



# Loading Analysis Plan and Supporting Data Acquisition Needed for the Lower Great Miami River and Select Tributaries

Total Maximum Daily Load Development



*Great Miami River in Montgomery County July 2011, Ohio EPA*

Ohio EPA Technical Report AMS/2010-LWGMR-3

Division of Surface Water  
Assessment and Modeling Section  
May 2021

## Table of Contents

<b>Introduction</b> .....	3
<b>Aquatic Life Use</b> .....	3
<i>Evaluation of Biocriteria</i> .....	3
<i>Proposed Actions</i> .....	8
<i>Current Pollutant Reduction Implementation Efforts - Wastewater Treatment Plant Upgrades</i> .....	10
<b>Recreation Use</b> .....	13
<b>References</b> .....	14

## Introduction

This document provides an overview of the information considered in proposing the strategy to address water quality impairments in the Lower Great Miami River and select tributaries. These recommendations are based on data collected as part of a biological and water quality study in 2010-2012. A description of the project area, sites, data types, methods and a summary of the study results can be found in the biological and water quality report at ([epa.ohio.gov/portals/35/documents/GMR2012TSD.pdf](http://epa.ohio.gov/portals/35/documents/GMR2012TSD.pdf)).

Sites in the Lower Great Miami River and select tributaries were assessed for aquatic life use and recreation use. The public water supply use was not assessed since no surface waters are used as a public water supply in this study area. The attainment of aquatic life and recreation use is based on specific restoration targets. This document examines those targets and lays out proposals for addressing each impairment. Where appropriate, methods are outlined to develop total maximum daily loads (TMDL) for specific pollutants.

## Aquatic Life Use

### *Evaluation of Biocriteria*

Attainment of Ohio EPA's biocriteria are based on fish and macroinvertebrate scores, as measured by the Index of Biotic Integrity (IBI), Modified Index of well-being (MIwb) and Invertebrate Community Index (ICI). Further explanations of Ohio EPA's biocriteria can be found in Ohio Administrative Code (OAC) Chapter 3745-1-07 and additionally at [epa.ohio.gov/dsw/bioassess/BioCriteriaProtAqLife](http://epa.ohio.gov/dsw/bioassess/BioCriteriaProtAqLife). Goals for those indices in the Lower Great Miami River and select tributaries are shown in

Table 1. The attainment status for each site is shown in Figure 1 and the scores for impaired sites are shown in Table 2.

From the Ohio EPA 2012 report, the following summarizes the primary aquatic life use assessment results: “Of the 75 river miles assessed during 2010 in the lower Great Miami River (GMR), 60.6 miles were fully attaining the designated Warmwater Habitat aquatic life use. Of the 14.4 miles in non-attainment, nutrient over-enrichment was the principal cause of impairment. .... Localized areas of impairment were observed in several direct tributaries to the lower GMR, including the headwaters of Taylor Creek ..., Wolf Creek through the City of Brookville due to a combination of urban street runoff, and organic enrichment from the Brookville WWTP, Holes Creek near Lyons Road due to an apparent failure in the sewage collection system, Elk Creek due to natural causes, Dicks Creek due to high levels of total dissolved solids, and Pleasant Run due to urban street runoff.” Other secondary causes of impairment are noted throughout the report.

**Table 1 – Biological criteria applicable in the Lower Great Miami River and select tributaries study area for aquatic life use designations.**

Ecoregion	Biological Index	Assessment Method <sup>2,3</sup>	Biological Criteria for the Applicable Aquatic Life Use Designations <sup>1</sup>		
			EWH	WWH	MWH <sup>4</sup>
Eastern Cornbelt Plains (ECBP)	IBI	Headwater	50	40	24
		Wading	50	40	24
		Boat	48	42	24 / 30
	MIwb	Wading	9.4	8.3	6.2
		Boat	9.6	8.5	5.8 / 6.6
	ICI	All <sup>5</sup>	46	36	22
	Interior Plateau (IP)	IBI	Headwater	50	40
Wading			50	40	24
Boat			48	38	24 / 30
MIwb		Wading	9.4	8.1	6.2
		Boat	9.6	8.7	5.8 / 6.6
ICI		All <sup>5</sup>	46	30	22

<sup>1</sup> Aquatic Life Use (ALU) designations: warmwater habitat (WWH); exceptional warmwater habitat (EWH); modified warmwater habitat (MWH).

<sup>2</sup> In general, the assessment method used at a site is determined by its drainage area (DA) according to the following: Headwater: DA ≤ 20 mi<sup>2</sup>; wading: DA >20 mi<sup>2</sup> and ≤ 500 mi<sup>2</sup>; boat: DA > 500 mi<sup>2</sup>.

<sup>3</sup> MIwb not applicable to drainage areas less than 20 mi<sup>2</sup> (headwater sites).

<sup>4</sup> Biocriteria depend on type of MWH. MWH-C (due to channelization) is listed first, MWH-I (due to impoundment) is listed second.

<sup>5</sup> Limited to sites with appropriate conditions for artificial substrate placement.

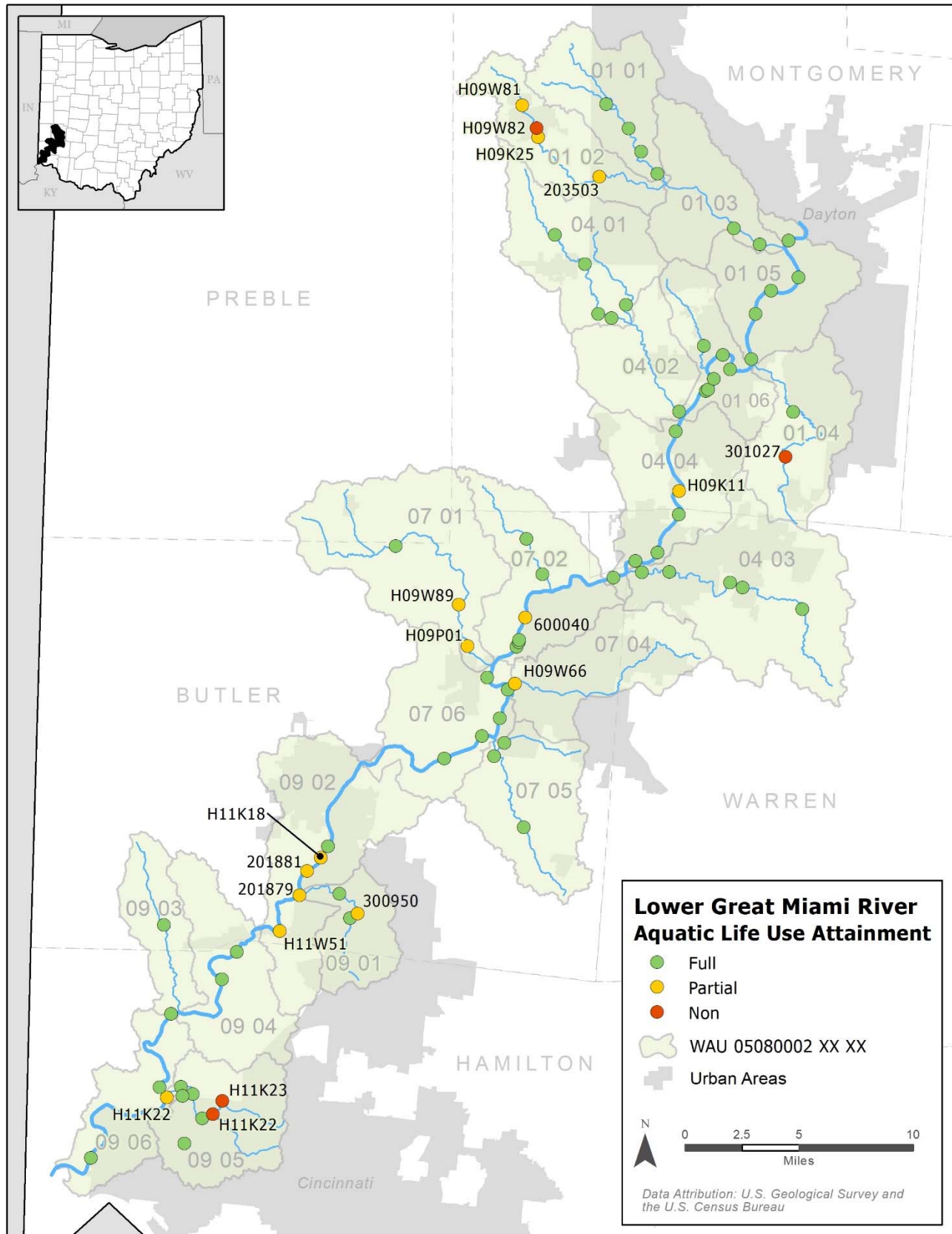


Figure 1 — Map summarizing ALU attainment status in the Lower Great Miami River and select tributaries study area in 2010. Impaired station IDs are annotated in the map and detailed in Table 2.

**Table 2 – Aquatic life use attainment information for impaired sampling locations in the Lower Great Miami River and select tributaries study area, 2010.**

Station	Location	ALU	River Mile <sup>a</sup>	Drain. Area (mi <sup>2</sup> )	IBI	MIwb <sup>b</sup>	ICI <sup>c</sup>	QHEI	Attain. Status	Causes	Sources
05080002 90 01 – Great Miami River - Mad River to Fourmile Creek (RMs 81.48-38.38) – Large River Assessment Unit											
H09K11	Great Miami R dst. DPL Hutchings Dam	WWH	64.10 <sup>B</sup>	2719	32 <sup>NS</sup>	8.2 <sup>NS</sup>	32*	86.5	PARTIAL	Temperature	Industrial thermal discharges
600040	Great Miami R at Middletown @ Central Ave (ST. RT. 122)	WWH	52.64 <sup>B</sup>	3134	42	7.8*	40	68.5	PARTIAL	Nutrient enrichment	Municipal point source discharges, agricultural livestock and row crops
05090101 90 02 – Great Miami River - Fourmile Creek to mouth (RMs 38.38-0.00) – Large River Assessment Unit											
H11K18	Great Miami R dst. Hamilton WWTP	WWH	33.60 <sup>B</sup>	3639	44	9.8	26*	82.0	PARTIAL	Temperature	Industrial thermal discharges
201881	Great Miami R 1.2 MI upst. Fairfield WWTP	WWH	32.70 <sup>B</sup>	3641	40 <sup>NS</sup>	10.1	14*	81.3	PARTIAL	Nutrient enrichment, biochemical oxygen demand	Municipal point source discharges, agricultural livestock and row crops
201879	Great River R dst. Fairfield WWTP, dst. Pleasant Run	WWH	31.40 <sup>B</sup>	3662	35*	9.6	44	76.8	PARTIAL		
H11W51	Great Miami R upst. Banklick Creek adj. East River Rd.	WWH	28.82 <sup>B</sup>	3670	37*	9.7	40	82.5	PARTIAL		
H11W55	Great Miami R @ I-74/I-275/NEW U.S. RT 52	WWH	14.93 <sup>B</sup>	3865	34*	9.6	32	84.3	PARTIAL		
05080002 01 02 – Headwaters Wolf Creek – HUC12 Watershed Assessment Unit											
H09W81	Wolf Creek upst. Brookville @ Lewisburg-Salem Rd.	WWH	16.61 <sup>W</sup>	4.6	36 <sup>NS</sup>	--	F*	56.0	PARTIAL	Organic enrichment	Urban stormwater
H09W82	Wolf Creek upst. Brookville WWTP @ Westbrook Rd.	WWH	15.32 <sup>W</sup>	4.7	34*	--	F*	73.0	NON	Stormwater	
H09K25	Wolf Creek dst. Brookville WWTP	WWH	14.90 <sup>W</sup>	8.0	38 <sup>NS</sup>	--	F*	79.8	PARTIAL	Organic enrichment	Municipal point source discharges
203503	Wolf Creek W of Trotwood upst. Nolan Rd.	WWH	10.40 <sup>W</sup>	13.9	32*	--	G	81.0	PARTIAL	Ammonia	
05080002 01 04 – Holes Creek – HUC12 Watershed Assessment Unit											
301027	Holes Creek @ Lyons Rd.	WWH	8.59 <sup>W</sup>	7.3	24*	--	P*	71.0	NON	Organic enrichment	

Station	Location	ALU	River Mile <sup>a</sup>	Drain. Area (mi <sup>2</sup> )	IBI	MIwb <sup>b</sup>	ICI <sup>c</sup>	QHEI	Attain. Status	Causes	Sources
										Ammonia	Sanitary Sewer Overflows
05080002 07 01 – Elk Creek – HUC12 Watershed Assessment Unit											
H09W89	Elk Creek N of Trenton, upst. Dry Run	EWH	3.70 <sup>W</sup>	37	46 <sup>NS</sup>	8.1*	E	64.5	PARTIAL	Natural conditions (flow or habitat)	Natural sources
H09P01	Elk Creek at Miltonville @ Howe Rd.	EWH	1.49 <sup>W</sup>	46	48 <sup>NS</sup>	8.7*	46	58.0	PARTIAL	Natural conditions (flow or habitat)	Natural sources
05080002 07 04 – Dicks Creek – HUC12 Watershed Assessment Unit											
H09W66	Dicks Creek at Middletown @Main St.	WWH	0.93 <sup>W</sup>	48.5	45	7.1*	42	60.8	PARTIAL	TDS Nutrient enrichment Organics	Industrial point source discharge
05080002 09 01 – Pleasant Run – HUC12 Watershed Assessment Unit											
300950	Trib. To Pleasant Run (RM 3.30) @ Chesapeake Way	WWH	0.13 <sup>H</sup>	3.0	36	--	F*	61.0	PARTIAL	Urban stormwater Organic enrichment	Urban stormwater
05080002 09 05 – Taylor Creek – HUC12 Watershed Assessment Unit											
H11K23	Briarly Creek Adj. Briarly Creek Rd, dst. Steel Creek	WWH	1.13 <sup>W</sup>	6.9	26*	--	--	65.3	(NON)	Urban stormwater	Urban stormwater
H11K22	Briarly Creek near mouth	WWH	0.10 <sup>W</sup>	7.2	22*	--	G	70.5	NON		

a River Mile (RM) represents the Point of Record (POR) for the station and may not be the actual sampling RM.

b MIwb is not applicable to headwater streams with drainage areas  $\leq 20$  mi<sup>2</sup>.

c A narrative evaluation of the qualitative sample based on attributes such as EPT taxa richness, number of sensitive taxa, and community composition was used when quantitative data was not available or considered unreliable. VP=Very Poor; P=Poor; LF=Low Fair; F=Fair; MG=Marginally Good; G=Good; VG=Very Good; E=Exceptional

ns Nonsignificant departure from biocriteria ( $\leq 4$  IBI or ICI units, or  $\leq 0.5$  MIwb units).

\* Indicates significant departure from applicable biocriteria ( $>4$  IBI or ICI units, or  $>0.5$  MIwb units). Underlined scores are in the Poor or Very Poor range.

H Headwater site (draining  $\leq 20$  miles<sup>2</sup>).

W Wading site (non-boat site draining  $>20$  miles<sup>2</sup>).

B Boat site (large or deep waters, necessitating the use of boat sampling methods)

## Proposed Actions

Ohio EPA considers many factors when deciding how to address impairments. For some projects, no TMDL is required. The sites in the watershed may be in attainment or the impairment is being addressed by another program/entity so no further action by the Division of Surface Water is necessary.

Additionally, the cause of impairment may be natural (i.e., flow or habitat), in which case no action is required. For those needing a TMDL, the complexity of each impairment—including the primary origin of the pollutant, its delivery mechanisms and the waterbody kinetics involved—will determine the

complexity needed in a model. Ohio EPA must also take into consideration ongoing efforts in the watershed, previous TMDL analyses, the questions to be answered by a model and the amount of effort required to complete the model. Depending on the method selected, the Agency may be required to return to the watershed and collect additional data, and it is possible the modeling approach may change. A summary of Ohio EPA's preliminary modeling approaches is presented in Table 3.

**Table 3 – Summary of ALU impairments and potential modeling approaches**

Station	Stream Name	River Mile	AU <sup>1</sup>	Cause(s) of Impairment	Source(s) of Impairment	Action	Method <sup>2</sup>
H09K11		64.10	90 01	Temperature	Industrial thermal discharges	Other	Follow-up
600040		52.64	90 01	Nutrient enrichment	Municipal point source discharges, agricultural livestock and row crops	Other	Follow-up
H11K18	Great Miami River	33.60	90 02	Temperature	Industrial thermal discharges	Other	Follow-up
201881		32.70	90 02			Other	Follow-up
201879		31.40	90 02	Nutrient enrichment, biochemical oxygen demand	Municipal point source discharges, agricultural livestock and row crops	Other	Follow-up
H11W51		28.70	90 02			Other	Follow-up
H11W55		14.80	90 02			Other	Follow-up
H09W81		16.61	01 02	Organic enrichment, stormwater	Urban stormwater	Other	Follow-up
H09W82		15.32	01 02			Other	Follow-up
H09K25	Wolf Creek	14.90	01 02	Organic enrichment, ammonia	Municipal point source discharges	Other	Follow-up
203503		10.40	01 02			Other	Follow-up
301027	Holes Creek	8.59	01 04	Organic enrichment, ammonia	SSOs – collection system failures	Other	Follow-up
H09W89	Elk Creek	3.70	07 01	Natural conditions	Natural sources	N/A	
H09P01		1.49	07 01			N/A	
H09W66	Dicks Creek	0.93	07 04	TDS, nutrient enrichment	Industrial point sources	Other	Follow-up
300950	Tributary to Pleasant Run	0.10	09 01	Urban stormwater, organic enrichment	Urban stormwater sources	Other	Follow-up
H11K23	Briarly Creek	1.13	09 05	Urban stormwater	Urban stormwater sources	Other	Follow-up
H11K22		0.10	09 05			Other	Follow-up

<sup>1</sup> AU = Assessment units. The 90 01 and 90 02 are larger river assessment units short for 05080002 90 01 and 05090101 90 02, respectively. The remained assessment units shown are the last 4 digits of HUC12s with the first 8 digits being 05080002.

<sup>2</sup> Due to space limitations there are several abbreviations used to describe the analysis or remediation method. Those abbreviations are defined as follows:

Abbreviation	Definition/interpretation
Follow-up	Follow-up assessment is required to determine if the attainment status has changed or to clarify/verify the listed cause of impairment.

After the 2010 water quality survey, Ohio EPA collected additional water quality monitoring data to characterize the GMR's mainstem nutrient enrichment. Data were collected in 2011 and 2012 in order to parameterize a water quality model that could simulate the enrichment. Given the complicated and extreme nature of the lower GMR's enrichment, initial modeling efforts dictated that continued data were needed and additional modeling methods perused for an acceptable means of TMDL development. Concurrently, in early 2015, the Supreme Court of Ohio issued a ruling that halted Ohio EPA's TMDL development process.

While TMDL development was stalled, in 2015 Ohio EPA considered there to be adequate information available to justify total phosphorus (TP) effluent National Discharge Elimination System (NPDES) permit limitations for two major wastewater treatment plants (WWTPs); the City of Dayton and Montgomery County's Western Regional WWTPs. These treatment plants are in the upstream reaches of the lower GMR study area, near the zone where the river's excessive nutrient enrichment conditions begin. Permit limitations for TP are requirements on how much TP the treatment plants are allowed to discharge. Plants generally use treatment technologies to meet permit limits. The nutrient enrichment assessment carried out in previous years for TMDL development was included as a factsheet addendum to those two WWTP's permits (the addendum is available at [wwwapp.epa.ohio.gov/dsw/permits/doc/1PF00000.fs.pdf](http://wwwapp.epa.ohio.gov/dsw/permits/doc/1PF00000.fs.pdf)). That addendum explains that excessive nutrient over-enrichment begins just downstream of the Dayton WWTP (the most upstream of the two plants receiving TP limits). It links the aquatic life use impairments on the GMR to nutrients being delivered by point sources during warmer months. Evidence from instream nutrient concentrations, sestonic (i.e., suspended) algae (via the chlorophyll *a* pigment) and dissolved oxygen 24-hour ranges are used to document this linkage.

Ohio now has a new process for TMDL development based on state law and subsequent Ohio EPA rules (see [epa.ohio.gov/Portals/35/tmdl/TMDL\\_factsheet\\_newprocess\\_aug2017\\_final.pdf](http://epa.ohio.gov/Portals/35/tmdl/TMDL_factsheet_newprocess_aug2017_final.pdf)).

Ohio expects nutrient enrichment extremes to be reduced in the lower GMR with the new Dayton and Montgomery County TP permit limits. Given that these limits will not be fully enacted by the WWTPs until the mid-summer 2022, results of reduced nutrient enrichment are not expected until 2021. Ohio EPA is using an iterative approach of giving the two largest dischargers – Dayton and Montgomery County, a seasonal phosphorus limit and then evaluating the impact of this reduction. Ohio EPA commits to resampling the lower GMR for aquatic life use prior to any TMDL development.

Tables 2 and 3 outline some select lower GMR tributaries that were included in the 2010 survey and found to not meet their aquatic life use designation. Several of the impairment causes were not fully documented (e.g., the sanitary sewer overflow noted as being the source of impairments in Holes Creek was never located). Given the commitment to resample the mainstem GMR, these tributaries will be included in this reassessment effort and not be addressed at this time.

Ohio EPA will develop a TMDL for any pollutant found to be causing an aquatic life use impairment after future resampling of the lower GMR and select tributaries. If that happens, it will restart the whole TMDL development process, including a new Loading Analysis Plan containing the results of the new water quality survey data.

### ***Current Pollutant Reduction Implementation Efforts - Wastewater Treatment Plant Upgrades***

Subsequent to the 2010 survey, upgrades and changes have been made to NPDES permitted facilities that further support the recommendation to conduct resampling at affected locations to get a more accurate depiction of current water quality conditions.

A permit to install (PTI) was issued to the City of Dayton (1PF00000) on July 27, 2020 for the installation of phosphorus removal equipment (chemical addition). The compliance schedule in the facility's current NPDES permit has a required construction completion date of March 1, 2022.

A PTI was issued to the Montgomery County Western Regional wastewater treatment works (1PL00002) on March 19, 2019 for the addition of a chemical feed for total phosphorus removal. The PTI was in response to the permit requirement for treatment system upgrades designed to meet the seasonal (July through October) phosphorus aggregate loading limit equivalent to a concentration of 1 mg/l. The discharge permit was modified to extend the upgrade compliance date to April 1, 2020, at which time the seasonal aggregate loading limits became effective. Figure 2 shows Western Regional's effluent phosphorus concentrations since the 2010 survey.

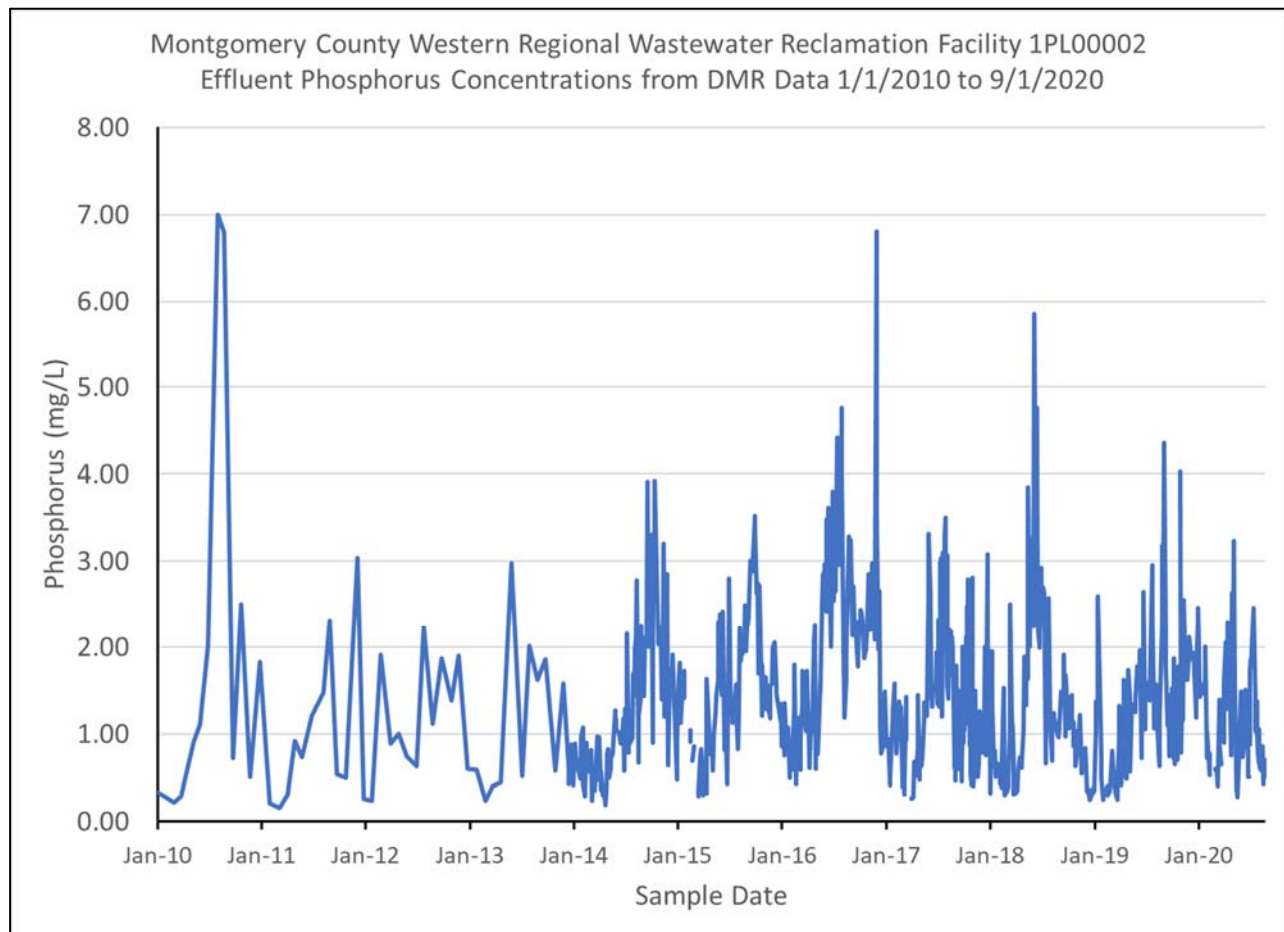


Figure 2 — Montgomery County Western Regional WWTP's effluent total phosphorus concentrations from 2010 through August 2020.

Three coal-fired electrical power plants which were identified as sources of impairment due to thermal loading have closed or idled since the 2010 survey. The Hamilton Municipal Power Plant, at river mile (RM) 37.12 on the Great Miami River, was idled in 2015, the Dayton Power and Light Hutchings Plant ceased discharging at RM 65.01 in November 2016, and the Dayton Power and Light Tait station at RM 77.65 closed in 2013.

The 2010 survey cited Brookville WWTP (1PC00000) as a source of impairment in Wolf Creek due to high ammonia concentrations. In the past, staff indicated a period during which they struggled to maintain appropriate ammonia levels. Solids accumulation in the final clarifiers was identified as the problem and ammonia

concentrations returned to compliance after activated sludge return and wasting rates were increased. Improved compliance with the NPDES permit and a change in operations to reduce ammonia concentrations in the discharge suggest a potential for improved conditions in the receiving stream. In addition, phosphorus loadings decreased from 8.37 kg/day in 2012 to 3.88 kg/day in 2016.

In Middletown, the City has implemented measures toward eliminating combined sewer overflow (CSO) discharges. They have developed a Capacity, Management, Operations, and Maintenance (CMOM) program. During the CSO reduction process, facilities are asked to develop these programs in order to better meet their NPDES permit requirements while reducing sanitary sewer overflows. Within Middletown's program they are implementing Nine Minimum Controls:

1. Proper operation and regular maintenance programs for the sewer system and CSO outfalls
2. Maximum use of the collection system for storage
3. Review and modification of pretreatment requirements to ensure that CSO impacts are minimized
4. Maximization of flow to the POTW for treatment
5. Elimination of CSOs during dry weather
6. Control of solid and floatable materials in CSOs
7. Pollution prevention programs to reduce containments in CSOs
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

These are all in place in order to reduce sanitary sewer overflows and eliminate CSO's in the collection system. The elimination of these discharges should affect the overall health of the river.

Upgrades and changes have also been made at several NPDES facilities located on portions of the Great Miami River which were not found to be in non-attainment during the 2010 survey.

At RM 45.65, at the LeSourdsville WRF (1PK00011), an upgrade was completed in 2014. The upgrade included biological phosphorus removal in the aeration tanks. With the upgrade, the facility was able to reduce the discharge of total phosphorus to a monthly average concentration of 1.0 mg/L or lower.

At RM 20.30, PCS Purified Phosphates (11E00001) has taken measures which has greatly reduced phosphorus and total suspended solids in their discharge to the Great Miami River. In 2016, PCS stopped production of potassium phosphate. At the time, they were still producing phosphoric acid, mono aluminum phosphate (less frequently than one time per year) and aqua ammonia phosphoric acid with copper (about once per month). Then in 2017, they made improvements to their storm water collection system to capture, treat and discharge its storm water through their primary outfall with site process wastewater. With these improvements, yearly average total phosphorous loading decreased from 202.4 kg/day in 2010 to 10.9 kg/day in 2020 (Figure 3), representing a 94.6% reduction. Yearly average total suspended solids loading decreased from 1.9 kg/day in 2010 to 0.2 kg/day in 2020, representing a 87.6% reduction.

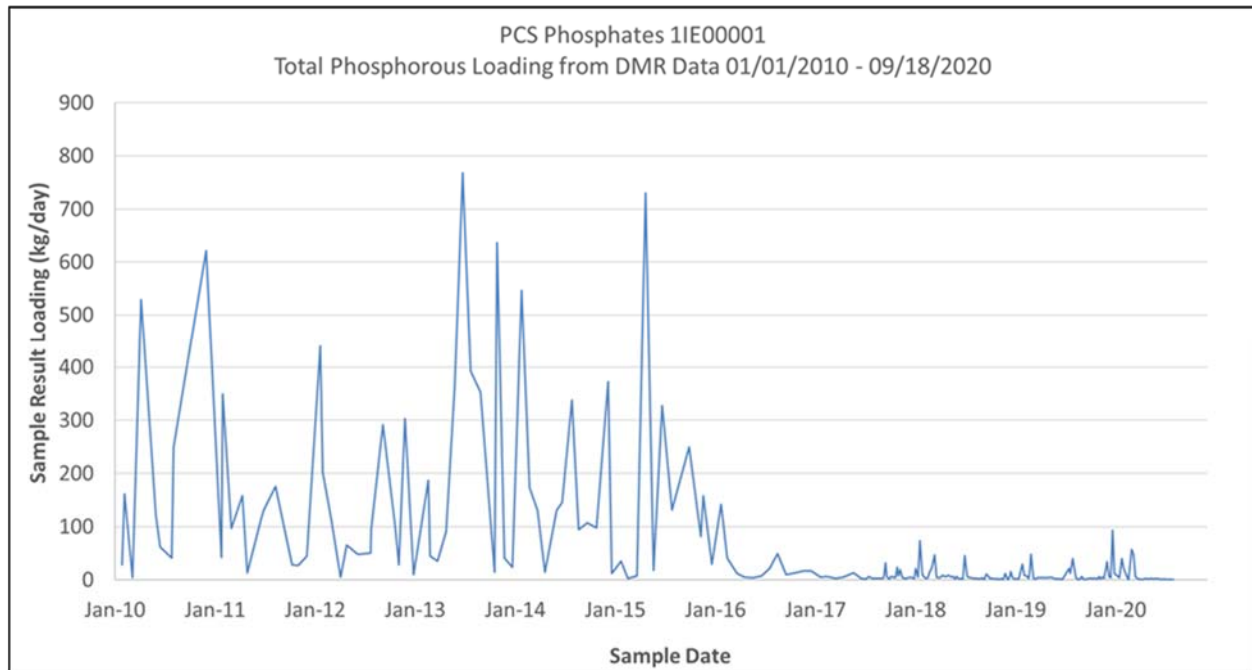


Figure 3 — PCS Phosphates effluent total phosphorus loads from 2010 through mid-September 2020.

## Recreation Use

The recreation use impairments in the Lower Great Miami River watershed, listed in Table 4 below, are included in the Multi-watershed Bacteria TMDL project. This project entails the development of TMDLs for over 400 watershed assessment units throughout the state of Ohio to address recreation use impairment. Additional information regarding this project is available at: [epa.ohio.gov/dsw/tmdl/Multi-Watershed#188795370-bacteria](http://epa.ohio.gov/dsw/tmdl/Multi-Watershed#188795370-bacteria).

Table 4 – Lower Great Miami River watershed units included in the Multi-watershed Bacteria TMDL Project

<b>Lower Great Miami (05080002)</b>										
<b>Watershed Unit</b>	<b>Station ID</b>	<b>Stream Name</b>	<b>River Mile</b>	<b>Drainage Area</b>	<b>Sample Year</b>	<b># of Samples</b>	<b>Geo Mean</b>	<b>Max Value</b>	<b>Action</b>	<b>Method</b>
01-01	600230	North Branch Wolf Creek	0.69	23.4	2010	9	329	1100	TMDL	LDC
01-02	203503	Wolf Creek	10.4	13.9	2010	1	160	160	TMDL	LDC
01-03	300818	Wolf Creek	2.49	66.6	2010	14	223	7200	TMDL	LDC
01-04	300652	Holes Creek	3.37	18.7	2010	14	543	9400	TMDL	LDC
02-01	H08Q03	Millers Fork	0.3	24.2	2006	2	675	6500	TMDL	LDC
02-02	H08S20	Twin Creek	35.72	44.2	2006	2	457	1100	TMDL	LDC
03-04	H08S16	Twin Creek	19.26	225	2005	5	177	930	TMDL	LDC
03-05	H08Q01	Little Twin Creek	2.03	19.8	2005	5	187	350	TMDL	LDC
04-01	H09P06	Bear Creek	9.75	11.2	2010	9	585	1300	TMDL	LDC
04-03	300812	Clear Creek	0.77	52.2	2010	14	258	15000	TMDL	LDC
05-02	303357	Sugar Run	0.07	3.1	2004	7	266	820	TMDL	LDC
05-03	H10Q04	Beasley Run	0.6	5.8	2004	7	204	450	TMDL	LDC
06-02	H10K14	Fleisch Run	0.71	4.6	2005	5	1655	2900	TMDL	LDC
06-04	H10S07	Fourmile Creek	20.27	100	2005	5	129	330	TMDL	LDC
06-05	1PB000 23	Fourmile Creek (New Miami WWTP)	0.36	315	2014	2	303	2420	TMDL	LDC

---

07-04	H09W6 6	Dicks Creek	0.93	48.5	2010	14	343	50000	TMDL	LDC
08-03	H11S14	Indian Creek	6.5	98	2005	5	210	440	TMDL	LDC
09-01	300949	Pleasant Run	2.1	16.5	2010	6	549	2700	TMDL	LDC
09-05	300902	Taylor Creek	0.82	26.5	2010	15	225	4800	TMDL	LDC

---

## References

Ohio EPA. 2012. Biological and Water Quality Study of the Lower Great Miami River and Select Tributaries.

Technical Report EAS/2012-5-7. Published at: [epa.ohio.gov/portals/35/documents/GMR2012TSD.pdf](http://epa.ohio.gov/portals/35/documents/GMR2012TSD.pdf)