4.0 AWQMP Update Process

The MVRPC undertook an aggressive, coordinated approach to complete the AWQMP Update process. This section provides a brief overview of the process undertaken to update the Plan.

4.1 AREAWIDE FACILITY PLANNING SUBCOMMITTEE

A Policy establishing an Areawide Facility Planning Subcommittee (AFPSC) was adopted by MVRPC on May 21, 2004 (**Appendix H**) and remains in effect at the time of this 208 Plan Update. The subcommittee includes representatives as shown in **Table 4-1**.

Table 4-1. Areawide Facility Planning Subcommittee Representatives

Bethel Township (Miami County)	Miami County Sanitary Engineer's Office
City of Brookville	Miami County SWCD
City of Centerville	Monroe Township in Miami County
City of Clayton	Montgomery County
City of Eaton	Montgomery County SWCD
City of Fairborn	Montgomery County Water Services
City of Greenville	Ohio EPA/Division of Surface Water
City of Huber Heights	Ohio EPA/Southwest District Office
City of Miamisburg	Preble County
City of Oakwood	Preble County Health Department
City of Piqua	Preble County SWCD
City of Springboro	Public Health Dayton & Montgomery County
City of Tipp City	Tecumseh Land Trust
City of Troy	Three Valley Conservation Trust
City of Union	Tri-Cities Wastewater Treatment Authority
City of West Carrollton	U.S. Environmental Protection Agency
City of Xenia	University of Dayton/Biology Department
Clark County	Village of Ansonia
Clay Township	Village of Arcanum
Darke County	Village of Camden
Darke County Health Department	Village of College Corner
Darke County SWCD	Village of Covington
Dayton Area Chamber of Commerce	Village of Eldorado
Greene County	Village of Germantown
Greene County Combined Health District	Village of Gratis
Greene County Regional Planning Commission	Village of Jamestown
Greene County Sanitary Engineering Dept.	Village of New Madison
Greene County SWCD	Village of Phillipsburg
Jefferson Regional Water Authority	Village of Pleasant Hill
Lakengren Water Authority	Village of Versailles
League Of Women Voters	Village of West Alexandria
Miami Conservancy District	Village of West Milton
Miami County	Xenia Township
Miami County Health District	

The AFPSC played a significant role in the 208 Plan Update process and met regularly to discuss water quality-related issues and to develop associated prescriptive actions and recommendations.

4.2 MEETINGS

A series of meetings were held as part of the AWQMP update process and are summarized in this section.

An AWQMP Update "Kick Off" presentation was made at the AFPSC Meeting held on April 12, 2010 at the MVRPC Center for Regional Cooperation in Dayton, Ohio. Approximately 90 local officials and other interested parties were notified of the meeting. Although twenty-seven persons are listed on the sign-in sheet for this meeting, it was noted that there were more than that in attendance at the meeting.

The Stantec Project Manager provided a PowerPoint presentation on the 208 planning process to the group. A planning process schematic was presented and the project timeline was discussed. During the meeting, members of the AFPSC were introduced and each was asked to work with the stakeholder group they represented to ensure the opinions of all were considered during the planning process. Input from the public was encouraged. A copy of the presentation and meeting summary is included in **Appendix I.**

Shortly after the kick off meeting, the Planning Commission and its consultant attended meetings with Ohio EPA staff and the county Health Districts and Soil and Water Conservation Districts (SWCDs) to discuss current water quality issues, best management practices and upcoming regulations.

The AFPSC, along with other interested parties, met on April 12, June 2, August 4, and October 4, 2010 to review Issue Papers and discuss issues related to facilities planning, designated management agencies, wastewater prescriptive actions and other issues that are addressed in the 208 Plan Update.

The Planning Commission and its consultant met with most of the Designated Management Agencies at Countywide forums to discuss service area boundaries, wastewater prescriptions and identify issues of concern. These meetings included representatives from wastewater utilities, local government officials, and other interested parties. Specific water quality topics were discussed during the meetings and recommended actions were identified.

Advisory Committee members were provided copies of issue papers prior to committee meetings to review and discuss with the stakeholder groups each represented. AFPSC members were given copies of the draft 208 Plan Update in November, 2010 and met on December 1, 2010, February 9, 2011 and April 13, 2001 to discuss outstanding issues.

MVRPC's Technical Advisory Committee recommended that the 208 Plan be forwarded to the Board of Directors on April 21, 2011, and the Board approved the 208 Plan on May 5, 2011.

Copies of notes for the AFPSC, TAC, Board of Directors, Health Districts, and SWCD meetings are included in Appendix **J**.

4.3 WASTEWATER UTILITY SURVEYS

As part of the planning effort, updated information on the wastewater treatment facilities in the planning area was compiled. A survey form was prepared by Stantec to be completed by municipal WWTP owners in the Miami Valley region, mailed to the owners, and made available for online submission. Information gathered as a result of these surveys is discussed in Section 9.0 of this Plan. A summary of the completed surveys are presented in **Appendix K.**

4.4 PUBLIC PARTICIPATION

Opportunities for public participation were made throughout the planning process. The public was invited to attend AFPSC meetings and was given time on each agenda to ask questions and raise concerns. Additionally, MVRPC made the Issue Papers available on its website for the public to access and review. An example of a meeting invitation is presented in **Figure 4-1**.

Figure 4-1. Example Public Meeting Announcement

Upon completion of the draft updated MVRPC AWQMP, the Planning Commission presented the updated AWQMP at 5 public meetings and provided a 30-day comment period. The final Plan incorporates issues raised during the public commenting period. **Appendix L** provides a listing of all comments received on the draft updated AWQMP presented at the public meeting and how each comment was addressed in the Final 208 Plan.

4.5 INCORPORATION INTO STATE WATER QUALITY MANAGEMENT PLAN

The Final Updated AWQMP will be submitted to Ohio EPA for inclusion into the State's 2010 Water Quality Management Plan update. The State's Plan will be certified by the Governor and forwarded to the U.S. EPA for approval.

5.0 Non-Point Source Pollution Management

The programs for management of pollutants in Ohio's surface waters are broadly divided into point source programs and non-point source programs. Per the Clean Water Act, pollutants discharged to surface waters from an identifiable point source (pipe) must discharge under a National Pollution Discharge Elimination System (NPDES) permit. Pollution reaching surface waters from either (or both) diffuse sources or through diffuse discharges (runoff) are considered non-point sources. There are a variety of federal, state, regional and local programs in place in Ohio to manage and reduce non-point source pollution.

Though discharged from a storm water outfall (pipe) the pollution source in urban storm water is diffuse, from across impervious surfaces of the watershed; and so, urban storm water management is included in this non-point source chapter. There are many state and federal laws and programs that address urban runoff. Urban storm water is typically collected in storm water systems and discharged to surface waters through pipes. The Ohio EPA NPDES Program focuses on urban point sources and regulates storm water discharges through the MS4 program and general storm water NPDES permits.

Nonpoint source management programs under Section 319 of the CWA cover urban nonpoint source pollution as well as agricultural runoff management, and hydromodification. The Ohio EPA's TMDL program addresses both point and nonpoint sources of pollution in watersheds listed in the Integrated Report with degraded water quality.

This chapter provides a brief overview of the non-point source pollution management programs underway in the Miami Valley Region.

5.1 NPDES PERMIT STORM WATER PROGRAM

The Federal CWA prohibits the discharge of any pollutant to waters of the United States from a point source unless the discharge is authorized by a NPDES permit. Initial efforts to improve water quality under the NPDES program focused on reducing pollutants in industrial process wastewater and discharges from municipal sewage treatment plants (refer to Section **9.**).

As pollution control measures for point sources (i.e., municipal and industrial wastewater treatment discharges) were implemented and refined, studies showed that more diffuse sources of water pollution were also significant causes of water quality impairment – specifically, storm water runoff draining large surface areas, such as urbanized land. In 1987, an amendment to the CWA required implementation of a comprehensive national program for addressing non-agricultural sources of storm water discharges. The NPDES Storm water Program was implemented in two phases.

Phase I – US EPA published initial permit application requirements in the *Federal Register* on November 16, 1990 that required NPDES permits for storm water discharges from the following:

- Medium and large municipal separate storm sewer systems (MS4s) serving populations of 100,000 or greater; (note, large systems with combined storm and sanitary flows were exempted from the Phase I requirements)

- Construction activity disturbing 5 acres of land or greater[12]
- Ten categories of industrial activity

Entities regulated under Phase I requirements were required to obtain coverage under an NPDES storm water permit and implement storm water pollution prevention plans (SWPPPs) or storm water management programs that utilize Best Management Practices (BMPs) which effectively reduce or prevent the discharge of pollutants into the receiving waters.

Under the Phase I requirements, any construction activity that disturbs greater than five acres (grading, clearing, excavation, or other earth moving process), requires a separate NPDES storm water permit for construction.

The City of Dayton (Montgomery County) is the only Phase I municipality within the Miami Valley Region 208 Planning Area. There are construction and industrial activities within the planning area that fall under this Phase. Construction activities are handled in accordance with the Ohio EPA Construction Storm water General Permit.

Phase II – on December 8, 1999, the USEPA promulgated the expansion of the NPDES program by requiring permits for small sized MS4s (all municipalities with populations under 100,000 per the US Census and industrial dischargers) in urbanized areas and operators of small construction sites that disturb 1 to 5 acres of land.

Ohio EPA developed two general permits that are issued to Phase II Small MS4 municipalities and a separate one for small construction sites. The Baseline General Permit allows a full 5 years for storm water management plan development and implementation. A list of jurisdictions covered by the Baseline General Permit is provided in **Table 5-1**.

In November 2004, MVRPC released a final Storm water Model Ordinance (**Appendix M**) to assist local jurisdictions in managing storm water and comply with Phase II Storm water regulations. This model addresses both storm water quantity and quality issues. Local jurisdictions were encouraged to adjust the model to fit their own regulatory frameworks and needs to safeguard against the pollution of air, stream and ponds as properties within the planning area are developed.

Operators of small construction activities are required to implement BMPs to prevent pollutant discharge into receiving waters as outlined in a general or individually issued permit. There have been approximately 3,023 Construction Storm Water General Permits issued by Ohio EPA since 2003 within the five MVRPC 208 planning counties. Additionally, there are over 60 facilities in the Region that are covered by the Industrial Storm water General Permit. Lists of general permits issued by Ohio EPA are available from the Ohio EPA website at: https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/npdes-general-permits

[12] Currently, permits are required for construction activity disturbing 1 acre of land or greater for all Phase 1 and 2 communities.

Further information on Ohio EPA's Storm Water Program is available at:
https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/stormwater-program

The Ohio EPA Public Interest Center provides a variety of ways for the general public to stay informed about pending agency actions and decisions:
https://epa.ohio.gov/divisions-and-offices/public-interest-center

Table 5-1. Jurisdictions Affected by Phase II Storm Water Regulations

County	Jurisdiction	County	Jurisdiction
Darke	City of Greenville	**Montgomery**	City of Brookville
Greene	City of Beavercreek		City of Carlisle (part)
	City of Bellbrook		City of Centerville (part)
	City of Centerville (part)		City of Clayton
	City of Fairborn		City of Englewood
	City of Kettering (part)		Municipality of Germantown
	City of Xenia		City of Huber Heights (part)
	Bath Township		City of Kettering (part)
	Beavercreek Township		City of Miamisburg
	Miami Township		City of Moraine
	Sugarcreek Township		City of Oakwood
	Xenia Township		Village of Phillipsburg
	Wright Patterson Air Force Base		City of Riverside
	Wright State University		City of Springboro (part)
			City of Trotwood
			City of Union (part)
Miami	City of Troy		City of Vandalia
	City of Piqua		City of West Carrollton
	City of Tipp City		Clay Township
	City of Union (part)		German Township
	City of Huber Heights (part)		Washington Township
	Municipality of West Milton		Wright Patterson Air Force Base
	Monroe Township		Miami Conservancy District

Some county Soil and Water Districts support local communities in meeting some or all of the Minimum Control Measures (MCM) required in the Phase II storm water permit.

5.2 SECTION 319 NONPOINT SOURCE MANAGEMENT PROGRAM

The CWA amendment (1987) established the Section 319 Nonpoint Source Management Program to help focus state and local nonpoint source efforts. The State of Ohio receives grant money to support a wide variety of activities under this program that includes: technical and

financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects.

The Ohio grant programs are designed to provide financial assistance to local watershed stakeholders that undertake voluntary actions as opposed to regulatory mandates or permits. The Ohio 319 Program relies on Non-Point Source Implementation Strategies (NPS-IS) plans to address water quality problems. An overview of nonpoint source funding programs is available from the Ohio Nonpoint Source Pollution Management Plan: https://epa.ohio.gov/divisions-and-offices/surface-water/about/ohio-nonpoint-source-pollution-control-program

NPS-IS plans are developed by local watershed groups, soil and water conservation districts, park districts, and/or local governments. These plans are developed to identify the nature, extent and cause of water quality problems; develop an implementation plan that identifies specific actions and projects; implement BMPs; educate the effected community; and evaluate the impact of the Plan on the affected watershed. Although the majority of the planning work is completed by volunteers, grant funding is available on a competitive basis to fund NPS-IS plan development (or a portion thereof) by professional consultants.

Examples of implementation projects that have been funded through 319 grant monies include: stream restoration, low head dam removal, constructed wetlands, and agricultural best management practices incentives programs.

5.2.1 Watershed Action Plans

A watershed action plan is a stakeholder-driven comprehensive plan for protecting and improving a watershed, including an inventory of the watershed resources, identification of problems within the watershed, goals to protect the high quality waters and resources to address identified problem areas. This comprehensive planning approach was in use for several decades, but has been replaced in Ohio with NPS-IS documents, which are more streamlined and cover smaller watersheds. Below are brief summaries of Watershed Action Plans developed within the MVRPC Areawide counties prior to NPS-IS plans becoming the norm.

5.2.1.1 Stillwater River Protection Project (Darke, Miami, and Montgomery Counties)

Since its inception in 1992, the Stillwater River Watershed Protection Project has been a model for other projects in the development of watershed planning and implementation for the control of agricultural nonpoint source pollution. With the assistance of 604(b) funding[13], the MVRPC completed a management plan for the project. The project was then launched with the support of a joint board of supervisors drawn from the Darke County and Miami County SWCDs.

[13] The State of Ohio receives funds under Section 604(b) of CWA to carry out water quality management planning activities (under Sections 205(j) and 303 (e) of the Act). A portion of this funding is passed through to areawide planning agencies in Ohio for regional level planning work.

The primary source of water quality impairment in the Stillwater River watershed is agriculture. The protection program focuses on reducing the nonpoint pollutants nutrients and sediment through education and outreach efforts, and the implementation of agricultural BMPs such as buffers, fencing, alternate water sources, conservation tillage, and nutrient management.

5.2.1.2 Paint Creek Watershed Management Plan (Greene County)

The Paint Creek Watershed is comprised of 731,168.9 acres located in 9 counties: Madison, Greene, Clinton, Clark, Pickaway, Fayette, Pike, Ross, and Highland. Only a small portion of the watershed is contained within Greene County. This area is included the Watershed Action Plan for the Upper Half of Rattlesnake Creek, which is part of the overall Paint Creek Watershed Management Plan.

According to the WAP, this portion of the Paint Creek Watershed lacks intact, forested, riparian corridor that was found to be the primary source of water quality impairment. Other contributing factors are erosion, nutrient inputs and channel modification associated with intensive row cropping. Strategies to improve water quality in the Paint Creek Watershed include agriculture, riparian corridors, forestry, education, urban issues, and streamside management.

5.2.1.3 Wabash/Grand Lake St Mary's Watershed Action Plan (Darke County)

The Grand Lake/Wabash watershed consists of nearly 13,500 acres of lake and approximately 193,000 acres of land which primarily drains toward the Ohio River. The Grand Lake/Wabash Watershed Alliance developed a watershed action plan to address existing and potential future issues. The Wabash River begins in northern Darke County near the Mercer-Darke County Line, with only a small portion of the watershed contained in Darke County. Subsequent to this planning process, the watershed has been declared a watershed in distress by the State of Ohio, resulting in additional regulatory requirements on agricultural operations in the watershed.

The primary sources of water quality impairment in the headwaters of the Wabash River are agriculture-crop production, confined AFOs, onsite wastewater treatment systems, channelization, removal of riparian vegetation and streambank destabilization.

5.2.1.4 Twin Creek Watershed Action Plan (Darke, Preble and Montgomery Counties)

The Three Valley Conservation Trust (TVCT), a non-profit land trust, actively works to preserve streams and land in the Twin Creek watershed through permanent conservation easements and stewardship of the properties. The TVCT, in consultation with a Watershed Advisory Group (WAG) comprised of interested and agencies developed the Twin Creek Watershed Action Plan (WAP) in 2007 that addresses the watershed areas in Darke, Preble, Montgomery and Warren Counties. The WAP was updated by the Miami University Institute of Environmental Studies and submitted to Ohio EPA and ODNR in 2010.

Sources of impairment throughout the watershed were found to be caused by channelized ditches, subsurface drainage tiles directly tied to streams, little to no riparian vegetation, failing onsite wastewater treatment systems, and animal feeding operations. The WAP presents goals and strategies to address the sources.

5.2.1.5 Honey Creek/Great Miami River Watershed Action Plan (Miami and Montgomery Counties)

The Honey Creek Watershed Association (HCWA) was a non-profit organization dedicated to protecting and enhancing the quality of the watershed's water resources. In 2007, ODNR endorsed the HCWA's WAP and Inventory. The Honey Creek/Great Miami River WAP includes the entire Honey Creek watershed and a portion of the Great Miami River watershed. The planning area encompasses portions of four counties: Champaign, Clark, Miami and Montgomery and the following population centers: Christiansburg, Huber Heights, New Carlisle, North Dayton, Tipp City, and Vandalia.

Sources of impairment throughout the watershed were found to be caused by sediment and nutrients from extensive row-crop agriculture, channelized ditches, subsurface drainage tiles directly tied to streams, little to no riparian vegetation, failing onsite wastewater treatment systems, and animal feeding operations. The WAP presents goals and strategies to address the sources.

5.2.2 Non-Point Source Implementation Strategies (NPS-IS)

NPS-IS plans, also popularly known as 9-Element Plans area streamlined form of watershed planning adopted by Ohio EPA to encourage more watershed planning and the development of more projects eligible for Section 319 funding. A NPS-IS is a living strategic planning document that summarizes causes and sources of impairment, establishes critical areas, identifies quantifiable objectives to address causes and sources of impairment, and describes projects designed to meet those objectives. NPS-IS plans ensure that potentially funded projects are: rooted in the best science available; located in areas that will address the worst problems; and have the administrative, evaluation, and educational components needed to make sure that the water resource will achieve as much long term benefit as possible.

Each NPS-IS is unique at the HUC-12 Watershed Assessment Unit (WAU) scale. The NPS-IS is designed to evolve as projects come and go. For a project to be eligible for Ohio EPA Section 319 Funding, a proposed project must be described in an approved 9-Element NPS-IS for the HUC-12 watershed in which the project is located. Likewise, every updated version (containing new projects, new data, and or changes to critical areas, goals and objectives) must be reviewed and approved by Ohio EPA.

As of January 2023 there are 12 approved NPS-IS reports in the MVRPC areawide counties, with additional reports in the process of preparation. The table below lists existing approved NPS-IS plans.

Table 5-2. Approved NPS-IS Reports in MVRPC Counties

County	HUC-12 Number	HUC Name	Sponsor	Date
Darke/ Preble	050800020204	Price's Creek	Preble County SWCD	August 4, 2022
Greene/ Montgomery	050902020202	Little Beaver Creek	Little Miami Watershed Network	January 6, 2023
Greene	050902020205	Beaver Creek	Little Miami Watershed Network	January 6, 2023
	050902020301	Headwaters Anderson Fork	Warren County SWCD	September 16, 2022
	050902020302	Painters Run-Anderson Fork	Warren County SWCD	September 29, 2021
	050902020303	Mouth Anderson Fork	Warren County SWCD	October 1, 2021
	050902020401	North Branch Caesar Creek	Warren County SWCD	September 16, 2022
	050902020402	Upper Caesar Creek	Warren County SWCD	September 16, 2022
	050902020403	South Branch Caesar Creek	Warren County SWCD	September 16, 2022
	050902020404	Middle Caesar Creek	Warren County SWCD	September 16, 2022
Miami	050800010705	Garbry Creek-Great Miami River	Middle Great Miami River Watershed Alliance/ City of Piqua	October 13, 2020
Preble	050800020302	Aukerman Creek	Preble County SWCD	September 10, 2021

5.3 Total Maximum Daily Load (TMDL) PROGRAM

Ohio's TMDL program, required under Section 303 of the Clean Water Act, develops data to support strategies and projects to improve water quality in Ohio's impaired streams, rivers and lakes. These reports are written by Ohio EPA and typically take years to develop, beginning with in-field monitoring followed by analysis and modelling based on those findings. Final approval of TMDL reports is done by US EPA. TMDL reports typically cover HUC-10 watersheds, or multiple HUC-12 watersheds in a single report. TMDL reports provide the underlying data to support development of goals, objectives and critical areas for NPS-IS plans in HUC-12 sub-watersheds.

There are US EPA-approved TMDL reports for the Upper Great Miami River, the Stillwater River, the Mad River, Twin Creek, and the Upper Little Miami River. These vary in age from the most recent (Upper Great Miami) approved in March of 2012 to the oldest (Upper Little Miami) approved in July of 2002. Ohio EPA reports TMDLs in progress for the Middle Great Miami and Fourmile Creek. Once these two are completed, nearly all areas of the MVRPC areawide counties will be covered by an approved TMDL.

Non-point source reduction measures play a significant role in the implementation of the TMDL recommendations. In urbanized watersheds, reductions in urban runoff nonpoint pollution will play a significant role in meeting the TMDL allowable loadings (refer to Section 3.2). A two tiered approach that prescribes land management practices and promotes natural channel stability are anticipated to be the most effective in obtaining nutrient and sediment load reductions. Traditional best management practices (BMPs) are recommended to be targeted at the stream segments most vulnerable to erosion during high flow events. Restoring stream habitat and maintaining channel stability will increase the nutrient and sediment assimilative capacity of streams during normal and lower flow conditions.

Specific strategies and recommended actions related to nonpoint source pollution identified in Ohio EPA's TMDL reports are presented in Appendices A through E.

5.4 AGRICULTURAL IMPACTS

The agricultural industry is a vital part of the Miami Valley region's economy, lifestyle and character. However, existing Ohio EPA data (TMDLs, 303(d) lists) indicate agricultural processes are having a negative impact on water quality in the Miami Valley Region. Statistics on the farms within each county in the Region are provided in Table 5-3.

Table 5-3. 2017 Regional Agriculture Statistics[14]

County	Number of Farms	Average Area Per Farm (acres)	Land in Farms (acres)	Land in County (acres)	Percentage of County Land (%)
Darke	1,658	207	343,774	382,784	90%
Preble	1,055	202	213,476	271,504	79%
Miami	1,037	167	173,159	260,209	67%
Montgomery	781	145	113,109	295,523	38%
Greene	817	205	167,701	264,787	63%
Total	**5,348**	**189**	**1,011,219**	**1,474,807**	**69%**
Shelby	947	227	214,966	260,924	82%

Compared with data from 2008 (presented in previous versions of this plan) the region has fewer farm operations, of slightly smaller size, and fewer acres in farming. The most significant drop in terms of percent of land in farming occurred in Miami County (77% to 67%); this is consistent with the rate of urban and suburban development in Miami County.

This section provides an overview of the pollutants associated with the agricultural industry and programs underway to reduce the impact of the industry on the water resources of the Region.

5.4.1 Agricultural Pollutants

Sediment and siltation are significant causes of contamination of the Region's surface waters. Agricultural production practices that disturb the soil through tillage and cultivation and leave it without vegetative cover increase rates of soil erosion. Agricultural runoff is caused by rainfall and snowmelt eroding soils and carrying nutrients, pathogens, pesticides and herbicides away from the point of origin and may eventually reach surface water or groundwater resources.

Nutrients used to promote plant growth, including nitrogen, potassium, and phosphorous, enter surface waters through runoff (overland flow), run-in (directly to groundwater through porous or fractured bedrock, poorly constructed wells, etc.) or leaching (percolation). Nutrients from agriculture can accelerate algal production, which can result in increased biological activity, and lowered oxygen levels that lead to water quality conditions that cannot support life. Nitrates can also pose a human health threat when dangerous levels are exposed in a sole source drinking water supply.

Concentrated Animal Feeding Operations (CAFOs) are operations where animals such as cattle, swine, and poultry are raised in confined areas. These operations generate significant amounts of manure and process wastewater which contain a variety of pollutants, including phosphorus, metals and bacteria. If CAFO operators do not manage these materials properly,

[14] USDA National Agricultural Statistics Service, 2017 Agricultural Census

pollutants can be released into the environment through spills, overflows or runoff. Additionally, significant damage to riparian corridors results from the movement of livestock through streams.

All of the TMDLs that have been finalized for watersheds in the Miami Valley Region contain recommended strategies for addressing agricultural pollutants. The TMDLs for the Upper Little Miami and Stillwater River Watersheds also include recommendations for addressing impacts associated with animal feeding operations.

State and Federal agricultural pollution abatement programs available in the Region are described in the following sections.

5.4.2 Agricultural Pollution Abatement Initiatives

5.4.2.1 Organization Support

Soil and Water Conservation Districts

Pursuant to Chapter 1515 of the Ohio Revised Code, the five county Soil and Water Conservation Districts (SWCDs) are responsible for agricultural pollution abatement programs addressing sediment, erosion and animal waste control in the Miami Valley 208 Planning area. The SWCDs offer voluntary programs that promote the use of agricultural BMPs and assist the agricultural community with engineering and structural practices, information management and planning and conservation practices.

Additionally, the SWCDs provide engineering and structural practice related technical assistance to private landowners interested in agricultural conservation practices. Activities include site evaluation and selection, survey, design and construction inspection of conservation structures and facilities. Other technical assistance activities include conservation planning and management consultation and soil survey information. All technical assistance is guided by the U.S. Department of Agriculture - NRCS Standards and Specifications for permanent conservation practices. Technical Assistance is available in the following areas:

- Animal Waste Storage Facilities;
- Erosion Control Structures;
- Filter Strips;
- Grass Waterways;
- Streambank and Shoreline Protection; and
- Subsurface Drainage.

Technical assistance regarding information management and planning is also provided for the following areas:

- Conservation Planning
- Residue Management
- Manure Nutrient Management
- Soil Survey Information

Each SWCD is also responsible for working with local landowners to implement cost-share programs funded by the Natural Resource Conservation Service (NRCS) and the Farm Service Agency (FSA) within its county along with agriculture-related Ohio EPA TMDL directives.

Ohio State University Extension

The Ohio State University (OSU) Extension system is the world's largest non-formal educational system that offers scientifically based information developed by the faculty and staff of the Ohio Agricultural Research and Development Center, the Ohio State main campus, and other land-grant universities, including Central State University in Greene County. Local OSU Extension Offices located in each of the Region's counties can offer assistance in a variety of areas, including:

- Environmental Quality and Sustainability – topics include cover crops, forest and wildlife management
- Sustainable Food Systems – topics include organic farming, urban agriculture, innovative production methods

5.5 FUNDING PROGRAMS

There are a variety of sources for funding both planning and project implementation for non-point source management in Ohio.

5.5.1 Funding for Watershed Planning

Ohio EPA periodically issues small grants for development of NPS-IS plans at the HUC-12 level. MVRPC's 604(b) funding may also be used to support planning projects within the areawide counties.

Ohio EPA reports increasing funding related to the goals of the Gulf of Mexico Hypoxia Task Force. These funds may from time to time be directed toward projects to perform watershed (NPS-IS) planning. Planning projects in the MVRPC areawide counties would be eligible for these funds.

5.5.2 Funding for Non-Point Source Management Implementation

The principal source of funding for implementation of non-point source management projects is Section 319 grants from the Ohio EPA. These grants are specifically tied to non-point source management projects included in approved NPS-IS plans. Awards have been made primarily for implementation projects restoring Ohio streams and wetlands, reducing nonpoint source pollutants such as nutrients, sediment and bacteria, retaining runoff, improving stream and riparian habitat and improving stream services in channels affected by hydromodification.

Started in 2019, H2Ohio is a multi-agency state-funded program focusing on four priorities: reducing phosphorus, creating wetlands, addressing failing septic systems and lead in drinking water. The first two of those priorities address reducing pollutant loading (particularly in agricultural runoff) and natural infrastructure for managing pollutants that persist in runoff.

H2Ohio will need regular funding authorization from the Ohio General Assembly, but represents a commitment to significant investment in improving water quality in Ohio. Recent rounds of H2Ohio funding have been eligible in the Ohio River Basin portion of the state for wetland projects, only.

Other funding streams that may be applicable for non-point source pollution management include storm water infrastructure funds that allow or emphasize innovative ("green") infrastructure for slowing and filtering runoff. One example is Ohio Public Works Commission (OPWC) Infrastructure program which allows storm water management infrastructure to be included as an appurtenance to roadway projects or as part of a storm water solution. Allowed infrastructure includes rain gardens, bio-retention (rain gardens with underdrains), vegetated curb extensions (bump-outs), bio-swales, tree box filters, and permeable sidewalks.

Another example is the Onsite Storm Water Loan program from the Ohio Water Development Authority (OWDA). The Ohio Water Development Authority created the Onsite Storm Water Loan Program to provide financial assistance to development projects for storm water management elements that focus on treating storm water at its source to minimize, avoid, or offset impacts on water resources and reduce flow to sewers or surface waters. Eligible applicants include local governments, who can partner with developers to access these funds for specific projects. OWDA's Fresh Water Loan Program includes storm water facilities among eligible projects.

5.5.3 Agricultural Educational and Financing Initiatives

Federal farmer and property owner assistance programs are managed through the county agricultural services agencies including the Farm Service Agency, NRCS and SWCDs. The following programs are authorized by the 2018 Farm Bill, formally known as the Agriculture Improvement Act of 2018.

Environmental Quality Incentives Program

The Environmental Quality Incentives Program (EQIP) offers financial incentives to farmers to adopt practices that reduce soil erosion and improve water quality on livestock and grain farms. Examples of these practices include waste storage structures, heavy use pads, livestock watering systems, and prescribed grazing systems. Funding is also available for chemical/fertilizer containment facilities.

Conservation Reserve Program

The Conservation Reserve Program (CRP) is a federal/state natural resource conservation program targeted to address state and nationally significant agricultural related environmental problems. Program participants receive financial incentives from USDA to voluntarily remove highly erodible or environmentally sensitive land from agricultural production through long-term rental agreements.

Agricultural Conservation Easement Program

Helps landowners, land trusts, and other entities protect, restore, and even enhance wetlands, grasslands, and working farms through conservation easements.

Agricultural Management Assistance Program

Helps agricultural producers manage financial risk through a mix of diversification, marketing, and natural resource conservation programs.

Healthy Forest Reserve Program

Helps landowners restore, enhance, and protect forestland resources on private lands through easements and financial assistance. Through HFRP, landowners promote the recovery of endangered or threatened species, improve plant and animal biodiversity, and enhance carbon sequestration.

State of Ohio programs addressing agricultural impacts to water quality include longstanding and more recent funding efforts.

Agricultural Pollution Abatement Program

Ohio's Agricultural Pollution Abatement Program (APAP) provides farmers with cost share assistance to develop and implement best management practices (BMP) to protect Ohio's streams, creeks, and rivers from runoff pollution from both agricultural and forestry lands. Agricultural pollution abatement BMPs have been designed to meet CWA goals, and include outlet protection structures, subsurface tile drainage, contour farming, diversions and grassed waterways.

The SWCDs offer voluntary programs that promote the use of agricultural BMPs and assist the agricultural community with engineering and structural practices, information management and planning and conservation practices.

H2Ohio

A collaborative approach to the issues facing Ohio’s water, H2Ohio was an initiative of the administration of Governor Mike DeWine, launched in 2019. The program is administered jointly by the Ohio Department of Agriculture, the Ohio Department of Natural Resources and Ohio EPA. Through H2Ohio, the state will make a substantial investment in reducing phosphorus runoff from agricultural operations, providing financial incentives to producers who undertake best management practices, starting with developing a voluntary nutrient management plan. H2Ohio identified seven effective and cost-efficient practices that have been proven to reduce agricultural phosphorus runoff. H2Ohio will also fund the creation or restoration of wetland in strategic locations to reduce phosphorus and nitrogen runoff, manage flooding and sequester carbon.

Initial years of the H2Ohio programs were focused on the Lake Erie watershed. However, these programs have been partially expanded to cover the Ohio River watersheds including the Miami

Valley region for wetland projects, only. Future rounds of funding may also allow agricultural BMPs in the Ohio River basin, but that is pending future decisions.

5.5.4 Conservation and Preservation Programs

A conservation easement is a deed restriction which creates a legally enforceable land preservation agreement between a landowner and a government agency or a qualified land protection group that restricts development, commercial and industrial uses, and other activities on a property. There are a number of funding programs available that encourage landowners to donate conservation easements in the Miami Valley Region, including:

- Local Agricultural Easement Purchase Program (LAEPP), Ohio Department of Agriculture (ODA) – a program of Clean Ohio
- Agricultural Security Areas (ASA), ODA
- Debt for Nature, Farm Service Agency
- Farm and Ranch Lands Protection Program (FRPP), USDA
- Forest Legacy Program, USDA Forest Service and ODNR Division of Forestry
- Ohio Agricultural Easement Donation Program , ODA
- Section 319 Nonpoint Source Conservation Easement Funds, Ohio EPA
- State Water Resource Restoration Sponsorship Program, USEPA and Ohio EPA[15]
- Wetlands Reserve Easements (WRE), NRCS

5.6 MVRPC RECOMMENDATIONS

The following recommendations are made to support nonpoint source pollution prevention and abatement.

- Miami Valley jurisdictions are encouraged to use fully the management tools and components of the storm water management program to minimize urban storm water impacts on surface waters.
- MVRPC will review and, as needed, update the model storm water ordinance in consultation with member communities, water quality stakeholders and the Ohio EPA.
- Watershed management planning is a critical component of the State of Ohio's nonpoint source management strategy. MVRPC will participate in opportunities to collaborate with partners in the development of new or updated NPS-IS plans in the areawide counties. MVRPC can support such projects in a variety of ways, including RFP development, GIS analysis and mapping, steering committee facilitation, and stakeholder engagement.

[15] WRRSP projects are aquatic habitat preservation or restoration projects funded through interest rate reductions for WPCLF projects. Information about WPCLF and WRRSP projects can be obtained from the Ohio EPA website: https://epa.ohio.gov/divisions-and-offices/environmental-financial-assistance/financial-assistance

- Miami Valley jurisdictions, water resource stakeholders and the general public are encouraged to take advantage of opportunities to participate in Ohio EPA's multi-step process for TMDL development, when such projects are undertaken in the Region. Opportunities for public comment occur in each step of the process.

The following recommendations are made to support agricultural pollution abatement and land conservation and preservation efforts.

- Local government officials are encouraged to support the work performed by the SWCDs to achieve 208 Plan objectives.
- The SWCDs and local OSU Extension Offices should continue to promote available federal and state programs for conservation practices and arrange educational programs for the agricultural community.
- Cooperation between the SWCD, OSU Extension Offices and local grassroots organizations is needed to help Agricultural Producers further reduce nonpoint source pollution.
- All Livestock and Row Crop Producers should be encouraged by the SWCDs and OSU Extension Offices to develop nutrient management plans through the local SWCD office or appropriate private consulting organization.
- All livestock farmers should be encouraged to have manure management, pest management, dead animal disposal plans and emergency response plans. Fencing livestock from the creeks should also be encouraged. Grain farms should also have emergency response and nutrient management plans. Many programs require a conservation plan to be prepared before signing up for government programs, but these plans should be encouraged for all farm operations. Timely response to setting up these plans by the required agency should also be considered. Seminars and articles in local newspapers and newsletters should promote this awareness and encourage voluntary participation.
- Many acres in the Miami Valley Region are not farmed by the landowner. Farmers may not have the ability to implement conservation practices on the ground that they rent as part of their operation. An effort should be made to promote management practices to the absentee landlord. This might be accomplished by ensuring that information is passed to them by the renter or by direct mailing from agricultural agencies to absentee landlords.

Large animal farms in the Region which qualify for permit to operate, permit to install or general permit to operate are operations over 1,000 animal units and fall under the jurisdiction of the Ohio Department of Agriculture; while Ohio EPA retains authority for NPDES permits when animal units are greater than 1,000 and/or discharge into a stream or ditch. Communication and cooperation between operators, local government officials, SWCDs, OSU Extension, Farm Bureau, ODA and Ohio EPA is important.

6.0 Reserved

7.0 On-Site Sewage Treatment Systems

On-site (or decentralized) sewage treatment systems (OSTS) are used to treat wastewater from a home or business and return treated wastewater back into the environment[16]. Although these systems are generally used to serve areas that are not served by a centralized wastewater collection and treatment system, OSTSs are still in operation in sewered areas.

The most common and traditional on-site system consists of a septic tank and gravity fed soil absorption field. Non-traditional systems such as aerobic treatment and mounds are used when location, available space, soil type, or other issues become a limiting factor when designing the type of system that will serve one- to three-family residences and businesses producing less than 1,000 gallons of wastewater per day.

If an OSTS is properly sited, is working properly, and has been maintained regularly, it will effectively and efficiently remove disease-causing bacteria. Existing Ohio EPA data (TMDLs, 303(d) lists) indicate failing OSTS are having a negative impact on water quality in the Miami Valley Region.

This section provides an overview of the pollutants associated with failing OSTSs and programs underway to reduce the impact of such systems on the water resources of the Region.

7.1 FAILING ON-SITE SEWAGE TREATMENT SYSTEM POLLUTANTS

Many disease-causing pathogens contained in sewage including bacteria, viruses and other microorganisms make the proper treatment of wastewater and sewage an important issue.

Inadequately treated sewage from failing septic systems poses a significant threat to drinking water and human health because diseases and infections may be transferred to people and animals directly and immediately. Dysentery, hepatitis, typhoid fever, and acute gastrointestinal illness are some of the more serious examples.

Inadequately treated sewage from failing septic systems is the most frequently reported cause of groundwater contamination. Preventing or minimizing any of these organisms from entering the groundwater or any nearby surface water is the primary role of on-site sewage treatment systems.

Failing septic systems may leak excessive nutrients and bacteria to surface waters, destroying aquatic plant and animal habitat. When nutrients such as nitrogen and phosphorus enter coastal waters, they can cause excessive plant growth. Certain types of algae become so abundant they block sunlight in the water. This shade can then kill beneficial plants. As these plants disappear, so do the animals that depend upon them. Too much algae also uses up the oxygen in the water, which may kill fish and other animals. Excessive plant growth also makes boating,

[16] Onsite treatment systems serving homes are also referred to as Home Sewage Treatment Systems (HSTSs)

fishing, and swimming less enjoyable. Improperly treated sewage that contaminates nearby surface water, also increases the chance of swimmers contracting a variety of diseases. These may range from eye and ear infections to dysentery or hepatitis.

Areas of concern regarding failing OSTS are discussed by county in Appendices A - E.

7.2 STATE REQUIREMENTS

The Ohio Department of Health (ODH) was tasked by House Bill 231 in 2006 to develop a new set of rules governing HSTSs and to regulate Small Flow Onsite Sewage Treatment Systems (SFOSTS) (onsite facilities that treat up to 1,000 gallons per day) in Ohio. Sewage treatment system laws and rules currently in effect follow the provisions of OAC Chapter 3701-29 and Substitute Senate Bill 110 (Sub. SB 110). This bill was passed by the Ohio Senate and House of Representatives and signed into law by Ohio's governor on June 18, 2010.

The Ohio EPA developed the *Interim Onsite Sewage Treatment System Guidance Document* (May 21, 2008) for the design requirements for OSTSs in effect until the time the ODH SFOSTS rules and the Ohio EPA OSTS rules are fully developed.

7.3 SEPTAGE DISPOSAL

"Septage" is the liquid and solid material that is removed from onsite treatment systems that receive only domestic sewage. The U.S.EPA, ODH, local health departments and Ohio EPA regulate domestic septage disposal in Ohio.

The three primary options to dispose domestic septage in Ohio are:

1. Haul to a POTW or privately owned and operated waste disposal facility,
2. Dispose in a sanitary landfill, or
3. Apply to the land for agronomic benefit.

Regulations pertaining to the disposal of domestic septage include:

- Title 40 of the Code of Federal Regulations, Part 503 established the minimum requirements for land application of domestic septage in Ohio.
- OAC Chapter 3701-29 provides authority to local health departments to regulate sewage tank cleaners.
- Chapter 6111 provides broad authority to Ohio EPA to regulate disposal of waste in Ohio.

Based on information provided, WWTPs within the Miami Valley Region that accept septage are:

- Beavercreek Water Resource Reclamation Facility, Greene County
- Laura WWTP, Miami County (users within village only)
- New Madison Sewage Treatment Plant, Darke County

- Southwest Regional WWTP, Clark County
- Sugar Creek Water Resource Reclamation Facility
- Union Sewage Treatment Plant, Miami and Montgomery Counties (users within City only)
- Western Regional Water Reclamation Facility, Montgomery County

7.4 FINANCIAL RESOURCES FOR HSTS MANAGEMENT AND REPLACEMENT

The following funding resources can be utilized for projects related to failing OSTSs.

Water Pollution Control Loan Fund

Loan funds are available from the Ohio EPA Division of Environmental and Financial Assistance (DEFA) for projects that address water quality and/or public health problems. Funding opportunities related to OSTS include the following:

- Onsite Management Programs
- Linked Deposit Program
- Nonpoint Source Activities (System Repair and Replacement)

Community Development Block Grant Funds (CDBG)

CDBG funds have been utilized in some Ohio jurisdictions for the abatement of sewage nuisance conditions. Funds are generally limited to repair or replacement of failing systems, but have also been used for system abandonment and access to public sewer.

Community Housing Improvement Program (CHIP)

CHIP funds may be available in eligible jurisdictions. Applicants can apply for funds to address housing problems that will cover improvements to assure a safe and healthy environment, including the repair or replacement of a failing household sewage system.

Housing and Urban Development Program (HUD)

The federal HUD program provides low interest loans to homeowners for the repair and rehabilitation of homes, and these costs may also be included as part of the home purchase depending on the final appraised value.

Rural Housing and Rural Utility Programs

USDA funding is available to property owners seeking grants or low interest loans for the repair or replacement of failing sewage systems through the Rural Housing Service program under 502 Direct Loans and 504 Repair Loans and Grants.

7.5 UNSEWERED COMMUNITIES PROJECT (2014-2015)

In partnership with the Ohio EPA Southwest District Office and IBI Group, MVRPC developed a set of sewer feasibility studies for five unsewered communities in the Dayton Region. IBI Group was selected for the project team through an open RFP process conducted by MVRPC. Communities were selected for participation based on a priority list of locations provided by Ohio EPA, and the community leadership's willingness to participate. Participation in the planning project did not obligate the community to proceed with a sewer project. Participating communities were as follows (listed alphabetically):

1. Village of Bowersville (Greene County, Upper Little Miami watershed)
2. Glenwood area (unincorporated, Preble County, Twin Creek watershed)
3. Jackson Township (Darke County, Stillwater River and Mississinewa River watersheds)
4. Village of Ludlow Falls (Miami County, Stillwater River watershed)
5. Village of Wayne Lakes (Darke County, Stillwater River watershed)

All participating communities established steering committees of local residents, leaders and business owners; committees met individually with the consulting engineers for the project at least three times. Each community hosted a public participation meeting at which comments and questions from residents were accepted. Actionable comments were incorporated into the final reports. Final reports were developed for each community with tailored recommendations and cost estimates and delivered to the community, Ohio EPA Southwest District Office, and MVRPC. The final reports are of sufficient detail and quality to support applications for grants and loans, should the community decide to proceed with a project.

Copies of the final reports are available from MVRPC for all five communities.

7.6 MVRPC RECOMMENDATIONS

The following recommendations are made to support management of On-Site Treatment Systems.

- Watershed-level prioritization of OSTS areas of concern needs to be developed to maximize effectiveness of resources.
- MVRPC should review existing policies related to any approved statewide OSTS rule revisions that may occur in the future.

8.0 Groundwater Protection

Groundwater is an essential component of the Miami Valley Region's water resources. As such, measures taken to protect the quality and quantity of groundwater are critical. Groundwater accounts for over 94-97% percent of the public water supply. With the exception of Piqua, West Milton, and College Corner, all municipalities in the region are wholly dependent on local aquifers for the water supply source.

In 1988, the entire Great Miami/Little Miami buried aquifer system was designated as a Sole Source Aquifer (SSA) by U.S.EPA because of its vital importance in the area. Designation as an SSA serves the following purposes:

- Raise awareness about the aquifer system, its vulnerability to contamination and the region's dependence on groundwater
- Provide for a review of certain federally financially assisted projects to ensure they pose minimal threat to groundwater, and
- Enable the region to be eligible for any applicable federal funds that may become available under the Safe Drinking Water Act.

The SSA Program is authorized by Section 1424(e) of the Safe Drinking Water Act of 1974. The designation of an aquifer as a sole source aquifer provides the U.S.EPA with the authority to review federal financially assisted projects planned for the area to determine their potential for contaminating the aquifer. Federally funded projects reviewed by U.S.EPA under the SSA program may include, but not be limited to, highway improvements and new road construction, public water supply wells, transmission lines, wastewater treatment facilities, construction projects involving disposal of storm water, and agricultural projects involving management of animal waste."

8.1 REGIONAL GROUNDWATER PROTECTION STRATEGIES

As the Designated Planning Agency for water quality management in the Miami Valley Region, MVRPC is responsible for preparing and administrating a plan and program for protecting and preserving the water resources in the Region. In addition to the surface waters of the Great Miami and Little Miami River Basins, a vast reservoir of groundwater contained in an extensive system of aquifers is associated with the two rivers. Growing concerns about the area's dependence on this resource and the presence of threatening pollutant sources prompted MVRPC to develop a Groundwater Protection Strategy for the Region. The baseline strategy presented in 1990 includes a volume of eight documents outlining a regional framework.

In 1997, the Miami Conservancy District's Aquifer Preservation Subdistrict was created to develop and maintain an ongoing, watershed-wide program to support comprehensive protection and management of the Great Miami River Watershed's groundwater resources. The Subdistrict conducts quality and quantity studies of the buried valley aquifer, provides grants to communities to protect their drinking water sources, and helps citizens collect quality and

quantity data on their own private wells through the Groundwater Monitors and Test Your Well programs.[17]

The Ohio EPA's Source Water Protection Program (also known as "Wellhead Protection" and "Drinking Water Source Protection") was approved by U.S. EPA in 1999. This program assists public water suppliers with protecting drinking water sources (streams and aquifers) from contamination. This program involves two phases: assessing source water and developing/implementing a local protection plan. Public water systems with an endorsed protection plan are listed in the following table.

Table 8-1. Public Water Systems with Endorsed Drinking Water Source Protection Plans in the Miami Valley Region[18]

County	Public Water System	Population Served	Date Protection Plan Endorsed
Darke	Greeneville City PWS	13,200	6/3/2002
	Union City Village PWS	1,737	2/7/2003
	Versailles Village PWS	2,569	2/23/2009
Preble	Gratis Village PWS	990	7/16/2010
Miami	Troy City PWS	22,000	12/22/2000
Montgomery	Dayton Public Water System	166,000	12/26/1996
	Germantown Village PWS	4,800	11/24/1999
	Miamisburg City PWS	19,809	2/7/2003
	Phillipsburg Village PWS	650	9/21/2009
	Union City PWS	6,800	2/7/2003
	West Carrollton City PSW	12,000	3/9/1998
Greene	Fairborn Public Water System	33,000	8/28/2004
	Greene Co. – Southwest Reg Water	745	3/20/2007
	Spring Valley Village	538	12/20/2005
	Wright Patterson AFB Area A/C PWS	11,791	10/2/2007
	Wright Patterson AFB Area B PWS	10,928	10/2/2007
	Xenia City PWS	26,000	5/9/2003
	Yellow Springs Village PWS	3,761	1/16/2002
Total Population Served		**337,318**	

8.2 MVRPC RECOMMENDATIONS

The following recommendations are made to support groundwater protection efforts:

- Update potential pollution source inventories
- Communities should work toward completing an endorsed Source Water Protection Plan.

[17] http://www.miamiconservancy.org/water/groundwater.asp
[18] Ohio EPA, as of November 18, 2010

9.0 Municipal and Industrial Point Source Discharge Permits

As authorized by the CWA, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal sewer system, that use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.[19]

Whenever a municipality, industry, or other business wishes to discharge wastewater to a surface water of the State, they must first obtain an NPDES permit from the Ohio EPA Division of Surface Water (DSW). NPDES permits regulate wastewater discharges by limiting the quantities of pollutants in the discharge and establishing monitoring requirements and other conditions. The limits and other conditions in the permit help ensure compliance with Ohio's Water Quality Standards and Federal Regulations, all of which were written to protect public health and the aquatic environment.[20]

Figure 9-1 shows the approximate locations of all NPDES permit holders in the Miami Valley Region.

9.1 PUBLICLY OWNED WASTEWATER TREATMENT FACILITIES

There are currently forty-nine (49) Publicly Owned Treatment Work (POTW) facilities that are permitted in the Miami Valley Region. Lists of the municipal NPDES permits issued within the Miami Valley Region are presented by county in Appendices A through E.

As part of the MVRPC 208 plan update process, a survey form was sent to each POTW that requested updated information, including:

- Facility Name
- Permit Number
- Address
- Owner
- Operator/Manager
- Year Built
- Details on Upgrades and Expansions
- Details on Proposed Expansions, Timing and Costs
- Types of Treatment Processes and Plant and/or Process Schematic
- Current and Design Average Daily Flow
- Maximum Allowable Peak Flow
- Service Area Boundary
- Septage Receiving Capabilities

Data collected on Individual surveys is included in **Appendix K.** Brief descriptions of existing municipal, county and regional systems are provided in Appendices A through E.

[19] http://cfpub.epa.gov/npdes/
[20] http://www.epa.state.oh.us/dsw/permits/npdes_permit_types.html

Figure 9-1. Locations of NPDES Permits Issued within the Miami Valley Region

9.2 INDUSTRIAL AND MINOR POINT SOURCE DISCHARGE PERMITS

There are currently one hundred eight (108) industrial and minor wastewater treatment facilities that are permitted under the NPDES Program in the Miami Valley study area. Lists of these NPDES permits are presented in Appendices A through E.

10.0 Wastewater Collection and Treatment Systems Planning

Wastewater Treatment Facility Plans and their associated Facility Planning Areas are the cornerstones of the AWQMP. In response to Ohio EPA directives, the Planning Commission updates the wastewater treatment-related portions of the AWQMP to ensure that current and future wastewater treatment needs are met in ways that are protective of the region's water resources. The update process is undertaken with the following objectives:

1. Provide a regional inventory of the agencies responsible for wastewater treatment, planning areas, and surface water quality protection facilities and infrastructure;

2. Define regional policies to guide future wastewater infrastructure planning and development; and

3. Identify, evaluate, prioritize and recommend future water quality improvement projects intended to help surface water bodies attain Ohio EPA intended use designations.

This section provides a summary of the policies adopted by the Planning Commission to review and approve updates to Wastewater Treatment Facility Plan and modifications to Facility Planning Areas, as well as the requirements for completing and submitting planning documents.

10.1 WASTEWATER FACILITY PLANNING

On September 1, 2005, MVRPC Board of Directors adopted the following Areawide Wastewater Facility Planning Policies (see **Appendix N**):

Policy A: Designated Management Agencies

Policy B: Facility Planning Area Boundaries

Policy C: Modifications to Facility Planning Area Boundaries

Policy D: Development of Local Wastewater Management Options

Policy E: AWQMP Consistency Reviews

Policy F: Utilization of Areawide Population Projections

Policy G: Modifications to Designated Management Agencies

Policy H: Nomination of New Designated Management Agencies

The MVRPC document entitled: *Guidelines for Facility Plan (FP) and Facility Planning Area (FPA) Update Proposals: Content, Submittal & Review* is presented in **Appendix O**. This guidance document provides detailed instructions on what information is required for a FP and in what format the GIS mapping of FPAs must be provided.

10.1.1 Designated Management Agencies

As defined in Policy A, owners and operators of publicly owned WWTPs (WWTPs, aka Publicly Owned Treatment Works or POTWs) are identified as *Designated Management Agencies*

(DMAs). Primary DMAs are the entities responsible for the planning, financing, construction, operation and maintenance of WWTPs and collection systems. Satellite DMAs are the entities responsible for sanitary sewers, lift stations, and sometimes treatment facilities tributary to a primary DMA's collection and/or treatment systems. Satellite DMAs provide services that complement Primary DMA operations, usually pursuant to an agreement or contract between the entities.

Each primary DMA is responsible for developing and maintaining a *Wastewater Treatment Facility Plan* (FP, aka 201 Plan) that identifies and prescribes wastewater management approaches in a surrounding *Facility Planning Area* (FPA). These management approaches represent the current and best understanding about where sewers will be extended and where areas will remain un-sewered over the twenty year planning period. The designation of DMAs reduces the potential for duplication of services and investment in infrastructure by preventing multiple (and potentially competing) treatment facilities from being planned or constructed in an FPA.

As prescribed by the Ohio EPA in the 2006 State WMP, County Commissioners (or a sewer district under ORC 6119) are responsible for sewage collection and treatment in unincorporated communities. Where sewers are not available, approval of individual home sewage treatment systems is the responsibility of the County Health Department or local health department.

There are currently sixty-four (64) recognized DMAs within the Miami Valley Region. Primary DMAs and their associated FPAs are listed by county in **Table 10-1**.

Table 10-1. Miami Valley Region Designated Management Agencies

County	DMA	FPA(s)
Darke	Village of Ansonia	Ansonia/Rossburg
	Village of Arcanum	Arcanum
	Village of Burkettsville	Burkettsville/New Weston[21]
	Darke County	Darke County Unincorporated
	Darke County General Health District	
	Darke County SWCD	
	Village of Gettysburg	Gettysburg (satellite to Bradford)
	City of Greenville	Greenville
	Village of New Madison	New Madison
	Village of North Star	Osgood/Yorkshire/North Star
	Village of Osgood	Osgood/Yorkshire/North Star
	Palestine-Hollansburg Joint Sewer District	Palestine-Hollansburg
	Village of Pitsburg	Pitsburg
	Village of Union City	Union City

[21] The FPA encompassing the Burkettsville/New Weston area of Darke County which drains to a WWTP located in St. Henry in Mercer County.

	Village of Versailles	Versailles
	Village of Wayne Lakes	Wayne Lakes (satellite to New Madison)
	Village of Yorkshire	Osgood/Yorkshire/North Star
Preble	Village of Camden	Camden
	Village of College Corner	College Corner[22]
	City of Eaton	Eaton
	Village of Eldorado	Eldorado
	Village of Gratis	Gratis
	Lakengren Water Authority	Lakengren
	Village of Lewisburg	Lewisburg
	Village of New Paris	New Paris
	Preble County	Preble County Unincorporated
	Preble County Public Health	
	Preble County SWCD	
	Village of Verona	Verona
	Village of West Alexandria	West Alexandria
	Village of West Elkton	West Elkton
	Village of West Manchester	West Manchester
Miami	Village of Bradford	Bradford
	Village of Covington	Covington
	Village of Laura	Laura/Potsdam
	Miami County	Bethel Township, Fletcher, Southwest Bethel Township Service Area, Miami County Unincorporated, Tri-Cities
	Miami County Public Health	Miami County Unincorporated
	Miami County SWCD	
	City of Piqua	Piqua
	Village of Pleasant Hill	Pleasant Hill
	Tri-Cities North Regional Wastewater Authority[23]	Tri-Cities
	City of Troy	Troy
	Village of West Milton	West Milton
Montgomery	City of Brookville	Brookville
	Franklin Regional Wastewater Treatment Corporation[24]	Germantown FPA (serving the Municipality of Germantown and Village of

[22] The College Corners FPA drains to a WWTP located in the state of Indiana.
[23] In Miami County the Tri-Cities North Regional Wastewater Authority serves the cities of Tipp City and a portion of Huber Heights.
[24] Franklin FPA is located within the Areawide planning area of the OKI Council of Governments. The Franklin Regional Wastewater Treatment Corporation is DMA of the Franklin FPA, per the OKI 208 Plan. Village of Carlisle is a wastewater collection DMA, per the OKI 208 Plan.

		Carlisle[25])
	City of Dayton	Dayton
	Public Health Dayton and Montgomery County	Montgomery County Unincorporated
	City of Englewood	Englewood
	Village of Farmersville	Farmersville
	Tri-Cities North Regional Wastewater Authority[26]	Tri-Cities
	City of Miamisburg	Miamisburg
	Montgomery County	Eastern Regional, Western Regional, Opossum Creek, Montgomery County Unincorporated
	Montgomery County SWCD	Montgomery County Unincorporated
	Village of New Lebanon	New Lebanon
	City of Union[27]	Union
	City of West Carrollton	West Carrollton
Greene	Village of Bowersville	Bowersville
	City of Fairborn	Fairborn
	Greene County	Sugarcreek[28], Beavercreek, Cedarville, Clifton, Greene County Unincorporated
	Greene County Public Health	Greene County Unincorporated
	Greene County SWCD	Greene County Unincorporated
	Village of Jamestown	Greene County Unincorporated Jamestown
	City of Xenia	Xenia
	Village of Yellow Springs	Yellow Springs
	Clark County	Clark County Southwest Regional

Some county commissions in the MVRPC planning area have established sanitary sewer districts under powers granted by Ohio Revised Code section 6117. In addition one or more political subdivisions of the state may establish water and/or sewer districts under ORC section 6119. Many of these districts exist in the region but do not have facility planning areas under the Water Quality management Plan. Table 1-2 lists these districts as additional locations served by public sanitary sewer.

[25] The Municipality of Germantown and Village of Carlisle are responsible for wastewater collection. Wastewater treatment is managed by the Franklin Regional Wastewater Treatment Corporation.
[26] In Montgomery County, the Tri-Cities North Regional Wastewater Authority serves the cities of Vandalia and a portion of Huber Heights.
[27] Union is a city in Montgomery and Miami Counties
[28] Sugarcreek FPA extends into Montgomery and Warren Counties.

Table 10-2. Miami Valley Region ORC 6117 and ORC 6119 Sewer Districts

County	Sewer District (Type)	Location(s) Served
Darke	Rolin Acres (6117)	Rolin Acres Subdivision
Preble	County Sewer District #2 (6117)	Pinewood Drive and Cedarwood Drive (Twin Township)
	County Sewer District #3 (6117)	West Elkton
	Lakengren Water Authority (6119)	Lakengren community
Miami	County Sewer District (6117). District encompasses the entire County.	Multiple discreet service areas including Brandt, Casstown, Concord Township North, Concord Township South, Monroe Township, Phonton, Springcreek Township, Studebaker Historic Site, Village of Fletcher
	Monroe Township Water and Sewer District (6119)	Monroe Township
Montgomery	Greater Moraine-Beaver Creek Sewer District (6117). District encompasses the entire county.	District includes areas within FPAs managed by Montgomery County (Eastern Regional, Western Regional, Possum Creek) as well as the Montgomery County portion of the Sugarcreek FPA. Other areas served flow to the Dayton WWTF.
	Franklin Regional (6119)	Germantown, Carlisle, Franklin, Warren County, Springboro
Greene	Greater Greene-Little Miami Sewer District (6117). District encompasses the entire county.	District includes areas within FPAs managed by Greene County (Beavercreek, Sugarcreek, Cedarville, Clifton) As well as the Greene County portions of the Eastern Regional, Jamestown, Clark County SW Regional, and Dayton FPAs
Shelby	Shelby County Sewer District	Arrowhead Hills subdivision Fair Haven Shelby County Home Hickory Dell Estates subdivision Lake Loramie Area Sewer District McCartyville Millcreek subdivision Village of Kettlersville

Policy G, Modifications to DMAs, outlines the process to be followed and policies applicable to when the need arises to consider changes to DMA designations within an FPA or affected jurisdictions seek to challenge DMA decisions and/or designations.

All entities that are not designated as a DMA must apply to be considered for that status prior to applying for permits. Policy H: Nominations of New DMAs, provides the factors considered by MVRPC's AFPSC when reviewing new DMA applications as well and the process undertaken to complete the review.

10.2 FACILITY PLANNING PROCESS

The development of Wastewater Facility Plans and Plan Updates involves the identification of viable local wastewater management options or prescriptions for a specified facilities planning area. The State WQM Plan includes recommended wastewater facility planning guidelines for individual POTWs as shown in Table 10-3.

Each wastewater utility in the Miami Valley Region is encouraged to complete wastewater facility planning in accordance with these guidelines as part of the overall MVRPC 208 planning process. Due to the schedule for completing the regional 208 Plan in 2011, individual utilities may not have completed each step in the recommended guidelines to develop the Facility Planning Area boundaries identified in this Plan.

Table 10-3. State WQM Plan Facility Planning Guidelines

Steps	Materials Submitted in Facility Plan
Delineate current service area	Provide up to date maps of the current sewer service areas with all trunk lines and pump stations shown.
Evaluate sewer system conditions	Identify needed improvements; provide cost estimates.
Evaluate need for additional sewer service area	Define a study area (FPA); delineate the geographic area that was evaluated relative to growth/development and the need for central sewers (provide on map).
Delineate projected service area	Forecast and map new areas expected to be sewered in the next 20 years (projected service are); provide cost estimates.
Develop prescriptions for wastewater treatment in areas without sewers	Evaluate options and select interim prescriptions for areas expected to be sewered within 20 years. Evaluate options and select permanent prescriptions for areas not expected to have sewers.
Evaluate wastewater treatment capacity	Itemize improvements, if any, to meet current needs (population now served) and provide cost estimates.
Determine future capacity need for treatment	Forecasts of population growth and other demands used to assess the treatment capacity needed in next 20 years.
Evaluate future wastewater treatment capacity options	Identify feasible alternatives, select most likely option(s); itemize improvements to meet future needs and provide cost estimates.
Develop general plan to implement improvements	Provide a capital improvement plan to finance necessary sewer and treatment upgrades; include a schedule for improvements (sewers and treatment plant); provide an

Steps	Materials Submitted in Facility Plan
	operation and maintenance plan.
Qualify as Management Agency	Agree to provide services indicated in 201/208 plan; obtain written agreements with other governmental jurisdictions if service involves more than one jurisdiction.

10.2.1 Facility Planning Areas/Service Areas

As stated in its *Water Quality Management Plan Framework*, Ohio EPA defines a *Facility Planning Area* **(FPA) as** "A discrete geographical planning area of sufficient scope to allow for an analysis of various alternatives for the treatment and disposal of wastewater. An FPA established as part of the Section 201 construction grants program was a "study area" for determining the needs and cost effective methods of providing sewer service, and was not intended to equate to a service area. FPAs will continue to be viewed as study areas unless the applicable areawide planning agency establishes alternative definitions as part of the area's 208 plan update."

The Framework defines a *Service Area* as "A discrete geographic area within which a specific governmental jurisdiction or other entity has the authority and major infrastructure needs in place (e.g., trunk sewer lines, lift stations, interceptors, treatment capacity) to provide for the collection and treatment of sewage. The collection and/or treatment of sewage may be provided through legally executed contracts for such services, or other forms of intergovernmental agreements deemed acceptable to the parties involved."

In the Guidance for Preparing a Facility Plan, U.S.EPA states "The facility planning area for new wastewater treatment systems should be large enough to analyze the cost-effective alternative methods of waste transport, treatment, handling and disposal of sludge and treated effluent. It also should be large enough to analyze the environmental effects of alternatives, as required by the regulations."

Service Area boundaries should reflect the anticipated growth in a particular jurisdiction over the 20-year life of the Plan. The boundaries should support, and be supported by, local comprehensive plans or land use plans. Such anticipated growth should also be a realistic reflection of the future ability of the treatment plant to service all areas within the Service Area boundary. Service Area boundaries should not be so all encompassing as to place restrictive land use conditions on properties within the boundary, nor should they be so narrowly defined as to require frequent modification.

The introduction to the Areawide Wastewater Facility Planning Policies adopted by MVRPC on September 1, 2005, states the following:

> "The overlap of multiple FPAs will not be permitted in Facility Plan and FPA updates. The Facility Planning process is intended to provide an organized and efficient approach to wastewater treatment planning. Allowing the overlap of FPAs brings undue confusion and conflict to the process, in addition to potentially resulting in duplication of effort, unwise pubic expenditures on redundant infrastructure, and excess plant capacities.

DMAs may consider establishing a Primary-Satellite DMA relationship to resolve overlapping boundary issues."

Neither the Facility Planning Policies nor Ohio EPA guidance forbids non-contiguous facility planning areas. Circumstances may arise in which a single facility serves multiple communities and the planning area may consist of separate, discrete areas.

Requests for plan updates that do not follow the policies are considered to be incomplete.

A list of the satellite/service agreements in place in the Miami Valley Region is provided in **Table 10-4**.

Table 10-4. Satellite/Service Agreements in the Miami Valley Region

Primary DMA (Treatment)	Satellite DMA/Agreement (Collection)
Village of Ansonia	Village of Rossburg
Village of Bradford	Village of Gettysburg
City of Dayton	Village of Phillipsburg, City of Vandalia, Montgomery County
Clark County Sanitary Engineer	City of Huber Heights, Miami County (Brant Area and Phonton, Bethel Township)
Village of New Madison	Village of Wayne Lakes (Wayne Lakes)
Village of St. Henry (Mercer County)	Burkettsville/New Weston FPA (Darke County)
Lakengren Water Authority	Preble County (Sanitary Landfill)
City of Piqua	Miami County Sanitary Engineering
City of Troy	
Tri-Cities North Regional Wastewater Authority	
Clark County	
City of Miamisburg	Montgomery County Environmental Services
Montgomery County Environmental Services	City of Miamisburg
Tri-Cities North Regional Wastewater Authority	City of Huber Heights, City of Tipp City, City of Vandalia
West Carrollton	Montgomery County Environmental Services (Western Regional)
Franklin Regional Wastewater Treatment Corporation	Germantown, Carlisle, Franklin, Warren County, and Springboro (part)
Village of Jamestown	Greene County (Shawnee Hills)
City of Xenia	Central State University
Greene County	Clark County (re: Clifton WWTP), City of Kettering (Eastern Regional WRF), and Montgomery County
City of Fairborn	City of Huber Heights

Policy B, Facility Planning Area Boundaries, includes a prohibition of overlapping FPAs and a provision for actions to be taken when boundary conflicts arise. Policy C, Modifications to Facility Planning Area Boundaries, outlines the process for changing FPA boundaries.

MVRPC maintains the map of all FPAs in the region's five-county area. These maps are used by the Ohio EPA in determining where Permits-to-Install (PTIs) for new sewer lines may and may not be issued.

In addition to a comprehensive update of plan contents, the 208 Plan Update process in 2011 included an opportunity for DMA agencies and jurisdictions to submit updates to Facility Planning Area maps for the consideration of the Facility Planning Subcommittee. The following FPA updates were submitted and included in the regional Facility Planning Areas map:

- Ansonia
- Bethel
- Brookville
- Clark County Southwest Regional
- Eaton
- Fairborn
- Huber Heights
- Miamisburg
- New Paris
- Piqua
- Tri-Cities
- Troy
- Union
- Verona
- Xenia

In the years between May 5, 2011 and June of 2023 the Board of Directors of the Miami Valley Regional Planning Commission has adopted amendments to the AWQMP for updates to Facility Planning Area boundaries as follows:

- Greene County FPA – Included updates to the Beavercreek, Sugarcreek and Eastern Regional FPA. March 2, 2017.
- Dayton International Airport Area – Included changes to the Dayton, Union and Tri-Cities FPA. March 2, 2017.
- Palestine-Hollansburg Joint Sewer District – Creation of a new FPA for the villages of Palestine and Hollansburg in southwest Darke County. June 6, 2019.
- West Milton – Ludlow Falls Area – Included modifications to the West Milton and Laura/Potsdam FPA to shift the Village of Ludlow Falls from the latter to the former. June 6, 2019.
- Village of Wayne Lakes – Creation of a new FPA to serve the Village of Wayne Lakes, in southwest Darke County. December 2, 2021.
- Tri-Cities Minor Modification – Included shifting parcels from the Dayton FPA to the Tri-Cities FPA south of the Dayton International Airport. May 5, 2022.

Upon adoption of these updates to the 208 Plan by the MVRPC Board of Directors, these FPA boundaries were incorporated into the master FPA map maintained by MVRPC.

The current (February 2023) Facility Planning Areas in the Miami Valley Region are shown in **Appendix P**. Facilities Planning Areas presented by County are that are shown in **Figures 10-1** through **10-6** as described in **Table 1-5**.

Table 10-5. Facility Planning Area Maps by County

County	Figure
Darke	10-1
Preble	10-2
Miami	10-3
Montgomery	10-4
Greene	10-5
Shelby	10-6

Table 10-6 provides current FPA statistics within each County. FPAs are considered for this discussion to be the boundaries of those POTWs that have distinctive service area boundaries.

Table 10-6. Current Facility Planning Areas within the Miami Valley Region

County	Number of FPAs	Area within FPA (sq. mi.)	Total Area in County (sq. mi.)	% County Area within FPA
Darke	14	65.0	600.4	10.8
Greene	12	195.7	416.2	47.0
Miami	11	201.8	409.2	49.3
Montgomery	17	352.2	464.3	75.8
Preble	11	55.1	426.3	12.9
Total	**65**	**869.8**	**2,316.4**	**37.5%**
Shelby	0	0.0	411.1	0.0

10.2.2 Population Projections

Policy F, Utilization of Areawide Population Projections, specifies that FP applicant's population projections must be consistent with MVRPC population projections as described in Section 3.1.

In 2013 MVRPC staff developed FPA-based population projections using 2010 Census figures and transportation planning data developed by the Ohio Department of Transportation and by the MVRPC Long Range Transportation Planning process. Population projections for 2040 were plotted for each facility planning area, as a guide for management agencies planning for future collection system extensions and treatment works upgrades. The projections, map and methodology description are incorporated into this AWQMP as **Appendix R**. MVRPC will look to update population projections using 2020 Census data in the coming years.

10.2.3 Development of Local Wastewater Management Options

The development of Wastewater Facility Plans and Plan Updates involves the identification of viable local wastewater management options or prescriptions. Policy D, Development of Local Wastewater Management Options, details the categories into which each FPA may be subdivided according to the type of wastewater treatment in existence, proposed and/or predicted.

Table 10-7. Wastewater Sub-Area Categories

Category	Description
1	Areas currently served with sanitary sewers
2	Areas expected to be served with sanitary sewers connected to an existing POTW during the next twenty years
3	Areas expected to be served with sanitary sewers connected to a new POTW in the next twenty years
4	Areas expected to remain on individual on-lot systems or semi-public systems, and where local officials are oriented to maintaining an unsewered status for the foreseeable future
5	Areas currently unsewered where local officials are oriented to accepting sewers if feasible and if found to be consistent with the AWQMP
6	Areas for which no wastewater management options have been declared

This policy provides the mechanism for encouraging DMAs to amend engineering plans based on the desire of a local government to manage growth within its jurisdictions. Wastewater management prescriptions should be aligned with local land use and/or comprehensive plans, where such plans exist.

10.2.4 Wastewater Treatment Facility Flow Data Review

In 2022 MVRPC staff requested and received from Ohio EPA Flow Rate data for every wastewater treatment facility serving the MVRPC Areawide Counties covering five years' worth of Discharge Monitoring Reports. Flow Rate is a daily report required under all NPDES permits for these facilities that tracks the volume of wastewater processed by the facility on a daily basis. Data is reported in millions of gallons per day (MGD).

Using a methodology designed to exclude outlier data, staff reviewed the data to assess typical daily throughput as compared to the Design Flow of the facility. By using five full years (60 months) of data, the review averaged out rainy months with dry months and wet years with dry years to provide a fair picture of typical operating conditions at each facility. Facilities were sorted into tiers based on typical daily flow rate as a percent of design flow. Facilities operating below 60 percent of design flow were considered to have no concern. Those typically operating between 60 and 80 percent of design flow were listed as "on watch." Those typically experiencing daily flows above 80 percent of design capacity were listed as an "immediate concern." Ohio EPA recommends DMA's plan for a facility capacity expansion once flows regularly reach 80 percent of design flow.

Based on data from May of 2017 through May of 2022 there were 11 facilities listed as an immediate concern, including six major facilities (design flow greater than one million gallons per day) and five minor facilities (less than one MGD). The major facilities were those serving

the following FPA: Beavercreek[29], Franklin[30], Tri-Cities, Troy, Union, and West Carrollton. The minor facilities were those serving the Ansonia/Rossburg, Bradford, Burkettsville/New Weston[31], Cedarville, and Lewisburg FPAs.

Flow rate assessments using this methodology have several uses in the wastewater planning process. Consideration of typical operating flows can be made when reviewing permit to install applications for new developments and extensions of sanitary sewer collection systems. See section 10.3 for a description of the PTI review process under the 208 Plan. Flow rate assessments can be made when proposals are made to adjust Facility Planning Area boundary lines to serve new developments. Projected new flows can be reviewed in light of available capacity at the receiving treatment facility. Comparative reviews can be made if multiple facilities may be able to serve the new development. In such cases planned future treatment capacity improvements should also be taken into account.

Finally, attention to flow rate change over time and the observed and projected impacts of climate change can be taken into account when planning for future upgrades to treatment capacity. Higher annual total precipitation and more frequent and more extreme precipitation events are predicted effects of global warming in Ohio, driven by increasing concentrations of greenhouse gases in the atmosphere.

MVRPC staff is available to assist communities in generating updated flow rate reviews to support local facility planning processes. The full methodology and findings for every facility in the Region are available in the full Flow Data Review report, which may be found as **Appendix S** to this 208 Plan.

[29] The Beavercreek facility was re-rated to increase design flow to 10.6 MGD as of April 1, 2022. The Flow Data Review looked at data from years when the facility was rated at 8.5 MGD. Case study within the report highlights the re-rate process and resulting flow rates.
[30] The Franklin WWTF serves Germantown and Carlisle within the MVRPC areawide planning area.
[31] Burkettsville/New Weston is served by the Village of St. Henry treatment facility in Mercer County.

Figure 10-1. Darke County Facility Planning Areas

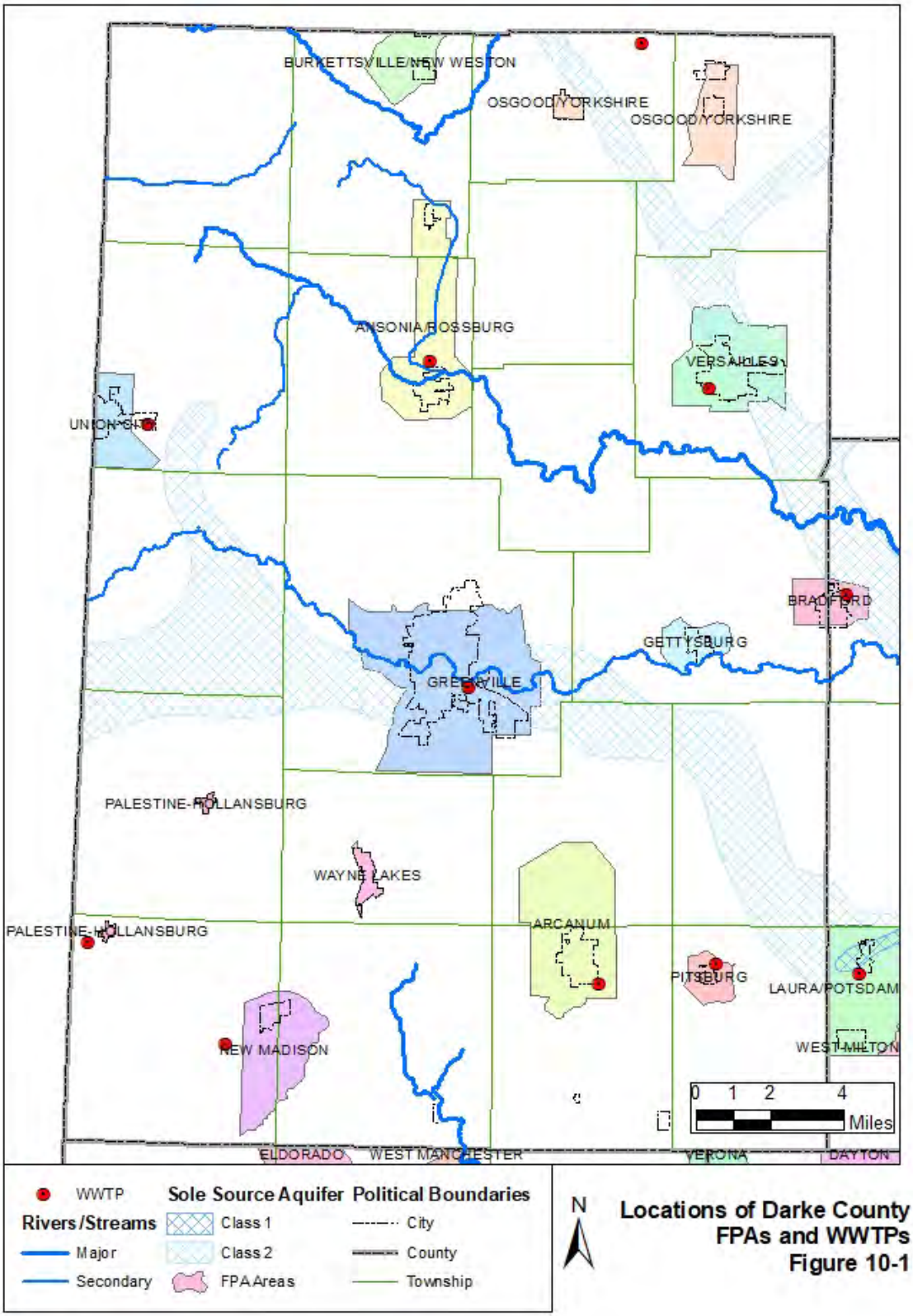


Figure 10-2. Preble County Facility Planning Areas

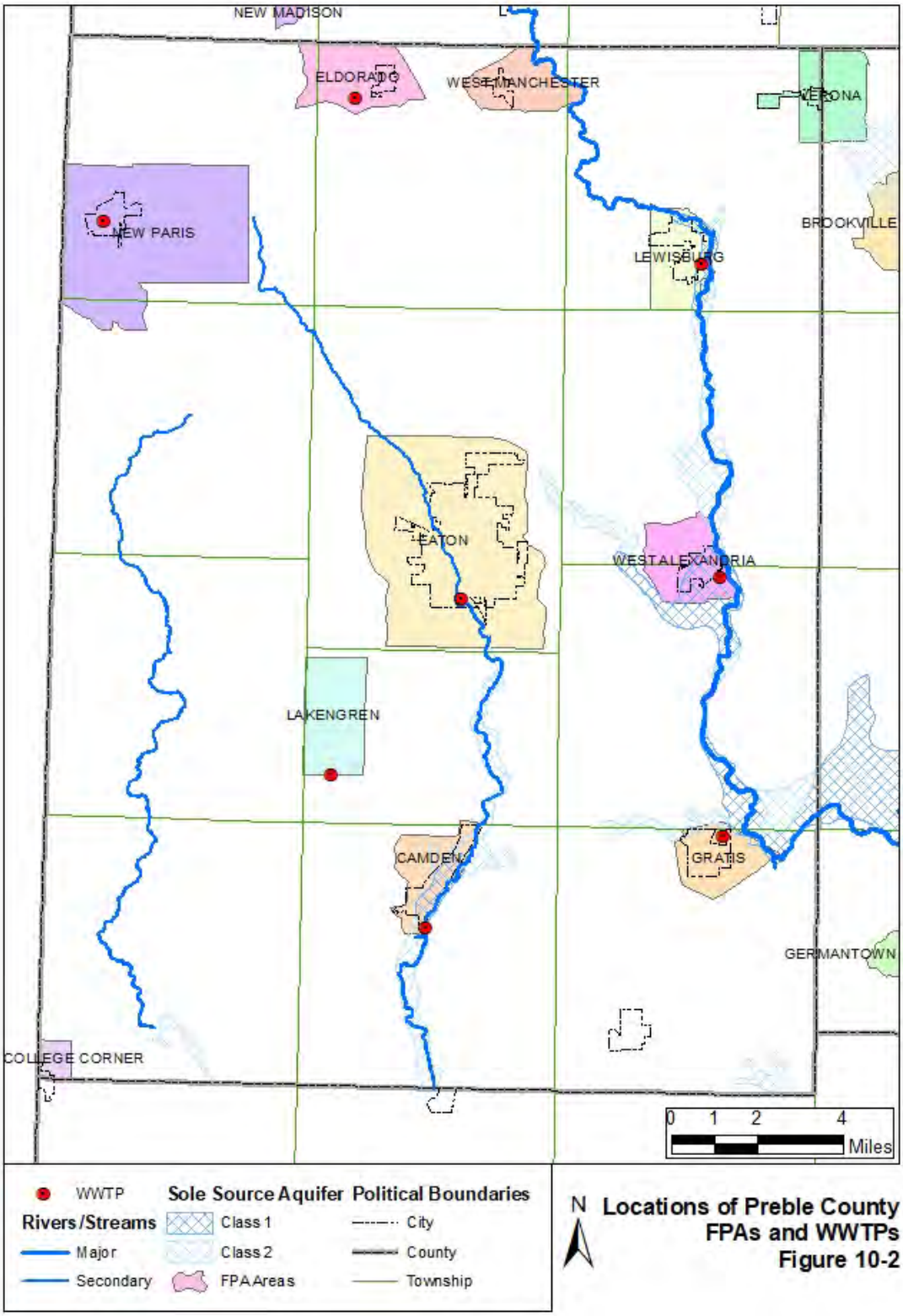


Figure 10-3. Miami County Facility Planning Areas

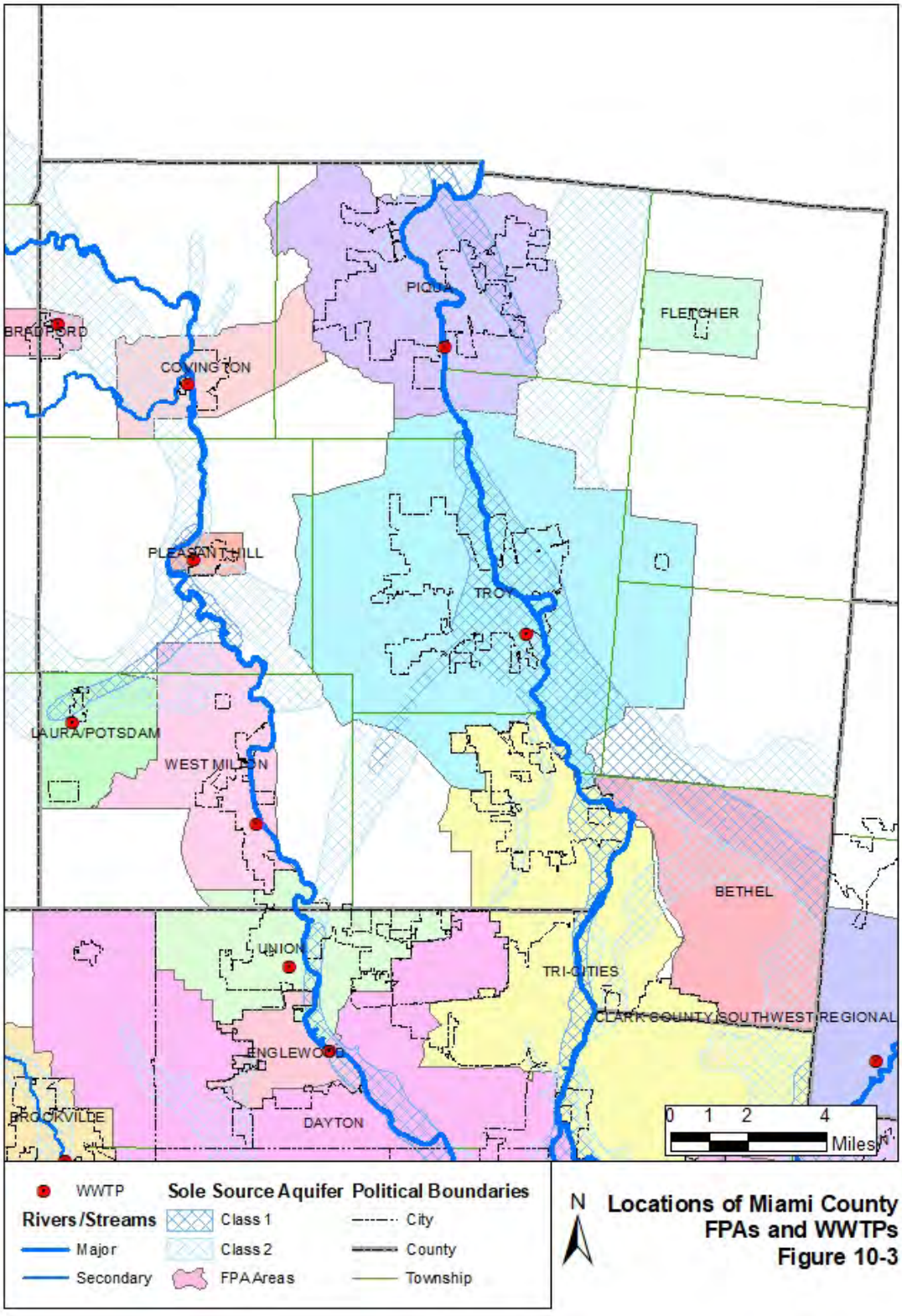


Figure 10-4. Montgomery County Facility Planning Areas

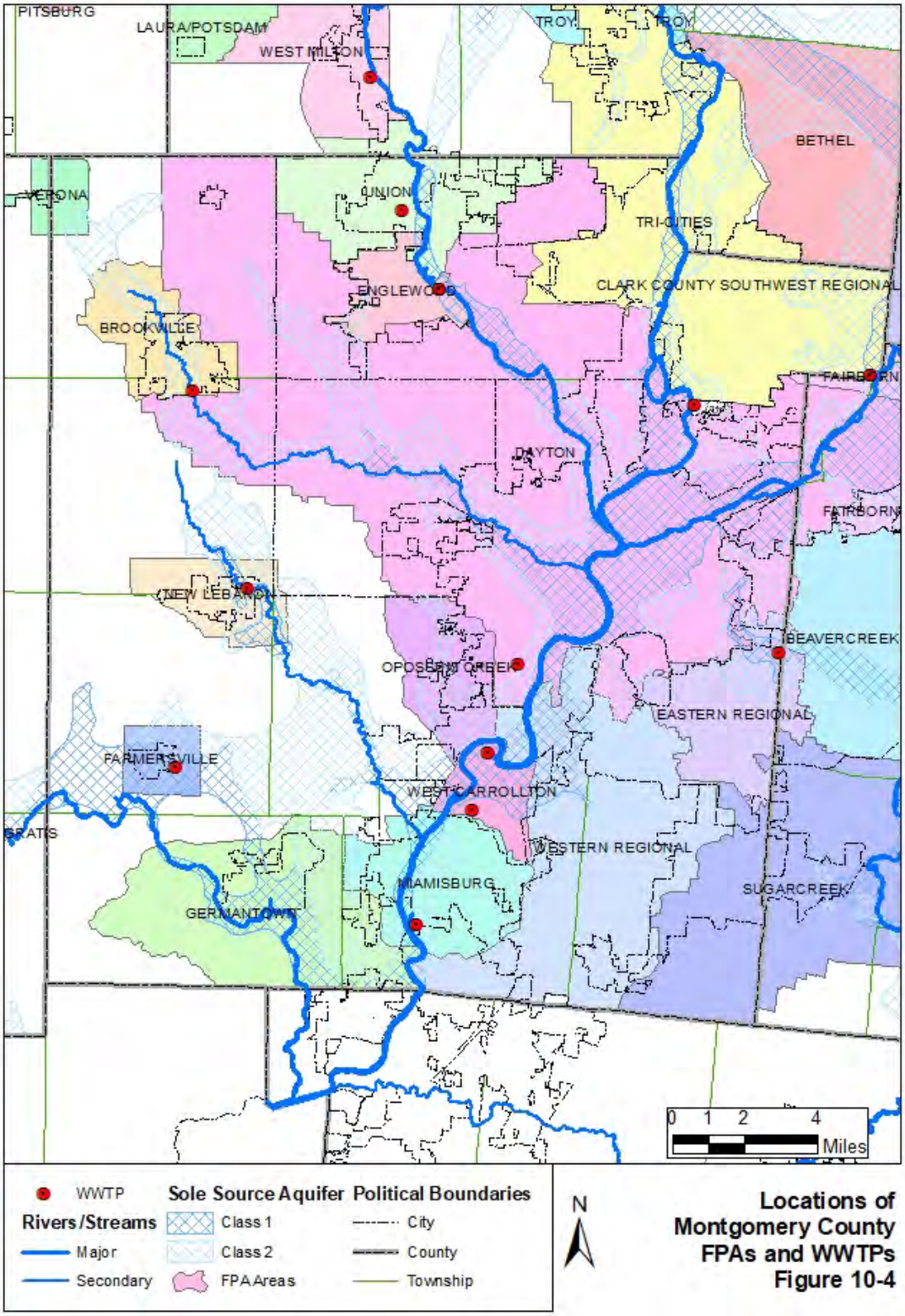


Figure 10-5. Greene County Facility Planning Areas

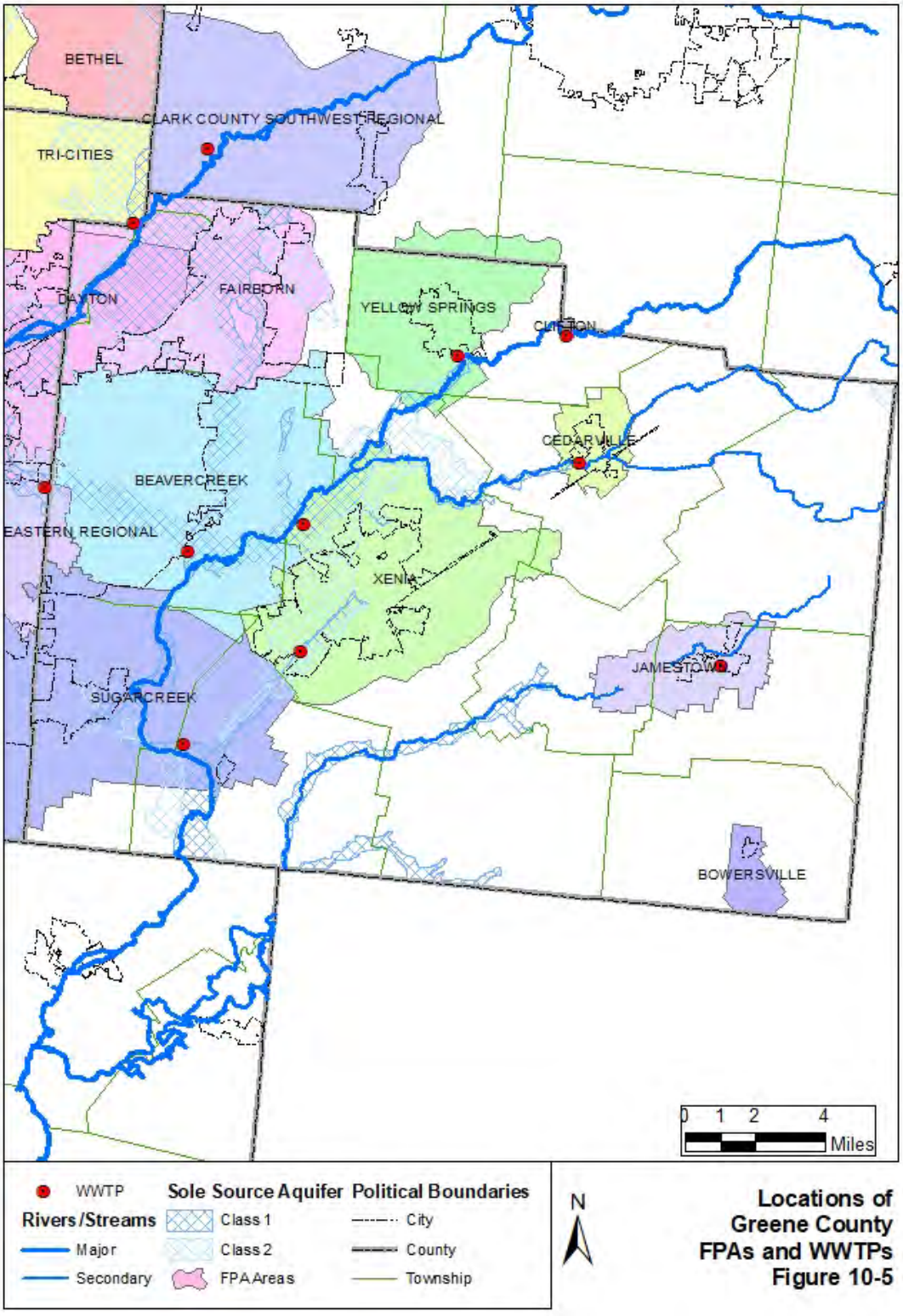
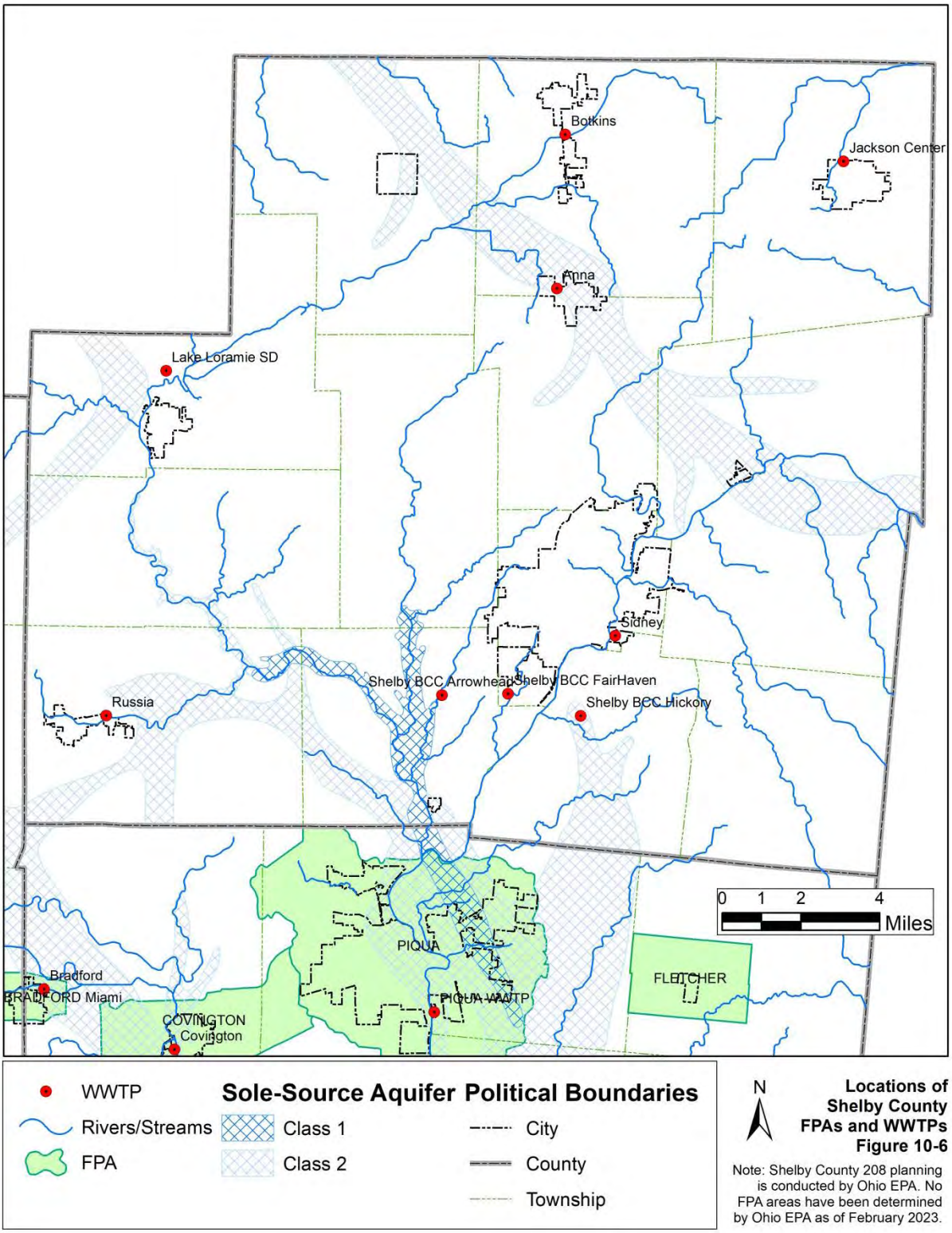


Figure 10-6. Shelby County Facility Planning Areas



Additionally, the policy outlines the conditions that must be met in those areas where local officials want to restrict wastewater treatment to individual on-site systems.

This policy recognizes the legal responsibilities and authorities of local health departments to influence wastewater treatment options.

10.2.5 AWQMP Consistency Reviews

Policy E, AWQMP Consistency Reviews, outlines the process under which DMA actions are reviewed by MVRPC. As described in Policy E, any action proposed by a DMA is considered consistent with the AWQMP as long as the following criteria are met:

1. Meets Ohio EPA's regulatory and technical requirements,
2. Consists solely of actions that are within the existing FPA boundary,
3. Consist solely of actions which are consistent with the wastewater prescriptions for the location, and
4. Conforms to accepted regional population projections.

Consistency reviews may also be conducted to review proposed private developments in advance of developing permit applications, as well as for individual permit to install applications.

10.3 OHIO EPA PERMIT TO INSTALL PROCESS

The Ohio EPA is responsible for issuing PTIs. A full explanation of the PTI application and review process is provided on Ohio EPA's website at: https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/wastewater-permit-to-install-pti-program.

The Ohio EPA tracks pending PTI applications on their website at: http://wwwapp.epa.ohio.gov/dsw/pti/PtiStatus.htm

MVRPC staff reviews PTI applications submitted for locations within the areawide planning counties. This 208 plan "pre-review" is designed to identify any consistency issues that may arise from the location and/or wastewater management option(s) proposed in the permit application. The review includes plotting the project location in relation to regional FPA boundaries, reviewing the project description in light of wastewater management options for the location, and ensuring that DMAs are aware of PTI applications which originate from entities other than the DMA itself.

10.4 ONGOING MAINTENANCE OF THE AWQMP FOR THE MIAMI VALLEY

Upon final adoption of this update to the Areawide Water Quality Management Plan, the Miami Valley Regional Planning Commission resumes the regular, ongoing responsibility to maintain the content of the plan to ensure that it addresses new developments in the state and federal regulatory environment, and local plans for development in the five county region. To accomplish this, MVRPC will continue to manage a process designed to facilitate dialogue

between and among diverse water interests in the region, including jurisdictions, utilities, watershed groups, environmental groups, regulators, and MVRPC staff.

10.4.1 Meetings

All interested parties will be invited and encouraged to attend periodic watershed-based meetings in which current issues regarding the Plan content will be open for discussion. Currently existing meetings (the Great Miami River Watershed Network and the Little Miami Watershed Network) will be leveraged for their opportunities to foster dialogue regarding development and water resources. Jurisdictions proposing changes to Facility Plans or Facility Planning Areas within the AWQMP will be asked to make short presentations to the appropriate watershed meeting to describe the proposed change. Presentations on developments regarding groundwater protection, storm water management, agricultural BMPs and on-site sewage treatment management will also be encouraged so that the meeting participants can be informed on the broad range of water resource issues in the AWQMP.

10.4.2 Tours

Annually, in coordination with numerous agencies across the region, MVRPC will sponsor a “Best Management Practices Tour” of current and recent projects designed to protect or enhance water resources in the region. These tours will demonstrate the ongoing work of many agencies, with the intention of sharing ideas and approaches to water resource management across the region.

10.4.3 Content Review

In coordination with jurisdictions and agencies across the region MVRPC staff annually will compile necessary and requested updates to the content of the AWQMP for the review and consideration of the MVRPC Board of Directors. Any Designated Management Agency (DMA) may submit updates to the AWQMP relevant to their area of responsibility. Additionally, MVRPC staff may recommend updates to the AWQMP based upon regulatory changes, updates to ongoing projects and other similar developments that warrant a change to plan content.

10.4.4 Committee Structure

The MVRPC Areawide Facility Planning Subcommittee will have the responsibility of detailed review and comment on all proposed updates to the AWQMP for the Miami Valley. After the subcommittee’s review, proposed updates to the AWQMP recommended by the subcommittee will be forwarded to the MVRPC Technical Advisory Committee for review, and then the MVRPC Board of Directors for consideration for adoption. Updates approved by the MVRPC Board of Directors will be incorporated into the plan document, maintaining a single current plan report. The updated plan will be forwarded to Ohio EPA for state-level certification and incorporation into the state water quality management plan.

10.5 MVRPC RECOMMENDATIONS

During the 2010-2011 plan update process, MVRPC staff developed a policy suggested by some DMAs regarding modifications to Facility Planning Areas based on property annexation. The proposed policy was evaluated by the AFPSC and determined to conflict with MVRPC planning policies. Therefore, adoption of the proposed policy was not pursued.

Clarifying statements have been developed by MVRPC to the current Facility Planning Policies as follows:

- ORC 6117 and 6119 Sewer Districts can be useful tools for delivering sanitary services to areas in need of sewers and/or needing to disconnect from failing or underperforming on-site septic systems. Designated Management Agencies operating wastewater treatment facilities are encouraged to enter into satellite sewer services agreements to treat wastewater collected by sewer systems operated by 6117 and 6119 Sewer Districts, provided such arrangements can meet Ohio EPA permitting requirements. 6117 and 6119 Sewer Districts that have undertaken engineering planning for sewer design and financial planning for construction and long term operation and maintenance of a sewer system shall be given serious consideration for such satellite sewer service agreements.

- The Ohio Revised Code specifically anticipates the possibility that an area served by 6117 Sewer Districts may be annexed by a municipal corporation, and provides suggested mechanisms for compensating the Sewer District for infrastructure investments. See ORC section 6117.05. For this reason, anticipated or desired annexations should not discourage Designated Management Agencies from entering into satellite sewer service agreements with 6117 Sewer Districts. Rather, because future annexation interests are protected, priority should be given to delivery of sanitary services.

- MVRPC will coordinate with the Ohio Kentucky Indiana (OKI) Planning Commission and/or Ohio EPA to ensure issues involving FPAs that overlie County boundaries and extend beyond the MVRPC areawide planning area will be appropriately addressed by all necessary planning agencies.

11.0 Prescriptions and Recommended Actions

A key element of a 208 WQMP is the list of **Prescriptive Actions**. In Ohio EPA's *"New Water Quality Management Plan Framework,"* the Agency defines Prescriptions as:

> **"Prescriptions for wastewater treatment** - The wastewater management option(s) agreed upon by local communities and the agency responsible for the 208 plan and included in the 208 plan. Prescriptions should be based upon up-to-date planning information and represent current judgments about: when and where central sewer service will be provided within a defined geographic area; through what means; and by which management agency(ies)."

As noted above, Prescriptions are primarily related to when and where sewer service will be provided. Typically, this may be different for a County than for a City. As an example, most counties will permit septic systems to be installed where many municipal corporations will not.

Ohio EPA utilizes the Prescriptive Actions incorporated in the Miami Valley 208 Plan which are adopted into the Statewide Water Quality Management Plan when reviewing requests for permits for new commercial, industrial or residential development.

This section provides a brief overview of the prescriptions and recommended actions developed by the DMAs within the Miami Valley Region.

11.1 PRESCRIPTIONS

In the State WQM Plan and Areawide 208 Plans, specific prescriptions can be associated with a defined Facility Planning Area and DMA who is responsible for wastewater planning, construction, operation and maintenance. Specific prescriptions are utilized to set limits on wastewater infrastructure development. When proposed sewer and/or treatment plant projects are in conflict with the prescriptions, NPDES permit and permit-to-install applications will be denied by the Ohio EPA until the application is amended to achieve consistency and/or the 208 Plan is amended.

Generic prescriptions provided in the State WQMP that are described in Section 3.2.7 of this Plan continue to apply to the Miami Valley Region planning area.

Specific Prescriptive Actions assigned by Greene County are included in Appendix E.

11.2 RECOMMENDATIONS

In addition to Prescriptive Actions, this 208 Plan includes recommendations for activities or actions that are not directly related to Ohio EPA permit approval. The following summarizes recommendations developed by MVRPC. Ohio EPA's TMDL-related recommendations are listed in Appendices A-E.

11.2.1 Support Nonpoint Source Pollution Prevention and Abatement

- Miami Valley jurisdictions are encouraged to use fully the management tools and components of the storm water management program to minimize urban storm water impacts on surface waters.
- Watershed action planning is a critical component of the State of Ohio's nonpoint source management strategy. MVRPC will participate in opportunities to collaborate with partners in the development of new or updated watershed action plans in the Miami Valley.

11.2.2 Support Agricultural Pollution Abatement and Land Conservation and Preservation Efforts

- Local government officials are encouraged to support the work performed by the SWCDs to achieve 208 Plan objectives.
- Communities with WWTP are encouraged to contribute to the Water Quality Credit Trading Program as managed by the Miami Conservancy District.
- The SWCDs and local OSU Extension Offices should continue to promote available federal programs for conservation practices and arrange educational programs for the agricultural community.
- Cooperation between the SWCD, OSU Extension Offices and local grassroots organizations is needed to help Agricultural Producers further reduce nonpoint source pollution.
- All Livestock Producers should be encouraged by the SWCDs and OSU Extension Offices to develop Comprehensive Management Plans through the local SWCD office or appropriate private consulting organization.
- All livestock farmers should be encouraged to have manure management, pest management, dead animal disposal plans and emergency response plans. Fencing livestock from the creeks should also be encouraged. Grain farms should also have emergency response and nutrient management plans. Many programs require a conservation plan to be prepared before signing up for government programs, but these plans should be encouraged for all farm operations. Timely response to setting up these plans by the required agency should also be considered. Seminars and articles in local newspapers and newsletters should promote this awareness and encourage voluntary participation.
- Many acres in the Miami Valley Region are not farmed by the landowner. Farmers may not have the ability to implement conservation practices on the ground that they rent as part of their operation. An effort should be made to promote management practices to the absentee landlord. This might be accomplished by ensuring that information is passed to them by the renter or by direct mailing from agricultural agencies to absentee landlords.
- Large animal farms in the Region which qualify for permit to operate, permit to install or general permit to operate are operations over 1,000 animal units and fall under the jurisdiction of the Ohio Department of Agriculture; while Ohio EPA retains authority for NPDES permits when animal units are greater than 1,000 and/or discharge into a stream or ditch. Communication and cooperation between operators, local government officials, SWCDs, OSU Extension, Farm Bureau, ODA and Ohio EPA is important.

11.2.3 Support Management of On-Site Treatment Systems

- Watershed-level prioritization of OSTS areas of concern needs to be developed to maximize effectiveness of resources.
- MVRPC should review existing policies related to any approved statewide OSTS rule revisions that may occur in the future.

11.2.4 Support Groundwater Protection Efforts

- Update potential pollution source inventories.
- Communities should work toward completing an endorsed Source Water Protection Plan.

11.2.5 Clarifying Statements for Current Facility Planning Policies

- ORC 6117 and 6119 Sewer Districts can be useful tools for delivering sanitary services to areas in need of sewers and/or needing to disconnect from failing or underperforming on-site septic systems. Designated Management Agencies operating wastewater treatment facilities are encouraged to enter into satellite sewer services agreements to treat wastewater collected by sewer systems operated by 6117 and 6119 Sewer Districts, provided such arrangements can meet Ohio EPA permitting requirements. 6117 and 6119 Sewer Districts that have undertaken engineering planning for sewer design and financial planning for construction and long term operation and maintenance of a sewer system shall be given serious consideration for such satellite sewer service agreements.
- The Ohio Revised Code specifically anticipates the possibility that area served by 6117 Sewer Districts may be annexed by a municipal corporation, and provides suggested mechanisms for compensating the Sewer District for infrastructure investments. See ORC section 6117.05. For this reason, anticipated or desired annexations should not discourage Designated Management Agencies from entering into satellite sewer service agreements with 6117 Sewer Districts. Rather, because future annexation interests are protected, priority should be given to delivery of sanitary services.
- MVRPC will coordinate with the Ohio Kentucky Indiana (OKI) Planning Commission and/or Ohio EPA to ensure issues involving FPAs that overlie County boundaries and extend beyond the MVRPC areawide planning area will be appropriately addressed by all necessary planning agencies.

MVRPC has developed a list of available resources and wastewater improvement funding opportunities (**Appendix Q**)

11.3 CONCLUSIONS

This Areawide Water Quality Management Plan for the Miami Valley provides a comprehensive listing of policies and programs for the protection of high quality surface water resources and the improvement of impaired waters. It condenses work by the Miami Valley Regional Planning Commission and many partner agencies since the 1970s into a single document, and will serve, upon adoption, as the base plan (208 Plan) for the purposes of consistency reviews and detailed facility planning (201 Planning).

MVRPC staff will, with the guidance of the Facility Planning Subcommittee and the approval of the Board of Directors, maintain and update this plan to reflect evolving priorities, new or updated regulatory requirements, and any new or enhanced funding opportunities.