

WOOD COUNTY FACILITY PLANNING AREAS

BLOOMDALE - BAIRDSTOWN FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Northwestern Water and Sewer District:** The Villages of Bloomdale and Bairdstown are members of Northwestern Water and Sewer District. The District is responsible for planning public sewerage system, which it owns and operates.

Figure 5-33: Bloomdale-Bairdstown Facility Planning Area

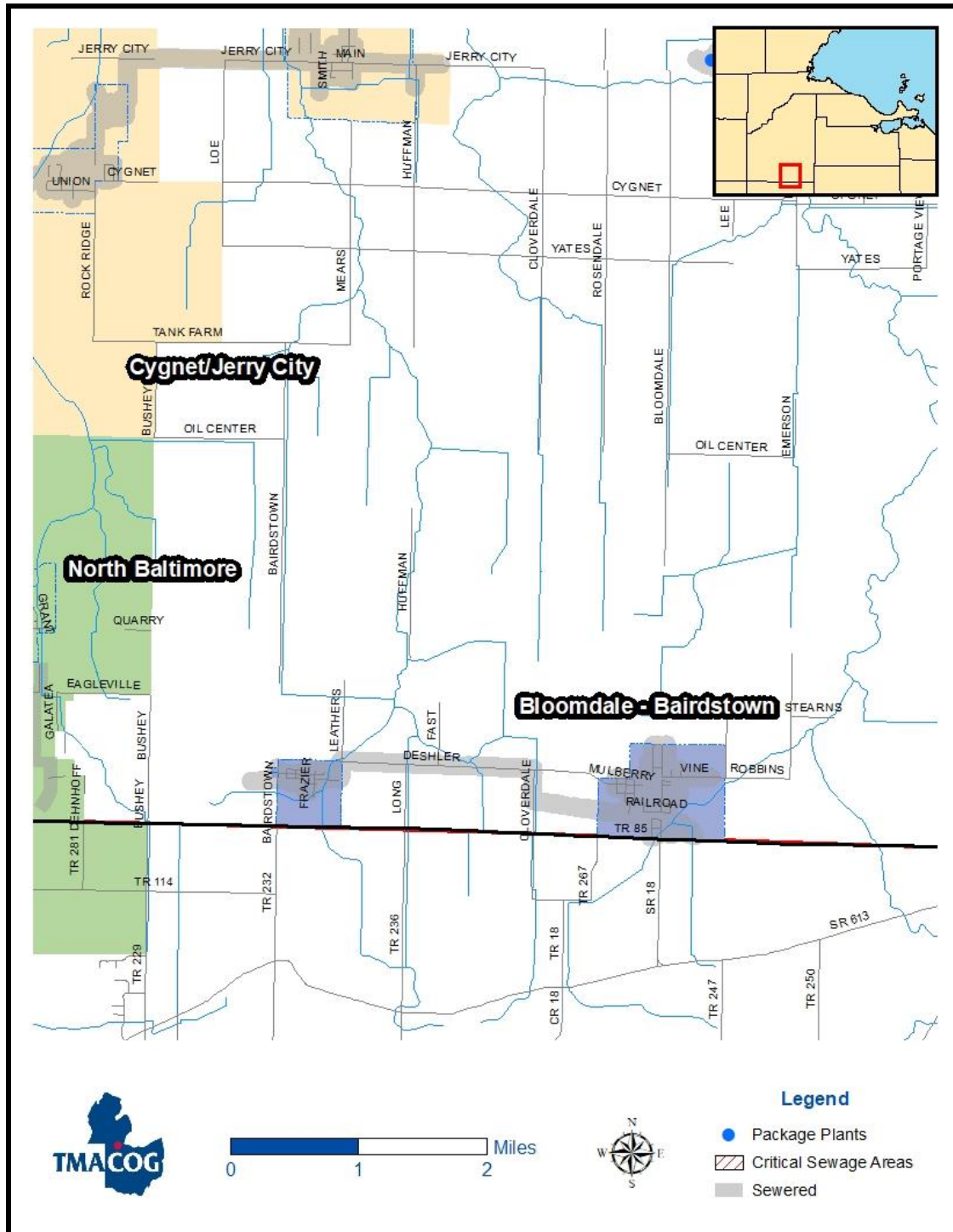


Table 5-80: Bloomdale-Bairdstown Area Population

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Bloomdale, entire jurisdiction	665		
Bairdstown, entire jurisdiction	115		
Estimates within the FPA boundary		148	0.04

The 2020 population numbers in Table 5-80 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The 2017 Bloomdale/Bairdstown Wastewater Treatment Plant is an Activated Sludge System which includes an oxidation ditch, final settling tanks, ultraviolet disinfection and aerated sludge treatment and storage. The sludge treatment provides disposal options for both land application and landfill. Average daily design flow is at 0.100 mgd and the peak flow is at 0.300 mgd. The average daily flow in 2020 to 2021 was 0.082 mgd.

The Bloomdale small diameter gravity sewer collection system was constructed in 1991 and the original wastewater plant, which was also constructed in 1991, has been replaced with the new treatment plant that now includes the Village of Bairdstown.

Northwestern Water and Sewer District constructed a conventional gravity sewer collection system in 2017 to serve the Village of Bairdstown. The gravity sewers flow to a main pump station located on State Route 18, just south of the railroad tracks. A second pump station was constructed to deliver sanitary flow to the Bloomdale sewer collection system. As of March 2017, all of Bairdstown is sewerred and lateral hook ups to homes are complete.

The Bairdstown sewer system cost \$1,985,438 and the joint WWTP cost \$3,020,000. The project was funded by Community Development Block Grant (CDBG) program and U.S. Department of Agriculture (USDA).

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Bloomdale-Bairdstown wastewater treatment plant.

Future Needs

- This Areawide Water Quality Management Plan supports grant funding and other financial assistance to achieve the future goals for the Bloomdale-Bairdstown FPA.
- Lateral hook up to the sanitary sewer installed throughout the Village of Bairdstown.

The capital improvement plan for the Bloomdale-Bairdstown FPA is shown in Table 5-81.

Table 5-81: Bloomdale-Bairdstown FPA Capital Improvement Schedule

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2022	2023	2024	2025	2026	2027	Future
Bloomdale Sanitary Sewer I/I Removal	Northwestern Water and Sewer District	\$50,000					\$50,000		
		\$50,000							

BOWLING GREEN FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **City of Bowling Green:** Owns and operates wastewater treatment facilities, and collection system within the corporate limits.
- **Village of Portage:** Owns the wastewater collection system within the corporate limits; maintenance is conducted by Northwestern Water and Sewer District under contract with the Village.
- **Northwestern Water and Sewer District:** Owns and operates collection systems outside the corporate limits, connecting to the Bowling Green municipal wastewater collection system for treatment services.

[illegible]

Table 5-82: Bowling Green Area Population

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Bowling Green, entire jurisdiction	30,808		
Portage, entire jurisdiction	398		
Center Township, entire jurisdiction*	1,140		
Liberty Township, entire jurisdiction*	1,690		
Plain Township, entire jurisdiction*	1,625		
Portage Township, entire jurisdiction*	1,558		
Estimates within the FPA boundary		7,570	2.08

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-82 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. The unsewered population does not include the areas serviced by package plants; it is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

Bowling Green built its current WWTP in 1982. It is an activated sludge plant facility with tertiary disk filters (2009), auto-thermophilic aerobic digestion (ATAD 2005), ultraviolet disinfection (2010), and a septage receiving station (2005). The City of Bowling Green has developed and implemented an industrial wastewater pretreatment program since 2006. In 2018, the treatment plant expanded the expanded the grit removal capacity to 30 mgd.

The plant uses a centrifuge to dewater Class A biosolids. Currently, a local landscape contractor creates commercial topsoil using the biosolids. The plant has an average design capacity of 10.0 mgd, with a peak capacity of 20 mgd. In 2009 the tertiary sand filters were replaced with 30 mgd cloth disc filter units; a 30 mgd ultraviolet disinfection system was installed in 2010. Ohio EPA data shows an average flow of 5.856 mgd and a peak flow of 29.881 mgd during the period of 2010-2013.

The Bowling Green system includes combined sewers serving an area of 1,940 acres (out of about 5,400 acres for the whole service area). When the wastewater plant was built, an underground combined sewage overflow retention tank was included. The retention tank substantially reduces, but does not completely eliminate overflows. Portage was included in the Bowling Green FPA and was accounted for in sizing the treatment plant. Portage installed sanitary sewers and tapped into the system in 1991.

The east side of the SR 582/SR 25 intersection is served by the Northwestern Water and Sewer District (District) system. It connects to the system via force main following SR 25, Union Hill, and Brim Roads with treatment provided by Bowling Green.

Rudolph, an unincorporated community of about 200 residences in Liberty Township, is served by the District. It connects to the system via force main following Rudolph Rd with treatment provided by Bowling Green. The Rudolph sanitary sewer system was completed in 2003 at a cost of \$2,208,270. The project received CDBG and USDA grants totaling \$1,188,000; the balance of the capital costs will be paid by residents through rates.

There are several package sewage treatment plants in the Bowling Green FPA, two of which are 20,000 gallons per day or larger. The plant serving the Maurer Trailer Park has been identified as a critical sewage area. A recent court decision did not require the Park to be publicly sewered.

The Wood County Landfill is served by the District via force main along Poe Rd with treatment provided by Bowling Green.

Package plants in the FPA are listed in Table 5-83.

Table 5-83: Package Plants in the Bowling Green Facility Planning Area

Package Plant	Map ID	Type	Install or Upgrade Date	NPDES Permit	Capacity, gpd
13611 Klopfenstein Road ^A	WO-105	Private*	1972		1,500
Elmview C.S.A. Apartments (East) ^A	WO-43E	Private*			1,500
Elmview C.S.A. Apartments (West) ^A	WO-43W	Private			1,500
Industrial Services ^A	WO-04	Private*			1,500
Maurer Trailer Park ^A	WO-64	Private	1967, 1969, 2010	2PY00005	30,000
Principle Business Enterprises, Inc. ^A	WO-45	Private*	1976, 1978	No Disch.	1,500

^AStatus is active

*Facility type is assumed

Note: Data are based on current available data as of April 2019

Issues

The FPA covers part of the SR 25 / I-75 corridor. The Wood County Comprehensive Plan identifies this area for employment opportunities and is therefore included in the FPA with a potential for requiring future service. The area is presently rural with no public sewerage facilities in this area, active package plants, or unsewered developed areas.

Combined Sewer Overflows

As noted above in “Present Facilities,” the Bowling Green sewerage system includes an overflow retention tank. In 2006, Ohio EPA required Bowling Green to submit a Long-Term Control Plan (LTCP) to reduce overflows further.

In January 2007, the City of Bowling Green filed its CSO LTCP with the Ohio EPA and submitted a revised plan on or about June 1, 2007.

1. Although the LTCP was submitted by the Ohio EPA's deadline, staff wasn't convinced that the plan left no stone unturned in trying to not only eliminate CSOs, but also addressing wet and damp basement issues for local residents and businesses. As a result, staff began an investigation that included soliciting ideas from multiple engineering firms, reviewing technical documents on the subject and seeking solutions other communities have effectively employed.

The result of this investigation was staff's development of the City of Bowling Green Comprehensive Wastewater Strategy. This document details the requirements of the City's 2006 NPDES permit relating to a CSO LTCP and Sanitary Sewer Overflow (SSO) reporting requirements and also lists goals and objectives for a long-term wastewater strategy for the City.

2. On January 24, 2008, City staff met with Northwest District and Central District Ohio EPA staff to solicit the Agency's reaction to and input on the proposed Comprehensive Wastewater Strategy.

Subsequently to this meeting, the Ohio EPA drafted an NPDES permit modification, effective March 1, 2008, that required upgrades of the clarifiers and the tertiary filters; upgrades of the ultraviolet disinfection system; and reports on characterization of the Wastewater Treatment Plant's increased capacity, characterization of the Storm Water Overflow Holding Basin's capacity, and an evaluation of CSO characteristics including overflow occurrence and volume. These steps were all completed by 2010. The remaining step is an evaluation of the need for additional storage at the Wastewater Treatment Plant to reduce CSO events to four, two, and zero occurrences per year. This evaluation will depend on the effects of the increased flow capacity from the Poe/Mercer Rd pumping station improvements, completed in 2013.

Critical Sewage and Ordered Areas

Several areas in the Bowling Green FPA have been identified as Critical Sewage Areas by the Wood County Health Department and/or Ohio EPA. Additionally, in 2010 Ohio EPA ordered four new areas to receive public sanitary sewers and they should be installed per Ohio EPA schedules.

- **Kramer/Huffman Roads Area:** an Ohio EPA ordered area with failing septic systems that includes about 28-33 houses. The District studied serving the area either by a sewer extension to Bowling Green, and on-site treatment solutions. Both were found to be financially infeasible. The existing systems will be managed under Health Department operation and maintenance requirements.
- **Sugar Ridge/Mercer Roads Area:** an unincorporated community with the adjacent Mercer Road including 75 residences in Center and Middleton Townships. It is about 3.0 miles north of Bowling Green between I-75 and SR 25. The original town of Sugar Ridge lies between the railroad crossing at Sugar Ridge Road on the west and I-75 on the east. More

recent development has spread west along Sugar Ridge Road and north and south along Mercer Road.

There are no wastewater treatment plants in the Sugar Ridge/Mercer Roads area; therefore, sewage is handled by on-site systems. The soils belong to the Hoytville (poorly drained clays) or Millsdale-Randolph-Romeo (shallow limestone bedrock) Associations. Both soil associations have very severe limitations for onsite sewage disposal.

Many of the septic systems in Sugar Ridge are believed to have failed, as evidenced by a severe accumulation of black sludge in the ditch on Sugar Ridge Road. The District is the DMA responsible for executing the Ohio EPA orders, which apply to 55 residences; another 23 are optional and may join the system by petition. The District studied constructing a low-pressure sewer system connecting to Bowling Green for treatment via a force main. This project may not be financially feasible. In 2017, the District completed an income survey that will address the older part of town, and which may qualify for financial help. The Army Corp of Engineers has offered a grant that covers approximately 60% of the project costs. The NWWSO has received their permit to install for this project, and funding allowed for another 33 homes in addition to the 57 homes in the ordered area to have access to sanitary sewers.

Maurer Mobile Home Park: a mobile home park designated as a Critical Sewage Area. It is located just north of Bowling Green and is served by a package plant that discharges to a drainage tile on SR 25. In 2004, this wastewater treatment plant was subject to enforcement action by the Ohio Attorney General. Future changes will be per the court settlement on Ohio EPA's enforcement action.

- **Dunbridge:** an unincorporated community, located at Dunbridge Road and SR 582. There are four package plants in or near the town. Individual residences are served by septic systems. While OEPA has investigated the area, and issued findings and orders to construct sanitary sewer in 2023. at this time Dunbridge is not under orders to construct sewers. Dunbridge is identified as a Critical Sewage Area. Project is under design and construction will take place in 2024-2025.
- **Dowling:** an unincorporated community, located at Dowling Road and Conrail tracks between Dunbridge and Carter Roads. Residences are served by septic systems. Dowling is not under orders to construct sewers. The community is split between the Bowling Green and Perrysburg FPAs. Dowling is identified as a Critical Sewage Area
- **Mermill:** There is no existing documentation of sewage problems in Mermill, which has about 30 residences. No stream testing data is available, but septic system failures are very common in Wood County with houses of similar age and size on similar soils. It may be feasible to install sewers and connect to Bowling Green through Rudolph via force main.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage

treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Bowling Green wastewater treatment plant.

Future Needs

This Plan supports financial assistance for Bowling Green's wastewater facility improvements.

- The District completed a General Plan to eliminate unsanitary conditions for the Sugar Ridge / Mercer Roads area. Ohio EPA orders call for construction of the sewerage system for it by (2015). Funding for this project was secured in 2021 and 2022 from the US Army Corp of Engineers, Ohio Builds and ARPA programs. The Sugar Ridge Sanitary Sewer Project construction will begin in 2022 will be completed in 2023.
- The District completed a General Plan to eliminate unsanitary conditions for the Huffman / Kramer Roads area. Ohio EPA orders call for construction of the sewerage system for it by 2015. However, the system cost has been found not to be affordable. Federal funds have been requested ~~and may be available in 2023.~~

The capital improvement plan for the Bowling Green FPA is shown in Table 5-84.

Table 5-84: Bowling Green FPA Capital Improvement Schedule

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2022	2023	2024	2025	2026	2027	Future
Sugar Ridge / Mercer general plan, sewers	Northwestern Water and Sewer District	3,000,000		\$3,000,000					
Huffman / Kramer general plan, sewers	Northwestern Water and Sewer District	3,500,000				\$2,500,000	<u>\$3,500,000</u>		
Dunbridge Area Sewer	Northwestern Water and Sewer District	2,500,000				<u>\$2,500,000</u>			\$2,500,000
		9,000,000							

BRADNER FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Village of Bradner:** Owns and operates wastewater treatment facilities, and collection system within the corporate limits.
- **Northwestern Water and Sewer District:** Will own and operate portions of the collection system in unincorporated areas of Wood County, connecting to the Bradner system for treatment services.
- **Sandusky County:** Will own and operate, if and when built, portions of the collection system in unincorporated areas of Sandusky County, connecting to the Bradner system for treatment services.

Figure 5-35: Bradner Facility Planning Area

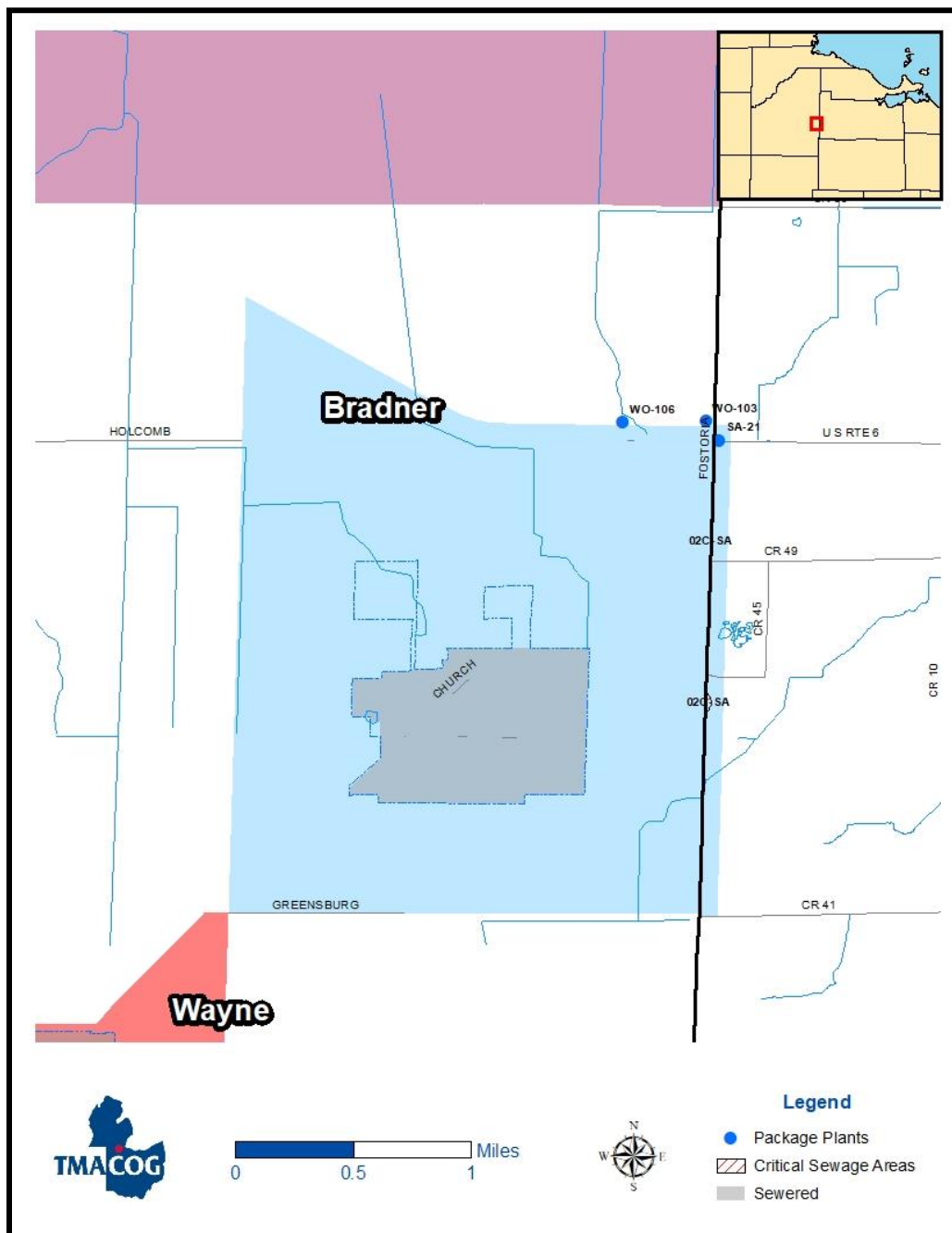


Table 5-85: Bradner Area Population

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Bradner, entire jurisdiction	971		
Montgomery Township, entire jurisdiction*	4,157		
Madison Township, entire jurisdiction*	3,887		
Scott Township, entire jurisdiction*	1,330		
Estimates within the FPA boundary		304	0.08

*only part of this jurisdiction is within the FPA boundary

The 2020 population numbers in Table 5-85 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. The unsewered population does not include the areas serviced by package plants; it is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The Bradner WWTP is a three-cell lagoon facility that was built in 1988. The plant is a controlled discharge lagoon, meaning it does not discharge continuously, nor does it discharge every day. The system uses conventional gravity sewers. The design capacity is 0.13 mgd; Ohio EPA data shows an average flow of 0.238 mgd, and a peak flow of 0.274 mgd on days where discharges occurred during the period of 2004-2009. Daily, the average discharge was 0.71 mgd. In 2009, Bradner received 75% American Recovery and Reinvestment Act (ARRA) funding on a \$389,000 upgrade for five lift stations.

Package plants located in Bradner the FPA are listed in Table 5-86.

Table 5-86: Package Plants in the Bradner Facility Planning Area

Package Plant	Map ID	Type	Install or Upgrade Date	NPDES Permit	Capacity, gpd
Ports Petroleum Fuel Mart #767 ^A	WO-103	Private	1987	2PR00190	4,000
Twin Maples MHP ^A	WO-106	Private		2PY00069	5,000
US 6/23 Retail Sales ^A	SA-21	Private	1973	2PR00202	5,000

^AStatus is active

Note: Data are based on current available data as of April 2019

New Subdivisions

It is the policy of the 208 Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Bradner WWTP.

Future Needs

There are no projects planned for the Bradner FPA at the present.

CUSTAR/MILTON CENTER FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Northwestern Water and Sewer District:** both the Villages of Custar and Milton Center, and Milton Township are members of Northwestern Water and Sewer District. The District is responsible for the planning, ownership and operations of public sewage systems in both incorporated and unincorporated areas.

Figure 5-36: Custar/Milton Center Facility Planning Area

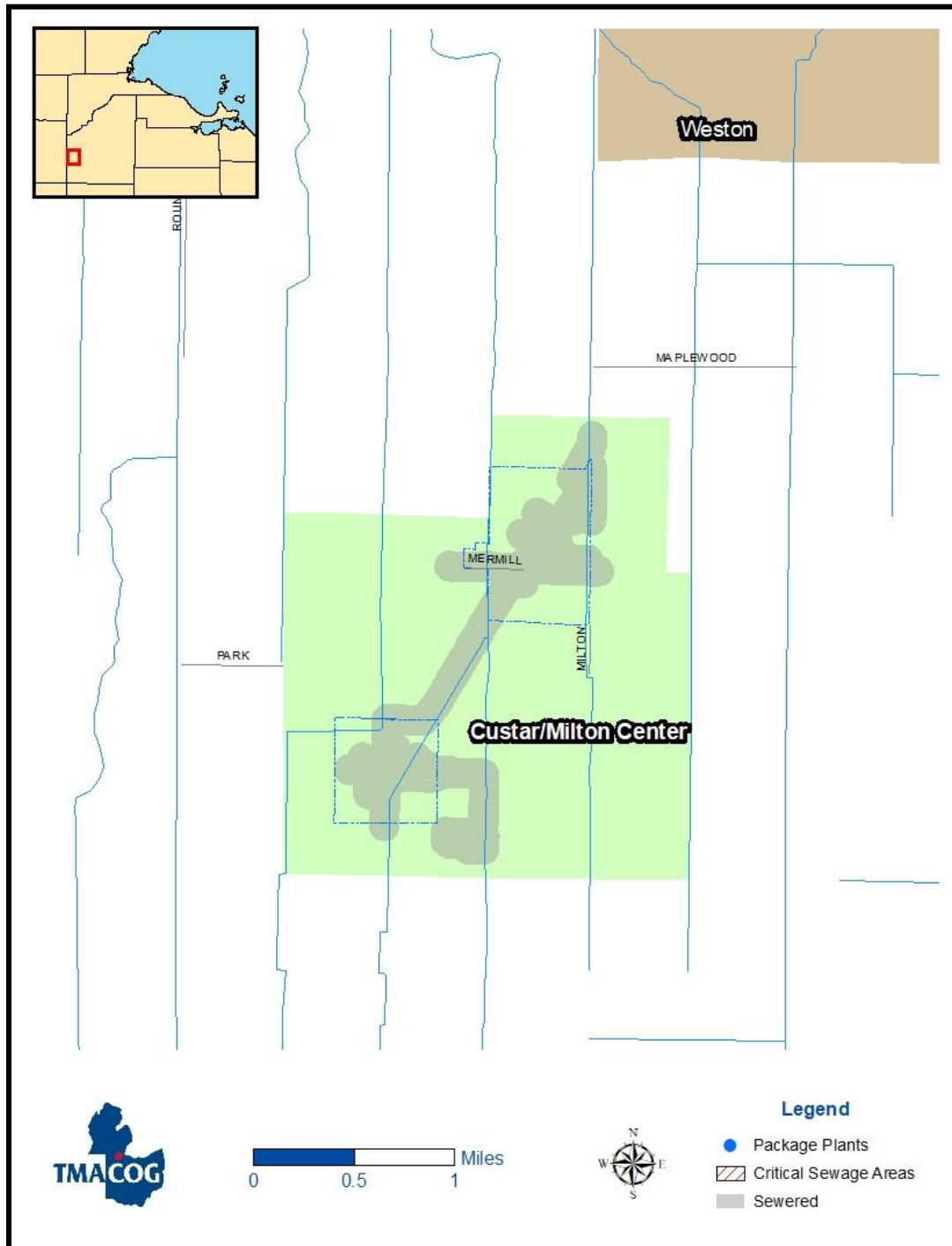


Table 5-87: Custar/Milton Center Area Population

Area	Total Population	Unsewered Population	Phosphorus Load (mta)
Custar, entire jurisdiction	178		
Milton Center, entire jurisdiction	137		
Milton Township, entire jurisdiction*	929		
Estimates within the FPA boundary		163	0.04

*only part of this jurisdiction is within the FPA boundary

The 2020 population numbers in Table 5-87 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

A wastewater collection and treatment system consisting of conventional gravity sewers, a pump station, and a non-aerated facultative controlled discharge lagoon was completed in the Village of Custar in 2006. The plant began serving the Villages of Custar in 2007 and Milton Center in 2008. The wastewater lagoon has a design flow of 0.05 mgd. The lagoon discharged 51 days from 2015 to 2019. The equalized average daily flow is in 2020 to 2021 was 0.015 mgd.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Custar wastewater treatment plant.

Future Needs

The current wastewater systems serving both Villages should provide adequate capacity to handle the wastewater demands for the foreseeable future. There are no projects planned for the Custar/Milton Center FPA at the present.

CYGNET/JERRY CITY FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Northwestern Water and Sewer District:** Owns and operates the collection system in the Village of Jerry City, the Village of Cygnet, and unincorporated areas.

Figure 5-37: Cygnet/Jerry City Facility Area

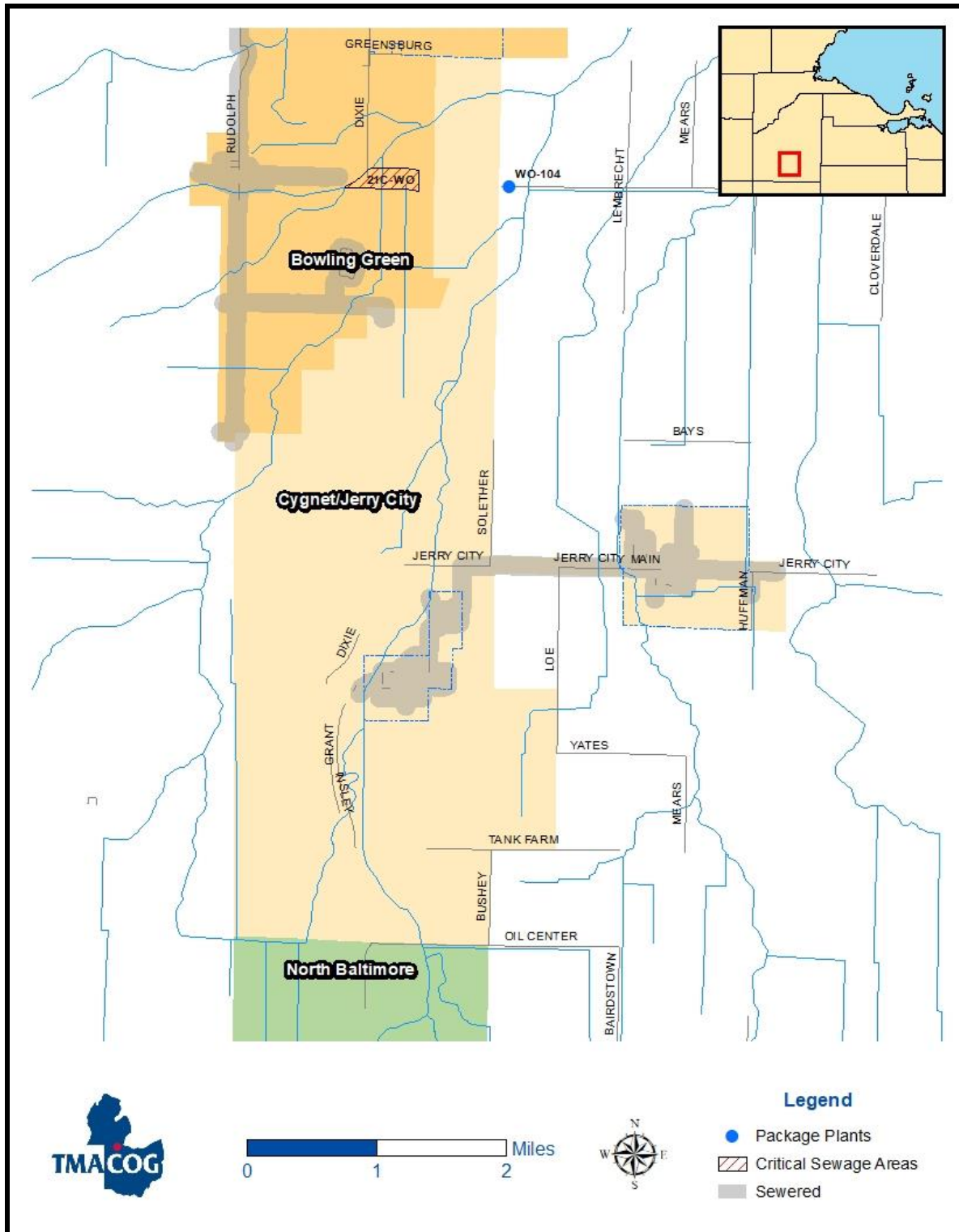


Table 5-88: Cygnet/Jerry City Area Population

Area	Total Population	Unsewered Population	HSTS Phosphorus Load (tons)
Cygnet, entire jurisdiction	543		
Jerry City, entire jurisdiction	454		
Bloom Township, entire jurisdiction*	2,513		
Henry Township, entire jurisdiction*	4,079		
Liberty Township, entire jurisdiction*	1,690		
Portage Township, entire jurisdiction*	1,558		
Estimates within the FPA boundary		505	0.14

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-88 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data . It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG’s Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The Cygnet/Jerry City WWTP is a lagoon facility with an average daily capacity of 0.09 mgd. At the time of construction in 1995, there were 220 customers in Cygnet and 172 in Jerry City. The plant was designed to allow 50% growth in both towns. Ohio EPA data shows an average flow of 1.502 mgd, and a peak flow of 1.700 mgd during the period of 2004-2007. Discharges from the lagoons averaged 0.20 mgd in 2020-2021. The Cygnet sewer system was completed in 1995, and Jerry City’s in 1996; both systems are conventional gravity sewer systems. Each Village pumps its sewage to the treatment plant at a main pump station. In 2014, flow meters were added to both main pump stations.

In 2021-2022, the three sewer pump stations were replaced with new submersible stations and a new force main was constructed to make the system operate more efficiently by the elimination of double pumping.

Issues

The Cygnet/Jerry City FPA covers part of the corridor U.S. 25 / I-75. The Wood County Comprehensive Plan identifies this area for employment opportunities and is therefore included in the FPA with a potential for requiring future service. The area is presently rural with no public sewerage facilities available, active package plants, or unsewered developed areas.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems

for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Cygnet wastewater treatment plant.

Future Needs

Capital improvement needs include the replacement of each pump station and the addition of flow meters. The pump station rehab and flow meter upgrades will be complete in 2021. The capital improvement plan for the Cygnet/Jerry City FPA is shown in Table 5-89.

Table 5-89: Cygnet/Jerry City FPA Capital Improvement Schedule

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2022	2023	2024	2025	2026	2027	Future
Cygnet Pump Station Replacement and Flow Meter	Northwestern Water and Sewer District	\$410,000	\$410,000						
		\$410,000							

FOSTORIA FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **City of Fostoria:** Owns and operates wastewater treatment facilities, and collection system within its corporate limits. Owns and operates collection system in Hancock County unincorporated areas, connecting to the City system for treatment services.
- **Northwestern Water and Sewer District:** Owns and operates collection system in Wood County unincorporated areas, connecting to the City system for treatment services.
- **Seneca County:** Owns and operates collection system in Seneca County unincorporated areas, connecting to the City system for treatment services.
- **Village of New Riegel:** Seneca County owns and operates the New Riegel collection system, connecting to the Fostoria system for treatment services.

Figure 5-38: Fostoria Facility Planning Area

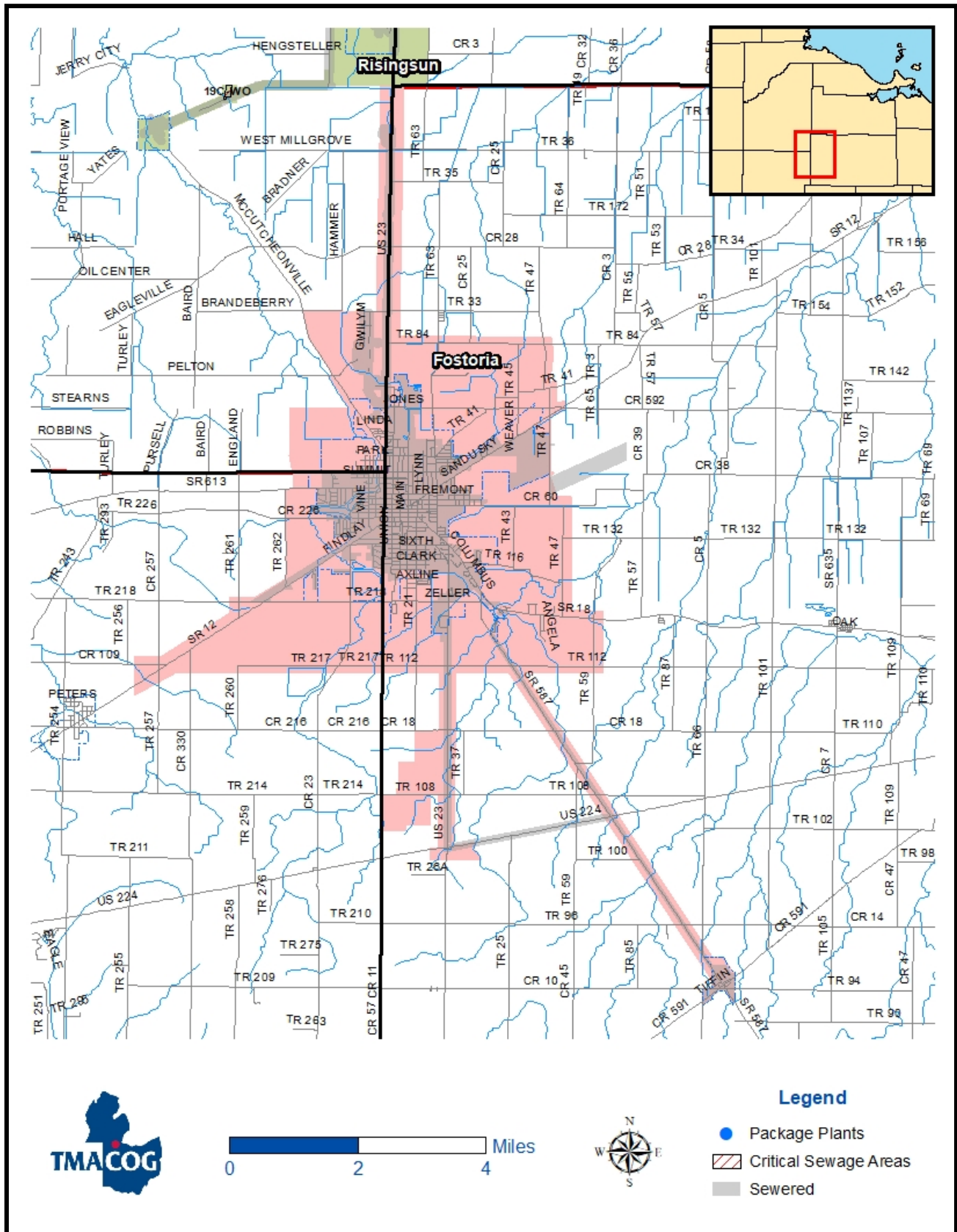


Table 5-90: Fostoria Area Population

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Fostoria, entire jurisdiction	13,046		
Perry Township, entire jurisdiction (Wood County)*	1,568		
Washington Township, entire jurisdiction (Hancock County)*	4,353		
New Riegel, entire jurisdiction	286		
Loudon Township, entire jurisdiction (Seneca County)*	2,246		
Jackson Township, entire jurisdiction (Seneca County)*	1,401		
Estimates within the FPA boundary		2,049	0.56

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-90 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. The unsewered population does not include the areas serviced by package plants; it is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The Fostoria WWTP is a primary settling and activated sludge facility that treated an average daily flow of 4.132-418 mgd in 2021¹² with a daily maximum flow of 11.34012.012 mgd and a minimum flow of 2.1431.423 mgd. Primary treatment capacity is 12.7 mgd, and secondary treatment capacity is 12.7 mgd. In 2014, the City completed the installation of two new final 100 feet diameter clarifiers. The previous rectangular clarifiers were converted to six additional extended aeration tanks. Additionally, improvements were made to the flow splitter chamber into the aeration tanks, and the return sludge pump wet well along with the construction of related piping and flow meters. These improvements increased the secondary treatment capacity to 12.7 mgd. Ohio EPA data showed an average flow of 4.500 mgd, and a peak flow of 12.047 mgd during the period of 2011-2015. The plant uses ultraviolet (UV) disinfection of final effluent; sludge is held in an aerated sludge holding tank until it is dewatered by a belt filter press. In 2016, the City completed installation of a new UV treatment system.

In 1994, the City completed a major upgrade and expansion that included increased primary treatment capacity, elimination of the plant bypass, CSO abatement, and construction of a 2.0 mg primary effluent storage lagoon. The total cost for these improvements was \$7 million. The lagoon stores primary effluent that the second treatment facilities cannot handle during wet weather. The primary effluent is stored until the plant has the capacity to treat it. The primary effluent storage lagoon was removed as part of the current wastewater treatment plant improvements. In 2020¹² construction was started completed on a new raw influent pumping station, a coarse bar screen, fine bar screens and a 7.5 mg equalization basin. The plant's pumping capacity will be increased to 45 mgd. Of this flow, 12.7 mgd will go through the treatment plant and the balance will be stored in the equalization basin. The facility

is currently fully operational ~~and final testing, punch list items and site restoration is in progress. The project is scheduled for completion by October of 2022.~~ The project cost ~~is~~ was approximately \$15 million.

Sixty-eight percent of Fostoria's sewer system was combined. New sewers are separate. There are four CSOs, three of which discharge to the east branch of the Portage River, and one to Wolf Creek. In 2021, the City had 102 CSO events that discharged 177.75 mg into the east branch of the Portage River; there was 40.56" of rainfall recorded that year.

Northwestern Water and Sewer District

The District owns and operates a sanitary sewer force main that serves Charter Steel four miles north of Fostoria on U.S. 23. Additionally, the District serves a subdivision known as "Flehtner Heights" just north of Fostoria's incorporated limits.

Other Outside City Service Areas

Besides the FPA contiguous to the City, Fostoria provides wastewater treatment services to two non-contiguous areas via force main. These areas include:

- South of the City in Loudon Township of Seneca County along U.S. 23
- The Village of New Riegel

Package plants located in the FPA are listed in Table 5-91.

Table 5-91: Package Plants in the Fostoria Facility Planning Area

Package Plant	Map ID	Type	Install or Upgrade Date	NPDES Permit	Capacity, gpd
Hammer-Heinsman Subdivision ^A	SE-11	Public		2PG00011	30,000
Poplar Village MHP ^A	SE-10	Public		2PY00032	18,750

^AStatus is active

Note: Data are based on current available data as of April 2019

Issues

Combined Sewer Overflows

Fostoria's NPDES permit was renewed on ~~January 1, 2017~~ September 1, 2022, with an expiration date of ~~December 31, 2021~~ August 31, 2027. ~~The permit is currently in the renewal stage.~~ In August 2006, the United States of America on behalf of the U.S. EPA and the Ohio EPA, filed a complaint against the City of Fostoria, Ohio seeking injunctive relief and civil penalties, and alleging that the City of Fostoria violated the Clean Water Act and certain terms and conditions of the NPDES permit.

The City of Fostoria is currently working on the items required by the Consent Decree. The City developed a Combined Sewer System Monitoring and Modeling Plan. The goal of this monitoring and modeling study is to satisfy the hydrologic and hydraulic portions of the planning required for system characterization, monitoring and modeling by the City's NPDES permit. This plan will serve as one of the essential elements of the City's Combined Sewer Overflow (CSO) Long-Term Control Plan (LTCP). The

ultimate goal of the LTCP is to assure the City's compliance with existing water quality regulations relating to CSOs. The City completed the monitoring and modeling in 2008 and submitted the LTCP to the U.S. EPA Region 5 Office in February 2012.

A modification to the LTCP schedule was approved on April 17, 2020. This modification allowed for Phase 2 WWTP upgrades which include a new raw influent pump station with additional wet weather pumping capacity (5 pumps at 10.5 MGD each for wet weather and 2 pumps at 6.2 MGD each for dry weather), mechanical fine screens and a 7.5 MG CSO storage basin to be constructed prior to the elimination of CSO #2 and CSO #3. This project ~~is currently under construction~~ was completed in 2022.

Unsewered Areas

Several unsewered portions of the Fostoria FPA are likely to need sewers. These areas include:

- A subdivision in Loudon Township, Seneca County, southeast of the corporate limits. No stream sampling data is available, but septic systems in the area are believed to be failing and discharging into the Wolf Creek drainage basin.
- State Route 18, just west of existing sewers. It is recommended by the Hancock County Health Department as a Critical Sewage Area.
- The triangle between Washington Township Roads 218 and 261. It is recommended by the Hancock County Health Department as a Critical Sewage Area.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions in Wood County that are required to be platted under subdivision regulations: for platted subdivisions of more than five (5) lots, septic tanks or individual household sewage treatment systems shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Fostoria wastewater treatment plant.

Future Needs

- The City of Fostoria is facing significant improvements to its sewer system and wastewater treatment plant.
- Fostoria will continue implementation of its CSO Abatement Plan and Long-Term Control Plan.
- Install sanitary sewers in developed but unsewered areas that have documented sewage problems.
- Construct sewer extensions to eliminate remaining problem areas and provide service to new developments. New package plants and septic systems should not be permitted in areas that may be served by public sewers.
- Future collection system and wastewater plant improvements to meet the Long-Term Control Plan requirements in the FPA are provided in Table 5-92.

Table 5-92: Fostoria FPA Capital Improvement Schedule

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2022	2023	2024	2025	2026	2027	Future
LTCP: CSO No. 2 & 3 Elimination	Fostoria	\$10,165,215			\$655,215	\$9,510,000			
LTCP: CSO #5 Elimination & Structure Modification	Fostoria	\$250,000					250,000		
LTCP: WWTP Upgrades Phase II (Under Construction)	Fostoria	\$1,700,000	\$1,700,000	-	-	-	-		
		\$12,115,215							

Designated Management Agency Responsibilities:

- Figure 5-39: Grand Rapids Facility Planning Area**



Table 5-93: Grand Rapids Area Population

Area	Total Population	Unsewered Population	HSTS Phosphorus Load (tons)
Grand Rapids, entire jurisdiction	925		
Grand Rapids Township, entire jurisdiction*	1,586		
Washington Township, entire jurisdiction*	1,864		
Damascus Township, entire jurisdiction*	1,783		
Estimates within the FPA boundary		276	0.08

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-93 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The Grand Rapids WWTP was built in 1978; it is an oxidation ditch with an average capacity of 0.180 mgd and a hydraulic capacity of 0.6 mgd. Plant facilities include aerobic sludge digestion, and final chlorination. Sludge is transported to the Bowling Green WWTP for final treatment. Ohio EPA data shows an average flow of 0.063 mgd, and a peak flow of 0.434 mgd during the period of 2014-2018.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Grand Rapids wastewater treatment plant.

Future Needs

There are no projects planned for the Grand Rapids FPA at the present.

Haskins Facility Planning Area

Designated Management Agency Responsibilities:

- **Village of Haskins:** Owns and operates wastewater treatment facilities, and the collection system within the corporate limits.
- **Northwestern Water and Sewer District:** Will own and operate collection systems outside the corporate limits when built and will convey sewerage to the Haskins WWTP for treatment. In 2005, the District signed a 40-year agreement with Haskins for the Village to accept average daily flows of 50,000 gpd of sewage; additional flows may be negotiated.

Figure 5-40: Haskins Facility Planning Area

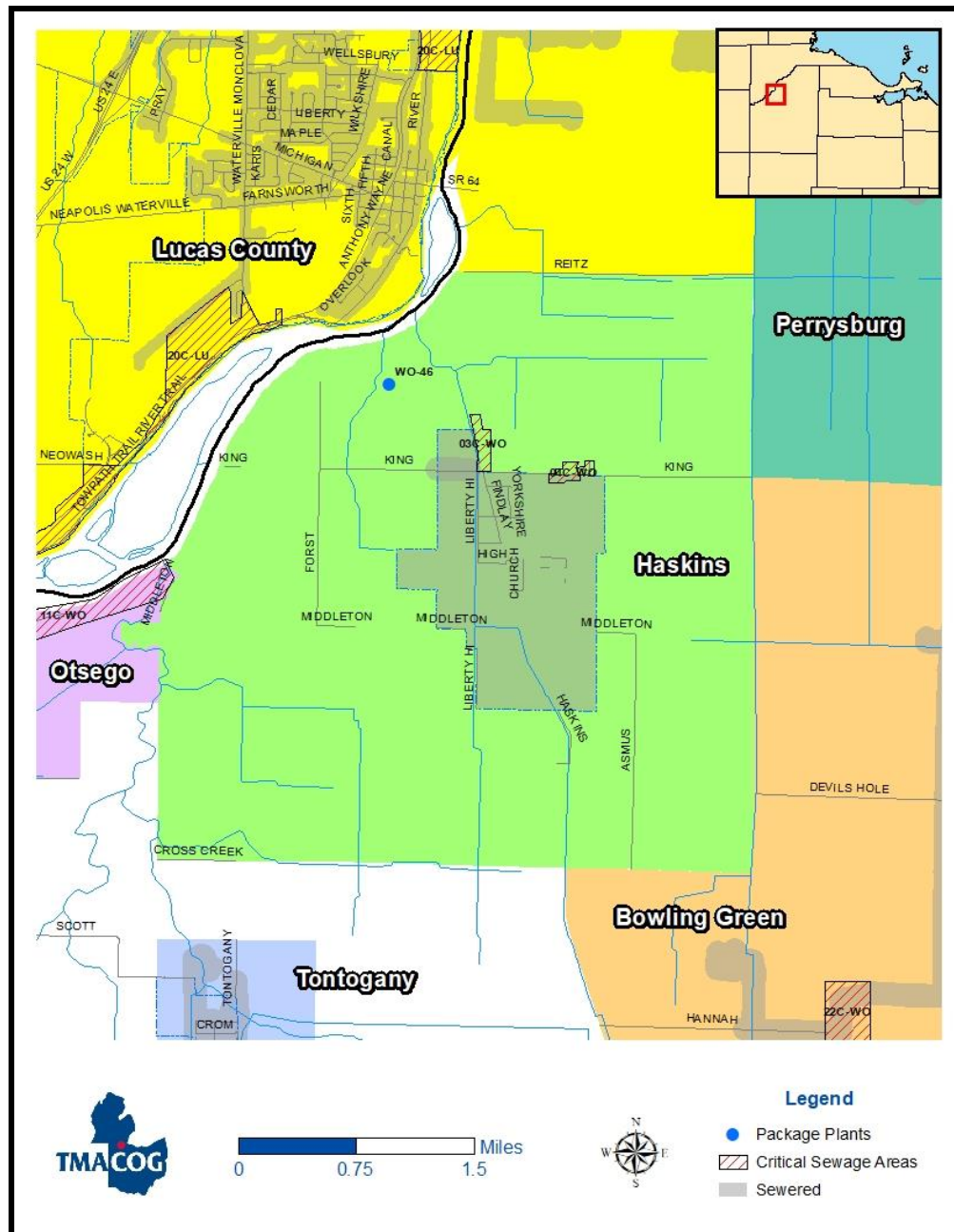


Table 5-94: Haskins Area Population

Area	Total Population	Unsewered Population	HSTS Phosphorus Load (tons)
Haskins, entire jurisdiction	1,245		
Middleton Township, entire jurisdiction*	5,611		
Washington Township, entire jurisdiction*	1,864		
Estimates within the FPA boundary		721	0.20

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-94 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The existing Haskins WWTP was built in 2006. The plant is a 300,000 gpd sequencing batch reactor facility, built at a total cost of \$2.76 million. The WWTP site is 40 acres on the west side of SR 64, just on the north end of the Village. The receiving stream is a ditch along SR 64, flowing north into the Maumee River. Ohio EPA data shows an average flow of 0.176 mgd, and a peak flow of 0.852 mgd during the period of 2014-2018. Liquid sludge is applied to agricultural land.

Package plants located in the FPA are listed in Table -95.

Table 5-95: Package Plants in the Haskins Facility Planning Area

Package Plant	Map ID	Type	Install or Upgrade Date	NPDES Permit	Capacity, gpd
Riverby Hills Golf Club ^A	WO-46	Private*			4,000

^AStatus is active

*Facility type is assumed

Note: Data are based on current available data as of April 2019

Issues

Two groups of unsewered houses adjacent to the Village have been identified as Critical Sewage Areas, and need sewer service to eliminate problems from failed on-site systems.

- **State Route 64 north of King Road:** approximately 19 houses are in this area north of town. Bypassing sewage from failed septic systems is present in the roadside ditch. The septic systems for most of these houses are believed to have failed. Therefore, sanitary sewers should be extended to eliminate these septic systems. In 2000, the Wood County Health Department conducted a sanitary survey in this area.

- **King Road / RR:** an unincorporated area on the north side of King Road just east of the railroad tracks. There are 10 houses in this area; a sanitary survey of this area has not been conducted. Sanitary sewers may be needed here in the future.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Haskins wastewater treatment plant.

Future Needs

Support planning and funding to provide sanitary sewer capabilities to eliminate individual and household septic systems in Critical Sewage Areas. There are no projects planned for the Haskins FPA at the present.

HOYTVILLE FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Northwestern Water and Sewer District:** Owns and operates wastewater treatment facilities and collection system.

Figure 5-41: Hoytville Facility Planning Area

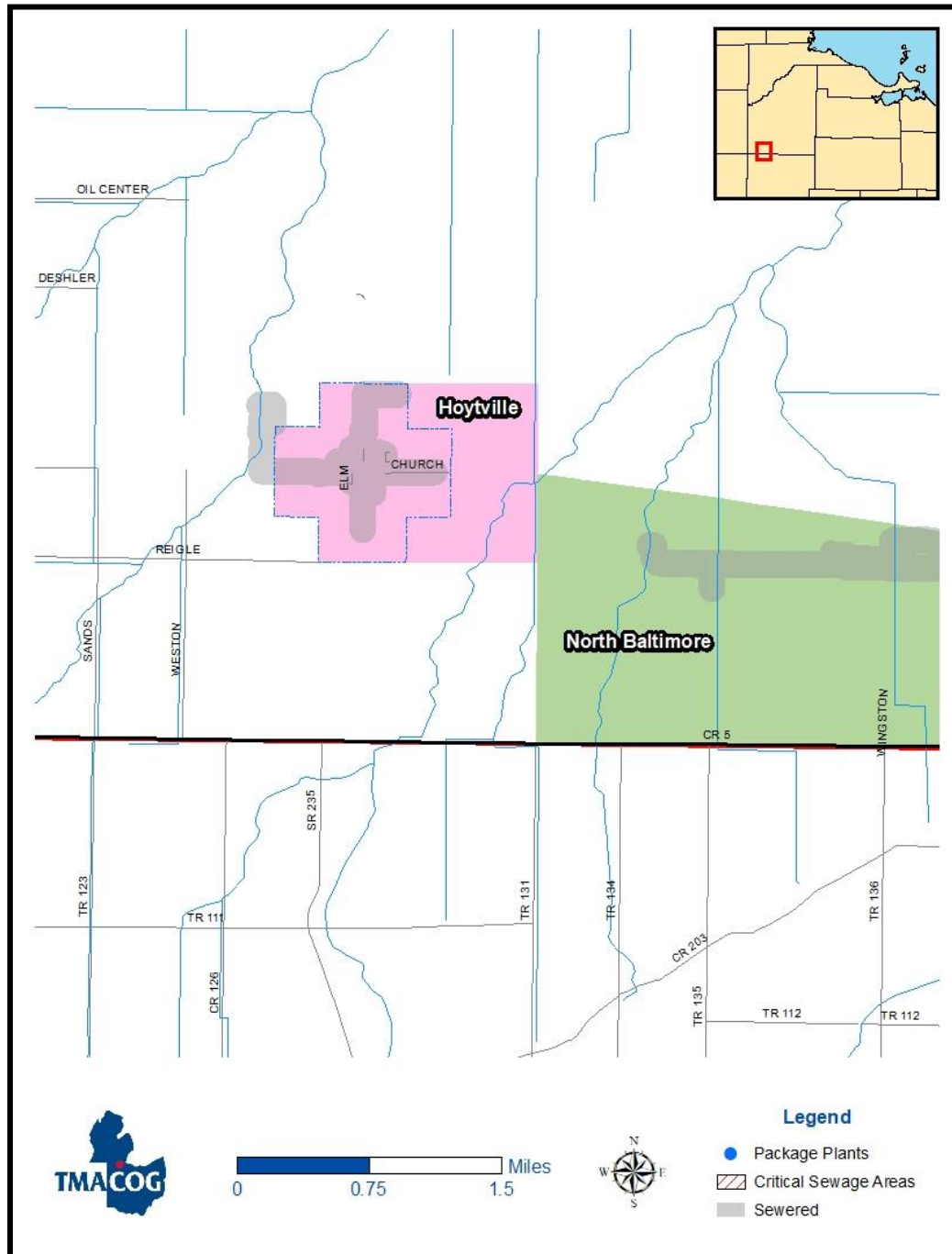


Table 5-96: Hoytville Area Population

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Hoytville, entire jurisdiction	220		
Jackson Township, entire jurisdiction*	702		
Estimates within the FPA boundary		150	0.04

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-96 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

Hoytville WWTP was built in 1990 with an average daily design flow of 0.036 mgd. Ohio EPA data shows an average flow of 0.946 mgd when discharging, 0.022 mgd on a daily average, and a peak flow of 0.968 mgd during the period of 2004-2009. The plant is a three-cell controlled discharge lagoon system that discharges to Needles Creek only during high flow. The collection is via a Septic Tank Effluent Gravity (STEG) system with small diameter gravity pipes and on-lot septic tanks to capture solids. The Northwestern Water and Sewer District (District) is responsible for pumping the septic tanks and septage handling.

In 2018, the District completed an upgrade to the controlled discharge lagoon system. The project included a new access road, addition of rip rap, replacement of valves and control structures, along with fence repair and replacement. The project was funded by the District with the assistance of a Ohio Water Pollution Control Loan Fund (WPCLF) in the amount of \$380,000.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Hoytville wastewater treatment plant.

Issues

Ohio EPA found excess infiltration and inflow (I/I) is a problem for the collection system. The small-diameter gravity sewer system was not designed to carry storm flows or groundwater. The District evaluated I/I issues, completed the Sanitary Sewer Evaluation Survey (SSES), and has submitted the final report to Ohio EPA. The following details some of the results and actions:

- Some I/I was found in manholes; therefore, manhole lining was completed in early 2011.

- Installation of a flow meter at the main pump station into the lagoon demonstrated that even though I/I remains, its severity was not as great as previously thought.
- Manholes are scheduled for replacement in 2023.

Future Needs

The existing pump station will require replacement within the next five years.

LUCKEY FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Village of Luckey:** Owns wastewater treatment facilities and the collection system within its corporate limits; however, these systems are operated by the Northwestern Water and Sewer District.
- **Northwestern Water and Sewer District:** Owns and operates collection system in unincorporated areas. The District operates the Luckey WWTP under contract with the Village. In 2006, the District entered a 40-year agreement with the Village of Luckey to accept average daily flows of 4,000 gpd of sewage; additional flows may be negotiated.

Figure 5-42: Luckey Facility Planning Area

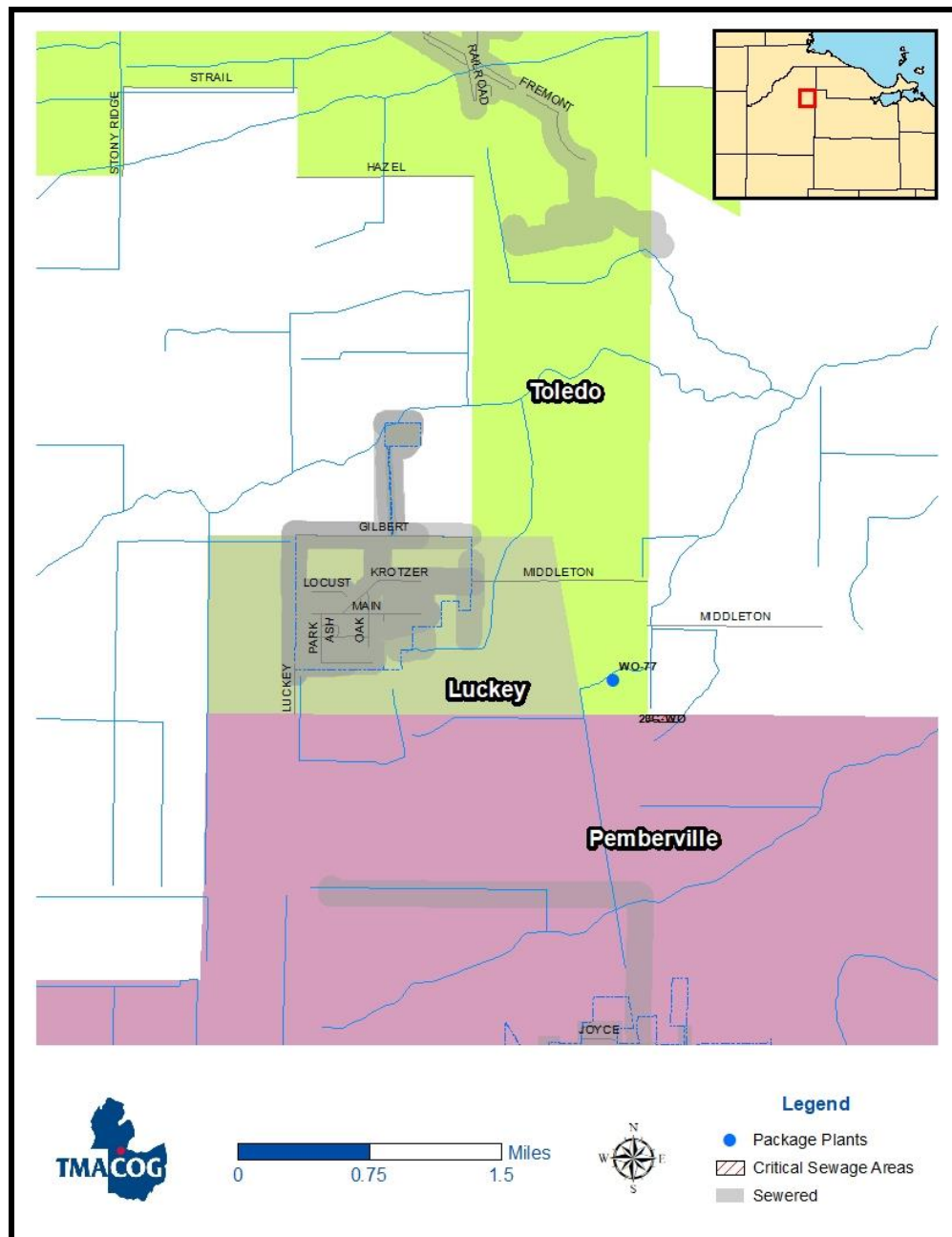


Table 5-97: Luckey Area Population

Area	Total Population	Unsewered Population	HSTS Phosphorus Load (tons)
Luckey, entire jurisdiction	1,009		
Troy Township, entire jurisdiction*	4,097		
Webster Township, entire jurisdiction*	1,230		
Estimates within the FPA boundary		131	0.04

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-97 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The Luckey WWTP was built in 1988 and is a 0.10 mgd controlled discharge lagoon facility. Hydraulic capacity of the system is 0.36 mgd. Ohio EPA data shows an average flow of 0.820 mgd when discharging, 0.049 mgd on a daily average, and a peak flow of 1.380 mgd during the period of 2014-2018. Effluent is discharged to Toussaint Creek only during high flow.

Prior to construction of the WWTP, failed septic systems discharged to the Village storm sewer system. Pump stations were built to convey the septic tank effluent to the treatment plant. Existing septic tanks were originally left in place, with the Village responsible for pumping them out and disposing of the septage. In late 2007, sewer separation was completed, eliminating combined sewer overflows (CSOs) and septic tanks. The total project cost was \$4.8 million, financed with \$1.7 million in grants from U.S. EPA/STAG and USDA/Rural Development, and the balance in loans from USDA.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Luckey wastewater treatment plant.

Future Needs

There are no projects planned for the Luckey FPA at the present.

NORTH BALTIMORE FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Village of North Baltimore:** Owns and operates the wastewater plant and sewers within its corporate limits.
- **Northwestern Water and Sewer District:** Owns and operates sewers in unincorporated areas of Wood County with treatment services provided by the North Baltimore WWTP.
- **Hancock County:** Owns and operates sewers in unincorporated areas of Hancock County with treatment services provided by the North Baltimore WWTP.

Figure 5-43: North Baltimore Facility Planning Area

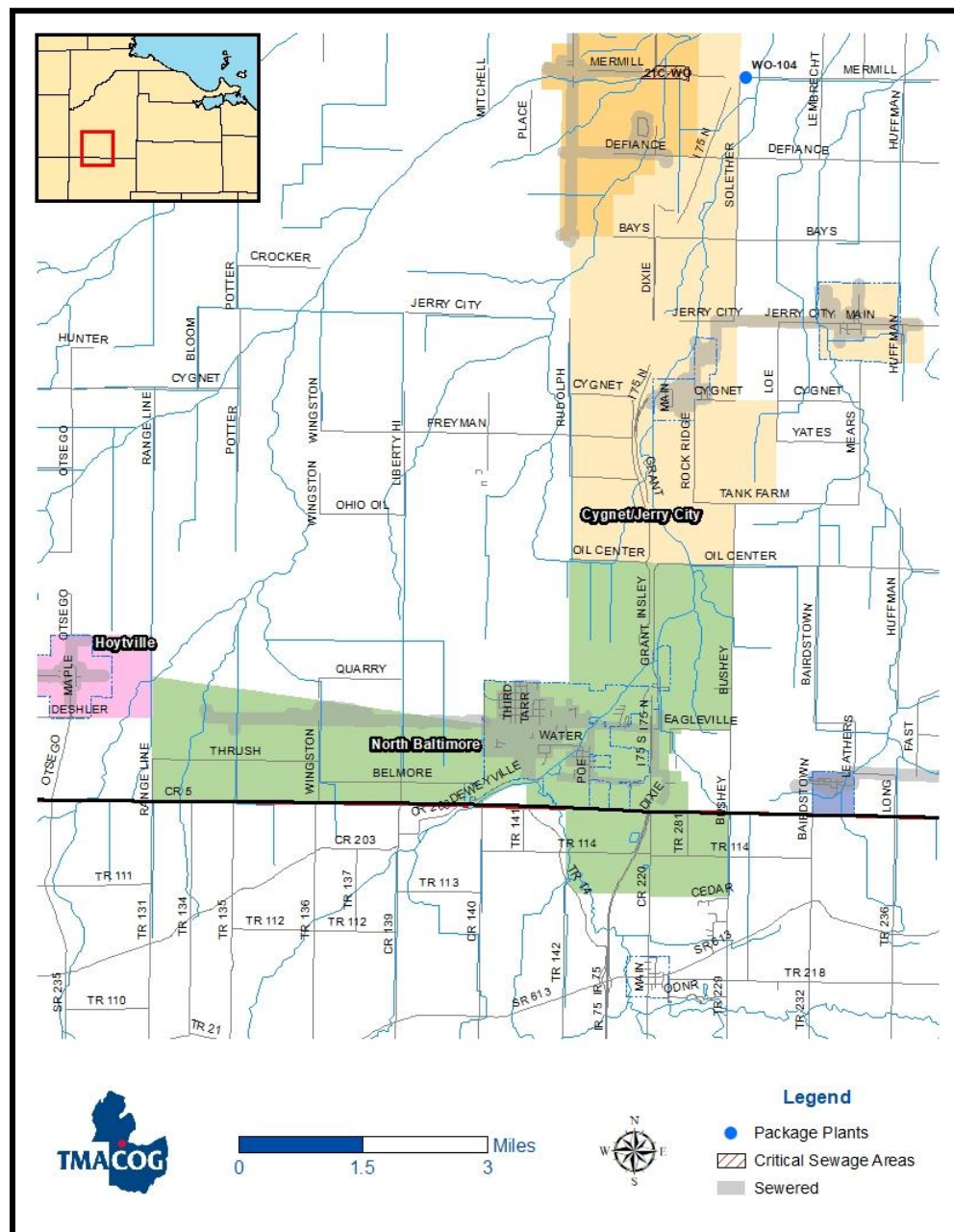


Table 5-98: North Baltimore Area Population

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Bloom Township, entire jurisdiction*	2,513		
Henry Township, entire jurisdiction*	4,079		
Jackson Township, entire jurisdiction*	702		
Allen Township, entire jurisdiction*	2,754		
Estimates within the FPA boundary		516	0.14

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-100 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The North Baltimore WWTP is a 0.8 mgd trickling filter plant. Ohio EPA data shows an average flow of 0.718 mgd, and a peak flow of 1.589 mgd during the period of 2015 - 2018. I/I was a serious problem contributing to combined sewer overflow (CSO) events. In 1997, in-house improvements to two overflow structures reduced CSO discharges by 60% during a rain event. In 2000, North Baltimore constructed a 200,000-gallon sludge holding tank to provide 180-day storage capacity at a cost of \$300,000. The Village constructed a new sludge dewatering facility in 2009 at a cost of \$780,000.

The Notice to Proceed for the Phase I Sewer Separation Project was completed in May 2012. CSO #1 on Water Street was eliminated in April 2012. Funding for the project was provided by Ohio Water Development Authority (OWDA), U.S. EPA State and Tribal Assistance Grant (STAG), and Ohio Public Works Commission (OPWC) during construction and final long-term financing was provided by U.S. Department of Agriculture and Rural Development (USDA-RD). After completion of the Phase 1 sewer separation project, 32 septic tanks have been abandoned and the properties connected to the new sanitary sewer system.

The Village issued the Notice to Proceed to the contractor for the Phase II Sewer Separation Project in January 2013. The project was completed in 2014 and with an estimated cost was \$9,700,000. Completion of this project will satisfy the Ohio EPA's requirement for the Village to separate all sewers by 2017. Funds were provided by the Community Development Block Grant program (CDBG) in the amount of \$600,000 and by OPWC in the amount of \$449,999. The remaining funds are being provided by USDA-RD.

With completion of the sewer separation projects, the wastewater treatment plant is experiencing significant reductions to its flow. In 2016, improvements were completed for the wastewater treatment headworks. The equipment in the headworks (comminatory/screening and raw sewage pumping) area of the wastewater treatment plant were becoming problematic for the plant operators. The electrical gear that services the headworks was also becoming a maintenance/reliability issue. Problems have also been noted in matching the lower flows the plant has been seeing since the completion of the sewer

separation projects. These improvements were completed in October 2016 at a total cost of \$1.3 million with funding from the USDA-RD.

In 2018, the Village implemented improvements to the Quadland sanitary lift station that serves the commercial area on the east side of the Interstate 75/State Road 18 interchange.

In 2010, sewers in Henry and Jackson Townships were built to serve the CSX intermodal facility. Initially wastewater treatment was provided by a 5,000 gpd extended aeration package plant. It faced operational challenges of being too large for the actual flow. Another difficulty was finding an acceptable receiving stream for its treated effluent. The CSX plant was abandoned and removed in 2016, in favor of a connection to North Baltimore for treatment services. Future sewer extensions will be needed to accommodate economic development. The FPA boundary follows the service contract area agreed to between CSX and Northwestern Water and Sewer District (District).

Issues

Ohio EPA approved the renewal of North Baltimore's Long-Term Control Plan (LTCP) for combined sewer overflows in 2020. North Baltimore is required to report the status of LTCP implementation annually. The Village's NPDES permit requires total separation of the collection system by 2017. The permit also requires post construction monitoring of the system to determine if the CSO goals have been met and submission of a written report by January 2019 on the results of the post construction monitoring. Per Ohio EPA, the Village needs to complete post construction compliance monitoring on the last CSO. There were four overflows reported between 4/1/15 and 7/1/17; no overflows have been reported since July 2017.

In 2020, the Village completed a "smoke test" of the complete sanitary sewer system as part of the CSO compliance requirements. Specific project improvement recommendations are being prepared in conjunction with assistance from the Great Lakes Community Action Partnership.

The NPDES permit requires a written status report on the plant's compliance with their copper final effluent limits. If they are not able to meet the copper effluent limits the status report shall indicate how the Village intends to meet this limit and if additional construction will be required. The Village sent a status report prior to June 2015 stating that they would be able to meet the limits; their data shows no limit violations.

The NPDES permit also indicates the Village shall evaluate its ability to meet *Escherichia coli* limits with its existing facilities. The Village has evaluated its ability to meet the *E. coli* limits with the existing facilities, which they are still using for disinfection.

The wastewater treatment plant is reporting age/condition related issues at the wastewater treatment plant headworks. Improvements to the facility are planned to maintain the Village's ability to comply with permit conditions.

The FPA covers part of the corridor US 25 / I-75. The Wood County Comprehensive Plan identifies this

area for employment opportunities and is therefore included in the FPA with a potential for requiring future service. The area is presently rural with no public sewerage facilities in this area, active package plants, or unsewered developed areas.

Northwestern Water and Sewer District

In 2018, the Northwestern Water and Sewer District (NWWSD) and the Village executed a contract for sewer service to the CSX facility and surrounding area. This area is located to the west of the Village on State Route 18 and Liberty Hi Roads. Significant development is expected in the area and a 12" sanitary sewer and pump station have been constructed for future extension as the area develops.

The Village and the NWWSD are in the initial planning stages for undertaking a sewer needs assessment specific to the CSX facility, adjacent NorthPoint development, and immediate surrounding area. The purpose of this assessment is to determine the adequacy of the North Baltimore WWTP to serve peak flow levels based upon future development along the State Road 18 corridor. This assessment will help the Village and NWWSD plan for specific needed improvements at the WWTP necessary to serve peak demands.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the North Baltimore wastewater treatment plant.

Future Needs

- Achieve the milestone of the LTCP under the Village's NPDES permit:
 - Submittal of a Phosphorus Discharge Optimization Evaluation Plan by 2020.
 - Achieve compliance with the final phosphorus loading limit by 2022
 - Submittal of Post-Construction Compliance Monitoring in 2021
 - Eliminate CSOs by 2021 and 2022

The following improvements are planned:

- Extension of sanitary sewer service south of SR 18.
- New screening and grinding system for the raw sewage pump station.
- New variable speed lift pumps for the raw sewage lift station.
- New electrical switchgear to replace the existing switchgear that serves the raw sewage pumps and screening area.
- New PLC control system to replace the failed annunciator panel and run the raw sewage pumps.

- New lab facility to house the lab that is currently located above the raw sewage pumping station.
- Sewer service area expansions in Henry and Jackson Townships are likely to be needed to facilitate economic development of the CSX intermodal facility and associated.

Based on current plant performance, no capital projects are anticipated to be required for copper or *E. coli* limit compliance. There are no other projects planned at the present.

Designated Management Agency Responsibilities:

- Figure 5-44: Otsego Facility Planning Area**



Table 5-99: Otsego Area Population

Area	Total Population	Unsewered Population	HSTS Phosphorus Load (tons)
Grand Rapids Township, entire jurisdiction*	1,586		
Washington Township, entire jurisdiction*	1,864		
Estimates within the FPA boundary		361	0.1

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-99 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. The unsewered area does not include the areas serviced by the package plant; it is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

Most of the Otsego area is not served by a public sewage system. The one public facility is a package plant owned and operated by the Northwestern Water and Sewer District (the District) that serves the Williamsburg-on-the-River subdivision in Washington Township and West River Road, Otsego Road to Weston Road including Nazareth Hall. This WWTP was built in 2009 and is a 50,000 gpd extended aeration plant that can be expanded. Ohio EPA data shows an average flow of 0.026 mgd 2020-2021. The District took the original Williamsburg WWTP, built in 1972, out of service in 2009. The new treatment plant was designed to provide service to the entire Otsego FPA. The new WWTP, pump station, and force main from the old WWTP, outfall sewer to the Maumee River, and removal of the old WWTP cost \$1,311,235. The project was funded with a \$536,634 American Recovery and Reinvestment Act (ARRA) principle-forgiveness loan and the balance financed over a period of 40 years.

Some houses along SR 65, outside the Williamsburg subdivision, are being added to this WWTP's service area. Liquid sludge is transported to the City of Bowling Green WWTP for processing to Class A sludge. Package plants located in the FPA are listed in Table 5-100.

Table 5-100: Package Plants in the Otsego Facility Planning Area

Package Plant	Map ID	Type	Install or Upgrade Date	NPDES Permit	Capacity, gpd
Riverview Manor Trailer Park ^A	WO-11	Private		2PY00061	3,500
Williamsburg-on-the River WWTP ^A	WO-84	Public	2009	PG00097	50,000

^AStatus is active

Note: Data are based on current available data as of April 2019

Issues

Unsewered Areas

The entire riverfront between Grand Rapids and Haskins is a potential growth area. Public water is available and additional development is very likely to proceed. Many of the houses in this planning area

are located between River Road (SR 65) and the Maumee River. The bank of the river is steep, the lots are small, and there is no room for an acceptable leaching field. On the other side of River Road, new housing will need to meet the present lot size requirements for sewage disposal.

Williamsburg-on-the-River WWTP

An aggressive I & I removal program, which included sanitary sewer grouting and lining was completed in 2018. Private I/I efforts are ~~ongoing currently underway~~ in the Williamsburg subdivision.

Future Needs

Future capital improvements for the Otsego FPA are given in Table (5-101).

Table 5-101: Otsego FPA Capital Improvement Schedule

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2022	2023	2024	2025	2026	2027	Future
<u>Private I/I Mitigation</u>	<u>Northwestern Water and Sewer District</u>	<u>\$200,000</u>			<u>\$50,000</u>	<u>\$50,000</u>	<u>\$50,000</u>	<u>\$50,000</u>	

PEMBERVILLE FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Village of Pemberville:** Owns and operates wastewater treatment facilities, and collection system within its corporate limits.
- **Northwestern Water and Sewer District:** Owns capacity in the Pemberville WWTP, and will own and operate collection system in unincorporated areas, if and when built, connecting to the Village for treatment services. The District entered into an agreement with Pemberville for the Village to accept average daily flows of 50,000 gpd of sewage; additional flows may be negotiated.

Figure 5-45: Pemberville Facility Planning Area

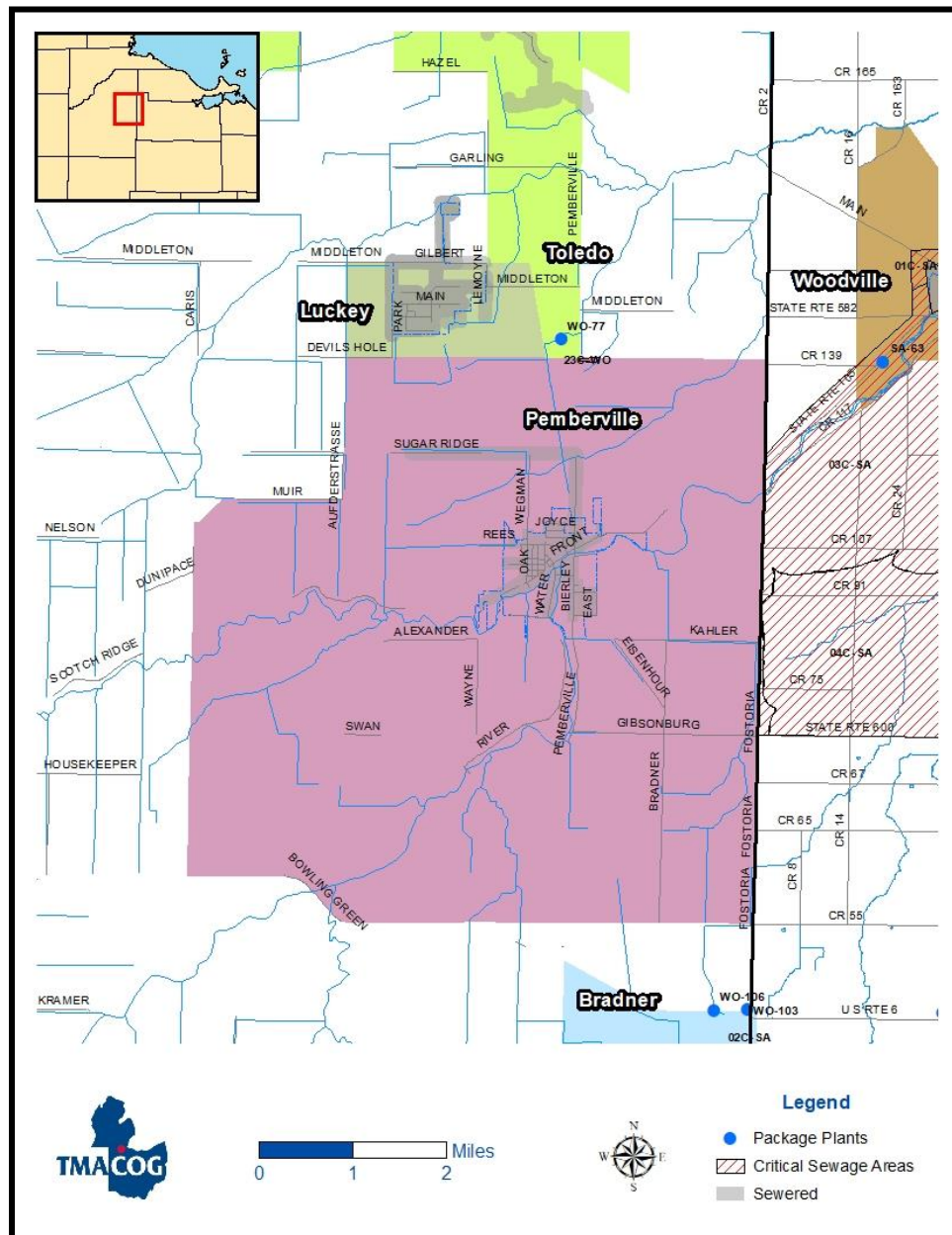


Table 5-102: Pemberville Area Population

Area	Total Population	Unsewered Population	HSTS Phosphorus Load (tons)
Pemberville, entire jurisdiction	1,3626		
Freedom Township, entire jurisdiction*	2,649		
Troy Township, entire jurisdiction*	4,097		
Webster Township, entire jurisdiction*	1,230		
Estimates within the FPA boundary		1,841	0.51

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-102 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The Pemberville WWTP is a sequencing batch reactor facility built in 2011. The plant was designed for 0.4 mgd average daily flow, 1.0 mgd peak dry weather flow, and 1.3 mgd peak wet weather flow. Ohio EPA data shows an average flow of 0.242 mgd and a peak flow of 0.746 mgd during the period of 2014-2018. The plant was designed to treat greater wet weather flows, and provide service to portions of Freedom and Troy Townships surrounding the Village. The plant cost \$2.5 million to build, and replaced the previous plant, which included an oxidation ditch, a polishing pond, and aerated sludge digesters. The plant is equipped with ultraviolet effluent disinfection. Liquid sludge is applied to agricultural land.

1. The sewers were originally combined, with four overflow points. Pemberville completed its Combined Sewer Overflow (CSO) Abatement Plan by separating the entire system. The Plan, prepared in 1994, called for five phases. It was completed in 1999 at a cost of \$2,037,618, financed through Ohio EPA over a 20-year period. Pemberville spent \$546,730 on additional sewer system improvements to exclude I/I between 2001 and 2009.

There are no package plants located in the FPA. The Eastwood High School package plant has been eliminated as part of an Eastwood school consolidation project. The School District requested Northwestern Water and Sewer District to construct a pump station and force main to send the sanitary sewer flows to the Pemberville WWTP.

New Subdivisions

It is the policy of this Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Pemberville wastewater treatment plant.

Future Needs

The NPDES permit issued in 2019 indicates that the Village shall evaluate the ability of its existing treatment facilities to meet the final effluent limit (1.0 mg/L) for phosphorus. If the existing treatment facilities are not capable of meeting the final effluent limit for phosphorus, plant improvements will be needed by 2021, and demonstrated by 2022.

The capital improvement plan for the Pemberville FPA is shown in Table (5-103).

Table 5-103: Pemberville FPA Capital Improvement Schedule

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2022	2023	2024	2025	2026	2027	Future

PERRYSBURG FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **City of Perrysburg:** Owns and operates wastewater treatment facilities, and portions of the collection system.
- **Northwestern Water and Sewer District:** Owns and operates portions of the collection system, connecting to Perrysburg system for treatment services.
- **City of Rossford:** Northwestern Water and Sewer District owns and operates the collection system within Rossford, connecting a small portion of the collection system to Perrysburg system for treatment services.

Figure 5-46: Perrysburg Facility Planning Area

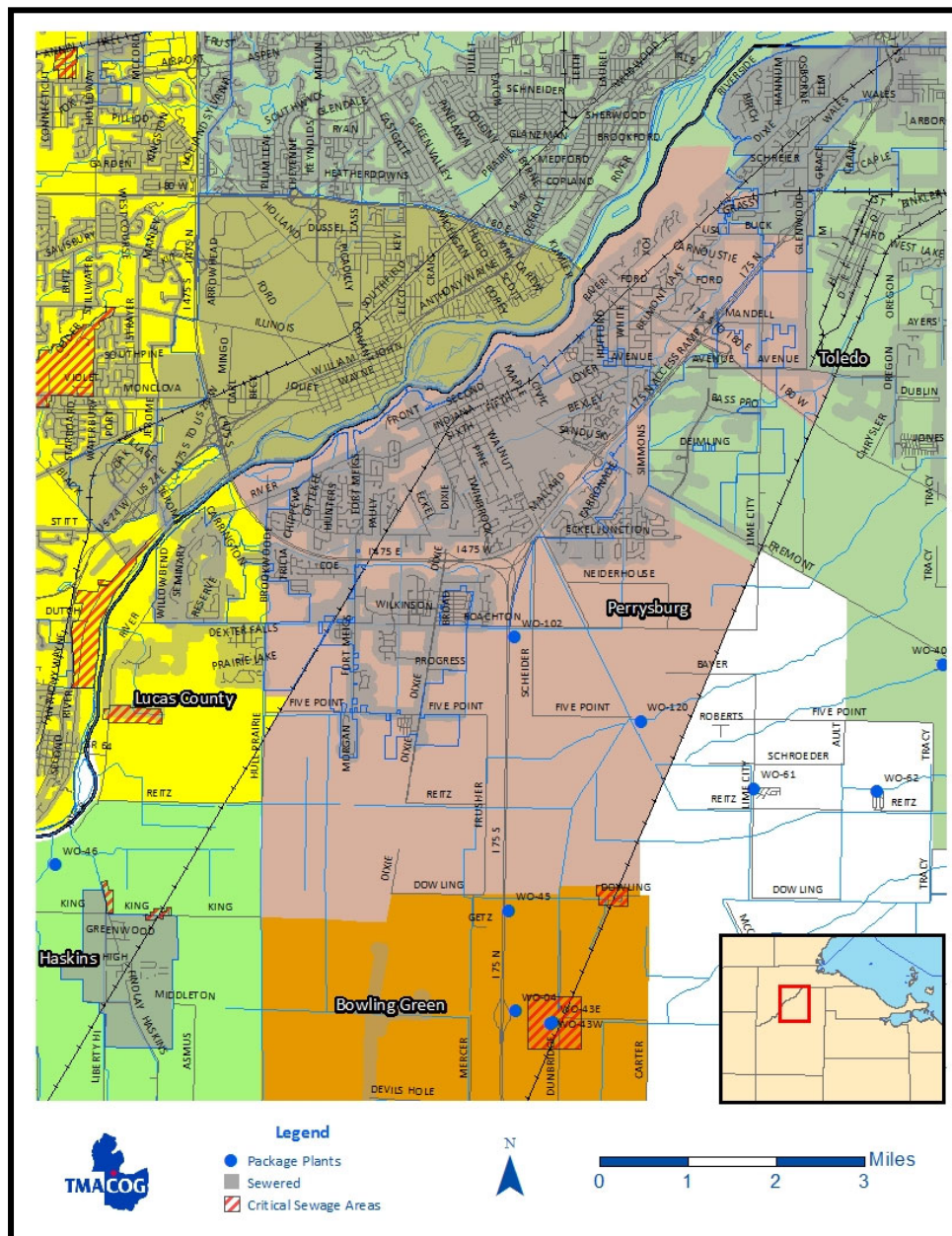


Table 5-104: Perrysburg Area Population

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Perrysburg, entire jurisdiction*	25,041		
Rossford, entire jurisdiction*	6,299		
Middleton Township, entire jurisdiction*	5,611		
Perrysburg Township, entire jurisdiction*	13,571		
Estimates within the FPA boundary		1,760	0.48

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-104 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. The unsewered population does not include the areas serviced by package plants; it is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The City of Perrysburg WWTP has an average design capacity of 8.0 mgd, with a peak capacity of 24.0 mgd. Data from 2021 showed an average flow of 5.05 mgd. The plant was originally built in 1958 with expansions in 1972, 1986, and 1991 with recent upgrades in 2008, 2009, and 2011. The most recent expansion was completed in late 2015 and increased the average daily flow capacity to 8.0 mgd. The capacity upgrades were needed because of growth in the service area, new stricter discharge limitations, and treatment of wet weather flows. The Perrysburg WWTP is an activated sludge facility with ultraviolet final effluent disinfection, post aeration, anaerobic sludge digestion, and one biosolids belt filter press and one volute dewatering press. Currently all biosolids are land applied to local fields.

Issues

Combined Sewers

About 600 acres of the ~~Central City older part~~ of Perrysburg had a combined sewer system, with four wet-weather overflows. Perrysburg submitted its combined sewer overflow (CSO) Abatement Plan, called a Long Term Control Plan (LTCP) in ~~the mid-1990s~~ which called for annual sewer separation projects over a 20-year period. ~~The estimated cost of the plan in 2013 was \$25 million. These projects were completed in 2017 for approximately \$30 Million.~~

~~The CSO area was split into assessment districts for the Cherry and Elm Street regulator areas. The Elm Street area covers from one half block west of Louisiana Avenue, extending east to East Boundary Avenue from the River to Grassy Creek. Separation of sewers in this area was divided into 13 districts. The remainder of the CSO area, west of Louisiana to West Boundary Avenue is in the Cherry Street district.~~

~~New storm sewers were installed in both Cherry and Elm Street districts. New and existing catch basins were connected to the new storm sewers. Elm Street district was completed in 2001 at a cost of approximately \$9.3 million. The last Cherry Street subdistrict was completed in November 2017. Overall Cherry Street district costs exceeded \$20 million.~~

~~Sewer separation projects since 1991 focused on removing stormwater from public property (i.e. streets).~~ Some homeowners have separated their private property stormwater inputs and routed some to the new sewers, with financial assistance from City grants. The City increased available funding for private property separation grants in 2020 to entirely incentivize more homeowners to remove their private property stormwater from the sanitary sewer.

In 2023, the City, to further reduce and/or eliminate CSO's, is conducting flow monitoring throughout the sanitary collection system.

Unsewered Areas

There are two package plants located in this FPA, shown in Table 5-105. When public sewers become available, these plants will be abandoned and replaced by a tap to the public sewer.

Table 5-105: Package Plants in the Perrysburg Facility Planning Area

Package Plant	Map ID	Status	Install or Upgrade Date	NPDES Permit	Capacity, gpd
Islamic Center of Greater Toledo	WO-102	Active	1991		8,300
Five Point MHP	WO-120	Active		2PY00073	6,600

Note: Data are based on current available data as of April 2019

Dowling: An unincorporated community, located at Dowling Road and Conrail tracks between Dunbridge and Carter Roads. Residences are served by septic systems. Dowling is not under orders to construct sewers. The community is split between the Bowling Green and Perrysburg FPAs. Dowling is identified as a Critical Sewage Area, which is under the jurisdiction of the Northwestern Water and Sewer District (District).

Shelton Gardens: A portion of Middleton Township in Wood County along Five Point Road from the CSX railroad tracks west to the Maumee River is also known as Shelton Gardens. In 2007, Ohio EPA ordered sanitary sewers for this area. Most of the area was in the Lucas County FPA, but the portion between Hull Prairie Road and the railroad tracks was in the Perrysburg FPA.

The portion of Shelton Gardens then in the Perrysburg FPA was moved to the Lucas County FPA subject to the following provisos of TMACOG Resolution 2007-26:

THAT the area along Five Point Road between Hull Prairie and the CSX tracks shall remain in the Lucas County FPA until a sewer connected to the Perrysburg system becomes available; and

THAT when a Perrysburg sewer becomes available, the area may revert back to the Perrysburg FPA; sanitary sewer services may be disconnected from the Lucas County system and connected to the Perrysburg system at the City of Perrysburg's discretion; and

THAT the City of Perrysburg and Northwestern Water and Sewer District agree that notwithstanding availability of a Perrysburg sewer, the Hull Prairie-CSX triangle shall remain in the Lucas County FPA and not be moved back to the Perrysburg FPA before January 1, 2028.

New Subdivisions

It is the policy of the Plan that for all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Perrysburg wastewater treatment plant.

Recent Projects

- ~~WWTP upgrades completed from 2005 to 2015 included the following: primary clarifier, primary thickener, additional biosolids storage area, new grit removal equipment, screening equipment, and phosphorous removal, office, and staff facilities, and conversion to ultraviolet disinfection and plant SCADA system.~~
- ~~The final phase of the WWTP expansion began in Spring 2014 and concluded in late 2015, which increased the average daily capacity from 5.4 to 8.0 mgd. This phase included capacity increases in the following areas; effluent pumping, and secondary treatment.~~
- ~~When found~~ Perrysburg ~~is working~~ with the Wood County Health District to identify and classify residential properties inside City limits which have no record of sanitary sewer connection. If a sanitary sewer is deemed available, connection will be enforced, and where any discharging Household Sewage Treatment System (HSTS) remain, the properties will be notified to seek individual National Pollutant Discharge Elimination System (NPDES) permit coverage.
- ~~Perrysburg contracted with AECOM Technical Services in March 2016 to conduct a sanitary sewer and combined sewer flow study and General Plan. Draft reports were presented to Ohio EPA in January 2018. During 2018 – 2020, additional modelling and alternatives were requested by Ohio EPA and completed by the City. The flow monitoring, modelling and General Plan have identified:~~
 - ~~Predictions of CSO frequency during a typical year, and for a 5-year design storm at current CSO locations.~~
 - ~~Design options to eliminate the Maple Street sanitary sewer overflow at Grassy Creek.~~

~~**The City, in an effort to reduce the Maple Street ER-SSO, will line the Grassy Creek Interceptor by the end of 2024. The draft reports are summarized below:**~~

- ~~The City contracted with AECOM to install flow meters and analyze flow data in the sanitary sewer system during rainfall events to measure variations in wet weather sewer flow. AECOM input flow data into a computer model to predict the combined sewer system response to various rainfall scenarios. AECOM was charged with determining “the typical year” of rainfall by analyzing historic rainfall data. The model was focused on predicting what rainfall scenarios would exceed the flow capacity of the sanitary sewers and thus trigger CSO’s (combined sewer overflows). The City’s intent since 1992 has been to separate the combined sewers in order to reduce or eliminate CSO’s. The City contracted with AECOM in 2016 before the final sewer separation projects were completed. Through the modeling, AECOM could simulate various rainfall conditions and predict the occurrence and volume of CSO events for each. The final model predicted the number of CSO events under Typical Year rainfall conditions. AECOM produced alternatives including construction of various combinations of relief sewers to reduce the number of CSO events in a typical year to 4 events or fewer. The report included 3 alternatives and cost projections for each alternative. The NPDES permit renewed in 2017 requires the City to monitor overflow events for 48 months and report on progress and feasibility of further reducing or eliminating the CSO events. The most recent modeling in 2020 was based on 5-year frequency storm events.~~
- ~~The City operates an Emergency Response sanitary sewer overflow (ER SSO) at Maple Street and Grassy Creek when wet weather conditions in the sewer system necessitate emergency pumping into Grassy Creek to avoid back up in basements. The City’s current wastewater permit issued in 2017 required a plan to eliminate this overflow by 2022. In 2016, AECOM was contracted to develop a general plan to eliminate the pumped overflow. AECOM performed sewer flow monitoring and modelling in the watershed around Grassy Creek to predict flow levels in the sanitary sewer system. The model predicted flow levels in the sewer during a 5-year frequency storm. AECOM used the model to propose various combinations of relief sewers and additional pumping capacity to eliminate the need for pumping wastewater into Grassy Creek. Ohio EPA and the City have agreed that the controlling design condition will be elimination of the ER SSO up to a 10-year frequency rain event. During engineering design to eliminate the ER SSO to the 10-year storm, questions were raised about the proposed plan’s feasibility. Other alternatives are currently under review. The City requested an extension to the August 31, 2022 deadline. The City repaired the gravity return line from the Elm Street CSO to the Maumee River Interceptor.~~
- Per the City’s NPDES permit, a Phosphorus Discharge Optimization Evaluation was submitted in February 2019.
- The City’s Post-aeration project was completed in September 2019 per the NPDES compliance schedule
- Two projects were recently completed: a SCADA system upgrade and an upgrade to the biosolids dewatering system to replace a belt filter press with a volute dewatering press and new conveyor system at the WWTP.
- The City has recently completed a pilot study to determine the feasibility of adding a Biological Nutrient Removal process to the primary effluent treatment stream.

Future Needs

- Build sewer extensions to eliminate package plants and to provide service to new development. New package plants and septic systems are not to be permitted in areas where public sewers are available.
- ~~Fishbeck prepared~~ Fishbeck prepared a WWTP Capital Project Planning report in 2021. Major report recommendations include replacement of biogas piping and heat exchangers, upgrading biosolids treatment to Class A, retrofitting existing primary clarifiers or added capacity, and adding a compactor to the screening facility. The City is checking loading rates to the primary clarifiers. Digester improvements including heat exchanger and biogas piping replacement are in the design phase. Also planned is a constructed cover over the solids drying beds to keep the biosolids cake out of the rain/snow.
- ~~Perrysburg shall continue implementation of its CSO Abatement Plan. Perrysburg's Combined Sewer System Long Term Control Plan and the project implementation schedule is described above. This Plan supports state and federal financial assistance for these improvements.~~
- ~~The SR 25 Trunk Sewer, from Five Point Road to King Road has been designed. Construction is expected in the 2024-2026 timeframe.~~
- The City is nearing design completion on several sanitary sewer line replacements in the old combined sewer area to repair deteriorated sections of sewer to ~~eliminate~~ eliminate I/I from the sewer.
- The City is moving forward with the design of a new Public Utilities building due to an expanding work force and equipment needs.
- The City will be updating the Sanitary Sewer Master Plan around 2025 after the completion of the current system flow monitoring.
- The District anticipates performing extensive I&I reduction projects through main line lining, grouting, manhole rehabilitation and private lateral replacement within the Perrysburg FPA.
- The structure located on West Boundary which receives flows from the Ford Road pumping station was rehabilitated in 2022 due to corrosion being observed.
- Ford Road pumping station rehab to be completed by The District in 2023. Capital Project investment \$7.5 million

The capital improvement plan for the Perrysburg FPA is shown in Table 4-106.

Table 5-106: Perrysburg FPA Capital Improvement Schedule

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2022 2024	2025	2026	2027	2028	2029	Future
Sanitary Sewer Master Plan <u>SR 25 Sewer: King to Five Point</u>	Perrysburg	\$250,000 <u>\$250,000</u>		<u>250,000</u>	<u>1,000,000</u>	<u>2,800,000</u>	<u>500,000</u>		
Sewer Rehabilitation	Perrysburg	<u>\$1,620,000</u>	<u>430,000</u>	300,000	300,000	300,000	<u>300,000</u>		

CSO and ER-SSO	Perrysburg	TBD	400,000 1,750,000	1,500,000 TBD	TBD 2,000,000	TBD 2,500,000	TBD 2,000,000	TBD	TBD
WWTP Upgrades	Perrysburg	\$2,981,500 19,500,000	480,000 3,500,000	900,000 1,000,000	47,000,000	18,0400,000	500,000		
SS300 Area Sewer Rehabilitation	Northwestern Water and Sewer District	\$500,000		500,000					
West Boundary Manhole/Structure Work	Northwestern Water and Sewer District	\$750,000	750,000						
		\$12,384,000							

RISINGSUN FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Northwestern Water and Sewer District:** The Village of Risingsun, the Village of West Millgrove, Montgomery Township, and Scott Township are members of Northwestern Water and Sewer District (District). The District is responsible for public sewerage systems in both incorporated and unincorporated areas.

Figure 5-47: Risingsun Facility Planning Area

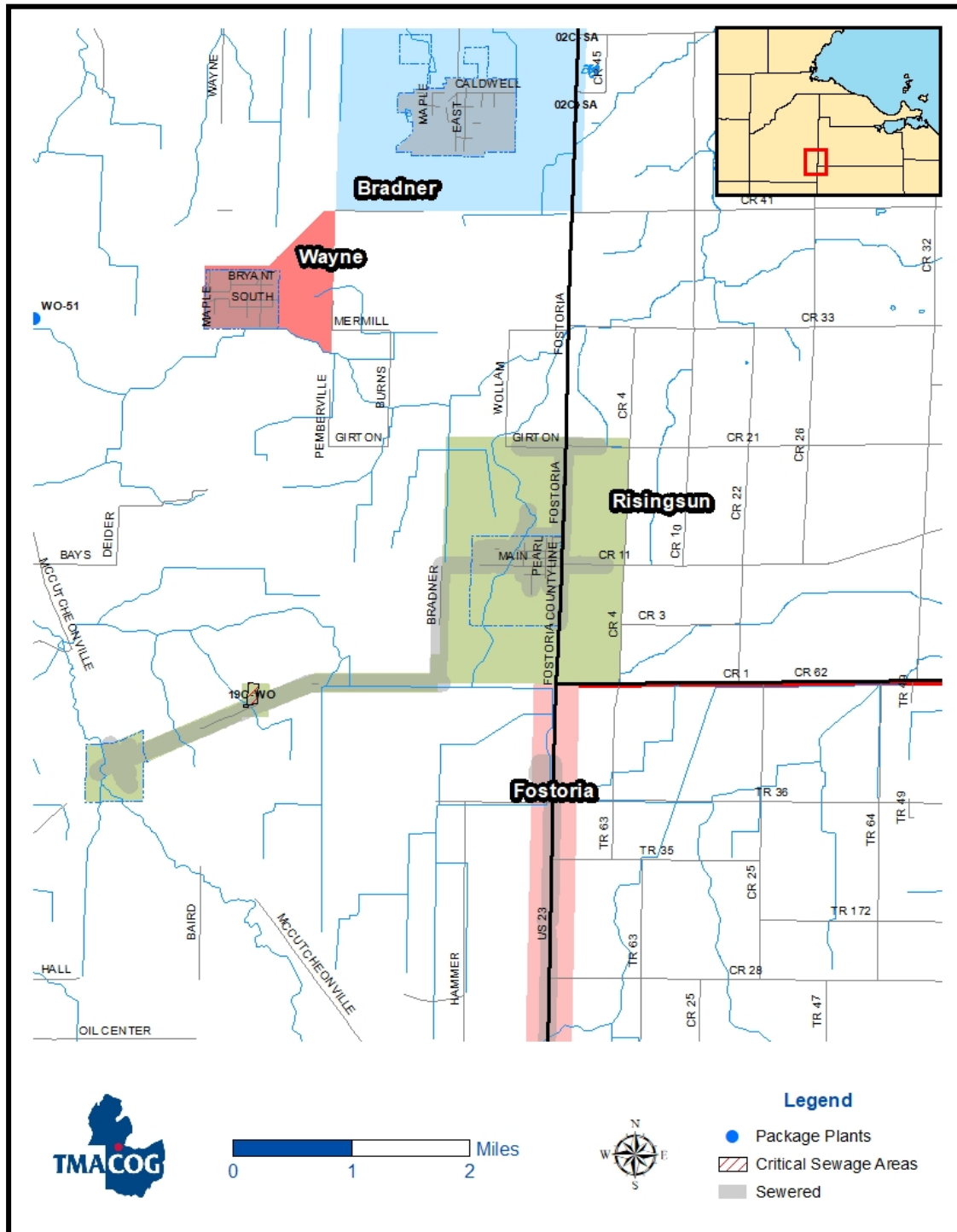


Table 5-107: Risingsun Area Population

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Risingsun, entire jurisdiction (Wood County)	541		
West Millgrove, entire jurisdiction	131		
Montgomery Township, entire jurisdiction (Wood County)*	4,157		
Scott Township, entire jurisdiction (Sandusky County)*	1,333		
Perry Township, entire jurisdiction (Wood County)*	1,5668		
Estimates within the FPA boundary		299	0.08

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-107 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The Northwestern Water and Sewer District (the District) completed a conventional gravity/force main sewer system and WWTP in 2008 at a total cost was \$4,799,434. Of that cost, \$2,468,300 came from grants and local funds. The treatment plant is an extended aeration plant with an average daily design flow of 95,000 gpd; peak hydraulic capacity is 475,200 gpd (330 gpm). Its Class B sludge is disposed of by discharge to a larger POTW with sludge handling facilities. Ohio EPA data showed an average flow of 0.067 mgd during the period ~~of 2020~~ of 2020-2021.

- In 2012, sewers were installed to serve to Village of West Millgrove, and the critical sewage area at Bays and Bradner Roads. West Millgrove was connected to the Risingsun system via a force main; the force main is available for service, and properties to which it is accessible were ordered to tap. These included buildings in the critical sewage area of Hatton that abut Cygnet Road, but most of the unincorporated town, about 17 residences, have no public sewerage system. Sewage treatment is handled by individual septic systems.
- A new headworks project is being completed by the District at the WWTP. The project includes replacing the existing trash trap with a new precast dual channel vault to house a new augur monster and grinder, a bypass channel with a standard bar screen, and all necessary electrical, mechanical, and structural work.

Issues

Hatton is identified as a Critical Sewage Area (see **Chapter 6**) due to failing septic systems identified through sanitary surveys and inspections. New or replacement on-site sewage treatment systems and replacements are not practical or possible in many cases. Many of the suspected or failing systems are on small lots that do not have room for replacement leaching fields or soil conditions are poor due to shallow bedrock, tight silt/clay soils, and/or seasonally high ground water.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Risingsun wastewater treatment plant.

Future Needs

- The town of Hatton remains as a Critical Sewage Area. The town’s approximately 17 residences are close but not accessible to the District’s sanitary sewer. Existing septic systems are believed to be inadequate; a sanitary survey is needed to determine and document their status. It is likely that sanitary sewers will be needed, and financial assistance to make the project feasible.

This Plan supports financial assistance to install sewers and provide treatment for unsewered areas.

Table 5-108: Risingsun FPA Capital Improvement Schedule

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2022	2023	2024	2025	2026	2027	Future
WWTP Headworks Improvement	Northwestern Water and Sewer District	<u>\$750,000</u>		<u>\$750,000</u>					

TONTOGANY FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Northwestern Water and Sewer District:** Owns and operates wastewater treatment facilities and the collection system.

Figure 5-48: Tontogany Facility Planning Area

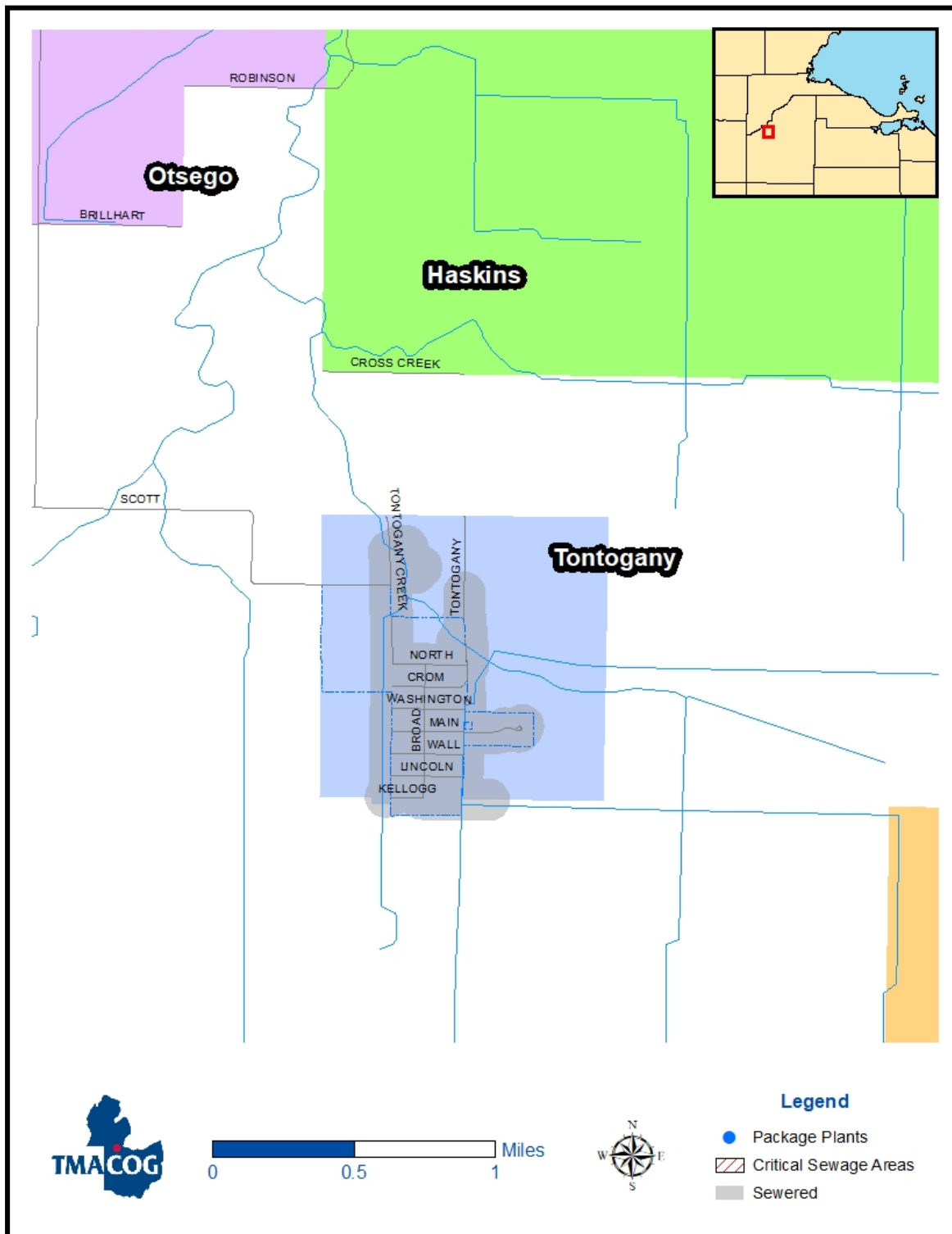


Table 5-108: Tontogany Area Population

Area	Total Population	Unsewered Population	HSTS Phosphorus Load (tons)
Tontogany, entire jurisdiction	387		
Washington Township, entire jurisdiction*	1,864		
Estimates within the FPA boundary		51	0.01

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-108 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The Tontogany WWTP is a four-cell aerated lagoon facility with ultraviolet disinfection. The facility was built in 1985 and has an average design capacity of 0.10 mgd and a hydraulic capacity of 0.33 mgd. Ohio EPA data showed an average flow of 0.053 mgd during the period of 2020-2021. The conventional gravity sewer system was built at the same time.

In 2006, Northwestern Water and Sewer District (District) bought approximately 14 acres for potential future expansion of the WWTP. In 2016, rehabilitation work was completed for the existing wastewater pumping station located at North Street.

~~The District is performing maintenance and replacing aeration equipment and evaluating the long term operations of this plant. The lagoon was cleaned in 2020 and a bacterial supplements are being added. The plant performance will be evaluated over the next couple of years to determine the future of this plant.~~

There are no package sewage treatment plants located in the FPA.

Issues

The Tontogany WWTP has had ~~some recent~~ difficulty in maintaining the ammonia and suspended solids limits listed in the current NPDES permit. The District has commissioned an updated study~~performed a study~~ to determine possible alternatives to improve the treatment~~ammonia removal~~ process ~~and is reviewing the results. Additionally, during the study process it was determined that the WWTP requires the lagoons to be drained and the sludge removed. In 2020, the sludge was removed and with upgraded aeration equipment, it is anticipated that the lagoons will meet the permit limits.~~

Future Needs

The District plans to continue its evaluation of the plant to determine the best. The capital improvement plan for the Tontogany FPA is shown in Table 5-109.

Table 5-109: Tontogany FPA Capital Improvement Schedule

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2022	2023	2024	2025	2026	2027	Future
Tontogany WWTP Improvements	Northwestern Water and Sewer District	500,000 <u>\$1,000,000</u>							\$500,000 <u>\$1,000,000</u>
		500,000 <u>\$1,000,000</u>							

WAYNE FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Village of Wayne:** Owns and operates wastewater treatment facilities, and the collection system within the corporate limits.
- **Northwestern Water and Sewer District:** Plans, and will own and operate collection system in unincorporated areas, if and when built, connecting to the Village for treatment services.

Figure 5-49: Wayne Facility Planning Area

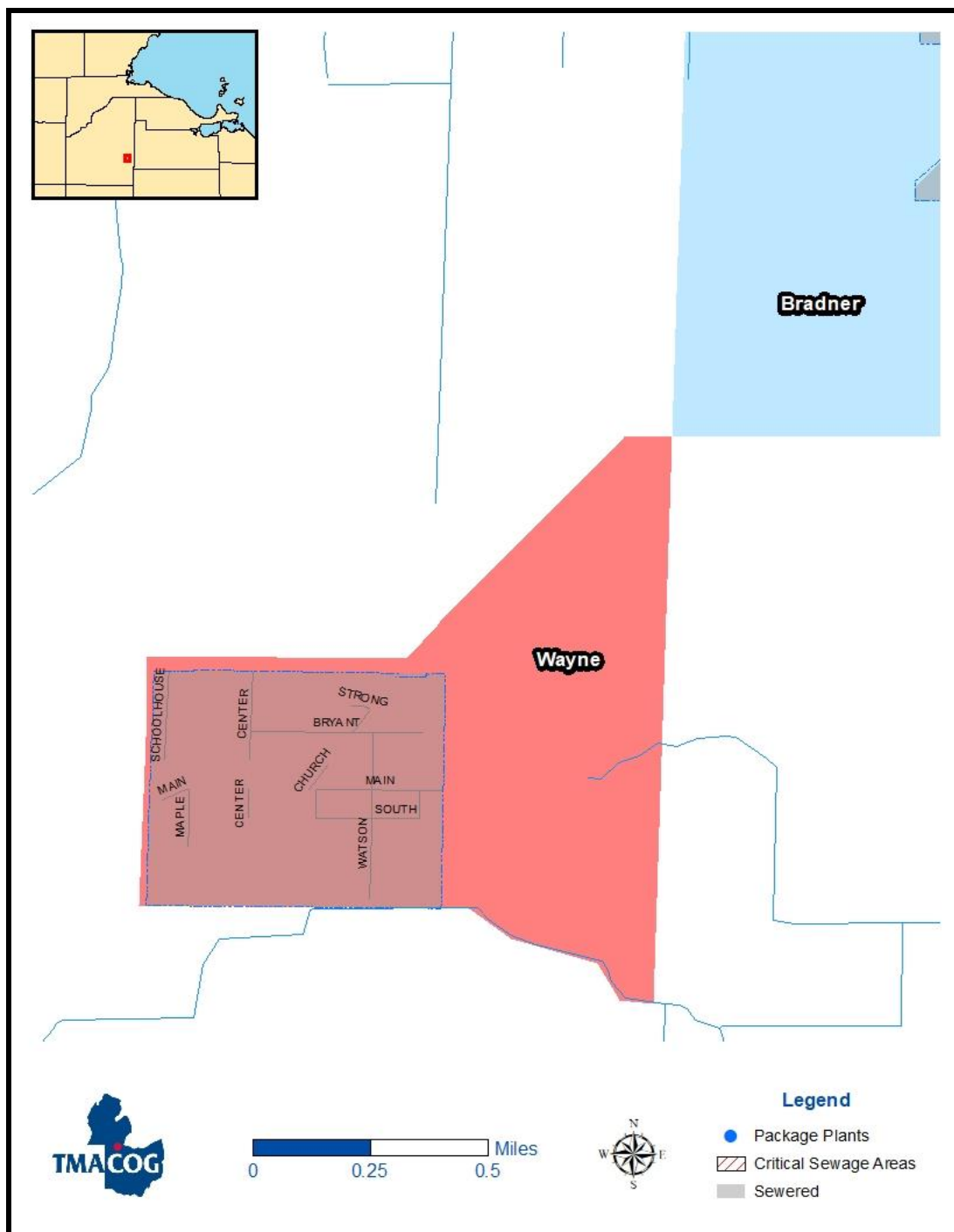


Table 5-110: Wayne Area Population

Area	Total Population	Unsewered Population	HSTS Phosphorus Load (tons)
Wayne, entire jurisdiction	841		
Montgomery Township, entire jurisdiction*	4,157		
Estimates within the FPA boundary		76	0.02

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-110 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The Wayne WWTP is a controlled discharge lagoon facility, built in 1997. The system uses conventional gravity sewers. The design capacity is 0.092 mgd. Ohio EPA data showed an average flow of 0.562 mgd when discharging, average flow of 0.020 mgd daily, and a peak flow of 1.361 mgd during the period of 2014-2018. Total discharge over the five-year period was 37.082 mg, with 66 discharge days.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Wayne wastewater treatment plant.

Future Needs

There are no projects planned for the Wayne FPA at the present.

WESTON FACILITY PLANNING AREA

Designated Management Agency Responsibilities:

- **Northwestern Water and Sewer District:** Owns and operates wastewater treatment facilities, and collection system.

Figure 5-50: Weston Facility Planning Area

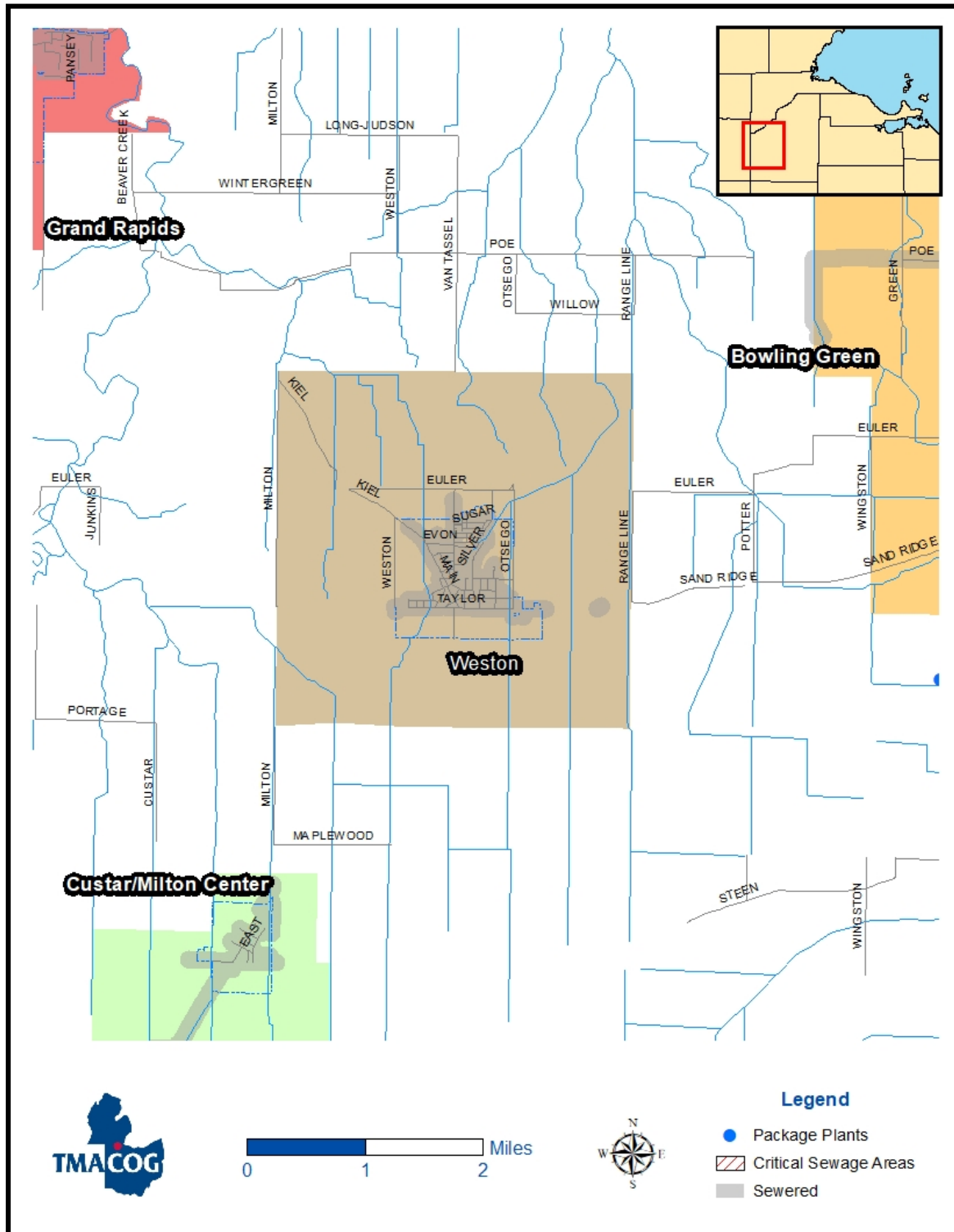


Table 5-111: Weston Area Population

Area	Total Population	Unsewered Population	HSTS Phosphorus Load (tons)
Weston, entire jurisdiction	1,455		
Weston Township, entire jurisdiction*	2,124		
Estimates within the FPA boundary		711	0.20

*only part of this jurisdiction is within the FPA boundary.

The 2020 population numbers in Table 5-111 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

Present Facilities

The Weston WWTP is an extended aeration facility with aerobic sludge digestion, effluent chlorination/dechlorination which was converted to ultraviolet in 2006, and aerated flow equalization ponds. The plant has sludge drying beds, but current practice is not to use them, and liquid sludge is transported to the City of Bowling Green WWTP for processing to Class A sludge. The plant was built in 1967, with an expansion in 1983. The 1983 improvements included separating the sewer system. Average design capacity was 0.21 mgd and hydraulic capacity was 0.70 mgd, in 2004-2005 the average design flow was increased to 0.28 mgd and peak flow to 0.85 mgd. Implementation of a General Plan led to further improvements for the plant to operate effectively and meet permit requirements. The improvements, completed in 2011 at a cost of \$1.3 million, included headworks design, optimized raw wastewater flow to secondary treatment, fine-bubble diffusers, and other secondary process improvements.

Ohio EPA data shows an average flow of 0.29 mgd during the period of 2020-2021. The Northwestern Water & Sewer District (District) is in the process of removing I & I by enforcing I & I elimination based on previous studies and televising the sewers during heavy rains. In 2018, the District completed a rehabilitation project on two pump stations. An analysis of the system in 2022-2023 ~~will~~ determined the need for plant improvements which are currently under design, if any.

Issues

Two phases of improvements to the Weston WWTP have been completed to adapt new technology and improve efficiency. The NPDES permit, renewed in May 2003, set a compliance schedule that required a General Plan, and compliance with effluent standards by 2007. Subsequently, in 2006 the District took over ownership and operation of the plant and has evaluated the plant's limitations and potential capabilities. Inflow and infiltration continues to be an issue and the District has to rehabilitated a portion of the sewer collection system. In 2021, The District completed a \$1.3 million sanitary sewer rehab project. The majority of this project is trenchless, targeting I/I issues, with a small portion of open cut

on Ohio Street. Private inflow and infiltration issues will be addressed over the next several years through the private grant program for stormwater removal.

New Subdivisions

It is the policy of the Plan that all new residential subdivisions that are required to be platted under Wood County subdivision regulations, septic tanks or individual household sewage treatment systems for platted subdivisions of more than five (5) lots shall not be permitted within the FPA boundary. New platted subdivisions shall connect to public sewers and be served by the Weston wastewater treatment plant.

Future Needs

The current NPDES permits indicates:

- The Village of Weston shall submit a Phosphorus Discharge Optimization Evaluation Plan no later than 12 months from the effective date of the permit. Upon acceptance of the plan by the Ohio EPA, the Village shall implement the recommended measures in accordance with the schedule specified in the plan.
- The Village shall conduct a comprehensive analysis of all feasible alternatives necessary to eliminate the bypass at the treatment plant and any overflows in the collection system. This comprehensive analysis shall be submitted no later than 12 months from the effective date of the permit, and thereafter submit annual status reports towards implementation.

The capital improvement plan for the Weston FPA is shown in Table 5-112.

Table 5-112: Weston FPA Capital Improvement Schedule

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2022	2023	2024	2025	2026	2027	Future
Sanitary Sewer I/I Removal Phase I Flow Equalization at WWTP	Northwestern Water and Sewer District	\$1,5200,000	1,200,000						\$1,500,000
		\$1,2500,000							