

## **DRAFT - 2021 TMACOG 208 Plan Facility Planning Area Updates**

The following Facility Planning Area overviews didn't receive any updates from Designated Management Agency contacts for the 2021 208 Plan update, but population data was updated to include 2020 Census data

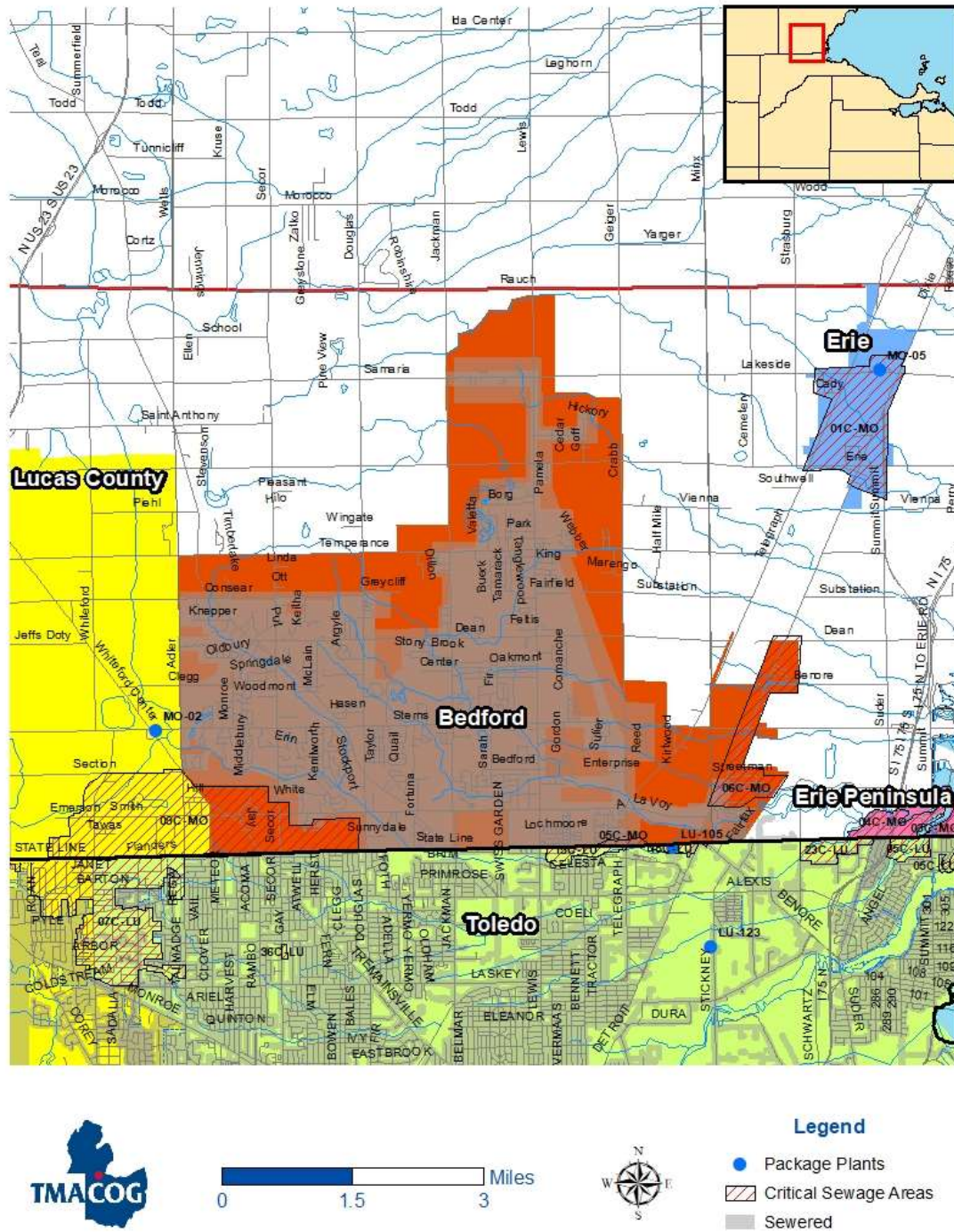
### **MONROE COUNTY FACILITY PLANNING AREAS**

## Bedford Township Facility Planning Area

### Designated Management Agency Responsibilities:

- Bedford Township: Owns the wastewater collection and treatment system.
- Monroe County Drain Commissioner: Operates and administers the sewage system under an agreement with Bedford Township.

**Figure 5-6: Bedford Township Facility Planning Area**



**Table 5-20: Bedford Township Area Population**

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Bedford Township, entire jurisdiction *	<u>31,813</u> 31,085		
Erie Township, entire jurisdiction*	<u>4,299</u> 4,517		
Whiteford Township, entire jurisdiction*	<u>4,590</u> 4,602		
<b>Totals inside <u>Estimates within</u>-the FPA boundary</b>	<b>28,118</b>	<b>3,256</b>	<b>0.90</b>

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

The 2020 population numbers in Table 5-20 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data.~~The population was estimated using 2010 census data.~~ It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

## Present Facilities

The Bedford WWTP has a capacity of 6.0 million gallons per day (mgd). It had an average daily flow of about 2.5 mgd in 2014. Peak flow rates can exceed 10 mgd, and the plant occasionally treats flows up to its hydraulic capacity of 13.2 mgd. The Bedford WWTP operates an industrial wastewater pretreatment program.

The Bedford Township WWTP was constructed in 1971 and is located on the Southeast side of the Township on LaVoy Road. This original facility consisted of administration and blower buildings that contain barminutors, raw influent pumps and low-pressure air blowers for process air, grit and primary clarifier tanks, a pressure filtration tank, two aeration tanks and aerobic digestion tank, two final clarifier tanks with a surge tank for high flows, one chlorine contact tank, six sludge drying beds. The plant was expanded in 1978 to a design capacity of 2.9 mgd. This expansion consisted of a new primary clarifier tank, additional raw influent pump and barminutor, a blower, three pressure filtration tanks, six aeration tanks, final clarifier tanks, chlorine contact tank and sludge drying beds; and a new digester control building and digester tanks. In 1994, another expansion took place to bring the WWTP up to a capacity of 6.0 mgd and included additional primary clarifier tanks, a pressure filter and aeration tanks; increased the size of the existing chlorine contact tanks; and added two larger final clarifier tanks. The WWTP is a conventional mechanical plant that provides tertiary treatment for the residential, commercial and industrial users in the Township. There is no septage receiving facility at the current WWTP.

In 2001, the Residual Management Plan for Land Application of Biosolids was approved and the Township started to use land application for their biosolids disposal. In approximately 2007, an above ground sludge storage tank was added to allow for additional sludge holding time prior to land application of the processed sludge in conjunction with the occasional use of some of the sludge drying beds.

In 2005, an 850,000-gallon sludge storage tank was built, including a new truck filling station. In 2011, a new head works building was built. It included a Duperon FlexRake screening system (which eliminated

the need for the old barminutors), five new 35 horse power (hp) raw pumps which replace the three old pumps (one 250 hp pump and two 150 hp), and a new Vortex grit removal system. In 2012, the blowers for the aeration system were replaced with two Turbalex blowers.

The collection system located within Bedford Township is composed of separated sanitary sewers that discharge directly to the WWTP with no direct outlets into any drains, rivers or streams that are known. The initial sanitary sewer system was completed in 1971 and consisted of approximately 58 miles of various sized sewer pipes. Since then, the mainline sewer system has been expanded to the current system that consists of about 100 miles of sanitary sewer in the Township. Majority of the system is gravity with six pump stations within the system and are located at: 1) Smith and Lewis Road; 2) Smith and Douglas Road; 3) Monroe Road north of Clegg Road; 4) Crystal Water located on Douglas north of Steams Road.; 5) Country Club Villis on Smith Road west of Douglas and 6) Legacy on Valetta Road north of Temperance Rd.

## **Issues**

With over 30,000 people and more development predicted, Bedford Township is the most populous Toledo suburb. Bedford Township's rising population continues to increase the demand for wastewater treatment capacity. The present service area includes developed portions of Bedford Township and a portion of Erie Township.

Majority of the plant equipment is near the end of its useful life, ranging from 30 to 40 years, many areas of the plant need to be upgraded. Continuing efforts are also needed to identify and eliminate sources of inflow and infiltration from the collection system.

## **Future Needs**

- Extraneous water entering the collection system is an ongoing problem. Monroe County has a program to identify and eliminate infiltration and inflow (I/I) including:
  - The County has walked, visually checked, and smoke tested all the interceptors that follow the County drains and corrected the problems found.
  - Slip lining of approximately 2,400 feet of sanitary sewer on Barbara Lee and Sandra Kay Drives.
  - The County will continue with the current program of manhole inspections and sewer televising for illicit connections and pipe problems on an as needed basis.
- In 2009, a Facilities Plan was prepared to provide recommendations, costs, and priorities for replacement or rehabilitation for several wastewater plant components. The first phase improvements were completed by 2011. In 2015, the second phase improvements were being planned and will be completed in 2020.
  - Replace the existing chlorine gas and dechlorination systems with new disinfection system, to be determined (Phase 2)
  - A new HVAC system for the Blower Building (Phase 2)

The capital improvement plan for the Bedford Township FPA is shown in Table 5-21 .

**Table 5-21: Bedford Township FPA Capital Improvement Schedule**

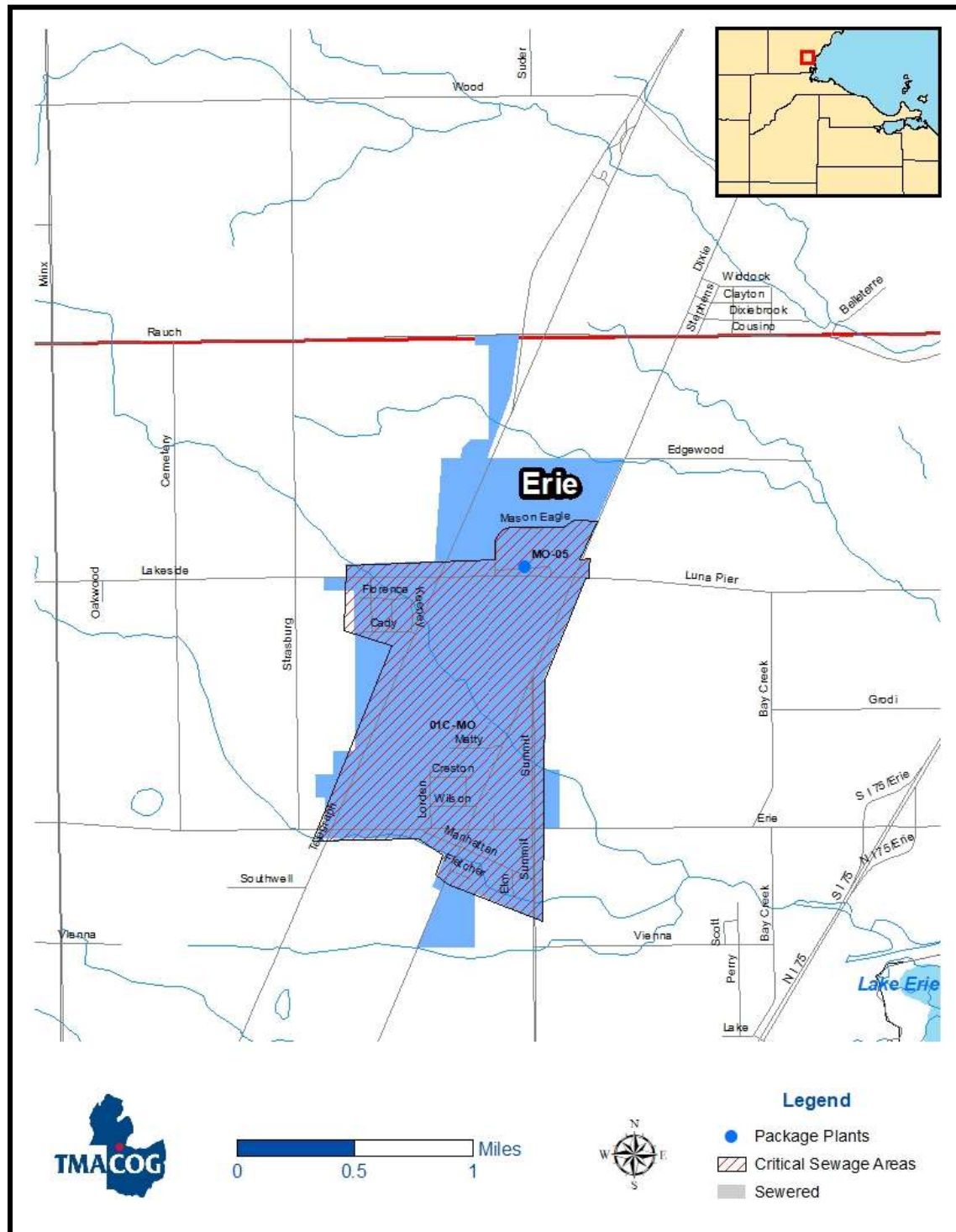
Project	DMA	Total Cost	Annual Capital Improvement Needs							
			2019	2020	2021	2022	2023	2024	2025	2026
Replace pressure filters at WWTP	Bedford	<b>\$5,343,750</b>	\$5,343,750							
Replace chlorine gas with UV and new HVAC system for blower building 2 at WWTP	Bedford	<b>\$17,000,000</b>		\$17,000,000						
Manhole repair + sewer main lining	Bedford	<b>\$2,000,000</b>	\$2,000,000							
		<b>\$24,343,750</b>								

## ERIE FACILITY PLANNING AREA

### Designated Management Agency Responsibilities:

- **Erie Township:** Should a sewage project in Erie Township be initiated, the Township would be responsible for planning, construction, and operation of a collection system, and a wastewater treatment facility if required.

Figure 5-7: Erie Facility Planning Area



**Table 5-22: Erie Area Population**

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Erie Township, entire jurisdiction*	4,2994,517		
<del>Totals inside</del> <b>Estimates within the FPA boundary</b>	<b>719</b>	<b>719</b>	<b>0.20</b>

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

The 2020 population numbers in Table 5-22 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data.~~The population was estimated using 2010 census data.~~ It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

## Present Facilities

Erie is an unincorporated town in Erie Township. There is no public sewerage system: all businesses and residences are served by individual on-site systems. There is one package plant, which serves the school district (Table 5-23).

**Table 5-23: Package Plants in the Erie Facility Planning Area**

Package Plant	Map ID	Type	Install or Upgrade Date	NPDES Permit	Capacity, gpd
Mason Consolidated Schools <sup>A</sup>	MO-05	Private*	1992	MI047201	35,000

<sup>A</sup>Status is active

\*Facility type is assumed

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

## Issues

Most of the planning area has been designated as a Critical Sewage Area by the Monroe County Health Department. The individual septic systems are susceptible to failure due to poor soil conditions. The community's small lot sizes do not allow room for onsite sewage systems that meet today's standards.

## Future Needs

If a significant number of individual septic systems fail, a public sanitary sewerage system may be required. The sewage treatment options that should be considered are connecting to the Luna Pier system via force main or constructing a new wastewater treatment plant.

This Plan supports state and federal financial assistance for planning, design, and construction of a sewerage system, when required.

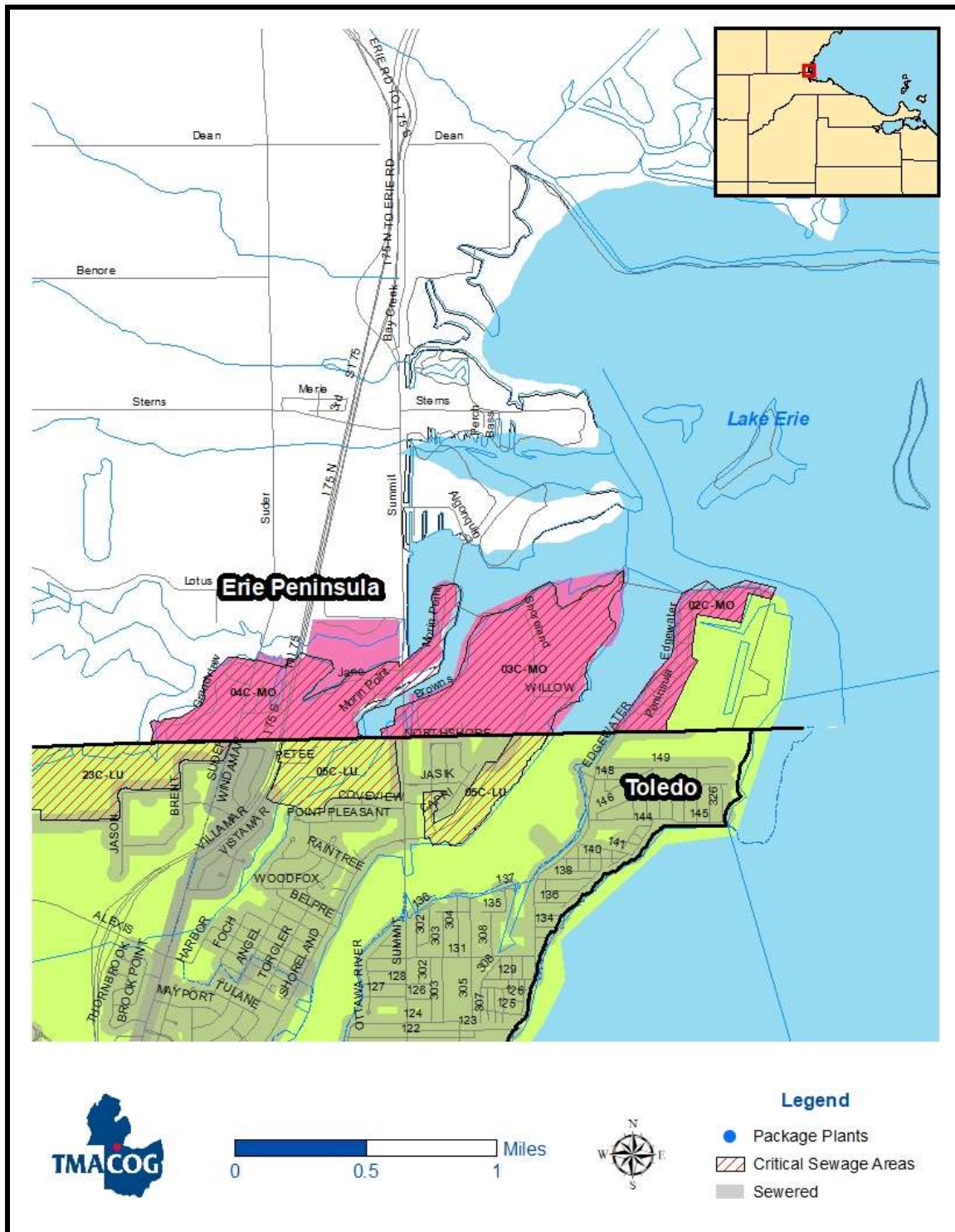
There are no projects planned for the Erie FPA at the present.

## Erie Peninsula Facility Planning Area

### Designated Management Agency Responsibilities:

- **Erie Township:** Should a sewage project in Erie Township be initiated, the Township would be responsible for planning, construction, and operation of a collection system, and a wastewater treatment facility if required.

Figure 5-8: Erie Peninsula Facility Planning Area



**Table 5-24: Erie Peninsula Area Population**

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Erie Township, entire jurisdiction*	4,2994,517		
<del>Totals inside</del> Estimates within the FPA boundary	459	459	0.13

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

~~The 2020 population numbers in Table 5-24 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data. The population was estimated using 2010 census data.~~ It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

## Present Facilities

Monroe County borders the City of Toledo, with the state line running through north Maumee Bay. On the bay's south shore are three peninsulas located in Michigan, but have land access only through Ohio. The peninsulas, west to east, are Morin Point, McLeary's Point, and Lost Peninsula, respectively. There are no public wastewater treatment facilities in the planning area. Residences are served by individual onsite systems. In Lost Peninsula, a marina is served by privately-owned sewers that connect to the Toledo system for treatment services. These sewers were built under an agreement signed in 1993, and service is limited by flows of 189,125 gallons per day (gpd) with a maximum flow not to exceed 300 gallons per minute (gpm).

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

## Issues

Most of the planning area has been designated as Critical Sewage Areas by the Monroe County Health Department. The individual septic systems are susceptible to failure due to poor soil conditions and high water tables. The community's small lot sizes do not allow room for on-site sewage systems that meet today's standards. Houses on the peninsulas were originally built as recreational summer homes. Many, especially in Lost Peninsula, have since become permanent residences.

## Future Needs

If a significant number of individual septic systems fail, a public sanitary sewage system may be required. The sewage treatment options that should be considered are connecting to the Toledo system or constructing one or more new wastewater treatment plant(s).

This Plan supports state and federal financial assistance for planning, design, and construction of sewerage systems, when required.

There are no projects planned for the Erie Peninsula FPA at the present.

**Designated Management Agency Responsibilities:**

- Figure 5-9: Luna Pier/Erie-LaSalle Township Facility Planning Area**



**Table 5-25: Luna Pier/Erie-LaSalle Township Area**

Area	Population	Unsewered Population	HSTS Phosphorus Load (tons)
Luna Pier, entire jurisdiction	<del>1,382</del> 1,411		
Erie Township, entire jurisdiction*	<del>4,299</del> 4,517		
La Salle Township, entire jurisdiction*	<del>4,639</del> 4,894		
<b>Totals inside Estimates within the FPA boundary</b>	<b>1,860</b>	<b>321</b>	<b>0.09</b>

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

The 2020 population numbers in Table 5-25 are from the U.S. Census 2020 decennial census. The unsewered population was estimated in 2018 using GIS analysis of 2010 Census data.~~The population was estimated using 2010 census data.~~ It is assumed the unsewered population uses home sewage treatment systems. The phosphorus load from home sewage treatment systems was estimated based on population and mass of phosphorus (this method is detailed in TMACOG's Nutrient Source Inventory for Package Plants and Septic Systems).

## Present Facilities

The City of Luna Pier has an activated sludge wastewater treatment plant with grit removal, primary and final sedimentation, aeration, anoxic zone, effluent chlorination, gravity sludge thickening and storage. Average daily flow capacity is 0.348 million gallons per day (mgd), and 0.696 mgd peak. The discharge enters Lake Erie via LaPointe Drain. The WWTP was constructed in 1969 and expanded in 1990 and 2013.

The 1990 plant expansion allowed for the Lakeshore Area of LaSalle Township, which included the areas of North Shores and Grandview Beach Subdivisions along with the North Cape Yacht Club. The Toledo Beach Marina Area was not included in this project.

The 2013 plant upgrade added an automated screen, a second primary and final clarifiers, replaced three raw sewage pumps and three return sludge pumps, replaced and relocated de-gritting system, abandoned flash mixer, replaced backup generator, added two aeration tanks, converted the existing aeration tank to anoxic tank, added two blowers, and added an auxiliary chlorine contact tank.

## Issues

The Luna Pier plant receives a substantial amount of infiltration and inflow (I/I), an estimated 44% of its total flow; however, the system does not have sanitary sewer overflows (SSOs), but one plant bypass has been recorded. The bypass has since been removed, as part of the 2013 upgrade.

In 2014, a flow monitoring study was conducted. Overall, the flow monitoring study (SSES) showed that I/I is present throughout the City's sanitary sewer collection system. The infiltration is prevalent due to the high groundwater table resulting from its location next to Lake Erie. The wet- versus dry-weather data showed that none of the areas monitored experienced peak wet-to-dry ratios greater than 4.5, which is within the typical range for sewers.

## **Future Needs**

Based on a plant analysis and correspondence with Michigan EGLE from 2004-2009, replacement or expansion of several key plant components was planned. In May 2010, the City was awarded a \$3 million loan and an \$898,000 grant from USDA's Rural Development Program. The funding paid for the improvements that comprised the 2013 plant upgrade described above. Overall, the Luna Pier sanitary sewage system serves about 1,500 users in the City plus residents in the North Shores subdivision in LaSalle Township.

There are no projects planned for the Luna Pier/Erie-LaSalle Township FPA at this time.