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Date: October 13, 2021

From: MVRPC Staff

Subject: Proposed text and map updates to the Areawide Water Quality Management Plan

The following document is an excerpt from the full text of the Areawide Water Quality Management Plan (AWQMP) for the Miami Valley. The excerpt includes the full texts of:

- Chapter 10: Wastewater Collection and Treatment Systems Planning
- Appendix A: Darke County

Using red print and strikethrough, the text includes proposed updates to the plan to reflect local decisions made in the Village of Wayne Lakes to design, construct, operate and maintain a wastewater collection system for the Village and to contract for wastewater treatment services with the Village of New Madison.

Maps within the plan document have also been updated to reflect the proposed boundaries of a new Facility Planning Area for the Village of Wayne Lakes.

Together, these proposed text and map updates comprise a proposed amendment to the AWQMP, which is being made available for public review and comment during a thirty-day period between **Monday**, **October 25**, **2021 and Tuesday**, **November 23**, **2021**.

Under designation from the Governor of Ohio, MVRPC is responsible for water quality planning in a five-county region including Darke, Greene, Miami, Montgomery and Preble Counties. The Areawide Water Quality Management Plan is the guiding document of that planning effort. The full current text of the AWQMP is available on the MVRPC website here: <u>https://www.mvrpc.org/environment/water-quality-management/areawide-water-quality-management-plan</u>.

Questions or comments about this proposed amendment, or MVRPC's water quality planning program may be directed to Matt Lindsay, MVRPC's Manager of Environmental Planning at <u>mlindsay@mvrpc.org</u> or 937.531.6548.

AWQMP Proposed Updates

October 8, 2021 Draft for Public Comment

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 has updated 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 <u>Policy A</u>, 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, 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 options in a surrounding *Facility Planning Area* (FPA). These management options represent current and best understanding about where sewers will be extended and where areas will remain unsewered 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 seven (67) recognized DMAs within the Miami Valley Region. Primary DMAs and associated FPAs are listed by county in **Table 10-1**.

County	DMA	FPA(s)	
	Village of Ansonia	Ansonia/Rossburg	
	Village of Arcanum	Arcanum	
	Village of Burkettsville	Burkettsville/New Weston ²⁵	
	Darke County		
	Darke County General Health District	Darke County Unincorporated	
	Darke County SWCD		
	Village of Gettysburg	Gettysburg (satellite to Bradford)	
Darke	City of Greenville	Greenville	
Darke	Village of New Madison	New Madison	
	Village of North Star	Osgood/Yorkshire/North Star	
	Village of Osgood	Osgood/Yorkshire/North Star	
	Palestine-Hollansburg Sewer District	Palestine-Hollansburg	
	Village of Pitsburg	Pitsburg	
	Village of Union City	Union City	
	Village of Versailles	Versailles	
	Village of Wayne Lakes	Wayne Lakes	

Table 10-1. Miami Valley Region Designated Management Agencies

²⁵ The FPA encompassing the Burkettsville/New Weston area of Darke County which drains to a WWTP located in Mercer County.

	Village of Yorkshire	Osgood/Yorkshire/North Star	
	Village of Camden	Camden	
	Village of College Corner	College Corner ²⁶	
	City of Eaton	Eaton	
	Village of Eldorado	Eldorado	
	Village of Gratis	Gratis	
	Lakengren Water Authority	Lakengren	
	Village of Lewisburg	Lewisburg	
Preble	Village of New Paris	New Paris	
	Preble County		
	Preble County General Health District	Preble County Unincorporated	
	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	
	Village of Bradford	Bradford	
	Village of Covington	Covington	
	Village of Laura	Laura/Potsdam/Ludlow Falls	
	Miami County	Bethel Township, Fletcher, Southwest Bethel Township Service Area, Miami County Unincorporated, Tri-Cities	
Miami	Miami County Health District	Miami County Unincorporated	
	Miami County SWCD	Mianii County Onincorporated	
	City of Piqua	Piqua	
	Village of Pleasant Hill	Pleasant Hill	
	City of Tipp City	Tri-Cities	
	City of Troy	Troy	
	Village of West Milton	West Milton	
	City of Brookville	Brookville	
	Village of Carlisle	Franklin	
	Clark County	Clark County Southwest Regional ²⁷	
Montgomery	City of Dayton	Dayton	
	Dayton and Montgomery County Board of Health	Montgomery County Unincorporated	
	City of Englewood	Englewood	
	Village of Farmersville	Farmersville	

 ²⁶ The College Corners FPA drains to a WWTP located in the state of Indiana.
 ²⁷ Clark County Southwest Regional Facilities Planning Area also includes area in Greene County

	City of Germantown	Franklin	
	City of Huber Heights ²⁸	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	
	Tri-Cities North Regional Wastewater Authority	Tri-Cities	
	City of Union ²⁹	Union	
	City of Vandalia	Tri-Cities	
	City of West Carrollton	West Carrollton	
	Village of Bowersville	Bowersville	
	City of Fairborn	Fairborn	
	Greene County	Sugarcreek ³⁰ , Beavercreek, Cedarville, Clifton, Greene County Unincorporated	
Greene	Greene County Combined Health District	Groops County Unincorporated	
	Greene County SWCD	Greene County Unincorporated	
	Village of Jamestown	Jamestown	
	City of Xenia	Xenia	
	Village of Yellow Springs	Yellow Springs	

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 10-2.

 ²⁸ Huber Heights is a city in Montgomery and Miami Counties
 ²⁹ Union is a city in Montgomery and Miami Counties
 ³⁰ Sugarcreek FPA extends into Montgomery and Warren Counties.

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

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 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.

Table 10-2.	State WQM Plan	Facility Planning	Guidelines
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10.2.1 Facility Planning Areas/Service Areas

As stated in its <u>Water Quality Management Plan Framework</u>, 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 <u>Guidance for Preparing a Facility Plan</u>, 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. Such anticipated growth should 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 <u>Areawide Wastewater Facility</u> Planning <u>Policies</u> 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.

A list of the satellite/service agreements in place in the Miami Valley Region is provided in **Table 10-3**.

Primary DMA	Satellite DMA/Agreement
Village of Ansonia	Village of Rossburg
Village of Bradford	Village of Gettysburg
City of Dayton	Village of Phillipsburg, City of Vandalia
Clark County Sanitary Engineer	City of Huber Heights, Miami County (Brant Area and Phonton Bethel Township)
Greene County	Clark County (re: Clifton WWTP), City of Kettering (Eastern Regional WRF), and Montgomery County
Village of Jamestown	Greene County (Shawnee Hills)
Lakengren Water Authority	Preble County (Sanitary Landfill)
Miami County	Village of Casstown, Village of Fletcher, Village of Pleasant Hill, City of Tipp City, Tri-Cities North Regional Water Authority(southwest Bethel Township), City of Troy
City of Miamisburg	Montgomery County Environmental Services
Village of New Madison	Village of Wayne Lakes (Wayne Lakes)
City of Piqua	Brown Township (Miami County), Village of Fletcher (Miami County), Monnin Estates (Miami County), Greens of Springcreek & Piqua Country Club
Tri-Cities	City of Huber Heights, City of Tipp City, City of Vandalia
West Carrollton	Montgomery County Environmental Services (Western Regional)
City of Xenia	Central State University

Table 10-3.	Satellite/Service Agreements in the Miami Valley Region
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<u>Policy B</u>, Facility Planning Area Boundaries, includes a prohibition of overlapping FPAs and a provision for actions to be taken when boundary conflicts arise. <u>Policy C</u>, 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 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 are submitted to be included in the updated regional Facility Planning Areas map:

Ansonia

 Clark County Southwest Regional

- Fairborn
- Huber Heights

BethelBrookville

• Eaton

Miamisburg

- New Paris Trov Xenia •
- Piqua
- Tri-Cities •

Union

Verona

Upon adoption of the updated 208 Plan by the MVRPC Board of Directors, these FPA boundaries will be incorporated into the master FPA map maintained by MVRPC.

The current (April 2011) 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 10-5 as described in Table 10-4.

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

Table 10-4. Facility Planning Area Maps by County

Table 10-5 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.

County	Number of FPAs	Area within FPA (sq. mi.)	Total Area in County (sq. mi.)	% County Area within FPA
Darke	10<u>13</u>	55 63	600	9.2<u>10.6</u>
Greene	9	198	416	47.5
Miami	8	180	410	44.0
Montgomery	13	354	465	76.0
Preble	11	45	427	10.6
Total	5 1 <u>54</u>	832<u>840</u>	2,318	35.9% <u>36.2%</u>

Current Facility Planning Areas within the Miami Valley Region³¹ Table 10-5.

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

³¹ The difference in the number of DMAs and FPAs are due to Preble County Sanitary Districts No. 2 and 3 not having identified FPAs and the City of Xenia FPA being served by two WWTPs. Additionally, two DMAs are located within multiple counties.

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.

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. <u>Policy D</u>, Development of Local Wastewater Management Options, details the categories into which each FPA is to be subdivided according to the type of wastewater treatment in existence, proposed and/or predicted. 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.



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

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.

10.2.4 AWQMP Consistency Reviews

<u>Policy E</u>, 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, and
- 3. Conforms to accepted regional population projections.

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

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: <u>http://www.epa.state.oh.us/dsw/pti/index.aspx.</u>

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

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 Upper Little Miami TMDL Implementation Group) 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 Plan update process, MVRPC staff developed a policy 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 onsite 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.

Appendix A. Darke County

A.1 DESCRIPTION AND LOCATION

Darke County is located in the northwest portion of the Miami Valley Region as shown in **Figure A-1** and encompasses approximately 600 square miles, or 26% of the planning area.



Figure A-1. Darke County Location Map

Land use within Darke County is predominately rural, with over 80% of the land used for agricultural production. Darke County has the second highest concentration of animal feeding operations (AFOs) in Ohio. The County is characterized by small villages and wide open spaces. There are also several natural open spaces along stream corridors designated for recreational use and wildlife preservation.

A.1.1 Communities in Darke County

Although Darke County includes several communities, it is not heavily populated. The most recent 20-year projections indicate that the population in Darke is expected to remain constant. Although the population projections indicate overall growth in Darke County over the next 20 years, the population within the Stillwater River watershed in the county is not anticipated to change significantly. The administrative boundaries within this area are listed in **Table A-1**.

Townships		Incorporated Communities			
Adams	Neave	Liberty	Ansonia	Greenville	Versailles
Allen	Patterson	Mississinawa	Arcanum	North Star	Wayne Lakes
Brown	Richland	Wayne	Bradford (portion)	Osgood	Yorkshire
Franklin	Van Buren	York	Burkettsville/New Weston	Rossburg	
Greenville	Wabash	Washington	Gettysburg	Union City	
Jackson		•			-

Table A-1.	Administrative Boundaries within Darke County
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Watershed groups that are active in Darke County are listed in Table A-2.

Watershed Group	Watershed(s)
Grand Lake/Wabash Watershed Alliance	Grand Lake and Wabash River
Loramie Valley Alliance	Loramie Creek Watershed
Miami Conservancy District	Great Miami River Watershed
Stillwater Watershed Project	Stillwater River
Three Valley Conservation Trust	Fourmile, Sevenmile, Twin and Indian Creek Valleys
Twin Creek WAP	Twin Creek

Table A-2. Watershed Groups in Darke County³²

A.1.2 Other Watershed-Related Groups in Darke County

The following organizations and special districts are located and/or operate within Darke County:

- Darke County Parks: Alice Bish Park, Coppess Nature Sanctuary, Preserve, Eidson Woods Preserve, Prairie Ridge Park, Routzong Preserve, Shawnee Prairie Preserve, Tecumseh Point, Turkeyfoot Preserve, Winterrowd Wetland, Worth Family Preserve
- ODNR Drew Woods State Nature Preserve
- Miami University Institute of Environmental Sciences
- Ohio State University Extension Service
- Darke County Soil and Water Conservation District (SWCD)
- Darke County General Health District (GHD)
- Miami Valley Regional Planning Commission
- Miami Conservancy District

The Miami Conservancy District's trading program operates within Darke County and focuses on reducing nitrogen and phosphorous.

A.2 WATER RESOURCES

Major streams in Darke County include the Stillwater River that flows from its headwaters in Indiana and northern Darke County to a confluence with the Great Miami River in Dayton. The Stillwater River flows in a generally eastward direction through Darke County into western Miami County where it turns southward to Montgomery County. The major tributaries to the Stillwater River include Greenville Creek, Ludlow Creek, Painter Creek, Swamp Creek and North Fork Stillwater Creek. ³³ The northwest corner of Darke County is drained by the Wabash River and Mississinawa River. **Figure A-2** provides an overview of the water resources in Darke County. Lakes in Darke County include the Wabash Conservancy District Structure Reservoir and Sugar Valley Lake.

³² http://ohiowatersheds.osu.edu/groups/wgp_county.php?county=Darke

³³ OEPA Stillwater River Watershed TMDL 2010

A.3 LOCAL ON-SITE SEWAGE TREATMENT SYSTEM ISSUES

In the Ohio Department of Health report "Survey of Household Sewage Treatment Systems Operation and Failure Rates in Ohio" published in 2008, it was noted that that better septic system management was recommended in the Stillwater River, Twin Creek and Wabash River watersheds in Darke County.

In 2008, the Darke County GHD received a 3-year U.S.EPA Section 319 grant to develop a detailed inventory of the location and performance of on-site systems in the county and to upgrade some failing systems. An HSTS plan for the county was developed to make the county eligible for the linked deposit program. **Figure A-3** shows the location of HSTSs in Darke County.

As reported in Ohio EPA's 2009 Stillwater River TMDL Report, septic systems impact water quality in the Stillwater River watershed (which includes a significant amount of area in Darke County) through failed, faulty, or discharging systems and improper disposal of septage from septic systems. Implementation actions to address these sources of pollution would include oversight of septic tank waste haulers, identification of faulty septic systems, elimination of onsite septic systems through extension of municipal sanitary sewers, and public education about septic system maintenance.

Localized areas of concern as noted by the Darke County General Health District, Darke County SWCD and Ohio EPA are briefly described in the following sections.

A.3.1 Village of Castine

While 2000 Census data indicated that there were 46 households in the Village of Castine, Darke County GHD records indicate that only 38 permits were issued for the area. Of those permits, two were for churches (leachfields) and the remaining permits were issued to individuals. It is assumed that there are at least 10 homes without permits that are likely tank to tile systems with no secondary treatment of waste.

Existing subsurface sand filters, tank to tile systems, aerators and drywells do not meet Ohio EPA discharge standards. There are approximately 25 homes that are not meeting Ohio EPA discharge standards, equating to approximately 10,000 gallons per day of untreated sewage entering Twin Creek. Most of the leach beds are older systems with very small tanks and small leach beds. It is not known how well these systems are working or whether they have been illegally tied into the storm sewer. The majority of these homes are on very small lots that do not have adequate space for septic system installation or replacement.





Figure A-3. Home Sewage Treatment Systems in Darke County

A.3.2 Harrison and Liberty Township

There are 92 homes along the force main route including Hollansburg Arcanum Road, Richmond Palestine Road, and Mills Road. The Darke County GHD records show there are 72 permits for HSTS for these homes. There are at least 20 homes without permitted HSTS that are likely tank to tile systems with no secondary treatment of waste.

Existing subsurface sand filters, tank to tile systems, aerators and drywells do not meet Ohio EPA discharge standards. Consequently, there are approximately 47 homes that are not meeting Ohio EPA discharge standards. This equates to approximately 18,800 gallons per day of untreated sewage based upon an estimate of 400 gallons per day per home into Lake and West Branch, which flow to Greenville Creek. Several of the leach beds are older systems with very small tanks and small leach beds. It is not known how well these systems are working or whether they have been illegally tied into field tile.

Twenty-seven (27) properties along the proposed force main routes encompass less than 2.5 acres and 62 properties encompass less than 10 acres each.

A.3.3 Glen Karn Area

Census data from the year 2000 indicated that there are 27 households in the Glen Karn area. Darke County GHD records show that 18 HSTS permits were issued for this area. Of the permits, one was issued to a local business (1 leach bed), and the remaining permits were issued to individuals. Therefore, it is assumed that there are at least 9 homes without permits that are likely tank to tile systems with no secondary treatment of waste.

Existing subsurface sand filters, tank to tile systems, aerators and drywells do not meet Ohio EPA discharge standards. Consequently, there are approximately 17 homes that are not meeting Ohio EPA discharge standards. This equates to approximately 6,800 gallons per day of untreated sewage based upon an estimate of 400 gallons per day per home into East Fork of the Whitewater River. Most of the leach beds are older systems with very small tanks and small leach beds. It is not known how well these systems are working or whether they have been illegally tied into the storm sewer. Most of these homes are on very small lots that do not have adequate room for septic system installation or replacement.

A.3.4 Village of Palestine

Census data from 2000 indicated that there were 73 households within the Village of Palestine. Darke County GHD records indicate that there are 40 permits for the area. Of these permits, three are for the Palestine Recreation Park (2 privies and 1 leach bed), one was issued to the Church of Palestine (subsurface sand filter), and one to the Liberty Township Fire House (subsurface sand filter), and the remainders were issued to individuals.

Existing subsurface sand filters, tank to tile systems, aerators and drywells do not meet Ohio EPA discharge standards. Consequently, there are approximately 45 homes that are not meeting Ohio EPA discharge standards. This equates to approximately 18,000 gallons per day of untreated sewage based upon an estimate of 400 gallons per day per home into Spring

Branch, which flows to West Branch of Greenville Creek. Most of the leach beds are older systems with very small tanks and small leach beds. It is not known how well these systems are working or whether they have been illegally tied into the storm sewer.

Palestine and Hollansburg are working together to develop a regional solution.

A.3.5 Village of Wayne Lakes

In 2000, U.S. Census data indicated that there were 307 households within the Village of Wayne Lakes. Darke County GHD records indicate that 324 HSTS permits were issued for the Village. Many of the systems were initially holding tanks, but now discharge directly to the Lakes. There are many small septic tanks with approximately 200 lineal feet of leaching trench or small septic tanks followed by drywells. As Wayne Lakes was formally a gravel pit, the effluent passes through the soil too quickly for adequate treatment and leaches to the Lakes. The Lakes flow into Mud Creek, which then flows into Greenville Creek. Water quality impacts have been observed in the Lakes.

Existing subsurface sand filters, tank to tile systems, aerators and drywells do not meet Ohio EPA discharge standards. According to the GHD, there are approximately 136 homes that are not meeting Ohio EPA discharge standards. This equates to approximately 54,400 gallons per day of untreated sewage based upon an estimate of 400 gallons per day per home into Mud Creek. Most of the leach beds are older systems with very small tanks and small leach beds. It is not known how well these systems are working or whether they have been illegally tied into the lakes. Most of the homes in the area are located on very small lots that do not have adequate space for septic system installation or replacement.

In 2020 and 2021 the Village of Wayne Lakes worked with Darke County, Village of New Madison and other funding partners to plan and design a sanitary sewer system for the village. The plan includes a septic tank effluent pump (STEP) sanitary sewer collection system, force main and treatment service agreement with the Village of New Madison. By the fourth quarter of 2021 financing applications were submitted as well as the permit to install application to Ohio EPA. The system is expected to be fully implemented by 2025.

A.3.6 Villages of Gordon and Ithaca

As reported in 2000 Census data, there were 78 households in the Village of Gordon and 28 households in the Village of Ithaca. Darke County GHD records indicate that 59 permits were issued for the Village of Gordon and 38 in the Village of Ithaca. Of those permits, two were issued for commercial properties (1 aerator with upflow filter, 1 leachfield), three were issued to churches (2 subsurface sand filters, 1 leachfield), one for the cemetery (1 subsurface sand filter) and the remainder of permits were issued to individuals. Therefore, it is assumed that there are at least 25 homes without permits that are likely tank to tile systems with no secondary treatment of waste.

Existing subsurface sand filters, tank to tile systems, aerators and drywells do not meet Ohio EPA discharge standards. According to the GHD, there are approximately 57 homes that are not meeting Ohio EPA discharge standards. This equates to approximately 22,800 gallons per

day of untreated sewage based upon an estimate of 400 gallons per day per home into Millers Fork. Most of the leach beds are older systems with very small tanks and small leach beds. It is not known how well these systems are working or whether they have been illegally tied into the storm sewer. The majority of these homes are on very small lots that do not have adequate space for septic system installation or replacement.

Gordon and Ithaca are working together to develop a regional solution.

A.3.7 Villages of Yorkshire, Osgood and North Star

Currently, the villages of Yorkshire, Osgood and North Star in northern Darke County have no central sewer service. Due to the age of most of the properties, most of the sewage systems will not meet current health department standards. Replacing failing systems with new systems is not an option in most cases, as most of the lot sizes are not large enough to allow for a modern on-site wastewater disposal system configuration.

All three villages are currently developing plans to install central sewer systems, and are working together to construct a lagoon-type WWTP. The proposed treatment plant would receive the wastewater from the three villages, along with a portion of the surrounding areas outside of village limits. The proposed facilities are depicted in **Figure A-5**. The proposed collection system and WWTP projects are needed to abate a long standing environmental hazard, where inadequately-treated wastewater is ultimately discharged to an unnamed tributary in the Upper Loramie Creek Watershed.



Figure A-5. Proposed Regional Wastewater Facilities to Serve North Star, Osgood and Yorkshire Villages in Darke County ³⁴

A.4 PUBLIC WASTEWATER TREATMENT MANAGEMENT AGENCIES

A listing of the FPAs, DMAs and municipal WWTPs within Darke County is presented in **Table A-3**. The locations of FPAs, existing municipal point sources, sensitive groundwater aquifer, and other unique features of Darke County are shown in **Figure A-6**.

³⁴ Ohio EPA, Draft Finding of No Significant Impact, Village of Yorkshire Sanitary Sewer System, August 27, 2010.

Facilities Planning Area (FPA)	Primary DMA			Area(s) Serviced	Design	Ave. Dailv	
	Owner / Operator	Wastewater Designation	Secondary DMA(s)	(p = portion)	Capacity (mgd)	Flow (mgd)	Receiving Waterway
Ansonia/Rossburg	Village of Ansonia	Ansonia Sewage Treatment Plant	Village of Rossburg	Village of Ansonia, Village of Rossburg	0.35	.047	Stillwater River
Arcanum	Village of Arcanum	Arcanum Sewage Treatment Plant		Village of Arcanum	0.4	x	Sycamore Ditch to Painter Creek
Burkettsville/New Weston	Village of Burkettsville	n/a					
Darke County Unincorporated	Darke County	Stillwater Golf Estates Wastewater Treatment Works			х	x	Unnamed Tributary of the Stillwater River
		Rolin Acres Subdivision			x	x	Boyd Creek
	Darke County General Health District						
	Darke County SWCD						
Gettysburg	Village of Gettysburg						
Greeneville	City of Greeneville	Greeneville WWTP		City of Greeneville	3.5	2.2	Greeneville Creek
New Madison	Village of New Madison	New Madison Sewage Treatment Plant	<u>Village of Wayne</u> <u>Lakes</u>	Village of New Madison	0.13	x	East Fork of the Whitewater River
Osgood, Yorkshire, North Star	Village of Osgood	Osgood WWTP	Village of North Star Village of Yorkshire	Villages of Osgood, North Star, Yorkshire	0.122	x	Brandewie Ditch
Palestine-Hollansburg	Palestine-Hollansburg Sewer District		Village of Palestine Village of Hollansburg	Villages of Paletine and Hollansburg, Glen Karn			
Pitsburg	Village of Pitsburg	Pitsburg Wastewater Treatment Works		Village of Pitsburg	0.095	x	Ludlow Creek
Union City	Village of Union City	Union City Wastewater Treatment Works		Village of Union City	x	x	Unnamed Tributary of Gray Branch
Wayne Lakes	Village of Wayne Lakes	New Madison Sewage Treatment Plant		Village of Wayne Lakes (collection only)	<u>n/a</u>		East Fork of the Whitewater River
Versailles	Village of Versailles	Versailles Sewage Treatment Plant		Village of Versailles	3.5	0.75	Swamp Creek

Table A-3	Summary of FPAs_DMAs_and WWTPs in Darke County
Table A-3.	Summary of FFAS, DWAS, and WWWIFS in Darke County



Figure A-6. Locations of Darke County FPAs and WWTPs

A.5 OTHER PERMITTED POINT SOURCES

The facilities listed in **Table A-4** have been issued NPDES permits to discharge wastewater in Darke County.

Type of Discharge	Facility				
Minor	Arrowhead Campground				
Industrial	Shamrock Materials Ft Jefferson Limestone				
Minor	Sherwood Forest MHP				
Minor	Darke Co Home				
Minor	Darke Co Criminal Justice Center				
Industrial	Markwith Tool Co Inc.				
Minor	Greenville Country Club				
Industrial	Foureman Sand & Gravel Inc.				
Minor	Wildcat Woods Campground				
Minor	Northtowne Apartments				
Minor	Woodland Heights Elem School				
Minor	Stillwater Golf Estates				
Minor	Mississinawa Valley Local School District Office				
Minor	Cottonwood Lakes Campground				
Minor	Midwest Poultry Service Sunny Side Farms				

Table A-4. Industrial and Minor Wastewater Dischargers in Darke County

A.6 DARKE COUNTY PRESCRIPTIONS

This section summarizes specific actions prescribed by Ohio EPA that are applicable in Darke County.

A.6.1 Ohio EPA Prescribed Actions (Twin Creek TMDL)

The following prescriptions were included in Ohio EPA's 2010 Twin Creek TDML Report:

Manage nutrients in agricultural areas to reduce runoff

- Develop and improve nutrient management plans to address site-specific resource concerns
- Implement NRCS 633 standards for winter application of manure
- Plant winter cover crops to provide manure application sites
- Install tile drainage control structures
- Restore and use wetlands to filter runoff, remove nutrients

Improve erosion and sediment control in all areas

- Practice conservation tillage on row crop farms
- Install filter strips along all agricultural tributaries

- Restore and utilize wetlands to filter runoff and remove sediments
- Establish and protect riparian buffers on streams
- Utilize bank erosion control structures where appropriate

Eliminate bacteria problems

- Improve planning for environmentally sustainable manure management at livestock and poultry production facilities
- Reduce home sewage treatment system failures
- Educate citizens about proper maintenance of home sewage treatment systems

A.7 DARKE COUNTY RECOMMENDATIONS

This section summarizes the specific actions that are recommended by Ohio EPA in Darke County.

A.7.1 Ohio EPA Recommendations (Stillwater River TMDL)

The following is a summary of the regulatory, non-regulatory, and incentive based actions that were included in Ohio EPA's 2010 Stillwater River Watershed TDML Report.

Regulatory:

- Phosphorus limits for specific NPDES dischargers where aquatic life use attainment downstream of the effluent is impaired
- Any new requirements that may be developed for household sewage treatment systems (statewide)
- Sewage sludge disposal standards to regulate sludge application rates (statewide)
- Phase I and II stormwater requirements

Non-Regulatory:

- Incorporation of the recommendations of the Stillwater River Watershed TMDL into the watershed action plan
- The Stillwater Watershed Joint Board of Supervisors to promote the watershed action plan and other activities contributing to the goals of the TMDL project
- Periodic stream monitoring to measure progress
- Removal of the low head dam at Englewood

Incentive-Based:

- 319-funded projects for the entire Stillwater watershed which support the goals of the TMDL
- 319-funded (in part) watershed coordinator to promote watershed improvement activities

- various loan opportunities for WWTP, septic system, agriculture practices and riparian/habitat improvements
- A pilot program to test tying conservation payments to performance standards for reducing loads in impaired stream segments with 10-15 farmers

A.7.2 Ohio EPA Recommendations (Twin Creek TMDL)

The following recommendations were included in Ohio EPA's 2010 Twin Creek TDML Report:

- Failing or poorly operating home sewage treatment systems (HSTSs) should be inspected and improved in rural, urban and developing areas by the county health departments.
- Sediment flowing into streams is a concern in both agricultural and developing areas. Controls include reducing erosion with cover crops or conservation tillage; providing buffers along stream banks; identifying concentrated flow paths from agricultural fields and implementing site-specific practices to reduce sources of sediment and nutrient load; and adopting measures that maintain stream stability during land disturbance activities such as stream drainage maintenance.
- Nutrient loading from livestock operations and agriculture chemicals would be abated by conservation and management practices promoted by the USDA Natural Resource Conservation Service. Suggestions include adoption of phosphorus index and nitrogen index strategies to address nitrogen leaching and phosphorus concentration buildup on agricultural land.
- Agricultural producers are encouraged to buffer streams near crop land using filter strips and streamside vegetation. This will help to filter sediment and nutrients out of runoff and will provide instream shade and habitat to reduce temperatures, thereby increasing dissolved oxygen content and reducing algae blooms.
- Agricultural producers are encouraged to participate in wetland restoration in areas of land that consistently retain water. Wetlands are a natural filtering mechanism for nutrients and sediment.
- Residential, commercial and other urban areas can reduce overland loading of nutrients by practicing better timing and rate of fertilizer application.