

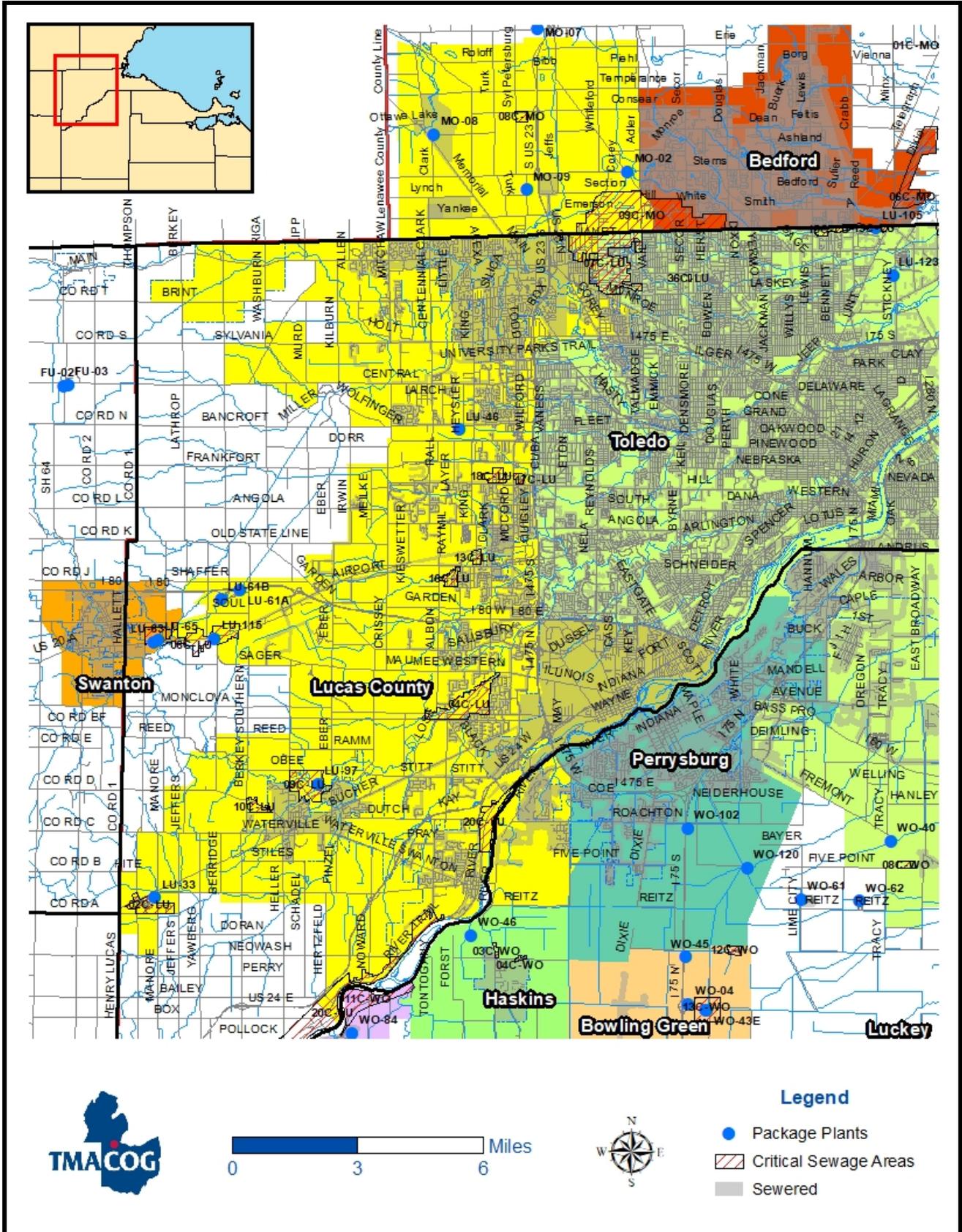
# LUCAS COUNTY FACILITY PLANNING AREAS

## **LUCAS COUNTY FACILITY PLANNING AREA**

### **Designated Management Agency Responsibilities:**

- Lucas County: Owns and operates the Lucas County Water Resource Recovery Facility (WRRF). Owns and operates sanitary sewers in the unincorporated areas of Lucas County and various other communities by agreement. The WRRF provides treatment services to all or part of the following communities as specified in the Lucas County Facility Planning Area (Figure 5.1) Whiteford Township (Michigan): Owns and operates sanitary sewers in Whiteford Township areas served by Lucas County. Whiteford Township has a 40-year agreement with the City of Sylvania for sewage treatment capacity of 125,000 gallons per day (gpd) for Service Area #1 (south of Sterns Road) and 120,000 gpd for Service Area #2 (Ottawa Lake).
- City of Sylvania: Owns and operates sanitary sewers within its service area and has reserved allocated capacity in the WRRF through an agreement with Lucas County. Sylvania transports wastewater from Whiteford Township, Michigan for treatment by the WRRF, under contract with the Whiteford Township Trustees.
- Village of Holland: Owns sanitary sewers within its corporate limits, which are operated by Lucas County through an agreement with the Village.
- City of Maumee: Owns and operates sanitary sewers within its corporate limits, has reserved allocated capacity in the WRRF, and operates sanitary sewers within its sewer service area through an agreement with Lucas County.
- City of Perrysburg: Owns and operates sanitary sewers in portions of the FPA in Wood County. Wastewater is transported to the WRRF via the Northwestern Water and Sewer District (the District) collection system.
- City of Waterville: Owns and operates sanitary sewers within its corporate limits, has reserved allocated capacity in the WRRF, and operates sanitary sewers within its sewer service area through an agreement with Lucas County.
- Village of Whitehouse: Owns and operates sanitary sewers within its corporate limits, has reserved allocated capacity in the WRRF, and operates sanitary sewers within its sewer service area through an agreement with Lucas County.
- Northwestern Water and Sewer District: Owns and operates sanitary sewers in portions of the FPA in Wood County.

Figure 5-1: Lucas County Facility Planning Area



**Table 5-1: Lucas County Area Population**

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Berkey, entire jurisdiction	275		
Holland, entire jurisdiction	1,820		
Maumee, entire jurisdiction	13,896		
Perrysburg, entire jurisdiction*	25,041		
Sylvania, entire jurisdiction	19,011		
Toledo, entire jurisdiction*	270,871		
Wartville, entire jurisdiction	6,003		
Whitehouse, entire jurisdiction	4,990		
Middleton Township, entire jurisdiction*	5,611		
Monclova Township, entire jurisdiction*	14,827		
Perrysburg Township, entire jurisdiction*	13,571		
Providence Township, entire jurisdiction*	3,378		
Richfield Township, entire jurisdiction*	1,575		
Spencer Township, entire jurisdiction*	1,746		
Springfield Township, entire jurisdiction	26,957		
Swanton Township, entire jurisdiction*	2,822		
Sylvania Township, entire jurisdiction	50,679		
Wartville Township, entire jurisdiction*	7,036		
Whiteford Township, entire jurisdiction*	4,590		
<b>Estimates within the FPA boundary</b>		<b>36,699</b>	<b>10.10</b>

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

The 2020 population numbers in Table 5-1 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 WRRF has a capacity of 22.5 million gallons per day (mgd) average daily flow, and 45.46 mgd peak, expanded in 2005. Ohio EPA data shows an average flow of 15.576 mgd, and a peak flow of 51.237 mgd during the period of 2016-2020. The treatment process uses the activated sludge process with anaerobic sludge digestion, centrifuge/belt filter press dewatering, and ultraviolet disinfection. The Class B biosolids are applied to land, however, the WRRF is currently undergoing an improvement project that, in addition to becoming a regional organics/food waste recovery facility, will generate Class A EQ biosolids and become energy neutral.

The major system improvements since the mid-1970s have been expansions to the WRRF, many sewer extensions, closing of two municipal wastewater plants, construction of an interceptor to serve the Toledo Express Airport area, and construction of the McCord Road interceptor. The Lucas County FPA now includes the individual service areas that use the WRRF.

The Lucas County system provides pollution control to Tenmile Creek, Ottawa River, Swan Creek, the Maumee River, and several ditches. The extension into unsewered areas, the elimination of many package plants, and the closing of the Sylvania and Whitehouse wastewater plants brought about a pronounced cleanup of Tenmile Creek, Swan Creek and their tributaries. This was reflected by a great reduction in fecal coliform concentrations and oxygen demanding substances.

Package plants located in the FPA are listed in Table 5-2.

**Table 5-2: Package Plants in the Lucas County Facility Planning Area**

Package Plant	Map ID	Type	Install or Upgrade Date	NPDES Permit	Capacity, gpd
Arrowhead Trailer Park (west plant) <sup>A</sup>	LU-61B	Private	1986	2PY00067	30,000
Arrowhead Trailer Park (east plant) <sup>A</sup>	LU-61A	Private	1979	2PY00067	18,000
Bedford Meadows <sup>A</sup>	MO-02	Private*	1970, 1976	MI026611	30,000
Charlie's Restaurant <sup>A</sup>	LU-115	Private*	1988	No Disch.	7,000
Crossroads Community Church <sup>A</sup>	MO-09	Private*	2005	MI0057625	1,000
Hidden Lake <sup>A</sup>	LU-46	Private*	1966, 1975		7,200
Sisters of Notre Dame, Lial Convent <sup>A</sup>	LU-97	Private	1975 (additions)	2PT00056	17,500
Whispering Winds Mobile Home Community <sup>A</sup>	LU-33	Private	1970, 2010	2PY00064	12,500
Whiteford Valley Golf Course <sup>A</sup>	MO-08	Private*		MIG580030	4,657

<sup>A</sup>Status is active

\*Facility type is assumed

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

## Issues

The overall sewer system is subject to I/I problems. These rarely lead to bypassing but can interfere with efficient plant operation and raise treatment costs.

The Lucas County FPA includes areas that are under pressure for development, and therefore sanitary sewer extensions. Most of the areas that were once pollution problems because of package plants or concentrations of septic systems have been tapped in. The continuing need will be to provide sewage service to accommodate planned development and eliminate failed septic systems. Both Swan Creek and Ottawa River have a long history of high bacterial levels. Both streams often exceed water quality standards at the City of Toledo's furthest upstream monitoring sites (Swan Creek at Eastgate, and Ottawa River at Sylvania Avenue near Wildwood Metropark). Failed septic systems are believed to be major contributors to these bacterial levels.

## Berkey

The Village of Berkey has no sewage system. All sanitary wastes are treated using "on-lot" septic systems. Berkey was recognized as a *Critical Sewage Area* in TMACOG's 1983 *Home Sewage Disposal Priorities* study. In recent years, most of the failed septic systems have been repaired or replaced, so the Village is no longer a critical area. Long-term, however, Berkey is likely to need a sewage system.

The problem area was the central part of town, around the corner of Berkey-Southern and Sylvania-Metamora Roads. This area has the greatest concentration of older homes on small lots. A 1995 study by Feller and Finch recommended a gravity sewer system for Berkey connecting to the Lucas County system. The estimated cost was \$1.7 million for a system to serve 96 users, or \$1.1 million to serve 55 users. That system proved too costly for the community, and failed onsite systems were upgraded instead.

## **Holland**

Sanitary sewers were installed in Holland and tapped into the Lucas County system in 1990.

## **Maumee**

Maumee was connected to the Toledo sewer system until 1973 when the WRRF (formerly known as the Maumee River Treatment Plant) began operation. Maumee separated its sewers and eliminated its combined sewer overflows (CSOs) in a four-phase program completed in 1997. By 2001, the entire city was sewered with two small exceptions. One is Old Trail Road, where about a dozen houses are not on the sewer system which is proposed as a function of grant applications the city submitted in September of 2021. The second is Valley Drive, which has about half a dozen unsewered houses. This area does not have local sanitary sewers: of the six to eight homes on septic systems about three remain; the rest have been torn down. However, The City just recently completed a design for an additional small sanitary lift station in an effort to serve the above reference unserved homes.

The City of Maumee self-reported an SSO problem that appears to have been an ongoing problem since the city closed out its CSO program in 1997. Initial projects and estimates for eliminating Sanitary Sewer Overflows and discharges (SSO) are as follows:

- 300,000 linear feet of sanitary sewer lining (\$12,000,000)
- 200,000 linear feet of sanitary service lead relining or replacement (\$6,000,000)
- Rehabilitation and lining of approximately 300 Sanitary Manholes (\$2,400,000)
- Rehabilitation and/replacement and construction of approximately 80 storm sewer manhole structures (\$700,000)
- Construction of approximately 15,000 linear feet of Storm sewer and related appurtenances (6,500,000)
- Removal of at least 9 sanitary sewer regulator chambers (all), (2,200,000)
- Replacement and new construction of approximately 20,000 linear feet of sanitary sewer main (12,000,000)
- Rehabilitation and/or replacement of 20 storm sewer outfall pipe and headwalls, including river slope stabilization (4,000,000)
- 10 additional years of flow monitoring consultation and data collection (4,000,000)
- 2,500 storm and sanitary sewer and footer/downspout separations (residential structures) (20,000,000)
- Rehabilitation, construction, and wet-well enhancement of City's Sanitary lift and pump stations. (14,000,000)

The approximate cost for these projects is 83.8 million over the span of 10-15 years. Table 5-5 will be updated with more specific project timelines as they are developed.

## **Neapolis**

Neapolis is an unincorporated, unsewered village in Providence Township, near the western edge of Lucas County, and is recognized as a Critical Sewage Area. The 2010 census records the population estimate of the Village at 423. Presently the area is served by individual septic systems, and one package plant at the Whispering Winds Mobile Home Community, in the northeast portion of the town. It is a 12,500 gpd extended aeration plant built in 1970, with sand filters and a chlorinator updated in 2011 per Ohio EPA. There are 58 mobile homes in the park. In 2005, the Lucas County Court of Common Pleas ordered the mobile home park owners to bring the wastewater plant into compliance with Ohio EPA standards. The mobile home park has since changed owners.

A Facilities Plan has been prepared for Neapolis, which documented water quality violations due to fecal coliform in local streams (Blue Creek and Aumend Ditch). The Toledo-Lucas County Health Department (TLCHD) notes in addition that septic system leach fields fail to function properly because of the seasonally high-water table. High groundwater, which occurs in the spring and fall, is a continuous threat to drinking water supplies, which are from private wells. Neapolis is not under order from Ohio EPA to install sewers.

The TLCHD has agreed to installation of public water before sewers. Eliminating wells will allow more space on lot for septic systems, and will help alleviate system failures in the short term.

The project proposed in the *Neapolis Facilities Plan* was for conventional gravity sewers and a treatment lagoon, at a cost of \$2 million. The grant was not awarded. In 1988, TMACOG did a study of lower-cost alternative technology systems for Neapolis, and proposed a system costing an estimated \$530,000. No financial aid was available for the project, and it was not affordable. Neapolis continues to need a sewer system; financial assistance is needed to make it affordable to residents.

An updated General Plan is needed to identify best service options for the area and estimate current costs. The General Plan should include a financing plan. The town of Neapolis proper, the trailer park, and the Woodbrier subdivision stand a reasonable chance of qualifying for financial assistance, but an income survey will probably be needed. Lucas County plans on serving Neapolis by tapping it into the County system to the WRRF.

## **Perrysburg**

The City of Perrysburg has a small sewer area that falls within the Lucas County FPA portion in Wood County. This area is in the far western part of Perrysburg Township where the City owns and operates sanitary sewers. The City's collection system is tributary to the Northwestern Water and Sewer District's (District) system who then conveys the sewage to the WRRF for treatment.

## **Sylvania**

Sewers in Sylvania were originally served partly by the City's 0.3 mgd wastewater plant that began operation in 1957, and discharged into the Ottawa River. Additional portions of the City, up to 2.0 mgd of flow, connected to the Toledo system. Excess flows went into the Ottawa River. In 1977, the two

systems were consolidated, and the entire City was connected to the WRRF. In 2007, there is one area in the Sylvania service area identified as needing sewers:

- Alexis/Whiteford area; the TLCHD collected samples in this area and found elevated fecal coliform levels.

## **Waterville**

Waterville had its own 0.12 mgd treatment plant, which was abandoned around 1977 when the City tapped into the Lucas County system. The storm and sanitary sewers were separated in 1975.

## **Whitehouse**

Whitehouse had its own 0.29 mgd wastewater plant, which discharged to Disher Ditch. It was abandoned in 1989 when the Village tapped into the Lucas County system. Whitehouse has also eliminated their combined sewers; the system is now entirely separate. The connections between the sanitary and storm sewers have been sealed off.

There are some unsewered areas remaining within the Village itself. Whitehouse Facilities Plan (Poggemeyer, 1981) makes note of these: "The Village should provide unsewered Village areas with service, as the density of development demands such facilities." Connecting unsewered houses within the Village to the public sewer will further reduce pollution to local streams.

Several areas near Whitehouse, but outside of the Village corporate limits need sanitary sewers. It is the recommendation of this Plan that these areas be connected into the village system:

- The Springbrook Farms/Davis Road area. It includes 92 houses, plus a package plant at the Lial School, and is located between the north corporate limits and Obee Road. The first phase of this project has been completed, from Providence street west to just beyond Industrial Boulevard. The next phase of this project is listed on the Village of Whitehouse's capital improvement plan.
- SR 64 (Centerville Street / Waterville-Swanton Road) northwest of the corporate limits: about 10-15 houses. This project is listed on the Village of Whitehouse's capital improvement plan.

The Village of Whitehouse has identified several future sanitary sewer extension projects within its service district of the FPA. They are listed in the "Future Needs" table, below.

## **Northwestern Water and Sewer District (the District)**

The WRRF provides treatment for the District in Wood County for an area west of Hull Prairie Road in Perrysburg and Middleton Townships. This service is pursuant to an agreement reached between Lucas and Wood Counties in 1975. Seven subdivisions in the FPA are served by Lucas County: Willowbend (at SR 65 and Roachton Road), Saddlebrook (south side of Roachton at Hull Prairie), Riverbend (on the east side of SR 65), The Village at River Bend Lakes (south side of Roachton between SR 65 and Saddlebrook), Hull Prairie Meadows (south of Roachton North of Five Points and West of Hull Prairie), Carrington Woods (on the east side of SR 65, between Roachton Road and I-475, and The Sanctuary (the former Divine Word Seminary)). The District conveys sewage to the WRRF for the City of Perrysburg for a small

portion of the City that falls within the Lucas County FPA (see Perrysburg section).

A section 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 2006, Ohio EPA ordered sanitary sewers for this area. Most of the area was in the Lucas County FPA; however, a portion of the ordered area between Hull Prairie Road and the railroad tracks lies within 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 stated in 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.*

In 2014, the portion of the ordered area from Shelton Gardens west to River Road was connected to the Riverbend sanitary sewer system. The Ohio EPA is going to be evaluating whether sewers are required for portions of Five Point Road to the east.

## **Ottawa Lake**

Ottawa Lake is an unincorporated community in Whiteford Township, Monroe County Michigan. Sanitary sewers were constructed to serve the area in 2014, connecting to the Lucas County system via the City of Sylvania.

Karst bedrock formations and sink-holes are common in the area. Groundwater is vulnerable to contamination from failed on-site sewage systems, and several wells in the area showed signs of bacterial contamination during a 2006 - 2008 investigation. In April 2010, the Michigan Department of Natural Resources (Michigan DNR) ordered construction of sewers. The Whiteford Township 671-acre municipal Sanitary Sewer District (#2) serves approximately 59 houses, 31 businesses, and 23 vacant parcels. The collection system is a gravity sewer routed to a pump station to the state border, and delivered by metered gravity flow to the Sylvania, Ohio wastewater system.

The facilities include 5,400 feet of gravity sewer, a pump station, 18,400 feet of force main, a meter vault, and appurtenances. The Whiteford Township portion of the FPA includes several other critical sewage areas and package sewage treatment plants. The Township completed a sewer extension project in 2015-2016 that eliminated the Critical Sewage Area of Hicker and Acre Roads. The remaining areas should be priorities for future service extension.

Capital costs for the Ottawa Lake project were paid with a loan from U.S. Department of Agriculture Rural Development (USDA-RD), repaid by special assessment on properties in the sewer district. Future repairs and modifications will be funded through a small portion of revenue generated by monthly sewer billing. Treatment and handling costs billed by Sylvania will also be paid from the monthly sewer bill. Future capitalization to expand the facilities would be funded by special assessment of properties added

to the system at that time.

## **New Subdivisions**

It is the policy of this Plan that all new major subdivisions in Lucas County shall be improved with public sanitary sewers that are designed and constructed in accordance with the specifications of the Lucas County Sanitary Engineer or other appropriate Designated Management Agency (DMA), consistent with regulations of the TLCHD. Septic tanks or individual household sewage treatment systems should be discouraged for new subdivisions within the FPA boundary. New subdivisions are encouraged to connect to public sewers and be served by the WRRF.

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 WRRF.

## **Future Needs**

- The WRRF was expanded to an average daily flow capacity of 22.5 mgd in 2005 at a cost of \$17.1 million. The ultimate design capacity to which the WRRF could be enlarged at the current site is 30.0 mgd average daily flow, or 62.66 mgd maximum. Expansion to that size is not expected to be necessary before 2020. As the system ages, it is anticipated that the focus will change from expansion to repair and replacement.
- Extraneous flows may be high for the older sewers in the system. Sanitary Sewer Evaluation Studies may be needed to identify and remove excess inflow and infiltration.
- Sewer extensions to eliminate remaining problem areas and provide service to new development. New package plants and septic systems should not be permitted in areas that may be served by public sewers.
- Future collection system improvements for the WRRF and the Lucas County service districts within the Lucas County FPA are provided in Tables 5-3 to 5-8.

**Table 5-3: Lucas County FPA Capital Improvement Schedule – Lucas County**

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2020	2021	2022	2023	2024	2025	2026
S77 & S189 Lining in Ottawa Hills - COMPLETE	Lucas County	\$1,200,000	1,200,000						
Cairl Ditch Siphon Rehabilitation - COMPLETE	Lucas County	\$1,200,000		1,200,000					
Wolf Creek Siphon Rehabilitation	Lucas County	\$1,300,000			1,300,000				
S500 Rehab – MH2 to MH4	Lucas County	\$3,300,000			3,300,000				
Sylvania-Herr Pump Station Rehab S-763R - COMPLETE	Lucas County	\$350,000		350,000					
S-897 Shoreland Avenue	Lucas County	\$750,000				750,000			
Anaerobic Digester Improvements	Lucas County	\$20,000,000		20,000,000					
Fallen Timbers Pump Station Improvements COMPLETE	Lucas County	\$232,000			232,000				
S500 Rehab – MH4 to MH6	Lucas County	\$3,168,000				3,168,000			
Angola Rd. Sewer	Lucas County	\$1,000,000		1,000,000					
		\$32,500,000							

**Table 5-4: Lucas County FPA Capital Improvement Schedule – Sylvania Service District**

Project	DMA	Total Cost	Annual Capital Improvement Needs						
			2020	2021	2022	2023	2024	2025	Future
<b>Aclara Equipment Replacement</b>		<b>\$13,000</b>		<b>13,000</b>					
Allen Street Sanitary Sewer Replacement	Sylvania	Pending							
Altara Street - Highland View to Gillingham	Sylvania	<b>\$42,800</b>		3,700		39,100			
Angleview – Trailway to Elden	Sylvania	Pending							
Equipment		<b>\$22,000</b>		14,000					8,000
Centennial Crossing Pumping Station (Complete)	Sylvania								
Fairview-Parkwood	Sylvania	Pending							
Highland View Park Sanitary Sewer Replacement	Sylvania	Pending							
Large Diameter Sewer Rehab	Sylvania	<b>\$2,887,044</b>		1,092,744	1,794,300				
Main Street SS Lining – Convent to Ten Mile Creek	Sylvania	<b>\$800,000</b>				800,000			
Monroe Street Pumping Station Retrofit	\$1,000,000					1,000,000			
San Benito Sanitary Sewer Replacement	Sylvania	<b>\$160,000</b>					16,000	144,000	
SOMO	Sylvania	<b>\$55,100</b>		55,100					
Sylvania Pumping Station Retrofit	Sylvania	<b>\$1,000,000</b>						1,000,000	
		<b>\$5,982,904</b>							

**Table 5-5: Lucas County FPA Capital Improvement Schedule - Maumee Service District**

Project	DMA	Total Cost	Annual Capital Improvement Needs							
			2018	2019	2020	2021	2022	2023	2024	2025
Sanitary Sewer Lining		\$12,000,000								
Sanitary Service Lead Relining or Replacements		\$6,000,000								
Rehabilitation and Relining of Sanitary Manholes		\$2,400,000								
Rehabilitation and Relining of Storm Sewer Manholes		\$700,000								
Construction of Storm Sewer and Related Appurtenances		\$6,500,000								
Removal of Sanitary Sewer Regulator Chambers		\$2,200,000								
Replacement and Construction of Sanitary Sewer Main		\$12,000,000								
Rehabilitation and/or Replacement of Storm Sewer Outfall Pipes and Headwalls		\$4,000,000								
Flow Monitoring Consultation and Data Collection		\$4,000,000								
Storm and Sanitary Sewer Footer/Downspout Separations		\$20,000,000								
Rehabilitation, Construction, and Wet-well Enhancement		\$14,000,000								
		\$83,800,000								

**Table 5-6: Lucas County FPA Capital Improvement Schedule – Northwestern Water & Sewer District**

Project	DMA	Total Cost	Annual Capital Improvement Needs							
			2019	2020	2021	2022	2023	2024	2025	2026
Willowbend Pump Station Rehabilitation / Replacement	The District	\$3,000,000			\$3,000,000					
		\$3,000,000								

**Table 5-7: Lucas County FPA Capital Improvement Schedule – Waterville Service District**

Project	DMA	Total Cost	Annual Capital Improvement Needs							
			2018	2019	2020	2021	2022	2023	2024	2025
Sewer Line Improvements	Waterville	\$200,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
		\$200,000								

**Table 5-8: Lucas County FPA Capital Improvement Schedule – Whitehouse Service District**

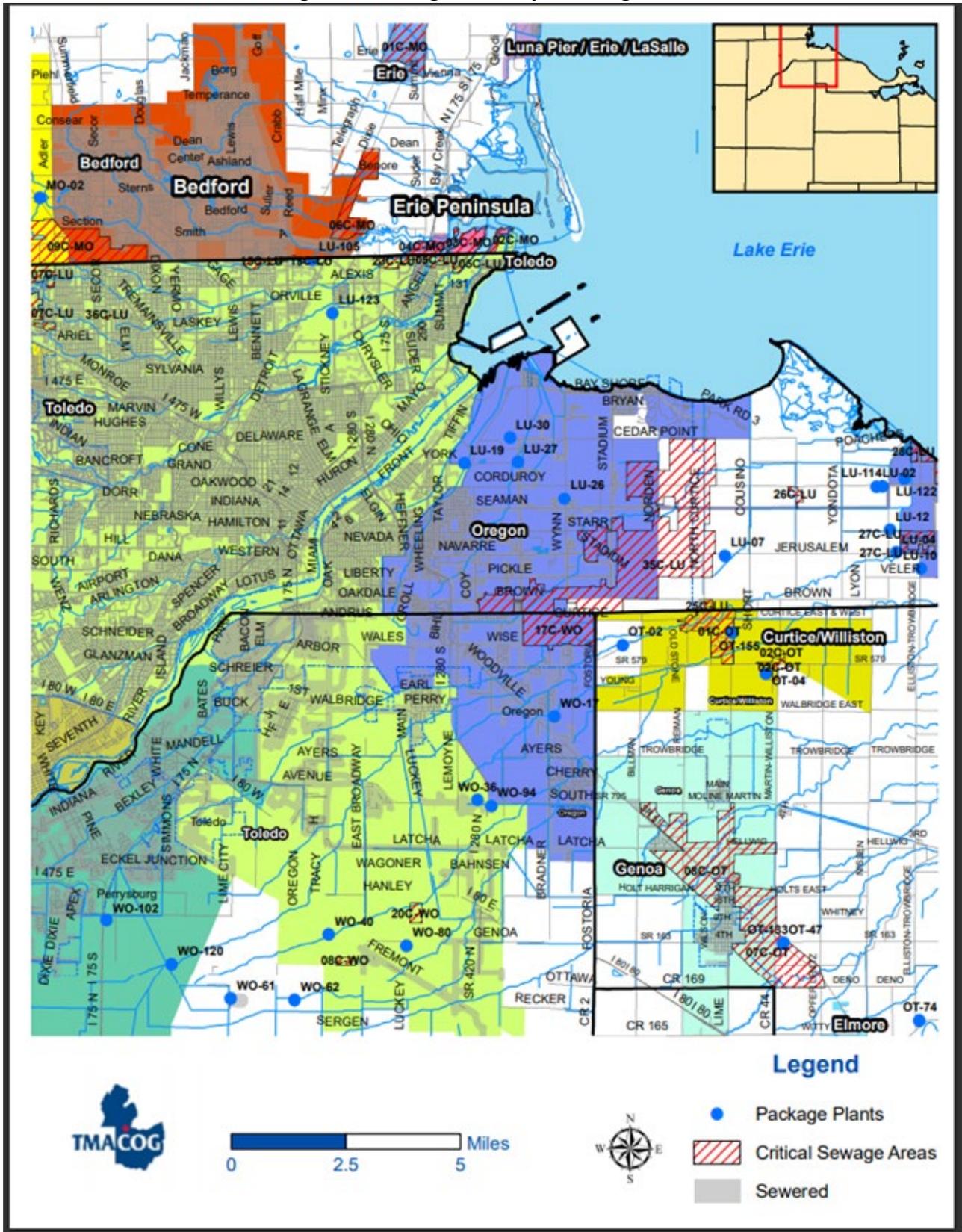
Project	DMA	Total Cost	Annual Capital Improvement Needs							
			2018	2019	2020	2021	2022	2023	2024	2025
Dutch Rd Ext. Phase II	Whitehouse	\$1,000,000	500,000		500,000					
Regional pump station bypass & wet well rehab	Whitehouse	\$400			400					
S.R. 295 - South to U.S. 24	Whitehouse	\$3,200,000						3,200,000		
Industrial Park-New Development	Whitehouse	\$175,000		35,000	35,000	35,000	35,000	35,000		
Bucher Rd. to Monclova Twshp. Line	Whitehouse	\$345,000		345,000						
Weckerly Rd. Phase II - Cemetery to Davis	Whitehouse	\$150,000				150,000				
Gravity sewer interceptor for regional pump station	Whitehouse	\$2,000			2,000					
Stiles East from Providence	Whitehouse	\$200,000			200,000					
Noward Rd. Ext North to Dutch	Whitehouse	\$670,000						670,000		
S.R. 295 Sanitary Sewer Extension to S.R. 64	Whitehouse	\$255,000					255,000			
Weckerly Rd. Ulrich Sewer Ext. Vintage	Whitehouse	\$500,000			500,000					
		\$6,497,400								

## **OREGON FACILITY PLANNING AREA**

### **Designated Management Agency Responsibilities:**

- **City of Oregon:** Owns and operates wastewater treatment facilities, and collection system within the corporate limits.
- **City of Northwood:** Northwestern Water and Sewer District (the District) owns some of the sanitary sewers within the corporate limits in the Oregon FPA, and the District owns others in the unincorporated areas. All sanitary sewers are operated by the District and connect to Oregon's system for treatment.
- **Village of Harbor View:** Owns the sanitary sewer system within the corporate limits, operated by the Lucas County Sanitary Engineer through an agreement with the Village.
- **Village of Millbury:** The District owns and operates sanitary sewers within the corporate limits and connects to Oregon's system for treatment.
- **Lucas County:** Owns and operates collection system in Lucas County unincorporated areas, connecting to Oregon's system for treatment.
- **Northwestern Water and Sewer District:** Owns and operates sanitary sewers in Wood County unincorporated areas and connects to Oregon's system for treatment.

Figure 5-2: Oregon Facility Planning Area



**Table 5-9: Oregon Area Population**

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Oregon, entire jurisdiction	19,950		
Harbor View, entire jurisdiction	89		
Millbury, entire jurisdiction	1,193		
Northwood, entire jurisdiction*	5,160		
Jerusalem Township, entire jurisdiction*	2,895		
Lake Township, entire jurisdiction*	11,160		
<b>Estimates within the FPA boundary</b>		<b>5,567</b>	<b>1.53</b>

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

The 2020 population numbers in Table 5-9 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 Oregon wastewater treatment plant is an 8.0 million gallon per day (mgd) activated sludge facility, designed to serve the City of Oregon, Jerusalem Township, (the District) #200, the Village of Harbor View, and Maumee Bay State Park. Its peak hydraulic capacity is 36.0 mgd. During the period 2012-2017, daily flow varied between 3.62 and 7.44 mgd based on the 50<sup>th</sup> percentile values. Maximum flow varied between 15.16 and 34.30 mgd. Plant facilities include bar screen, influent pumping, grit removal, flow equalization, activated sludge, ferrous chloride addition for phosphorus removal, secondary aeration, final settling, chlorination/dichlorination. The sewage sludge treatment process includes aerobic digestion and portable belt press. Historically, sludge was applied to agricultural land at agronomic rates, however, more recently the sludge has been dewatered at the WWTP and disposed in a municipal landfill.

Since the completion WWTP on Dupont Road, its service area has been expanded through sewer extensions. The South Shore Park subdivision originally had its own package plant. It was abandoned in 1991, and the area is now connected to the main Oregon system. Harbor View and North Oregon were tapped in 1996 at a cost of \$3.2 million. Oregon became a city when the entire Township incorporated. Many areas remain sparsely developed or rural, and unsewered. Package plants located in the FPA are listed in Table 5-10. It is the policy of this Plan that package plants shall be required to tap into public sanitary sewers when they become available.

**Table 5-10: Package Plants in the Oregon Facility Planning Area**

Package Plant	Map ID	Type	Install or Upgrade Date	NPDES Permit	Capacity, gpd
5104 Walbridge <sup>A</sup>	WO-17	Private*			12,000
Meinke Marina <sup>A</sup>	LU-122	Private		2PR00165	10,000
BP Husky Oil Refinery <sup>A</sup>	LU-30	Private	1958, 1974	2IG00007	21,500
Buckeye Pipeline <sup>A</sup>	LU-19	Private*	1962	2GS00022	1,500
Our Lady of Mt. Carmel <sup>A</sup>	LU-10	Private*	1967 (expansion)		4,000
Wynn Road Homes <sup>A</sup>	LU-26	Private*	1981	No discharge	2,000
Ivy Steel and Wire <sup>A</sup>	LU-27	Private*	1973		3,500

<sup>A</sup>Status is active

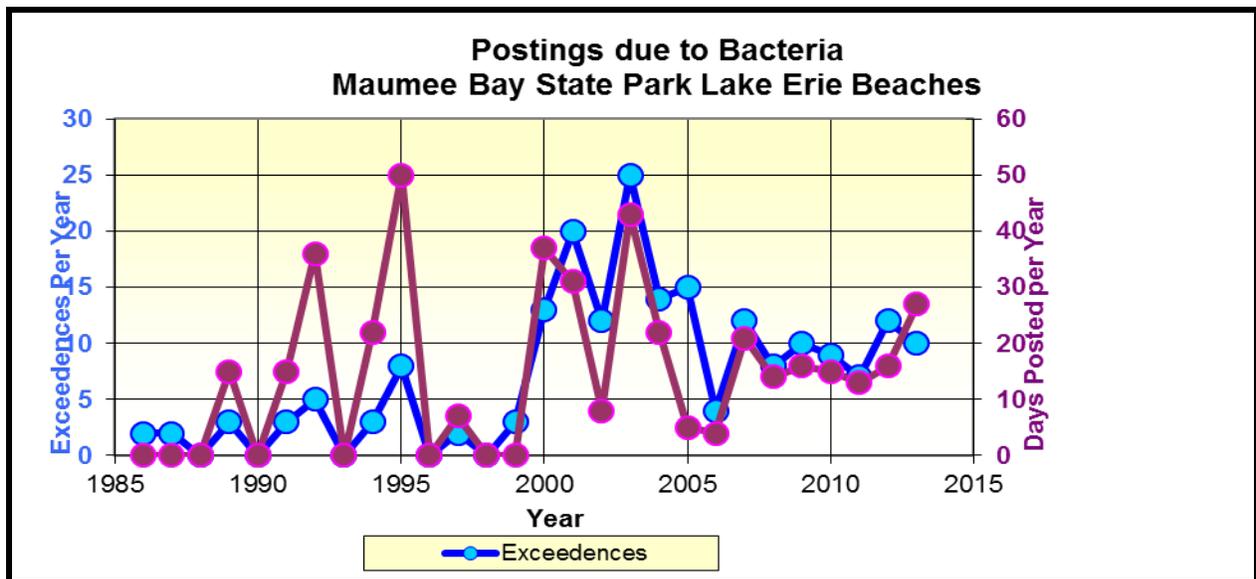
\*Facility type is assumed

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

### Issues

A large part of the Oregon FPA is unsewered. Eliminating package plants and failed septic systems is a major challenge for Oregon and Jerusalem Township. The Lake Erie beaches at Maumee Bay State Park often have posted warnings of elevated bacteria levels, which have been attributed to failed septic systems. Postings are very weather-dependent, but average more than 15 days out of the 100-day recreational season. Bacteria and beach posting trends for the Maumee Bay State Park Lake Erie beaches are shown in the Figure 5-3.

**Figure 5-3: Maumee Bay State Park Beach Postings**



Health Department testing indicates that septic system failure is very common in the area. Some areas are densely settled enough to require public sewers. In 1998-1999, the Toledo- Lucas County Health Department (TLCHD) conducted a stream and septic system testing program in Oregon and Jerusalem Township. In Oregon, 11 of 19 stream sites showed bacteria levels above water quality standards.

Trunk sewers were built along Stadium Road, Seaman Road from Lallendorf to Wolf Creek, and Stadium between Pickle and Corduroy Roads between 2001-2005. The Seaman and Stadium trunk sewer project is approximately seven miles long with a service area of 5,350 acres or 8.4 square miles; cost of the project was \$7.6 million. These sewers eliminated hundreds of septic systems and three package sewage treatment plants.

- In 2004, the City also constructed the Pickle & Wynn local sewer project, which is three miles long, at a cost of \$2.5 million. This project serves approximately 200 households in the Wolf Creek Watershed that previously had septic systems.
- In 2006-2007, Oregon constructed the Coy Road sanitary sewer project, which included 3,300 feet and cost \$400,000. This project eliminated approximately 30 failing septic systems.

Oregon participates in the Wolf Creek Committee, a group of agencies and citizens that monitors bacteria levels in Maumee Bay, and undertakes investigation and implementation projects.

In recent years, the Oregon wastewater collection system has experienced sanitary sewer overflow (SSO) events due to overloading from extraneous stormwater. Oregon's National Pollutant Discharge Elimination System (NDPDES) permit includes the implementation of a Management, Operation, and Maintenance (MOM) program and the elimination of SSOs through a schedule of compliance with a System Evaluation and Capacity Assurance Plan (SECAP). The City of Oregon's capital improvement plan includes projects for elimination of I/I through a series of rehabilitation projects, as per the SECAP compliance schedule; this work is ongoing (see Table 4-11 below).

- In 2009, Oregon rehabilitated sanitary sewers and sanitary manholes in the Wheeling Street District of the collection system. This work included the lining of 9,401 linear feet of various size sanitary sewer and the rehabilitation of 51 sanitary sewer manholes. Sanitary sewers crossing underneath creeks were targeted for the lining project.
- In 2012-2013, the City of Oregon rehabilitated approximately 66 additional manholes in the collection system by a variety of methods including lining and chemical grouting. These manholes were noted as needing some sort of rehabilitation during Global Positioning System (GPS) manhole inspections completed 2007-2010.
- Also, in 2012-2013, the City of Oregon completed the Sanitary Sewer Rehabilitation Project, Phase II. This included the replacement of sanitary sewers and manholes in the Cresceus Heights subdivisions, between Navarre Avenue and Pickle Road. Sanitary sewers and residential home connections were replaced within the City right of way. This work also included the continued lining of the Wheeling Street Trunk Sewer from Navarre Avenue to north of Starr Avenue. Manholes within the sewer lining project were also lined. Statistics for this project are as follows: 6,417 linear feet of 8" sanitary sewer, 4,727 linear feet of 6" lateral service, 23 sanitary sewer manholes, nine sanitary sewer manholes lined, 454 linear feet of 30" sanitary sewer lined, 2,661 linear feet of 27" sanitary sewer lined, 180 linear feet of 12" sanitary sewer lined, 610 linear feet of 8" sanitary sewer lined.

- In March 2013, sanitary sewer flow meters were installed in sewers serving South Shore Park and Navarre Avenue to further define sources of I/I within these areas. Flow meters were removed in July 2013 and have given the City direction on where to concentrate I/I efforts in the North Oregon Sanitary Sewer District, as well as, the Wheeling Street Sanitary Sewer District.
- In 2015-2016, the Sanitary Sewer Rehabilitation Project Phase 3 was completed in the Eastmoreland and Euclid Park areas of the Wheeling Street Sanitary Sewer District. This work included the trenchless rehabilitation of sanitary sewer mainlines, manholes, and laterals within the public right-of-way. Statistics for this project are as follows: 535 linear feet of 30" sanitary sewer lined, 2,969 linear feet of 12" sanitary sewer lined, 355 linear feet of 10" sanitary sewer lined, 9002 linear feet of 8" sanitary sewer lined, 186 sanitary sewer cleanouts installed, 194 sanitary sewer laterals lined, 16 sanitary sewer point repairs completed, 14 sanitary sewer risers lined, and 875 vertical linear feet (56 manholes) of sanitary sewer manholes were lined. Total project cost was \$1,776,066.53.
- In 2016-2017, the Sanitary Sewer Rehabilitation Project, Phase 4, Part A was completed in the Ketcham's Little Farms, East Hollywood, and Woodville Heights areas of the Wheeling Street Sanitary Sewer District. This work included the trenchless rehabilitation of sanitary sewer mainlines, manholes, and laterals within the public right-of-way. Statistics for this project are as follows: 893 linear feet of 12" sanitary sewer lined, 1,148 linear feet of 10" sanitary sewer lined, 5,049 linear feet of 8" sanitary sewer lined, 34 sanitary sewer cleanouts installed, 116 sanitary sewer laterals lined, 11 sanitary sewer point repairs completed, 298 vertical linear feet (21 manholes) of sanitary sewer manholes were lined. Total project cost upon completion was \$1,041,197.78.
- In 2016, the City of Oregon extended a trunk sanitary sewer down Wynn Road, to the mid block of Cedar Point Road and Corduroy Roads. Statistics for this project are as follows: 2,613 linear feet of 24", 2,880 linear feet of 15", 63 linear feet of 10", 171 linear feet of 8", and 44 linear feet of 6" sanitary sewer was installed. Total Project Cost for this extension was \$1,891,850.86.
- In 2017-2018, the City of Oregon completed Sanitary Sewer Rehabilitation Project Phase 4, Part B. The rehabilitation project included the trenchless rehabilitation of sanitary sewer mainlines, manholes, and laterals within the public right-of-way. The following lining was completed: 140 linear feet of 15" sanitary sewer, 2,570 linear feet of 12" sanitary sewer, 1,679 linear feet of 10" sanitary sewer, 7,040 linear feet of 8" sanitary sewer, 135 sanitary sewer laterals, 10 sanitary sewer point repairs, 717 vertical linear feet of sanitary sewer manholes (48 manholes). The project also included the installation of three new sanitary sewer manholes. Total Project Cost for this work was \$1,245,220.50.
- In 2018-2019, the City of Oregon completed the Sanitary Sewer Rehabilitation Project Phase 4, Part C. The sewer rehabilitation project included the trenchless rehabilitation of sanitary sewer mainlines, manholes, and laterals within the public right-of-way. This work was completed in the Moundview Subdivision of the City. The project included the following work: lining of 177 linear feet of 12" sanitary sewer, 172 linear feet of 10" sanitary sewer, 8441 linear feet of 8" sanitary sewer, 225 sanitary sewer laterals, and 381 vertical linear feet of sanitary sewer manholes (31 Manholes). The project also included the construction of 15 new sanitary sewer manholes, and 15 sanitary sewer point repairs. Total Project Cost for this work was \$2,241,729.50.

- In 2019, the City of Oregon constructed a petitioned sanitary sewer extension on Norden Road from Seaman Road south to Wolf Creek. This project included the construction of approximately 952 linear feet of sanitary sewer and four new sanitary sewer manholes. This project eliminated eight septic systems in the Wolf Creek watershed. Total Project Cost for this work was \$153,011.00 (contract bid price).
- In 2020, the City of Oregon completed a petitioned sanitary sewer extension on Norden Road from Seaman Road north to Corduroy Road. This project included the construction of 1,710 linear feet of sanitary sewer and five new sanitary sewer manholes. This project eliminated 19 septic systems. Total project cost for this work was \$320,041.11

In 2020-2021, the City of Oregon began constructing the Sanitary Sewer Rehabilitation Project Phase 5, Part A. The sewer rehabilitation project included the trenchless rehabilitation of sanitary sewer mainlines, manholes, and laterals within the public right-of-way. This work is being completed in the South Shore Park Subdivision of the City, adjacent to Lake Erie. The project included the following work: lining of 9,823 linear feet of 8" sanitary sewer, 215 sanitary sewer laterals, and 592 vertical linear feet of sanitary sewer manholes (56 Manholes). Total Project Cost for this work is \$1,687,854.29 (contract bid price). As part of the NPDES permit required No Feasible Alternative (NFA) analysis, the Oregon WWTP is addressing wet weather wastewater bypasses at the plant. This will be accomplished through increasing the secondary treatment capacity from 24.0 mgd to 36.0 mgd, which represents the hydraulic capacity of the plant. Secondary treatment capacity will be increased through the addition of a new final settling tank, aeration tank improvements, disinfection improvements, and effluent pumping improvements.

- Phase 1 of the WWTP Secondary Treatment Improvements were completed in December 2014. Phase 1 included the replacement of two influent screens, two blowers, replacement of three raw sewage pump motor drives, full replacement of air piping and replacement of air diffusers in aeration tanks, a dissolved oxygen control system, site restoration, and associated Supervisory Control Data Acquisition (SCADA) upgrades. Total project cost was \$6,536,032.
- Phase 2 of the WWTP Secondary Treatment Improvements has been completed. The Phase 2 project improvements consist of a new final clarifier with associated secondary sludge pumping facilities, aeration tank improvements consisting primarily of replacement of stop plates and slide gates, disinfection improvements consisting of replacement of the chlorine feed and safety equipment, effluent pump replacement and improvements, site restoration, and associated SCADA upgrades. Total project cost was \$7,572,882.27.
- During 2017-2018, the Oregon WWTP is the constructing the WWTP Sludge Dewatering improvements. These improvements will allow the WWTP to dewater sludge for disposal at a landfill facility. In general, the improvements include the following: installation of a new sludge grinder, new centrifuge feed pumps, replacement of existing sludge transfer pumps and associate piping, construction of a new sludge dewatering building with new centrifuges, polymer feed system, screw conveyors, dumpster / truck loading areas, and associated structural, electrical, HVAC, plumbing, process piping and other appurtenances. The total cost for this project was \$3,540,459.56.

- During 2017-2018, the District constructed the SS200 Area Equalization Basin to capture excess sewer flow during wet weather. The City of Oregon treats flows from this area which includes Millbury and parts of Northwood and Lake Township. In wet weather, the aged sewers in this system are influenced by infiltration and inflow. The Ohio EPA required that the City of Oregon make improvements to their treatment plant to better handle storm flows. As part of this requirement, the District was required to construct a storage basin to detain the high flows until the wet weather influence subsides. At that time, the basin will discharge at a controlled rate to the Oregon system. The project cost was approximately \$6 million.

In early 2019, the City of Oregon began preliminary design for the Oregon WWTP to change disinfection methods from chlorine disinfection to UV disinfection. This preliminary design is expected to be completed by the end of 2019.

## **Reno Beach / Bono**

Reno Beach, Bono, and the Howard Farms subdivisions are an unincorporated area with approximately 500 houses in eastern Jerusalem Township. The area was under orders from Ohio EPA to install sewers. They were completed in 2005 for 400 of the total residences at a cost of about \$11 million. The remaining residences are unsewered, and these areas are recognized as Critical Sewage Areas.

## **New Subdivisions**

It is the policy of this Plan that all new major subdivisions in Lucas County shall be improved with public sanitary sewers that are designed and constructed in accordance with the specifications of the Lucas County Sanitary Engineer or other appropriate Designated Management Agency, consistent with regulations of the TLCHD. Septic tanks or individual household sewage treatment systems should be discouraged for new subdivisions within the FPA boundary. New subdivisions are encouraged to connect to public sewers and be served by the Oregon wastewater treatment plant.

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 Oregon wastewater treatment plant.

## **Future Needs**

- Continue participation with Wolf Creek Committee to identify remaining bacteria sources in the Wolf Creek watershed, and determine solutions needed to protect the bay for recreation, especially the Lake Erie Beaches at Maumee Bay State Park.

- Work with Lucas and Ottawa Counties, and Jerusalem and Allen Townships in planning sewerage facilities for the Curtice and Williston areas. Lucas County Sanitary Engineer (LCSE) is working with the Ottawa County Sanitary Engineer (OCSE) for a Master Plan of the Curtice-Williston Area. Poggemeyer Design Group was hired by the OCSE to develop the plan. A kickoff meeting was held in January 2018. As part of this plan, 270 Lucas County addresses are to be served and a greater number of addresses in Ottawa County. The Genoa WWTP did have the capacity to provide treatment, therefore other options are being explored including treatment by another facility, construction of a new package plant system, and treatment by the Oregon WWTP.
- Sewer extensions to eliminate remaining problem areas and provide service to new development. New package plants and septic systems should not be permitted in areas that may be served by public sewers.
- The Oregon WWTP is planning to replace the current chlorine disinfection system with UV disinfection. This work is planned for 2023, see the capital improvement table for a project schedule.
- The Oregon WWTP is in need of an update to the grit removal system. This work is expected to take place as part of the planned UV disinfection upgrades in 2023, see the capital improvement table.
- Oregon’s NPDES Permit states the “Oregon WWTP receives excessive infiltration and inflow (I/I) which results in one or more of the following: collection system overflows; surcharging of sewers; hydraulic overloading of lift stations; sewage flows at the treatment plant that cause poor treatment plant performance and secondary bypasses.” The permits require the following responses:
  - By 2019, completion of sewer rehabilitation for the west Brown Road area, OR 77, OR 79, and OR 85 (Sanitary Sewer Rehabilitation Project Phase 4, Parts A, B, and C).
  - Continue implementation of the System Evaluation and Capacity Assurance Plan (SECAP) and Management, Operation, and Maintenance (MOM) Program.
  - The City of Oregon has identified several high I/I areas that will be targeted for sewer rehabilitation. These areas include the South Shore Park subdivision along Bay Shore Road, near Lake Erie. Sanitary Sewer Rehabilitation Project, Phase 5 will target these areas over the next five years.

Future capital improvements for the Oregon FPA are given in Table 5-11.

**Table 5-11: Oregon FPA Capital Improvement Schedule**

Project	DMA	Total Cost	Annual Capital Improvement Needs								
			2017	2018	2019	2020	2021	2022	2023	2024	Future
Sanitary Sewer Rehabilitation Project Phase 4, Part C	Oregon	\$2,241,730			2,241,730						
Norden Road Sanitary Sewer Improvements	Oregon	\$450,000			150,000	300,000					
WWTP Sludge Dewatering Improvements	Oregon	\$3,000,097		3,000,097							
WWTP Secondary Treatment Improvements, Phase 2	Oregon	\$7,572,882	7,572,882								
Sewer Rehabilitation Project Phase 5, Part A-C (South Shore Park)	Oregon	\$5,000,000				2,000,000		1,500,000		1,500,000	
WWTP UV Disinfection and Grit Improvements	Oregon	\$7,700,000				100,000	400,000	200,000	7,000,000		
Navarre Avenue Sewer Extension (Pending)	Oregon	\$2,100,000					200,000	1,000,000	900,000		
Wynn, Curtice & Bradner Rd	The District	\$2,000,000								2,000,000	
SS200 Area Lateral Rehab Phase II-III	The District	\$2,000,000				500,000		500,000		1,000,000	
S-898 Allegan & Rubens Sanitary Sewer	Lucas County	\$125,000								125,000	
		\$27,950,220									

## **SWANTON FACILITY PLANNING AREA**

### **Designated Management Agency Responsibilities:**

- **Village of Swanton:** Owns and operates wastewater treatment facilities, and the collection system within the corporate limits.
- **Lucas County:** Will own and operate the collection system, if and when, any Lucas County unincorporated areas connect to the Village system for treatment services.
- **Fulton County:** Will own and operate the collection system, if and when, any Fulton County unincorporated areas connect to the Village system for treatment services. For the purpose of preserving and promoting the public health and welfare, the Board of Fulton County Commissioners, under the authority of the Ohio Revised Code (ORC) Section 6117, is responsible for maintaining and operating sanitary sewer district within the county and outside municipal corporations. The board may acquire, construct, maintain, and operate within its district facilities that it determines to be necessary or appropriate for the collection, treatment and disposal of sewage and other wastes originating in its district to comply with the provisions of the ORC Section 6117 of and other applicable provisions of the Clean Water Act. As indicted in the Fulton County Comprehensive Sewer Plan, the board will provide for sanitary sewer facilities and should contract with the county's municipal agencies for operation, maintenance and/or treatment services of any of these facilities on behalf of the county and that may be determined by the board to be in the best interests of the county and as long as the appropriate municipal agency is capable of providing said services.



**Table 5-12: Swanton Area Population**

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Swanton, entire jurisdiction	3,897		
Swanton Township, entire jurisdiction*	2,822		
Swan Creek Township, entire jurisdiction*	8,555		
Fulton Township, entire jurisdiction*	3,147		
<b>Estimates within the FPA boundary</b>		<b>1,066</b>	<b>0.29</b>

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

The 2020 population numbers in Table 5-12 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 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

In January 2017, the Swanton Village Council approved the renaming of the facility to Swanton Water Resource Recovery Facility. Swanton is served by trickling filters and an oxidation ditch rated at 0.939 mgd. Ohio EPA data shows an average flow of 0.90 mgd and a peak flow of 2.892 mgd during the period of 2008-2012. After final settling the trickling filter effluent goes through tertiary sand filters, and is then chlorinated/dechlorinated. The oxidation ditch effluent typically goes directly to chlorination, not through the tertiary filters. Disinfected final effluent is discharged to Ai Creek. The plant has a 2.5 mg retention lagoon with chlorination to reduce bypasses of combined sewage during storm events.

Plant upgrades include:

- In 2002, the plant was upgraded by replacing the trickling filter media. Sludge can be further treated at an anaerobic digester facility operated by a private contractor when needed. Geobags are currently used to dewater biosolids prior to disposal at a landfill or by land application.
- The oxidation ditch and new final clarifier were added in 2010.
- In 2015, the Village received added chemical facilities to remove phosphorus. Ferrous chloride or ferric chloride are used to remove phosphorus.
- Phosphorus removal was put in place in 2015.
- Implemented the use of dewatering bags in November 2016
- In early 2021, the Village of Swanton contracted with an outside firm to perform a Master Plan for the WRRF. Proposed projects will be discussed with legislative authority and included in future editions of the Village’s Capital Improvement Plan.

Package plants located in the FPA are listed in Table 5-13.

**Table 5-13: Package Plants in the Swanton Facility Planning Area**

Package Plant	Map ID	Type	Install or Upgrade Date	NPDES Permit	Capacity, gpd
Swanton Meadows MHP (Fulton County) <sup>A</sup>	FU-21	Active		2PY00022	54000
Valleywood Golf Club (Lucas County) <sup>A</sup>	LU-65	Private	1963	No discharge	12,500

<sup>A</sup>Status is active

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

## Issues

To date, more than 60% of the Village’s sewer system is separated. The sewer system includes nine CSO points, which discharge into Ai Creek. Two storm sewer projects in the early 1990s eliminated some combined sewers. The average flow rate of 257 gallons per capita per day (gpcd) indicates that the combined sewers also have a serious I/I problem, which cause the WRRF to process a large quantity of extraneous water. As of August 2020, the Village had completed seven storm sewer separation projects. In 2017, the Village estimated that \$8.2 million in sewer system repairs and improvements would be needed to meet the CSO reduction targets.

Swanton’s Long-Term Control Plan (LTCP) was approved by Ohio EPA in November 2010. The NPDES Permit set a schedule for plant improvements that were required to meet effluent limits. These have been completed: but in 2010 a new oxidation ditch and final clarifier were added to the WRRF at an estimated cost of \$2.2 million. The oxidation ditch operates in parallel with the older secondary treatment unit, a trickling filter. The NPDES permit incorporates the LTCP’s schedule of projects to separate the combined sewer system into storm and sanitary sewer systems. Details for the LTCP are discussed below under Future Needs and the Capital Improvement Schedule.

Swan creek Township in Fulton County is an unsewered part of the Swanton FPA that is under pressure for development. Ohio EPA believes that failed septic systems are a pollution problem in this area, but there is no documentation and the area is not under orders. Sewer projects may proceed on a case-by case basis. In 2014, the Village extended sanitary sewerage service to the Holiday Lane subdivision after the Fulton County Health Department determined that its septic tanks had failed.

The Fulton County Comprehensive Sewer Plan discusses two unsewered areas near Swanton for potential sanitary sewer service. One is the unincorporated town of Ai, located at the intersection of routes 4 and L in Fulton Township, and includes the adjacent trailer park. The other is unincorporated Swan creek Township, surrounding the Village of Swanton from the south and west. The comprehensive sewer plan concluded that the Swanton system had the capacity to treat sewage from the town of Ai, but it did not have the capacity to serve Swan creek Township. Consequently in 2003, it was ruled that Ai should connect to the Village of Swanton, but that Swan creek Township should have its own treatment facility.

## New Subdivisions

It is the policy of this Plan that all new major subdivisions in Fulton or Lucas County shall be improved with public sanitary sewers that are designed and constructed in accordance with the specifications of the Fulton or Lucas County Sanitary Engineer or other appropriate Designated Management Agency, consistent with regulations of the Fulton or Toledo-Lucas County Health Departments. Septic tanks or individual household sewage treatment systems should be discouraged for new subdivisions within the FPA boundary. New subdivisions are encouraged to connect to public sewers and be served by the Swanton WRRF. Sewers constructed for subdivisions must meet the Village of Swanton Construction Standards.

## Future Needs

- Separation of combined sewers will continue. In 2017, the estimated cost of separating remaining combined sewers was \$8.2 million. The LTCP schedules system separation as a series of 12 projects, the last to be completed by 2026. Separation completion is to be followed by post-construction monitoring. As of 2020, seven project segments have been completed. A timeline for future projects include<sup>5</sup>:
  - Projects 8 and 9 – submit an application for PTI by December 2020; attain operational level of sewerage by April 1, 2023.
  - Projects 3 and 11 – submit an application for PTI by December 2022; attain operational level of sewerage work by April 1, 2025.
  - Project 12 – submit an application for PTI by December 2024; attain operational level sewerage work by March 1, 2027.
- As part of the LTCP for sewer separation, Swanton will perform Post-Construction Compliance Monitoring for a three-year period following the completion of construction for each project to determine if all overflow events have been eliminated and all sources of sanitary flow are being conveyed to the WWTP. A final post-construction report, including all projects should be prepared by the fall of 2028.
- Swanton is investigating further capital improvements to the wastewater treatment plant. Three projects are under consideration, although no decision or timeline has been set:
  - Replace the trickling filters with a second oxidation ditch.
  - Add screen to the raw sewage influent.
- In 2016, Fulton County was planning to update its Comprehensive Sewer Plan and plans to have the process finalized in early 2021. The previous edition of that plan from 2003 recommends building sewers to serve the town of Ai, and connecting to the Swanton system for treatment services. The public health and water quality conditions that led to the 2003 recommendations exist. Alternatives that should be considered include:
  - Construct a conventional sanitary sewer system to serve the town of Ai, and connect to the Village of Swanton’s system for treatment services. Sanitary sewerage service along the interceptor from Ai in to Swanton may or may not be available to abutting residents, depending upon the policy established by the County Sanitary Engineer.

- Construct a conventional sanitary sewer system to serve the town of Ai, and connect to a new wastewater treatment facility built to serve that area.
- Investigate and repair or replace onsite sewage treatment systems that have failed or are not achieving current water quality standards.
- This Plan supports state and federal financial assistance to carry out these needed infrastructure improvements. The capital improvement plan for the Swanton FPA is shown in Table 5-14.

**Table 5-14: Swanton FPA Capital Improvement Schedule**

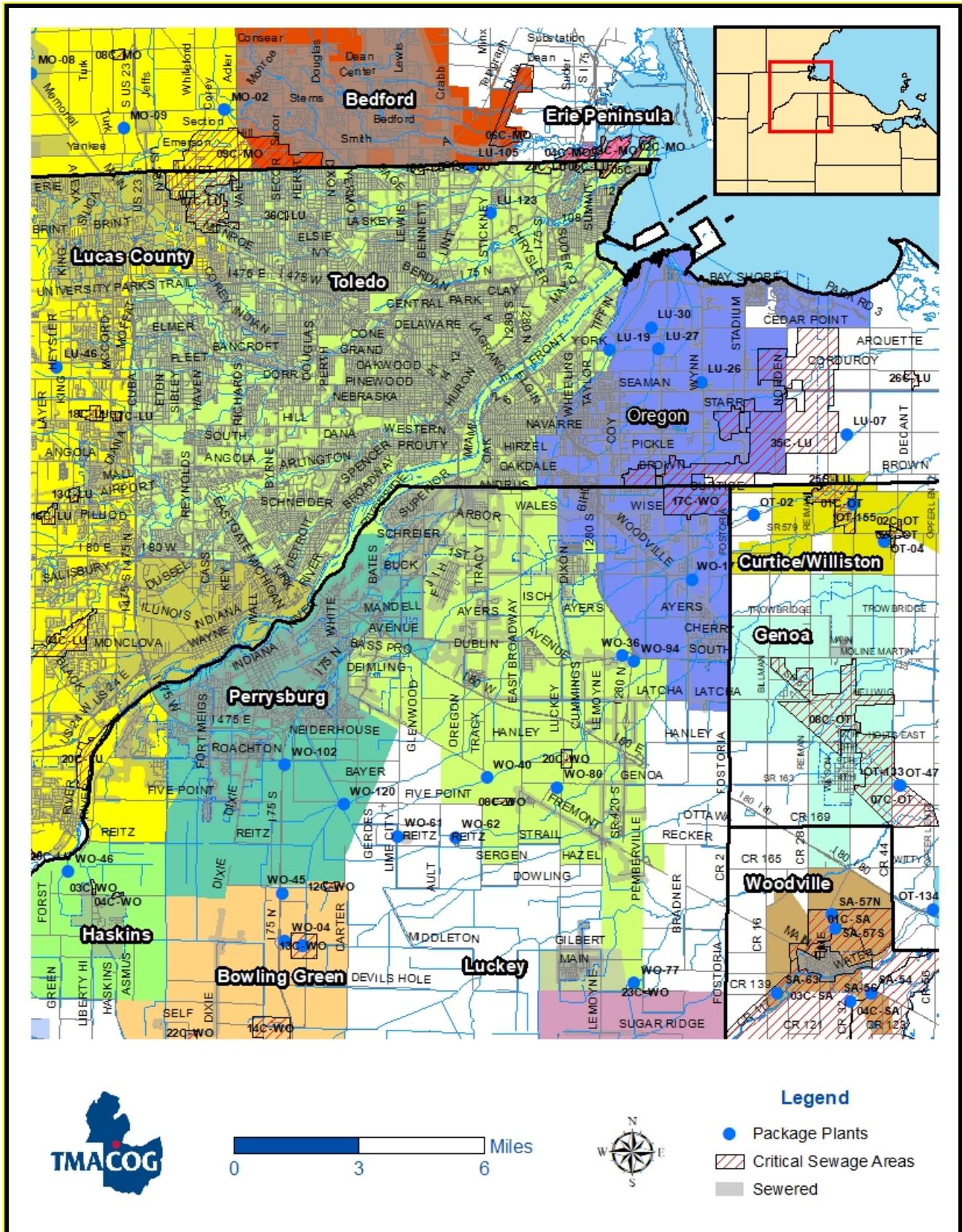
Project	DMA	Total Cost	Annual Capital Improvement Needs					
			2021	2022	2023	2024	2025	Future
Separation project 2: North Main and Brookside	Swanton	\$815,000						\$815,000
Separation projects 2B, 3 & 11: St. Richards Court-Fulton Street & Elm Street <i>ENGINEERING</i>	Swanton	\$150,000			\$150,000			
Separation projects 2B, 3 & 11: St. Richards Court-Fulton Street & Elm Street	Swanton	\$2,000,000				\$2,000,000		
Separation projects 8 & 9: Sanderson Avenue & West Garfield Avenue <i>ENGINEERING</i>	Swanton	\$320,000	\$60,000	\$260,000				
Separation projects 8 & 9: Sanderson Avenue & West Garfield Avenue	Swanton	\$2,000,000	\$700,000	\$1,300,000				
Separation project 12: Centerville Road	Swanton	\$755,000						\$755,000
Post-construction monitoring report	Swanton	\$150,000						
		<b>\$5,310,000</b>						

## **TOLEDO FACILITY PLANNING AREA**

### **Designated Management Agency Responsibilities:**

- **Toledo:** Owns and operates wastewater treatment facilities and collection system within its corporate limits. The wastewater treatment plant provides treatment services to all or part of the following communities as specified in the Toledo Facility Planning Area map, below.
- **Ottawa Hills:** Owns sanitary sewers within its corporate limits, which are operated by Lucas County through an agreement with the Village.
- **Rossford:** Northwestern Water and Sewer District (the District) owns and operates collection system within the Rossford corporate limits.
- **Northwood:** The District owns and operates collection system within the Northwood corporate limits.
- **Walbridge:** The District owns and operates collection system within the Walbridge corporate limits.
- **Lucas County:** Owns and operates collection system in unincorporated areas of Lucas County.
- **Northwestern Water and Sewer District:** Owns and operates collection system in unincorporated areas of the Toledo FPA located in Wood County.
- **Erie Township:** Under a service agreement privately-owned sanitary sewers were constructed to serve a marina in Lost Peninsula. The sewers connect to the Toledo system for treatment services. Flows are limited to 189,125 gallons per day (gpd) with a maximum flow not to exceed 300 gallons per minute (gpm).

Figure 5-5: Toledo Facility Planning Area



**Table 5-15: Toledo Area Population**

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Toledo, entire jurisdiction	270,871		
Ottawa Hills, entire jurisdiction	4,790		
Northwood, entire jurisdiction*	5,160		
Rossford, entire jurisdiction*	6,299		
Walbridge, entire jurisdiction	3,011		
Lake Township, entire jurisdiction*	11,160		
Perrysburg Township, entire jurisdiction*	13,571		
Springfield Township, entire jurisdiction*	26,957		
Sylvania Township, entire jurisdiction*	50,679		
Troy Township, entire jurisdiction*	4,097		
Washington Township, entire jurisdiction*	3,055		
Erie Township, entire jurisdiction*	4,299		
<b>Estimates within the FPA boundary</b>		<b>9,363</b>	<b>2.58</b>

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

The 2020 population numbers in Table 5-15 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 Toledo sewage system affects two major rivers and several smaller streams. Water quality violations of dissolved oxygen and fecal coliform are frequently recorded in the Maumee River and Estuary, Ottawa River and Estuary, and Swan, Silver, and Shantee Creeks. The main reasons for violations are combined and sanitary sewer overflows (CSOs), urban runoff, failed septic systems, and upstream heritage.

The Toledo Bay View WWTP has an average daily capacity of 130 million gallons per day (mgd); it treats the sewage from Toledo and all or portions of six adjacent jurisdictions. The ballasted flocculation facility, completed in 2007, is rated at 185 mgd for wet weather flows. The peak daily capacity of the Bay View plant is 400 mgd. Older parts of the City — about 17 square miles, or 20% of the City — are served by combined sewers, which carry both sanitary sewage and storm runoff. Presently, there are 14 CSOs along the Maumee, six along Swan Creek and three along the Ottawa River.

Ohio EPA data shows an average flow of 66.5 mgd, and a peak hourly flow of 405 mgd during the period of 2012-2016, a decline from previous levels. This reduction in flow is due to sewer system improvements, improved flow monitoring, loss of population and industry.

The City of Toledo operates an industrial wastewater pretreatment program. Starting in 2002, Toledo undertook its Waterways Initiative to further address sewage discharges to streams, and increase the Bay View wastewater treatment plant’s wet weather capacity. See the discussion of the Waterways

Initiative under “Issues,” below.

Package sewage treatment plants located in the FPA are listed in Table 5-16.

**Table 5-16: Package Plants in the Toledo Facility Planning Area**

Package Plant	Map ID	Type	Install or Upgrade Date	NPDES Permit	Capacity, gpd
Globe Trucking <sup>A</sup>	LU-123	Private*	1994		1,500
Grimes Builders' Supply <sup>A</sup>	LU-105	Private	1969	2PR00218	3,000
Otterbein-Portage Valley Retirement Village <sup>A</sup>	WO-77	Private	1980 exp. '06	2PS00005	90,000
Pioneer 795 Truck Stop   Sunoco/Subway <sup>A</sup>	WO-36	Private*	1966		1,500
Stony Ridge KOA <sup>A</sup>	WO-80	Private*		2PR00300	7,500
Utility International <sup>A</sup>	WO-94	Private*	1986		12,000
Wagoner Apartments <sup>A</sup>	WO-40	Private	1974	2PW00023	5,000

<sup>A</sup>Status is active

\*Facility type is assumed

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

## Issues

To abate its combined sewer problems, Toledo’s first construction project was initiated in 1988. The approach was to store combined sewage for later treatment. On Swan Creek and the west side of the Maumee River in downtown Toledo, tunnels were constructed to catch the “first flush,” which washes accumulated sludge out of combined sewers. The storage tunnels hold combined sewage until the treatment plant can handle it.

In 2002, Toledo and U.S. EPA reached a consent decree agreement, to be carried out over a 15-year period at a cost estimated at that time of \$450 million. In 2010, when the CSO Long-Term Control Plan (LTCP) was approved, the schedule was extended out to 2020. At the end of 2017, about \$475 million of the improvements had been completed out of a revised total cost estimate of \$521. The overall program is known as the Toledo Waterways Initiative. The program includes:

- Development and implementation of a TLCP for combined sewer overflows. The LTCP was submitted to Ohio EPA in 2005, and was approved in June 2009. The plan will eliminate nine overflow locations, reduce the number of annual overflow events from 33 to between 0-3 depending on the receiving water, and reduce overflow volumes by 92%. There are 26 major projects identified in the LTCP, including combined sewage storage basins and pipelines, combined sewage tunnel improvements, flow reduction, and sewer separation. Facilities in the LTCP will be located at Joe E. Brown Park, the Marina District, the Oakdale/Miami area, Toledo’s south end, International Park, and Jamie Farr Park, among other areas. The following projects were completed as of December 2017: W1 (Ash/Columbus Storage Pipeline), O1 (Lockwood/DeVilbiss SSES), E6 (Wheeling Ave. SSES and Sewer Separation), W2 (Ash St. SSES and Sewer Separation), W5 (Knapp/Williams SSES and Inflow Reduction), W7 (New York St. SSES and Inflow Reduction), S3 (Highland Dr. SSES and Inflow Reduction), S4 (Woodsdale Ave. SSES and

Inflow Reduction). OF (Lockwood/DeVilbiss Sewer Separation), W6 (Maumee Storage Basin), E7 (Bay View Grit Facility), O3 (Ayers/Monroe Storage/Conveyance Pipeline), E5 (Oakdale Storage Basin), S-1A (Swan Creek North Tunnel Optimization), W-4A (Downtown Tunnel Optimization), E-2 (Dearborn Storage Pipeline), and O-4 (Ottawa River Storage Facility). The following projects were under construction as of the end of December 2017: E3 (International Park Storage Basin), W4C (Downtown Storage Basin), and S-1B (Swan Creek North Sewer Separation).

- Wastewater treatment plant improvements to handle wet weather flows. Plant improvements completed include a 185 mgd ballasted flocculation facility, which provides primary treatment of combined sewage. It also includes a 25 mgd equalization basin and grit removal facility.
- Elimination of Sanitary Sewer Overflows (SSOs). There were three known SSOs in the Toledo system, in the Point Place area, and one on River Road. SSOs are overflows from sewers that were designed for sanitary sewage only. Because SSOs are discharges from separate sanitary sewer systems, they are a high priority for elimination. The SSOs in Point Place were eliminated in 2006 by eliminating known points of inflow, building a wet weather pump station to isolate the Point Place sanitary sewer system from the surcharged Manhattan interceptor into which it discharges, and building two pump stations and relief sewers in Point Place to convey the remaining flow. The SSO in the River Road/Midland Road area was eliminated with the construction of the 3.0 million gallon Brook ford Equalization Basin in 2007.
- Sewer system analysis conducted under the Toledo Waterways Initiative turned up additional SSO points into Delaware Creek at Detroit Ave. and Erawa Road, on Mt. Vernon, in the Parkside area, on the 5<sup>th</sup> hole of the Heatherdowns golf course, at Arlington and Westwood, and on Fernhill Drive. The Erawa SSO points were eliminated in 2009 with construction of a new pump station and manhole and sewer rehabilitation. The SSO at Detroit Ave. was eliminated with the construction of an 8.0 million gallon equalization basin at Schneider Park in 2014. A 3.0 million gallon equalization tank and pump station was completed in Ottawa Park in 2012 to address the Parkside SSO. The Fernhill Drive SSO was eliminated in 2017 with the construction of a relief sewer. The Arlington SSO was eliminated in 2017 with the construction of the Arlington/Heatherdowns project. Other suspected SSOs are being monitored and are under investigation or design. Projects are currently underway to eliminate the Arlington and Heatherdowns SSOs.

## **Washington Township**

In 2008, the Lucas County Sanitary Engineers (LCSE) completed construction of a sanitary sewer collection system and pump station serving Alexis Place. Streets along Silver Creek were not served. The pump station discharges to a City of Toledo sanitary sewer on Progress Avenue.

In summer of 2011, the LCSE contracted with RedZone Robotics to deploy a Solo unit to inspect the sanitary sewers in all of Washington Township. The entire system was cleaned ahead of this televising effort.

In 2013, the rotating assemblies of the Fullers Creekside Pump Station were replaced.

In 2017, the lining of S-408 in Washington Township was completed. This sewer serves sections adjacent to either side of I-75.

In 2018, the LCSE began the design for a sanitary sewer along Shoreland Avenue, east of Summit Street, but the assessment costs were excessive for the homeowners. In 2021, LCSE secured an H2Ohio grant, in addition an OPWC grant that will install this project at no cost to the homeowners in the project area. Utilizing these funds, the individual home connections will also be installed as part of this project. This project will eliminate 35% of the septic systems along this stretch of Shoreland Avenue in the Township.

### **Northwestern Water and Sewer District (the District)**

The District serves a large part of north-central Wood County within the Toledo FPA; therefore, as sewers are constructed, they are connected to the Toledo system. The District surrounds and includes Rossford and Walbridge which are tributary to the Toledo system. Historically, this entire area was served by septic systems and package plants. Until the late 1980s, there were about 20 package plants in the Ohio Turnpike/I-280 interchange. Sewer extensions have eliminated these and many other problems. In 2014, the District added flow meters to trunk sewer connections with the Toledo system at the 60" Tracy Road sewer, at the 36" Rossford sewer, and at the 18" Northwood sewer. Sewer extensions are being studied and planned to address ongoing development and make improvements to existing system.

### **Ottawa Hills**

The system is located within the Village limits and is operated and maintained by the LCSE. It is the oldest system maintained by the County dating back to 1912. There are two public and one private pumping stations located in the collection system. All the pump stations have been replaced within the last 10 years. In addition to receiving flow from Village residents, the Indian Road Trunk Sewer receives flow contributions from the City of Toledo and Sylvania Township residents.

To alleviate I/I contributions and basement flooding, the LCSE lined S-74 in 2004, located north of Indian and west of Secord Road. In 2015, the LCSE lined S-19, located just south of the Ottawa River and west of Secor Road. At present, the LCSE is lining approximately 14,000 feet of sanitary sewers as part of a \$1.5M project partially funded by OPWC and the Ohio Water Development Authority (OWDA). This is the third major lining project that the LCSE has contracted in the Village of Ottawa Hills. The associated manholes are being lined as well. When the project is completed in spring 2019, the LCSE will have lined over 22,000 feet of the oldest sections of sanitary sewer in the Village. The LCSE also continues to address failing laterals in the Village.

There are four unsewered lots in the Village that have petition for sanitary sewer service; these lots may be the last unsewered lots in the Village. This sanitary sewer is under design at the present.

### **Walbridge**

The system is owned and operated by the District, collection is via gravity system, and treatment is provided by Toledo.

## **Northwood**

The City of Northwood is partly tributary to the Toledo system; and partly tributary to the Oregon system. The system is owned and operated by the District, collection is via gravity system, and treatment is provided by a combination of both Toledo and Oregon.

## **Rossford**

Nearly all of Rossford connects to the Toledo system; however, a small portion to the south connects to the Perrysburg system. The system is owned and operated by the District, collection is via gravity system, and treatment is provided by a combination of both Toledo and Perrysburg. The District operates multiple sewage pumping stations, which have alleviated overflows:

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### **Stony Ridge/ Lemoyne and Truman Road Area**

Stony Ridge and Lemoyne are two unincorporated communities in Troy Township on US 20. The two communities include approximately 263 residences. Sewers to serve both communities were completed in 2012. The nearby Truman Road area in along SR 420 was sewered as part of the same project. The District owns and operates sewers serving these communities; the sewers connect to Toledo for treatment services.

### **Jobs Ready Site (JRS) Development (Eastwood Commerce Center)**

The Ohio Department of Development approved a JRS grant in December 2006 to provide utility infrastructure capabilities (water and sanitary) for potential future major industrial/commercial development in Troy Township south of the US 20/SR 420 intersection. The District was the grant recipient and commenced construction in 2009 and completed it in 2010. The District owns and operates the system and treatment is provided by Toledo. Home Depot has constructed a warehouse and NSG is schedule to open a new glass manufacturing facility in 2020. Additional industrial development is expected.

## **Stormwater Anti-Degradation**

Ohio EPA anti-degradation regulations require removal of stormwater flows from a combined system or infiltration and inflow from a separate system in order to tap new sanitary flows. The removal rate is based on peak sanitary flow rate, or 3.33 times the average flow. In 2017, Ohio EPA stated that the anti-degradation rule no longer applies to the City of Toledo since the City is implementing their approved CSO Long-Term Control Plan.

The \$521 million worth of improvements to the Bay View wastewater plant and sewer collection system under the 2002 U.S. EPA consent decree are designed to meet National Pollutant Discharge Elimination System (NPDES) and water quality standards along with specific requirements contained in the consent decree (such as when the wet weather facility can be used to treat flows that are bypassed around the secondary system). The improvements are not designed to accommodate significant residential or commercial/industrial growth in the FPA in the event the prediction of a population decrease specified in Table 5-17 is not borne out. Toledo may not be able to construct improvements to accommodate

significant additional flows due to the magnitude and schedule of the projects that are required to meet state and federal regulations and the consent decree. Furthermore, federal and state regulatory agencies may not permit Toledo to accept significant additional flows while it is subject to the court-approved consent decree. For this reason, Toledo's obligation to treat new flows in its FPA should be conditioned upon its ability to do so without jeopardizing compliance with the U.S. EPA consent decree, NPDES permit and water quality standards.

To meet the requirements of the U.S. EPA consent decree, Toledo will be required to reduce stormwater flows received from combined sewer systems. To the extent that these flows occur in communities outside the City of Toledo, it may be necessary for the appropriate DMAs to assume responsibility for the removal of excessive flows that are directed to Toledo's wastewater treatment system.

## **New Subdivisions**

It is the policy of this Plan that all new major subdivisions in Lucas County shall be improved with public sanitary sewers that are designed and constructed in accordance with the specifications of the LCSE or other appropriate DMAs, consistent with regulations of the Toledo-Lucas County Health Department. Septic tanks or individual household sewage treatment systems should be discouraged for new subdivisions within the FPA boundary. New subdivisions are encouraged to connect to public sewers and be served by the Toledo wastewater treatment plant.

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 Toledo wastewater treatment plant.

## **Future Needs**

Under its consent decree, the City of Toledo is committed to completion of its Waterways Initiative projects. Rate payers have supported the improvements through 9.75% annual sewer rate increases 2003-2006 and 9.9% increases 2007-2010. In 2011, a fixed fee of \$15.82 per quarter was added to fund TWI projects and three percent annual increases in the non-TWI portion of the bill were approved for 2011 through 2014. In 2014, rate increases of 7.1% per year were approved for 2015 through 2019 and 7.9% in 2020. This Plan supports state and federal financial assistance for these improvements in the form of grants and loans. As of December 2017, Toledo had completed all the Waterways Initiative improvements at the wastewater treatment plant; all the known SSO elimination projects, and was about 79% complete with the LTCP. The remaining CSO abatement projects total an estimated \$58 million, as outlined in Table 5-17. Budgets for ongoing inspection, rehabilitation, and replacement of its interceptor and collector sewers have been severely reduced due to the high TWI budget requirements.

**Table 5-17: Major Sewage Improvements Completed for the Toledo FPA**

<b>Project</b>	<b>Cost (\$ Millions)</b>	<b>Completion Date Projected Date</b>
CSO Telemetry system to monitor overflows	\$0.07	1976
Tenmile Creek Interceptor relief sewer; modified Ottawa River CSO regulators; added tide gates	\$48.6	1982
Downtown CSO Phases 1 and 2	\$13.6	1990
Swan Creek CSO Phases 3-7	\$31.4	1991-1996
Point Place SSO Phase I	\$4.1	2000
Point Place SSO Phase II	\$20.0	2006
River Road Phase I	\$11.7	2007
River Road Phase 3A	\$2.7	2006
Parkside SSO Improvements	\$2.3	2007
Paine/Westside Interceptor Rehabilitation	\$2.9	2007
Detroit SSO Elimination	\$12.6	2012
Parkside SSO Elimination	\$12.8	2014
Arlington/Heatherdowns SSO Elimination	\$2.1	2017
Lockwood/DeVilbiss Illicit Discharge Elimination	\$1.0	2017
<b>CSO Optimization Projects</b>		
Installed tide gates on 20 regulators (Maumee, Swan)	\$0.4	1988
Hawley and Ewing CSO regulator improvements (Swan)	\$2.1	1989
Lockwood — improvements to control extraneous flow (Ottawa)	\$0.1	1997
Williams — partially separated area by removing stormwater from overflows (Maumee)	\$1.5	1998
DeVilbiss — partially separated area by removing stormwater and closing the overflow (Ottawa)	\$0.3	1997
Woodsdale — regulator improvements reducing CSO volumes (Swan)	\$1.7	2000
Lagrange — partially separate by redirecting flow from large sanitary area to interceptor (Ottawa)	\$1.5	2000
Columbus — Partial separation of CSO #23 area by redirecting flow from large sanitary area to interceptor (Maumee)	\$3.0	2002
<b>Bay View WWTP Projects</b>		
Chlorination/Dechlorination System Improvements – Renovated the existing chlorination system and added a chlorine contact tank and dechlorination facilities.	\$3.6	1994
Aeration System Improvements – Replaced existing aeration tank (AT) diffusers and added first pass feed pumps to ATs 7, 8 & 9	\$2.8	1995
Solids Handling Control System Improvements	\$0.5	1996
Final Tank #12, I-4B – Constructed an additional final tank and rebuilt 3 control houses	\$6.7	1997
Belt Filter Press Control Panel Replacement	\$0.39	1996
Belt Filter Press Rebuilds	\$1.0	1998-2000
Ferrous Chloride and Polymer System Renovations – Replaced existing tanks, added a contained unloading station and additional dry weather ferrous chloride pumps	\$0.9	1999
PLC-3 Replacement Project – Upgraded obsolete PLC-3 processors with PLC-5 processors, installed fiber optic network	\$0.55	1999
East Side Pump Station (ESPS) Electrical Renovation, I-3A –	\$1.2	1999

Project	Cost (\$ Millions)	Completion Date Projected Date
Renovated the complete electrical system at the ESPS		
Bay View Pump Station (BVPS) & Primary Tanks (PT) Electrical Renovation – Renovated the complete electrical system at the BVPS & PTs	\$3.34	2000
Secondary Renovations, I-44 – Renovated the existing 11 final tanks and 9 aeration tanks including new electrical service, valve actuators, safety handrails, concrete repairs, inlet valves, air flow meters and a new control house	\$11.2	2002
Skimming Tank Separation Project, I-45 – Separate the existing two pass skimming tanks into four single pass tanks includes new electrical service to grit and skimming tanks, concrete repairs and safety handrails	\$4.65	2001
Major Pump Station Renovation, I-46A, B & C – Includes the structural and mechanical renovation of the ESPS & BVPS and the complete renovation of the Windermere PS	\$4.5	2002
Filling of the Mooring Basin, I-47A – Basin area is needed for additional plant expansion.	\$8.2	2003
Wet Weather Treatment Facility, I-47B-Includes final effluent pump station and a new wet weather treatment facility designed to provide a minimum of equivalent primary treatment and disinfection to flows exceeding treatment plant capacity	\$32.76	2006
Equalization Basin Land Acquisition, I-48A	\$6.4	2003
Equalization Basin, I-48B-Includes the construction of a 25.0 MG basin, odor control, pump station and preliminary treatment	\$28.0	2006
Secondary Back-up Power-Provide back-up electrical power for secondary treatment and all new construction	\$3.8	2004
Blower Renovation-Includes the replacement of existing diesel driven blowers	\$5.32	2005
Ballasted Flocculation Facility	\$40.45	2007

CSO Long-Term Control Plan projects and their status are listed in Tables 5-18. The capital improvement plan for the Toledo FPA is shown in Table 5-19.

**Table 5-18: CSO Long Term Control Plan Improvements Planned for the Toledo FPA**

<b>Ottawa River Projects in the Recommended Plan</b>		
<b>Project</b>	<b>Project Description</b>	<b>Construction Cost</b>
<b>Identifier</b>		<b>(\$M)</b>
O-1 Completed	Study of the Lockwood (64) and DeVilbiss (63) regulator tributary areas. Objective: identify work required to completely separate the tributary areas, remove inflow sources from the existing sanitary. Project is part of the Bennett Area SSES.	\$3.0
O-2 Completed	Lockwood and DeVilbiss sewer separation. Work includes extension of sanitary and storm sewer as needed to accomplish separation. Regulators would be abandoned. Private inflow sources would be removed (by property owner). May include replacement of some sanitary sewer lines on Sylvania and Berdan. May include storm water quality ponds at the outlet. May be implemented in several contracts or projects as determined by the study (project O-1). Follow-up project certification effort to confirm all inflow sources removed.	\$17.7
O-3 Completed	Monroe (67) and Ayers (65) collector sewer study; design and construction. Rehabilitate or replace the sewer on the south side of the Ottawa River from Monroe to Ayers. Add new overflow location with floatables control and backwater protection. Abandon existing outfalls. Alternative will create 0.3 MG of pipeline storage/conveyance and make use of 1.1 MG of pipeline storage/conveyance.	\$9.5
O-4 Completed	Ottawa River South Storage Basin. Approximately 14.0 MG basin near Joe E. Brown Park.	\$68.8
	<b>Total</b>	\$99.0
<b>Maumee River Westside Projects in the Recommended Plan</b>		
W-1 Completed	Pipeline Storage Facility adjacent to Jamie Farr Park. Project includes pre-study; design; construction; and post-construction evaluation of pipeline storage facility to limit discharge frequency, volume, and pollutant load from outfalls 23 through 25. Facility would be located adjacent to the Maumee River near Jamie Farr Park and would consist of a single pipeline. Approximate storage volume of 1.1 MG would be provided. Flow to the pipeline storage facility basin is anticipated to be gravity influent and gravity or pumped dewatering. The CSOs would be consolidated so that the outfall from the discharges would be located near the existing CSO 23 discharge. Regulator and return line modifications will be provided at existing locations with floatables control and backwater prevention added at the overflow from the pipeline storage system.	\$6.4
W-2 Completed	Ash to Interceptor sewer separation project. This project would separate the combined area that is directly tributary to the interceptor at Ash.	\$2.7
W-4C Under Construction	Downtown Tunnel Storage. Pipeline or tank Storage Facility extending from the Galena (26) CSO to the existing downtown tunnel. Project includes pre-study; design; construction; and post-construction evaluation of pipeline storage facility to limit discharge frequency, volume and pollutant load from outfall 26 and the existing downtown tunnel. An approximate storage volume of 2.2 MG would be provided. Facility would be located in the existing Water Street right-of-way (extended to Galena). The outfall from CSO 26 would be eliminated. Regulator and return line modifications will be provided.	\$43.9
W-4A Completed	Downtown Tunnel Optimization. This project includes modifications to the existing Downtown Tunnel and associated regulators to reduce overflow frequency and volume and provide enhancement of the existing tunnel system operation. Specific project elements include: addition of in-system storage devices upstream of regulators 28, 29, 30 and 31 (providing approximately 1.0	\$9.3

<b>Ottawa River Projects in the Recommended Plan</b>		
<b>Project</b>	<b>Project Description</b>	<b>Construction Cost</b>
<b>Identifier</b>		<b>(\$M)</b>
	MG of additional storage), modifying the regulator associated with CSO 27 (to better direct flow to the tunnel system), clean the tunnel of accumulated sediment, add floatables control and backwater protection to remaining CSO discharges, improve monitoring, and improve other tunnel operational characteristics. In addition, localized sewer system modifications to enable elimination of the overflow location at Madison and the Maumee River would be implemented.	
W-5 Completed	William and Knapp Area SSES, inflow removal and Regulator 32 abandonment. This project would investigate steps necessary to eliminate CSO 32. This area previously was separated but private inflow was not addressed. The regulator remains open and may discharge.	Part of Ash
W-6 Completed	Maumee Ave. Storage Basin	\$6.7
W-7 Completed	New York Area SSES. This project includes SSES projects and inflow reduction projects in formerly separated areas. The regulators for these areas were removed, but no specific assessment of the remaining wet weather flows was conducted. The projects identified include: New York (old 22).	Part of Wheeling
	<b>Total</b>	<b>\$69.0</b>
<b>Maumee River Eastside Projects in the Recommended Plan</b>		
E-1	Modification to the Paine (4) regulator and return line to allow increased transport of CSO flows to the Eastside Interceptor. Limited sewer separation in portions of the Paine CSO tributary area to reduce incidence of basement backup and reduce CSO tributary area. Additional of floatables control and backwater protection to the discharge.	\$2.1
E-2 Completed	Dearborn Storage Basin. Approximately 1.0 MG storage basin.	\$16.7
E-3 Under Construction	International Park Pipeline Storage Facility. Project includes pre-study; design; construction; and post-construction evaluation of pipeline storage facility to limit discharge frequency, volume, and pollutant load from outfalls 6 and 7. Facility would be located in International Park (probably along the eastern border) and would consist of one or dual box culverts to provide storage. Approximate storage volume of 4.9 MG would be provided. Flow to the pipeline storage facility basin is anticipated to be gravity influent and gravity or pumped dewatering. Pipeline storage would operate in a first flush configuration, with any discharge occurring at existing overflow locations. Regulator and return line modifications will be provided at existing outfalls with floatables control and backwater prevention added at these locations.	\$24.9
E-4	Modification to the Fassett (8) regulator and return line to allow increased transport of CSO flows to the east side interceptor. Additional of floatables control and backwater protection to the discharge.	\$1.9
E-5 Completed	Oakdale Storage Basin - Approximately 8.0 MG storage basin.	\$21.6
E-6 Completed	Wheeling Area sewer separation. The Wheeling area is combined but not controlled by a regulator. The size of the area is limited. The Wheeling area sewer separation project would reduce the wet weather flow directed to the East Side Interceptor.	\$2.9
E-7 Completed	Bay View Grit Facility	\$20.2
	<b>Total</b>	<b>\$90.3</b>

<b>Ottawa River Projects in the Recommended Plan</b>		
<b>Project</b>	<b>Project Description</b>	<b>Construction Cost</b>
<b>Identifier</b>		<b>(\$M)</b>
<b>Swan Creek Projects in the Recommended Plan</b>		
S-1A Completed	Swan North Tunnel Optimization. This project includes modifications to the existing Swan North Tunnel and associated regulators to reduce overflow frequency and volume and provide enhancement of the existing tunnel system operation. Specific project elements include: addition of in-system storage devices upstream of regulators 43 and 47 (providing approximately 0.8 MG of additional storage), modifying the sewers associated with CSO 47 (to better direct flow to the tunnel system), clean the tunnel of accumulated sediment, add floatables control and backwater protection to remaining CSO discharges, improve monitoring, and improve other tunnel operational characteristics.	\$6.2
S-1B Under Construction	Swan Creek North Sewer Separation	\$13.9
S-2A Completed	Swan South Tunnel Optimization. This project includes modifications to the existing Swan South Tunnel to control the discharge of floatables and improve operation of the tunnel system. Work would include: cleaning the tunnel of accumulated sediment, addition of floatables control and backwater protection to remaining CSO discharges, improved monitoring, and improvement of other tunnel operational characteristics.	\$3.6
S-3 Completed	Highland (Regulator 50) sewer separation. The separation of the area tributary to regulator 50 would be implemented to reduce the total tributary area to the Swan South Tunnel system, hence increasing the percentage of volume captured by the tunnel system for this tributary area.	\$1.4
S-4 Completed	Woodsdale SSES and inflow reduction project. This project includes SSES projects and inflow reduction projects in formerly separated areas. The regulators for these areas were removed, but no specific assessment of the remaining wet weather flows was conducted. The projects identified include the Woodsdale area (old Regulator 49).	\$1.2
	<b>Total</b>	<b>\$26.3</b>

**Table 5-19: Toledo FPA Capital Improvement Schedule**

Project	DMA	Total Cost	Annual Capital Improvements Needed				
			2019	2020	2021	2022	Future
Supplemental CCTV Services (may be operational), 50% outsource	Toledo	\$3,428,172	1,109,118	1,142,391	1,176,663		
Interceptor Condition Analysis (Study) +36" Pipe	Toledo	\$2,950,859		562,754	2,388,105		
Basement Flooding Grant Program	Toledo	\$600,000	200,000	200,000	200,000		
Remediation of Large Diameter Sewer ( In'cld Design), 1% of system/year	Toledo	\$4,656,943	1,469,320	1,343,099	1,844,523		
Annual Rehabilitation and Lining - 36" and less, 1% of system/year, grout laterals	Toledo	\$5,426,305	1,162,746	1,796,443	2,467,115		
Sanitary Sewer Replacement Misc, 1% of system/year, assume 5% line	Toledo	\$1,196,164	256,313	396,004	543,846		
Sanitary & Storm PS Replacement	Toledo	\$360,000	\$80,000	\$120,000	\$160,000		
Solids Handling Equipment Upgrades and Replacements	Toledo	\$1,800,000	400,000	600,000	800,000		
Plant Telemetry Upgrade and Improvement	Toledo	\$75,000	25,000	25,000	25,000		
Plant PLC Upgrade and Replacement	Toledo	\$75,000	25,000	25,000	25,000		
Secondary Improvement I-44 C&D (Design & Const)	Toledo	\$2,000,000	\$2,000,000				
Remediation of Large Diameter Sewer (In'cld Design), 1% of system/year	Toledo	\$1,831,495	895,400	461,131	474,965		
Annual Rehabilitation and Lining - 36" and less, 1% of system/year, grout laterals	Toledo	\$3,558,527	1,744,120	1,197,629	616,779		
Detroit SSO Elimination Phase 2	Toledo	\$9,177,000			9,177,000		
SSO Elimination Heatherdowns (Construction)	Toledo	\$50,000	25,000	25,000			
SSO Elimination Arlington (Construction)	Toledo	\$662,000		662,000			
Sanitary Sewer Replacement Misc, 1% of system/year, assume 5% line	Toledo	\$784,434	384,470	264,003	135,961		
Primary Treatment Facility Plan (PTFP)	Toledo	\$300,000	300,000				
Chemical Facility Design Engineering & Construction	Toledo	\$500,000	500,000				

Project	DMA	Total Cost	Annual Capital Improvements Needed				
			2019	2020	2021	2022	Future
Solids Handling Renovations I-60A Design & Construction	Toledo	\$1,700,000	1,700,000				
Solids Handling Renovations I-60B Design & Construction	Toledo	\$14,000,000	6,500,000	6,000,000	1,500,000		
Solids Handling Renovations I-60C Design & Construction	Toledo	\$24,500,000	1,500,000	10,500,000	12,500,000		
Solids Handling Renovations I-60D Design & Construction	Toledo	\$2,500,000			2,500,000		
Sanitary & Storm PS Replacement	Toledo	\$240,000	120,000	80,000	40,000		
Chlorination and Dechlorination Design & Construction	Toledo	\$2,000,000	1,500,000	500,000			
Nutrient Removal Design & Construction	Toledo	\$5,000,000		1,000,000	4,000,000		
WW Grit Facility Design and Construction	Toledo	\$3,750,000	2,500,000	1,250,000			
Solids Handling Equipment Upgrades and Replacements	Toledo	\$1,200,000	600,000	400,000	200,000		
BVPS VFD #1 and #6 Replacement, Design Engineering & Construction	Toledo	\$900,000	900,000				
Plant Electric Actuator Replacement	Toledo	\$300,000	100,000	100,000	100,000		
Paine Regulator Modifications C/CPS	Toledo	\$1,122,542	1,122,542				
Fassett Regulator Modifications C/CPS	Toledo	\$1,031,316	1,031,316				
Downtown Tunnel Sys Storage Basin C/CPS	Toledo	\$28,279,229	21,209,422	7,069,807			
Swan Creek North Sewer Separation C/CPS	Toledo	\$12,160,063	9,457,826	2,702,237			
Rossford I & I Removal Ph III	Northwestern Water and Sewer District	\$1,000,000	500,000	500,000			
Rossford I&I Removal Ph IV	Northwestern Water and Sewer District	\$1,000,000					1,000,000
S-189 Lining	Lucas County - Ottawa Hills	\$1,500,000	1,500,000				

Project	DMA	Total Cost	Annual Capital Improvements Needed				
			2019	2020	2021	2022	Future
S-897 Shoreland Avenue	Lucas County - Washington Township	\$550,000	550,000				
Ottawa Hills Lateral Lining	Lucas County - Ottawa Hills	\$500,000		500,000			
<b>Totals</b>	<b>All DMAs</b>	<b>\$141,965,049</b>					
	<b>Toledo only</b>	<b>\$138,115,049</b>					