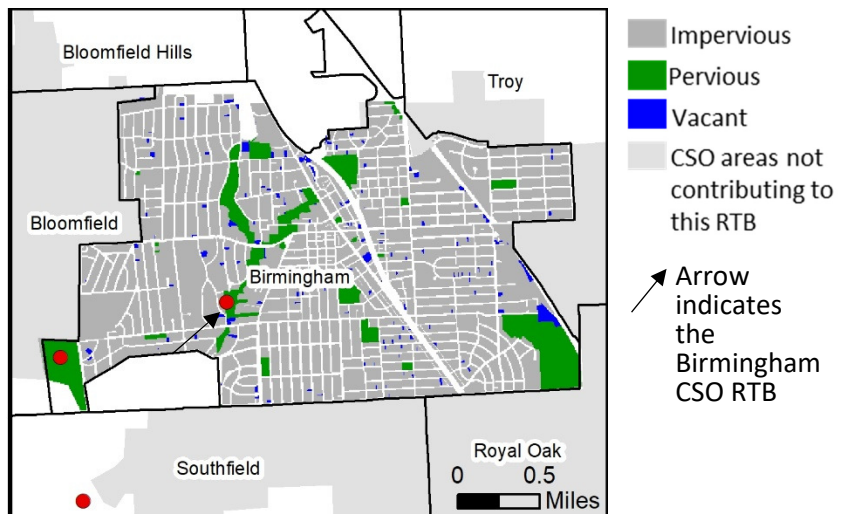


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~4.57 mi²)



Land use³ in area contributing to this RTB. Approximately 89.8% impervious, 8.7% pervious, and 1.5% vacant.



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CHAPATON CSO RTB FACTSHEET

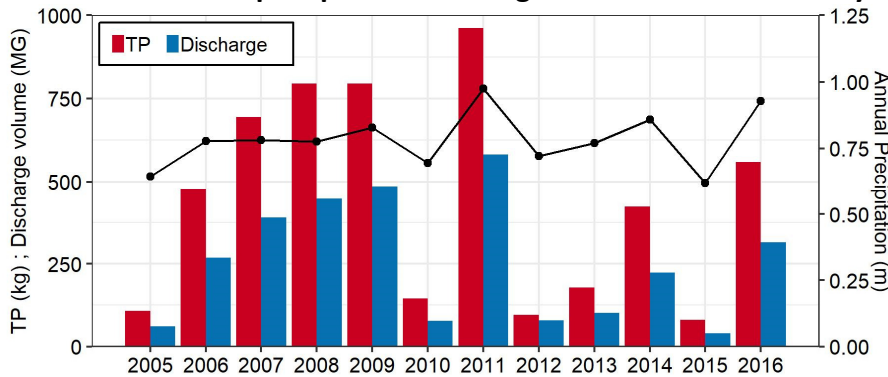
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SUMMARY STATISTICS

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	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	246.1	162.3
Median annual total phosphorus (TP) load (kg)	449.8	300.1
Average number of events per year	6.7	7.2
Average TP concentration (mg/L)	NA	0.48
Most events in a year: 12 in 2011		
Fewest events in a year: 2 in 2005		

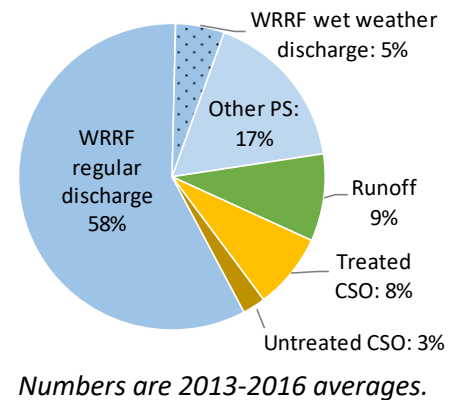
Water and total phosphorus discharged from the RTB annually



CONTEXT

Sources of phosphorus in metro Detroit and significance of CSOs

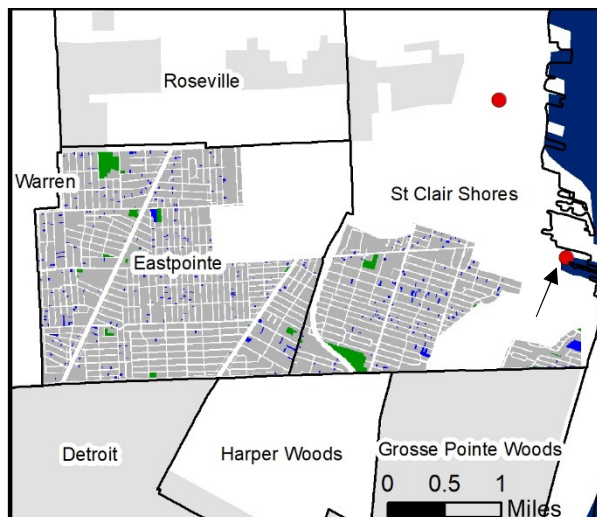
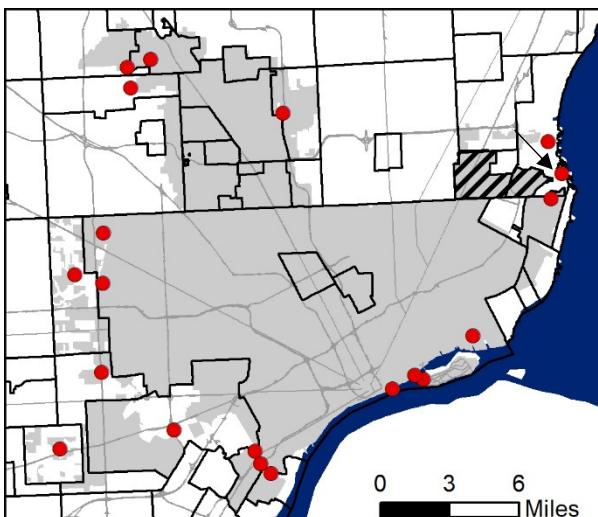
The metro Detroit urban area¹ contributes 515 metric tons (MTA) of phosphorus annually to the Detroit River through runoff, point sources (PS) (most notably the Great Lakes Water Authority Water Resource Recovery Facility), and combined sewer overflows (CSOs). CSOs make up about 11% (~53 MTA) of that load. Treated CSOs contribute 41 MTA, and untreated CSOs contribute 12 MTA.



GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~5.79 mi²)

Land use³ in area contributing to this RTB. Approximately 96.3% impervious, 1.8% pervious, and 1.9% vacant.



- Impervious
- Pervious
- Vacant
- CSO areas not contributing to this RTB
- Arrow indicates the Chapaton CSO RTB

1: This area was delineated based on HUC-12 subwatersheds with more than 80% impervious cover. Map is provided in main report. 2: Data source: Michigan Department of Environmental Quality online database available at miwaters.deq.state.mi.us. 3: Data source: SEMCOG, 2015 land use dataset, provided by SEMCOG by request.

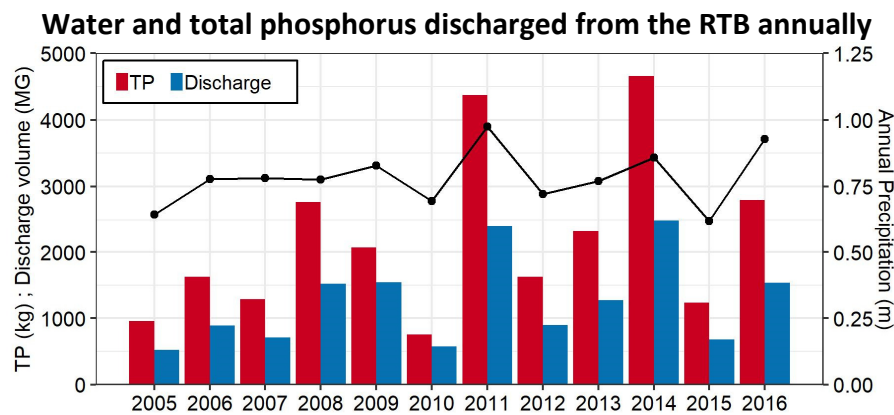
GEORGE W. KUHN CSO RTB FACTSHEET

An appendix to the report "Watershed Assessment of Detroit River Nutrient Loads to Lake Erie," published by the University of Michigan Water Center in May 2019. Report and other supporting documents available at www.myumi.ch/detroit-river.

SUMMARY STATISTICS

All years in this section are waters years (i.e., September through October).

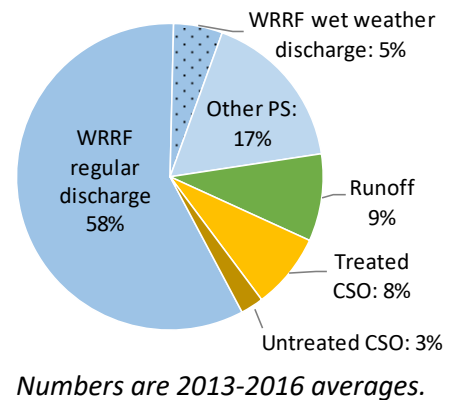
	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	1,085	1,407
Median annual total phosphorus (TP) load (kg)	1,849	2,556
Average number of events per year	7.8	7.5
Average TP concentration (mg/L)	NA	0.49
Most events in a year: 12 in 2011		
Fewest events in a year: 5 in 2010 and 2012		



CONTEXT

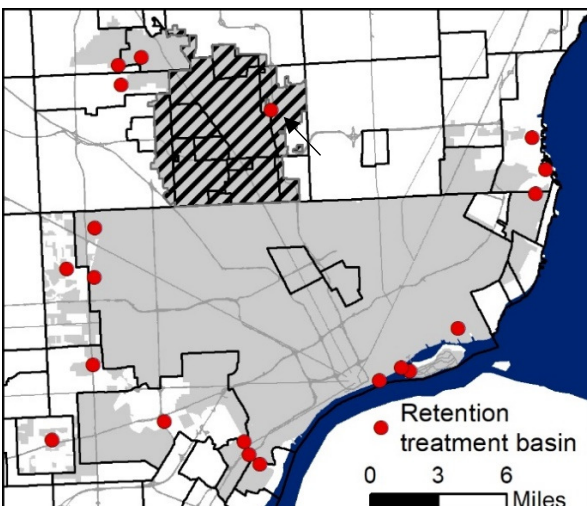
Sources of phosphorus in metro Detroit and significance of CSOs

The metro Detroit urban area¹ contributes 515 metric tons (MTA) of phosphorus annually to the Detroit River through runoff, point sources (PS) (most notably the Great Lakes Water Authority Water Resource Recovery Facility), and combined sewer overflows (CSOs). CSOs make up about 11% (~53 MTA) of that load. Treated CSOs contribute 41 MTA, and untreated CSOs contribute 12 MTA.

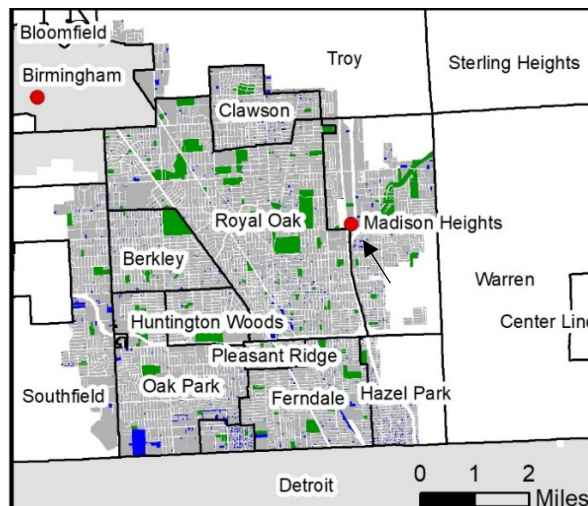


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~38.3 mi²)



Land use³ in area contributing to this RTB. Approximately 91.6% impervious, 6.3% pervious, and 2.1% vacant.



- Impervious
- Pervious
- Vacant
- CSO areas not contributing to this RTB
- Arrow indicates the George W. Kuhn CSO RTB

1: This area was delineated based on HUC-12 subwatersheds with more than 80% impervious cover. Map is provided in main report. 2: Data source: Michigan Department of Environmental Quality online database available at miwaters.deq.state.mi.us. 3: Data source: SEMCOG, 2015 land use dataset, provided by SEMCOG by request.

RIVER ROUGE CSO RTB FACTSHEET

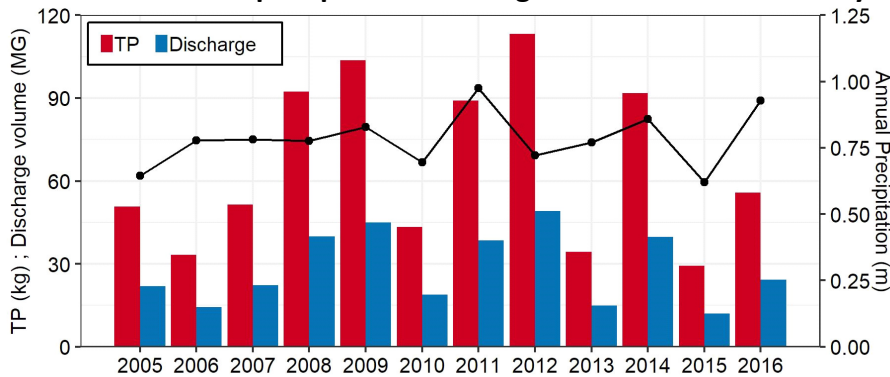
An appendix to the report "Watershed Assessment of Detroit River Nutrient Loads to Lake Erie," published by the University of Michigan Water Center in May 2019. Report and other supporting documents available at www.myumi.ch/detroit-river.

SUMMARY STATISTICS

All years in this section are waters years (i.e., October through September).

	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	23.3	19.6
Median annual total phosphorus (TP) load (kg)	53.6	45.1
Average number of events per year	6	5.5
Average TP concentration (mg/L)	NA	0.61
Most events in a year: 9 in 2005, 2011, and 2012		
Fewest events in a year: 2 in 2010		

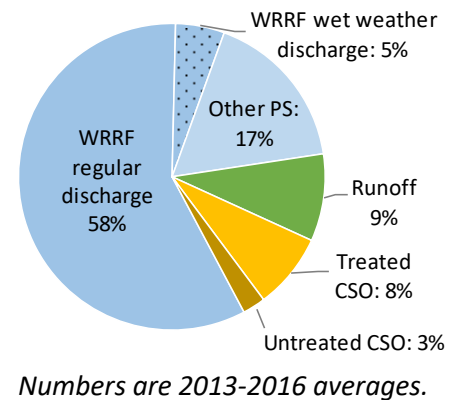
Water and total phosphorus discharged from the RTB annually



CONTEXT

Sources of phosphorus in metro Detroit and significance of CSOs

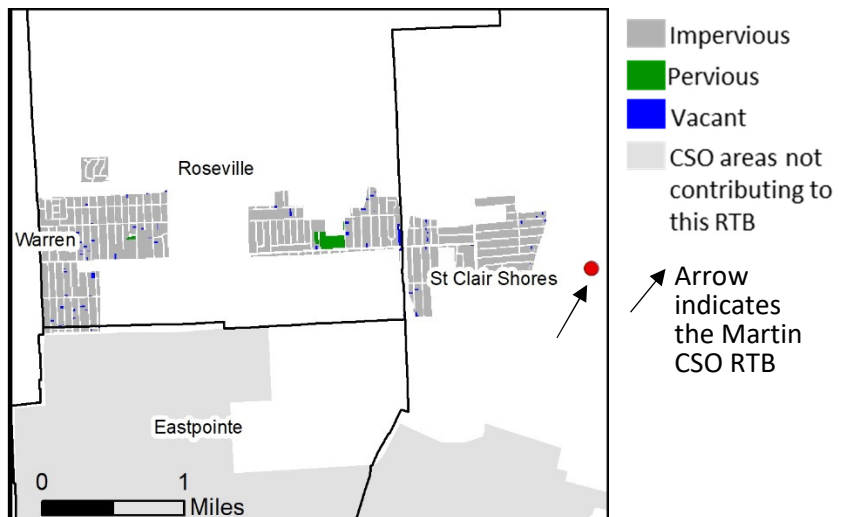
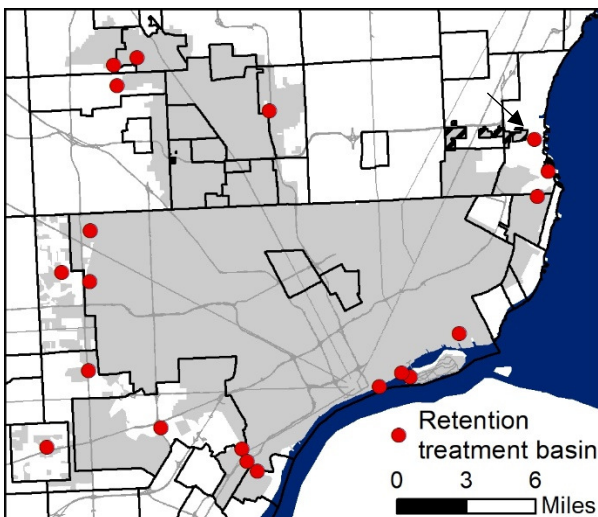
The metro Detroit urban area¹ contributes 515 metric tons (MTA) of phosphorus annually to the Detroit River through runoff, point sources (PS) (most notably the Great Lakes Water Authority Water Resource Recovery Facility), and combined sewer overflows (CSOs). CSOs make up about 11% (~53 MTA) of that load. Treated CSOs contribute 41 MTA, and untreated CSOs contribute 12 MTA.



GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~1.45 mi²)

Land use³ in area contributing to this RTB. Approximately 97.4% impervious, 1.4% pervious, and 1.2% vacant.



1: This area was delineated based on HUC-12 subwatersheds with more than 80% impervious cover. Map is provided in main report. 2: Data source: Michigan Department of Environmental Quality online database available at miwaters.deq.state.mi.us. 3: Data source: SEMCOG, 2015 land use dataset, provided by SEMCOG by request.

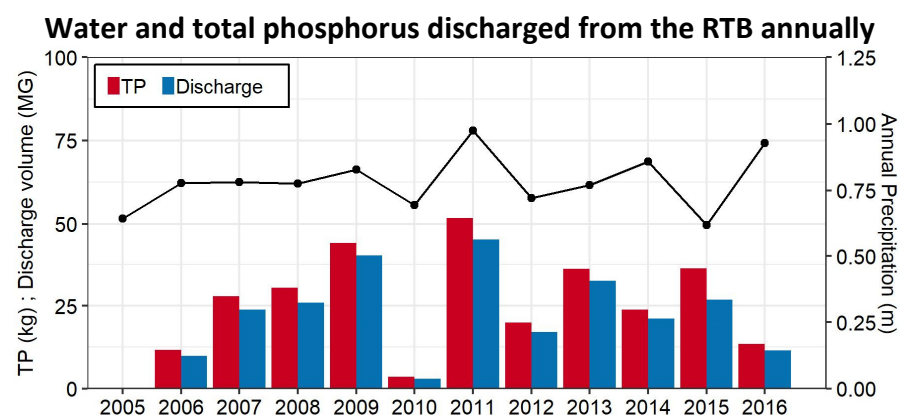
ACACIA PARK CSO RTB FACTSHEET

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SUMMARY STATISTICS

All years in this section are waters years (i.e., September through October).

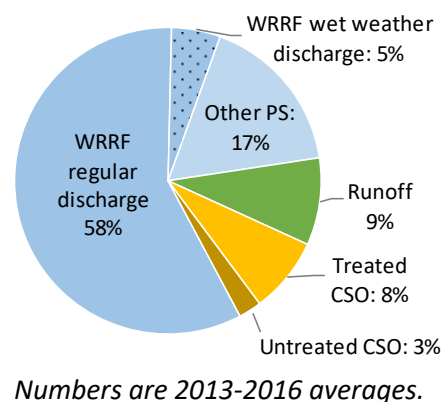
	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	23.8	24
Median annual total phosphorus (TP) load (kg)	27.9	30
Average number of events per year	3.9	3.8
Average TP concentration (mg/L)	NA	0.32
Most events in a year: 7 in 2007 and 2009		
Fewest events in a year: 1 in 2012		



CONTEXT

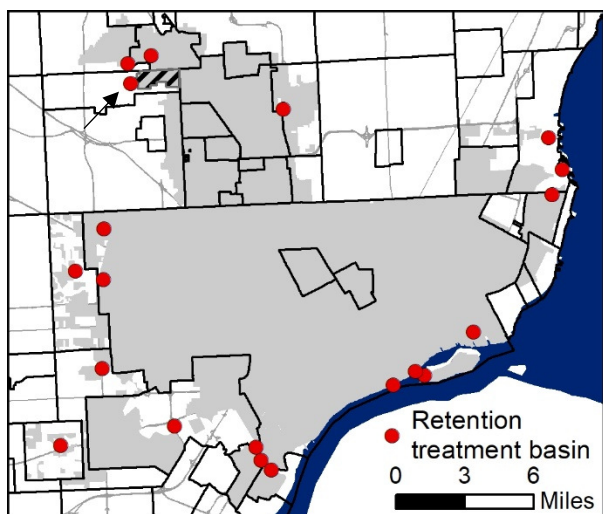
Sources of phosphorus in metro Detroit and significance of CSOs

The metro Detroit urban area¹ contributes 515 metric tons (MTA) of phosphorus annually to the Detroit River through runoff, point sources (PS) (most notably the Great Lakes Water Authority Water Resource Recovery Facility), and combined sewer overflows (CSOs). CSOs make up about 11% (~53 MTA) of that load. Treated CSOs contribute 41 MTA, and untreated CSOs contribute 12 MTA.

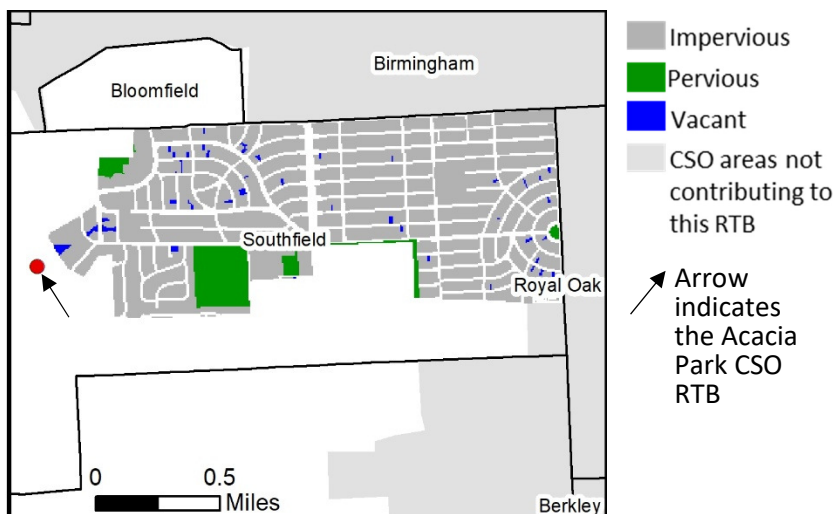


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~1.29 mi²)



Land use³ in area contributing to this RTB. Approximately 93.2% impervious, 5.8% pervious, and 1.1% vacant.



1: This area was delineated based on HUC-12 subwatersheds with more than 80% impervious cover. Map is provided in main report. 2: Data source: Michigan Department of Environmental Quality online database available at miwaters.deq.state.mi.us. 3: Data source: SEMCOG, 2015 land use dataset, provided by SEMCOG by request.

BLOOMFIELD CSO RTB FACTSHEET

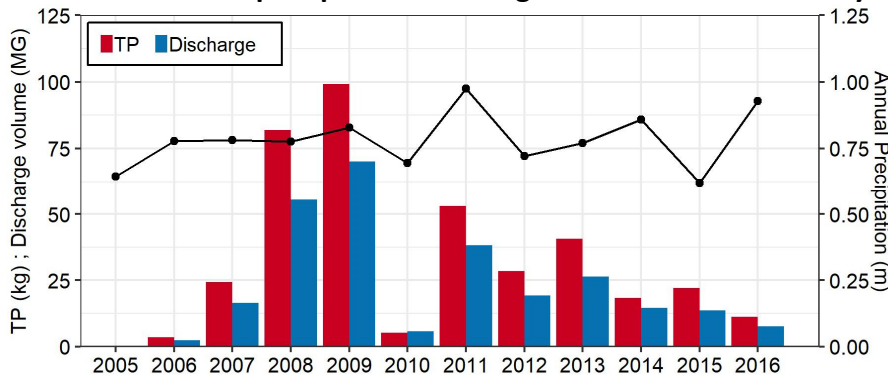
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SUMMARY STATISTICS

All years in this section are waters years (i.e., September through October).

	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	16.4	14.1
Median annual total phosphorus (TP) load (kg)	24.3	20.2
Average number of events per year	2.9	2.2
Average TP concentration (mg/L)	NA	0.39
Most events in a year: 7 in 2009		
Fewest events in a year: 1 in 2010, 2012, 2015, and 2016		

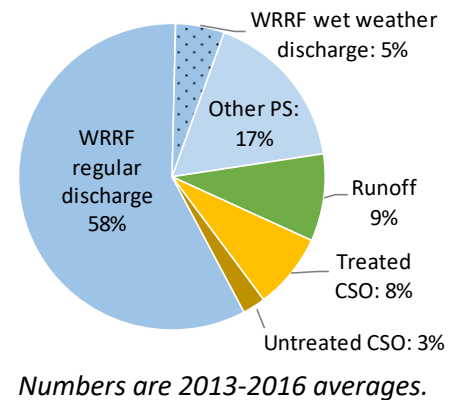
Water and total phosphorus discharged from the RTB annually



CONTEXT

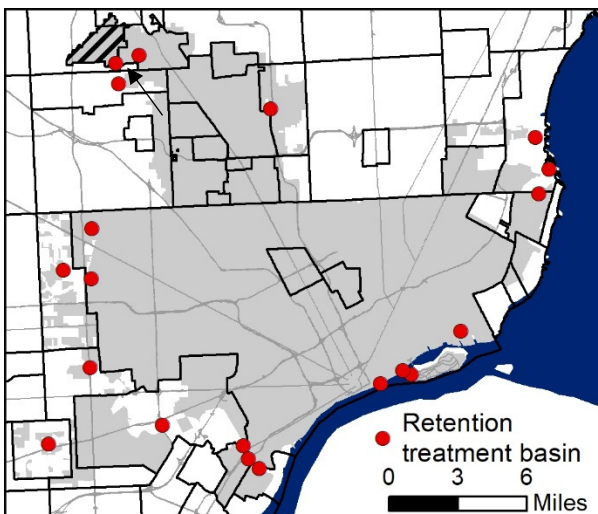
Sources of phosphorus in metro Detroit and significance of CSOs

The metro Detroit urban area¹ contributes 515 metric tons (MTA) of phosphorus annually to the Detroit River through runoff, point sources (PS) (most notably the Great Lakes Water Authority Water Resource Recovery Facility), and combined sewer overflows (CSOs). CSOs make up about 11% (~53 MTA) of that load. Treated CSOs contribute 41 MTA, and untreated CSOs contribute 12 MTA.

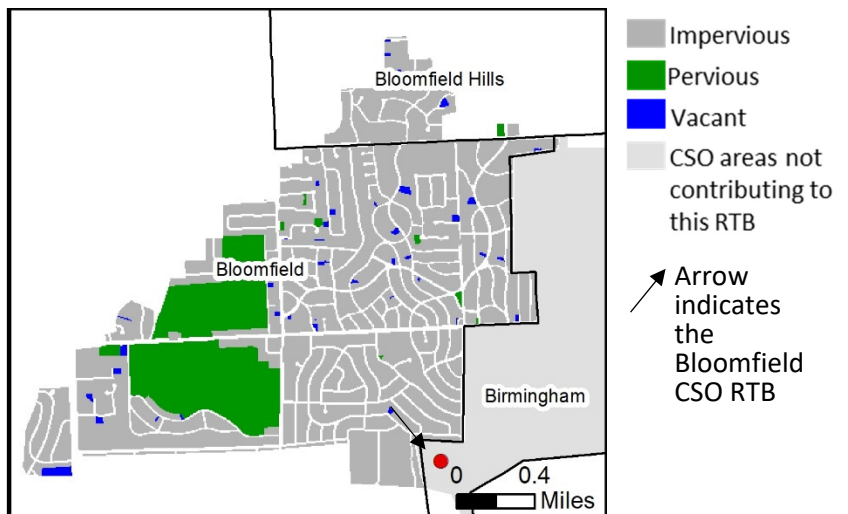


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~3.09 mi²)



Land use³ in area contributing to this RTB. Approximately 83.4% impervious, 15.4% pervious, and 1.2% vacant.



1: This area was delineated based on HUC-12 subwatersheds with more than 80% impervious cover. Map is provided in main report. 2: Data source: Michigan Department of Environmental Quality online database available at miwaters.deq.state.mi.us. 3: Data source: SEMCOG, 2015 land use dataset, provided by SEMCOG by request.

WAYNE COUNTY-INKSTER CSO RTB

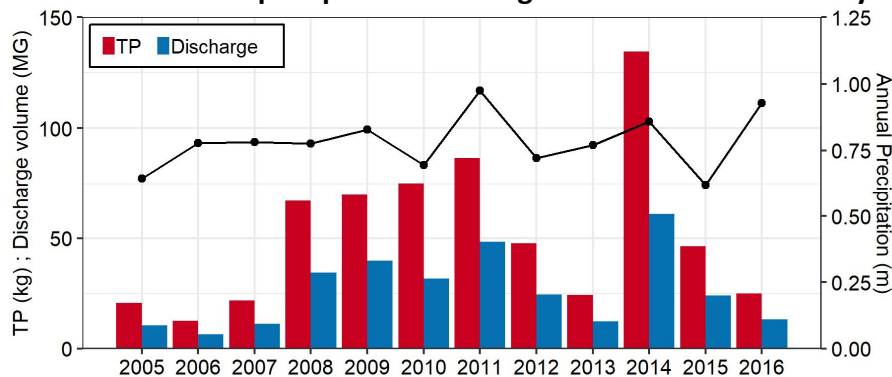
An appendix to the report "Watershed Assessment of Detroit River Nutrient Loads to Lake Erie," published by the University of Michigan Water Center in May 2019. Report and other supporting documents available at www.myumi.ch/detroit-river.

SUMMARY STATISTICS

All years in this section are waters years (i.e., October through September).

	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	24.3	18.6
Median annual total phosphorus (TP) load (kg)	46.9	35.6
Average number of events per year	5.3	5.5
Average TP concentration (mg/L)	NA	0.55
Most events in a year: 11 in 2011		
Fewest events in a year: 3 in 2005 and 2008		

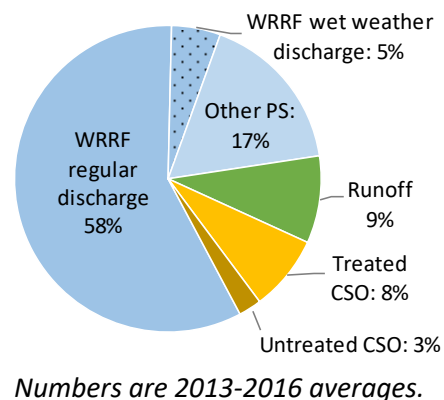
Water and total phosphorus discharged from the RTB annually



CONTEXT

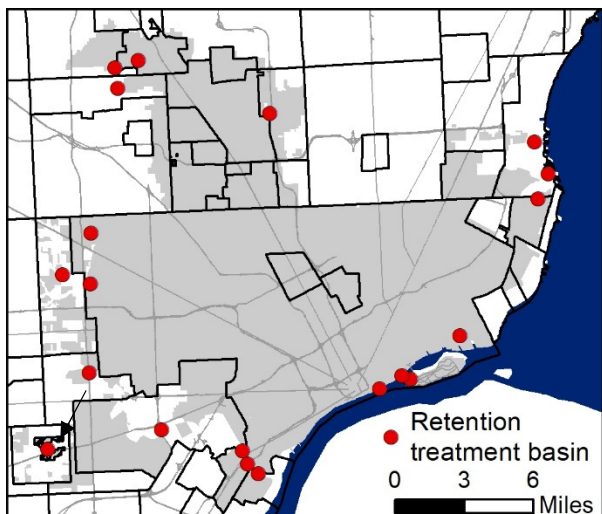
Sources of phosphorus in metro Detroit and significance of CSOs

The metro Detroit urban area¹ contributes 515 metric tons (MTA) of phosphorus annually to the Detroit River through runoff, point sources (PS) (most notably the Great Lakes Water Authority Water Resource Recovery Facility), and combined sewer overflows (CSOs). CSOs make up about 11% (~53 MTA) of that load. Treated CSOs contribute 41 MTA, and untreated CSOs contribute 12 MTA.



GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~0.56 mi²)



Land use³ in area contributing to this RTB. Approximately 87.7% impervious, 4.2% pervious, and 8.1% vacant.



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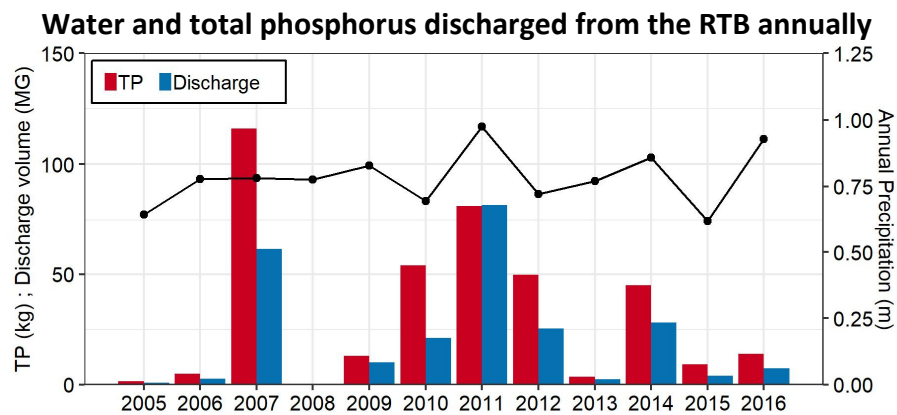
DEARBORN HEIGHTS CSO RTB

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SUMMARY STATISTICS

All years in this section are waters years (i.e., October through September).

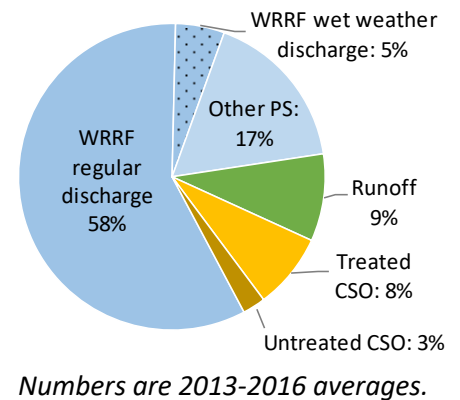
	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	8.7	5.6
Median annual total phosphorus (TP) load (kg)	13.4	11.5
Average number of events per year	2.8	2.5
Average TP concentration (mg/L)	NA	0.45
Most events in a year: 6 in 2011		
Fewest events in a year: 1 in 2005, 2008, 2010, and 2015		



CONTEXT

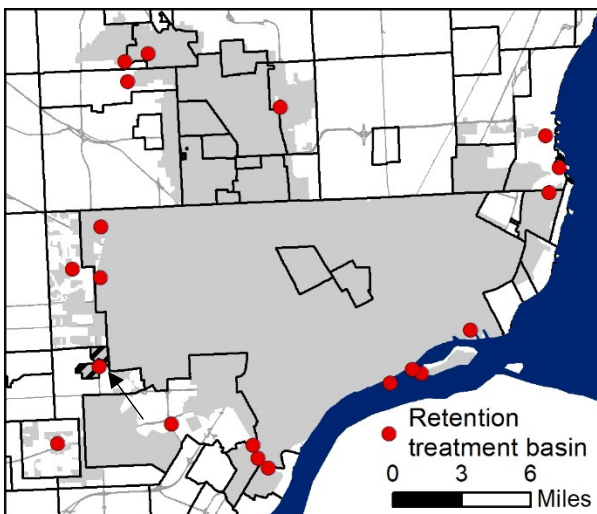
Sources of phosphorus in metro Detroit and significance of CSOs

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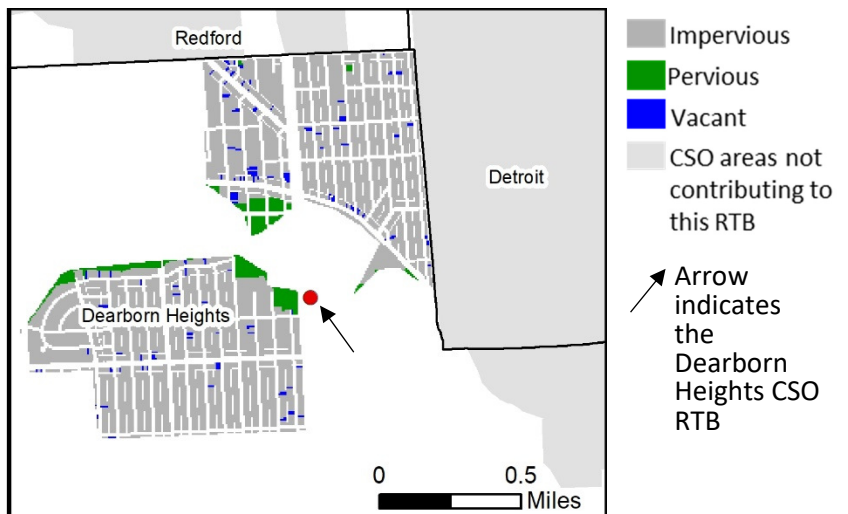


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~1.0 mi²)



Land use³ in area contributing to this RTB. Approximately 94.9% impervious, 3.5% pervious, and 1.6% vacant.



1: This area was delineated based on HUC-12 subwatersheds with more than 80% impervious cover. Map is provided in main report. 2: Data source: Michigan Department of Environmental Quality online database available at miwaters.deq.state.mi.us. 3: Data source: SEMCOG, 2015 land use dataset, provided by SEMCOG by request.

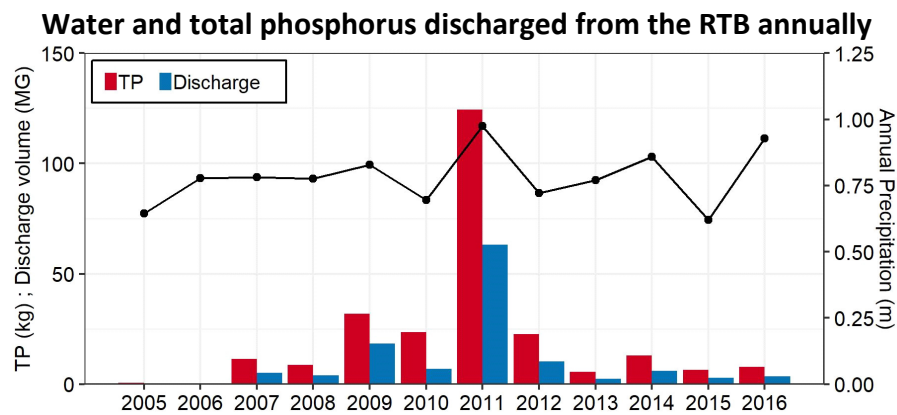
WAYNE COUNTY-REDFORD CSO RTB

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SUMMARY STATISTICS

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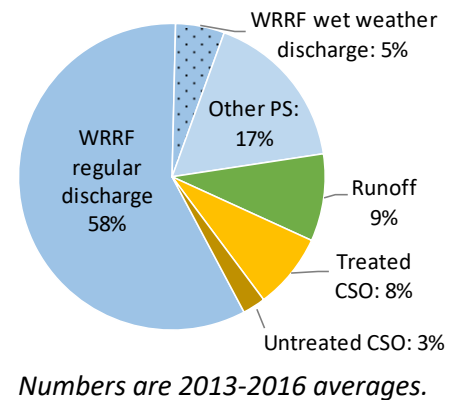
	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	4.6	3.2
Median annual total phosphorus (TP) load (kg)	10.1	7.1
Average number of events per year	2.9	2
Average TP concentration (mg/L)	NA	0.58
Most events in a year: 10 in 2011		
Fewest events in a year: 1 in 2006, 2010, and 2015		



CONTEXT

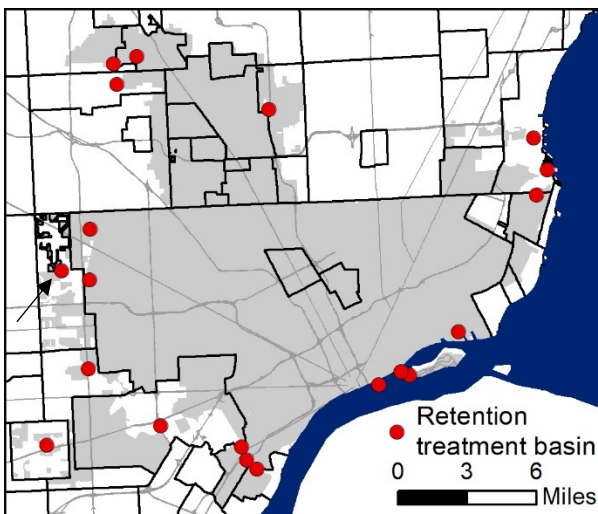
Sources of phosphorus in metro Detroit and significance of CSOs

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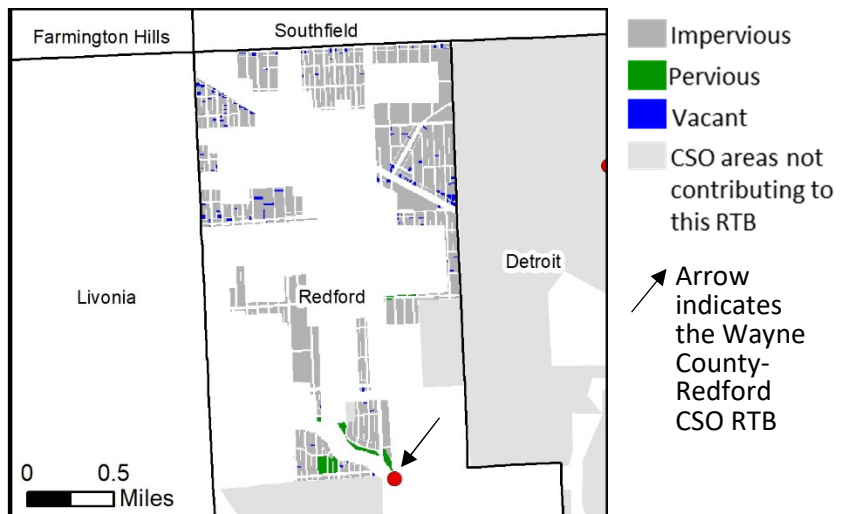


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~1.12 mi²).



Land use³ in area contributing to this RTB. Approximately 95.9% impervious, 1.8% pervious, and 2.3% vacant.



1: This area was delineated based on HUC-12 subwatersheds with more than 80% impervious cover. Map is provided in main report. 2: Data source: Michigan Department of Environmental Quality online database available at miwaters.deq.state.mi.us. 3: Data source: SEMCOG, 2015 land use dataset, provided by SEMCOG by request.

MARTIN CSO RTB FACTSHEET

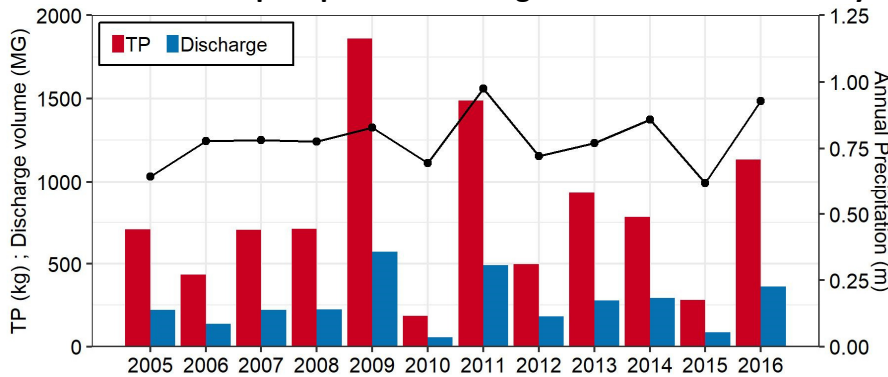
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SUMMARY STATISTICS

All years in this section are waters years (i.e., September through October).

	Long term (2005-2016)	Recent (2013-2016)
Median volume discharged per year (MG)	223.2	286.1
Median annual total phosphorus (TP) load (kg)	709.6	855.6
Average number of events per year	7.2	7
Average TP concentration (mg/L)	NA	0.81
Most events in a year: 13 in 2009		
Fewest events in a year: 3 in 2005 and 2010		

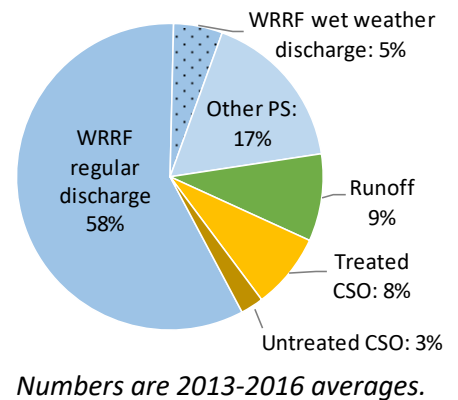
Water and total phosphorus discharged from the RTB annually



CONTEXT

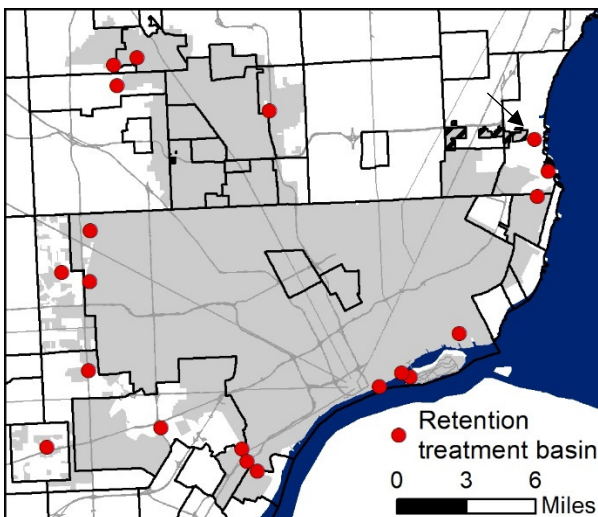
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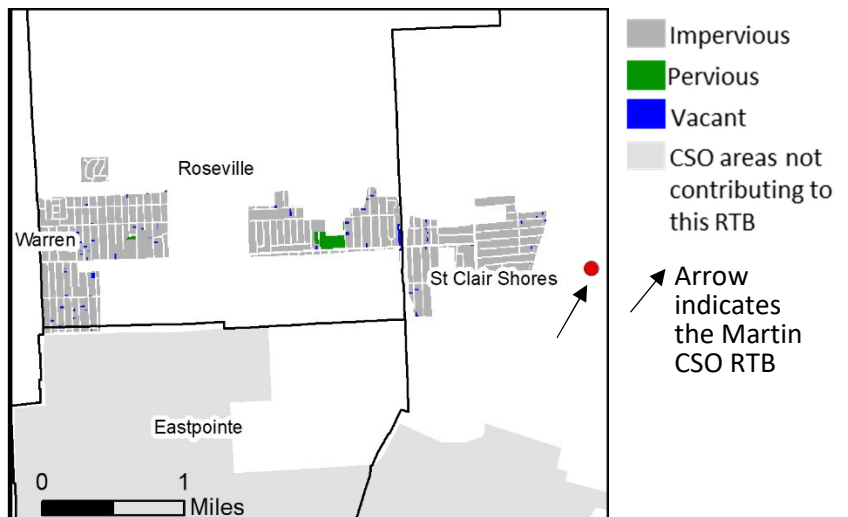


GEOGRAPHY AND LAND USE

Area with combined sewers (shaded gray, ~238 mi²) and approximate area contributing to this RTB (black lines, ~1.45 mi²)



Land use³ in area contributing to this RTB. Approximately 97.4% impervious, 1.4% pervious, and 1.2% vacant.



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