



Mr. David Worthington
Michigan Department of Environment, Great Lakes, and Energy
Drinking Water and Municipal Assistance Division
Revolving Loan Section
P.O. Box 30817
Lansing, MI 48909-8311

Dear Mr. Worthington:

As directed by, and on behalf of the Tuscarora Township Board of Trustees, attached is our application for the State Revolving Fund program. Our intent is to have an approved plan and to be placed on the Intended Use Plan.

In this document you will find our request and justification for an exception to a public procedure.

Additionally, the enclosed environmental report is a sensitive document, parts of which are exempt from Freedom of Information Act (FOIA) requests under Michigan law, MCL 15.243, or must be appropriately redacted. This is due to the possible disclosure that would reveal the exact location of archaeological sites.

Sincerely,

Robert A. Kramer
Lt. Colonel, US Army (Ret.)
Trustee/Chair Sewer Committee

**Tuscarora Township
Cheboygan County
State Revolving Fund
Application for
Sanitary Sewer System Funding**

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Tuscarora Township Septic to Sewer Expansion and Modernization Project
– Protecting Our Community & the Great Lakes

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ENTITY REQUESTING FUNDS

Tuscarora Township, 3546 South Straits Highway, Indian River. MI 49749, (231) 238-0970

POINTS OF CONTACT

Lt. Colonel (Ret.) Robert A. Kramer, Township Trustee/Chair, Sewer Committee (231) 290-0044

Mr. Michael Ridley, Township Supervisor, (231) 238-0970

PROJECT TITLE/NAME

Tuscarora Township Septic to Sewer Expansion and Modernization Project
– Protecting Our Community & the Great Lakes

COST
\$11.6 million

EXECUTIVE SUMMARY

In the rural area of Tuscarora Township and the unincorporated area known as Indian River, there is a crowded, compact zone of residences, many dating back to the early 1900s, that have aging, problematic, noncompliant or nonexistent septic systems. In addition to significant public health concerns, this area is within an environmentally sensitive zone in the middle of the 38-mile Inland Waterway which drains into Lake Huron, of the Great Lakes. In 2015, the community invested \$5.9 million for a commercial sewer system with a modular expandable plant. However, despite overwhelming community support, a residential system remains financially out of reach for most property owners as many full-time residents are either retirees on fixed incomes, seasonally employed, or financially disadvantaged.

PROBLEM STATEMENT

Efforts have been ongoing for decades to install a residential sewer system in this rural area but have been unsuccessful due to high costs and affordability for residents.

Many of the septic systems in the proposed area have failed or are not in compliance with local, state or federal recommendations and constitute a potential problem. The project area is in an environmentally sensitive zone, of which almost all parts are zoned by the county as “P-LS,” Lake and Stream Protection District. This is due to residences being within 1,000 feet of a body of water which drain into, and pollute, the 38-mile Inland Waterway, Lake Huron, of the Great Lakes.

The project is in an area previously highlighted by Michigan District Health Department No. 4 (DHD4), as a problem area for onsite sewage disposal due to a high seasonal groundwater table and very small lots.

Tuscarora Township Septic to Sewer Expansion and Modernization Project
– Protecting Our Community & the Great Lakes

These issues created lack of isolation for onsite sewage disposal systems and from onsite water wells, property lines and surface water and in some cases, critically undersized septic disposal systems. The expanded sewer system would resolve these public health concerns and issues, help improve surface water quality and improve environmental conditions in the residential area while reducing increasing affluent pollution to protect the Inland Waterway and the Great Lakes.

Economic disparity has played a significant role in lack of progress to date due to affordability. The area as a whole is no longer “disadvantaged” by government standards. That is because those with waterfront property are mostly absentee and second homeowners from outside the township. But the majority of full-time residents are either retirees on fixed incomes, seasonally employed, or financially disadvantaged. As an example, the unemployment rate in Cheboygan County in April 2020 during the pandemic was over 41% -- the highest in the continental United States at that time.

PROJECT SUMMARY

The project will provide a sanitary sewer system for 420 homes within an environmentally sensitive area zoned Lake & Stream Protection with residences being within 1,000 feet of a body of water which drains into the 38-mile Inland Waterway, Lake Huron, & the Great Lakes.

The purpose and goal are to replace aging, problematic, noncompliant or nonexistent septic systems, & addresses local, regional, national & international concerns for Great Lakes protection, while improving public health & protecting the tourist-based economy.

The community funded an engineering study. The project is ready for final design & execution

NOTE: The township has a plan for multiple phases to serve over 700 homes in the unincorporated area of Indian River at a total cost of \$18.6 million. This application only covers the beginning phases for 420 homes at a cost of \$11.6 million.

PROJECT DESCRIPTION

The residential expansion will provide service to approximately 420 homes in an environmental sensitive area. Phase 1 is for approximately 200 homes. Phase 1 is the most problematic area due to age of homes, many dating back to 1900. Phase 2 is the remaining homes.

Both phases can be executed simultaneously. The township decided to break it into 2 phases to seek various grant funding from federal agencies and other sources. To date, no grants have been received.

This rural community sits on northern Michigan’s 38-mile “Inland Waterway” which feeds Lake Huron, of the Great Lakes. The project area consists of residential areas which are in environmentally sensitive areas zoned by the county as “P-LS,” Lake and Stream Protection District, due to all residences being within 1,000 feet of a body of water that include Burt Lake, the Indian River, Sturgeon River and Little Sturgeon River.

Since 2018, the community has been working towards a residential wastewater project that consists of an expansion of the existing \$2.5 million modular plant complex in the commercial district and a gravity fed sewer system with additional pumps in low lying areas. The community invested in an engineering and

Tuscarora Township Septic to Sewer Expansion and Modernization Project
– Protecting Our Community & the Great Lakes

feasibility study and the project is now “bid ready” and executable. A community group, Burt Lake Preservation Association (BLPA) donated the funds to the township government for the study.

This project consists of an area along the Sturgeon River and includes properties north of Burt Lake State Park, east of Burt Lake and includes the both the north and south side of the Indian River which is a part of the Inland Waterway.

The community is already invested in a modern wastewater system. The commercial sewer system constructed in 2015 was a \$5.9 million investment in land for the existing modular/expandable plant, holding areas, test wells and over 400 commercial hook-ups. This residential project will leverage the \$2.5 million expandable plant complex investment for this project. Community groups, citizens and property owners have petitioned their township government to move residential sewer expansion forward.

The proposed project area is the most sensitive to public health concerns, protection of the community’s natural resources, the Inland Waterway and the Great Lakes.

BACKGROUND INFORMATION, COMMUNITY SUPPORT AND INVESTMENT

Over the years the need for a residential sewer system in high-density areas in around the Indian River, Burt Lake and the Sturgeon River has only increased. Demands on septic systems have changed significantly, while the typical household water usage having increased dramatically and the dangers to public health and the environment, to include the Great Lakes, increase each day.

A community group, CHIRP – Citizens and Homeowners for Indian River Progress, was formed in 2017 by local citizens for the purpose of petitioning township government to support a cost study for a residential sewer system. The petitions were circulated to all property owners in the previously defined residential area with the majority in favor and presented to township. A study was conducted, with funds donated for the study by the Burt Lake Preservation Association (BLPA).

The project was designed to leverage the substantial investment by the community in the 2015 commercial sewer system using the existing modular \$2.5 million expandable plant and adjacent township land.

In July of 2019 after the study was completed and accepted, the Tuscarora Township Board of Trustees determined that this citizen-driven initiative be authorized and directed that an application be submitted to USDA for grants and funding.

As of this writing, there have been numerous delays in submission of the application due to changing administrative requirements and availability of funds and grants.

Due to a lack of adequate USDA grant funding, and at the advice of USDA officials, the project area was divided up into phases that would stretch over many years.

PROJECT BENEFITS

- Addresses two key environmental priorities: (1) environmental justice to ensure those who cannot afford it have access to a clean and functioning sewer system and (2) protection of the Great Lakes.

Tuscarora Township Septic to Sewer Expansion and Modernization Project
– Protecting Our Community & the Great Lakes

- Economy of scale
- Leverages prior \$5.9 million commercial system, specifically the \$2.5 million plant complex investment made by the community that will be the anchor for the project.
- Affordability for long-term operation by residents without the additional burden of high initial project funding by property owners over the normal forty-year payment period.
- Solve ever-increasing public health dangers due to aging, failing non-compliant septic systems.

PROJECT SIGNIFICANCE TO MICHIGAN

Addresses two key priorities: (1) environmental justice to ensure those who cannot afford it to have access to a clean and functioning sewer system and (2) protection of the Great Lakes.

Solve ever-increasing public health and environmental dangers due to aging, failing or non-compliant septic systems.

LOCAL, STATE, PRIVATE OR FEDERAL ENTITIES SUPPORTING THIS REQUEST

Northeast Michigan Council of Governments
Cheboygan County Michigan
Tipp of the Mitt Watershed Council
Burt Lake Preservation Association
Michigan District Health Department #4
State Senator Wayne Schmidt
State Representative John Demoose

District Health Department No. 4



April 8, 2021

Robert Kramer
Tuscarora Township Trustee
3546 S. Straits Hwy.
Indian River, MI. 49749

Alpena County
100 Woods Circle
Suite 200
Alpena, MI 49707
(989) 356-4507
Fax (989) 356-3529

RE: Proposed Expansion
Indian River Municipal Sewer System
Tuscarora Township
Cheboygan County, Michigan

Cheboygan County
Doris E. Reid Center
825 S. Huron St.
Suite 1
Cheboygan, MI 49721
(231) 627-8850
Fax (231) 627-9466

Dear Mr. Kramer,

As stated previously during the original planning stages of municipal sewer expansion, District Health Department #4(DHD4) offers the following:

Montmorency County
P.O. Box 183
12519 State Street
Atlanta, MI 49709
(989) 785-4428
Fax (989) 785-2217

The expanded service area that encompasses the region due West of the Downtown corridor, between the Indian River to the North and the Sturgeon River to the South, is an area previously highlighted by DHD4, as a problem area for onsite sewage disposal due to a high seasonal groundwater table and very small lots. These issues created lack of isolation for onsite sewage disposal systems from onsite water wells, property lines and surface water and in some cases, critically undersized sewage disposal systems.

The expanded sewer system in the area mentioned above would resolve some of these public health concerns and issues, help improve surface water quality and improve environmental conditions in the residential area.

Presque Isle County
106 E. Huron
Suite A
Rogers City, MI 49779
(989) 734-4723
Fax (989) 734-3866

DHD4 strongly supports the municipal sewer expansion in the area outlined above.

Sincerely,

Kevin Prevost R.S.

Environmental Health Director


Kyle Keller

Environmental Sanitarian

www.dhd4.org

Administrative Services
Alpena County
Office

05.28.2021

District 2 Onsite Septic Suitability Review

To:

Michael Ridley
Tuscarora Township
Via email:
supervisor@tuscaroratwp.com

From:

Aaron Nordman
Performance Engineers
406 Petoskey Ave.
Charlevoix, MI 49720

Re:

District 2
Evaluation for Onsite Septic
System Suitability

Project No.:

19-5213

Project Summary:

Performance Engineers, Inc. (PEI) has been working with Tuscarora Township on the feasibility of extending municipal sewer into the residential area west of their existing commercial sewer district. As part of this process, we have performed an evaluation of this area to assess the suitability of these properties for onsite septic systems. The basis for this determination is whether or not the properties can comply with the District Health Department No. 4 Sanitary Code regulations for onsite sewage treatment and disposal. A partial analysis (for the southerly service area) was provided to the Health Department for their review and comment on May 7, 2021. However, the Health Department declined to provide comment on that original submittal, citing the fact that evaluations are performed by the Health Department on a case-by-case basis, not neighborhood wide.

The basic issue is that we performed the original analysis on the southerly service area utilizing the dimensional setback requirements of the Code as the basis for evaluating compliance on a neighborhood-wide scale. As a follow up to that original submittal, we have since revised the phasing plan to set Phase I as the area north of Mack Avenue and Phase II would be the area south of Mack Avenue. We have also conducted a more thorough parcel by parcel dimensional analysis and included information on the soils present. This expanded analysis is presented here, along with our reference material.

Maps for Phase I and Phase II of the proposed sewer expansion are provided with this report for reference. The maps contain information related to the Sanitary Code setbacks, property dimensions, and the soils present in the area.

Background Information:

The proposed service area covers a total of approximately 200 acres and 420 properties. Of this area, approximately 30 acres are public road right-of-way and 12 acres are water, leaving 158 acres for the 420 properties. If the properties were all equal in size, it would leave just over 0.37 acres per lot (about 16,400 sf) per lot.

The USDA Soil Survey of Cheboygan County, Michigan maps approximately 77.7 acres of this area as unsuitable soils for onsite septic systems. This is based on the attached mapping of Grousehaven variant muck, Roscommon muck, and Udipsammments soils within the area. Although we recognize the fact that the USDA soil mapping is large in scale and cannot be applied to a specific site or localized area, we are also looking at this from a larger scale perspective to make generalized assumptions.

Performance Engineers, Inc.

Tel (231) 547-2121
Fax (231) 547-0084

406 Petoskey Ave.
Charlevoix, MI 49720

performanceeng.com
Info@performanceeng.com



To:
Michael Ridley
Tuscarora Township
Via email:
supervisor@tuscaroratwp.com

The local Sanitary Code (District Health Department 4, effective October 12, 2009) states as its purpose “*These regulations are hereby adopted for the purpose of protecting public health and the quality of the environment as it affects human health, and to prevent the occurrence of public health hazards, risks and nuisances.*” Pursuant to that stated purpose, the Code contains design standards, special provisions, and requirements for the onsite discharge of sanitary sewage. The Code requirements for a compliant onsite septic system that PEI applied to this evaluation include the following:

From:
Aaron Nordman
Performance Engineers
406 Petoskey Ave.
Charlevoix, MI 49720

- 100-ft surface water setback (Table 405)
- 50-ft well isolation (Table 405)
- 10-ft setback from property lines (Table 405)
- 10-ft setback from building foundation (Table 405)
- 50-ft setback from an intermittent wet area (Table 405)
- 24-in vertical isolation from bottom of aggregate to high groundwater (Table 409)
- Area shall be available for both the primary sewage disposal system & a replacement area (404.C)
- The replacement area shall be large enough for a sewage disposal system that complies with the Code (404.G)
- Structures, driveways, parking areas, etc. shall not be constructed over the drainfield area (404.D)
- The design sizing information in Section 410

Re:
District 2
Evaluation for Onsite Septic
System Suitability

Project No.:
19-5213

Additional background information was collected during site visits to visually assess the surrounding environmental conditions. A key factor noticed is that there appears to be many artesian wells in the area, some of which were observed with a constant flow to the road ditch system (see attached photos). A subsequent review of well records from the area confirmed that this area is mainly drilled into an artesian aquifer with many flowing wells.

Basis for Determining Code Compliance:

The Code requires a 100-foot surface water setback, which renders about 114 (27%) of these properties non-compliant. The remaining 306 properties may be subject to additional setbacks related to the constant and/or intermittent flow of surrounding ditches (at least 51 additional properties are within 100 feet of a constantly flowing road ditch), but for our purposes, we will ignore this.

The Code requires a 10-foot setback from property lines, a 50-foot radius around a well, and 10-feet from a foundation. If we look at these minimum requirements and extrapolate this to a theoretically optimized lot, where the neighbor’s well does not impact it, we estimate that any lot under about 10,000 sf would not reasonably be

To:
Michael Ridley
Tuscarora Township
Via email:
supervisor@tuscaroratwp.com

expected to meet the Code requirements for an onsite septic system. This assumption is based on the following dimensional information:

- Property line setback (150'x66' lot) requires 3,920 sf
- Well isolation (50' radius) requires 7,854 sf
- House footprint of 900 sf with 10-foot setback requires 2,500 sf
- Small driveway of 16' by 30' requires 480 sf
- Assume no garage, shed, or other accessory structures

From:
Aaron Nordman
Performance Engineers
406 Petoskey Ave.
Charlevoix, MI 49720

Re:
District 2
Evaluation for Onsite Septic
System Suitability

So, the theoretical small house on a small lot described here requires 6,900 sf for just the driveway, house, and property setbacks. When you add the well envelope, the theoretical land required is 14,754 sf before you even begin to place an onsite septic system, which itself would require at least another 400 sf for a two-bedroom home in ideal conditions, plus an equally sized replacement system.

Project No.:
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The reality is that any property under about 0.33 acres (14,000 sf) will have difficulty fitting everything on their site. However, in our conservative analysis, we identified 94 properties, outside of the surface water setback that are under 10,000 sf. This alone means that at least 208 properties (49.5%) cannot meet the Sanitary Code's dimensional requirements for proper setbacks and are thus non-conforming.

When you then apply the USDA soil survey information to the remaining properties, we find another 65 properties are located within area mapped as muck or made land. The Sanitary Code would prohibit the installation of a conforming onsite septic system on these soils (Section 410, deems these "unsuitable" without a variance). This would put the total number of non-conforming properties at 273 or 65% of the total 420 properties.

Summary of Findings:

Based on this analysis, it is obvious to us that the area is severely limited in regard to properties being able to install onsite septic systems that would adequately protect the surrounding environment and adjacent property owners from the potential impacts of an onsite septic system discharge, per the local Sanitary Code. There could be arguments made against our theoretical home and property dimensions, such as overlapping well envelopes or overlapping well and property line setbacks. However, this is why we have conservatively identified only the properties under 10,000 sf. and we did not take into account the Code requirement for a property to have not only room for the drainfield, but also an equivalent replacement area. Nor did we take into account the very likely scenario that many of these properties will have high groundwater conditions that require "mounded" drainfields that take up even more space. It is probably closer to

To:
Michael Ridley
Tuscarora Township
Via email:
supervisor@tuscaroratwp.com

75% of the properties in this area that would need some form of variance from strict application of the Code for a new or replacement onsite septic system.

From:
Aaron Nordman
Performance Engineers
406 Petoskey Ave.
Charlevoix, MI 49720

PEI recognizes that the local Health Department can only make specific determinations on a case-by-case basis and that the Code gives them the ability to grant variances and approve alternative treatment systems. While these are more costly than a conventional system, it is our assumption that this is the most likely scenario for the majority of properties in the proposed District 2 service area. However, the setbacks, design criteria, and requirements cited here were promulgated for the protection of public health and the environment, as the stated purpose of the Code, and should not be discounted just because the Health Department has to have a means to deal with these existing situations.

Re:
District 2
Evaluation for Onsite Septic
System Suitability

PEI believes that we have clearly demonstrated that over 51% of the properties within the proposed service area have non-conforming septic systems based on application of Section 404 General Requirements of the Sanitary Code. This Section requires that "All sewage shall be disposed in a sewage system meeting the requirements of this Code". While we have done this dimensionally, utilizing aerial imagery, tax maps, well records, USDA Soil Maps, and AutoCAD software, we believe that an actual field investigation would only turn up additional issues.

Project No.:
19-5213

It is readily apparent why there has been such a demand for an expansion of the municipal sewer system into this residential area. Municipal sewer is the only viable way for the high density of properties within this area to reasonably be expected to discharge sanitary sewage without impact to the sensitive environment surrounding this location. We hope that you concur with our findings, but invite you to please provide any comment or additional information that you feel may not have been considered.

Sincerely,

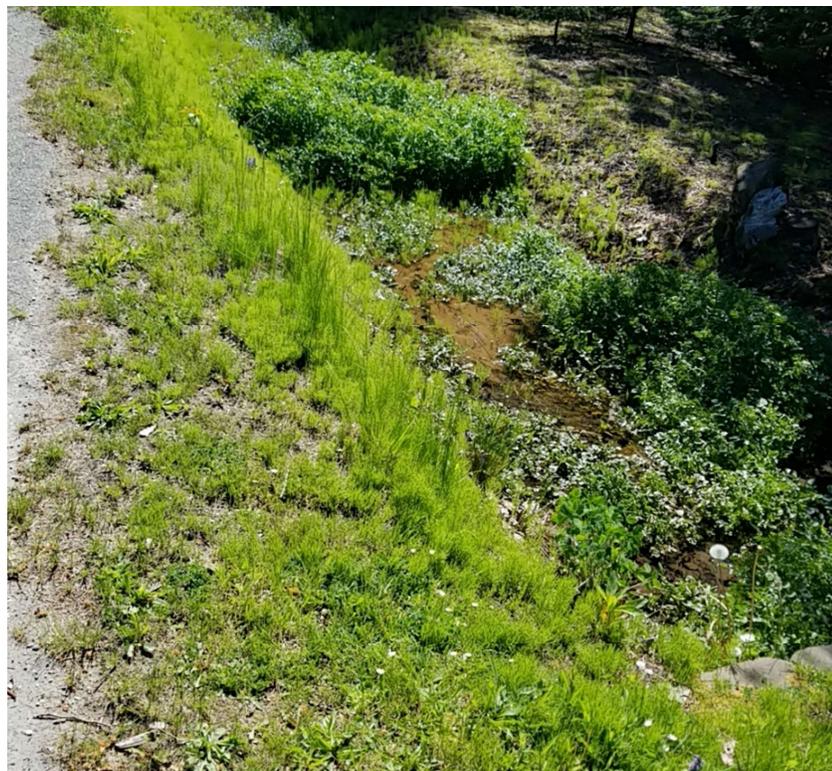
Performance Engineers, Inc.



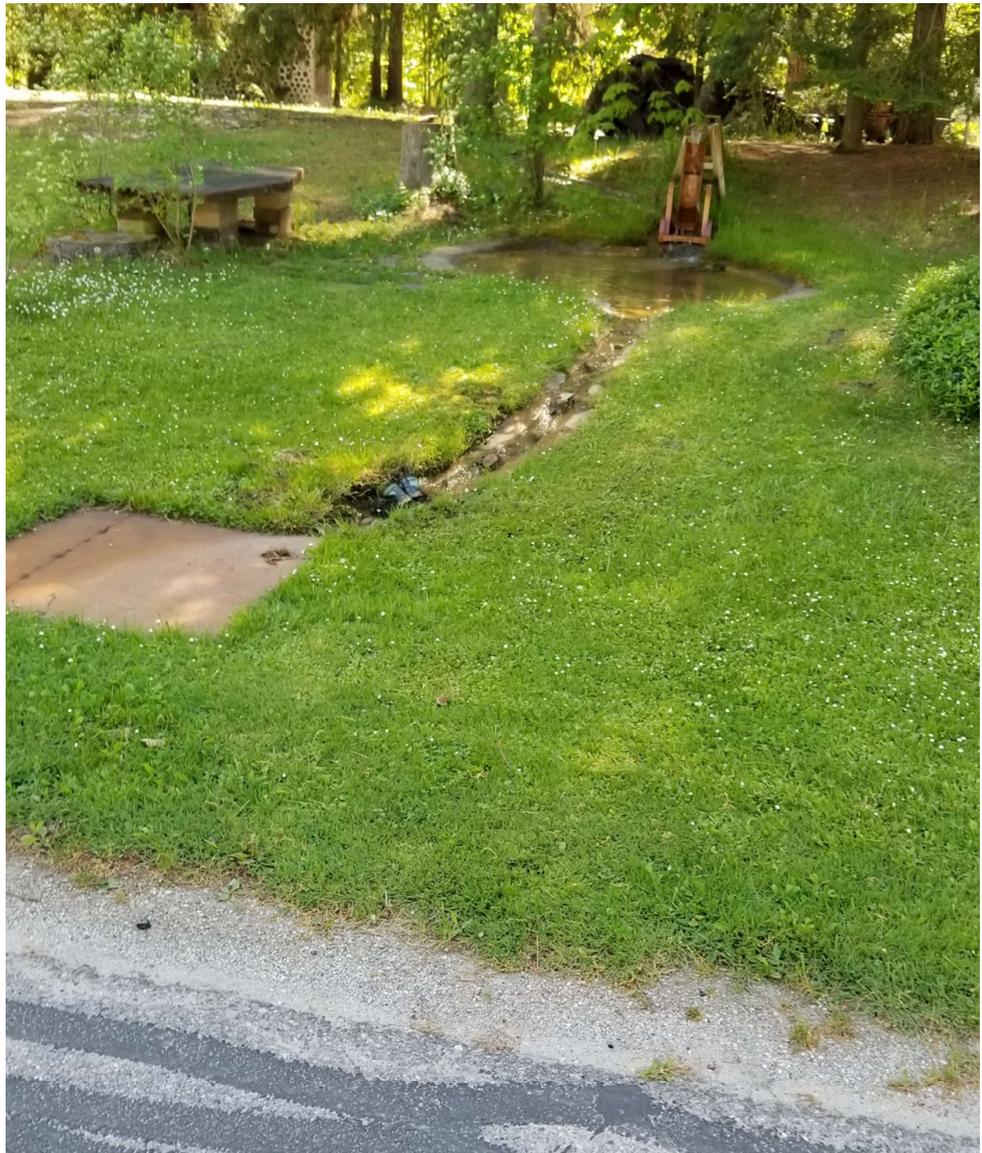
Aaron Nordman, P.E.
Principal



One of several constant flows to road ditch system



Another example of constant ditch flow.



Upstream source of some ditch water all the way up at Poplar & Mack



Road ditch on Witt becomes substantial with successive upstream flows



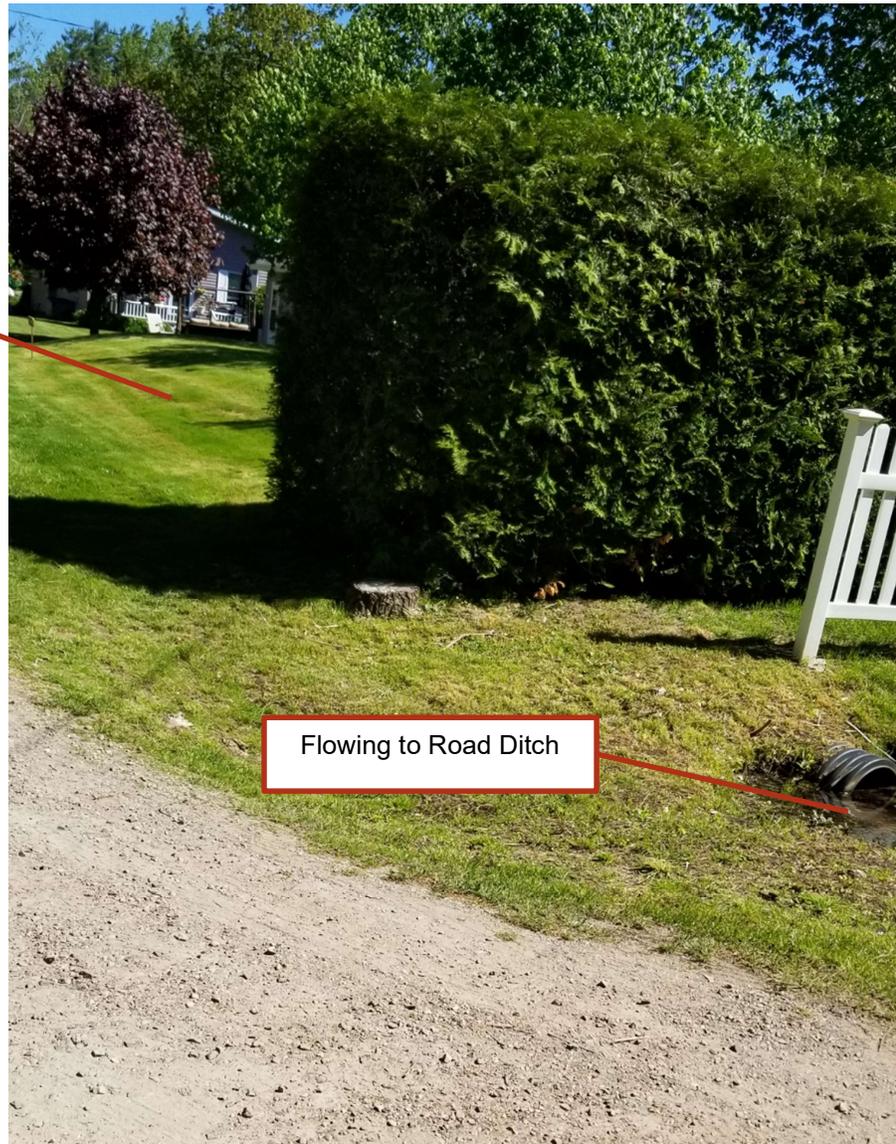
Flow from Witt to Oak Glen that gets piped under mounds



Mounded drainfields directly over piped flow from ditch

Oak Glen Mounds over the piped flow from Witt Rd.

Mounded Drainfield



Flowing to Road Ditch

Another example of mounded drainfield with a direct discharge to road ditch under it.

MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Soils	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
 Special Point Features	 Special Line Features
 Blowout	Water Features
 Borrow Pit	 Streams and Canals
 Clay Spot	Transportation
 Closed Depression	 Rails
 Gravel Pit	 Interstate Highways
 Gravelly Spot	 US Routes
 Landfill	 Major Roads
 Lava Flow	 Local Roads
 Marsh or swamp	Background
 Mine or Quarry	 Aerial Photography
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cheboygan County, Michigan
Survey Area Data: Version 16, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Mar 31, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7	Grousehaven variant muck	8.9	4.1%
12B	Grayling sand, 0 to 8 percent slopes	11.2	5.2%
13B	Rubicon sand, 0 to 6 percent slopes	5.5	2.6%
13D	Rubicon sand, 6 to 18 percent slopes	14.5	6.7%
13F	Rubicon sand, 30 to 60 percent slopes	2.6	1.2%
27D	Cheboygan loamy sand, 12 to 30 percent slopes	5.1	2.4%
41A	Au Gres sand, 0 to 3 percent slopes	70.1	32.4%
56A	Riggsville loamy sand, 0 to 3 percent slopes	3.2	1.5%
61	Roscommon muck	50.4	23.3%
81	Udipsamments, nearly level to steep	18.4	8.5%
CswaaA	Croswell sand, 0 to 6 percent slopes	13.2	6.1%
W	Water	13.4	6.2%
Totals for Area of Interest		216.5	100.0%

TABLE 14.--SANITARY FACILITIES

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "poor," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
2----- Lupton	Severe: subsides, ponding, percs slowly.	Severe: seepage, excess humus, ponding.	Severe: ponding, excess humus.	Severe: seepage, ponding.	Poor: ponding, excess humus.
5----- Loxley	Severe: subsides, ponding, percs slowly.	Severe: seepage, excess humus, ponding.	Severe: seepage, ponding, excess humus.	Severe: seepage, ponding.	Poor: ponding, excess humus, too acid.
7----- Grousehaven Variant	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: seepage, too sandy, ponding.
8----- Tawas	Severe: subsides, ponding, percs slowly.	Severe: seepage, excess humus, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
9----- Greenwood	Severe: subsides, ponding.	Severe: seepage, excess humus, ponding.	Severe: seepage, ponding, excess humus.	Severe: seepage, ponding.	Poor: ponding, excess humus.
10----- Dawson	Severe: subsides, ponding, percs slowly.	Severe: seepage, excess humus, ponding.	Severe: seepage, ponding, excess humus.	Severe: seepage, ponding.	Poor: ponding, excess humus.
11B----- Kalkaska	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
11C----- Kalkaska	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
11D, 11F----- Kalkaska	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: seepage, too sandy, slope.
12B----- Grayling	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
13B----- Rubicon	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
13C----- Rubicon	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.

TABLE 14.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
49A----- Finch	Severe: cemented pan, wetness, percs slowly.	Severe: seepage, cemented pan, wetness.	Severe: seepage, wetness, too sandy.	Severe: cemented pan, seepage, wetness.	Poor: cemented pan, seepage, too sandy.
50A----- Bonduel	Severe: depth to rock, seepage, wetness.	Severe: depth to rock, seepage, wetness.	Severe: depth to rock, seepage, wetness.	Severe: wetness, seepage.	Poor: area reclaim, wetness, thin layer.
51A----- Otisco	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
52A----- Ogemaw	Severe: cemented pan, wetness, percs slowly.	Severe: seepage, cemented pan, wetness.	Severe: wetness, too clayey.	Severe: cemented pan, seepage, wetness.	Poor: cemented pan, too clayey, wetness.
55A----- Solona	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
56A----- Riggsville	Severe: wetness, percs slowly.	Severe: seepage.	Severe: wetness.	Severe: wetness.	Poor: wetness.
57A----- Brimley	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too sandy.	Severe: wetness.	Poor: wetness.
58A----- Alstad	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
60A----- Rudyard	Severe: wetness, percs slowly.	Slight-----	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
61----- Roscommon	Severe: ponding, poor filter.	Severe: seepage, excess humus, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
62----- Wheatley	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, small stones.
63----- Brevort	Severe: ponding, percs slowly, poor filter.	Severe: seepage, ponding.	Severe: ponding.	Severe: seepage, ponding.	Poor: ponding.
64----- Burleigh	Severe: ponding, percs slowly, poor filter.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: ponding.

LEGEND		
DESCRIPTION	PROPOSED	EXISTING
BUILDING		
STORM SEWER		
SANITARY SEWER		
WATER		
NATURAL GAS		
UNDRGRND ELEC.		
OVERHEAD ELEC.		
UNDRGRND TEL.		
WELL		
MANHOLE		
CATCH BASIN		
FIRE HYDRANT		
UTILITY POLE		
LIGHT POLE		
CLEANOUT		
WATER VALVE		
DECIDUOUS TREE		
CONIFEROUS TREE		
BUSH		
TREELINE		
DITCH OR SWALE		
ELEVATION		
CONTOUR		
PROPERTY LINE		
UNIT LINE		
FENCE		

ABBREVIATIONS			
ASPH	- ASPHALT	IE	- INVERT ELEVATION
BF	- BARRIER FREE	LFT	- LINEAR FEET
BC	- BACK OF CURB	MH	- MANHOLE
BLDG	- BUILDING	PVC	- POLYVINYLCHLORIDE
B.M.	- BENCH MARK	PIPE	- PIPE
CFT	- CUBIC FEET	R	- RADIUS
C/C	- CENTER TO CENTER	RCP	- REINFORCED PIPE
CMP	- CORRUGATED METAL PIPE	CONC	- CONCRETE
CONC	- CONCRETE	RR	- RAILROAD
DIP	- DUCTILE IRON PIPE	SAN	- SANITARY
FDN	- FOUNDATION	STL	- STEEL
FFE	- FINISH FLOOR ELEVATION	STM	- STORM
F.G.	- FINISH GRADE	T/C	- TOP OF CURB
HDPE	- HIGH DENSITY POLYETHYLENE	T/W	- TOP OF WALK
		TWALL	- TOP OF WALL
		TE	- TOP/RIM ELEVATION
		TYP	- TYPICAL

**SANITARY CODE REFERENCE,
SECTION 405
(REQUIRED MINIMUM ISOLATION
DISTANCES TO ABSORPTION BEDS
AND TRENCHES)**

- WELL - 50'
- BUILDING FOUNDATION - 10'
- SURFACE WATER - 100'
- PROPERTY LINE - 10'



PHASE I - ONSITE SANITARY LIMITATIONS
1"=200'

CONSULTANTS

TUSCARORA TOWNSHIP
DISTRICT 2 SERVICE AREA EXPANSION

MARK	DATE	DESCRIPTION
0	5/03/2021	SETBACK RESTRICTIONS

PROJECT NO:	19-5213
CAD DWG FILE:	5213_BASE
DRAWN BY:	PEI
DESIGNED BY:	BWM
CHECKED BY:	AEN

SEAL

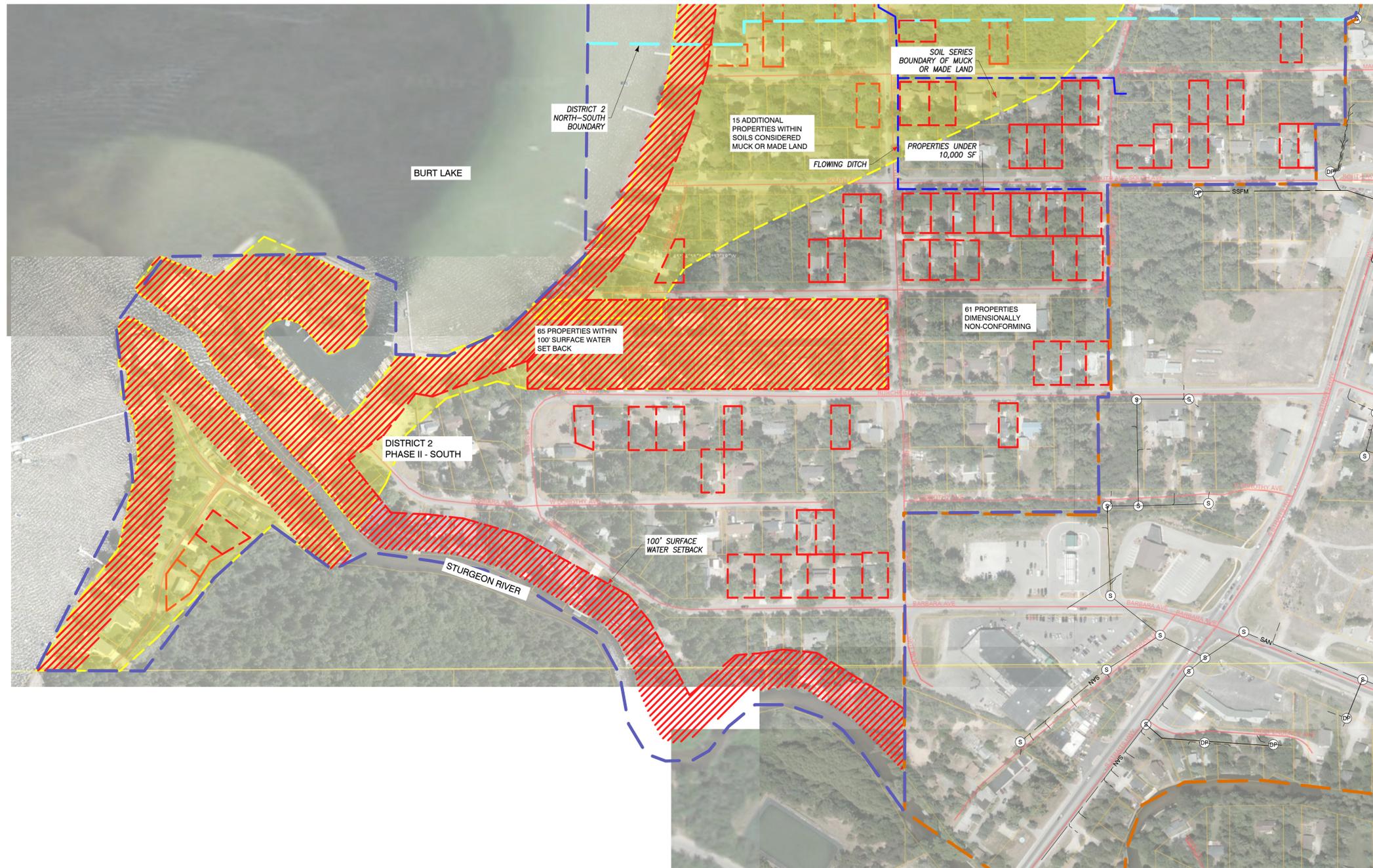
SHEET TITLE
**PHASE I
LIMITATIONS**

C1
SHEET 1 OF 2

LEGEND		
DESCRIPTION	PROPOSED	EXISTING
BUILDING		
STORM SEWER	— ST —	— ST —
SANITARY SEWER	— SAN —	— SAN —
WATER	— W —	— W —
NATURAL GAS	— G —	— G —
UNDRGRND ELEC.	— U/E —	— U/E —
OVERHEAD ELEC.	— E —	— E —
UNDRGRND TEL.	— U/T —	— U/T —
WELL		
MANHOLE		
CATCH BASIN		
FIRE HYDRANT		
UTILITY POLE		
LIGHT POLE		
CLEANOUT		
WATER VALVE		
DECIDUOUS TREE		
CONIFEROUS TREE		
BUSH		
TREELINE		
DITCH OR SWALE		
ELEVATION		
CONTOUR		
PROPERTY LINE		
UNIT LINE		
FENCE		
ABBREVIATIONS		
ASPH - ASPHALT	IE - INVERT ELEVATION	
BF - BARRIER FREE	LFT - LINEAR FEET	
BC - BACK OF CURB	MH - MANHOLE	
BLDG - BUILDING	PVC - POLYVINYLCHLORIDE	
B.M. - BENCH MARK	PIPE - PIPE	
CFT - CUBIC FEET	R - RADIUS	
C/C - CENTER TO CENTER	RCP - REINFORCED	
CMP - CORRUGATED METAL	CONCRETE PIPE	
CONC - CONCRETE	RR - RAILROAD	
DIP - DUCTILE IRON PIPE	SAN - SANITARY	
FDN - FOUNDATION	STL - STEEL	
FFE - FINISH FLOOR	STM - STORM	
ELEVATION	T/C - TOP OF CURB	
F.G. - FINISH GRADE	T/W - TOP OF WALK	
HDPE - HIGH DENSITY	T/WALL - TOP OF WALL	
POLYETHYLENE	TE - TOP/RIM ELEVATION	
	TYP - TYPICAL	

**SANITARY CODE REFERENCE,
SECTION 405
(REQUIRED MINIMUM ISOLATION
DISTANCES TO ABSORPTION BEDS
AND TRENCHES)**

- WELL - 50'
- BUILDING FOUNDATION - 10'
- SURFACE WATER - 100'
- PROPERTY LINE - 10'



PHASE II - ONSITE SANITARY LIMITATIONS

1"=150'



K:\PROJECTS\6213\DRAWINGS\6213_BASE.DWG - PHASE II - PLOTTED 5/29/2021 2:00 PM BY ARON NORDMAN

**Performance
Engineers, Inc.**

Civil / Structural Engineering
406 Petoskey Avenue
Charlevoix, Michigan 49720
Phone: (231) 547-2121
Fax: (231) 547-0084
www.performanceeng.com

CONSULTANTS

TUSCARORA TOWNSHIP
DISTRICT 2 SERVICE AREA EXPANSION

OWNER
TUSCARORA TOWNSHIP
INDIAN RIVER, MICHIGAN

DESCRIPTION
SETBACK RESTRICTIONS

DATE
4/29/2021

MARK
0

PROJECT NO: 19-5213

CAD DWG FILE: 5213_BASE

DRAWN BY: PEI

DESIGNED BY: BWM

CHECKED BY: AEN

SEAL

SHEET TITLE

PHASE II
LIMITATIONS

C2

SHEET 2 OF 2

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PRELIMINARY ENGINEERING REPORT

Tuscarora Twp District 2 Sewer Extension

Tuscarora Township

Prepared by: Aaron E Nordman

Registration State: Michigan

Registration Number: 49600

**Performance Engineers, Inc.
406 Petoskey Avenue
Charlevoix, MI**

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Introduction

Tuscarora Township is requesting funding assistance through the US Department of Agriculture's Rural Development, Water and Waste Disposal Direct Loans and Grant Program. The purpose of this funding request is to enable the Township to expand the community's wastewater collection system from the downtown commercial district to the surrounding residential area. The current central sewer system was designed and constructed with the intention of expansion into the residential areas and this request would be the first expansion of the original system.

In conjunction with a proposed expansion of the service area, an expansion of the wastewater treatment facility (WWTF) would be necessary to treat the additional flow.

Need

The proposed service area (District 2) is comprised of the primarily residential properties that are west of the existing service area (District 1) to the Burt Lake Shoreline. The District 2 service area includes the Columbus Beach Club at the northerly boundary, down to Sturgeon Island and the Sturgeon River at the southerly boundary. District 2 is then subdivided into a Phase I (north of Mack Avenue) and Phase II (south of Mack Avenue).

The homes within District 2 currently rely upon private wells and individual drain fields. Due to a combination environmental concerns including poor soil infiltration, high groundwater, surface water proximity, and well isolation distances on relatively small lots, the majority of existing onsite wastewater disposal systems are believed to be non-conforming to current environmental health standards (Sanitary Code), which can contribute to the degradation of the surrounding water quality. The lack of sewer infrastructure has also become a limiting factor to population and economic growth. Furthermore, there is concern about the constant discharge of excess flow from the artesian wells, which adds to the hydraulic loading within the area.

Scope

The proposed project will provide a gravity sewer system to the District 2 users, building off of the existing infrastructure installed for District 1. The proposed service area encompasses approximately 200 acres and 420 EDUs. The District 2 expansion will include approximately 18,500 feet of new 8-inch gravity sewer, over 50 manholes, approximately 13,000 feet of new force main sewer, 9 lift stations, 86 individual pumping stations, upgrades to increase capacity in the two existing lift stations, and an expansion to approximately double the capacity of the existing WWTF. The existing WWTF is a modular extended aeration plant that discharges to groundwater through rapid infiltration beds. The proposed expansion would increase the capacity of the plant by approximately 100,000 gpd, which then requires additional infiltration beds installed accordingly.

Summary

The estimated project costs for Phase I are \$6.3M, which results in an individual cost of \$27,500 per EDU. The estimated project costs for Phase II are \$5.3M, which results in an individual cost of \$27,700 per EDU. This is a negligible cost differential, making the per customer cost of each phase very similar within the overall District.

Current Facility Description

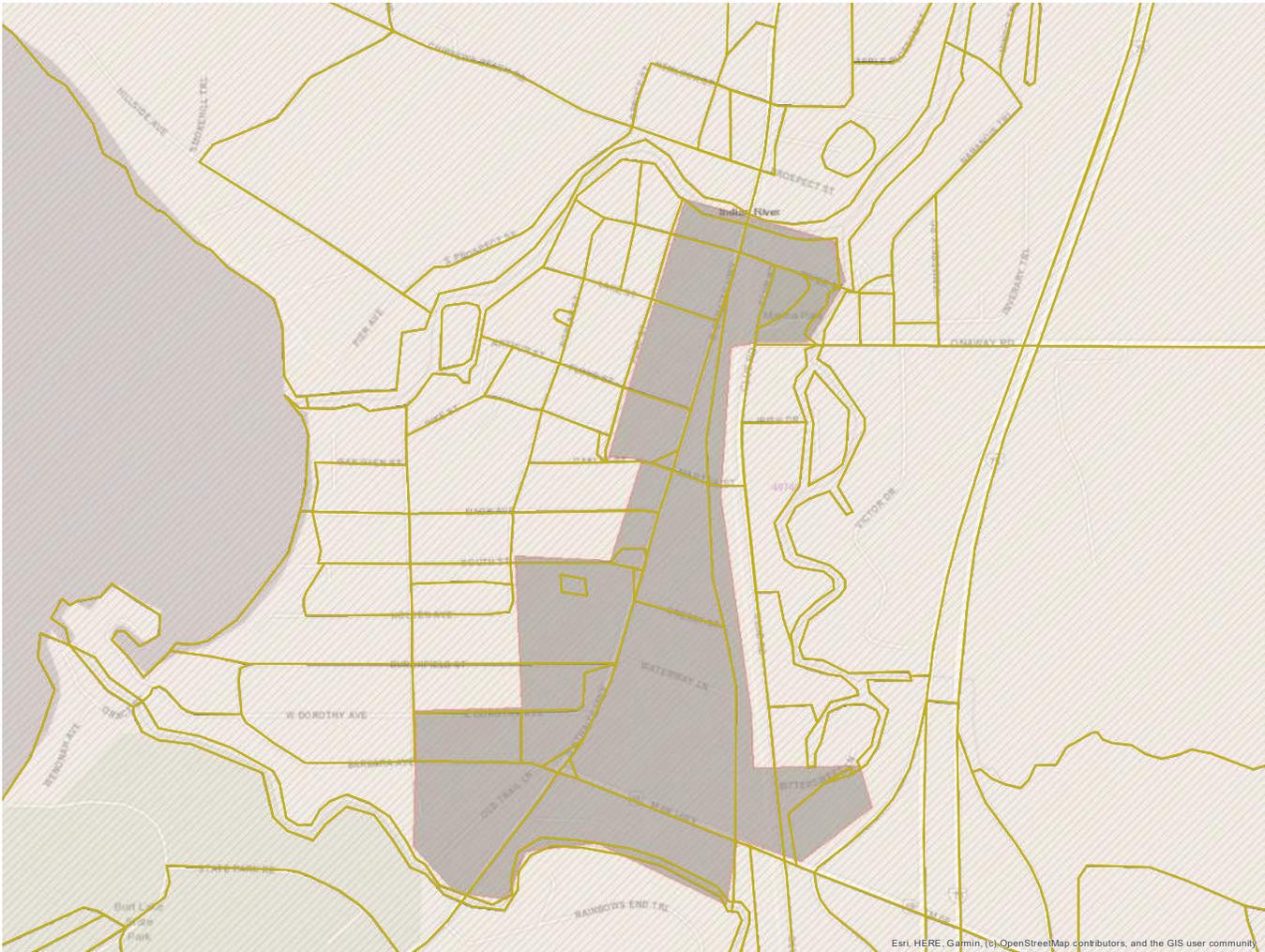
The existing WWTF consists of three major components, the first is a headworks building with trash and grit removal, a laboratory, blowers, the treatment process controls, and chemical feed equipment. Next is the 96,000 gpd treatment process unit, which is a proprietary Aero Mod, Inc. SEQUOX, modular treatment system with a dual process train and a decant storage tank with discharge pumping equipment. The treated wastewater is discharged to groundwater through 39,000 square feet of Rapid Infiltration Basins. The existing collection system encompasses primarily the commercial properties along the S. Straights Highway. There are two main pumping stations that transport the wastewater from the service area to the WWTF.

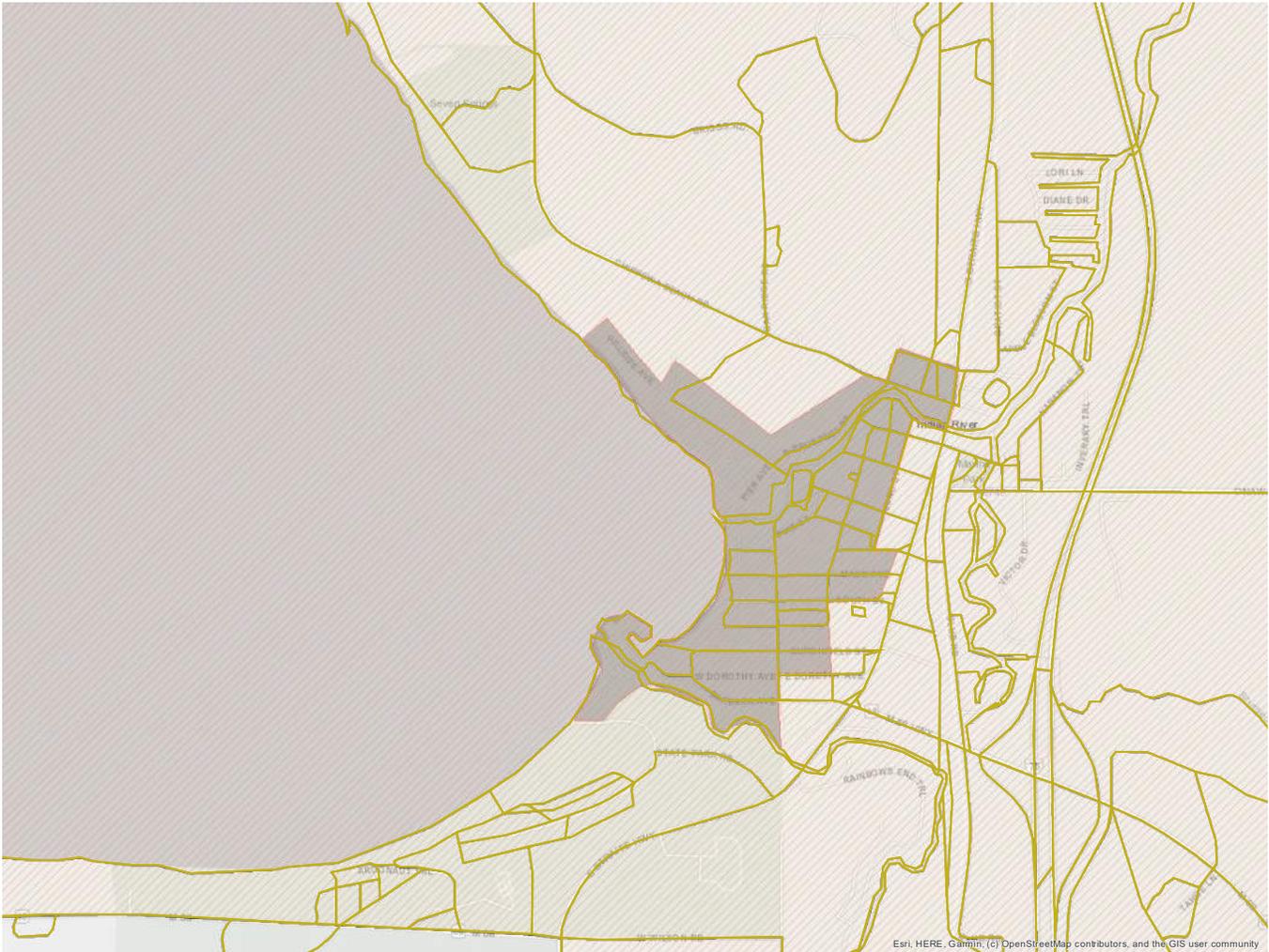
Proposed Facility Description

The three major WWTF components will be improved as follows: the existing headworks building will be modified to add trash and grit removal capacity, additional process controls will be integrated into the system and the chemical feed equipment will be modified for the increased capacity. Next, the treatment process unit will be doubled in capacity by adding another 96,000 gpd (approx. 48,000 gpd in each Phase) in modular Aero Mod, Inc. SEQUOX unit, added decant storage capacity and additional discharge pumping equipment. The resulting treatment capacity will be 192,000 gpd to accommodate the additional service area. Finally, there will be a corresponding increase in the Rapid Infiltration Basins, doubling the footprint to 78,000 square feet total for discharge to groundwater, again roughly half of this expansion is associated with each of the proposed Phases. The proposed improvements would add a new service area that will be primarily residential connections. There would be an additional 420 EDUs added from the Columbus Beach Club neighborhood at the north end to the Sturgeon Island area at the south end and extending the existing collection system westerly to the shore of Burt Lake. The collection system extension would add approximately 18,500 feet of new 8-inch gravity sewer, over 50 manholes, approximately 13,000 feet of new force main sewer, 9 lift stations, 86 individual pumping stations, and an upgrade to add capacity to both of the existing main sewer pumping stations.

Service Area(s)

Service Area Name	Population	Square Miles
District 1 - Existing Area	244	0.17
District 2 - Existing Area	540	0.33





District 2 Service Area

The proposed service area (District 2) is an extension of the existing commercial service area (District 1). The proposed service area will extend westerly from the existing District 1 east boundary line to the shore of Burt Lake. The southerly boundary will be the Burt Lake State Park and the service area will extend northerly to the Columbus Beach Club residential area and the properties on the north side of the Indian River. District 2 is comprised of primarily residential customers. Figure C1 depicts the District 2 Service Area Expansion, along with the Phase I and Phase II subdivision.

Environmental Resources Summary

The project area has several environmental resources present that impact the design and construction of a sewer system. First there is Burt Lake along the eastern boundary, which is the primary receiving water body for the majority of soil erosion, runoff and/or contaminants generated within the project area. Next there is the Sturgeon River, which must be crossed and is a tributary flowing into Burt Lake. Then we have the Indian River, which flows out from Burt Lake. The Indian River must be crossed to reach the Columbus Beach Club and residential area east of the Club.

A secondary effect of having these water bodies within the project planning area is that much of the project area has high groundwater levels. The groundwater itself is a receiving body for contaminants, but it also impacts construction methods and techniques, requires specific design considerations for the installation of subsurface pumping stations, and also impacts the selection of materials used within the construction.

Please find additional details pertaining to the environmental resources present in the Environmental Report, prepared by the Michigan Community Action Program and submitted to the USDA under a separate cover.

Population Trends								
Service Area	1990	2000	2010	Annual Growth	2020	2030	2040	2050
District 1	237	244	244	0.0035%	249	252	256	259
District 2	527	541	540	0.0065%	549	556	562	569
Total	764	785	784		798	808	818	828

General Population Trend

According to the U.S. Census Bureau, the population of Tuscarora Township in 2010 was 3038 persons (1468 male - 1570 female), a decrease of 53 people or 1.7% compared to the 2000 census. For comparisons, the population of Cheboygan County decreased by 1.1% and the State decreased by 0.6% during the same decade. However, over 4 decades from 1960 to 2000, Tuscarora's population has experienced an average growth of 31.5% compared to a 16.4% average growth rate in Cheboygan County in the same time period. The population density in Tuscarora Township in 2010 averaged 103 persons per square mile. For comparison, Cheboygan County had a population density of 36.5 persons per square mile and the State of Michigan had a population density of 174 persons per square mile. It is important to note that the census tally is conducted on April 1st and does not reflect the increased summer population. Approximately 35% of the total housing units in Tuscarora Township are classified as seasonal, recreational, or occasional use homes. If these residences conform to the average Township household size of 2.23, the summer population would be expected to increase by 1887 persons or over 60%.

Community Engagement Summary

The need for a community system has been an ongoing discussion in the Township for decades, with the need for such a system increasing with population and water use. In the past, the Township has contracted engineering firms to conduct sewer studies; however, public opposition typically focusing on the cost, prevented the implementation of a public sewer system.

In 2012, the existing sewer system in the commercial district was approved by petition demonstrating support by 67% of the affected property owners. This allowed the Township to install the current infrastructure that can now be used for the contemplated expansion project. Based on the positive reception of the first phase of municipal sewer implementation in 2012, the Township set out to offer sewer service to the surrounding (primarily residential) areas.

A community group, CHIRP – Citizens and Homeowners for Indian River Progress, was formed in 2017 by local citizens for the purpose of petitioning township government to support a cost study for a residential sewer system. The petitions were circulated to all property owners in the previously defined residential area with the majority in favor and presented to township. Tip of the Mitt Watershed Council and the Burt Lake Preservation Association (BLPA) supported the effort. BLPA donated \$8,000.00 to the township to fund an initial study.

Performance Engineers, Inc. (PEI) was contracted to assist the Township with the development of conceptual plans and associated cost estimates to begin the community engagement process. An informational hearing was held on July 6th, 2019 over the Fourth of July holiday weekend to encourage as much public participation as possible. Based on this public meeting, the service areas under consideration were revised, honing in on the area with the greatest need and support.

At the Township's Board meeting on August 6, 2019 the Township approved the preparation and submittal of an application to the USDA Rural Development for the proposed project planning area, referred to as District 2. Subsequently, in March of 2021 discussions with USDA and the community led to the subdivision of District 2 into a Phase I and a Phase II, divided at Mack Avenue.

The Township has continued to keep the sewer service area and the proposed USDA funding application on their regular agenda to provide the public with updates along the way. In April, 2021 the township convened a Township Board Sewer Committee consisting of three Trustees. Monthly meetings are held to update the public on the project, discuss issues and receive feedback from citizens.

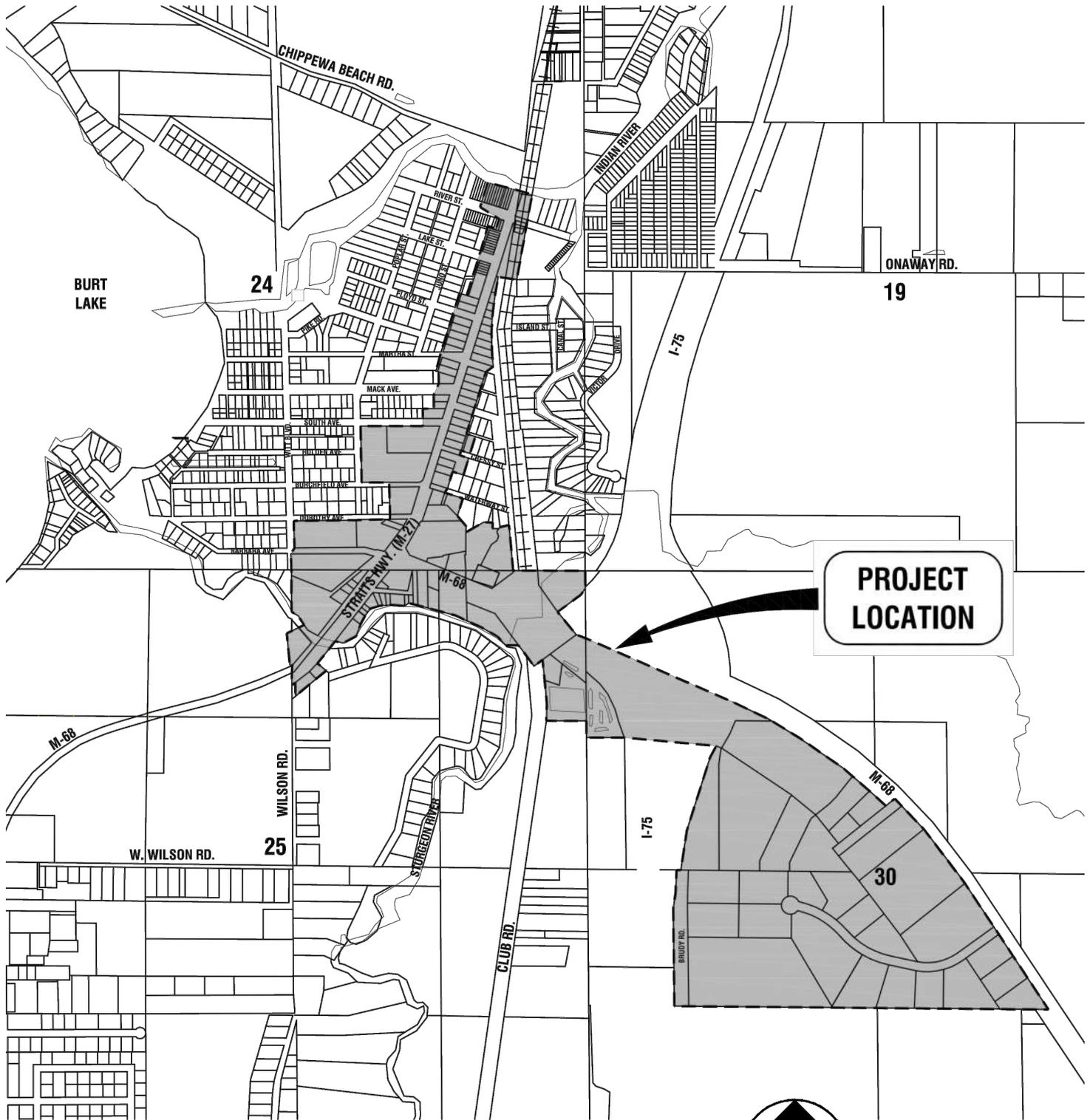
Existing Facilities Summary

The existing WWTF consists of three major components, the first is a headworks building with trash and grit removal, a laboratory, blowers, the treatment process controls, and chemical feed equipment. Next is the 96,000 gpd treatment process unit, which is a Aero Mod, Inc. SEQUOX, modular treatment system with a dual process train and a decant storage tank with discharge pumping equipment. The treated wastewater is discharged to groundwater through 39,000 square feet of Rapid Infiltration Basins. The WWTF is permitted at 96,000 gpd and currently peaks at about 80% capacity during the summer tourist season.

The existing collection system encompasses primarily the commercial properties along the S. Straights Highway. It is primarily gravity sewer with a few duplex pumping stations and associated force main piping. There are two main pumping stations that transport the wastewater from the service area to the WWTF. The WWTF is located on southeasterly of the service area, on the east side of I-75 approximately 1.5 miles from the service area.

A map of the existing service area is included below for reference.

Existing Facilities Map

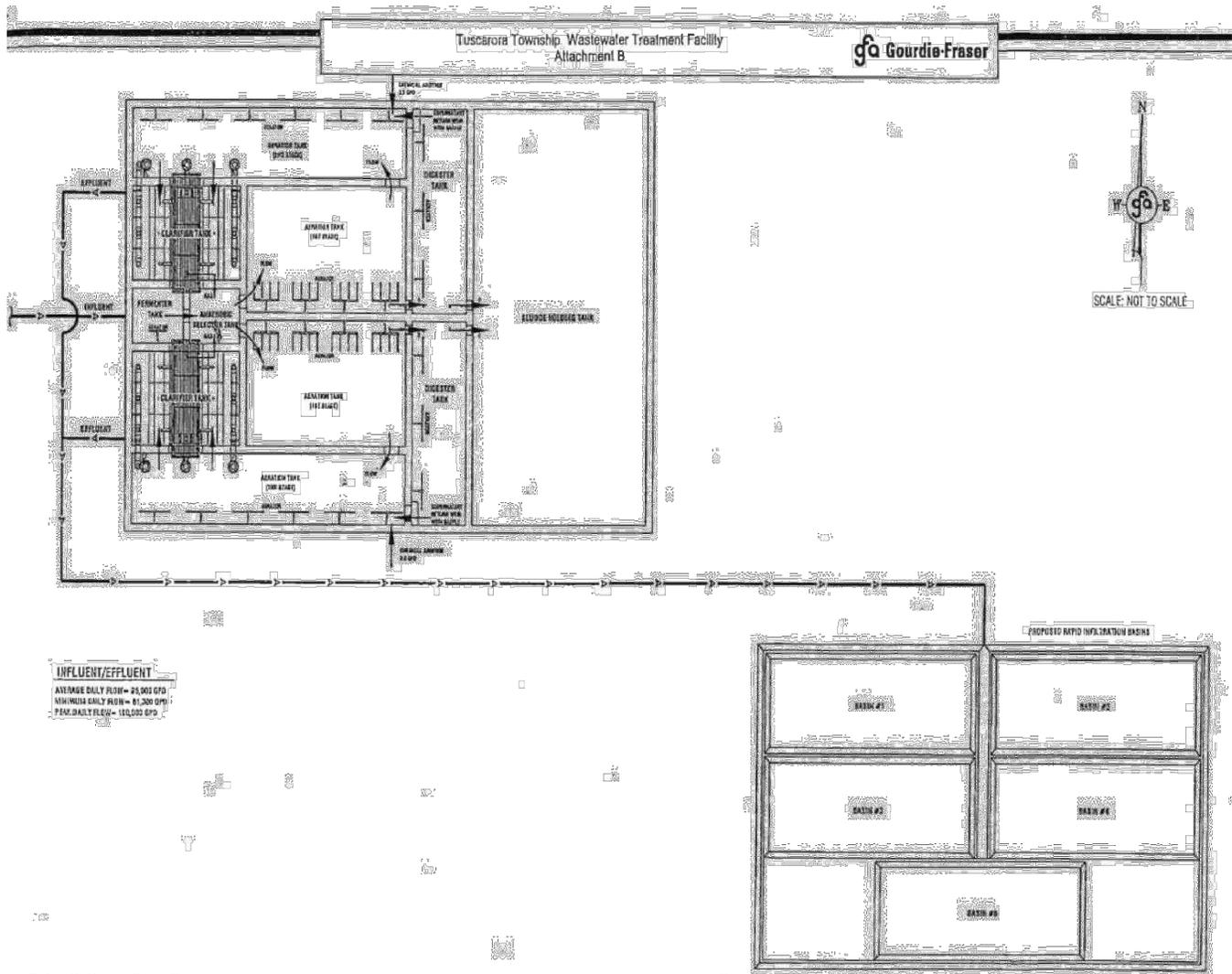


EXISTING FACILITIES SERVICE AREA



1"=5000'

Schematic Process Layout of Existing System Document



INFLUENT/EFFLUENT
AVERAGE DAILY FLOW = 25,000 GPD
MINIMUM DAILY FLOW = 81,300 GPD
PEAK DAILY FLOW = 110,000 GPD

EXISTING FACILITIES WWTP PROCESS

NOT TO SCALE

History Summary

Tuscarora Township has been considering options for providing municipal sewer to its residents for over 50 years. There was a serious effort made in the 1970's to utilize Federal Water Pollution Control grant funding and a plan was developed, bid out, and found to be cost prohibitive. Another effort was made in the late 1990's with a similar result. It wasn't until Tuscarora Township obtained USDA grant and loan funding through the Rural Development program in 2012 that construction was actually begun on a municipal sewer project.

Although this process was not without its own difficulties, it did move forward and Tuscarora Township had a municipal sewer system available to primarily the commercial users along the S. Straights Highway area. The service area does also include the industrial park southeast of the WWTP and the Burt Lake State Park. It is this backbone of infrastructure that forms the basis for the proposed service area expansion.

Existing Conditions Summary

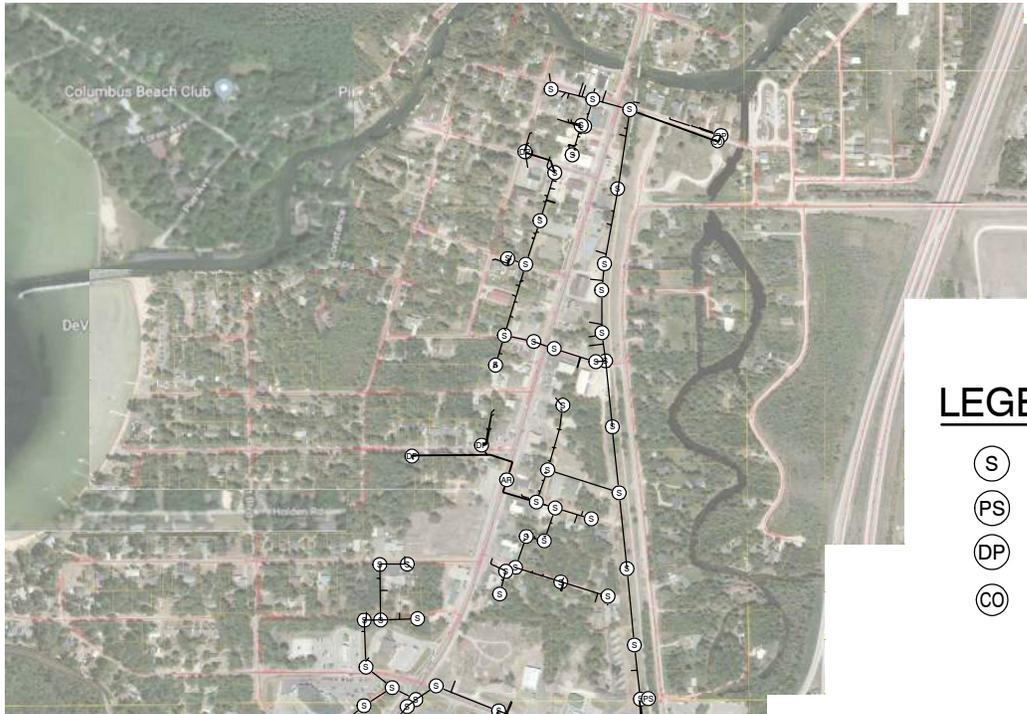
The existing collection, treatment, and disposal system for Tuscarora Township is quite new, being constructed and placed into service in 2014. Since that time there have been no major facility upgrades, repairs, or expansions. The proposed project would be the first of this nature.

Existing Wastewater Flow Table

Tuscarora Township Waste Water Flow Table

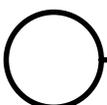
2020	Residential	Commercial	Industrial	Bulk	Other	Total Flow
Jan	352,492	1,409,970			-	1,762,462
Feb	298,756	1,195,026			-	1,493,782
Mar	327,602	1,310,407			-	1,638,009
Apr	292,916	1,171,663			-	1,464,579
May	330,292	1,321,167			-	1,651,459
Jun	342,087	1,368,350			-	1,710,437
Jul	365,570	1,462,278			-	1,827,848
Aug	380,748	1,522,993			-	1,903,741
Sep	330,567	1,322,267			-	1,652,834
Oct	404,547	1,618,188			-	2,022,735
Nov	256,576	1,026,302			-	1,282,878
Dec	302,816	1,211,265			-	1,514,081
Average Daily Flow =				54,589		
Average Dry Weather Flow =				56,112		
Average Wet Weather Flow =				53,365		
Peak Hour =				9,098		

Existing Conveyance - Sewers Document



LEGEND

- (S) EXISTING GRAVITY SEWER MH
- (PS) EXISTING PUMP STATION
- (DP) EXISTING DUPLEX LIFT STATION
- (CO) EXISTING SANITARY FORCE MAIN
CLEAN OUTS



EXISTING CONVEYANCE SYSTEM

1"=1,000'

Existing Contract Disposal - Statement

Existing Contract Disposal Customers

There is one existing contract disposal customer and no new contract disposal customers proposed. The existing customer is the Burt Lake State Park, which pays a flat rate for its wastewater treatment and disposal. The Township plans to install a meter at their connection point in the future and eliminate the flat rate contract.

Existing Bulk Treatment - Statement

Existing Bulk Treatment

There is one existing bulk treatment customer and none within the proposed project. The existing bulk treatment customer is the Burt Lake State Park, however, the Township is working towards metering their flow in the future and eliminating them as a bulk customer.

Wastewater Connections Table Document

Tuscarora Township Waste Water Connections Table

Type of Connection	Number of Connections
Residential	63
Commercial	99
Industrial	0
Bulk	1
Other	52
Total Connections	215

Financial Summary

The existing municipal sewer system has a current USDA loan, which means that the USDA maintains some level of oversight on the finances of the system. The Township has regular audits of its sewer accounts and fund balances, which are reported to the USDA. The Township has been meeting its financial obligations since the inception of the system.

Existing Financial Audits Document



TUSCARORA TOWNSHIP
Heart of the Inland Waterway

TOWNSHIP OF TUSCARORA, MICHIGAN

ANNUAL FINANCIAL REPORT

YEAR ENDED JUNE 30, 2020

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Grand Rapids, MI 49546
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Fax: 616-538-2441
gabridgeco.com

INDEPENDENT AUDITOR'S REPORT

To the Board of Trustees
Township of Tuscarora, Michigan

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township of Tuscarora, Michigan (the "Township") as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Township's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township, as of June 30, 2020, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, budgetary comparison information, and the pension schedules, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Township's basic financial statements. The combining and individual fund financial statements are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The combining and individual fund financial statements are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the combining and individual fund financial statements are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 4, 2020, on our consideration of the Township's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Township's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Township's internal control over financial reporting and compliance

A handwritten signature in cursive script that reads "Gabridge & Company". The signature is written in dark ink and is positioned above the printed name of the firm.

Gabridge & Company, PLC
Grand Rapids, Michigan
December 4, 2020

Management's Discussion and Analysis

Management's Discussion and Analysis

As management of the Township of Tuscarora, Michigan (The "Township" or "government") we offer readers of the Township's financial statements this narrative overview and analysis of the financial activities of the Township for the fiscal year ended June 30, 2020. We encourage readers to consider the information presented here in conjunction with the financial statements.

Financial Highlights

- The assets and deferred outflows of resources of the Township exceeded its liabilities and deferred inflows of resources at the close of the most recent fiscal year by \$10,285,500 (net position). Of this amount, \$1,901,332 represents unrestricted net position, which may be used to meet the government's ongoing obligations to citizens and creditors.
- The Township's total net position increased \$4,892 during the year. Revenues showed an increase across all Township funds during the year of \$114,077 and expenses for the Township increased by \$68,327 from the prior fiscal year.
- At the close of the current fiscal year, the Township's governmental funds reported combined fund balances of \$1,379,815, an increase of \$68,910 in comparison with the prior year. Approximately 41.3% of this amount, or \$570,448, is available for spending at the government's discretion (*unassigned fund balance*).
- At the end of the current fiscal year, unassigned fund balance for the general fund was \$570,448, or approximately 54.6% of total general fund expenditures.

Overview of the Financial Statements

The discussion and analysis provided here is intended to serve as an introduction to the Township's basic financial statements. The Township's basic financial statements consist of three components: 1) government-wide financial statements, 2) fund financial statements, and 3) the notes to financial statements. This report also includes supplementary information intended to furnish additional detail to support the basic financial statements themselves.

Government-wide Financial Statements. The government-wide financial statements are designed to provide readers with a broad overview of the Township's finances, in a manner similar to a private-sector business.

The *statement of net position* presents financial information on all of the Township's assets, deferred outflows, and liabilities, with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Township is improving or deteriorating.

The *statement of activities* presents information showing how the Township's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. Thus,

revenues and expenses are reported for some items that will only result in cash flows in future fiscal periods (e.g., earned but unused vacation leave and accrued interest on long-term debt).

Both of the government-wide financial statements distinguish functions of the Township that are principally supported by taxes and intergovernmental revenues (governmental activities) from other functions that are intended to recover all or a significant portion of their costs through user fees and charges (business-type activities). The governmental activities of the Township include general government, police and fire protection, streets, health and welfare, community and economic development, and recreation and culture. The business-type activities of the Township include sewer services.

The government-wide financial statements include not only the Township itself (known as the primary government), but also the legally separate Downtown Development Authority (“DDA”) and Indian River Area Library (“Library”), for which the Township is financially accountable. Financial information for these component units are reported separately from the financial information presented for the primary government itself. Financial statements for the DDA and Library can be located in the other supplemental information section of this report.

Fund Financial Statements. A *fund* is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The Township, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. All of the funds of the Township can be divided into three categories: governmental funds, proprietary funds, and fiduciary funds.

Governmental Funds. *Governmental funds* are used to account for essentially the same functions reported as *governmental activities* in the government-wide financial statements. However, unlike the government-wide financial statements, governmental fund financial statements focus on *near-term inflows and outflows of spendable resources*, as well as on *balances of spendable resources* available at the end of the fiscal year. Such information may be useful in assessing a government’s near-term financing requirements.

Because the focus of governmental funds is narrower than that of the government-wide financial statements, it is useful to compare the information presented for *governmental funds* with similar information presented for *governmental activities* in the government-wide financial statements. By doing so, readers may better understand the long-term impact of the government’s near-term financing decisions. Both the governmental fund balance sheet and the governmental fund statement of revenues, expenditures, and changes in fund balances provide a reconciliation to facilitate this comparison between *governmental funds* and *governmental activities*.

The Township maintains four individual governmental funds. Information is presented separately in the governmental fund balance sheet and in the governmental fund statement of revenues, expenditures, and changes in fund balances for the general fund and the police fund, which are considered to be major funds. Data from the 2016 special assessment bonds debt retirement is presented as a separate column as it is considered a nonmajor fund.

The Township adopts an annual appropriated budget for the general fund and each special revenue fund. A budgetary comparison schedule for the general fund and each major special revenue fund has been provided to demonstrate compliance with these budgets.

Proprietary Funds. The Township maintains one type of proprietary fund, an enterprise fund. *Enterprise funds* are used to report the same functions presented as *business-type activities* in the government-wide financial statements. The Township uses enterprises funds to account for its sewer operations.

Proprietary funds provide the same type of information as the government-wide financial statements, only in more detail. The proprietary fund financial statements provide information for the sewer operations. The sewer fund is considered to be a major fund of the Township.

Fiduciary funds. Fiduciary funds are used to account for resources held for the benefit of parties outside the government. Fiduciary funds are not reflected in the government-wide financial statement because the resources of those funds are not available to support the Township's own programs. The accounting used for fiduciary funds is much like that used for proprietary funds.

Notes to the Financial Statements. The notes provide additional information that is necessary to acquire a full understanding of the data provided in the government-wide and fund financial statements.

Other Information. In addition to the basic financial statements and accompanying notes, this report also presents *required supplementary information* concerning the Township's budgetary comparison schedules and the Townships pension plan schedules.

This report also presents other supplementary information which includes the nonmajor fund and component unit combining and individual statements. The combining statements are presented immediately following the required supplementary information on pensions.

Government-wide Overall Financial Analysis

As noted earlier, net position over time, may serve as a useful indicator of a government's financial position. In the case of the Township, assets and deferred outflows of resources exceeded liabilities and deferred inflows of resources by \$10,285,500, at the close of the most recent fiscal year.

Township of Tuscarora's Net Position

	Governmental Activities		Business-type Activities		Total Government	
	2020	2019	2020	2019	2020	2019
ASSETS						
<i>Current Assets</i>						
Cash and Cash Equivalents	\$ 1,441,875	\$ 1,338,267	\$ 109,487	\$ 223,692	\$ 1,551,362	\$ 1,561,959
Accounts Receivable	1,410	3,033	41,608	43,893	43,018	46,926
Due from Other Governments	-	45,426	-	-	-	45,426
Special Assessments, Current Portion	17,649	19,965	41,553	42,233	59,202	62,198
Total Current Assets	1,460,934	1,406,691	192,648	309,818	1,653,582	1,716,509
<i>Noncurrent Assets</i>						
Restricted Cash	-	-	352,407	386,505	352,407	386,505
Special Assessments	-	15,722	1,882,174	1,917,527	1,882,174	1,933,249
Capital Assets, Net	3,636,413	3,466,550	5,667,094	5,796,894	9,303,507	9,263,444
Total Assets	5,097,347	4,888,963	8,094,323	8,410,744	13,191,670	13,299,707
DEFERRED OUTFLOWS OF RESOURCES						
Pension Related Deferred Outflows	102,638	228,456	-	-	102,638	228,456
LIABILITIES						
<i>Current Liabilities</i>						
Accounts Payable	18,478	36,489	2,290	18,037	20,768	54,526
Payroll Liabilities	44,992	36,590	-	-	44,992	36,590
Accrued Interest Payable	104	195	8,391	9,170	8,495	9,365
Current Portion of Long-term Debt	24,000	21,000	63,000	63,000	87,000	84,000
Internal Balances	-	2,742	-	(2,742)	-	-
Total Current Liabilities	87,574	97,016	73,681	87,465	161,255	184,481
<i>Noncurrent Liabilities</i>						
Compensated Absences	25,291	29,677	-	-	25,291	29,677
Long-term Debt	-	24,000	1,855,000	2,033,000	1,855,000	2,057,000
Net Pension Liability	909,328	913,163	-	-	909,328	913,163
Total Liabilities	1,022,193	1,063,856	1,928,681	2,120,465	2,950,874	3,184,321
DEFERRED INFLOWS						
Pension Related Deferred Inflows	57,934	63,234	-	-	57,934	63,234
NET POSITION						
Net Investment in Capital Assets	3,612,413	3,421,550	3,749,364	3,767,695	7,361,777	7,189,245
Restricted	669,984	619,049	352,407	386,505	1,022,391	1,005,554
Unrestricted	(162,539)	(50,270)	2,063,871	2,136,079	1,901,332	2,085,809
Total Net Position	\$ 4,119,858	\$ 3,990,329	\$ 6,165,642	\$ 6,290,279	\$ 10,285,500	\$ 10,280,608

A portion of the Township's net position, \$7,361,777, or 71.6 percent, reflects its investment in capital assets (e.g., land and land improvements, buildings and improvements, machinery, equipment, vehicles, and infrastructure), less any related outstanding debt that was used to acquire those assets. The Township uses these capital assets to provide a variety of services to its citizens. Accordingly, these assets are not available for future spending. Although the Township's investment in capital assets is reported net of related debt, it should be noted that the resources used to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities.

An additional portion of the Township's net position, \$1,022,391, or 9.9 percent, represents resources that are subject to external restrictions on how they may be used. The remaining balance

of \$1,901,332, or 18.5 percent, is unrestricted and may be used to meet the government's ongoing obligations to its citizens and creditors.

A summary of significant changes between June 30, 2019 and June 30, 2020 are as follows:

- Long-term liabilities decreased by a total of \$202,000 during the current year. This is a more significant decrease than in the prior year due to the Township making an additional one time principal payment of \$115,000.
- The Township's governmental activities cash increased during the current year by \$103,608. This increase is largely attributable to increased tax revenues due to an increase in taxable values compared to the previous year.
- The increase in net governmental capital assets relates to the completion of the ice rink renovation project and work done to remodel the police station.

Governmental Activities. There were significant fluctuations in governmental activities revenues and expenses in the current year, governmental activities net position, in total, changed from the prior year increasing by \$129,529. A notable component of this change is the decrease in unrestricted net position. The Township's unrestricted net position decreased by \$112,269 from a deficit balance of \$(50,270) to a deficit balance of \$(162,539). Significant events leading to this change are highlighted as follows:

- The Township's taxable value increased by approximately 2.4% and total mills levied across all millages increased by .5137 resulting in an increase in property tax revenue of \$155,476.
- Public safety expenses increased by \$84,987 due to the costs for remodeling the police station. Recreation and culture related expenses decreased by \$24,451 as the costs for completing the ice rink were not as much as in the previous year.

Business-type Activities. Business-type activities decreased the Township's net position by \$124,637. Overall expenses decreased from \$361,703 during 2019 to \$339,843 in 2020 while revenues increased from \$207,421 to 215,206.

Significant events impacting revenues and expenses of the business-type activities during the year include:

- Sewer fund charges for services increased from \$133,022 in the previous year to \$142,844 in the current year mostly due to an increase in the Residential Equivalent Unit (REU) rates and metered rates for service.
- Expenses related to the sewer system operation decreased from \$305,305 to \$285,800 during the current year.

Township of Tuscarora's Changes in Net Position

	Governmental Activities		Business-type Activities		Total Government	
	2020	2019	2020	2019	2020	2019
Revenue						
Program Revenues						
Charges for Services	\$ 139,730	\$ 156,086	\$ 142,844	\$ 125,022	\$ 282,574	\$ 281,108
Operating Grants and Contributions	275,631	268,126	-	8,000	275,631	276,126
Total Program Revenues	415,361	424,212	142,844	133,022	558,205	557,234
General Revenues						
Property Taxes	1,578,745	1,423,269	-	-	1,578,745	1,423,269
Intergovernmental	223,838	262,248	-	-	223,838	262,248
Interest Income	4,649	6,572	72,362	74,399	77,011	80,971
Total General Revenues	1,807,232	1,692,089	72,362	74,399	1,879,594	1,766,488
Total Revenues	2,222,593	2,116,301	215,206	207,421	2,437,799	2,323,722
Expenses						
General Government	367,363	352,154	-	-	367,363	352,154
Public Safety	1,294,947	1,209,960	-	-	1,294,947	1,209,960
Public Works	83,112	67,625	339,843	361,703	422,955	429,328
Community and Economic Development	260	-	-	-	260	-
Recreation and Culture	345,470	369,921	-	-	345,470	369,921
Interest on Long-term Debt	1,912	1,649	-	-	1,912	1,649
Loss on Sale of Asset	-	1,568	-	-	-	1,568
Total Expenses	2,093,064	2,002,877	339,843	361,703	2,432,907	2,364,580
Change in Net Position	129,529	113,424	(124,637)	(154,282)	4,892	(40,858)
Net Position at the Beginning of Period	3,990,329	3,876,905	6,290,279	6,444,561	10,280,608	10,321,466
Net Position at the End of Period	\$ 4,119,858	\$ 3,990,329	\$ 6,165,642	\$ 6,290,279	\$ 10,285,500	\$ 10,280,608

Financial Analysis of Governmental Funds

As noted earlier, the Township uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

Governmental Funds. The focus of the Township’s *governmental funds* is to provide information on near-term inflows, outflows, and balances of spendable resources. Such information is useful in assessing the Township’s financing requirements. In particular, unassigned fund balance may serve as a useful measure of a government’s net resources available for discretionary use as they represent the portion of fund balance which has not yet been limited to use for a particular purpose by either an external party, the Township itself, or a group or individual that has been delegated authority to assign resources for use for particular purposes by the Township’s Board.

At June 30, 2020, the Township’s governmental funds reported combined fund balances of \$1,379,815, an increase of \$68,910 in comparison with the prior year. Approximately 41.3% of this amount, \$570,448, constitutes *unassigned fund balance*, which is available for spending at the government’s discretion. The remainder of the fund balance is either *nonspendable*, *assigned*, or *restricted* to indicate that it is: 1) restricted for particular purposes \$669,984 (48.6%) or 2) assigned for particular purposes, \$139,383 or 10.1%.

The general fund is the chief operating fund of the Township. At the end of the current fiscal year, unassigned fund balance of the general fund was \$570,448. As a measure of the general fund’s

liquidity, it may be useful to compare unassigned fund balance to total general fund expenditures. Unassigned fund balance represents approximately 54.6% of total general fund expenditures.

The fund balance of the Township’s general fund increased by \$36,045 during the current fiscal year. The explanations for the change was provided in an earlier section of this report.

The police fund, a major fund, had a \$36,566 increase in fund balance during the current fiscal year which put the overall fund balance at \$503,744. The explanations for the change was provided in an earlier section of this report.

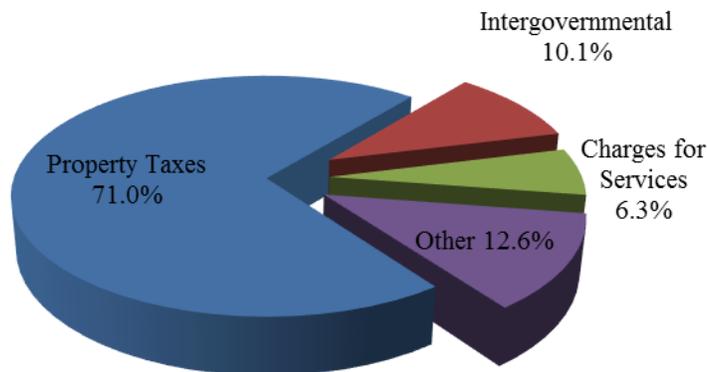
Proprietary Funds. The Township’s proprietary funds provide the same type of information found in the government-wide financial statements, but in more detail.

Unrestricted net position at the end of the year was \$2,063,871 for the sewer fund. The decrease in net position was \$124,637 for the sewer fund. A summary of the changes in the sewer fund net position can be found in the business-type activities paragraph found earlier in this report.

Governmental Activities

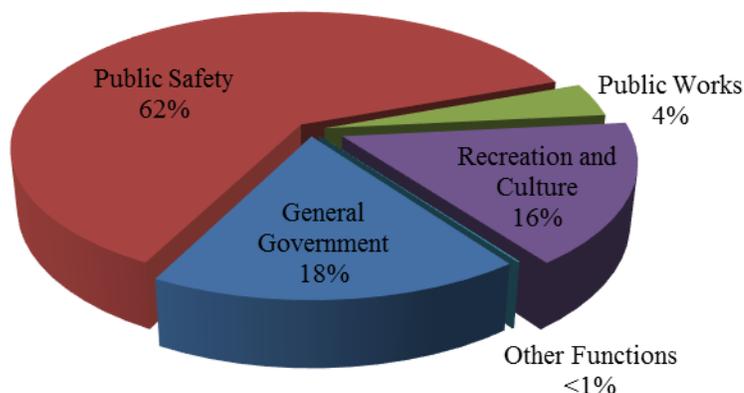
The following chart summarizes the revenue sources for the governmental activities of the Township for the most recent fiscal year end:

Governmental Activities Revenues



The following chart summarizes the expenses for the governmental activities of the Township for the most recent fiscal year end:

Governmental Activities Expenses



General Fund Budgetary Highlights

Original budget compared to final budget. During the year, there was no need to increase authorized expenditures in the general fund as a whole. Budget adjustments were made to allow for increased costs related to the completion of the ice rink project.

Final budget compared to actual results. The Township had no expenditures in excess of the amounts appropriated during the year ended June 30, 2020.

Capital Assets and Debt Administration

Capital assets. The Township's investment in capital assets for its governmental and business-type activities as of June 30, 2020, amounts to \$9,303,507 (net of accumulated depreciation). This investment in capital assets includes land and land improvements, buildings and improvements, machinery, equipment, vehicles, park facilities, and sewer infrastructure.

More detailed information about the Township's capital assets can be found in Note 4.

Long-term Debt

As described in Note 6 to the financial statements, the Township had \$1,942,000 in long-term debt at the end of the fiscal year. The Township is well under its legal debt limit as of year-end.

Economic Condition and Outlook

Management estimates that \$954,000 of revenues will be available for appropriation in the general fund in the upcoming year. The Township continues to review all budget line items for

opportunities to reduce expenditures when possible. The budget will be monitored during the year to identify any necessary amendments. In 2021, the Township plans again to use current revenues to provide essential services and to maintain the Township's financial reserves at similar levels. Property tax revenues are expected to change minimally reflecting fairly stable property values. Additionally, management and the Township Board are currently working to determine the significance that the COVID-19 pandemic will have on the Township's upcoming revenues.

Contacting the Township

This financial report is designed to provide a general overview of the Township's finances to its citizens, customers, investors, and creditors and to demonstrate the Township's accountability for the resources it receives. Questions regarding any information provided in this report or requests for additional financial information should be addressed to:

The Township of Tuscarora
3546 S Straits Highway
Indian River, MI 49749

Basic Financial Statements

Township of Tuscarora
Statement of Net Position
June 30, 2020

	Primary Government			Component Units
	Governmental Activities	Business-type Activities	Total	
ASSETS				
<i>Current Assets</i>				
Cash and Cash Equivalents	\$ 1,441,875	\$ 109,487	\$ 1,551,362	\$ 602,819
Accounts Receivable	1,410	41,608	43,018	19,675
Special Assessments	17,649	41,553	59,202	--
Total Current Assets	1,460,934	192,648	1,653,582	622,494
<i>Noncurrent Assets</i>				
Capital Assets not Being Depreciated	1,383,282	178,618	1,561,900	--
Capital Assets Being Depreciated, Net	2,253,131	5,488,476	7,741,607	817,465
Restricted Cash	--	352,407	352,407	--
Investments - Endowment	--	--	--	5,675
Special Assessments	--	1,882,174	1,882,174	--
Total Assets	5,097,347	8,094,323	13,191,670	1,445,634
DEFERRED OUTFLOWS OF RESOURCES				
Pension Related	102,638	--	102,638	--
Total Deferred Outflows of Resources	102,638	--	102,638	--
LIABILITIES				
<i>Current Liabilities</i>				
Accounts Payable	18,478	2,290	20,768	2,497
Payroll Liabilities	44,992	--	44,992	1,532
Accrued Interest	104	8,391	8,495	--
Current Portion of Long-term Debt	24,000	63,000	87,000	--
Total Current Liabilities	87,574	73,681	161,255	4,029
<i>Noncurrent Liabilities</i>				
Net Pension Liability	909,328	--	909,328	--
Compensated Absences	25,291	--	25,291	--
Long-term Debt	--	1,855,000	1,855,000	--
Total Liabilities	1,022,193	1,928,681	2,950,874	4,029
DEFERRED INFLOWS OF RESOURCES				
Pension Related	57,934	--	57,934	--
Total Deferred Inflows of Resources	57,934	--	57,934	--
NET POSITION				
Net Investment in Capital Assets	3,612,413	3,749,364	7,361,777	817,465
<i>Restricted for:</i>				
Nonspendable Endowment	--	--	--	5,675
Debt Service	78,595	--	78,595	--
Repair, Replacement, Improvement	--	59,734	59,734	--
Additional Residential Equivalent Units	--	292,673	292,673	--
Police	503,744	--	503,744	--
Fire Protection	1,540	--	1,540	--
Lights	6,315	--	6,315	--
Boat Launch Fees	79,790	--	79,790	--
<i>Unrestricted</i>	(162,539)	2,063,871	1,901,332	618,465
Total Net Position	\$ 4,119,858	\$ 6,165,642	\$ 10,285,500	\$ 1,441,605

Existing Facilities - Financial Status

**Township of Tuscarora
Statement of Activities
For the Year Ended June 30, 2020**

Programs	Expenses	Program Revenues			Net (Expense) Revenue		
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Governmental Activities	Business-type Activities	Total
Government Activities:							
Administration	\$ 367,363	\$ 22,268	\$ 6,953	\$ --	\$ (338,142)	\$ --	\$ (338,142)
Police	1,294,947	85,857	4,275	--	(1,204,815)	--	(1,204,815)
Fire	83,112	6,016	--	--	(77,096)	--	(77,096)
Economic Development	260	--	--	--	(260)	--	(260)
Culture	345,470	25,589	264,403	--	(55,478)	--	(55,478)
Interest	1,912	--	--	--	(1,912)	--	(1,912)
Governmental Activities	2,093,064	139,730	275,631	--	(1,677,703)	--	(1,677,703)
Business-type Activities:							
Public Works	339,843	142,844	--	--	--	(196,999)	(196,999)
Business-type Activities	339,843	142,844	--	--	--	(196,999)	(196,999)
Primary Government	\$ 2,432,907	\$ 282,574	\$ 275,631	\$ --	\$ (1,677,703)	\$ (196,999)	\$ (1,874,702)
Special Units:							
Community Center	\$ 105,150	\$ --	\$ --	\$ --	--	--	--
Area Library	126,605	2,330	15,490	--	--	--	--
Special Units	\$ 231,755	\$ 2,330	\$ 15,490	\$ --	--	--	--
General Purpose Revenues and Transfers:							
Revenues							
Intergovernmental					223,838	--	223,838
Property Taxes					1,578,745	--	1,578,745
Interest Income					4,649	72,362	77,011
Transfers					--	--	--
Total General Revenues and Transfers					1,807,232	72,362	1,879,594
Change in Net Position					129,529	(124,637)	4,892
<i>Net Position at Beginning of Period</i>					3,990,329	6,290,279	10,280,608
Net Position at End of Period					\$ 4,119,858	\$ 6,165,642	\$ 10,285,500

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Balance Sheet
Governmental Funds
June 30, 2020**

	<u>Special Revenue</u>		<u>Debt Service</u>	
	<u>General</u>	<u>Police</u>	<u>2016 Special Assessment Bonds Debt Retirement (Nonmajor Fund)</u>	<u>Total Governmental Funds</u>
ASSETS				
Cash and Cash Equivalents	\$ 892,742	\$ 541,150	\$ 7,983	\$ 1,441,875
Accounts Receivable	1,410	--	--	1,410
Due from Other Funds	--	--	70,612	70,612
Special Assessments	--	--	17,649	17,649
<i>Total Assets</i>	<u>\$ 894,152</u>	<u>\$ 541,150</u>	<u>\$ 96,244</u>	<u>\$ 1,531,546</u>
LIABILITIES				
Accounts Payable	\$ 17,287	\$ 1,191	\$ --	\$ 18,478
Payroll Liabilities	8,777	36,215	--	44,992
Due to Other Funds	70,612	--	--	70,612
<i>Total Liabilities</i>	<u>96,676</u>	<u>37,406</u>	<u>--</u>	<u>134,082</u>
DEFERRED INFLOWS OF RESOURCES				
Unavailable Revenue	--	--	17,649	17,649
<i>Total Liabilities and Deferred Inflows of Resources</i>	<u>96,676</u>	<u>37,406</u>	<u>17,649</u>	<u>151,731</u>
FUND BALANCE				
Restricted	87,645	503,744	78,595	669,984
Assigned	139,383	--	--	139,383
Unassigned	570,448	--	--	570,448
<i>Total Fund Balance</i>	<u>797,476</u>	<u>503,744</u>	<u>78,595</u>	<u>1,379,815</u>
<i>Total Liabilities, Deferred Inflows of Resources and Fund Balance</i>	<u>\$ 894,152</u>	<u>\$ 541,150</u>	<u>\$ 96,244</u>	<u>\$ 1,531,546</u>

Township of Tuscarora
Reconciliation of Governmental Funds Balance Sheet to the Statement of Net Position
June 30, 2020

Total Fund Balance - Governmental Funds	\$	1,379,815
In the Statement of Activities, interest is accrued on outstanding bonds, whereas in governmental funds, the interest expenditure is reported when due.		(104)
General government capital assets of \$6,641,456, net of accumulated depreciation of \$3,005,043, are not financial resources, and accordingly are not reported in the funds.		3,636,413
Compensated absences are not due in and payable in the current period, and therefore, are not reported in the funds.		(25,291)
Long-term liabilities are not due and payable in the current period, and therefore, are not reported in the funds.		(24,000)
Certain pension-related amounts, such as the net pension liability and related deferred amounts are not due and payable in the current period or do not represent current financial resources and therefore are not reported in the funds.		(864,624)
Certain receivables are not available to pay for current period expenditures and, therefore, are unearned in the funds.		17,649
Total Net Position-Governmental Funds	\$	<u>4,119,858</u>

Township of Tuscarora
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2020

	<u>General</u>	<u>Special Revenue</u> <u>Police</u>	<u>Debt Service</u> <u>2016 Special Assessment Bonds Debt Retirement (Nonmajor Fund)</u>	<u>Total Governmental Funds</u>
Revenues				
Property Taxes	\$ 530,042	\$ 1,048,703	\$ --	\$ 1,578,745
Special Assessments	5,116	--	17,970	23,086
Intergovernmental	230,791	76,914	--	307,705
Charges for Services	43,471	9,332	--	52,803
Refunds and Reimbursements	3,258	3,766	--	7,024
Other	266,431	120	--	266,551
Interest Income	2,459	858	1,332	4,649
Total Revenues	<u>1,081,568</u>	<u>1,139,693</u>	<u>19,302</u>	<u>2,240,563</u>
Expenditures				
General Government	316,439	--	--	316,439
Public Safety	171,198	1,103,127	--	1,274,325
Public Works	60,026	--	--	60,026
Community and Economic Development	260	--	--	260
Recreation and Culture	497,600	--	--	497,600
Debt Service - Principal	--	--	21,000	21,000
Debt Service - Interest	--	--	2,003	2,003
Total Expenditures	<u>1,045,523</u>	<u>1,103,127</u>	<u>23,003</u>	<u>2,171,653</u>
Excess of Revenues Over (Under) Expenditures	<u>36,045</u>	<u>36,566</u>	<u>(3,701)</u>	<u>68,910</u>
Net Change in Fund Balance	<u>36,045</u>	<u>36,566</u>	<u>(3,701)</u>	<u>68,910</u>
<i>Fund Balance at Beginning of Period</i>	761,431	467,178	82,296	1,310,905
Fund Balance at End of Period	<u>\$ 797,476</u>	<u>\$ 503,744</u>	<u>\$ 78,595</u>	<u>\$ 1,379,815</u>

Township of Tuscarora
Reconciliation of Governmental Funds Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2020

Total Net Change in Fund Balances - Governmental Funds	\$	68,910
Governmental fund report capital outlay as expenditures; however, in the Statement of Activities, the cost of those assets is allocated over the estimated useful lives as depreciation expense. This is the amount of capital outlay expenditures less depreciation expense.		186,792
Changes to accrued interest are not shown in the fund financial statements. The net effect of the current year decrease is to increase net position.		91
Change to compensated absences are not shown in the fund financial statements. The net effect of the current year increase is to decrease net position.		(12,543)
Changes to the net pension liability and related pension deferrals are not shown in the fund financial statements.		(116,683)
Some receivables are long-term in nature and are collectible over several years. However, the current receipts are reflected as revenues on the fund statements.		(18,038)
Current year long-term debt principal payments on contractual obligations and bonds payable are expenditures in the fund financial statements but are reductions in long-term debt in the government-wide financial statements.		21,000
Changes in Net Position-Governmental Funds	\$	<u>129,529</u>

**Township of Tuscarora
Statement of Net Position
Proprietary Funds
June 30, 2020**

	<u>Business-type Activities - Enterprise Funds</u>
	<u>Sewer</u>
ASSETS	
<i>Current Assets</i>	
Cash and Cash Equivalents	\$ 109,487
Accounts Receivable	41,608
Special Assessments	41,553
Total Current Assets	<u>192,648</u>
<i>Noncurrent Assets</i>	
Capital Assets not Being Depreciated	178,618
Capital Assets Being Depreciated, Net	5,488,476
Restricted Cash	352,407
Special Assessments	1,882,174
Total Assets	<u>8,094,323</u>
LIABILITIES	
<i>Current Liabilities</i>	
Accounts Payable	2,290
Accrued Interest	8,391
Current Portion of Long-term Debt	63,000
Total Current Liabilities	<u>73,681</u>
<i>Noncurrent Liabilities</i>	
Long-term Debt	1,855,000
Total Liabilities	<u>1,928,681</u>
NET POSITION	
Net Investment in Capital Assets	3,749,364
<i>Restricted for:</i>	
Repair, Replacement, Improvement	59,734
Additional Residential Equivalent Units	292,673
<i>Unrestricted</i>	2,063,871
Total Net Position	<u>\$ 6,165,642</u>

Township of Tuscarora
Statement of Revenues, Expenses, and Changes in Net Position
Proprietary Funds
For the Year Ended June 30, 2020

	<u>Business-type Activities - Enterprise Funds</u>
	<u>Sewer</u>
Operating Revenues	
Charges for Services	\$ 142,844
<i>Total Operating Revenues</i>	<u>142,844</u>
Operating Expenses	
Professional Fees	97,391
Utilities	31,418
Supplies	7,668
Repairs and Maintenance	18,126
Insurance	1,397
Depreciation	129,800
<i>Total Operating Expenses</i>	<u>285,800</u>
<i>Operating Income (Loss)</i>	<u>(142,956)</u>
Non-Operating Revenues (Expenses)	
Interest Income	72,362
Interest Expense	(54,043)
<i>Net Non-Operating Revenues (Expenses)</i>	<u>18,319</u>
<i>Change In Net Position</i>	<u>(124,637)</u>
<i>Net Position at Beginning of Period</i>	6,290,279
<i>Net Position at End of Period</i>	<u>\$ 6,165,642</u>

**Township of Tuscarora
Statement of Cash Flows
Proprietary Fund
For the Year Ended June 30, 2020**

	<u>Business-type Activities - Enterprise Fund</u>
	<u>Sewer</u>
Cash Flows Used by Operating Activities	
Cash Received from Customers	\$ 181,162
Cash Payments to Suppliers for Goods and Services	(171,747)
<i>Net Cash Used by Operating Activities</i>	<u>9,415</u>
 Cash Flows from Non-capital and Related Financing Activities	
Interfund Balances	2,742
<i>Net Cash Provided by Non-capital and Related Financing Activities</i>	<u>2,742</u>
 Cash Flows from Capital and Related Financing Activities	
Principal Paid	(178,000)
Interest Paid	(54,822)
<i>Net Cash Used by Capital and Related Financing Activities</i>	<u>(232,822)</u>
 Cash Flows From Investing Activities	
Interest Income	72,362
<i>Net Cash Provided by Investing Activities</i>	<u>72,362</u>
<i>Net Decrease in Cash and Equivalents</i>	(148,303)
<i>Cash and Equivalents - Beginning of Year</i>	610,197
<i>Cash and Equivalents - End of Year</i>	<u>\$ 461,894</u>
 Reconciliation of Operating Loss to Net Cash Used by Operating Activities	
Operating Loss	\$ (142,956)
Adjustments to Reconcile Operating Loss to Net Cash Used by Operating Activities	
Depreciation Expense	129,800
Changes in Assets and Liabilities	
Special Assessment Receivable	36,033
Accounts Receivable	2,285
Accounts Payable	(15,747)
<i>Net Cash Used by Operating Activities</i>	<u>\$ 9,415</u>

**Township of Tuscarora
Statement of Assets and Liabilities
Fiduciary Funds
June 30, 2020**

	Agency
	Property Tax Collection
ASSETS	
Cash and Cash Equivalents	\$ 6,688
<i>Total Assets</i>	6,688
LIABILITIES	
Due to Others	6,688
<i>Total Liabilities</i>	\$ 6,688

Township of Tuscarora
Combining Statement of Net Position
Component Units
June 30, 2020

	<u>DDA</u>	<u>Indian River Area Library</u>	<u>Total Component Units</u>
ASSETS			
<i>Current Assets</i>			
Cash and Cash Equivalents	\$ 412,417	\$ 190,402	\$ 602,819
Accounts Receivable	--	19,675	19,675
Total Current Assets	<u>412,417</u>	<u>210,077</u>	<u>622,494</u>
<i>Noncurrent Assets</i>			
Capital Assets Being Depreciated, Net	625,992	191,473	817,465
Investments - Endowment	--	5,675	5,675
Total Assets	<u>1,038,409</u>	<u>407,225</u>	<u>1,445,634</u>
LIABILITIES			
<i>Current Liabilities</i>			
Accounts Payable	--	2,497	2,497
Payroll Liabilities	--	1,532	1,532
Total Current Liabilities	<u>--</u>	<u>4,029</u>	<u>4,029</u>
<i>Noncurrent Liabilities</i>			
Total Liabilities	<u>--</u>	<u>4,029</u>	<u>4,029</u>
NET POSITION			
Net Investment in Capital Assets	625,992	191,473	817,465
<i>Restricted for:</i>			
Nonspendable Endowment	--	5,675	5,675
<i>Unrestricted</i>	412,417	206,048	618,465
Total Net Position	<u>\$ 1,038,409</u>	<u>\$ 403,196</u>	<u>\$ 1,441,605</u>

Township of Tuscarora
Combining Statement of Activities
Component Units
For the Year Ended June 30, 2020

	<u>DDA</u>	<u>Indian River Area Library</u>	<u>Total Component Units</u>
Expenses			
Community and Economic Development	\$ 105,150	\$ --	\$ 105,150
Recreation and Culture	--	126,605	126,605
Total Expenses	<u>105,150</u>	<u>126,605</u>	<u>231,755</u>
Program Revenues			
Charges for services	--	2,330	2,330
Operating grants and contributions	--	15,490	15,490
Capital grants and contributions	--	--	--
Total Program Revenues	<u>--</u>	<u>17,820</u>	<u>17,820</u>
Net Program Revenues (Expenses)	<u>(105,150)</u>	<u>(108,785)</u>	<u>(213,935)</u>
General Revenue			
Property Taxes	88,329	70,900	159,229
Intergovernmental	--	22,110	22,110
Interest Income	198	763	961
Total General Revenues	<u>88,527</u>	<u>93,773</u>	<u>182,300</u>
Change in Net Position	<u>(16,623)</u>	<u>(15,012)</u>	<u>(31,635)</u>
<i>Net Position at Beginning of Period</i>	<u>1,055,032</u>	<u>418,208</u>	<u>1,473,240</u>
Net Position at End of Period	<u>\$ 1,038,409</u>	<u>\$ 403,196</u>	<u>\$ 1,441,605</u>

Notes to the Financial Statements

Township of Tuscarora

Notes to the Financial Statements

Note 1 – Summary of Significant Accounting Policies

The financial statements of Tuscarora Township, Cheboygan County, Michigan (the “Township” or “government”) have been prepared in conformity with generally accepted accounting principles (GAAP) as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard setting body for establishing governmental accounting and financial reporting principles. The more significant of the Township’s accounting policies are described below.

Reporting Entity

Tuscarora Township is an unincorporated Township, which operates under a Supervisor Board form of government. The Township provides the following services: public safety, highways and streets, public improvements, sewer, and general administrative services. The Township has considered all potential component units in evaluating how to define the Township for financial reporting purposes. The decision to include a potential component unit in the reporting entity was made by applying the criteria set forth in Statement 61 of the Government Accounting Standards Board (GASB), *The Financial Reporting Entity*. The basic criteria includes the appointment of a voting majority of the governing board of the unit; legal separation of the Township and the component unit, fiscal independence of the unit, whether exclusion of the unit would make the Township’s financial statements misleading, and whether there is a potential for the organization to provide specific financial benefits to, or impose specific financial burdens on the Township. There are two component units to be included in these statements.

Discretely Presented Component Units

Downtown Development Authority

The Downtown Development Authority, which was established pursuant to the provisions of Act 197 of 1975, as amended, is governed by the Township Supervisor and an eight-member board. The Authority may issue debt subject to the limitations set forth in the Act and is funded by a specified annual property tax capture of a portion of the Township and County levies which may only be used for activities within the downtown district. The Township also has the ability to significantly influence operations of the Downtown Development Authority. Complete financial statements for the component unit are not separately prepared.

Indian River Library

The Township Library, which was established pursuant to the provisions of Public Act 164 of 1877, as amended, is governed by a six-person Board of Directors elected through general elections. The Library may issue debt subject to the limitations set forth in the Act and is funded by an annual property tax levy and county penal fines. Complete financial statements for the component unit are not separately prepared.

Township of Tuscarora

Notes to the Financial Statements

Government-wide and Fund Financial Statements

The government-wide financial statements (i.e., the statement of net position and the statement of activities) report information on all of the nonfiduciary activities of the primary government and its component units. For the most part, the effect of interfund activity has been removed from these statements. Governmental activities, which normally are supported by taxes and intergovernmental revenues, are reported separately from business-type activities, which rely to a significant extent on fees and charges for support. Likewise, the primary government is reported separately from the legally separate component units for which the primary government is financially accountable.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segments are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function or segment. Program revenues include (1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and (2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported instead as general revenues.

Separate financial statements are provided for governmental funds and proprietary funds. Major individual governmental funds and major individual enterprise funds are reported as separate columns in the fund financial statements.

Measurement Focus, Basis of Accounting and Financial Statement Presentation

The government-wide financial statements are reported using the *economic resources measurement focus* and the *accrual basis of accounting*, as are the proprietary fund and fiduciary fund financial statements. The fiduciary fund financial statements use the economic resources measurement focus, although the agency funds do not have a measurement focus. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the have been met.

Governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the Township considers revenues to be available if they are collected within 60 days of the end of the current fiscal period or within one year for expenditure driven grants. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service and accrued employee benefit expenditures are recorded only when payment is due.

Township of Tuscarora

Notes to the Financial Statements

Property taxes, intergovernmental revenue, charges for services, and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. All other revenue items are considered to be measurable and available only when cash is received by the Township.

The Township reports the following major governmental funds:

The **general fund** is the Township's primary operating fund. It accounts for all financial resources of the general government, except those accounted for and reported in another fund.

The **police fund** accounts for revenues and expenditures directly attributable to police operations. Revenue is primarily generated from property taxes.

The Township reports the following major proprietary fund:

The **sewer fund** accounts for the cost of collecting and treating wastewater. Revenues are primarily from service charges to customers, grants, and special assessments. These revenues are also used to pay principal and interest on revenue bonds which were used to finance improvements to the system.

Additionally, the government reports the following fund types:

Special revenue funds are used to account for and report the proceeds of specific revenue sources that are restricted or committed to expenditure for specific purposes other than debt service or capital projects.

Debt service funds are used to account for all financial resources restricted, committed or assigned to expenditure for principal and interest.

Capital project funds account for the accumulation and disbursement of resources for the construction of governmental fund capital projects.

Agency funds are used to account for assets held on behalf of outside parties, including other governments.

As a general rule the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are payments-in-lieu of taxes and other charges between the Township's sewer function and various other functions of the government. Elimination of these charges would distort the direct costs and program revenues reported for the various functions concerned.

Township of Tuscarora

Notes to the Financial Statements

Proprietary funds distinguish *operating* revenues and expenses from *non-operating* items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the enterprise funds are charges for services. Operating expenses for the enterprise funds include depreciation on capital assets, labor, supplies and contracted services. All revenues and expenses are not meeting this definition are reported as nonoperating revenues and expenses.

Assets, Liabilities, and Equity

Cash and Cash Equivalents

The Township's cash and cash equivalents include amounts in demand deposit accounts, certificates of deposit, and short-term investments with original maturities of three months or less from the date of acquisition. Certificates of deposit are carried at cost plus accrued interest, since the original maturity dates are less than one year.

Investments

Investments consist of the Township's share in an external investment pool and are reported at fair value. This investment pool operates in a manner consistent with the Securities and Exchange Commission's Rule 2a(7) of the Investment Company Act of 1940.

Restricted Assets

Assets which are restricted for specified uses by bond debt requirements are classified as restricted assets. Liabilities payable for such restricted assets are separately classified.

Receivables

All receivables are reported at their gross value and, where appropriate, are reduced by the estimated portion that is expected to be uncollectible. No amounts outstanding at June 30, 2019 were identified by as being uncollectible.

Capital Assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, and similar items), are reported in the governmental and business-type activities columns in the government-wide financial statements. Capital assets are defined by the government as assets with an individual cost of more than \$1,000 and an estimated useful life in excess of five years. Such assets are valued at cost where historical records are available and at an estimated historical cost if purchased or constructed. Donated capital assets are recorded at replacement value at the date of donation.

Township of Tuscarora

Notes to the Financial Statements

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend asset lives are not capitalized. Major outlays of capital assets and improvement are capitalized and depreciated over the remaining useful lives of the related capital assets, as applicable.

No interest expense has been incurred or capitalized on capital assets reported in proprietary funds.

Depreciation on capital, assets (including infrastructure) of the primary government is computed using the straight-line method over the following estimated useful lives:

	<u>Years</u>
Land Improvements	15
Buildings and Improvements	10 - 40
Sewer Infrastructure	30 - 50
Vehicles, Machinery, and Equipment	5 - 10

The Township reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset exceeds its fair value. If it is determined that an impairment loss has occurred, the asset is written down to its net realizable value and a current charge to income is recognized.

Deferred Outflows of Resources

In addition to assets, the balance sheet will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The amounts will be amortized to pension expense within five years.

Deferred Inflows of Resources

In addition to liabilities, the fund level balance sheet or statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of fund balance/net position that applies to a future period and so will not be recognized as an inflow of resources (revenue) until that time.

Pension

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Municipal Employees Retirement System (MERS) of Michigan and additions to/deductions from MERS' fiduciary net position have been determined on the same basis as they

Township of Tuscarora

Notes to the Financial Statements

are reported by MERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Compensated Absences

Under terms of Township policies, eligible employees are granted vacation, sick, and compensatory time in varying amounts based on length of service. Sick and vacation pay is accrued when incurred in the government-wide financial statements. A liability for these amounts is reported in governmental funds only if they have maturity, for example, as a result of employee resignations and retirements.

Long-term Obligations

In the government-wide financial statements and proprietary fund types in the fund financial statements, the long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type statement of net position. For new bond issuances of governmental funds after the implementation of GASB Statement No. 34 and all proprietary fund bond premiums and discounts are deferred and amortized over the life of the bonds using the straight-line method which approximates the effective interest method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are recognized as an expense in the period that the bond was issued.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

Deferred Inflows of Resources

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The governmental funds report unavailable revenues, which arises only under a modified accrual basis of accounting, from special assessments. These amounts are deferred and recognized as an inflow of resources in the period that the amount becomes available.

Net Position Flow Assumption

Sometimes the government will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted – net position and unrestricted – net position in the government-wide and

Township of Tuscarora

Notes to the Financial Statements

proprietary fund financial statements, a flow assumption must be made about the order in which the resources are considered to be applied.

It is the government's policy to consider restricted – net position to have been depleted before unrestricted – net position is applied.

Fund Balance Flow Assumptions

Sometimes the government will fund outlays for a particular purpose from both restricted and unrestricted resources (the total of committed, assigned, and unassigned fund balance). In order to calculate the amounts to report as restricted, committed, assigned, and unassigned fund balance in the governmental fund financial statements a flow assumption must be made about the order in which the resources are considered to be applied. It is the government's policy to consider restricted fund balance to have been depleted before using any of the components of unrestricted fund balance. Further, when the components of unrestricted fund balance can be used for the same purpose, committed fund balance is depleted first, followed by assigned fund balance. Unassigned fund balance is applied last.

Fund Balance Policies

Fund balance is essentially the difference between the assets and liabilities reported in governmental fund. There are five separate components of fund balance, each of which identifies the extent to which the Township is bound to honor constraints on the specific purpose for which amounts can be spent.

1. Non-spendable fund balance (*inherently non-spendable*)
2. Restricted fund balance (*externally enforceable limitations on use*)
3. Committed fund balance (*self-imposed limitations on use*)
4. Assigned fund balance (*limitation resulting from intended use*)
5. Unassigned fund balance (*the residual classification of the general fund*)

Non-spendable and Restricted Funds - Non-spendable funds are those fund that cannot be spent because they are either (a) not in spendable form – inventories and prepaids - or (b) legally or contractually required to be maintained intact – long-term receivables.

Restricted funds are those funds that have constraints placed on their use by an external party or constitutional provisions or enabling legislations (grants, contributions, specific fee mandates). Non-spendable and Restricted Funds will be maintained and then summarized in the Township's annual financial report by the Townships financial staff.

Committed Funds - In order to commit fund balance, the Township Board, as the highest level of decision making authority, must pass a Resolution to Commitment funds for a specific purpose. These funds must be fully expended for their committed purpose. To make committed funds

Township of Tuscarora

Notes to the Financial Statements

uncommitted, a new resolution must be passed by the Board. Action must be taken before the last day of the fiscal year to commit funds for that year.

Assigned Funds - Assigned funds are amounts that are constrained by the Township's intent to be used for specific purposes, but are neither restricted nor committed. These amounts can be "assigned" by the Township Supervisor, or his/her designee.

Minimum Unassigned Fund Balance - The Township is committed to maintaining a prudent level of financial resources to protect against the need to reduce service levels because of temporary revenue shortfalls or unpredicted expenditures. The goal of the Township Board shall be to maintain a minimum unassigned fund balance of no less than 50% of General Fund expenditures. For purposes of this calculation, "expenditures" will be the annual budgeted expenditures less non-recurring capital expenditures.

If unassigned fund balance approaches a level that greatly exceeds 50% of expenditures, the Township Board will consider using unassigned fund balance for the following purposes: pay down future debt, transfer funds to a Capital Projects fund for future Capital improvements, and other future obligations of the Township.

Fund balance levels will be analyzed each fiscal year after the financial statement audit.

Property Tax Revenue Recognition

Property taxes are levied as of December 1 of each year and are due by February 15 of the following calendar year. Any amounts not received by February 28 are added to the County tax rolls. The Township receives 100% payment for the delinquent taxes by June 30. The Township bills and collects its own property taxes and also taxes for other governmental units. Collections of the other governmental units' taxes and remittance of them to the units are accounted for in the tax collection fund (a fiduciary fund).

The taxable value of the Township totaled \$240,916,681, on which ad valorem taxes consisted of .9971 mills for the Township's operating purposes, .01028 mills for lights, .7365 mills for the fire protection, 4.5 mills for police protection, and .2951 mills for the component unit library operations.

Interfund Transactions

During the course of normal operations, the Township has numerous transactions between funds, including expenditures and transfers of resources to provide services, construct assets, and service debt. The accompanying financial statements generally reflect such transactions as transfers. Operating subsidies are also recorded as transfers. The amounts recorded as subsidies or advances are determined by the Township.

Township of Tuscarora

Notes to the Financial Statements

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results may differ from those estimates.

Budgetary and Budgetary Accounting

All governmental funds are under formal budgetary control. Budgets shown in the financial statements as “GAAP Basis” are adopted on a basis consistent with generally accepted accounting principles (GAAP) and are not significantly different from the modified accrual basis used to reflect actual results, and consist only of those amounts contained in the formal budget approved and amended by the Township Board. Budgets are adopted on the activity level and control is exercised on that same level.

Note 2 – Statutory Compliance

P.A. 621 of 1978, as amended, provides that a local unit shall not incur expenditures in excess of the amount budgeted. Budgetary control is exercised at the activity level in the general fund and the functional level in other funds.

The Township had no expenditures in excess of the amounts appropriated during the year ended June 30, 2020.

Deficit Net Position

The Township’s governmental activities had an unrestricted net position deficit of \$(162,539) as of June 30, 2020.

Note 3 - Cash and Investments

The captions on the government-wide and fund statements relating to cash and investments are as follows:

	Governmental Activities	Business-type Activities	Primary Government	Component Units	Fiduciary Fund
Statement of Net Position					
Cash and Cash Equivalents	\$ 1,441,875	\$ 109,487	\$ 1,551,362	\$ 602,819	\$ 6,688
Restricted Cash		352,407	352,407	-	-
Investments - Endowment	-	-	-	5,675	-
Total Deposits and Investments	\$ 1,441,875	\$ 461,894	\$ 1,903,769	\$ 608,494	\$ 6,688

Township of Tuscarora

Notes to the Financial Statements

These deposits are held in two financial institutions, both of which are located in Michigan. State policy limits the Treasurer's investing options as described in detail below. All accounts are in the name of the Township and a specific fund or common account. Deposits and investments are recorded in Township records at fair value. Interest is recorded when earned.

Deposits and Investments

Checking and Savings Accounts	\$ 2,513,131
Investments	5,675
Cash on Hand	145
Total Deposits and Investments	\$ 2,518,951

Custodial Credit Risk - Deposits. Custodial credit risk is the risk that, in the event of a bank failure, the Township's deposits might not be returned. State law does not require, and the Township does not have, a policy for deposit custodial credit risk. As of year-end, \$1,913,275 of the Township's bank balance of \$2,558,727, was exposed to custodial credit risk because it was uninsured and uncollateralized. Due to the dollar amounts of cash deposits and the limits of FDIC and NCUA insurances, the Township believes it is impractical to insure all bank deposits. As a result, the Township evaluates each financial institution with which it deposits Township funds and assesses the level of risk of each institution; only those institutions with an acceptable estimated risk level are used as depositories.

Statutory Authority

State statutes authorize the Township to invest in:

- a. Bonds, securities, other obligations, and repurchase agreements of the United States of America, or an agency or instrumentality of the United States of America.
- b. Certificates of deposit, savings accounts, deposit accounts, or depository receipts of a qualified financial institution.
- c. Commercial paper rated at the time of purchase within the two highest classifications established by not less than two standard rating services and that matures not more than 270 days after the date of purchase.
- d. Bankers' acceptances of United States banks.
- e. Obligations of the State of Michigan and its political subdivisions that, at the time of purchase are rated as investment grade by at least one standard rating service.
- f. Mutual funds registered under the Investment Company Act of 1940 with the authority to purchase only investment vehicles that are legal for direct investment by a public corporation.

Township of Tuscarora

Notes to the Financial Statements

- g. External investment pools as authorized by Public Act 20 as amended through December 31, 1997.

Fair Value Measurement

The Township categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

The Township has the following recurring fair value measurements as of June 30, 2020:

- All investments held at the Community Foundation of Northeast Michigan, with a balance of \$60,461 at June 30, 2020, are valued using Level 2 inputs.

Note 4 - Capital Assets

Capital asset activities for governmental activities for the year ended June 30, 2020 were as follows:

Governmental Activities	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets not being Depreciated				
Land	\$ 1,383,282	\$ -	\$ -	\$ 1,383,282
Capital Assets being Depreciated				
Land Improvements	2,596,462	6,130	-	2,602,592
Buildings and Improvements	1,518,457	389,905	-	1,908,362
Vehicles	183,994	-	-	183,994
Equipment	563,227	-	-	563,227
<i>Subtotal</i>	<u>4,862,140</u>	<u>396,035</u>	<u>-</u>	<u>5,258,175</u>
Less Accumulated Depreciation				
Land Improvements	1,453,523	135,190	-	1,588,713
Buildings and Improvements	861,311	46,244	-	907,555
Vehicles	103,707	15,051	-	118,758
Equipment	360,331	29,687	-	390,018
<i>Subtotal</i>	<u>2,778,872</u>	<u>226,172</u>	<u>-</u>	<u>3,005,044</u>
Capital Assets being Depreciated, Net	<u>2,083,268</u>	<u>169,863</u>	<u>-</u>	<u>2,253,131</u>
Capital Assets, Governmental Activities	<u>\$ 3,466,550</u>	<u>\$ 169,863</u>	<u>\$ -</u>	<u>\$ 3,636,413</u>

Township of Tuscarora

Notes to the Financial Statements

Capital asset activities for business-type activities for the year ended June 30, 2020 were as follows:

Business-type Activities	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets not being Depreciated				
Land	\$ 178,618	\$ -	\$ -	\$ 178,618
Capital Assets being Depreciated				
Sewer System	5,814,433	-	-	5,814,433
Machinery and Equipment	189,318	-	-	189,318
<i>Subtotal</i>	<u>6,003,751</u>	<u>-</u>	<u>-</u>	<u>6,003,751</u>
Less Accumulated Depreciation				
Sewer System	360,654	128,464	-	489,118
Machinery and Equipment	24,822	1,336	-	26,158
<i>Subtotal</i>	<u>385,475</u>	<u>129,800</u>	<u>-</u>	<u>515,275</u>
Capital Assets being Depreciated, Net	<u>5,618,276</u>	<u>(129,800)</u>	<u>-</u>	<u>5,488,476</u>
Capital Assets, Business-type Activities	<u>\$ 5,796,894</u>	<u>\$ (129,800)</u>	<u>\$ -</u>	<u>\$ 5,667,094</u>

Capital asset activities for the component unit activities for the year ended June 30, 2020 were as follows:

Component Unit - Downtown Development Authority	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets being Depreciated				
Land Improvements	\$ 737,066	\$ 24,550	\$ -	\$ 761,616
Less Accumulated Depreciation				
Land Improvements	105,253	30,371	-	135,624
Capital Assets, Downtown Development Authority	<u>\$ 631,813</u>	<u>\$ (5,821)</u>	<u>\$ -</u>	<u>\$ 625,992</u>

Component Unit - Indian River Area Library	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets being Depreciated				
Books and Periodicals	\$ 213,201	\$ 8,701	\$ 17,445	\$ 239,347
Buildings and Improvements	74,113	-	-	74,113
Equipment	188,887	-	-	188,887
<i>Subtotal</i>	<u>476,201</u>	<u>8,701</u>	<u>17,445</u>	<u>502,347</u>
Less Accumulated Depreciation				
Books and Periodicals	124,363	16,713	17,445	158,521
Buildings and Improvements	13,160	6,126	-	19,286
Equipment	128,442	4,625	-	133,067
<i>Subtotal</i>	<u>265,965</u>	<u>27,464</u>	<u>17,445</u>	<u>310,874</u>
Capital Assets, Indian River Area Library	<u>\$ 210,236</u>	<u>\$ (18,763)</u>	<u>\$ -</u>	<u>\$ 191,473</u>

Township of Tuscarora

Notes to the Financial Statements

Depreciation expense was charged to functions of the Township as follows:

Governmental Activities

General Government	\$ 50,924
Public Safety	16,929
Public Works	28,408
Recreation and Culture	129,911
<i>Total</i>	<u>\$ 226,172</u>

Business-type Activities

Sewer Fund	<u>\$ 129,800</u>
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Discretely Presented Component Units**Tuscarora Township DDA**

Community and Economic Development	\$ 30,371
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Indian River Area Library

Recreation and Culture	27,464
<i>Total</i>	<u>\$ 57,835</u>

Note 5 - Interfund Receivables and Payables

The composition of interfund balances as of June 30, 2020 was as follows:

<u>Receivable Fund</u>	<u>Payable Fund</u>	<u>Amount</u>
2016 Special Assessment	General	\$ 70,612

All amounts due from other funds represent advances to other funds to finance operations or capital outlays.

Township of Tuscarora

Notes to the Financial Statements

Note 6 - Long-term Debt

Long-term debt activity for the year ended June 30, 2020 was as follows:

	Beginning Balance	Additions	Reductions	Ending Balance	Due Within One Year
Governmental Activities:					
2016 Special Assessment bonds - Eagles Nest	\$ 45,000	\$ -	\$ (21,000)	\$ 24,000	\$ 24,000
Compensated Absences	29,677	-	(4,386)	25,291	-
Total Governmental Activities:	<u>74,677</u>	<u>-</u>	<u>(25,386)</u>	<u>49,291</u>	<u>24,000</u>
Business-type Activities:					
2014 Sewer Special Assessment Bonds used to finance sewer project. \$2,411,000 at 2.625% Interest. Payments to be made through 2052.	2,096,000	-	(178,000)	1,918,000	63,000
Total Business-type Activities:	<u>2,159,000</u>	<u>-</u>	<u>(178,000)</u>	<u>1,918,000</u>	<u>63,000</u>
Total Long-term Debt:	<u>\$ 2,252,001</u>	<u>\$ -</u>	<u>\$ (203,386)</u>	<u>\$ 1,967,291</u>	<u>\$ 87,000</u>

The annual requirements, excluding accrued employee benefits, to maturity on the total long-term debt obligations outstanding at June 30, 2020 are as follows:

Year Ending June 30	Governmental Activities		
	Principal	Interest	Total
2021	\$ 24,000	\$ 624	\$ 24,624
Totals	<u>\$ 24,000</u>	<u>\$ 624</u>	<u>\$ 24,624</u>
Year Ending June 30	Business-type Activities		
	Principal	Interest	Total
2021	\$ 63,000	\$ 55,020	\$ 118,020
2022	63,000	53,366	116,366
2023	63,000	51,713	114,713
2024	63,000	50,059	113,059
2025	63,000	48,405	111,405
2026-2030	311,000	217,718	528,718
2031-2035	315,000	176,400	491,400
2036-2040	319,000	134,794	453,794
2041-2045	320,000	92,794	412,794
2046-2050	323,000	50,636	373,636
2051	15,000	6,326	21,326
Totals	<u>\$ 1,918,000</u>	<u>\$ 937,230</u>	<u>\$ 2,855,230</u>

Township of Tuscarora

Notes to the Financial Statements

Note 7 - Risk Management

The Township is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees (workers' compensation); and natural disasters. During the year ended June 30, 2020, the Township carried commercial insurance to cover all risks of loss. The Township has had no settled claims resulting from these risks that exceeded their commercial coverage in any of the past three fiscal years. There was no significant change in coverage during the year.

Note 8 - Defined Benefit Pension Plan**Plan Description*****Benefits Provided***

Plan Description. The employer's defined benefit pension plan provides certain retirement, disability, and death benefits to plan members and beneficiaries. The employer participates in the Municipal Employees Retirement System (MERS) of Michigan. MERS is an agent multiple-employer, statewide public employee pension plan established by the Michigan Legislature under Public Act 135 of 1945 and administered by a nine member Retirement Board. Public Act 427 of 1984, as amended, establishes and amends the benefit provisions of the participants in MERS. MERS issues a publicly available financial report that includes financial statements and required supplementary information. This report may be obtained accessing the MERS website at www.mersofmich.com.

Retirement benefits for employees are calculated as follows:

Division	Benefit Multiplier	Employee Contributions	Benefit Maximum	Final Average Compensation (Years)	Normal Retirement Age	Unreduced Benefit (Age/Years of Service)	Reduced Benefit (Age/Years of Service)	Vesting (Years)
Police	2.50%	0.00%	80%	5	60	55/20	50/25 or 55/15	10

Benefit terms, within the parameters established by MERS, are generally established and amended by authority of the Township Board of Trustees, generally after negotiations of these terms with the affected unions.

Township of Tuscarora

Notes to the Financial Statements

Employees Covered by Benefit Terms

At the December 31, 2019 measurement date, the following employees were covered by the benefit terms:

Inactive plan members or beneficiaries currently receiving benefits	4
Inactive plan members entitled to but not yet receiving benefits	2
Active plan members	<u>9</u>
Total employees covered by MERS	<u>15</u>

Contributions

Article 9, Section 24 of the State of Michigan constitution requires that financial benefits arising on account of employee service rendered in each year be funded during that year. Accordingly, MERS retains an independent actuary to determine the annual contribution. The employer is required to contribute amounts at least equal to the actuarially determined rate, as established by the MERS retirement board. The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by plan members during the year, with an additional amount to finance any unfunded accrued liability. The employer may establish contribution rates to be paid by its covered employees.

For the year ended December 31, 2019, the Township had the following contribution rates:

<u>Division</u>	<u>Employer Contributions</u>	<u>Employee Contributions</u>
Police	24.15%	0.00%

Net Pension Liability

The net pension liability reported at June 30, 2020 was determined using a measure of the total pension liability and the pension net position as of December 31, 2019. The December 31, 2019 total pension liability was determined by an actuarial valuation performed as of that date.

Township of Tuscarora

Notes to the Financial Statements

Changes in the net pension liability during the measurement year were as follows:

Changes in Net Pension Liability	Increase (Decrease)		
	Total Pension Liability	Plan Net Position	Net Pension Liability
Balance at December 31, 2018	\$ 2,582,974	\$ 1,669,811	\$ 913,163
Service cost	60,668	-	60,668
Interest	205,578	-	205,578
Difference between expected and actual experience	(17,990)	-	(17,990)
Changes in assumptions	87,087	-	87,087
Contributions - employer	-	113,787	(113,787)
Net investment income	-	229,342	(229,342)
Benefit payments, including refunds	(87,166)	(87,166)	-
Administrative expenses	-	(3,952)	3,952
Other expenses	(1)	-	(1)
Net changes	248,176	252,011	(3,835)
Balance at December 31, 2019	\$ 2,831,150	\$ 1,921,822	\$ 909,328

Net pension liabilities are generally liquidated by the general and police fund within governmental activities.

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended June 30, 2020, the Township recognized pension expense of \$189,261. At June 30, 2020, the Township reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

Source	Deferred Outflows of Resources	Deferred Inflows of Resources
Net difference between projected and actual earnings on pension plan investments	\$ 6,913	\$ -
Net difference in experience	3,505	57,934
Net difference in assumptions	36,235	-
Employer contributions to the plan subsequent to the measurement date	55,985	-
Total	\$ 102,638	\$ 57,934

Township of Tuscarora

Notes to the Financial Statements

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended	
June 30	Amount
2021	\$ 2,893
2022	(13,376)
2023	20,068
2025	(20,866)

Actuarial Assumptions

The total pension liability in the December 31, 2019 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation: 2.50%

Salary Increases: base wage inflation of 3.00% in the long-term.

Investment rate of return: 7.35%, net of investment expense including inflation.

Mortality rates used for non-disabled plan member were based on a weighted blend of RP-2014 mortality tables of a 50% Male and 50% Female blend.

The actuarial assumptions used in the valuation were based on the results of the most recent actuarial experience study.

The long-term expected rate of return on pension plan investments was determined using a model method in which the best-estimate ranges of expected future real rates of return (expected returns, net of investment and administrative expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Township of Tuscarora

Notes to the Financial Statements

The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Target Allocation Gross Rate of Return</u>	<u>Long-term Expected Gross Rate of Return</u>	<u>Inflation Assumption</u>	<u>Long-term Expected Real Rate of Return</u>
Global Equity	60.00%	7.75%	4.65%	2.50%	3.15%
Global Fixed Income	20.00%	3.75%	0.75%	2.50%	0.25%
Private Investments	20.00%	9.75%	1.95%	2.50%	1.45%
Total	100.00%		7.35%		4.85%

Discount Rate

The discount rate used to measure the total pension liability is 7.6%. The projection of cash flows used to determine the discount rate assumes that employer and employee contributions will be made at the rates agreed upon for employees and the actuarially determined rates for employers. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to pay all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the Township, calculated using the discount rate of 7.6 percent, as well as what the Township's net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.6 percent) or one percentage point higher (8.6 percent) than the current rate:

	1% Decrease (6.60%)	Current Discount Rate (7.6%)	1% Increase (8.60%)
Net pension liability of the Township	\$ 1,299,619	\$ 909,328	\$ 327,976

Pension Plan Fiduciary Net Position

Detailed information about the pension plan's fiduciary net position is available in the separately issued plan financial statements.

Township of Tuscarora

Notes to the Financial Statements

Note 9 - Subsequent Events

Subsequent events have been evaluated through December 4, 2020, the date the financial statements were available to be issued. The following significant subsequent events were noted:

- The Township’s Downtown Development Authority component unit is beginning a streetscape project that is to be funded by a USDA loan of \$1.4 million. The project has been delayed in part to the Covid-19 pandemic. The project is expected to be completed during the Township’s fiscal year ending June 30, 2021. During September of 2020, the Township closed on two loans for the project.
- During August 2020, the Township authorized the issuance of special assessment bonds to fund upcoming street projects.
- The Township will be affected by the recent and ongoing outbreak of the Coronavirus (COVID-19) which was declared a pandemic by the World Health Organization in March 2020. COVID-19 has caused significant government and business disruptions through mandated and voluntary closings and stay at home orders. The Township Board and management is in the process of determining the significance that the outbreak will have on the Township’s upcoming budget.

Note 10 – USDA Restricted Cash

A portion of the restricted cash in the sewer fund is required by the United States Department of Agriculture - Rural Development (the “USDA”) to be maintained at levels consistent with the Township’s bond agreements. Repair, Replacement, and Improvement account funds may be used for the repair, replacement, and improvement of the Township’s sewer system. Restricted cash related to USDA bonds consists of the following:

	June 30, 2020	
<u>Business-type Activities</u>	Required Balance	Actual Balance
<i>Repair, Replacement, and Improvement</i>		
2014 Issue, \$10,693 per year	\$ 64,158	\$ 59,734

The variance from required balance to actual is due to expenditures from that account that have been authorized by the USDA.

Note 11 – Tax Abatements

Governmental Accounting Standards Board (GASB) Statement No. 77 “Tax Abatement Disclosures” requires that State and local governments that have entered into tax abatement agreements disclose information related to those agreements. The Township did not have any active tax abatement agreements at June 30, 2020.

Required Supplementary Information

Township of Tuscarora
Schedule of Revenues, Expenditures, and Changes in Fund Balance-Budget and Actual
General Fund
For the Year Ended June 30, 2020

	<u>Budgeted Amounts</u>		<u>Actual</u>	<u>Variance</u>
	<u>Original</u>	<u>Final</u>		<u>Positive</u> <u>(Negative)</u>
				<u>Final to Actual</u>
Revenues				
Property Taxes	\$ 526,450	\$ 526,450	\$ 530,042	\$ 3,592
Special Assessments	5,150	5,150	5,116	(34)
Intergovernmental	274,500	274,500	230,791	(43,709)
Charges for Services	40,600	40,600	43,471	2,871
Refunds and Reimbursements	--	--	3,258	3,258
Other	216,200	216,200	266,431	50,231
Interest Income	1,680	1,680	2,459	779
Total Revenues	<u>1,064,580</u>	<u>1,064,580</u>	<u>1,081,568</u>	<u>16,988</u>
Expenditures				
General Government				
Township Board	103,321	103,321	91,471	11,850
Supervisor	129,032	49,032	28,534	20,498
Clerk	44,532	44,532	34,982	9,550
Board of Review	2,385	2,385	1,207	1,178
Treasurer	39,240	39,240	37,199	2,041
Assessor	95,900	95,900	77,191	18,709
Cemetery	23,800	23,800	17,106	6,694
Elections	10,450	10,450	4,232	6,218
Building and Grounds	25,550	25,550	20,454	5,096
Other	10,000	10,000	4,063	5,937
Total General Government	<u>484,210</u>	<u>404,210</u>	<u>316,439</u>	<u>87,771</u>
Public Safety				
Fire Protection	171,198	171,198	171,198	--
Public Works				
Roads	51,000	51,000	12,600	38,400
Street Lighting	35,000	35,000	28,728	6,272
Sanitation	1,000	1,000	676	324
Airport	25,500	25,500	18,022	7,478
Total Public Works	<u>112,500</u>	<u>112,500</u>	<u>60,026</u>	<u>52,474</u>
Community and Economic Development				
Planning	4,600	4,600	260	4,340
Recreation and Culture				
Parks	170,775	165,185	155,540	9,645
Boat Launch	269,800	355,390	342,060	13,330
Total Recreation and Culture	<u>440,575</u>	<u>520,575</u>	<u>497,600</u>	<u>22,975</u>
Total Expenditures	<u>1,213,083</u>	<u>1,213,083</u>	<u>1,045,523</u>	<u>167,560</u>
Excess (Deficiency) of Revenues				
Over Expenditures	<u>(148,503)</u>	<u>(148,503)</u>	<u>36,045</u>	<u>184,548</u>
Net Change in Fund Balance	<u>(148,503)</u>	<u>(148,503)</u>	<u>36,045</u>	<u>184,548</u>
Fund Balance at Beginning of Period	761,431	761,431	761,431	--
Fund Balance at End of Period	<u>\$ 612,928</u>	<u>\$ 612,928</u>	<u>\$ 797,476</u>	<u>\$ 184,548</u>

Township of Tuscarora
Schedule of Revenues, Expenditures, and Changes in Fund Balance-Budget and Actual
Police
For the Year Ended June 30, 2020

	<u>Budgeted Amounts</u>		<u>Actual</u>	Variance
	<u>Original</u>	<u>Final</u>		Positive (Negative)
				<u>Final to Actual</u>
Revenues				
Property Taxes	\$ 1,059,998	\$ 1,059,998	\$ 1,048,703	\$ (11,295)
Intergovernmental	73,181	73,181	76,914	3,733
Charges for Services	10,423	10,423	9,332	(1,091)
Refunds and Reimbursements	--	--	3,766	3,766
Other	--	--	120	120
Interest Income	750	750	858	108
Total Revenues	<u>(1,144,352)</u>	<u>(1,144,352)</u>	<u>1,139,693</u>	<u>2,284,045</u>
Expenditures				
Public Safety - Police	1,143,393	1,152,589	1,103,127	49,462
Total Expenditures	<u>1,143,393</u>	<u>1,152,589</u>	<u>1,103,127</u>	<u>49,462</u>
Excess (Deficiency) of Revenues				
Over Expenditures	<u>(2,287,745)</u>	<u>(2,296,941)</u>	36,566	2,333,507
Net Change in Fund Balance	<u>(2,287,745)</u>	<u>(2,296,941)</u>	<u>36,566</u>	<u>2,333,507</u>
<i>Fund Balance at Beginning of Period</i>	467,178	467,178	467,178	--
Fund Balance at End of Period	<u>\$ (1,820,567)</u>	<u>\$ (1,829,763)</u>	<u>\$ 503,744</u>	<u>\$ 2,333,507</u>

Existing Facilities - Financial Status

Township of Tuscarora
Required Supplementary Information
Schedule of Changes in Net Pension Liability and Related Ratios
Last Six Plan Years

	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$ 60,668	\$ 58,652	\$ 51,118	\$ 70,378	\$ 66,338	\$ 64,795
Interest	205,578	193,122	181,306	207,567	186,965	172,980
Changes in Benefit Terms	-	-	-	(409,343)	-	-
Differences Between Expected & Actual Experience	(17,990)	(10,676)	(3,609)	(103,865)	21,040	-
Changes in Assumptions	87,087	-	-	-	133,816	-
Other	(1)	(1)	-	-	-	-
Benefit Payments, Including Refunds	(87,166)	(85,645)	(84,124)	(82,603)	(81,082)	(56,969)
Net Change in Pension Liability	248,176	155,452	144,691	(317,866)	327,077	180,806
<i>Total Pension Liability - Beginning</i>	<i>2,582,974</i>	<i>2,427,522</i>	<i>2,282,831</i>	<i>2,600,697</i>	<i>2,273,620</i>	<i>2,092,814</i>
Total Pension Liability - Ending (a)	\$ 2,831,150	\$ 2,582,974	\$ 2,427,522	\$ 2,282,831	\$ 2,600,697	\$ 2,273,620
Plan Fiduciary Net Position						
Contributions - Employer	\$ 113,787	\$ 100,545	\$ 92,739	\$ 86,165	\$ 91,211	\$ 93,992
Contributions - Member	-	-	-	5,905	15,816	14,615
Net Investment Income	229,342	(69,017)	202,446	156,459	(20,972)	79,029
Benefit Payments, Including Refunds	(87,166)	(85,645)	(84,124)	(82,603)	(81,082)	(56,969)
Administrative Expenses	(3,952)	(3,378)	(3,200)	(3,084)	(3,002)	(2,925)
Other	-	(2)	-	-	-	-
Net Change in Plan Fiduciary Net Position	252,011	(57,497)	207,861	162,842	1,971	127,742
<i>Plan Fiduciary Net Position - Beginning</i>	<i>1,669,811</i>	<i>1,727,308</i>	<i>1,519,447</i>	<i>1,356,605</i>	<i>1,354,634</i>	<i>1,226,892</i>
Plan Fiduciary Net Position - Ending (b)	\$ 1,921,822	\$ 1,669,811	\$ 1,727,308	\$ 1,519,447	\$ 1,356,605	\$ 1,354,634
Net Pension Liability - Ending (a) - (b)	\$ 909,328	\$ 913,163	\$ 700,214	\$ 763,384	\$ 1,244,092	\$ 918,986
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	67.9%	64.6%	71.2%	66.6%	52.2%	59.6%
Covered Employee Payroll	\$ 562,258	\$ 545,997	\$ 467,843	\$ 465,158	\$ 451,893	\$ 441,383
Net Pension Liability as a Percentage of Covered Employee Payroll	161.7%	167.2%	149.7%	164.1%	275.3%	208.2%

* Built prospectively upon implementation on GASB 68

Existing Facilities - Financial Status

**Township of Tuscarora
Required Supplementary Information
Schedule of Contributions
Last Six Fiscal Years**

	2020	2019	2018	2017	2016	2015
Actuarially Determined Contribution	\$ 113,787	\$ 100,545	\$ 92,739	\$ 86,165	\$ 61,855	\$ 93,992
Contributions in Relation to the Actuarially Determined Contribution	113,787	100,545	92,739	86,165	61,855	93,992
Contribution Deficiency (Excess)	<u>\$ -</u>					
Covered Employee Payroll	562,258	545,997	467,843	465,158	451,893	441,383
Contributions as a Percentage of Covered Employee Payroll	20.2%	18.4%	19.8%	18.5%	13.7%	21.3%

Notes

Valuation Date

Actuarially determined contribution amounts are calculated as of December 31 each year, which is 18 months prior to the beginning of the fiscal year in which the

Methods and assumptions used to determine contribution rates

Actuarial cost method	Entry-age Normal
Amortization method	Level percentage of pay, open
Remaining amortization period	19 years
Asset valuation method	5 year smoothed
Inflation	2.50%
Salary increases	3.00% - In the long term
Investment rate of return	7.35% net of investment and administrative expense
Retirement Age	Experience-based tables of rates that are specific to the type of eligibility condition
Mortality	50% Male - 50% Female blend of the 2014 Grouped Annuity Mortality

* Built prospectively upon implementation on GASB 68

OTHER SUPPLEMENTARY INFORMATION

**Indian River Library
Statement of Net Position
June 30, 2020**

ASSETS*Current Assets*

Cash and Cash Equivalents	\$ 190,402
Accounts Receivable	19,675
Total Current Assets	<u>210,077</u>

Noncurrent Assets

Capital Assets being Depreciated, Net	191,473
Investments - Endowment	5,675
Total Assets	<u>407,225</u>

LIABILITIES*Current Liabilities*

Accounts Payable	2,497
Payroll Liabilities	1,532
Total Liabilities	<u>4,029</u>

NET POSITION

Investment in Capital Assets	191,473
<i>Restricted for:</i>	
Nonspendable - Endowment	5,675
<i>Unrestricted</i>	206,048
Total Net Position	<u>\$ 403,196</u>

**Indian River Library
Statement of Activities
For the Year Ended June 30, 2020**

<u>Programs</u>	<u>Expenses</u>	<u>Program Revenues</u>			<u>Net (I Re</u>
		<u>Charges for Services</u>	<u>Operating Grants and Contributions</u>	<u>Capital Grants and Contributions</u>	
Capital Activities:					
n and Culture	126,605	2,330	15,490	--	(
	<u>\$ 126,605</u>	<u>\$ 2,330</u>	<u>\$ 15,490</u>	<u>\$ --</u>	<u>\$</u>

General Purpose Revenues and Transfers:

Revenues

Interest Income

State Sources

Penal Fines

Property Taxes

Total General Revenues and Transfers

Change in Net Position

Net Position at Beginning of Period

Net Position at End of Period

\$

**Indian River Library
Balance Sheet
Governmental Funds
June 30, 2020**

	General
ASSETS	
Cash and Cash Equivalents	\$ 190,402
Accounts Receivable	19,675
Investments - Endowment	5,675
<i>Total Assets</i>	\$ 215,752
LIABILITIES	
Accounts Payable	\$ 2,497
Payroll Liabilities	1,532
<i>Total Liabilities</i>	4,029
FUND BALANCE	
Nonspendable	5,675
Unassigned	206,048
<i>Total Fund Balance</i>	211,723
<i>Total Liabilities and Fund Balance</i>	\$ 215,752

Indian River Library
Reconciliation of Governmental Funds Balance Sheet to the Statement of Net Position
June 30, 2020

Total Fund Balance - Governmental Funds	\$ 211,723
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.	191,473
Total Net Position-Governmental Funds	\$ <u>403,196</u>

Indian River Library
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2020

	<u>General</u>
Revenues	
Property Taxes	\$ 70,900
Penal Fines	19,675
State Sources	2,435
Grants and Contributions	15,490
Charges for Services	1,915
Fines	352
Interest Income	763
Other Revenues	63
<i>Total Revenues</i>	<u>111,593</u>
Expenditures	
Salaries and Wages	59,332
Fringe Benefits	914
Postage	3,532
Supplies	1,345
Repairs and Maintenance	5,955
Utilities	7,873
Contracted Services	4,461
Printing and Publishing	3,750
Travel and Meals	501
Telephone	4,522
Other Expenditures	5,573
Capital Outlay	10,084
<i>Total Expenditures</i>	<u>107,842</u>
<i>Excess of Revenues Over</i>	
<i>(Under) Expenditures</i>	<u>3,751</u>
<i>Net Change in Fund Balance</i>	3,751
<i>Fund Balance at Beginning of Period</i>	207,972
<i>Fund Balance at End of Period</i>	<u>\$ 211,723</u>

Indian River Library
Reconciliation of Governmental Funds Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2020

Total Net Change in Fund Balances - Governmental Funds	\$	3,751
--	----	-------

Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of these assets is allocated over their useful lives as depreciation expense. This is the amount by which current year depreciation expense of \$24,464 is in excess of capital outlay expenditures of \$8,701.

(18,763)

Changes in Net Position-Governmental Funds	\$	<u>(15,012)</u>
---	-----------	------------------------

Township of Tuscarora DDA
Statement of Net Position
June 30, 2020

ASSETS*Current Assets*

Cash and Cash Equivalents	\$ 412,417
Total Current Assets	<u>412,417</u>

Noncurrent Assets

Capital Assets being Depreciated, Net	625,992
Total Assets	<u>1,038,409</u>

LIABILITIES*Current Liabilities*

Total Liabilities	<u>\$ --</u>
--------------------------	--------------

NET POSITION

Investment in Capital Assets	625,992
<i>Unrestricted</i>	412,417
Total Net Position	<u>\$ 1,038,409</u>

**Township of Tuscarora DDA
Statement of Activities
For the Year Ended June 30, 2020**

<u>Programs</u>	<u>Expenses</u>	<u>Program Revenues</u>			<u>Net (I Re</u>
		<u>Charges for Services</u>	<u>Operating Grants and Contributions</u>	<u>Capital Grants and Contributions</u>	
General Activities:					
Community and Economic Development	\$ 105,150	\$ --	\$ --	\$ --	\$
	\$ 105,150	\$ --	\$ --	\$ --	\$

General Purpose Revenues and Transfers:

Revenues

Interest

Property Taxes

Total General Revenues and Transfers

Change in Net Position

Net Position at Beginning of Period

Net Position at End of Period

\$

**Township of Tuscarora DDA
Balance Sheet
Governmental Funds
June 30, 2020**

	General
ASSETS	
Cash and Cash Equivalents	\$ 412,417
<i>Total Assets</i>	\$ 412,417
LIABILITIES	
<i>Total Liabilities</i>	--
FUND BALANCE	
Unassigned	412,417
<i>Total Liabilities and Fund Balance</i>	\$ 412,417

Township of Tuscarora DDA
Reconciliation of Governmental Funds Balance Sheet to the Statement of Net Position
June 30, 2020

Total Fund Balance - Governmental Funds	\$ 412,417
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.	625,992
Total Net Position-Governmental Funds	\$ <u>1,038,409</u>

**Township of Tuscarora DDA
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2020**

	General
Revenues	
Property Taxes	\$ 88,329
Interest	198
<i>Total Revenues</i>	88,527
Expenditures	
Community and Economic Development	99,329
<i>Total Expenditures</i>	99,329
<i>Excess of Revenues Over (Under) Expenditures</i>	(10,802)
<i>Net Change in Fund Balance</i>	(10,802)
<i>Fund Balance at Beginning of Period</i>	423,219
<i>Fund Balance at End of Period</i>	\$ 412,417

Township of Tuscarora DDA
Reconciliation of Governmental Funds Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2020

Total Net Change in Fund Balances - Governmental Funds \$ (10,802)

Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of these assets is allocated over their useful lives as depreciation expense. This is the amount by which depreciation expense of \$30,371 is in excess of capital outlay of \$24,550 during the current year. (5,821)

Changes in Net Position-Governmental Funds \$ (16,623)



Gabridge & Company, PLC
3940 Peninsular Dr SE, Suite 200
Grand Rapids, MI 49546
Tel: 616-538-7100
Fax: 616-538-2441
gabridgeco.com

December 4, 2020

To the Board of Trustees
Township of Tuscarora, Michigan

We have audited the financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township of Tuscarora for the year ended June 30, 2020. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards and *Government Auditing Standards* as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated September 16, 2020. Professional standards also require that we communicate to you the following information related to our audit.

Significant Audit Findings

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the Township are described in Note 1 to the financial statements. We noted no transactions entered into by the Township during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the Township's financial statements were:

- Management's estimate of the useful lives of depreciable capital assets is based on the length of time it is believed that those assets will provide some economic benefit in the future.
- Management's estimate of the accrued compensated absences is based on current hourly rates and policies regarding payment of sick and vacation banks.
- The assumptions used in the actuarial valuations of the pension plans are based on historical trends and industry standards.

We evaluated the key factors and assumptions used to develop the estimates in determining that it is reasonable in relation to the financial statements taken as a whole.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated December 4, 2020.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the Township's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the Township's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Other Matters

We applied certain limited procedures to management's discussion and analysis, pension schedules, and budgetary comparison schedules, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were engaged to report on the combining statements and individual fund statements and the schedule of expenditures of federal awards, which accompany the financial statements but are not RSI. With respect to this supplementary information, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

Restriction on Use

This information is intended solely for the information and use of the Township Board of Trustees and management of the Township and is not intended to be, and should not be, used by anyone other than these specified parties.

Very truly yours,

A handwritten signature in cursive script that reads "Gabridge & Company".

Gabridge & Company, PLC
Grand Rapids, MI



Gabridge & Company, PLC
3940 Peninsular Dr SE, Suite 200
Grand Rapids, MI 49546
Tel: 616-538-7100
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INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

To the Board of Trustees
Township of Tuscarora, Michigan

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, each major fund, the aggregate discretely presented component units, and the aggregate remaining fund information of the Township of Tuscarora, Michigan (the "Township") as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Township's basic financial statements, and have issued our report thereon dated December 4, 2020.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Township's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Township's internal control. Accordingly, we do not express an opinion on the effectiveness of the Township's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Township's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The

results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in dark ink that reads "Galbridge & Company". The signature is written in a cursive, flowing style.

Grand Rapids, Michigan

December 4, 2020

Environmental Conditions

The primary health and sanitation concern that is addressed by the proposed project is the fact that the homes within proposed service area currently rely upon private wells and individual drain fields. There are environmental resources present at the project location that place constraints on septic design, of primary concern is Burt Lake and two rivers. The lake influences local groundwater table elevation for properties in the proposed service area. The high groundwater and poor soil infiltration are the primary environmental factors limiting onsite sewage disposal for many of the properties within the service area. The high groundwater level and proximity to the lake is also a situation of great concern for many of the properties that have existing onsite septic systems. Though these systems may not be in a failure mode where sewage is present at the surface, it is likely that many of the older septic systems do not adequately provide the aerobic conditions to allow for proper treatment by soil absorption systems. Further, it can be demonstrated that even on a dimensional basis, over 51% of the properties within this sewer district cannot meet the current sanitary code requirements for a conventional septic system.

Summary

The project area is generally poorly for onsite sewage disposal, based on current health code and design standards. The primary limitation is a high seasonal groundwater table and poor soil quality that prevent construction of drain fields with adequate isolation for aerobic treatment of septic tank effluent in the soil. This is a very serious concern due to the proximity of these properties to Burt Lake, Indian River, and the Sturgeon River. It is likely that untreated or partially treated septic tank effluent is reaching the groundwater and being carried to the lake. This is a health and sanitation problem for anyone that wishes to enjoy water based recreational activities in this area. This situation is well documented, with a study conducted by the DNR in 1988, where they concluded that *"There are a very large number of flowing well discharges to the rivers and storm sewers. These provide a high degree of dilution for any contamination..."* The study (see attached) determined that this dilution effect is likely the primary reason that there are not more observable impacts from the onsite septic systems. However, this is clearly not a viable long-term solution to the problem.

Similarly, in the absence of a central water distribution system, residents rely on private wells for drinking water. Due to the vulnerability of the drinking water aquifers and the high density of homes in the area, failing septic systems pose a concern to drinking water security for individual wells. The health department has previously provided a map of problem areas identified for onsite septic limitations, which is included below for reference.

Need for Project - Health & Sanitation



Health Department Area of Concern

Alternatives Description Details	
System Component Type:	Treatment
System Component Name:	WWTF Expansion
Description	
Alternative Name:	Treatment Alt 2 - Add Parallel Treatment
Is this alternate solution feasible or is it not feasible?	
Feasibility	✓ Yes

Alternative 2 - Parallel Lagoon Treatment Process

The second alternative considered for treatment of the additional wastewater flow is to add some form of parallel treatment process and keep the existing AeroMod system as-is. The reason this alternative is considered viable is because of the seasonal variation in flow within the existing and proposed service areas. The idea would be to add an aerated lagoon that would primarily be used to buffer out the peak summer flow. The lagoon would be sized to store excess flow through the summer, knock down the BOD concentrations, and meter out flow back to the existing AeroMod plant at a lower strength for reduced treatment time. The effluent would then be sent for disposal into the slightly expanded rapid infiltration beds. This would require two approximately 1.5 acre lagoons, headworks modifications, smaller expansion of the rapid infiltration beds, and controls modifications to integrate the two treatment processes.

The estimated cost to implement this alternative is similar to the expansion using the same treatment technology. However, there are other factors that make this alternative less desirable. First, the WWTF site has not been fully evaluated for suitability for the installation of lagoons. Though based on the available information, it does appear that there is a strong possibility that the site would support a lagoon. The second issue is that the existing WWTF is situated adjacent to the industrial park and the businesses within the industrial park may not be supportive of a lagoon system in their backyard, creating political issues that would need to be dealt with. Finally, the existing site approval and permitting through the State is based on the AeroMod system and the Township has been operating this system in compliance with their permit. Opening the door to additional review and permit modification adds uncertainty to the project, which for the savings is not deemed to be warranted.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Design Summary

The design parameters used for evaluation of this alternative are based on storage of excess flow during the peak summer months. The existing customer base peaks out at around 80,000 gpd. The new service area is anticipated to peak at around 70,000 gpd. Since the existing plant capacity is 96,000 gpd, the excess summer flow would be stored in lagoons at a flow of approximately 54,000 gpd for 90 days during the summer. This requires approximately 5M gallons of storage. This volume would be provided in two 1.5 acre aerated lagoons, each with a storage capacity of about 3.5M gallons.

The added benefit of reducing the wastewater strength in the aeration lagoons has not been considered as a direct cost benefit, but does factor into the overall consideration of this alternative.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Environmental Impacts Summary

There are two main environmental concerns related to the addition of aerated lagoons into the WWTF process. The first is that the lagoons create a potential disease vector created by insects, birds, and small animals that may come into contact with the lagoon and then carry contaminants off-site. The second is that the lagoons will generate sludge that will require maintenance dredging over time. This material will then have to be hauled off-site for proper disposal.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Land Requirements

The proposed addition of lagoons to the treatment process would be the most intensive land use of the alternatives being evaluated. However, the Township owns approximately 65 acres around the existing WWTF and has sufficient area for the lagoons. Please see the Parallel Treatment Schematic Layout to see how the proposed lagoons would fit into the existing property and WWTF infrastructure.

Alternatives Considered - Potential Construction Problems

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Construction Issues

The construction of lagoons and integration of these lagoons into the existing site creates the most construction uncertainty of the alternatives evaluated. The available information from review USGS maps and previous hydrogeology data prepared for the existing plant indicates that the lagoons could be properly located on the site. However, the engineers from the previous study were not specifically evaluating the site for lagoon placement and thus there is some uncertainty surrounding special construction or additional site improvement efforts that may be required to make the site suitable for the lagoon system.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Efficiency Summary

The energy efficiency of the aerated lagoon is assumed to be similar to the selected alternative (Aero-Mod package plant). There will be blowers required for aeration of the lagoon, which requires a lot of energy. However, the aeration would most likely occur only in one of the two lagoons at a time and would most likely not be run all year around. There is no proposed water recycling or reuse proposed with the project.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Green Infrastructure

There is some argument that could be made for this alternative as more sustainable or "green" than the other alternatives evaluated. The reasoning would be that the lagoons utilize a natural biological process for breakdown of the wastewater. This alternative also would allow for some evapotranspiration out of the lagoons, although this is traditionally thought to be offset by rainfall into the lagoon, the period where the parallel treatment has the most impact is usually a period of less rainfall.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Other Sustainability Issues

This alternative would leverage the existing infrastructure to reduce the overall discharge footprint and feed the mechanical plant at a more efficient rate with a lower influent wastewater strength, taking some of the peaks out of the summer flow.

Treatment

System Component Name:

WWTF
Expansion

Alternative Name:

Treatment Alt 2 - Add Parallel Treatment

Annual O&M		
Expense Item	Description	Annual Amount
Contract Waste Treatment	Contract Operations	\$87,500.00
Other	Lab, Vehicle, & Computer Cost	\$13,200.00
Utilities	Utilities	\$23,250.00
Engineering	Engineering/Legal	\$4,500.00
Repairs/Maintenance	General Repairs & Maintenance	\$10,000.00
Repairs/Maintenance	Sludge Removal	\$25,000.00
Supplies	Misc. Supplies	\$2,500.00
Insurance	Insurance/Audit	\$2,000.00
	Total:	\$167,950.00

Parallel Treatment O&M Summary

The operation of the WWTF with a parallel lagoon has some positive aspects and some negative aspects. The positive points include the fact that a lagoon requires relatively low operational oversight compared to a mechanical plant. There is also the large storage volume that would allow for repairs or emergencies to be addressed within the mechanical part of the plant with no disruption to the customers. Finally, the parallel treatment through a lagoon will lower the incoming wastewater strength and provide a more consistent flow to the mechanical plant.

The negative aspects include the requirement for an operator with both mechanical plant and lagoon experience and certifications, which in northern Michigan will further limit an already small pool of operators. The lagoon will require a whole separate set of maintenance procedures, repair parts and equipment, and oversight tasks that add to the list of requirements already being done. Finally, the lagoon will require periodic maintenance for sludge removal, which will be an ongoing cost.

Alternatives Description Details	
System Component Type:	Treatment System Component Name: WWTF Expansion
Description	
Alternative Name:	Treatment Alt 3 - New Independent WWTF
Is this alternate solution feasible or is it not feasible?	
Feasibility	No

Explanation for Lack of Feasibility

The final alternative considered for treatment and disposal of the additional wastewater flow is to construct an independent WWTF and keep the two service areas separated. This alternative was evaluated and rejected, not because of the inability to develop a new treatment and disposal site, but because there is such economy in utilizing the existing wastewater collection and conveyance system that we could never overcome that cost in the development of a new site. Primarily because there is no land available near the District 2 service area that could be utilized, therefore, a whole new conveyance system would be required to a new off-site location.

Alternative 3 - New Independent WWTF

The final alternative considered for treatment and disposal of the additional wastewater flow is to construct an independent WWTF and keep the two service areas separated. This alternative was not fully evaluated because we could not identify a suitable location for a new WWTF in close proximity to the proposed service area.

Alternatives Considered - Design Criteria

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 3 - New Independent WWTF

Alternate Site Design Criteria

The design criteria for selection of an alternate WWTF and disposal site includes many factors. However, the primary criteria for an alternate WWTF and disposal site would be to find a closer location to reduce the cost of conveyance (ie. eliminate the upgrade cost to existing lift stations), a site that has sufficient land area for both the physical WWTF and disposal components, but also the required isolation from incompatible uses, and to find a location that can safely discharge treated effluent with minimal impact to the receiving environment.

Alternatives Considered - Map

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 3 - New Independent WWTF

Alternatives Considered - Environmental Impacts

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 3 - New Independent WWTF

Alternatives Considered - Land Requirements

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 3 - New Independent WWTF

Alternatives Considered - Potential Construction Problems

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 3 - New Independent WWTF

Alternatives Considered - Water and Energy Efficiency

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 3 - New Independent WWTF

Alternatives Considered - Green Infrastructure

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 3 - New Independent WWTF

Alternatives Considered - Sustainability - Other

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 3 - New Independent WWTF

Alternatives Considered - Annual O&M

Treatment

System Component Name:

WWTF
Expansion

Alternative Name:

Treatment Alt 3 - New Independent WWTF

Annual O&M

Expense Item	Description	Annual Amount
	Total:	\$.00

Alternatives Considered - Project Costs

System Component Type:

Treatment

System Component Name:

WWTF Expansion

Alternative Name:

Treatment Alt 3 - New Independent WWTF

Construction Costs		
Item	Description	Cost
Development (Construction)		
	Total Construction	\$.00

Non Construction Costs		
Item	Description	Cost
	Total Non Construction	\$.00

Alternatives Description Details	
System Component Type:	Treatment
System Component Name:	WWTF Expansion
Description	
Alternative Name:	Treatment Alt 1 - Expansion of Existing Technology
Is this alternate solution feasible or is it not feasible?	
Feasibility	✓ Yes

Treatment Alternative 1 - Existing System Expansion Summary

The most logical solution to adding treatment capacity to the existing WWTF is to simply expand using the same treatment technology already in-place. The original plant was designed to be modular in that the AeroMod SESQUOX treatment system can be purchased in incremental (by-the-gallon) units. In the proposed project, the expansion requires an approximate doubling of the existing treatment plant capacity, therefore, another 96,000 gallon treatment package would be added and integrated into the balance of the facility controls, headworks, etc. The final disposal of the treated effluent would similarly be to groundwater through an expansion of the existing rapid infiltration beds.

The costs associated with this expansion have been calculated based on a review and analysis of the original plant construction costs, discussions and price quote from the AeroMod supplier, and cost data analysis for the integration of the new unit into the existing system. The total estimated cost to complete this WWTF upgrade is \$0.85M in Phase I, which includes the new AeroMod package, headworks modifications, upgrades to the chemical feed system, and an expansion of the rapid infiltration beds. Phase II is estimated at \$0.75M and includes the AeroMod package and rapid infiltration beds only for the Phase II discharge increase.

Alternative 3 - New WWTF Site

The final alternative considered for treatment and disposal of the additional wastewater flow is to construct an independent WWTF and keep the two service areas separated. This alternative was evaluated and rejected, not because of the inability to develop a new treatment and disposal site, but because there is such economy in utilizing the existing wastewater collection and conveyance system that we could never overcome that cost in the development of a new site. Primarily because there is no land available near the District 2 service area that could be utilized, therefore, a whole new conveyance system would be required to a new off-site location.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 1 - Expansion of Existing Technology

WWTF Expansion Design Criteria

The expansion of the WWTF using the existing treatment and disposal technology is pretty straight forward. The expansion must be able to be installed within the available land, integrate into the existing plant and controls, and produce effluent that meets or exceeds the EGLE discharge permit limitations.

The AeroMod supplier has provided the basis of design information included at the end of this Section for reference. This information has been developed from actual WWTF flow data and the original design, for which AeroMod was responsible.

Alternatives Considered - Annual O&M

Treatment

System Component Name:

WWTF
Expansion

Alternative Name:

Treatment Alt 1 - Expansion of Existing Technology

Annual O&M

Expense Item	Description	Annual Amount
Supplies	Misc. Supplies	\$4,000.00
Utilities	Utilities	\$41,500.00
Contract Waste Treatment	Contract Operation of WWTF	\$98,300.00
Insurance	Insurance/Audit	\$4,000.00
Repairs/Maintenance	Repairs & Maintenance	\$15,000.00
Other	Lab, Vehicle, & Computer Costs	\$15,400.00
Engineering	Engineering/Legal	\$7,000.00
	Total:	\$185,200.00

WWTF Operation

The overall O&M costs are provided separately. The cost for O&M of the expanded plant is separated here as 50% of the total plant annual O&M cost.

Alternatives Considered - Project Costs

System Component Type:

Treatment

System Component Name:

WWTF Expansion

Alternative Name:

Treatment Alt 1 - Expansion of Existing Technology

Construction Costs		
Item	Description	Cost
Development (Construction)	Rapid Infiltration Beds Expansion	\$80,000.00
Development (Construction)	WWTF Headworks & Integration	\$245,000.00
Development (Construction)	AeroMod Package - 96,000 gpd	\$525,000.00
	Total Construction	\$850,000.00

Non Construction Costs		
Item	Description	Cost
Contingencies	Contingency	\$85,000.00
Bond Counsel	Legal & Bond Counsel	\$8,000.00
Engineering - Design	Engineering Design through Construction	\$136,000.00
	Total Non Construction	\$229,000.00

WWTF Quote from AeroMod

Aero-Mod, Inc.

ACTIVATED SLUDGE DESIGN CALCULATIONS

Project: Tuscarora Twp, MI - Phase II
Engineer: Performance Engineering
Act. Sludge Process: SEQUOX BNR

Date: 5-Mar-19
Units: English

DESIGN CONDITIONS & PARAMETERS

	Influent	Clarifier Effluent		
Flow (Q), MGD	0.190		Aeration Basin	
BOD ₅ , mg/l	240	10.0	Retention Time, hours	24.0
BOD ₅ , lbs/day	380	15.8	Aeration Tank Volume, Mgal	0.190
BOD _L , mg/l	351		MCRT, days	18.0
TSS, mg/l	280	10.0	Wastewater Temperature, °C	8
TSS, lbs/day	444	15.8	Aerobic Digester	
Ammonia-N, mg/l	85.0	1.0	Volume, % of Aeration Tank	64.0
Ammonia-N, lbs/day	134.7	1.6	Maximum Solids Conc., mg/l	15,000
TIN, mg/l		5.0	Maximum Solids Conc., %	1.50%
TIN, lbs/day		7.9	Digester Temperature, °C	8
Phosphorus-P, mg/l	15.0	0.9 *	Sludge Holding Tank	
Phosphorus-P, lbs/day	23.8	1.4	Volume, % of Aeration Tank	65.5
Net Alkalinity Loss, mg/l as CaCO ₃		(328)	Maximum Solids Conc., mg/l	30,000
			Maximum Solids Conc., %	3.00%

* Assumes Bio-P & Chemical Addition

PROJECTED OPERATING CONDITIONS - AERATION BASIN

Mixed Liquor Suspended Solids, mg/l	3,775
Excess MLSS due to Phos-P Uptake/Removal, mg/l	214
Mixed Liquor Volatile Suspended Solids, %	67%
F/M Ratio, lbs BOD ₅ /lb MLVSS	0.09
F/M Ratio, lbs BOD ₅ /lb MLSS	0.06
Organic Loading, lbs BOD ₅ /1000 cf of tank/day	15.0
Oxygen Requirements (Carbonaceous), mg/l/hr	8.37
Oxygen Requirements (Nitrogenous), mg/l/hr	16.10
Solids Production, lbs/day	332
WAS - Solids Wasted per Day, lbs/day	317
WAS - Solids Wasted per Day, gal/day @ 0.38%	10,054

PROJECTED OPERATING CONDITIONS - AEROBIC DIGESTER

Volatile Solids Loading in Digester, lbs VSS/1,000 cf of tank/day	13
Volatile Solids Reduction in Digester, %	37%
Solids Wasted from Digester, lbs/day	237
Mass Solids Yield in Process & Digester per Mass Influent BOD ₅ , %	66%
Volume Wasted from Digester, gallons/day	1,891
Digester Sludge Age, days	64
Air Required for Stabilization, scfm	100
Air Required for Mixing @ 30 cfm/1000 cf	488

PROJECTED OPERATING CONDITIONS - SLUDGE HOLDING TANK

Thickened Sludge Age, days	133
Total Volative Solids Reduction in Digester & Sludge Holding Tank, %	40%
Solids Wasted from Sludge Holding Tank, lbs/day	233
Volume Wasted from Sludge Holding Tank, gallons/day	930

Aero-Mod, Inc.
AERATION DESIGN CALCULATIONS

Project: Tuscarora Twp, MI - Phase II
Engineer: Performance Engineering
Diffuser Type Used: Stainless Steel Coarse Bubble

Date: 5-Mar-19
Units: English

AERATION REQUIREMENTS - SECOND & THIRD STAGE

	<u>Design</u>	<u>Peak</u>
Removal in Second Stage	35%	27.5%
Oxygen Required for BOD [$Q * BOD_{rem} * 8.34 * O_2 \text{ Req.} / 24$], lbs O ₂ /hr	8.3	10.3
Oxygen Required for TKN [$Q * TKN_{rem} * 8.34 * O_2 \text{ Req.} / 24$], lbs O ₂ /hr	9.0	10.5
Actual Oxygenation Rate (AOR), lbs O₂/hr	17.4	20.9
Standard Oxygenation Rate (SOR), lbs O₂/hr	32.7	39.3

$$SOR = [(AOR * C_{s,20}) / (\alpha * \theta^{\Delta(T-20)} * (Tau * \Omega * \beta * C_{s,20} - C_L) * F)]$$

Where:	C _{s,T,H} Actual Value of D.O. Saturation, mg/l	9.08	C _L Residual D.O. Conc, mg/l	2.0
	C _{s,20} Steady State Value of D.O. Saturation, mg/l	9.08	T Temperature of Water, °C	20
	Tau Oxygen Saturation Value (C _{s,T,H} /C _{s,20})	1.000	F Diffuser Fouling Factor	1.00
	α Alpha - Oxygen Transfer Correction Factor for Waste	0.75	θ Theta - Oxygen Transfer Coeffi	1.024
	β Beta - Salinity-Surface Tension Correction Factor	0.95	Site Elevation, FASL	620
	P _H Atmospheric Pressure at Site Elevation, psi/FASL	14.37	Ω Omega (P _H /P _s)	0.978

Air Requirement = [SOR / (Oxygen Density * TE% * Diffuser Depth) / 60], scfm **271** **326**

Where:	Oxygen Density, lbs O ₂ /cf	0.0175	Diffuser Depth Below Water Surface, ft	13.5
	Transfer Efficiency per Foot of Submergence, %	0.85%		

Denitrification Credit = [Air Rqmt * (TKN_{oxy} / AOR) * 50% * ((TKN_o - TN_e) / TKN_o)], scfm 50 57

Where: TN_e = TKN_o / 2 (assumed when D.O. control is not used)

Total Aeration Required in Aeration Basin, scfm **221** **269**

Air Correction

$$icfm = scfm / [((T_{std} + 460) / (T_{air} + 460)) * ((P_H - (RH\% * SVP_{Tair})) / (14.7 - (RH\%_{std} * SVP_{std}))) * ((P_A / P_H))]$$

Where:	T _{std} , °F	68	T _{air} Maximum Air Temperature, °F	104
	RH% _{std}	36%	RH% Maximum Relative Humidity, %	90%
	SVP _{std} , psi	0.34	SVP _{Tair} Saturated Vapor Pressure of Air @ T _{air} , psi	1.058
			P _A Actual Atmospheric Pressure after Blower Inlet, psi	14.17

Minimum Air Required for Mixing in Second & Third Stage Aeration Basin, cfm 135 Side Roll

Aeration Pressure, in. H₂O 189 189
psi, std (does not include blower inlet/outlet) **6.8** **6.8**

	<u>Design</u>	<u>Peak</u>	<u>Design</u>	<u>Peak</u>
	scfm	scfm	icfm	icfm
Aeration Basin - Coarse Bubble	221	269	261	317

Aero-Mod, Inc.
CLARIFIER DESIGN CALCULATIONS

Project: Tuscarora Twp, MI - Phase II
Engineer: Performance Engineering
Clarifier Type Used: Split-ClarAstor

Date: 5-Mar-19
Units: English

FLOW CONDITIONS

Design Flow, MGD	0.190	
Peaking Factor, hourly	4.00	0.760 MGD
Duration, min	60	
Peaking Factor, sustained	2.00	0.380 MGD
Aeration Tank Volume, Mgal	0.190	
MLSS, mg/l	3,775	
Avg. RAS Recycle Rate, %	150%	

EQUIPMENT SIZING & SELECTION

Number of Clarifiers	4	Surface Area per Clarifier, sf	192
Clarifier Unit Model	12192	Total Surface Area, sf	768
Bridge Length, ft	12	Total Weir Length, ft	84
Clarifier Unit Width, ft	16	Tank Wall Depth, ft	16.0
Number of Units per Clarifier	1	Tank Water Depth, ft	14.0

SURFACE OVERFLOW RATE

	<u>Design</u>
Design Flow, gpd/sf	247
Peak Day Flow, gpd/sf	495
Peak Hour Flow, gpd/sf	990
Max. Flow Allowed Through Clarifier Orifice, gpd/sf	1,000 * Max allowed to leave clarifier

WEIR OVERFLOW RATE

Design Flow, gpd/lin. ft	2,262
Peak Flow, gpd/lin. ft	9,048

SOLIDS LOADING RATE

Design Flow, lbs/day/sf	19.5
Peak Flow, lbs/day/sf	42.8

RETENTION TIME - including RAS

Design Flow, hr	4.1
Peak Flow, hr	1.8

Aero-Mod, Inc.
TANKAGE DESIGN CALCULATIONS

Project: Tuscarora Twp, MI - Phase II
Engineer: Performance Engineering
Tank Construction: Cast-in-Place Concrete

Date: 5-Mar-19
Units: English

BIO-P / SELECTOR TANK

Fermentation	Volume Required, gal	10,556	
Number of Tanks	2	Tank Length, ft	7.42
Tank Wall Height, ft	16.0	Tank Width, ft	7.50
Tank Water Depth, ft	14.0	Total Volume, gallons	11,650
Freeboard, ft	2.0	Retention Time, min.	88
Anaerobic Selector	Volume Required, gal	10,556	
Number of Tanks	2	Tank Length, ft	7.42
Tank Wall Height, ft	16.0	Tank Width, ft	7.50
Tank Water Depth, ft	14.0	Total Volume, gallons	11,650
Freeboard, ft	2.0	Retention Time (Design + RAS), min.	35

AERATION TANK

	Volume Selected, gal	190,032	
Tank Wall Height, ft	16.0	Number of Trains	2
Tank Water Depth, ft	14.0	Number of Stages	2
	<u>Stage 1</u>	<u>Stage 2</u>	
Number of Tanks	4	Number of Tanks	4
Tank Length, ft	13.00	Tank Length, ft	30.17
Tank Width, ft	16.33	Tank Width, ft	8.00
Area of Each Tank, sf	212	Area of Each Tank, sf	241
Total Volume, gallons	88,942	Total Volume, gallons	101,090
	Total volume provided, gal	190,032	

CLARIFIER TANK

Number of Tanks	4	Tank Length, ft	12.0
Tank Wall Height, ft	16.0	Tank Width, ft	16.0
Tank Water Depth, ft	14.0	Total Volume, gallons	80,425

AEROBIC DIGESTER TANK

	Volume Selected, gal	121,692	
Number of Tanks	4	Tank Length, ft	25.5
Tank Wall Height, ft	16.0	Tank Width, ft	11.0
Tank Water Depth, ft	14.5	Total Volume, gallons	121,692

SLUDGE HOLDING TANK

	Volume Selected, gal	124,476	
Number of Tanks	2	Tank Length, ft	52.17
Tank Wall Height, ft	16.0	Tank Width, ft	14.5
Tank Water Depth, ft	14.5	Total Volume, gallons	164,082

OVERALL TANKAGE DIMENSIONS - New

Total Length, ft	60.33	Wall Thickness, in	14.0
Total Width, ft	53.33	Floor Thickness, in	18.0
Total Area, sf	3,218	Total Concrete for Walls, cy	295
Total Wall Length, LF	427	Total Concrete for Slab, cy	192
		Total Grout for Clarifier, cy	18

Aero-Mod, Inc.
EQUIPMENT AND SERVICES COST ESTIMATE

Project: Tuscarora Twp, MI - Phase II
Engineer: Performance Engineering

Date: 5-Mar-19
Units: English

EQUIPMENT SUPPLIED

AERATION EQUIPMENT

- 2 Aeration pd blower/sound enclosure package, 75 HP - 460 V, 3 ph
- 4 SEQUOX aeration control butterfly valve, pneumatically-actuated
- 4 SEQUOX aeration throttling butterfly valve, gear-operated
- 2 Aeration throttling butterfly valve, gear-operated
- 6 Wall mounted aeration assembly, Model WA-PF6-2 - First Stage Aeration Basins
- 6 Diffuser header for PF6 assembly - First Stage Aeration Basins
- 10 Wall mounted aeration assembly, Model WA-HS2-2 - Second Stage Aeration Basins

BIO-P EQUIPMENT

- 1 Wall mounted aeration assembly, Model WAD-HSS2
- 1 Wall mounted aeration assembly, Model WAD-HSS2A
- 1 Bio-P Submersible Mixer - ___ HP - 230/460 V, 3 ph - Anaerobic Selector Zone

CLARIFIER & RAS EQUIPMENT

- 2 Aero-Mod Split-ClarAtoR Clarifier System - 192 sf/each
- 2 Algae Control Transducer - 115V

DIGESTION, SLUDGE HOLDING & WAS EQUIPMENT

- 2 WAS airlift pump, Model AL-400
- 2 Aeration control butterfly valve, pneumatically-actuated
- 2 Aeration control butterfly valve, gear-operated
- 6 Wall mounted aeration assembly, Model WAD-HS2-2
- 2 WAS airlift pump, Model AL-400L

ELECTRICAL & CONTROLS EQUIPMENT

- 1 SEQUOX Process Control Panel, Model SQC-200-RTU - 115 V
- 2 Blower control panel w/ Allen Bradley 6-pulse VFD - 460 V, 3 ph
- 1 D.O. Control System - probe analyzer w/ 2 rail-mounted DO probes
- 1 Bio-P Submersible Mixer control panel - 230/460 V, 3 ph

ANCILLARY EQUIPMENT

- 131 Wall mounted walkway & handrail, LF
- 2 Wall mounted stop plates & frames
- LS Spare Parts
- LS Interior tank installation materials - SS brackets, SS bolts, PVC wall inserts, pneumatic tubing, misc.

SERVICES

- LS Freight to jobsite
- LS Aero-Mod equipment dry inspection/equipment start-up & training, two (2) days
- LS Aero-Mod biological training, two (2) days
- LS Operator training school - 2 days at Aero-Mod facilities in Manhattan, KS

TOTAL EQUIPMENT COST =====
\$469,300

EST'D INSTALLATION of Aero-Mod EQUIPMENT by Contractor \$105,000
(Includes Interior Tank PVC Piping)

ESTIMATED CONCRETE TANK COST by Contractor \$380,000

Concrete for Tank Walls, cy	295	
Installed Concrete Cost, \$/cy	\$800	
Concrete for Tank Slab, cy	192	
Installed Concrete Cost, \$/cy	\$700	
Grout for Clarifier Bottom, cy	18	
Installed Concrete Cost, \$/cy	\$550	

ESTIMATED COST =====
\$954,300

PLEASE NOTE THE FOLLOWING

1. Buildings, site work, and auxiliary equipment are not included within this estimate.
2. No RAS pump station and associated electrical requirements are required.
3. Yard piping is not required between each Aero-Mod tank.
4. All associated walkways & handrail for the clarifier and tankage are included in the above estimate.
5. This estimate is valid for 90 days from the above date.

WWTF Expansion Cost Summary

The proposed expansion of the WWTF using the existing treatment and disposal technology is the selected alternative for many reasons. One of which is the fact that the costs associated with this alternative are readily quantifiable and have a low risk of unforeseen issues. This treatment and disposal alternative is incorporated into the more detailed cost analysis provided for the project as a whole.

Alternatives Description Details	
System Component Type:	Collection
System Component Name:	Collection Sewer Expansion
Description	
Alternative Name:	Alternative 3 - Low Pressure Sewer
Is this alternate solution feasible or is it not feasible?	
Feasibility	✓ Yes

Alternative 3 - LPS Description

The Low Pressure Sewer (LPS) alternative is an evaluation of a collection system that utilizes individual grinder pumps to send wastewater directly from the point of generation into a forcemain. The primary benefit of this system is that the forcemain is relatively small diameter piping and can be installed at a minimum depth to prevent freezing, going up and down to follow the terrain. In the case of the District 2 service area, some of the sewer could be installed with directional drilling technology to minimize surface disturbance and the associated costs. This would also reduce the construction complications associated with the installation of deeper pipe in areas of high groundwater conditions.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Design Summary

The Township directed the preliminary engineering study to evaluate any and all possible technologies and methods for providing sewer service to the proposed sewer District at the lowest cost to the resident. Taking this broad direction, many collection system options were evaluated. The design criteria associated with this alternative was not selected, but included the following:

- All residences will be provided with a 1.5-inch pressure sewer lead to their property;
- Run the forcemain piping within the road right-of-ways maintaining minimum depth to prevent freezing;
- Directionally drill as much of the forcemain as possible to minimize surface disturbance costs;
- The owners within the pressure sewer area will be provided with individual pumping equipment and connected.

The rationale behind this design criteria is to provide each customer with a low pressure sewer connection at the lowest possible cost to the project as a whole. This alternative creates a larger upfront individual connection cost, primarily associated with their purchase of a private grinder pump stations meeting the Township's design criteria.

Alternatives Considered - Map

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Map

A full-size map of the proposed low pressure sewer network and associated pumping stations is included for reference as an appendix to this report.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Environmental Impacts

The primary environmental impacts associated with this alternative are that it will require construction in areas that are near water bodies, it will require dewatering, and it will involve boring under water bodies. Each of these impacts are further addressed below:

The bulk of the construction will take place within road right-of-ways where staging of excavated soil and restoration of disturbed ground will require special attention to ensure that this material is not eroded or otherwise discharged to adjacent ditches and stormwater conveyance systems that could ultimately impact the receiving waters of the Sturgeon River, the Indian River, or Burt Lake. Soil erosion controls will include silt fencing, a stockpile management plan, and/or transport of excavation spoils off-site, as appropriate.

Where dewatering is required, control of the discharged groundwater poses a potential for erosion and possible direct discharge of sediment to the receiving water bodies. The impact of the dewatering activities will be mitigated by reducing the discharge velocity to non-erosive levels before release from the construction zone, use of well points for a more constant, but lower discharge flow rate, and the use of silt or sediment bags, as appropriate.

Finally, where it is necessary to cross the Sturgeon River or Indian River with a sewer pipe, this crossing will be done with directional drilling technology. This technology allows for the construction to proceed while tracking the actual location and depth of the pipe. A minimum of 5-foot depth below the river bottom will be maintained to prevent the accidental release of drilling fluids. This process may require permitting from the State and any additional permit requirements will be incorporated into the project.

Alternatives Considered - Land Requirements

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Land Requirements

Since all project construction will occur within the road right-of-ways, there is no additional land requirement.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Efficiency Summary

There is no potential for water reuse or efficiency and limited ability for energy efficiency associated with this alternative because the only power consumption is associated with the pumping stations.

Alternatives Considered - Green Infrastructure

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Green Infrastructure Summary

There is not much opportunity for green infrastructure either with this alternative, or in comparison to the other alternatives.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion
Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Sustainability Summary

There is not much opportunity for sustainability measures associated with the collection system construction either independently, or in comparison between the alternatives. Although, there could be a case made that this alternative has some advantage in operational simplicity for the Township by placing the individual pumping equipment on the actual owners property and allowing them to essentially operate it, providing only maintenance and emergency response services.

Alternatives Considered - Annual O&M

Collection

System Component Name:

Collection Sewer
Expansion

Alternative Name:

Alternative 3 - Low Pressure Sewer

Annual O&M		
Expense Item	Description	Annual Amount
Contract Services - Other	Contract Operations - Collection System	\$24,000.00
Utilities	Utilities	\$8,000.00
Repairs/Maintenance	Repairs & Maintenance	\$8,000.00
	Total:	\$40,000.00

Alternative 3 - LPS O&M Summary

The operation and maintenance costs associated with this alternative are quite low for the Township in comparison to the other alternatives because all of the pumping equipment is owned and maintained by the customers. The exception being the two municipality owned lift stations, pumping back to the existing collection sewer system.

Alternatives Considered - Project Costs

System Component Type:

Collection

System Component Name:

Collection Sewer Expansion

Alternative Name:

Alternative 3 - Low Pressure Sewer

Construction Costs

Item	Description	Cost
Development (Construction)	Construction Cost	\$4,645,000.00
	Total Construction	\$4,645,000.00

Non Construction Costs

Item	Description	Cost
Contingencies	Contingencies - 10%	\$464,000.00
Engineering - Construction Administration	Engineering Construction Oversight & Contract Admin - 8%	\$372,000.00
Legal Services	Legal & Bond Counsel	\$102,000.00
Engineering - Design	Engineering Design, Survey, & Contract/Bid Docs - 8%	\$371,000.00
	Total Non Construction	\$1,309,000.00

Alternatives Considered - Project Costs

**Alternative 3 LPS Cost Summary
DISTRICT 2 - PHASE I - LOW PRESSURE SEWER**

ENGINEERS EST 3/19/21

<u>No.</u>	<u>Unit</u>	<u>Description</u>	<u>TOTAL</u>	<u>Unit Price</u>	<u>Amount</u>
1	LS	MOBILIZATION, MAX. ____	1.0	\$ 250,000.00	\$ 250,000.00
2	LS	TRAFFIC CONTROL	1.0	\$ 35,000.00	\$ 35,000.00
3	LS	CONSTRUCTION STAKING SP	1.0	\$ 25,000.00	\$ 25,000.00
4	STA	MACHINE GRADING, MOD	27.5	\$ 1,250.00	\$ 34,375.00
5	FT	CULV, REM, LESS THAN 24 INCH	320.0	\$ 5.00	\$ 1,600.00
6	FT	CURB AND GUTTER, REM	200.0	\$ 3.50	\$ 700.00
7	SYD	HMA, SURFACE, REM	1,500.0	\$ 4.00	\$ 6,000.00
8	SYD	HMA, SURFACE, PULVERIZE	7,133.0	\$ 2.25	\$ 16,049.25
9	SYD	PAVT, REM	200.0	\$ 12.50	\$ 2,500.00
10	EA	SIGN, TYPE III, ERECT, SALV	25.0	\$ 100.00	\$ 2,500.00
11	SYD	AGGREGATE BASE, REPLACE ONSITE MATERIALS, 6 INCH	5,000.0	\$ 2.50	\$ 12,500.00
12	SYD	AGGREGATE BASE, 6 INCH	3,600.0	\$ 13.25	\$ 47,700.00
13	SYD	SHOULDER CL II, 4 INCH	200.0	\$ 13.25	\$ 2,650.00
14	CYD	SUBGRADE UNDERCUTTING, TYPE II	800.0	\$ 22.00	\$ 17,600.00
15	FT	CULV, CL B, 12 INCH	320.0	\$ 25.00	\$ 8,000.00
16	FT	DEWATERING SYSTEM, TRENCH, WELL POINTS	1,600.0	\$ 22.00	\$ 35,200.00
17	FT	DEWATERING SYSTEM, TRENCH, OTHER	2,500.0	\$ 12.00	\$ 30,000.00
18	FT	SEWER, HPDE (SDR-11), 1 1/2 INCH	8,100.0	\$ 13.50	\$ 109,350.00
19	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 1 1/2 INCH	9,720.0	\$ 37.00	\$ 359,640.00
20	FT	SEWER, HPDE (SDR-11), 2 INCH	377.0	\$ 21.00	\$ 7,917.00
21	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 2 INCH	7,055.4	\$ 48.00	\$ 338,659.20
22	FT	SEWER, HPDE (SDR-11), 3 INCH	1,707.9	\$ 23.50	\$ 40,135.65
23	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 3 INCH	3,514.2	\$ 61.00	\$ 214,366.20
24	FT	SEWER, HPDE (SDR-11), 4 INCH	609.5	\$ 28.00	\$ 17,066.00
25	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 4 INCH	1,673.3	\$ 70.00	\$ 117,131.00
31	EA	SAN SERVICE, PRESSURE	162.0	\$ 800.00	\$ 129,600.00
34	EA	SAN STRUCTURE, 60 INCH DIA., AIR RELIEF	2.0	\$ 13,500.00	\$ 27,000.00
35	EA	SAN STRUCTURE, 60 INCH DIA., CLEANOUT	3.0	\$ 11,200.00	\$ 33,600.00
36	EA	SAN STRUCTURE, 24 INCH DIA., CLEANOUT	16.0	\$ 2,950.00	\$ 47,200.00
37	EA	GATE VALVE AND BOX, 2 INCH	2.0	\$ 3,000.00	\$ 6,000.00
38	EA	GATE VALVE AND BOX, 3 INCH	6.0	\$ 4,100.00	\$ 24,600.00
39	EA	GATE VALVE AND BOX, 4 INCH	12.0	\$ 5,200.00	\$ 62,400.00
40	EA	LIFT STATION - A	-	\$ 175,000.00	\$ -
41	EA	LIFT STATION - B	-	\$ 58,500.00	\$ -
42	EA	SAN TIE INTO EX. STRUCTURE, COMPLETE	1.0	\$ 7,500.00	\$ 7,500.00
43	EA	PUMP STATION, INDIVIDUAL, COMPLETE	162.0	\$ 12,500.00	\$ 2,025,000.00
44	EA	LIFT STATION, UPGRADES, COMPLETE	1.0	\$ 210,000.00	\$ 210,000.00
45	LS	TREATMENT PLANT	1.0	\$ 850,000.00	\$ 850,000.00
46	FT	CURB AND GUTTER, CONC, DET C4	200.0	\$ 22.00	\$ 4,400.00
48	SYD	DRIVEWAY, NONREINF CONC, 6 INCH	200.0	\$ 52.00	\$ 10,400.00
49	TON	HMA, 4E1, MOD, TOP	1,838.0	\$ 120.00	\$ 220,560.00
50	LS	SITE RESTORATION	1.0	\$ 105,000.00	\$ 105,000.00

TOTAL PROJECT \$ 5,494,899.30

ENGINEERING, SURVEY, & CONTRACT ADMIN (16%) \$ 879,183.89

LEGAL & BOND COUNSEL (2%) \$ 109,897.99

TOTAL PROJECT COSTS \$ 6,483,981.17

10% CONTINGENCY \$ 549,489.93

TOTAL PROJECT COST ESTIMATE \$ 7,033,471.10

Alternative 3 - LPS Project Cost Summary

The total estimated cost to provide low pressure sewer service to each customer is \$5.9M.

Alternatives Description Details	
System Component Type:	Collection
System Component Name:	Collection Sewer Expansion
Description	
Alternative Name:	Alternative 4 - Vacuum Sewer
Is this alternate solution feasible or is it not feasible?	
Feasibility	No

Explanation for Lack of Feasibility

The use of vacuum sewer systems are uncommon in our region, but at the direction of the Township Board, this form of sewer collection was investigated. The results of our research found a supplier of vacuum sewer equipment in Michigan and we reached out to find additional information. The information that was provided indicates that the homeowners will have to install equipment within their property for the proper function of the system. In conjunction with the high groundwater conditions in much of the service area, we deemed this alternative to be not technically feasible. The primary reason being that the Township does not want to install equipment for the proper function of the sewer system on each customer's private property, which requires us to first obtain easements and/or legal agreements. The logistics of the installation and overall cost of the facilities, in conjunction with the Township's desire to stay out of the private property led us to deem this alternative as not viable.

Alternative 4 - Vacuum Sewer Description

An alternative utilizing vacuum sewer technology was evaluated for the collection system. The alternative was deemed to be not technically feasible.

Alternatives Description Details	
System Component Type: Collection	System Component Name: Collection Sewer Expansion
Description	
Alternative Name: Alternative 1 - Gravity Services	
Is this alternate solution feasible or is it not feasible?	
Feasibility	✓ Yes

Gravity Services Summary

The Township desires to be able to offer every resident connecting to the sewer with a gravity sewer lead as the most preferred sewer service method. In the Phase I residential area west of District 1 and north of Mack Ave, typical gravity sewer collection infrastructure is proposed. Since the terrain along the Indian River shoreline area is relatively flat, low-lying ground, construction of gravity collection system infrastructure became too costly in these areas. Therefore, this alternative includes some force main piping and duplex pumping stations that will be installed in the right-of-way and owned by the Township to serve these residents. The residents will then be provided with a gravity service lead that connects to the Township duplex pumping station. In this way, all residents are being treated equal in terms of no one being required to supply their own pumping equipment.

Similarly, the Phase II residential area between Mack Ave and the Sturgeon River would mostly have gravity sewer, with Township owned grinder pump stations in the right-of-way serving the lower lying areas around the Sturgeon Island shoreline.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Design Criteria

The Township directed the preliminary engineering study to evaluate any and all possible technologies and methods for providing sewer service to the proposed sewer District at the lowest cost to the resident. Taking this broad direction, many collection system options were evaluated. After much discussion and public comment, the Township heavily weighed in favor of an alternative that does not require the homeowner to own a pump and have the ongoing responsibility for maintenance of their own equipment, preferring instead to have Township ownership of any pumping equipment. Therefore, the design criteria associated with this alternative came down to the following:

- Provide typical 8-inch gravity sewer main & 6-inch service leads everywhere that is technically feasible;
- Where terrain or groundwater conditions limit the feasibility of typical gravity sewer, forcemain piping will be installed;
- All residences on the forcemain route will be provided with a 6-inch gravity sewer lead to their property;
- The gravity sewer leads will then connect to Township owned duplex pumping stations installed in the right-of-way, which in turn will pump to the forcemain portions of the collection system;

The rationale behind this design criteria is that all customers are treated similarly in upfront costs. Instead of requiring the Sturgeon Island and Columbus Beach Club property owners to purchase and install their own private pumping equipment, the cost of any pumping stations will be spread out over all the users.

Alternatives Considered - Map

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Map

A full-size map of the proposed Phase I and Phase II, District 2 service area and collection system using the Township pump ownership model is included for reference in the appendices.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion
Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Environmental Impacts

The primary environmental impacts associated with this alternative are construction in areas that are near water bodies, it will require dewatering, and it will involve boring under water bodies. Each of these impacts are further addressed below:

The bulk of the construction will take place within road right-of-ways where staging of excavated soil and restoration of disturbed ground will require special attention to ensure that this material is not eroded or otherwise discharged to adjacent ditches and stormwater conveyance systems that could ultimately impact the receiving waters of the Sturgeon River, the Indian River, or Burt Lake. Soil erosion controls will include silt fencing, a stockpile management plan, and/or transport of excavation spoils off-site, as appropriate.

Where dewatering is required, control of the discharged groundwater poses a potential for erosion and possible direct discharge of sediment to the receiving water bodies. The impact of the dewatering activities will be mitigated by reducing the discharge velocity to non-erosive levels before release from the construction zone, use of well points for a more constant, but lower discharge flow rate, and the use of silt or sediment bags, as appropriate.

Finally, where it is necessary to cross the Sturgeon River or Indian River with a sewer pipe, this crossing will be done with directional drilling technology. This technology allows for the construction to proceed while tracking the actual location and depth of the pipe. A minimum of 5-foot depth below the river bottom will be maintained to prevent the accidental release of drilling fluids. This process may require permitting from the State and any additional permit requirements will be incorporated into the project.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Land Requirements

The collection system for this alternative will be installed within existing road right-of-ways and will not require any additional land.

Alternatives Considered - Water and Energy Efficiency

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Efficiency

There is not really much opportunity for energy efficiency or water conservation associated with the collection system construction either independently, or in comparison between the alternatives.

Alternatives Considered - Green Infrastructure

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Green Infrastructure

There is not really much opportunity for green infrastructure associated with the collection system construction either independently, or in comparison between the alternatives.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Sustainability

There is not really much opportunity for sustainability measures associated with the collection system construction either independently, or in comparison between the alternatives. Although, there could be a case made that this alternative has some advantage in operational simplicity for the homeowners associated with the Township taking responsibility for all of the pumping equipment.

Collection

System Component Name:

Collection Sewer Expansion

Alternative Name:

Alternative 1 - Gravity Services

Annual O&M		
Expense Item	Description	Annual Amount
Contract Services - Other	Contract Operations - Collection System	\$27,000.00
Utilities	Utilities	\$8,500.00
Repairs/Maintenance	Repairs & Maintenance	\$10,000.00
	Total:	\$45,500.00

Alternative 1 - Gravity Services O&M

The costs associated with providing gravity services to all homes will require the Township to take on the utility costs associated with the pumping stations, all of the routine maintenance activities, as well as all repair costs. The bulk of the costs are associated with the duplex pumping stations and the larger lift stations, with the routine maintenance of the gravity collection system being relatively inexpensive.

Alternatives Considered - Project Costs

System Component Type:

Collection

System Component Name:

Collection Sewer Expansion

Alternative Name:

Alternative 1 - Gravity Services

Construction Costs

Item	Description	Cost
Development (Construction)	Construction Costs	\$4,351,000.00
	Total Construction	\$4,351,000.00

Non Construction Costs

Item	Description	Cost
Engineering - Design	Design Engineering, Survey, Contract/Bid docs - 8%	\$348,000.00
Legal Services	Legal & Bond Counsel	\$70,000.00
Contingencies	Contingencies - 10%	\$435,000.00
Engineering - Construction Administration	Engineering, Construction Oversight & Contract Admin - 8%	\$348,000.00
	Total Non Construction	\$1,201,000.00

Alternatives Considered - Project Costs

PROPOSED SEWER DISTRICT 2 - PHASE I - NORTH

ENGINEERS EST 03/18/21

<u>Unit</u>	<u>Description</u>	<u>TOTAL</u>	<u>Unit Price</u>	<u>Amount</u>
LS	MOBILIZATION, MAX. _____	1.0	\$ 250,000.00	\$ 250,000.00
LS	TRAFFIC CONTROL	1.0	\$ 35,000.00	\$ 35,000.00
LS	CONSTRUCTION STAKING SP	1.0	\$ 25,000.00	\$ 25,000.00
STA	MACHINE GRADING, MOD	10.9	\$ 3,250.00	\$ 35,425.00
FT	CULV, REM, LESS THAN 24 INCH	300.0	\$ 5.00	\$ 1,500.00
FT	CURB AND GUTTER, REM	500.0	\$ 3.50	\$ 1,750.00
SYD	HMA, SURFACE, REM	6,200.0	\$ 4.00	\$ 24,800.00
SYD	HMA, SURFACE, PULVERIZE	24,300.0	\$ 2.25	\$ 54,675.00
SYD	PAVT, REM	500.0	\$ 12.50	\$ 6,250.00
EA	SIGN, TYPE III, ERECT, SALV	30.0	\$ 100.00	\$ 3,000.00
SYD	AGGREGATE BASE, REPLACE ONSITE MATERIALS, 6 INCH	21,300.0	\$ 2.50	\$ 53,250.00
SYD	AGGREGATE BASE, 6 INCH	6,200.0	\$ 13.25	\$ 82,150.00
SYD	SHOULDER CL II, 4 INCH	1,500.0	\$ 13.25	\$ 19,875.00
CYD	SUBGRADE UNDERCUTTING, TYPE II	750.0	\$ 22.00	\$ 16,500.00
FT	CULV, CL B, 12 INCH	300.0	\$ 25.00	\$ 7,500.00
FT	DEWATERING SYSTEM, TRENCH, WELL POINTS	3,700.0	\$ 22.00	\$ 81,400.00
FT	DEWATERING SYSTEM, TRENCH, OTHER	8,720.0	\$ 12.00	\$ 104,640.00
FT	SEWER, HPDE (SDR-11), 1 1/2 INCH	-	\$ 13.50	\$ -
FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 1 1/2 INCH	300.0	\$ 37.00	\$ 11,100.00
FT	SEWER, HPDE (SDR-11), 2 INCH	800.0	\$ 21.00	\$ 16,800.00
FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 2 INCH	3,000.0	\$ 48.00	\$ 144,000.00
FT	SEWER, HPDE (SDR-11), 3 INCH	1,650.0	\$ 23.50	\$ 38,775.00
FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 3 INCH	700.0	\$ 61.00	\$ 42,700.00
FT	SEWER, HPDE (SDR-11), 4 INCH	1,400.0	\$ 28.00	\$ 39,200.00
FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 4 INCH	2,250.0	\$ 70.00	\$ 157,500.00
FT	SEWER SERVICE, PVC (SDR-26), 6 INCH	12,015.0	\$ 18.50	\$ 222,277.50
FT	SEWER, PVC (SDR-26), 8 INCH	12,550.0	\$ 58.50	\$ 734,175.00
EA	SEWER CLEANOUT, 6 INCH	6.0	\$ 235.00	\$ 1,410.00
EA	SAN STRUCTURE, 48 INCH DIA.	33.0	\$ 4,800.00	\$ 158,400.00
EA	SAN STRUCTURE, 60 INCH DIA., AIR RELIEF	2.0	\$ 13,500.00	\$ 27,000.00
EA	SAN STRUCTURE, 60 INCH DIA., CLEANOUT	4.0	\$ 11,200.00	\$ 44,800.00
EA	SAN STRUCTURE, 24 INCH DIA., CLEANOUT	8.0	\$ 2,950.00	\$ 23,600.00
EA	GATE VALVE AND BOX, 2 INCH	6.0	\$ 3,000.00	\$ 18,000.00
EA	GATE VALVE AND BOX, 3 INCH	3.0	\$ 4,100.00	\$ 12,300.00

At 1 Gravity Services Cost Summary

4.057

Alternative 1 - Gravity Services

The total cost for providing gravity services to all the properties is about \$5.5M.

Alternatives Description Details	
System Component Type:	Collection
System Component Name:	Collection Sewer Expansion
Description	
Alternative Name:	Alternative 2 - Gravity & FM Hybrid
Is this alternate solution feasible or is it not feasible?	
Feasibility	✓ Yes

Alternative 2 - Gravity & FM Hybrid

This alternative encompasses the same traditional gravity sewer collection system for the residential area between the rivers as Alternative 1, but low pressure sewer (LPS) service would be utilized for the lower lying areas around the shoreline. The connections to the LPS would be made through individual grinder pump stations, these would be owned by the municipality. This project is still over 80% gravity sewer connections, with the lower terrain around the Burt Lake shoreline being served with individual pumps and low pressure sewer connections. It is understood that this alternative requires additional easements for situating an individual grinder pump package on the property.

Alternatives Considered - Map

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 2 - Gravity & FM Hybrid

Alternative 2 - Gravity & FM Hybrid

A full-size map of the proposed gravity sewer and forcemain hybrid service area plan is included in the appendices for reference.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 2 - Gravity & FM Hybrid

Alternative 2 - Gravity & FM Hybrid Land Requirements

All of the sewer mains and public collection system components will be installed within the road right-of-ways, there is no additional land requirement. The down-side to this alternative is that there are approximately 24 residences that would be served by individual grinder pump stations. The installation of this equipment on private property will require easements and/or appropriate agreements in order to complete the work. Since this is not the selected alternative, these easements have not been pursued.

Collection

System Component Name:

Collection Sewer Expansion

Alternative Name:

Alternative 2 - Gravity & FM Hybrid

Annual O&M		
Expense Item	Description	Annual Amount
Contract Services - Other	Contract Operations - Collection System	\$26,000.00
Repairs/Maintenance	Repairs & Maintenance	\$7,500.00
Utilities	Utilities	\$3,500.00
	Total:	\$37,000.00

Alternative 2 - Gravity & FM Hybrid O&M Cost Summary

The costs associated with the gravity sewer are minimal. The main cost items are associated with the weekly inspections and maintenance activities at the pumping stations. The maintenance of the individual grinder pumps requires some additional costs, but can be managed along with the larger lift stations and ancillary forcemain equipment.

Alternatives Considered - Project Costs

System Component Type:

Collection

System Component Name:

Collection Sewer Expansion

Alternative Name:

Alternative 2 - Gravity & FM Hybrid

Construction Costs

Item	Description	Cost
Development (Construction)	Construction Costs	\$4,112,000.00
	Total Construction	\$4,112,000.00

Non Construction Costs

Item	Description	Cost
Engineering - Design	Design Engineering, Survey, Contract/Bid docs - 8%	\$328,000.00
Legal Services	Legal & Bond Counsel	\$66,000.00
Contingencies	Contingency - 10%	\$411,000.00
Engineering - Construction Administration	Engineering, Construction Oversight, & Contract Admin - 8%	\$329,000.00
	Total Non Construction	\$1,134,000.00

Alternatives Considered - Project Costs

DISTRICT 2 - PHASE I - HYBRID GRAVITY - LPS

ENGINEERS EST 03/18/21

<u>No.</u>	<u>Unit</u>	<u>Description</u>	<u>TOTAL</u>	<u>Unit Price</u>	<u>Amount</u>
1	LS	MOBILIZATION, MAX. ____	1.0	\$ 250,000.00	\$ 250,000.00
2	LS	TRAFFIC CONTROL	1.0	\$ 35,000.00	\$ 35,000.00
3	LS	CONSTRUCTION STAKING SP	1.0	\$ 25,000.00	\$ 25,000.00
4	STA	MACHINE GRADING, MOD	6.8	\$ 3,250.00	\$ 22,100.00
5	FT	CULV, REM, LESS THAN 24 INCH	850.0	\$ 5.00	\$ 4,250.00
6	FT	CURB AND GUTTER, REM	200.0	\$ 3.50	\$ 700.00
7	SYD	HMA, SURFACE, REM	2,200.0	\$ 4.00	\$ 8,800.00
8	SYD	HMA, SURFACE, PULVERIZE	18,500.0	\$ 2.25	\$ 41,625.00
9	SYD	PAVT, REM	600.0	\$ 12.50	\$ 7,500.00
10	EA	SIGN, TYPE III, ERECT, SALV	35.0	\$ 100.00	\$ 3,500.00
11	SYD	AGGREGATE BASE, REPLACE ONSITE MATERIALS, 6 INCH	13,000.0	\$ 2.50	\$ 32,500.00
12	SYD	AGGREGATE BASE, 6 INCH	5,500.0	\$ 13.25	\$ 72,875.00
13	SYD	SHOULDER CL II, 4 INCH	500.0	\$ 13.25	\$ 6,625.00
14	CYD	SUBGRADE UNDERCUTTING, TYPE II	500.0	\$ 22.00	\$ 11,000.00
15	FT	CULV, CL B, 12 INCH	850.0	\$ 25.00	\$ 21,250.00
16	FT	DEWATERING SYSTEM, TRENCH, WELL POINTS	1,880.0	\$ 22.00	\$ 41,360.00
17	FT	DEWATERING SYSTEM, TRENCH, OTHER	4,600.0	\$ 12.00	\$ 55,200.00
18	FT	SEWER, HPDE (SDR-11), 1 1/2 INCH	2,325.0	\$ 13.50	\$ 31,387.50
19	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 1 1/2 INCH	6,975.0	\$ 37.00	\$ 258,075.00
20	FT	SEWER, HPDE (SDR-11), 2 INCH	-	\$ 21.00	\$ -
21	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 2 INCH	3,000.0	\$ 48.00	\$ 144,000.00
22	FT	SEWER, HPDE (SDR-11), 3 INCH	1,200.0	\$ 23.50	\$ 28,200.00
23	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 3 INCH	3,300.0	\$ 61.00	\$ 201,300.00
24	FT	SEWER, HPDE (SDR-11), 4 INCH	600.0	\$ 28.00	\$ 16,800.00
25	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 4 INCH	2,200.0	\$ 70.00	\$ 154,000.00
26	FT	SEWER SERVICE, PVC (SDR-26), 6 INCH	5,600.0	\$ 18.50	\$ 103,600.00
27	FT	SEWER, PVC (SDR-26), 8 INCH	6,850.0	\$ 58.50	\$ 400,725.00
28	EA	SEWER SERVICE, PRESSURE	62.0	\$ 800.00	\$ 49,600.00
29	EA	SAN STRUCTURE, 48 INCH DIA.	21.0	\$ 4,800.00	\$ 100,800.00
30	EA	SAN STRUCTURE, 60 INCH DIA., AIR RELIEF	2.0	\$ 13,500.00	\$ 27,000.00
31	EA	SAN STRUCTURE, 60 INCH DIA., CLEANOUT	2.0	\$ 11,200.00	\$ 22,400.00
32	EA	SAN STRUCTURE, 24 INCH DIA., CLEANOUT	7.0	\$ 2,950.00	\$ 20,650.00
33	EA	GATE VALVE AND BOX, 2 INCH	7.0	\$ 3,000.00	\$ 21,000.00
34	EA	GATE VALVE AND BOX, 3 INCH	3.0	\$ 4,100.00	\$ 12,300.00
35	EA	GATE VALVE AND BOX, 4 INCH	2.0	\$ 5,200.00	\$ 10,400.00

Alternative 2 - Gravity & FM Hybrid Cost Summary

The total estimated cost to provide sewer service to each resident is \$4.1M.

Selection of Alternative - Life Cycle Cost Analysis Details

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Lifecycle Cost Analysis Details	
Planning Period (in Years)	20
Expected/Useful Life of System Component (In Years)	40
Real Discount Rate	0.3%
Salvage Value (SV)	\$650,000
Total Capital Costs	\$1,680,000
Annual Operations & Maintenance (O&M)	\$167,950
Single Present Payment Worth Factor	0.9418
Single Payment Present Worth (SPPW) of SV	\$612,202
Uniform Series Present Worth Factor	19.3836
Uniform Series Present Worth of O&M	\$3,255,480
Net Present Value (NPV)	\$4,323,277.77

Alt 2 - Add Parallel Treatment Life Cycle Cost Summary

The life cycle cost analysis for the parallel treatment alternative is provided here.

Selection of Alternative - Life Cycle Cost Analysis Details

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 1 - Expansion of Existing Technology

Lifecycle Cost Analysis Details	
Planning Period (in Years)	20
Expected/Useful Life of System Component (In Years)	40
Real Discount Rate	-0.5%
Salvage Value (SV)	\$425,000
Total Capital Costs	\$1,079,000
Annual Operations & Maintenance (O&M)	\$185,200
Single Present Payment Worth Factor	1.1054
Single Payment Present Worth (SPPW) of SV	\$469,815
Uniform Series Present Worth Factor	21.0896
Uniform Series Present Worth of O&M	\$3,905,800
Net Present Value (NPV)	\$4,514,984.75

Treatment Alt 1 - Expansion of Existing Technology Life Cycle Cost Summary

The life cycle cost analysis for the AeroMod expansion alternative is provided here.

Selection of Alternative - Life Cycle Cost Analysis Details

System Component Type: Collection

System Component Name: Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Lifecycle Cost Analysis Details	
Planning Period (in Years)	20
Expected/Useful Life of System Component (In Years)	40
Real Discount Rate	-0.5%
Salvage Value (SV)	\$2,322,500
Total Capital Costs	\$5,954,000
Annual Operations & Maintenance (O&M)	\$40,000
Single Present Payment Worth Factor	1.1054
Single Payment Present Worth (SPPW) of SV	\$2,567,403
Uniform Series Present Worth Factor	21.0896
Uniform Series Present Worth of O&M	\$843,585
Net Present Value (NPV)	\$4,230,181.99

Alternative 3 - LPS Life Cycle Cost Summary

The life cycle cost analysis for the low pressure sewer alternative is provided here.

Selection of Alternative - Life Cycle Cost Analysis Details

System Component Type: Collection

System Component Name: Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Lifecycle Cost Analysis Details	
Planning Period (in Years)	20
Expected/Useful Life of System Component (In Years)	40
Real Discount Rate	-0.5%
Salvage Value (SV)	\$2,175,500
Total Capital Costs	\$5,552,000
Annual Operations & Maintenance (O&M)	\$45,500
Single Present Payment Worth Factor	1.1054
Single Payment Present Worth (SPPW) of SV	\$2,404,902
Uniform Series Present Worth Factor	21.0896
Uniform Series Present Worth of O&M	\$959,578
Net Present Value (NPV)	\$4,106,675.85

Alternative 1 - Gravity Services Life Cycle Cost Summary

The life cycle cost analysis for the gravity services alternative is provided here.

Selection of Alternative - Life Cycle Cost Analysis Details

System Component Type: Collection

System Component Name: Collection Sewer Expansion

Alternative Name: Alternative 2 - Gravity & FM Hybrid

Lifecycle Cost Analysis Details	
Planning Period (in Years)	20
Expected/Useful Life of System Component (In Years)	40
Real Discount Rate	-0.5%
Salvage Value (SV)	\$2,056,000
Total Capital Costs	\$5,246,000
Annual Operations & Maintenance (O&M)	\$37,000
Single Present Payment Worth Factor	1.1054
Single Payment Present Worth (SPPW) of SV	\$2,272,801
Uniform Series Present Worth Factor	21.0896
Uniform Series Present Worth of O&M	\$780,316
Net Present Value (NPV)	\$3,753,515.02

Alternative 2 - Gravity and FM Hybrid Life Cycle Cost Summary

The life cycle cost analysis for the gravity and pressure sewer services alternative is provided here.

Selection of Alternative - Life Cycle Cost Analysis

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative List			
Alternative Name	Net Present Value (NPV)	Created By	Best NPV
Treatment Alt 1 - Expansion of Existing Technology	\$4,514,984.75	A Nordman	
Treatment Alt 2 - Add Parallel Treatment	\$4,323,277.77	A Nordman	✓

Selection of Alternative - Non-Monetary Factors

System Component Type: Treatment

System Component Name: WWTF Expansion

Non-Monetary Factors						
Alternative Name	Social Considerations	Environmental Considerations	Regulatory Considerations	Operational Considerations	Total	Best
Treatment Alt 2 - Add Parallel Treatment	3	6	3	6	18	
Treatment Alt 1 - Expansion of Existing Technology	10	8	10	8	36	✓

Non-Monetary Factors Summary

While all WWTF projects involve non-monetary factors, these usually have the most impact when proposing a new facility. In this case we have proposed an expansion to an existing facility, which mitigates some of these concerns. The caveat being that proposing a lagoon could draw some social and regulatory concerns that would not be associated with the selected alternate (expand existing treatment technology).

Selection of Alternative - Non-Monetary Factors

System Component Type: Collection

System Component Name: Collection Sewer Expansion

Non-Monetary Factors						
Alternative Name	Social Considerations	Environmental Considerations	Regulatory Considerations	Operational Considerations	Total	Best
Alternative 3 - Low Pressure Sewer	2	9	5	9	25	
Alternative 1 - Gravity Services	10	7	8	5	30	✓
Alternative 2 - Gravity & FM Hybrid	8	8	6	7	29	

Non-Monetary Factors Summary

The non-monetary factors play a key role in the Township's alternative selection. Primarily, this is the social aspect of how the community would react to the requirement to have their own pumping equipment for connection to the Township sewer. This shifts some of the cost burden of the project to a homeowner cost for providing an electrical supply to their grinder pump and the ongoing issues associated with individual pump stations. The Township has received much public input and believes that this aspect of the alternative selection is very important.

Selection of Alternative - Alternative Selection Summary

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative List					
Alternative Selected	Alternative Name	NPV	Best NPV	Non Monetary Factor	Best Non Monetary Factor
✓	Treatment Alt 1 - Expansion of Existing Technology	\$4,514,984.75		36	✓
	Treatment Alt 2 - Add Parallel Treatment	\$4,323,277.77	✓	18	

Selection of Alternative - Alternative Selection Summary

System Component Type: Collection

System Component Name: Collection Sewer Expansion

Alternative List					
Alternative Selected	Alternative Name	NPV	Best NPV	Non Monetary Factor	Best Non Monetary Factor
✓	Alternative 2 - Gravity & FM Hybrid	\$3,753,515.02	✓	29	
	Alternative 1 - Gravity Services	\$4,106,675.85		30	✓
	Alternative 3 - Low Pressure Sewer	\$4,230,181.99		25	

Design Summary

Tuscarora Township directed the engineering evaluation to include all possible options for providing sewer service to the proposed expansion area. To that end, many alternatives were evaluated and eliminated. The selected alternative includes an expansion of the WWTF with the same modular technology currently used to accommodate the additional flow and an expansion of the rapid infiltration beds for discharge of the treated effluent. Since the Township has already invested in these treatment and disposal methods, there is no economical alternative that could be found other than expanding the existing technology to accommodate the additional demand.

On the collection system side, the recommended alternative is primarily a gravity sewer system with low pressure sewer at the north (Columbus Beach Club) and south (Sturgeon Island) ends, where terrain and groundwater table conditions make gravity sewer cost prohibitive. Within the low pressure sewer, the residents will be provided with Township owned individual pumping stations.

Details for Proposed Project - Waste Water Collection

Wastewater Collection Types Type			
✓ Conventional Gravity	✓ Small Diameter	✓ Grinder Pumps	✓ Pump Station/Forcemain

Proposed Project Collection System

In the Phase I residential area west of District 1 and bound between the Indian River and Mack Ave, typical gravity sewer collection infrastructure is proposed. Since the terrain along the Indian River shoreline area is relatively flat, low-lying ground, construction of gravity collection system infrastructure became too costly in these areas. Therefore, this alternative includes some force main piping and individual pumping stations that will be owned by the Township to serve these residents. Similarly, the Phase II residential area between Mack Ave and the Sturgeon River would mostly have gravity sewer, with Township owned grinder pump stations in the lower lying areas around Sturgeon Island.

Details for Proposed Project - Waste Water Treatment

Physical Unit Operations

- ✓ Screening
- ✓ Grit Removal
- ✓ Aeration

Chemical Unit Processes

- ✓ Precipitation

Suspended Growth Biological Treatment

- ✓ Other-Extended aeration

Attached Growth Biological Treatment

Anaerobic Treatment

Advanced Wastewater Treatment

- ✓ Advanced Wastewater Treatment

Disinfection

Treatment Summary

The current plant has a 96,000 gpd AeroMod extended aeration system (patented SEQUOX technology) that will be duplicated to double the plant capacity. The treatment plant is a pre-packaged modular system, which was originally designed to be expandable. The current project will add another 420 EDUs, or approximately 88,200 gpd (half in Phase I and half in Phase II). Since the existing WWTP is already experiencing peak flows at 80% of plant capacity, a doubling of the 96,000 gpd modular system is the minimum upgrade that would be adequate. The new design peak flow would be 165,000 gpd and the plant capacity would be 192,000, leaving some room for increased use of the system.

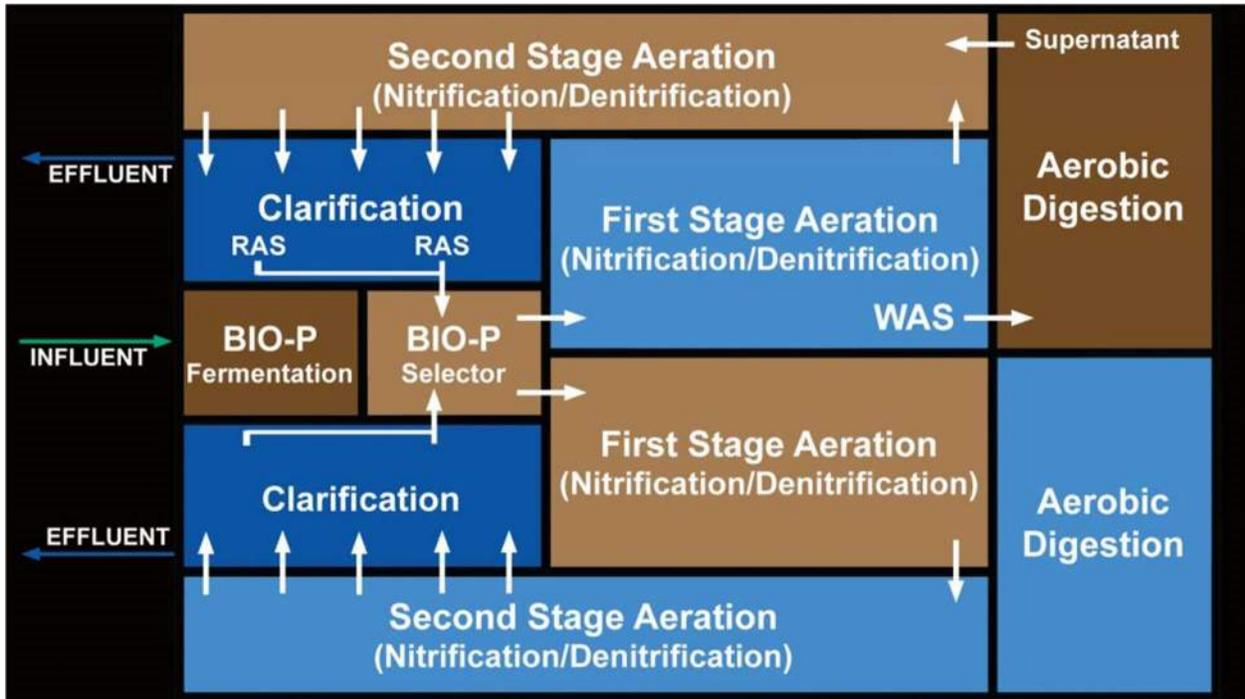
Proposed Project - Wastewater - Treatment

There will also be some modification to the headworks and the building associated with the expansion project to improve the trash and grit removal efficiency at the higher flows associated with the expansion and relocate the chemical feed process to reduce the corrosion occurring within the building.

A process schematic for the AeroMod unit is included below for reference.

AeroMod Schematic

AeroMod Treatment Schematic



Details for Proposed Project - Waste Water Effluent Discharge

Wastewater Discharge Type

- ✓ Rapid Infiltration

Effluent Discharge Summary

The final stage of the treatment process contains a 62,000 gallon storage tank with a decant chamber and discharge pumping equipment. The discharge effluent is sent through a rapid infiltration flow control structure that consists of a 3-nch Parshall flume and a 6-foot diameter manhole, 3-feet in depth. There are (5) gate valves with operators that control discharge to the rapid infiltration basins. These structures consist of five earthen basins totaling approximately 39,000 square feet and 2-feet deep for infiltration of the treated effluent to groundwater.

Proposed Project - Wastewater - Project Schedule

Project Schedule		
Type	Description	Date
Milestone Date	Funding approval	07/01/2021
Milestone Date	Survey and plan preparation	08/01/2021
Milestone Date	Permitting complete	12/01/2021
Milestone Date	Plan review & approval for bidding	02/01/2022
Milestone Date	Contract Award	04/06/2022

Proposed Start of Construction	Construction Begins	05/01/2022
Proposed End of Construction	Construction Complete	11/30/2022
Milestone Date	Project Closeout	02/01/2023

Project Schedule

A project implementation schedule is included for reference.

Land Rights	
Number of Acres To Be Acquired - Fee Simple	.0
Number of Acres To Be Acquired - Lease	.0
Acres To Be Acquired - Purchase Price	\$.00
Acres To Be Acquired - Value	\$.00
Number of Acres Now Owned - Fee Simple	70.0
Number of Acres Now Owned - Lease	.0
Acres Now Owned - Purchase Price	\$.00
Acres Now Owned - Value	\$178,618.00
Describe Other Rights (such as water rights or rights-of-way)	Collection system to be constructed within road right-of-ways.

Land Rights

Tuscarora Township already owns two parcels totaling 69.82 acres for the WWTF and disposal area. There would be no new property acquisition with the proposed project, only an expanded use within currently owned property.

All of the collection system facilities will be installed within the public road right-of-way.

Permitting

The proposed sewer collection system, WWTF expansion, and additional rapid infiltration basins will require a Part 41 Permit for Construction through the State of Michigan Department of Environment, Great Lakes, and Energy (EGLE). The additional demand will also require a modification to the existing Part 22 Groundwater Discharge Permit, also reviewed and issued through EGLE to approximately double the existing annual and daily discharge volumes.

Additional permits that will be required are a Soil Erosion permit through the County, a permit from EGLE for the river crossings, a permit from the County Road Commission for work within their right-of-way, a permit from MDOT for work within their right-of-way, and a building permit from the County for the modifications to the building at the WWTF.

Sustainability

The sustainability of the proposed project has been primarily implemented in the original construction project (District 1). This is where decisions were made regarding the wastewater treatment technology, the siting of the WWTF and groundwater discharge, the evaluation of the receiving environment, etc. At this point, the proposed project is carrying forward the sustainability decisions previously made in regard to the wastewater treatment and disposal.

Where we are improving the sustainability of wastewater treatment is within the proposed service area (District 2). This area is currently served by onsite septic systems, a situation that is clearly not sustainable. Looking at development pressure and wastewater loading trends over the past 40 years indicates that this area is not suitable for individual onsite septic systems. Documentation of this is provided under the Need for Project section.

Proposed Project - Wastewater - Total Project Cost

Total Project Cost (Engineer's Opinion of Probable Cost)		
Cost Classification	Description	Cost
Development (Construction)	WWTF Expansion - Development (Construction) - Rapid Infiltration Beds Expansion	\$80,000.00
Development (Construction)	WWTF Expansion - Development (Construction) - WWTF Headworks & Integration	\$245,000.00
Development (Construction)	WWTF Expansion - Development (Construction) - AeroMod Package - 96,000 gpd	\$525,000.00
Development (Construction)	Collection Sewer Expansion - Development (Construction) - Construction Costs	\$4,112,000.00
Contingencies	WWTF Expansion - Contingencies - Contingency	\$85,000.00
Bond Counsel	WWTF Expansion - Bond Counsel - Legal & Bond Counsel	\$8,000.00
Engineering - Design	WWTF Expansion - Engineering - Design - Engineering Design through Construction	\$136,000.00
Engineering - Construction Administration	Collection Sewer Expansion - Engineering - Construction Administration - Engineering, Construction Oversight, & Contract Admin - 8%	\$329,000.00
Legal Services	Collection Sewer Expansion - Legal Services - Legal & Bond Counsel	\$66,000.00
Engineering - Design	Collection Sewer Expansion - Engineering - Design - Design Engineering, Survey, Contract/Bid docs - 8%	\$328,000.00
Contingencies	Collection Sewer Expansion - Contingencies - Contingency - 10%	\$411,000.00
	Total:	\$6,325,000.00

Construction Cost Summary

The total estimated cost for the project is just over \$6.3M. The project costs can be broken down into the following general cost items:

Proposed Project - Wastewater - Total Project Cost

WWTP Upgrade	\$0.85M
Collection System Expansion	\$ 2.01M
Individual Pumping Stations	\$ 0.78M
Lift Stations	\$ 0.53M
Surface Removal/Replacement	\$ 0.78M
Engineering/Legals/Bonding	\$ 0.87M
Project Contingency (10%)	\$0.5M
Total Project Cost:	\$6.3M

Annual Operating Budget - Income		
Type of Income	Description	Yearly Income
Operating Income - Retail	O&M User Charge	\$230,800.00
Non-Operating Income - Tap Fees	New Connection Fees	\$8,000.00
Non-Operating Income - Assessments	Debt Retirement - District 1	\$119,000.00
Non-Operating Income - Assessments	Debt Retirement - District 2	\$189,000.00
Non-Operating Income - Interest Income	Interest Income	\$72,000.00
	Total:	\$618,800.00

Current User Charge Summary

The sewer system is currently supported by a user charge system that includes two categories; an O&M charge that covers all of the operating expenses and funds for RR&I and a Debt Retirement charge that covers repayment costs for the current USDA loan obligation. The current rate structure O&M expense is slightly under-funded on an annual basis, with the difference made up through additional tap fees. However, the Township has been implementing periodic rate increases to bring the O&M rate charges into alignment with the actual O&M costs.

The current user charges are \$60.33/mo per EDU, broken down as follows:

O&M revenue = \$32/mo

Debt Retirement = \$28.33/mo

Proposed Rate Structure

The proposed rate structure will continue the same two user charge categories; an O&M charge that covers all of the operating expenses and funds for RR&I, and a Debt Retirement charge that covers the repayment costs for the loan obligations. All of the customers will pay the same O&M rate. The debt retirement will be differentiated so that the existing customer base (District 1) will continue to pay their debt retirement and then the new customers (District 2) will pay their own debt retirement rate.

The proposed user charges for District 1 are \$63.50/mo per EDU, broken down as follows:

O&M revenue = \$35/mo

Debt Retirement = \$28.50/mo

The resulting user charges for District 2 without any grant support are \$118/mo per EDU, broken down as follows:

O&M revenue = \$35/mo

Debt Retirement = \$83/mo

Operating Budget

**Operating Budget
For First Full Year After Construction**

Community Name: Tuscarora Township **County:** Cheboygan

Address:
3546 S. Straits Highway
Indian River, MI 49749

A. Applicant Fiscal Year: **From:** 1-Jul **To:** 30-Jun

B. Operating Income:	From	Sewer Rates & Charges:	\$230,340
		Other	\$500
		Total Operating Income:	\$230,840

C. Operating Expenses:			
Utilities			\$50,000
Insurance/Audit			\$4,000
Contract Operations			\$125,300
Other - Lab or other Costs			\$14,900
Other - Vehicle Expenses			\$500
Administrative/Office			\$0
Repairs/Maintenance			\$25,000
Supplies			\$4,000
Engr. & Legal			\$7,000
Commodity Charges			\$0
		Total Operating Expenses:	\$230,700

D.	Net Operating Income:	\$140
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E. Non Operating Income:			
District 1	Debt Retirement		\$119,000
District 2	Debt Retirement		\$189,000
Other:	Interest Income		\$72,000
Other:	New Connections		\$8,000
		Total Non Operating Income:	\$388,000

F.	Net Income	\$388,140
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G. Expenditures/Transfers			
Repair, Replacement & Improvement Fund			\$9,483
Bond Reserve			\$30,800
Payment to USDA Loan District 1			\$120,000
Payment to USDA Loan District 2			\$188,900
		Total Expenditures/Transfers:	\$349,183
		Excess/Deficit over net income:	\$38,957

Annual Operating Budget - O&M Costs		
Expense Item	Description	Annual Amount
Repairs/Maintenance	WWTF Expansion - Repairs/Maintenance - Repairs & Maintenance	\$15,000.00
Engineering	WWTF Expansion - Engineering - Engineering/Legal	\$7,000.00
Insurance	WWTF Expansion - Insurance - Insurance/Audit	\$4,000.00
Supplies	WWTF Expansion - Supplies - Misc. Supplies	\$4,000.00
Contract Waste Treatment	WWTF Expansion - Contract Waste Treatment - Contract Operation of WWTF	\$98,300.00
Other	WWTF Expansion - Other - Lab, Vehicle, & Computer Costs	\$15,400.00
Utilities	WWTF Expansion - Utilities - Utilities	\$41,500.00
Repairs/Maintenance	Collection Sewer Expansion - Repairs/Maintenance - Repairs & Maintenance	\$7,500.00
Contract Services - Other	Collection Sewer Expansion - Contract Services - Other - Contract Operations - Collection System	\$26,000.00
Utilities	Collection Sewer Expansion - Utilities - Utilities	\$3,500.00
	Total:	\$222,200.00

Operation & Maintenance Cost Summary

The proposed O&M budget has been developed through a review and analysis of the existing Township Sewer Fund budget reports. Since the current proposal will utilize the same treatment plant processes, disposal methodology, and collection system infrastructure type, we have extrapolated the cost implications of the expansion with a firm basis centered on the actual costs for running the existing system. This O&M budget is included in the overall operating budget, included as an exhibit to this report.

Proposed Project - Wastewater - Debt Repayments

Does the potential applicant have any Existing Debt with Terms?					✓Yes			
Annual Operating Budget - Debt Repayments								
Type of Loan	Owed to	Purpose	Terms(yrs)	Date of First Payment	Annual Payment	Annual Reserve	Interest Rate	Due Date
Existing USDA Loan	USDA	District 1 Construction	40	03/19/2014	\$119,000.00	\$.00	2.62%	05/26/2021

Existing Loan Commitment

Tuscarora Township already has an existing USDA loan that was acquired to develop the original WWTP, disposal site, and the District 1 collection system infrastructure. The original USDA funded project was a combination of grant and loan, where \$3.0M came in grant funding and the Township took on a \$4.5M loan. The Township is in the early stages of repayment, approximately 5-years into the 40-year loan. The Township has met all of its financial obligations associated with the funding.

Proposed Project - Wastewater - Short Lived Asset Reserves

Does the client have any Short Lived Assets to report?

✓Yes

No

Annual Operating Budget - Short Lived Asset Reserves			
Description	Replacement Cost	Useful Life	Annual Reserve
Duplex Pumps	\$44,000.00	6-10 yrs	\$4,400.00
Lift Station Pumps	\$45,000.00	11-15 yrs	\$3,000.00
Individual Grinder Pumps	\$99,200.00	6-10 yrs	\$9,920.00
Chemical Feed Equipment	\$5,000.00	6-10 yrs	\$500.00
	Total: \$193,200.00		Total: \$17,820.00

Short Lived Asset Summary

The proposed project will add some short lived assets to the Township's infrastructure, which already has many of these asset categories already installed. This information is used to calculate a recommendation for the RR&I annual budget set-aside.

Total Cost		
Project Type: Wastewater		
Non Construction Total:	\$1,363,000.00	
Construction Total:	\$4,962,000.00	
Total Cost For Project Type:	\$6,325,000.00	
Grand Total		
Grand Total All Types:	\$6,325,000.00	

Project Conclusions & Recommendations

Tuscarora Township has identified the need for municipal sewer in this area since the mid 1970's when the first effort was made to construct a sewer collection, treatment, and disposal system. This is primarily due to obvious limitations in appropriately placing onsite septic systems in this area due to a combination of small lot size and poor soil/groundwater conditions. In 2014 the Township made a huge step towards this goal with the first WWTF constructed near the industrial park and a collection system installed for the commercial properties with District 1. The success of this original project has led to widespread community interest and support for expanding the municipal sewer into the surrounding residential area, proposed as District 2. However, due to the size and cost of the complete District 2 area, it has been subdivided into a Phase I (north half) and Phase II (south half). The key to this project is building off of the infrastructure installed with the original project, leveraging this to reduce the expansion costs.

Michigan Department of Natural Resources
Surface Water Quality Division
Report of Sanitary Survey and Water Quality Study
Indian River, Michigan
August 5-7, 1988

I Summary

A sanitary survey and surface water quality study were conducted in Indian River by staff of the Department of Natural Resources on August 5-7, 1988.

The surface waters in the area: the Indian River, the Sturgeon River, and the Little Sturgeon River, did not appear to be significantly impacted by passing through Indian River.

However, one residential direct discharge of sanitary sewage was found. At least four other storm sewer discharges had sample results which are at least suspected of being contaminated by partially treated human sewage.

There are a very large number of flowing well discharges to the rivers and storm sewers. These provide a high degree of dilution for any contamination which may be present. Should the area change to mostly full time residences, and there is more development, it could overwhelm the present dilution effect. Observable water quality problems could thus result.

II Background

Indian River is an unincorporated village in Tuscarora Township, Cheboygan County. There are no municipal water or sewer systems. This is primarily a resort community. Development is mainly commercial and residential. A large number of the residences are part time: week end and vacation use only. Some residential areas are very densely developed, yet each has its own well and sewage disposal system. Many of the areas have high water tables, clay or marl soils, or both. Because of this, questions are often raised as to the environmental and health implications. This survey was done to determine if any water quality problems exist in the surface waters of the Indian River area. Since the area has such a large number of weekend and vacation only residences, it was decided that this survey should be done on a weekend when the people and their potential impacts were there. The particular weekend (August 5-7) happened to be one of the busiest of the year. There were boat races going on Saturday and Sunday.

III Observations and Sampling Locations

On August 5, 1988, conditions along the Sturgeon River were observed by canoe starting upstream of Indian River and going downstream to Burt Lake.

As buildings and houses were encountered, it was readily noticeable that most had pipes discharging clear water to the river. These appeared to be overflow waters from free flowing wells. One of these was sampled (sample #1). None of these had any odors, colors, or turbidity.

At the M-27 bridge, a 12" black plastic pipe storm drain was observed on the south bank, east side of the bridge. There was a low flow of clear water. There was no color, turbidity, or odor. A sample was collected (sample #2).

The Sturgeon River itself was sampled at the starting point, about one mile upstream (sample #4), at the M-27 bridge (sample #5), and near the mouth about 50 yards upstream of Burt Lake (sample #3). There were about 25 ducks present in the area of sample #3.

In summary, the Sturgeon River appeared to be very clean. No visual evidence was found of direct or indirect sewage discharges in the river stretch observed.

On August 6, 1988, the Village of Indian River was observed by car and by foot. Samples were collected at various locations.

Sample #6 was collected in the Indian River about 10 yards upstream of the M-27 bridge.

Sample #7 was collected from the clear flow coming out of a storm sewer on the east side of the bridge on the south bank. The sewer is high up over the water, and the flow must drop down to it. There was no odor, color, or turbidity in this storm sewer discharge. The flow was about 20 gallons per minute (estimated). There was no visual evidence of human sewage in the pipe or in the river below the pipe.

The Little Sturgeon River was sampled at W. Onaway Road (sample #8) and upstream at I-75 (sample #9).

The Victoria Drive area was observed by car. Houses were only on the west side of the road (river side). Many of these had new mound septic systems. No obvious sewage problems were detected in this area.

The Nabantois Trail area was also observed by car. No obvious sewage problems were observed here either.

Waterway Lane, Cressy Street, and Martha Street were found to have no obvious sewage problems. These areas were on higher, sandy soil. Spruce Street and Cedar Street likewise were on higher sandy soil than the rest of the town. No obvious sewage problems were found.

Gratiot Steet and Apple Blossom Street had no obvious, visible evidence of sewage problems either.

The rest of the town consisting of the area bounded by M-27, the Indian River, Burt lake, and the Sturgeon River was observed by walking. Every street in this area was walked and every drainage ditch was observed. There were many pipes discharging clear water into these ditches. These all appeared to be coming from free flowing wells at each house. The ditches had vegetation growing in them, but there was no visual evidence of human sewage discharges in any of them. No Sphaerotolis sp. growths were observed.

In the course of looking at the drainage ditches and mapping them, it appeared that they came together and discharged their water at two main locations which were both sampled (fig. 1):

- 1) a 12" corrugated pipe at the east end of a boat canal between Holden Road and Chippewa Road (sample #11)
- 2) an open ditch entering the Indian River on the south bank about 50 feet east of the City park boundary. (Sample 13). This sample was collected from a boat on August 7, 1988.

One other location was sampled this day: a 16" corrugated pipe discharging a clear flow of about 30 gpm to the Indian River at the end of Lake Street (sample #10).

At all three sample locations (10, 11, 13), there was no turbidity, color, or odor in the water.

On August 7, 1988, the shorelines of Indian River were observed by boat. The Indian River, Little Sturgeon River, and boat canals were all checked in this manner. The Indian River itself was sampled just downstream of Burt Lake and at the I-75 bridge (samples 12 and 22 respectively).

Most of these shorelines consisted of seawalls. There was very little natural shoreline. Pipes discharging clear water were observed at almost every house and building. It was obvious that most of these were flowing well overflows. When other pipes were found discharging water, and it wasn't obviously well water, they were sampled. The following is a description of these sampling locations:

Along Pike street about 100 feet south of the bridge to the island,

The Indian River from the Little Sturgeon River mouth to I-75 was then observed by boat. The boat canals along Lori Lane, Bellchase, and Diane Lane were also surveyed. Again, many clear water discharges were observed. These were all apparently flowing well discharges. One larger pipe, a 12" corrugated pipe, was found on the west end at the southwest corner of the canal between Bellchase and Diane Lane. The flow was clear and about 20 gpm. No color, turbidity, or odor were apparent (sample 21). A man whose house was next to the pipe said that the flow was coming from the golf course across M-27.

In summary, the Indian River was clear and free flowing the entire stretch observed. No Sphaerotolis sp. growths were found, nor other visual indicators of sewage (other than sample #18).

IV Sample Results - Discussion

Sample #18, the suspected sewage discharge, was confirmed to be such by sample analyses. The bacteriological analyses revealed extremely high counts of all three forms of coliform bacteria. The ratio of fecal coliform bacteria to fecal strep. was 4:1. This, along with the high counts plus the visual observations, give a high probability of the presence of raw or partially treated human sewage. This information was conveyed to the Cheboygan County Health Department for follow up action.

The chemical data from sample #18 show a very high level of the nutrients found in fresh sewage: high ammonia, Kjeldahl nitrogen, and total phosphorus. Nitrate and nitrite levels were low indicating that the organic material has not yet been broken down.

None of the other samples were as conclusive as to the presence of human sewage. However, samples 10, 13, 17, and 19 show bacteria counts which appear to be significantly higher than the other samples. These samples were all from clear water flows coming from storm drains situated in the densely developed west side of Indian River. This gives an indication that these samples are showing the influence of the many drain fields situated close together. The high dilution of the many flowing well discharges may have kept the counts of bacteria from being higher. The lack of apparent visual evidence in any of these flows precludes a direct conclusion of the presence of recent raw or partially treated human sewage. The sample data does cast some suspicion of that fact, however.

Samples number 10, 20, and 17 showed the highest levels of nutrients (total phosphorus, ammonia nitrogen, and Kjeldahl nitrogen). Sample #20, not mentioned earlier, had relatively lower bacterial counts. It wasn't known what the source of the water in this pipe was. It

**Operating Budget
For First Full Year After Construction**

(Alternate 2 - gravity & FM individual pumps)

Community Name: Tuscarora Township **County:** Cheboygan

Address:
3546 S. Straits Highway
Indian River, MI 49749

A. Applicant Fiscal Year: **From:** 1-Jul **To:** 30-Jun

B. Operating Income:	From	Sewer Rates & Charges:	\$230,340
		Other	\$500
		Total Operating Income:	\$230,840

C. Operating Expenses:			
Utilities			\$45,000
Insurance/Audit			\$4,000
Contract Operations			\$127,300
Other - Lab or other Costs			\$14,900
Other - Vehicle Expenses			\$500
Administrative/Office			\$0
Repairs/Maintenance			\$20,000
Supplies			\$4,000
Engr. & Legal			\$7,000
Commodity Charges			\$0
		Total Operating Expenses:	\$222,700

D.	Net Operating Income:	\$8,140
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E. Non Operating Income:			
District 1	Debt Retirement		\$119,000
District 2	Debt Retirement		\$181,000
Other:	Interest Income		\$72,000
Other:	New Connections		\$8,000
		Total Non Operating Income:	\$380,000

F.	Net Income	\$388,140
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G. Expenditures/Transfers			
Repair, Replacement & Improvement Fund			\$12,233
Bond Reserve			\$30,100
Payment to USDA Loan District 1			\$120,000
Payment to USDA Loan District 2			\$181,000
		Total Expenditures/Transfers:	\$343,333
		Excess/Deficit over net income:	\$44,807

**Operating Budget
For First Full Year After Construction**

(Alternate 3 - LPS all individual pumps)

Community Name: Tuscarora Township **County:** Cheboygan

Address:
3546 S. Straits Highway
Indian River, MI 49749

A. Applicant Fiscal Year: **From:** 1-Jul **To:** 30-Jun

B. Operating Income:	From	Sewer Rates & Charges:	\$252,372
		Other	\$500
		Total Operating Income:	\$252,872

C. Operating Expenses:			
Utilities			\$40,000
Insurance/Audit			\$4,000
Contract Operations			\$117,500
Other - Lab or other Costs			\$14,900
Other - Vehicle Expenses			\$500
Administrative/Office			\$0
Repairs/Maintenance			\$60,500
Supplies			\$4,000
Engr. & Legal			\$7,000
Commodity Charges			\$0
		Total Operating Expenses:	\$248,400

D.		Net Operating Income:	\$4,472
-----------	--	------------------------------	---------

E. Non Operating Income:			
District 1	Debt Retirement		\$119,000
District 2	Debt Retirement		\$232,000
Other:	Interest Income		\$72,000
Other:	New Connections		\$8,000
		Total Non Operating Income:	\$431,000

F.		Net Income	\$435,472
-----------	--	-------------------	-----------

G. Expenditures/Transfers			
Repair, Replacement & Improvement Fund			\$14,000
Bond Reserve			\$34,000
Payment to USDA Loan District 1			\$120,000
Payment to USDA Loan District 2			\$232,000
		Total Expenditures/Transfers:	\$400,000
		Excess/Deficit over net income:	\$35,472



SERVICE AREA SUMMARY

THE PROPOSED DISTRICT 2 SERVICE AREA IS COMPRISED OF THE PREVIOUSLY RECREATIONAL PROPERTIES THAT ARE WEST OF THE EXISTING COMMERCIAL SEWER DISTRICT (DISTRICT 1) TO THE BURT LAKE SHORES. THE SERVICE AREA IS SUBDIVIDED INTO A PHASE 1 THAT INCLUDES THE PROPERTIES SOUTH OF MACK AVENUE TO THE STATE PARK AND A PHASE 2 THAT IS NORTH OF MACK AVENUE TO COLUMBUS BEACH CLUB. THE AREA IS PHASED APPROXIMATELY 200 ACRES AND 400 EDUs IN TOTAL. PHASE 1 IS 75 ACRES AND 180 EDUs AND PHASE 2 IS 125 ACRES AND 220 EDUs.

ADDITIONAL SERVICE AREA DETAILS INCLUDE THE FOLLOWING:

- 1) OF THE 450 FEET, 300 ARE PROPOSED TYPICAL GRAVITY SERVICE CONNECTIONS.
- 2) THE INCREASED SERVICE AREA WILL REQUIRE AN EXPANSION OF THE EXISTING WWT. APPROXIMATELY DOUBLING THE CURRENT TREATMENT CAPACITY. THERE IS A 50% INCREASE IN PHASE 1 AND ANOTHER 50% IN PHASE 2.
- 3) THE EXISTING LIFT STATIONS WILL BE UPGRADED TO ACCOMMODATE ADDITIONAL FLOW IN THE PHASE 1 PROJECT.

LEGEND

- PROPOSED GRAVITY SEWER MANHOLE
- PROPOSED FORCE MAIN SEWER CLEANOUT
- PROPOSED LIFT STATION
- PROPOSED DUPLEX STATION
- EXISTING GRAVITY SEWER MANHOLE
- EXISTING DUPLEX LIFT STATION

NO.	DESCRIPTION	DATE	BY
1	DESIGN	10/20/11	J. H. HARRIS
2	CHECK	10/20/11	J. H. HARRIS
3	REVISION	10/20/11	J. H. HARRIS
4	REVISION	10/20/11	J. H. HARRIS
5	REVISION	10/20/11	J. H. HARRIS
6	REVISION	10/20/11	J. H. HARRIS
7	REVISION	10/20/11	J. H. HARRIS
8	REVISION	10/20/11	J. H. HARRIS
9	REVISION	10/20/11	J. H. HARRIS
10	REVISION	10/20/11	J. H. HARRIS

PROJECT NO: 110111
 DRAWN BY: JHH
 CHECKED BY: JHH
 SCALE:

FIGURE C1



SERVICE AREA SUMMARY

THE PROPOSED DISTRICT 2 SERVICE AREA IS COMPRISED OF THE PREVIOUSLY RECREATIONAL PROPERTIES THAT ARE WEST OF THE EXISTING COMMERCIAL SEWER DISTRICT (DISTRICT 1) TO THE BURT LAKE SHORELINE. THE SERVICE AREA IS SUBDIVIDED INTO A PHASE 1 THAT INCLUDES THE PROPERTIES SOUTH OF BURT AVENUE TO THE STATE PARK AND A PHASE 2 THAT IS NORTH OF BURT AVENUE TO COLUMBUS BEACH CLUB. THE AREA ENCOMPASSES APPROXIMATELY 200 ACRES AND 400 EDUs IN TOTAL. PHASE 1 IS 75 ACRES AND 180 EDUs AND PHASE 2 IS 125 ACRES AND 220 EDUs.

ADDITIONAL SERVICE AREA DETAILS INCLUDE THE FOLLOWING:

- 1) OF THE 450 FEET, 200 ARE PROPOSED TYPICAL GRAVITY SERVICE CONNECTIONS.
- 2) THE INCREASED SERVICE AREA WILL REQUIRE AN EXPANSION OF THE EXISTING WWTTP. APPROXIMATELY DOUBLING THE CURRENT TREATMENT CAPACITY. THERE IS A 50% INCREASE IN PHASE 1 AND ANOTHER 50% IN PHASE 2.
- 3) THE EXISTING LIFT STATIONS WILL BE UPGRADED TO ACCOMMODATE ADDITIONAL FLOW IN THE PHASE 1 PROJECT.

- LEGEND**
- PROPOSED GRAVITY SEWER MANHOLE
 - PROPOSED FORCE MAIN SEWER CLEANOUT
 - PROPOSED LIFT STATION
 - PROPOSED DUPLEX STATION
 - EXISTING GRAVITY SEWER MANHOLE
 - EXISTING DUPLEX LIFT STATION

NO.	DESCRIPTION	DATE	BY
1	DESIGN	10/20/11	W. J. HARRIS
2	CHECKED	10/20/11	W. J. HARRIS
3	APPROVED	10/20/11	W. J. HARRIS
4	ISSUED FOR PERMIT	10/20/11	W. J. HARRIS
5	ISSUED FOR CONSTRUCTION	10/20/11	W. J. HARRIS

Operating Budget
For First Full Year After Construction
 (Alternate 2 - gravity & FM individual pumps)

Community Name: Tuscarora Township **County:** Cheboygan

Address:
 3546 S. Straits Highway
 Indian River, MI 49749

A. Applicant Fiscal Year: **From:** 7/1/2023 **To:** 6/30/2023

B. Operating Income:	From	Sewer Rates & Charges:	\$249,000
		Other	\$500
		Total Operating Income:	\$249,500

C. Operating Expenses:			
Utilities			\$45,000
Insurance/Audit			\$4,000
Contract Operations			\$104,100
Other - Lab or other Costs			\$14,900
Other - Vehicle Expenses			\$500
Administrative/Office			\$0
Repairs/Maintenance			\$20,000
Supplies			\$4,000
Engr. & Legal			\$2,500
Commodity Charges			\$0
		Total Operating Expenses:	\$195,000

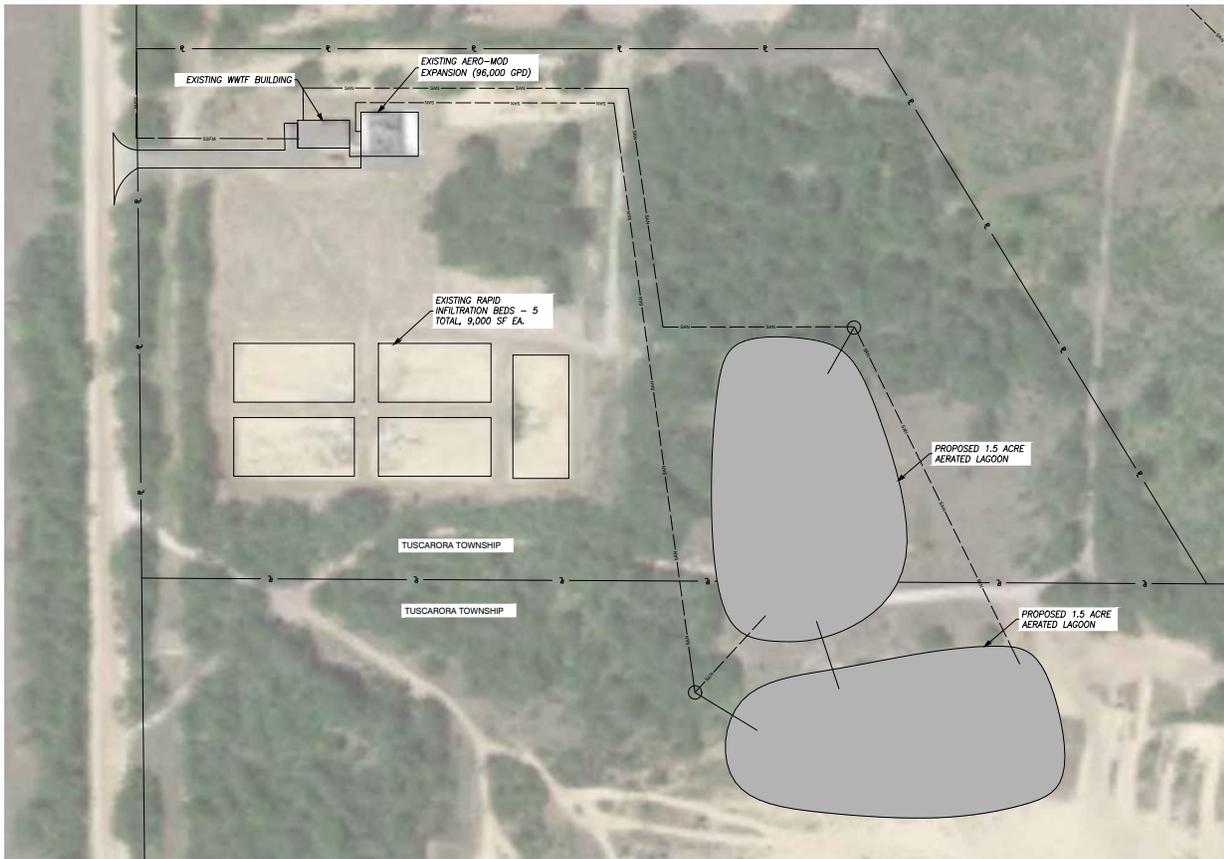
D. Net Operating Income: \$54,500

E. Non Operating Income:			
Other:	Special Assessment - Existing		\$119,000
Other:	Special Assessment - Proposed		\$221,200
Other:	New Connections		\$0
		Total Non Operating Income:	\$340,200

F. Net Income \$394,700

G. Expenditures/Transfers			
Repair, Replacement & Improvement Fund			\$17,800
Bond Reserve			\$0
Existing USDA Loan Repayment			\$119,000
Proposed USDA Loan Repayment			\$221,200
		Total Expenditures/Transfers:	\$358,000
		Excess/Deficit over net income:	\$36,700

APPENDIX - 12



WWTF PARALLEL TREATMENT PLAN
1" = 30'

CONSULTING

POTENTIAL SEWER
 DISTRICT EXPANSION
 TUSCARORA TOWNSHIP
 DISTRICT 7

NO.	DATE	DESCRIPTION

PROJECT NO. 14003
 CAD DWG FILE 1214 Rev 0002
 DRAWN BY JF
 DESIGNED BY JF
 CHECKED BY

SHEET NO. 1
 SHEET TITLE
 PARALLEL TREATMENT
 SCHEMATIC LAYOUT

PER-5
 SHEET 1 OF 1



TUSCARORA TOWNSHIP
 DISTRICT 2 SERVICE AREA EXPANSION

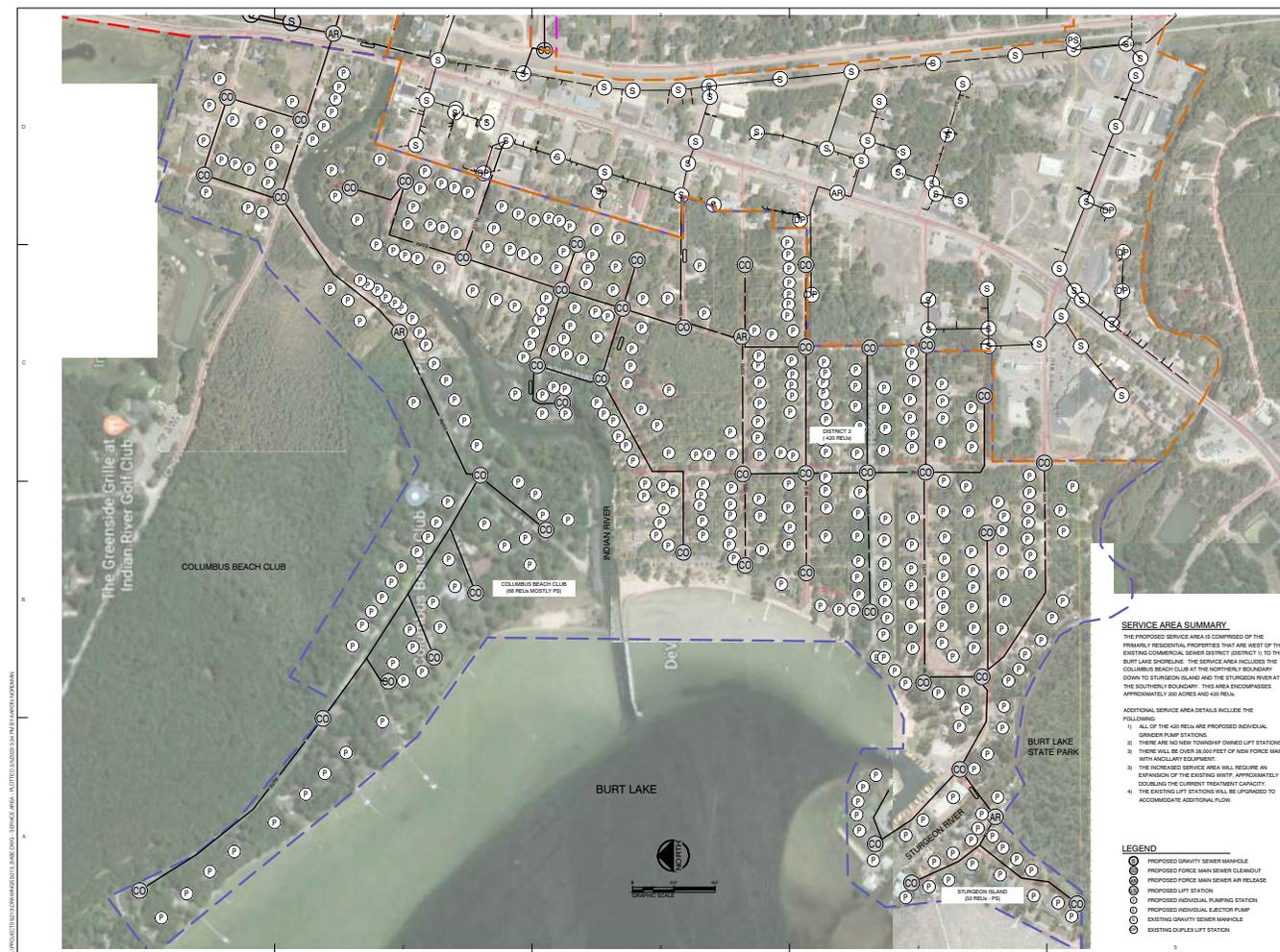
NO.	DESCRIPTION	DATE
1	PRELIMINARY PLAN	03/15/2011
2	FINAL SERVICE AREA	03/15/2011
3	PROPOSED SERVICE AREA	03/15/2011
4	PROPOSED SERVICE AREA	03/15/2011
5	PROPOSED SERVICE AREA	03/15/2011
6	PROPOSED SERVICE AREA	03/15/2011
7	PROPOSED SERVICE AREA	03/15/2011
8	PROPOSED SERVICE AREA	03/15/2011
9	PROPOSED SERVICE AREA	03/15/2011
10	PROPOSED SERVICE AREA	03/15/2011

SERVICE AREA SUMMARY
 THE PROPOSED SERVICE AREA IS COMPRISED OF THE PREVIOUSLY RESIDENTIAL PROPERTIES THAT ARE WEST OF THE EXISTING COMMERCIAL SEWER DISTRICT (DISTRICT 1) TO THE BURT LAKE SHORELINE. THE SERVICE AREA INCLUDES THE COLUMBUS BEACH CLUB AT THE NORTHERLY BOUNDARY DOWN TO STURGEON ISLAND AND THE STURGEON RIVER AT THE SOUTHERLY BOUNDARY. THIS AREA ENCOMPASSES APPROXIMATELY 300 ACRES AND 400 REIN.

ADDITIONAL SERVICE AREA DETAILS INCLUDE THE FOLLOWING:

- 1) OF THE 400 REIN, 300 ARE PROPOSED GRAVITY SERVICE CONNECTIONS (20% GRAVITY)
- 2) THERE ARE 79 PLANNED INDIVIDUAL PUMPING STATIONS
- 3) THERE WILL BE APPROXIMATELY 17,000 FEET OF NEW DENSITY COVER AND OVER 50 MANHOLES
- 4) THERE WILL BE OVER 10,000 FEET OF NEW FORCE MAIN WITH ANGLI-LIFT EQUIPMENT
- 5) THE INCREASED SERVICE AREA WILL REQUIRE AN EXPANSION OF THE EXISTING WWTP, APPROXIMATELY DOUBLING THE CURRENT TREATMENT CAPACITY.
- 6) THE EXISTING LIFT STATIONS WILL BE UPGRADED TO ACCOMMODATE ADDITIONAL FLOW.

- LEGEND**
- PROPOSED GRAVITY SEWER MANHOLE
 - PROPOSED FORCE MAIN SEWER CLEANOUT
 - PROPOSED FORCE MAIN SEWER AIR RELEASE
 - PROPOSED LIFT STATION
 - PROPOSED INDIVIDUAL PUMPING STATION
 - PROPOSED INDIVIDUAL EJECTOR PUMP
 - EXISTING GRAVITY SEWER MANHOLE
 - EXISTING DUPLER LIFT STATION



SERVICE AREA SUMMARY

THE PROPOSED SERVICE AREA IS COMPRISED OF THE PREVIOUSLY RESIDENTIAL PROPERTIES THAT ARE WEST OF THE EXISTING COMMERCIAL SEWER DISTRICT (DISTRICT 1) TO THE BURT LAKE AND INCLUDES THE SERVICE AREA INCLUDING THE COLUMBUS BEACH CLUB AT THE NORTHERLY BOUNDARY DOWN TO STURGEON ISLAND AND THE STURGEON RIVER AT THE SOUTHERLY BOUNDARY. THIS AREA ENCOMPASSES APPROXIMATELY 300 ACRES AND 400 REIN.

ADDITIONAL SERVICE AREA DETAILS INCLUDE THE FOLLOWING:

- 1) ALL OF THE 400 REIN ARE PROPOSED INDIVIDUAL OPERATOR PUMP STATIONS.
- 2) THERE ARE NO NEW TOWNSHIP OWNED LIFT STATIONS.
- 3) THERE WILL BE COVERED 100 FEET OF NEW FORCE MAIN WITH ANGLARY EQUIPMENT.
- 4) THE INCREASED SERVICE AREA WILL REQUIRE AN EXPANSION OF THE EXISTING WWTTP. APPROXIMATELY DOUBLING THE CURRENT TREATMENT CAPACITY.
- 5) THE EXISTING LIFT STATIONS WILL BE UPGRADED TO ACCOMMODATE ADDITIONAL FLOW.

- LEGEND**
- PROPOSED GRAVITY SEWER MANHOLE
 - PROPOSED FORCE MAIN SEWER CLEANOUT
 - PROPOSED FORCE MAIN SEWER AIR RELEASE
 - PROPOSED LIFT STATION
 - PROPOSED INDIVIDUAL PUMPING STATION
 - PROPOSED INDIVIDUAL ELECTOR PUMP
 - EXISTING GRAVITY SEWER MANHOLE
 - EXISTING DUPLER LIFT STATION

NO.	DESCRIPTION	DATE	BY	CHECKED BY
1	PRELIMINARY PLAN			
2	FINAL PLAN			
3	AS BUILT			

PROJECT NO.: 2023-01
 DATE: 03/15/2023
 DRAWN BY: JES
 CHECKED BY: JES

PRELIMINARY ENGINEERING REPORT

Tuscarora Twp District 2 Sewer Extension

Tuscarora Township

Prepared by: Aaron E Nordman

Registration State: Michigan

Registration Number: 49600

**Performance Engineers, Inc.
406 Petoskey Avenue
Charlevoix, MI**

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Introduction

Tuscarora Township is requesting funding assistance through the US Department of Agriculture's Rural Development, Water and Waste Disposal Direct Loans and Grant Program. The purpose of this funding request is to enable the Township to expand the community's wastewater collection system from the downtown commercial district to the surrounding residential area. The current central sewer system was designed and constructed with the intention of expansion into the residential areas and this request would be the first expansion of the original system.

In conjunction with a proposed expansion of the service area, an expansion of the wastewater treatment facility (WWTF) would be necessary to treat the additional flow.

Need

The proposed service area (District 2) is comprised of the primarily residential properties that are west of the existing service area (District 1) to the Burt Lake Shoreline. The District 2 service area includes the Columbus Beach Club at the northerly boundary, down to Sturgeon Island and the Sturgeon River at the southerly boundary. District 2 is then subdivided into a Phase I (south of Mack Avenue) and Phase II (north of Mack Avenue).

The homes within District 2 currently rely upon private wells and individual drain fields. Due to a combination environmental concerns including poor soil infiltration, high groundwater, surface water proximity, and well isolation distances on relatively small lots, the majority of existing onsite wastewater disposal systems are believed to be non-conforming to current environmental health standards (Sanitary Code), which can contribute to the degradation of the surrounding water quality. The lack of sewer infrastructure has also become a limiting factor to population and economic growth. Furthermore, there is concern about the constant discharge of excess flow from the artesian wells, which adds to the hydraulic loading within the area.

Scope

The proposed project will provide a gravity sewer system to the District 2 users, building off of the existing infrastructure installed for District 1. The proposed service area encompasses approximately 200 acres and 420 EDUs. The District 2 expansion will include approximately 18,500 feet of new 8-inch gravity sewer, over 50 manholes, approximately 15,000 feet of new force main sewer, 10 lift stations, 23, duplex pumping stations, upgrades to increase capacity in the two existing lift stations, and an expansion to approximately double the capacity of the existing WWTF. The existing WWTF is a modular extended aeration plant that discharges to groundwater through rapid infiltration beds. The proposed expansion would increase the capacity of the plant by approximately 100,000 gpd, which then requires additional infiltration beds installed accordingly.

Summary

The estimated project costs for Phase I are \$5.2M, which results in an individual cost of \$27,400 per EDU. The estimated project costs for Phase II are \$6.5M, which results in an individual cost of \$28,300 per EDU. This is deemed to be unaffordable to the residents, resulting in over \$80/month in debt repayment costs, before the sewer use rates are applied. Therefore, a key part of the Township's ability to complete the project is the availability grant funding to offset a part of the resultant debt repayment. With a MHI that places the Township's sewer affordability at about \$63.80/mo (at 1.5% of MHI), adding \$80/mo to the \$35.00/month in sewer O&M cost is a significant burden on residents who truly need municipal sewer.

Current Facility Description

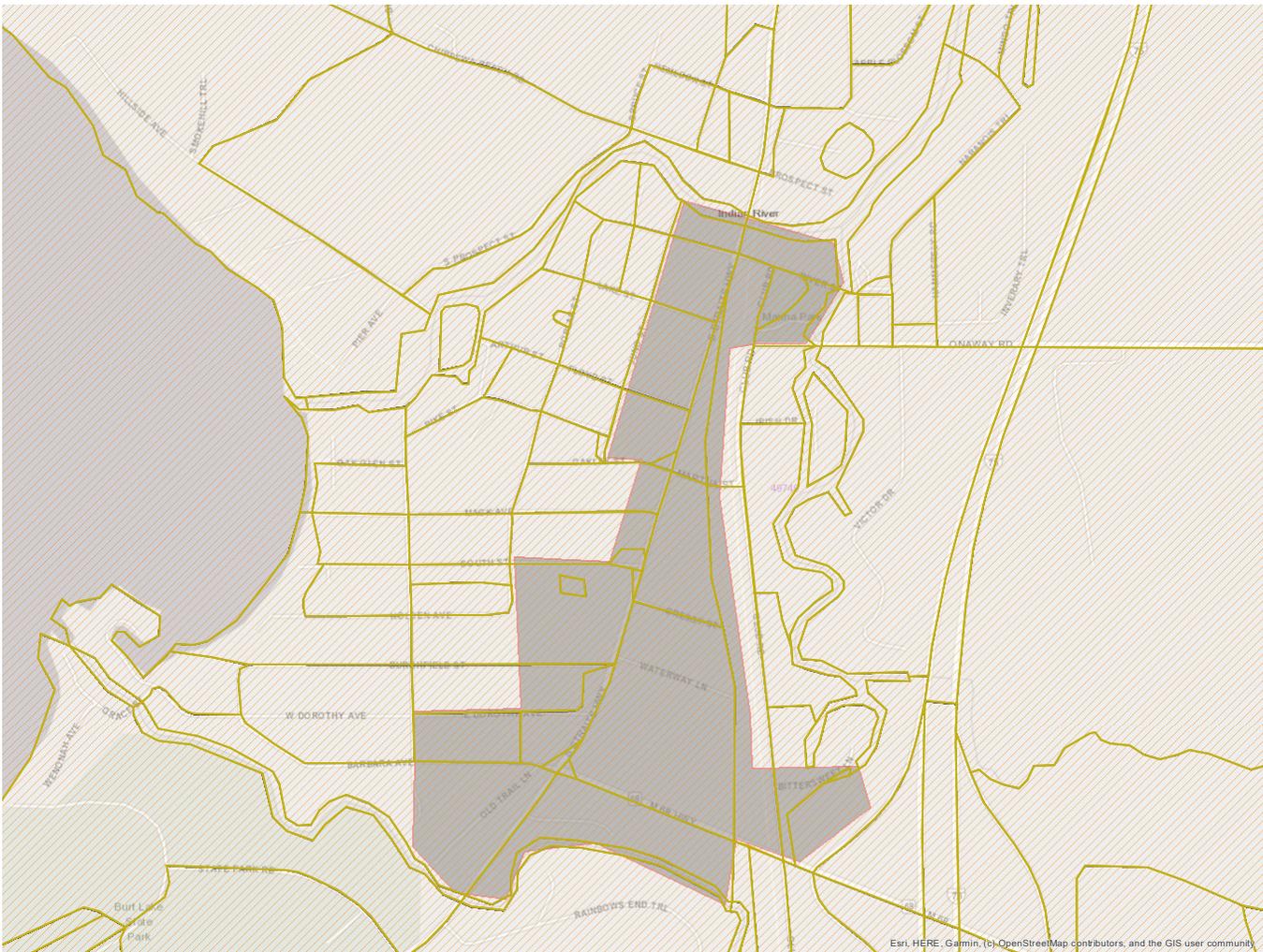
The existing WWTF consists of three major components, the first is a headworks building with trash and grit removal, a laboratory, blowers, the treatment process controls, and chemical feed equipment. Next is the 96,000 gpd treatment process unit, which is a proprietary Aero Mod, Inc. SEQUOX, modular treatment system with a dual process train and a decant storage tank with discharge pumping equipment. The treated wastewater is discharged to groundwater through 39,000 square feet of Rapid Infiltration Basins. The existing collection system encompasses primarily the commercial properties along the S. Straights Highway. There are two main pumping stations that transport the wastewater from the service area to the WWTF.

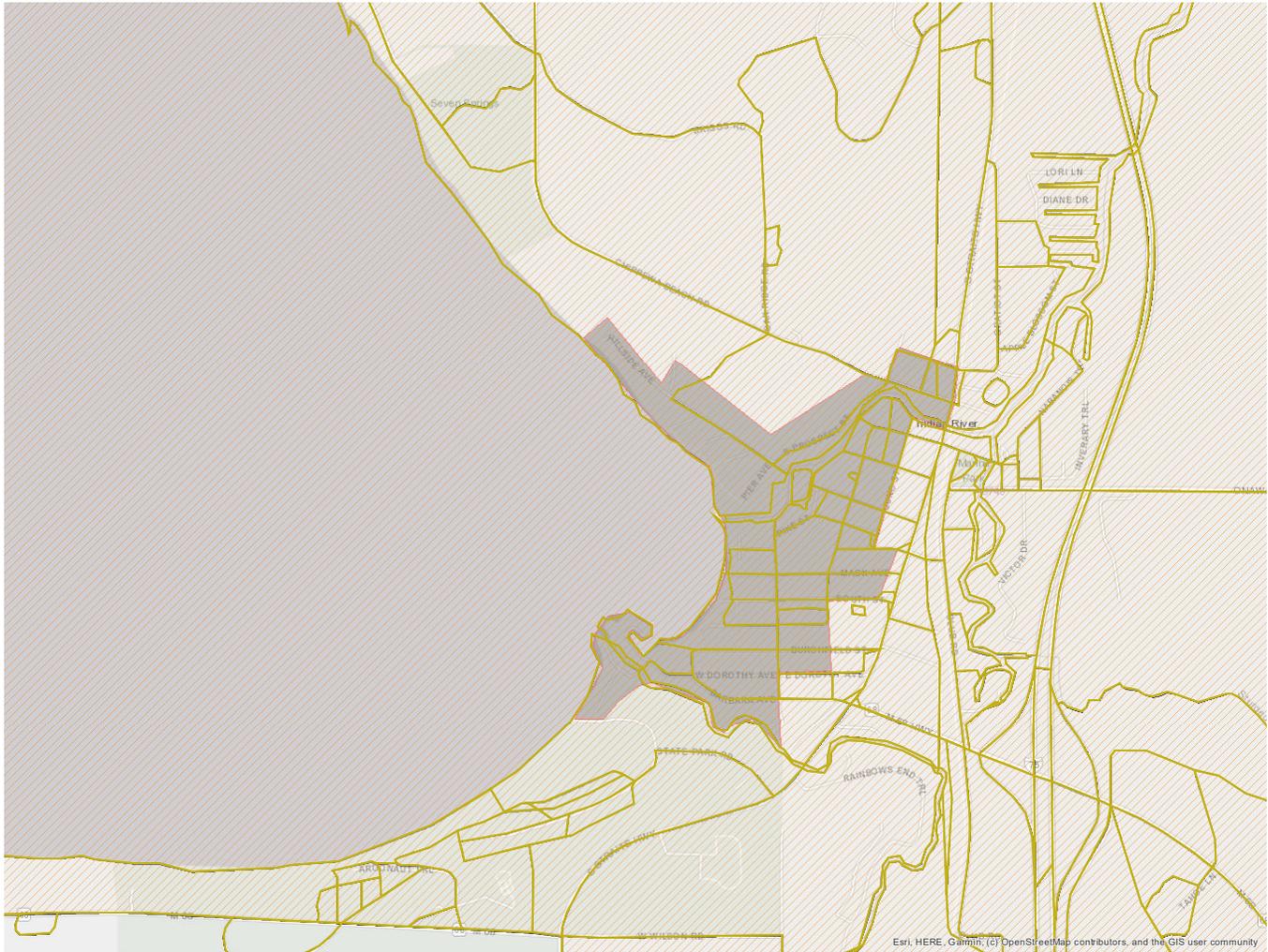
Proposed Facility Description

The three major WWTF components will be improved as follows: the existing headworks building will be modified to add trash and grit removal capacity, additional process controls will be integrated into the system and the chemical feed equipment will be modified for the increased capacity. Next, the treatment process unit will be doubled in capacity by adding another 96,000 gpd (approx. 48,000 gpd in each Phase) in modular Aero Mod, Inc. SEQUOX unit, added decant storage capacity and additional discharge pumping equipment. The resulting treatment capacity will be 192,000 gpd to accommodate the additional service area. Finally, there will be a corresponding increase in the Rapid Infiltration Basins, doubling the footprint to 78,000 square feet total for discharge to groundwater, again roughly half of this expansion is associated with each of the proposed Phases. The proposed improvements would add a new service area that will be primarily residential connections. There would be an additional 420 EDUs added from the Columbus Beach Club neighborhood at the north end to the Sturgeon Island area at the south end and extending the existing collection system westerly to the shore of Burt Lake. The collection system extension would add approximately 18,500 feet of gravity sewer with over 50 manholes, over 15,000 feet of force main piping with ancillary equipment, 10 lift stations, 23 new duplex pumping stations and an upgrade to add capacity to both of the existing main sewer pumping stations.

Service Area(s)

Service Area Name	Population	Square Miles
District 1 - Existing Area	244	0.17
District 2 - Existing Area	540	0.33





District 2 Service Area

The proposed service area (District 2) is an extension of the existing commercial service area (District 1). The proposed service area will extend westerly from the existing District 1 east boundary line to the shore of Burt Lake. The southerly boundary will be the Burt Lake State Park and the service area will extend northerly to the Columbus Beach Club residential area and the properties on the north side of the Indian River. District 2 is comprised of primarily residential customers. Figure C1 depicts the District 2 Service Area Expansion, along with the Phase I and Phase II subdivision.

Environmental Resources Summary

The project area has several environmental resources present that impact the design and construction of a sewer system. First there is Burt Lake along the eastern boundary, which is the primary receiving water body for the majority of soil erosion, runoff and/or contaminants generated within the project area. Next there is the Sturgeon River, which must be crossed and is a tributary flowing into Burt Lake. Then we have the Indian River, which flows out from Burt Lake. The Indian River must be crossed to reach the Columbus Beach Club and residential area east of the Club.

A secondary effect of having these water bodies within the project planning area is that much of the project area has high groundwater levels. The groundwater itself is a receiving body for contaminants, but it also impacts construction methods and techniques, requires specific design considerations for the installation of subsurface pumping stations, and also impacts the selection of materials used within the construction.

Please find additional details pertaining to the environmental resources present in the Environmental Report, prepared by the Michigan Community Action Program and submitted to the USDA under a separate cover.

Population Trends								
Service Area	1990	2000	2010	Annual Growth	2020	2030	2040	2050
District 1	237	244	244	0.0035%	249	252	256	259
District 2	527	541	540	0.0065%	549	556	562	569
Total	764	785	784		798	808	818	828

General Population Trend

According to the U.S. Census Bureau, the population of Tuscarora Township in 2010 was 3038 persons (1468 male - 1570 female), a decrease of 53 people or 1.7% compared to the 2000 census. For comparisons, the population of Cheboygan County decreased by 1.1% and the State decreased by 0.6% during the same decade. However, over 4 decades from 1960 to 2000, Tuscarora's population has experienced an average growth of 31.5% compared to a 16.4% average growth rate in Cheboygan County in the same time period. The population density in Tuscarora Township in 2010 averaged 103 persons per square mile. For comparison, Cheboygan County had a population density of 36.5 persons per square mile and the State of Michigan had a population density of 174 persons per square mile. It is important to note that the census tally is conducted on April 1st and does not reflect the increased summer population. Approximately 35% of the total housing units in Tuscarora Township are classified as seasonal, recreational, or occasional use homes. If these residences conform to the average Township household size of 2.23, the summer population would be expected to increase by 1887 persons or over 60%.

Community Engagement Summary

The need for a community system has been an ongoing discussion in the Township for decades, with the need for such a system increasing with population and water use. In the past, the Township has contracted engineering firms to conduct sewer studies; however, public opposition typically focusing on the cost, prevented the implementation of a public sewer system.

In 2012, the existing sewer system in the commercial district was approved by petition demonstrating support by 67% of the affected property owners. This allowed the Township to install the current infrastructure that can now be used for the contemplated expansion project. Based on the positive reception of the first phase of municipal sewer implementation in 2012, the Township set out to offer sewer service to the surrounding (primarily residential) areas.

Performance Engineers, Inc. (PEI) was contracted to assist the Township with the development of conceptual plans and associated cost estimates to begin the community engagement process. An informational hearing was held on July 6th, 2019 over the Fourth of July holiday weekend to encourage as much public participation as possible. Based on this public meeting, the service areas under consideration were revised, honing in on the area with the greatest need and support.

At the Township's Board meeting on August 6, 2019 the Township approved the preparation and submittal of an application to the USDA Rural Development for the proposed project planning area, referred to as District 2. Subsequently, in March of 2021 discussions with USDA and the community led to the subdivision of District 2 into a Phase I and a Phase II, divided at Mack Avenue.

The Township has continued to keep the sewer service area and the proposed USDA funding application on their regular agenda to provide the public with updates along the way.

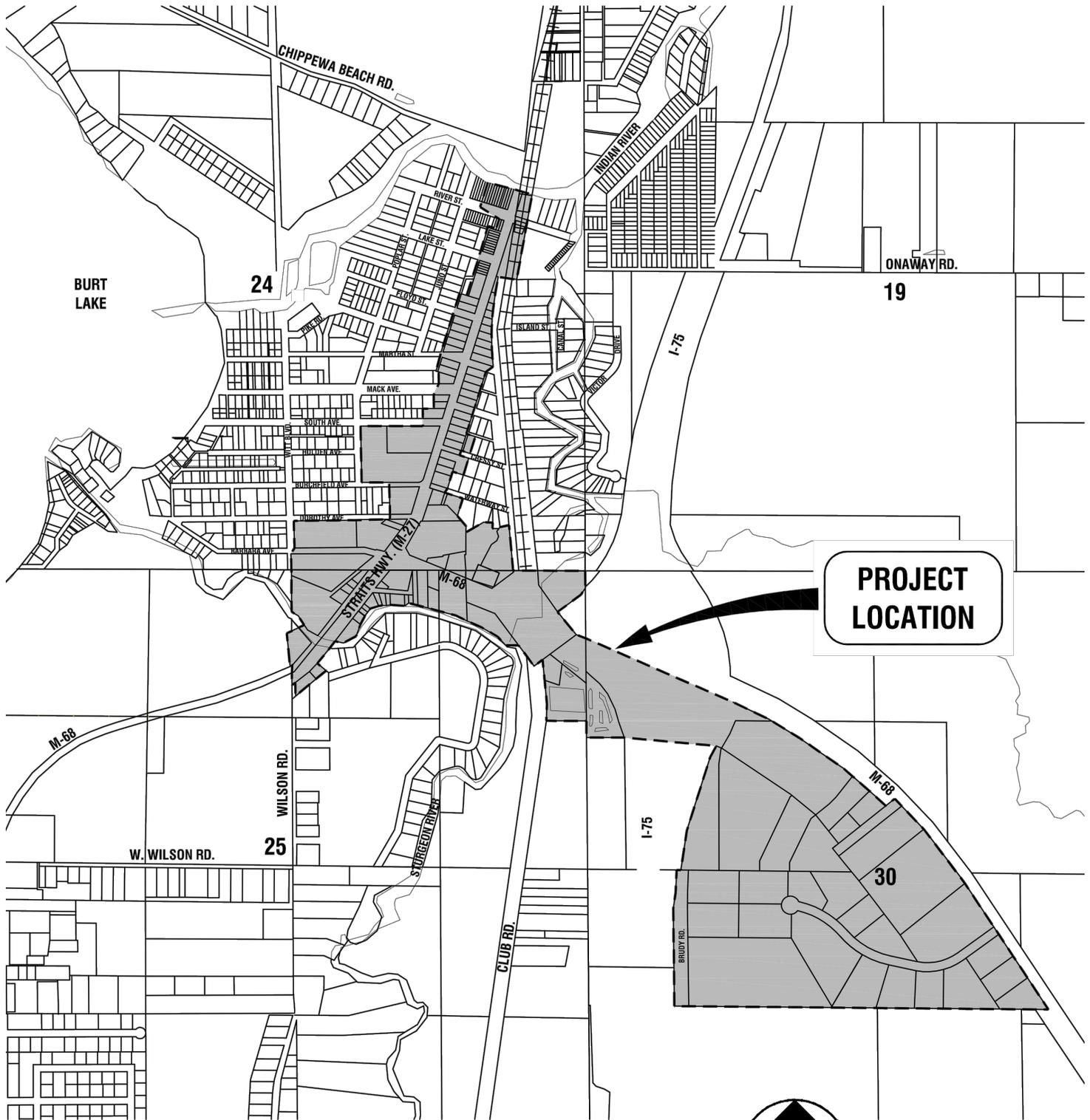
Existing Facilities Summary

The existing WWTF consists of three major components, the first is a headworks building with trash and grit removal, a laboratory, blowers, the treatment process controls, and chemical feed equipment. Next is the 96,000 gpd treatment process unit, which is a Aero Mod, Inc. SEQUOX, modular treatment system with a dual process train and a decant storage tank with discharge pumping equipment. The treated wastewater is discharged to groundwater through 39,000 square feet of Rapid Infiltration Basins. The WWTF is permitted at 96,000 gpd and currently peaks at about 80% capacity during the summer tourist season.

The existing collection system encompasses primarily the commercial properties along the S. Straights Highway. It is primarily gravity sewer with a few duplex pumping stations and associated force main piping. There are two main pumping stations that transport the wastewater from the service area to the WWTF. The WWTF is located on southeasterly of the service area, on the east side of I-75 approximately 1.5 miles from the service area.

A map of the existing service area is included below for reference.

Existing Facilities Map

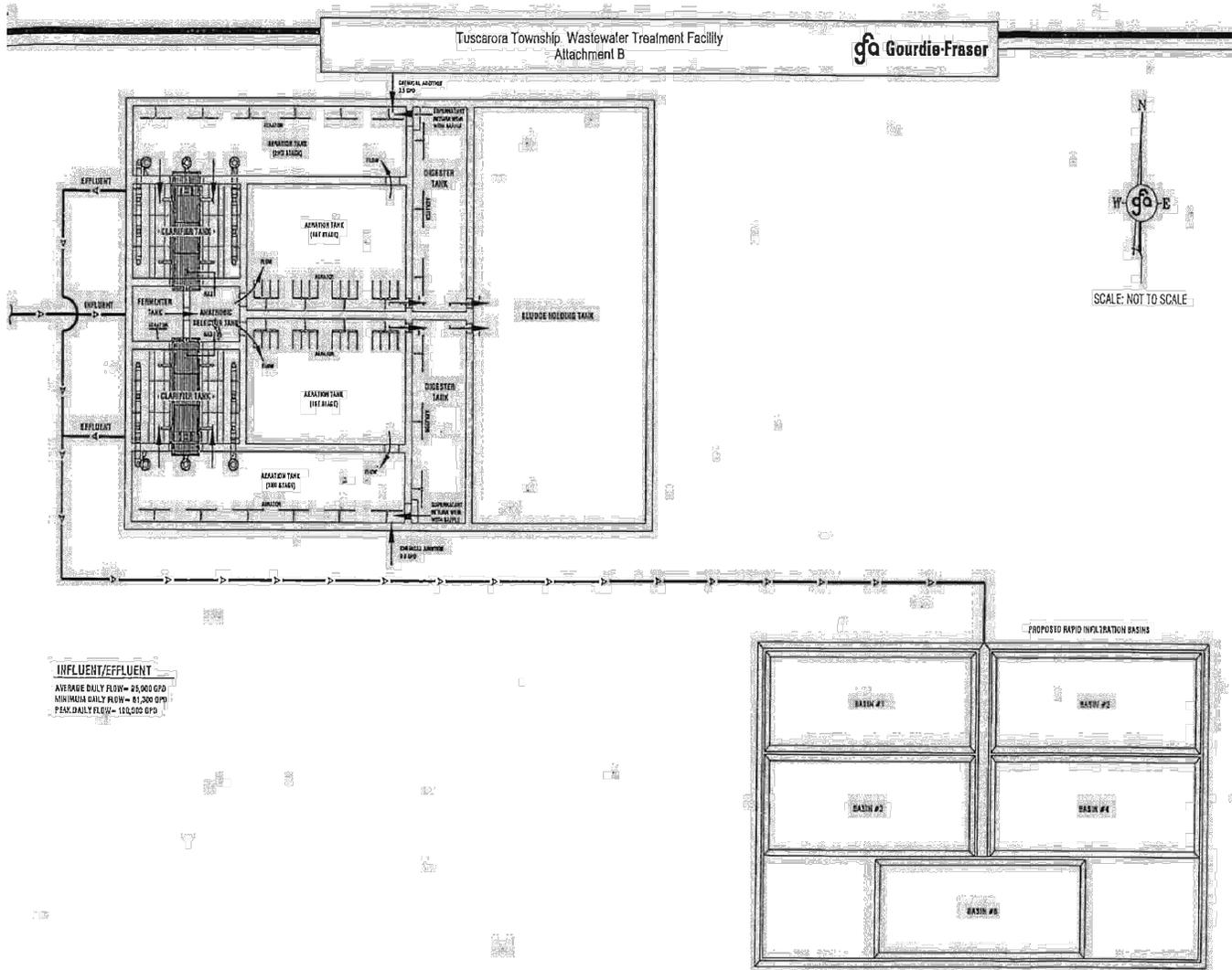


EXISTING FACILITIES SERVICE AREA



1"=5000'

Schematic Process Layout of Existing System Document



EXISTING FACILITIES WWTP PROCESS

NOT TO SCALE

History Summary

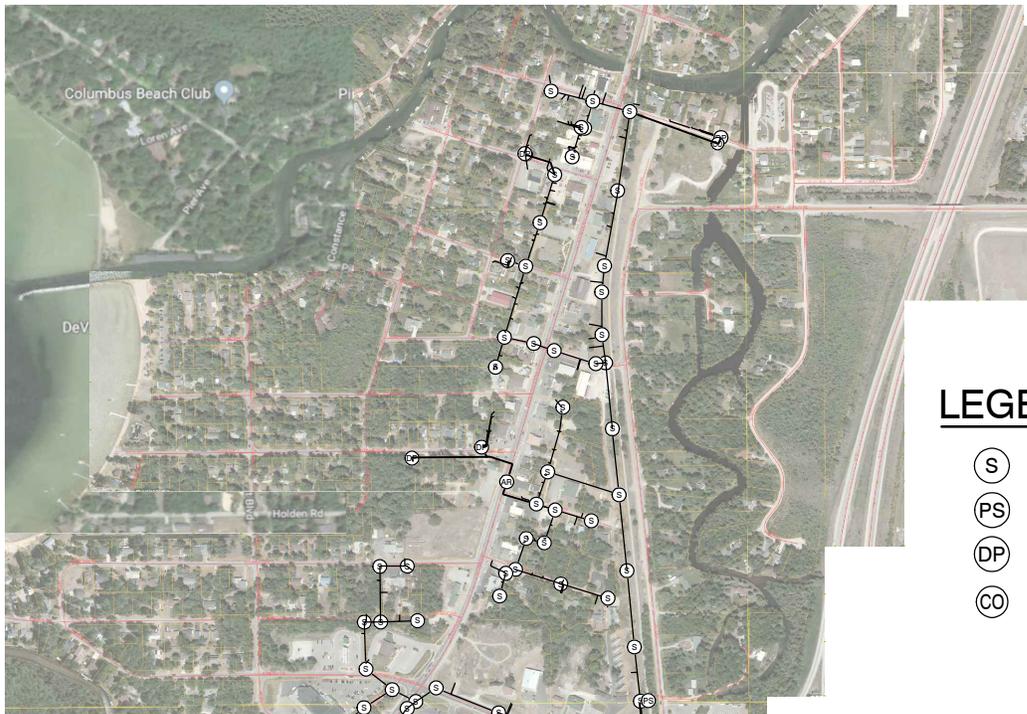
Tuscarora Township has been considering options for providing municipal sewer to its residents for over 50 years. There was a serious effort made in the 1970's to utilize Federal Water Pollution Control grant funding and a plan was developed, bid out, and found to be cost prohibitive. Another effort was made in the late 1990's with a similar result. It wasn't until Tuscarora Township obtained USDA grant and loan funding through the Rural Development program in 2012 that construction was actually begun on a municipal sewer project.

Although this process was not without its own difficulties, it did move forward and Tuscarora Township had a municipal sewer system available to primarily the commercial users along the S. Straights Highway area. The service area does also include the industrial park southeast of the WWTP and the Burt Lake State Park. It is this backbone of infrastructure that forms the basis for the proposed service area expansion.

Existing Conditions Summary

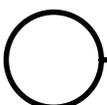
The existing collection, treatment, and disposal system for Tuscarora Township is quite new, being constructed and placed into service in 2014. Since that time there have been no major facility upgrades, repairs, or expansions. The proposed project would be the first of this nature.

Existing Conveyance - Sewers Document



LEGEND

- (S) EXISTING GRAVITY SEWER MH
- (PS) EXISTING PUMP STATION
- (DP) EXISTING DUPLEX LIFT STATION
- (CO) EXISTING SANITARY FORCE MAIN
CLEAN OUTS



EXISTING CONVEYANCE SYSTEM

1"=1,000'

Existing Contract Disposal - Statement

Existing Contract Disposal Customers

There is one existing contract disposal customer and no new contract disposal customers proposed. The existing customer is the Burt Lake State Park, which pays a flat rate for its wastewater treatment and disposal. The Township plans to install a meter at their connection point in the future and eliminate the flat rate contract.

Existing Bulk Treatment - Statement

Existing Bulk Treatment

There is one existing bulk treatment customer and none within the proposed project. The existing bulk treatment customer is the Burt Lake State Park, however, the Township is working towards metering their flow in the future and eliminating them as a bulk customer.

Wastewater Flows Table Document

Tuscarora Township Waste Water Flow Table

2018	Residential	Commercial	Industrial	Bulk	Other	Total Flow
Jan	447,840	671,761			-	1,119,601
Feb	425,688	638,533			-	1,064,221
Mar	447,840	671,761			-	1,119,601
Apr	528,234	792,352			-	1,320,586
May	577,544	866,317		89,100	-	1,532,961
Jun	629,274	943,910		154,380	-	1,727,564
Jul	651,472	977,209		514,800	-	2,143,481
Aug	773,248	1,159,872		415,800	-	2,348,920
Sep	587,097	880,645		120,900	-	1,588,642
Oct	503,145	754,718		45,570	-	1,303,433
Nov	519,995	779,992			-	1,299,987
Dec	482,416	723,623			-	1,206,039
Average Daily Flow =				48,699		
Average Dry Weather Flow =				52,801		
Average Wet Weather Flow =				44,864		
Peak Hour =				8,100		

Wastewater Connections Table Document

Tuscarora Township Waste Water Connections Table

Type of Connection	Number of Connections
Residential	63
Commercial	99
Industrial	0
Bulk	1
Other	52
Total Connections	215

Financial Summary

The existing municipal sewer system has a current USDA loan, which means that the USDA maintains some level of oversight on the finances of the system. The Township has regular audits of its sewer accounts and fund balances, which are reported to the USDA. The Township has been meeting its financial obligations since the inception of the system.

Existing Financial Audits Document



Heart of the Inland Waterway

TOWNSHIP OF TUSCARORA, MICHIGAN

ANNUAL FINANCIAL REPORT

YEAR ENDED JUNE 30, 2020

**Township of Tuscarora
Statement of Net Position
Proprietary Funds
June 30, 2020**

	<u>Business-type Activities - Enterprise Funds</u>
	<u>Sewer</u>
ASSETS	
<i>Current Assets</i>	
Cash and Cash Equivalents	\$ 109,487
Accounts Receivable	41,608
Special Assessments	41,553
<i>Total Current Assets</i>	<u>192,648</u>
<i>Noncurrent Assets</i>	
Capital Assets not Being Depreciated	178,618
Capital Assets Being Depreciated, Net	5,488,476
Restricted Cash	352,407
Special Assessments	1,882,174
<i>Total Assets</i>	<u>8,094,323</u>
LIABILITIES	
<i>Current Liabilities</i>	
Accounts Payable	2,290
Accrued Interest	8,391
Current Portion of Long-term Debt	63,000
<i>Total Current Liabilities</i>	<u>73,681</u>
<i>Noncurrent Liabilities</i>	
Long-term Debt	1,855,000
<i>Total Liabilities</i>	<u>1,928,681</u>
NET POSITION	
Net Investment in Capital Assets	3,749,364
<i>Restricted for:</i>	
Repair, Replacement, Improvement	59,734
Additional Residential Equivalent Units	292,673
<i>Unrestricted</i>	2,063,871
<i>Total Net Position</i>	<u>\$ 6,165,642</u>

Township of Tuscarora
Statement of Revenues, Expenses, and Changes in Net Position
Proprietary Funds
For the Year Ended June 30, 2020

	<u>Business-type Activities - Enterprise Funds</u>
	<u>Sewer</u>
Operating Revenues	
Charges for Services	\$ 142,844
<i>Total Operating Revenues</i>	<u>142,844</u>
Operating Expenses	
Professional Fees	97,391
Utilities	31,418
Supplies	7,668
Repairs and Maintenance	18,126
Insurance	1,397
Depreciation	129,800
<i>Total Operating Expenses</i>	<u>285,800</u>
<i>Operating Income (Loss)</i>	<u>(142,956)</u>
Non-Operating Revenues (Expenses)	
Interest Income	72,362
Interest Expense	(54,043)
<i>Net Non-Operating Revenues (Expenses)</i>	<u>18,319</u>
<i>Change In Net Position</i>	<u>(124,637)</u>
<i>Net Position at Beginning of Period</i>	6,290,279
<i>Net Position at End of Period</i>	<u>\$ 6,165,642</u>

**Township of Tuscarora
Statement of Cash Flows
Proprietary Fund
For the Year Ended June 30, 2020**

	<u>Business-type Activities - Enterprise Fund</u>
	<u>Sewer</u>
Cash Flows Used by Operating Activities	
Cash Received from Customers	\$ 181,162
Cash Payments to Suppliers for Goods and Services	(171,747)
<i>Net Cash Used by Operating Activities</i>	<u>9,415</u>
 Cash Flows from Non-capital and Related Financing Activities	
Interfund Balances	2,742
<i>Net Cash Provided by Non-capital and Related Financing Activities</i>	<u>2,742</u>
 Cash Flows from Capital and Related Financing Activities	
Principal Paid	(178,000)
Interest Paid	(54,822)
<i>Net Cash Used by Capital and Related Financing Activities</i>	<u>(232,822)</u>
 Cash Flows From Investing Activities	
Interest Income	72,362
<i>Net Cash Provided by Investing Activities</i>	<u>72,362</u>
<i>Net Decrease in Cash and Equivalents</i>	(148,303)
<i>Cash and Equivalents - Beginning of Year</i>	610,197
<i>Cash and Equivalents - End of Year</i>	<u>\$ 461,894</u>
 Reconciliation of Operating Loss to Net Cash Used by Operating Activities	
Operating Loss	\$ (142,956)
Adjustments to Reconcile Operating Loss to Net Cash Used by Operating Activities	
Depreciation Expense	129,800
Changes in Assets and Liabilities	
Special Assessment Receivable	36,033
Accounts Receivable	2,285
Accounts Payable	(15,747)
<i>Net Cash Used by Operating Activities</i>	<u>\$ 9,415</u>

Environmental Conditions

The primary health and sanitation concern that is addressed by the proposed project is the fact that the homes within proposed service area currently rely upon private wells and individual drain fields. There are environmental resources present at the project location that place constraints on septic design, of primary concern is Burt Lake and two rivers. The lake influences local groundwater table elevation for properties in the proposed service area. The high groundwater and poor soil infiltration are the primary environmental factors limiting onsite sewage disposal for many of the properties within the service area. The high groundwater level and proximity to the lake is also a situation of great concern for many of the properties that have existing onsite septic systems. Though these systems may not be in a failure mode where sewage is present at the surface, it is likely that many of the older septic systems do not adequately provide the aerobic conditions to allow for proper treatment by soil absorption systems. Further, it can be demonstrated that even on a dimensional basis, over 51% of the properties within this sewer district cannot meet the current sanitary code requirements for a conventional septic system.

Summary

The project area is generally poorly for onsite sewage disposal, based on current health code and design standards. The primary limitation is a high seasonal groundwater table and poor soil quality that prevent construction of drain fields with adequate isolation for aerobic treatment of septic tank effluent in the soil. This is a very serious concern due to the proximity of these properties to Burt Lake, Indian River, and the Sturgeon River. It is likely that untreated or partially treated septic tank effluent is reaching the groundwater and being carried to the lake. This is a health and sanitation problem for anyone that wishes to enjoy water based recreational activities in this area. This situation is well documented, with a study conducted by the DNR in 1988, where they concluded that *"There are a very large number of flowing well discharges to the rivers and storm sewers. These provide a high degree of dilution for any contamination..."* The study (see attached) determined that this dilution effect is likely the primary reason that there are not more observable impacts from the onsite septic systems. However, this is clearly not a viable long-term solution to the problem.

Similarly, in the absence of a central water distribution system, residents rely on private wells for drinking water. Due to the vulnerability of the drinking water aquifers and the high density of homes in the area, failing septic systems pose a concern to drinking water security for individual wells. The health department has previously provided a map of problem areas identified for onsite septic limitations, which is included below for reference.

Need for Project - Health & Sanitation



Alternatives Description Details	
System Component Type:	Treatment
System Component Name:	WWTF Expansion
Description	
Alternative Name:	Treatment Alt 2 - Add Parallel Treatment
Is this alternate solution feasible or is it not feasible?	
Feasibility	✓ Yes

Alternative 2 - Parallel Lagoon Treatment Process

The second alternative considered for treatment of the additional wastewater flow is to add some form of parallel treatment process and keep the existing AeroMod system as-is. The reason this alternative is considered viable is because of the seasonal variation in flow within the existing and proposed service areas. The idea would be to add an aerated lagoon that would primarily be used to buffer out the peak summer flow. The lagoon would be sized to store excess flow through the summer, knock down the BOD concentrations, and meter out flow back to the existing AeroMod plant at a lower strength for reduced treatment time. The effluent would then be sent for disposal into the slightly expanded rapid infiltration beds. This would require two approximately 1.5 acre lagoons, headworks modifications, smaller expansion of the rapid infiltration beds, and controls modifications to integrate the two treatment processes.

The estimated cost to implement this alternative is similar to the expansion using the same treatment technology. However, there are other factors that make this alternative less desirable. First, the WWTF site has not been fully evaluated for suitability for the installation of lagoons. Though based on the available information, it does appear that there is a strong possibility that the site would support a lagoon. The second issue is that the existing WWTF is situated adjacent to the industrial park and the businesses within the industrial park may not be supportive of a lagoon system in their backyard, creating political issues that would need to be dealt with. Finally, the existing site approval and permitting through the State is based on the AeroMod system and the Township has been operating this system in compliance with their permit. Opening the door to additional review and permit modification adds uncertainty to the project, which for the savings is not deemed to be warranted.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Design Summary

The design parameters used for evaluation of this alternative are based on storage of excess flow during the peak summer months. The existing customer base peaks out at around 80,000 gpd. The new service area is anticipated to peak at around 70,000 gpd. Since the existing plant capacity is 96,000 gpd, the excess summer flow would be stored in lagoons at a flow of approximately 54,000 gpd for 90 days during the summer. This requires approximately 5M gallons of storage. This volume would be provided in two 1.5 acre aerated lagoons, each with a storage capacity of about 3.5M gallons.

The added benefit of reducing the wastewater strength in the aeration lagoons has not been considered as a direct cost benefit, but does factor into the overall consideration of this alternative.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Environmental Impacts Summary

There are two main environmental concerns related to the addition of aerated lagoons into the WWTF process. The first is that the lagoons create a potential disease vector created by insects, birds, and small animals that may come into contact with the lagoon and then carry contaminants off-site. The second is that the lagoons will generate sludge that will require maintenance dredging over time. This material will then have to be hauled off-site for proper disposal.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Land Requirements

The proposed addition of lagoons to the treatment process would be the most intensive land use of the alternatives being evaluated. However, the Township owns approximately 65 acres around the existing WWTF and has sufficient area for the lagoons. Please see the Parallel Treatment Schematic Layout to see how the proposed lagoons would fit into the existing property and WWTF infrastructure.

Alternatives Considered - Potential Construction Problems

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Construction Issues

The construction of lagoons and integration of these lagoons into the existing site creates the most construction uncertainty of the alternatives evaluated. The available information from review USGS maps and previous hydrogeology data prepared for the existing plant indicates that the lagoons could be properly located on the site. However, the engineers from the previous study were not specifically evaluating the site for lagoon placement and thus there is some uncertainty surrounding special construction or additional site improvement efforts that may be required to make the site suitable for the lagoon system.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Efficiency Summary

The energy efficiency of the aerated lagoon is assumed to be similar to the selected alternative (Aero-Mod package plant). There will be blowers required for aeration of the lagoon, which requires a lot of energy. However, the aeration would most likely occur only in one of the two lagoons at a time and would most likely not be run all year around. There is no proposed water recycling or reuse proposed with the project.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Green Infrastructure

There is some argument that could be made for this alternative as more sustainable or "green" than the other alternatives evaluated. The reasoning would be that the lagoons utilize a natural biological process for breakdown of the wastewater. This alternative also would allow for some evapotranspiration out of the lagoons, although this is traditionally thought to be offset by rainfall into the lagoon, the period where the parallel treatment has the most impact is usually a period of less rainfall.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Parallel Treatment Other Sustainability Issues

This alternative would leverage the existing infrastructure to reduce the overall discharge footprint and feed the mechanical plant at a more efficient rate with a lower influent wastewater strength, taking some of the peaks out of the summer flow.

Treatment

System Component Name:

WWTF
Expansion

Alternative Name:

Treatment Alt 2 - Add Parallel Treatment

Annual O&M		
Expense Item	Description	Annual Amount
Repairs/Maintenance	General Repairs & Maintenance	\$10,000.00
Repairs/Maintenance	Sludge Removal	\$25,000.00
Contract Waste Treatment	Contract Operations	\$87,500.00
Other	Lab, Vehicle, & Computer Cost	\$13,200.00
Utilities	Utilities	\$23,250.00
Insurance	Insurance/Audit	\$2,000.00
Engineering	Engineering/Legal	\$4,500.00
Supplies	Misc. Supplies	\$2,500.00
	Total:	\$167,950.00

Parallel Treatment O&M Summary

The operation of the WWTF with a parallel lagoon has some positive aspects and some negative aspects. The positive points include the fact that a lagoon requires relatively low operational oversight compared to a mechanical plant. There is also the large storage volume that would allow for repairs or emergencies to be addressed within the mechanical part of the plant with no disruption to the customers. Finally, the parallel treatment through a lagoon will lower the incoming wastewater strength and provide a more consistent flow to the mechanical plant.

The negative aspects include the requirement for an operator with both mechanical plant and lagoon experience and certifications, which in northern Michigan will further limit an already small pool of operators. The lagoon will require a whole separate set of maintenance procedures, repair parts and equipment, and oversight tasks that add to the list of requirements already being done. Finally, the lagoon will require periodic maintenance for sludge removal, which will be an ongoing cost.

Alternatives Considered - Project Costs

System Component Type:

Treatment

System Component Name:

WWTF Expansion

Alternative Name:

Treatment Alt 2 - Add Parallel Treatment

Construction Costs		
Item	Description	Cost
Development (Construction)	Plant Integration	\$100,000.00
Development (Construction)	Lagoons - (2) 1.5 Acre each	\$1,200,000.00
	Total Construction	\$1,300,000.00

Non Construction Costs		
Item	Description	Cost
Engineering - Design	Engineering Design through Construction	\$225,000.00
Legal Services	Legal & Bond Council	\$30,000.00
Contingencies	Contingencies	\$125,000.00
	Total Non Construction	\$380,000.00

Parallel Treatment Alternative

ENGINEER'S OPINION OF PROBABLE COST

(2) 1.5 ACRE LAGOONS

Item #	DESCRIPTION	UNITS	AMT	UNIT COST	TOTAL COST
PLANT INTEGRATION					
1	4" Piping	LF	800.00	\$32.00	\$25,600.00
2	Valve Vault	LS	1.00	\$7,500.00	\$7,500.00
3	Flushing Manholes	EA	1.00	\$4,500.00	\$4,500.00
4	Utilities	LS	1.00	\$10,000.00	\$10,000.00
5	Electrical Allowance	LS	1.00	\$10,000.00	\$10,000.00
6	Ex. Building Retrofit	LS	1.00	\$10,000.00	\$10,000.00
7	Equalization Tank	EA	1.00	\$15,000.00	\$15,000.00
8	Controls	EA	1.00	\$25,000.00	\$25,000.00
INTEGRATION SUBTOTAL					\$107,600
LAGOON					
9	Misc. Clear & Grub	LS	1.00	\$5,000.00	\$5,000.00
10	Site Grading & Access Drive	LS	1.00	\$55,000.00	\$55,000.00
11	Security Fencing	LF	2000.00	\$15.00	\$30,000.00
12	Misc. Restoration	LS	1.00	\$12,500.00	\$12,500.00
13	Monitoring Wells	EA	5.00	\$5,000.00	\$25,000.00
14	Unclassified Excavation	CYD	15000.00	\$4.00	\$60,000.00
15	Lagoon Construction	CYD	62500.00	\$6.50	\$406,250.00
16	Lagoon Liner	SFT	295000.00	\$1.75	\$516,250.00
17	Lagoon Piping per Cell	EA	2.00	\$17,000.00	\$34,000.00
18	Chemical Dosing	LS	1.00	\$9,000.00	\$9,000.00
19	Dosing Tank & Siphon	LS	1.00	\$10,000.00	\$10,000.00
20	Valve Vault	LS	3.00	\$2,500.00	\$7,500.00
21	Outfall Sturcture	EA	2.00	\$4,500.00	\$9,000.00
LAGOON & DISPOSAL SUBTOTAL					\$1,179,500

SITWORK SUBTOTAL = \$1,287,100

10% Construction Contingency \$128,710

ESTIMATE OF TOTAL CONSTRUCTION COSTS= \$1,415,810

ESTIMATE OF ENGINEERING/SURVEY/INSPECTION \$226,530
(16% CONSTRUCTION COSTS)

ESTIMATE OF PERMITS & LEGAL DOCUMENTS \$16,000

TOTAL ESTIMATED COST OF PROJECT \$1,658,340

Parallel Treatment Project Cost Summary

The estimated costs for adding a parallel lagoon treatment process to the existing WWTF are included in the attached estimate.

Alternatives Description Details	
System Component Type:	Treatment System Component Name: WWTF Expansion
Description	
Alternative Name:	Treatment Alt 3 - New Independent WWTF
Is this alternate solution feasible or is it not feasible?	
Feasibility	No

Explanation for Lack of Feasibility

The final alternative considered for treatment and disposal of the additional wastewater flow is to construct an independent WWTF and keep the two service areas separated. This alternative was evaluated and rejected, not because of the inability to develop a new treatment and disposal site, but because there is such economy in utilizing the existing wastewater collection and conveyance system that we could never overcome that cost in the development of a new site. Primarily because there is no land available near the District 2 service area that could be utilized, therefore, a whole new conveyance system would be required to a new off-site location.

Alternative 3 - New Independent WWTF

The final alternative considered for treatment and disposal of the additional wastewater flow is to construct an independent WWTF and keep the two service areas separated. This alternative was not fully evaluated because we could not identify a suitable location for a new WWTF in close proximity to the proposed service area.

Alternatives Considered - Design Criteria

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 3 - New Independent WWTF

Alternate Site Design Criteria

The design criteria for selection of an alternate WWTF and disposal site includes many factors. However, the primary criteria for an alternate WWTF and disposal site would be to find a closer location to reduce the cost of conveyance (ie. eliminate the upgrade cost to existing lift stations), a site that has sufficient land area for both the physical WWTF and disposal components, but also the required isolation from incompatible uses, and to find a location that can safely discharge treated effluent with minimal impact to the receiving environment.

Alternatives Description Details	
System Component Type:	Treatment
System Component Name:	WWTF Expansion
Description	
Alternative Name:	Treatment Alt 1 - Expansion of Existing Technology
Is this alternate solution feasible or is it not feasible?	
Feasibility	✓ Yes

Treatment Alternative 1 - Existing System Expansion Summary

The most logical solution to adding treatment capacity to the existing WWTF is to simply expand using the same treatment technology already in-place. The original plant was designed to be modular in that the AeroMod SESQUOX treatment system can be purchased in incremental (by-the-gallon) units. In the proposed project, the expansion requires an approximate doubling of the existing treatment plant capacity, therefore, another 96,000 gallon treatment package would be added and integrated into the balance of the facility controls, headworks, etc. The final disposal of the treated effluent would similarly be to groundwater through an expansion of the existing rapid infiltration beds.

The costs associated with this expansion have been calculated based on a review and analysis of the original plant construction costs, discussions and price quote from the AeroMod supplier, and cost data analysis for the integration of the new unit into the existing system. The total estimated cost to complete this WWTF upgrade is \$0.85M in Phase I, which includes the new AeroMod package, headworks modifications, upgrades to the chemical feed system, and an expansion of the rapid infiltration beds. Phase II is estimated at \$0.75M and includes the AeroMod package and rapid infiltration beds only for the Phase II discharge increase.

Alternative 3 - New WWTF Site

The final alternative considered for treatment and disposal of the additional wastewater flow is to construct an independent WWTF and keep the two service areas separated. This alternative was evaluated and rejected, not because of the inability to develop a new treatment and disposal site, but because there is such economy in utilizing the existing wastewater collection and conveyance system that we could never overcome that cost in the development of a new site. Primarily because there is no land available near the District 2 service area that could be utilized, therefore, a whole new conveyance system would be required to a new off-site location.

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 1 - Expansion of Existing Technology

WWTF Expansion Design Criteria

The expansion of the WWTF using the existing treatment and disposal technology is pretty straight forward. The expansion must be able to be installed within the available land, integrate into the existing plant and controls, and produce effluent that meets or exceeds the EGLE discharge permit limitations.

The AeroMod supplier has provided the basis of design information included at the end of this Section for reference. This information has been developed from actual WWTF flow data and the original design, for which AeroMod was responsible.

Alternatives Considered - Annual O&M

Treatment

System Component Name:

WWTF
Expansion

Alternative Name:

Treatment Alt 1 - Expansion of Existing Technology

Annual O&M		
Expense Item	Description	Annual Amount
Insurance	Insurance/Audit	\$4,000.00
Contract Waste Treatment	Contract Operation of WWTF	\$98,300.00
Other	Lab, Vehicle, & Computer Costs	\$15,400.00
Supplies	Misc. Supplies	\$4,000.00
Engineering	Engineering/Legal	\$7,000.00
Utilities	Utilities	\$41,500.00
Repairs/Maintenance	Repairs & Maintenance	\$15,000.00
	Total:	\$185,200.00

WWTF Operation

The overall O&M costs are provided separately. The cost for O&M of the expanded plant is separated here as 50% of the total plant annual O&M cost.

Alternatives Considered - Project Costs

System Component Type:

Treatment

System Component Name:

WWTF Expansion

Alternative Name:

Treatment Alt 1 - Expansion of Existing Technology

Construction Costs		
Item	Description	Cost
Development (Construction)	Rapid Infiltration Beds Expansion	\$80,000.00
Development (Construction)	WWTF Headworks & Integration	\$245,000.00
Development (Construction)	AeroMod Package - 96,000 gpd	\$525,000.00
	Total Construction	\$850,000.00

Non Construction Costs		
Item	Description	Cost
Contingencies	Contingency	\$85,000.00
Engineering - Design	Engineering Design through Construction	\$136,000.00
Bond Counsel	Legal & Bond Counsel	\$8,500.00
	Total Non Construction	\$229,500.00

WWTF Quote from AeroMod

Aero-Mod, Inc.

ACTIVATED SLUDGE DESIGN CALCULATIONS

Project: Tuscarora Twp, MI - Phase II
Engineer: Performance Engineering
Act. Sludge Process: SEQUOX BNR

Date: 5-Mar-19
Units: English

DESIGN CONDITIONS & PARAMETERS

	Influent	Clarifier Effluent		
Flow (Q), MGD	0.190		Aeration Basin	
BOD ₅ , mg/l	240	10.0	Retention Time, hours	24.0
BOD ₅ , lbs/day	380	15.8	Aeration Tank Volume, Mgal	0.190
BOD _L , mg/l	351		MCRT, days	18.0
TSS, mg/l	280	10.0	Wastewater Temperature, °C	8
TSS, lbs/day	444	15.8	Aerobic Digester	
Ammonia-N, mg/l	85.0	1.0	Volume, % of Aeration Tank	64.0
Ammonia-N, lbs/day	134.7	1.6	Maximum Solids Conc., mg/l	15,000
TIN, mg/l		5.0	Maximum Solids Conc., %	1.50%
TIN, lbs/day		7.9	Digester Temperature, °C	8
Phosphorus-P, mg/l	15.0	0.9 *	Sludge Holding Tank	
Phosphorus-P, lbs/day	23.8	1.4	Volume, % of Aeration Tank	65.5
Net Alkalinity Loss, mg/l as CaCO ₃		(328)	Maximum Solids Conc., mg/l	30,000
			Maximum Solids Conc., %	3.00%

* Assumes Bio-P & Chemical Addition

PROJECTED OPERATING CONDITIONS - AERATION BASIN

Mixed Liquor Suspended Solids, mg/l	3,775
Excess MLSS due to Phos-P Uptake/Removal, mg/l	214
Mixed Liquor Volatile Suspended Solids, %	67%
F/M Ratio, lbs BOD ₅ /lb MLVSS	0.09
F/M Ratio, lbs BOD ₅ /lb MLSS	0.06
Organic Loading, lbs BOD ₅ /1000 cf of tank/day	15.0
Oxygen Requirements (Carbonaceous), mg/l/hr	8.37
Oxygen Requirements (Nitrogenous), mg/l/hr	16.10
Solids Production, lbs/day	332
WAS - Solids Wasted per Day, lbs/day	317
WAS - Solids Wasted per Day, gal/day @ 0.38%	10,054

PROJECTED OPERATING CONDITIONS - AEROBIC DIGESTER

Volatile Solids Loading in Digester, lbs VSS/1,000 cf of tank/day	13
Volatile Solids Reduction in Digester, %	37%
Solids Wasted from Digester, lbs/day	237
Mass Solids Yield in Process & Digester per Mass Influent BOD ₅ , %	66%
Volume Wasted from Digester, gallons/day	1,891
Digester Sludge Age, days	64
Air Required for Stabilization, scfm	100
Air Required for Mixing @ 30 cfm/1000 cf	488

PROJECTED OPERATING CONDITIONS - SLUDGE HOLDING TANK

Thickened Sludge Age, days	133
Total Volative Solids Reduction in Digester & Sludge Holding Tank, %	40%
Solids Wasted from Sludge Holding Tank, lbs/day	233
Volume Wasted from Sludge Holding Tank, gallons/day	930

Aero-Mod, Inc.
AERATION DESIGN CALCULATIONS

Project: Tuscarora Twp, MI - Phase II
Engineer: Performance Engineering
Diffuser Type Used: Stainless Steel Coarse Bubble

Date: 5-Mar-19
Units: English

AERATION REQUIREMENTS - SECOND & THIRD STAGE

	Design	Peak
Removal in Second Stage	35%	27.5%
Oxygen Required for BOD [$Q * BOD_{rem} * 8.34 * O_2 \text{ Req.} / 24$], lbs O ₂ /hr	8.3	10.3
Oxygen Required for TKN [$Q * TKN_{rem} * 8.34 * O_2 \text{ Req.} / 24$], lbs O ₂ /hr	9.0	10.5
Actual Oxygenation Rate (AOR), lbs O₂/hr	17.4	20.9

Standard Oxygenation Rate (SOR), lbs O₂/hr

32.7 39.3

$$SOR = [(AOR * C_{s,20}) / (\alpha * \theta^{(T-20)} * (Tau * \Omega * \beta * C_{s,20} - C_L) * F)]$$

Where:	C_{s,T,H} Actual Value of D.O. Saturation, mg/l	9.08	C_L Residual D.O. Conc, mg/l	2.0
	C_{s,20} Steady State Value of D.O. Saturation, mg/l	9.08	T Temperature of Water, °C	20
	Tau Oxygen Saturation Value (C _{s,T,H} /C _{s,20})	1.000	F Diffuser Fouling Factor	1.00
	α Alpha - Oxygen Transfer Correction Factor for Waste	0.75	θ Theta - Oxygen Transfer Coeffi	1.024
	β Beta - Salinity-Surface Tension Correction Factor	0.95	Site Elevation, FASL	620
	P_H Atmospheric Pressure at Site Elevation, psi/FASL	14.37	Ω Omega (P _H /P _s)	0.978

Air Requirement = [SOR / (Oxygen Density * TE% * Diffuser Depth) / 60], scfm **271 326**

Where:	Oxygen Density, lbs O ₂ /cf	0.0175	Diffuser Depth Below Water Surface, ft	13.5
	Transfer Efficiency per Foot of Submergence, %	0.85%		

Denitrification Credit = [Air Rqmt * (TKN_{oxy} / AOR) * 50% * ((TKN_o - TN_o) / TKN_o)], scfm **50 57**

Where: TN_o = TKN_o / 2 (assumed when D.O. control is not used)

Total Aeration Required in Aeration Basin, scfm **221 269**

Air Correction

$$icfm = scfm / [((T_{std} + 460) / (T_{air} + 460)) * ((P_H - (RH\% * SVP_{Tair})) / (14.7 - (RH\%_{std} * SVP_{std}))) * ((P_A / P_H))]$$

Where:	T_{std} , °F	68	T_{air} Maximum Air Temperature, °F	104
	RH%_{std}	36%	RH% Maximum Relative Humidity, %	90%
	SVP_{std} , psi	0.34	SVP_{Tair} Saturated Vapor Pressure of Air @ T _{air} , psi	1.058
			P_A Actual Atmospheric Pressure after Blower Inlet, psi	14.17

Minimum Air Required for Mixing in Second & Third Stage Aeration Basin, cfm **135 Side Roll**

Aeration Pressure, in. H₂O **189 189**
psi, std (does not include blower inlet/outlet) **6.8 6.8**

	<u>Design</u> scfm	<u>Peak</u> scfm	<u>Design</u> icfm	<u>Peak</u> icfm
Aeration Basin - Coarse Bubble	221	269	261	317

Aero-Mod, Inc.
CLARIFIER DESIGN CALCULATIONS

Project: Tuscarora Twp, MI - Phase II
Engineer: Performance Engineering
Clarifier Type Used: Split-ClarAstor

Date: 5-Mar-19
Units: English

FLOW CONDITIONS

Design Flow, MGD	0.190	
Peaking Factor, hourly	4.00	0.760 MGD
Duration, min	60	
Peaking Factor, sustained	2.00	0.380 MGD
Aeration Tank Volume, Mgal	0.190	
MLSS, mg/l	3,775	
Avg. RAS Recycle Rate, %	150%	

EQUIPMENT SIZING & SELECTION

Number of Clarifiers	4	Surface Area per Clarifier, sf	192
Clarifier Unit Model	12192	Total Surface Area, sf	768
Bridge Length, ft	12	Total Weir Length, ft	84
Clarifier Unit Width, ft	16	Tank Wall Depth, ft	16.0
Number of Units per Clarifier	1	Tank Water Depth, ft	14.0

SURFACE OVERFLOW RATE

	<u>Design</u>
Design Flow, gpd/sf	247
Peak Day Flow, gpd/sf	495
Peak Hour Flow, gpd/sf	990
Max. Flow Allowed Through Clarifier Orifice, gpd/sf	1,000 * Max allowed to leave clarifier

WEIR OVERFLOW RATE

Design Flow, gpd/lin. ft	2,262
Peak Flow, gpd/lin. ft	9,048

SOLIDS LOADING RATE

Design Flow, lbs/day/sf	19.5
Peak Flow, lbs/day/sf	42.8

RETENTION TIME - including RAS

Design Flow, hr	4.1
Peak Flow, hr	1.8

Aero-Mod, Inc.
TANKAGE DESIGN CALCULATIONS

Project: Tuscarora Twp, MI - Phase II
Engineer: Performance Engineering
Tank Construction: Cast-in-Place Concrete

Date: 5-Mar-19
Units: English

BIO-P / SELECTOR TANK

<u>Fermentation</u>	Volume Required, gal	10,556	
Number of Tanks	2	Tank Length, ft	7.42
Tank Wall Height, ft	16.0	Tank Width, ft	7.50
Tank Water Depth, ft	14.0	Total Volume, gallons	11,650
Freeboard, ft	2.0	Retention Time, min.	88
<u>Anaerobic Selector</u>	Volume Required, gal	10,556	
Number of Tanks	2	Tank Length, ft	7.42
Tank Wall Height, ft	16.0	Tank Width, ft	7.50
Tank Water Depth, ft	14.0	Total Volume, gallons	11,650
Freeboard, ft	2.0	Retention Time (Design + RAS), min.	35

AERATION TANK

	Volume Selected, gal	190,032	
Tank Wall Height, ft	16.0	Number of Trains	2
Tank Water Depth, ft	14.0	Number of Stages	2
	<u>Stage 1</u>	<u>Stage 2</u>	
Number of Tanks	4	Number of Tanks	4
Tank Length, ft	13.00	Tank Length, ft	30.17
Tank Width, ft	16.33	Tank Width, ft	8.00
Area of Each Tank, sf	212	Area of Each Tank, sf	241
Total Volume, gallons	88,942	Total Volume, gallons	101,090
	Total volume provided, gal	190,032	

CLARIFIER TANK

Number of Tanks	4	Tank Length, ft	12.0
Tank Wall Height, ft	16.0	Tank Width, ft	16.0
Tank Water Depth, ft	14.0	Total Volume, gallons	80,425

AEROBIC DIGESTER TANK

	Volume Selected, gal	121,692	
Number of Tanks	4	Tank Length, ft	25.5
Tank Wall Height, ft	16.0	Tank Width, ft	11.0
Tank Water Depth, ft	14.5	Total Volume, gallons	121,692

SLUDGE HOLDING TANK

	Volume Selected, gal	124,476	
Number of Tanks	2	Tank Length, ft	52.17
Tank Wall Height, ft	16.0	Tank Width, ft	14.5
Tank Water Depth, ft	14.5	Total Volume, gallons	164,082

OVERALL TANKAGE DIMENSIONS - New

Total Length, ft	60.33	Wall Thickness, in	14.0
Total Width, ft	53.33	Floor Thickness, in	18.0
Total Area, sf	3,218	Total Concrete for Walls, cy	295
Total Wall Length, LF	427	Total Concrete for Slab, cy	192
		Total Grout for Clarifier, cy	18

Aero-Mod, Inc.
EQUIPMENT AND SERVICES COST ESTIMATE

Project: Tuscarora Twp, MI - Phase II
Engineer: Performance Engineering

Date: 5-Mar-19
Units: English

EQUIPMENT SUPPLIED

AERATION EQUIPMENT

- 2 Aeration pd blower/sound enclosure package, 75 HP - 460 V, 3 ph
- 4 SEQUOX aeration control butterfly valve, pneumatically-actuated
- 4 SEQUOX aeration throttling butterfly valve, gear-operated
- 2 Aeration throttling butterfly valve, gear-operated
- 6 Wall mounted aeration assembly, Model WA-PF6-2 - First Stage Aeration Basins
- 6 Diffuser header for PF6 assembly - First Stage Aeration Basins
- 10 Wall mounted aeration assembly, Model WA-HS2-2 - Second Stage Aeration Basins

BIO-P EQUIPMENT

- 1 Wall mounted aeration assembly, Model WAD-HSS2
- 1 Wall mounted aeration assembly, Model WAD-HSS2A
- 1 Bio-P Submersible Mixer - ___ HP - 230/460 V, 3 ph - Anaerobic Selector Zone

CLARIFIER & RAS EQUIPMENT

- 2 Aero-Mod Split-ClarAtoR Clarifier System - 192 sf/each
- 2 Algae Control Transducer - 115V

DIGESTION, SLUDGE HOLDING & WAS EQUIPMENT

- 2 WAS airlift pump, Model AL-400
- 2 Aeration control butterfly valve, pneumatically-actuated
- 2 Aeration control butterfly valve, gear-operated
- 6 Wall mounted aeration assembly, Model WAD-HS2-2
- 2 WAS airlift pump, Model AL-400L

ELECTRICAL & CONTROLS EQUIPMENT

- 1 SEQUOX Process Control Panel, Model SQC-200-RTU - 115 V
- 2 Blower control panel w/ Allen Bradley 6-pulse VFD - 460 V, 3 ph
- 1 D.O. Control System - probe analyzer w/ 2 rail-mounted DO probes
- 1 Bio-P Submersible Mixer control panel - 230/460 V, 3 ph

ANCILLARY EQUIPMENT

- 131 Wall mounted walkway & handrail, LF
- 2 Wall mounted stop plates & frames
- LS Spare Parts
- LS Interior tank installation materials - SS brackets, SS bolts, PVC wall inserts, pneumatic tubing, misc.

SERVICES

- LS Freight to jobsite
- LS Aero-Mod equipment dry inspection/equipment start-up & training, two (2) days
- LS Aero-Mod biological training, two (2) days
- LS Operator training school - 2 days at Aero-Mod facilities in Manhattan, KS

TOTAL EQUIPMENT COST =====
\$469,300

EST'D INSTALLATION of Aero-Mod EQUIPMENT by Contractor \$105,000
(Includes Interior Tank PVC Piping)

ESTIMATED CONCRETE TANK COST by Contractor \$380,000

Concrete for Tank Walls, cy	295	
Installed Concrete Cost, \$/cy	\$800	
Concrete for Tank Slab, cy	192	
Installed Concrete Cost, \$/cy	\$700	
Grout for Clarifier Bottom, cy	18	
Installed Concrete Cost, \$/cy	\$550	

ESTIMATED COST =====
\$954,300

PLEASE NOTE THE FOLLOWING

1. Buildings, site work, and auxiliary equipment are not included within this estimate.
2. No RAS pump station and associated electrical requirements are required.
3. Yard piping is not required between each Aero-Mod tank.
4. All associated walkways & handrail for the clarifier and tankage are included in the above estimate.
5. This estimate is valid for 90 days from the above date.

WWTF Expansion Cost Summary

The proposed expansion of the WWTF using the existing treatment and disposal technology is the selected alternative for many reasons. One of which is the fact that the costs associated with this alternative are readily quantifiable and have a low risk of unforeseen issues. This treatment and disposal alternative is incorporated into the more detailed cost analysis provided for the project as a whole.

Alternatives Description Details	
System Component Type: Collection	System Component Name: Collection Sewer Expansion
Description	
Alternative Name: Alternative 3 - Low Pressure Sewer	
Is this alternate solution feasible or is it not feasible?	
Feasibility	✓ Yes

Alternative 3 - LPS Description

The Low Pressure Sewer (LPS) alternative is an evaluation of a collection system that utilizes individual grinder pumps to send wastewater directly from the point of generation into a forcemain. The primary benefit of this system is that the forcemain is relatively small diameter piping and can be installed at a minimum depth to prevent freezing, going up and down to follow the terrain. In the case of the District 2 service area, some of the sewer could be installed with directional drilling technology to minimize surface disturbance and the associated costs. This would also reduce the construction complications associated with the installation of deeper pipe in areas of high groundwater conditions.

Alternatives Considered - Map

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Map

A full-size map of the proposed low pressure sewer network and associated pumping stations is included for reference as an appendix to this report.

Alternatives Considered - Land Requirements

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Land Requirements

Since all project construction will occur within the road right-of-ways, there is no additional land requirement.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Construction Concerns

There is always the potential for construction problems associated with excavating in road right-of-ways, such as utility conflicts. With this project in particular, there are some areas of limited access in the platted roads, narrowed by deep ditches on either side. There is also a high groundwater level in the lower lying areas that will need to be handled with dewatering equipment. This alternative also relies upon a great deal of directional drilling, which adds uncertainty as to subsurface conditions being suitable for that process. On the positive side, the District 2 service area does not have a public water supply system, so there is not a concern over maintaining separation from a water main.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Efficiency Summary

There is no potential for water reuse or efficiency and limited ability for energy efficiency associated with this alternative because the only power consumption is associated with the pumping stations.

Alternatives Considered - Green Infrastructure

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Green Infrastructure Summary

There is not much opportunity for green infrastructure either with this alternative, or in comparison to the other alternatives.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion
Alternative Name: Alternative 3 - Low Pressure Sewer

Alternative 3 - LPS Sustainability Summary

There is not much opportunity for sustainability measures associated with the collection system construction either independently, or in comparison between the alternatives. Although, there could be a case made that this alternative has some advantage in operational simplicity for the Township by placing the individual pumping equipment on the actual owners property and allowing them to essentially operate it, providing only maintenance and emergency response services.

Alternatives Considered - Annual O&M

Collection

System Component Name:

Collection Sewer
Expansion

Alternative Name:

Alternative 3 - Low Pressure Sewer

Annual O&M		
Expense Item	Description	Annual Amount
Repairs/Maintenance	Repairs & Maintenance	\$8,000.00
Utilities	Utilities	\$8,000.00
Contract Services - Other	Contract Operations - Collection System	\$24,000.00
	Total:	\$40,000.00

Alternative 3 - LPS O&M Summary

The operation and maintenance costs associated with this alternative are quite low for the Township in comparison to the other alternatives because all of the pumping equipment is owned and maintained by the customers. The exception being the two municipality owned lift stations, pumping back to the existing collection sewer system.

Alternatives Considered - Project Costs

System Component Type:

Collection

System Component Name:

Collection Sewer Expansion

Alternative Name:

Alternative 3 - Low Pressure Sewer

Construction Costs

Item	Description	Cost
Development (Construction)	Construction Cost	\$4,238,000.00
	Total Construction	\$4,238,000.00

Non Construction Costs

Item	Description	Cost
Contingencies	Contingencies - 10%	\$423,000.00
Engineering - Construction Administration	Engineering Construction Oversight & Contract Admin - 8%	\$339,000.00
Legal Services	Legal & Bond Counsel	\$85,000.00
Engineering - Design	Engineering Design, Survey, & Contract/Bid Docs - 8%	\$339,000.00
	Total Non Construction	\$1,186,000.00

Alternatives Considered - Project Costs

**Alternative 3 LPS Cost Summary
DISTRICT 2 - PHASE I - LOW PRESSURE SEWER**

ENGINEERS EST 3/19/21

<u>No.</u>	<u>Unit</u>	<u>Description</u>	<u>TOTAL</u>	<u>Unit Price</u>	<u>Amount</u>
1	LS	MOBILIZATION, MAX. ____	1.0	\$ 250,000.00	\$ 250,000.00
2	LS	TRAFFIC CONTROL	1.0	\$ 35,000.00	\$ 35,000.00
3	LS	CONSTRUCTION STAKING SP	1.0	\$ 25,000.00	\$ 25,000.00
4	STA	MACHINE GRADING, MOD	27.5	\$ 1,250.00	\$ 34,375.00
5	FT	CULV, REM, LESS THAN 24 INCH	320.0	\$ 5.00	\$ 1,600.00
6	FT	CURB AND GUTTER, REM	200.0	\$ 3.50	\$ 700.00
7	SYD	HMA, SURFACE, REM	1,500.0	\$ 4.00	\$ 6,000.00
8	SYD	HMA, SURFACE, PULVERIZE	7,133.0	\$ 2.25	\$ 16,049.25
9	SYD	PAVT, REM	200.0	\$ 12.50	\$ 2,500.00
10	EA	SIGN, TYPE III, ERECT, SALV	25.0	\$ 100.00	\$ 2,500.00
11	SYD	AGGREGATE BASE, REPLACE ONSITE MATERIALS, 6 INCH	5,000.0	\$ 2.50	\$ 12,500.00
12	SYD	AGGREGATE BASE, 6 INCH	3,600.0	\$ 13.25	\$ 47,700.00
13	SYD	SHOULDER CL II, 4 INCH	200.0	\$ 13.25	\$ 2,650.00
14	CYD	SUBGRADE UNDERCUTTING, TYPE II	800.0	\$ 22.00	\$ 17,600.00
15	FT	CULV, CL B, 12 INCH	320.0	\$ 25.00	\$ 8,000.00
16	FT	DEWATERING SYSTEM, TRENCH, WELL POINTS	1,600.0	\$ 22.00	\$ 35,200.00
17	FT	DEWATERING SYSTEM, TRENCH, OTHER	2,500.0	\$ 12.00	\$ 30,000.00
18	FT	SEWER, HPDE (SDR-11), 1 1/2 INCH	8,100.0	\$ 13.50	\$ 109,350.00
19	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 1 1/2 INCH	9,720.0	\$ 37.00	\$ 359,640.00
20	FT	SEWER, HPDE (SDR-11), 2 INCH	500.0	\$ 21.00	\$ 10,500.00
21	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 2 INCH	1,700.0	\$ 48.00	\$ 81,600.00
22	FT	SEWER, HPDE (SDR-11), 3 INCH	1,500.0	\$ 23.50	\$ 35,250.00
23	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 3 INCH	1,050.0	\$ 61.00	\$ 64,050.00
24	FT	SEWER, HPDE (SDR-11), 4 INCH	1,200.0	\$ 28.00	\$ 33,600.00
25	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 4 INCH	1,475.0	\$ 70.00	\$ 103,250.00
31	EA	SAN SERVICE, PRESSURE	162.0	\$ 800.00	\$ 129,600.00
34	EA	SAN STRUCTURE, 60 INCH DIA., AIR RELIEF	2.0	\$ 13,500.00	\$ 27,000.00
35	EA	SAN STRUCTURE, 60 INCH DIA., CLEANOUT	3.0	\$ 11,200.00	\$ 33,600.00
36	EA	SAN STRUCTURE, 24 INCH DIA., CLEANOUT	16.0	\$ 2,950.00	\$ 47,200.00
37	EA	GATE VALVE AND BOX, 2 INCH	2.0	\$ 3,000.00	\$ 6,000.00
38	EA	GATE VALVE AND BOX, 3 INCH	6.0	\$ 4,100.00	\$ 24,600.00
39	EA	GATE VALVE AND BOX, 4 INCH	12.0	\$ 5,200.00	\$ 62,400.00
40	EA	LIFT STATION - A	-	\$ 175,000.00	\$ -
41	EA	LIFT STATION - B	-	\$ 58,500.00	\$ -
42	EA	SAN TIE INTO EX. STRUCTURE, COMPLETE	1.0	\$ 7,500.00	\$ 7,500.00
43	EA	PUMP STATION, INDIVIDUAL, COMPLETE	162.0	\$ 12,500.00	\$ 2,025,000.00
44	EA	LIFT STATION, UPGRADES, COMPLETE	1.0	\$ 210,000.00	\$ 210,000.00
45	LS	TREATMENT PLANT	1.0	\$ 850,000.00	\$ 850,000.00
46	FT	CURB AND GUTTER, CONC, DET C4	200.0	\$ 22.00	\$ 4,400.00
48	SYD	DRIVEWAY, NONREINF CONC, 6 INCH	200.0	\$ 52.00	\$ 10,400.00
49	TON	HMA, 4E1, MOD, TOP	1,838.0	\$ 120.00	\$ 220,560.00
50	LS	SITE RESTORATION	1.0	\$ 105,000.00	\$ 105,000.00

TOTAL PROJECT \$ 5,087,874.25

ENGINEERING, SURVEY, & CONTRACT ADMIN (16%) \$ 814,059.88

LEGAL & BOND COUNSEL (2%) \$ 101,757.49

TOTAL PROJECT COSTS \$ 6,003,691.62

10% CONTINGENCY \$ 508,787.43

TOTAL PROJECT COST ESTIMATE \$ 6,512,479.04

Alternative 3 - LPS Project Cost Summary

The total estimated cost to provide low pressure sewer service to each customer is \$6.5M. There are 162 estimated connections to serve the 190 EDUs in the Phase I area of District 2, which would result in a per resident cost of approximately \$34,200 each. This cost amortized over a 40-year loan repayment is unaffordable for this intermediate income level community. This alternative also has the problem of requiring easements from all of the property owners for the pumping equipment. While this is certainly a logistical issue, it also has some monetary cost in legal fees for the coordination.

Alternatives Description Details	
System Component Type: Collection	System Component Name: Collection Sewer Expansion
Description	
Alternative Name: Alternative 4 - Vacuum Sewer	
Is this alternate solution feasible or is it not feasible?	
Feasibility	No

Explanation for Lack of Feasibility

The use of vacuum sewer systems are uncommon in our region, but at the direction of the Township Board, this form of sewer collection was investigated. The results of our research found a supplier of vacuum sewer equipment in Michigan and we reached out to find additional information. The information that was provided indicates that the homeowners will have to install equipment within their property for the proper function of the system. In conjunction with the high groundwater conditions in much of the service area, we deemed this alternative to be not technically feasible. The primary reason being that the Township does not want to install equipment for the proper function of the sewer system on each customer's private property, which requires us to first obtain easements and/or legal agreements. The logistics of the installation and overall cost of the facilities, in conjunction with the Township's desire to stay out of the private property led us to deem this alternative as not viable.

Alternative 4 - Vacuum Sewer Description

An alternative utilizing vacuum sewer technology was evaluated for the collection system. The alternative was deemed to be not technically feasible.

Alternatives Description Details	
System Component Type: Collection	System Component Name: Collection Sewer Expansion
Description	
Alternative Name: Alternative 1 - Gravity Services	
Is this alternate solution feasible or is it not feasible?	
Feasibility	✓ Yes

Gravity Services Summary

The Township desires to be able to offer every resident connecting to the sewer with a gravity sewer lead as the most preferred sewer service method. In the Phase I residential area west of District 1 and bound between the Sturgeon River and Mack Ave, typical gravity sewer collection infrastructure is proposed. Since the terrain along the Sturgeon Island shoreline area is relatively flat, low-lying ground, construction of gravity collection system infrastructure became too costly in these areas. Therefore, this alternative includes some force main piping and duplex pumping stations that will be installed in the right-of-way and owned by the Township to serve these residents. The residents will then be provided with a gravity service lead that connects to the Township duplex pumping station. In this way, all residents are being treated equal in terms of no one being required to supply their own pumping equipment.

Similarly, the Phase II residential area between Mack Ave and Indian River would mostly have gravity sewer, with Township owned grinder pump stations in the right-of-way serving the lower lying areas around Columbus Beach and the Indian River shoreline.

Alternatives Considered - Map

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Map

A full-size map of the proposed Phase I and Phase II, District 2 service area and collection system using the Township pump ownership model is included for reference in the appendices.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion
Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Environmental Impacts

The primary environmental impacts associated with this alternative are construction in areas that are near water bodies, it will require dewatering, and it will involve boring under water bodies. Each of these impacts are further addressed below:

The bulk of the construction will take place within road right-of-ways where staging of excavated soil and restoration of disturbed ground will require special attention to ensure that this material is not eroded or otherwise discharged to adjacent ditches and stormwater conveyance systems that could ultimately impact the receiving waters of the Sturgeon River, the Indian River, or Burt Lake. Soil erosion controls will include silt fencing, a stockpile management plan, and/or transport of excavation spoils off-site, as appropriate.

Where dewatering is required, control of the discharged groundwater poses a potential for erosion and possible direct discharge of sediment to the receiving water bodies. The impact of the dewatering activities will be mitigated by reducing the discharge velocity to non-erosive levels before release from the construction zone, use of well points for a more constant, but lower discharge flow rate, and the use of silt or sediment bags, as appropriate.

Finally, where it is necessary to cross the Sturgeon River or Indian River with a sewer pipe, this crossing will be done with directional drilling technology. This technology allows for the construction to proceed while tracking the actual location and depth of the pipe. A minimum of 5-foot depth below the river bottom will be maintained to prevent the accidental release of drilling fluids. This process may require permitting from the State and any additional permit requirements will be incorporated into the project.

Alternatives Considered - Water and Energy Efficiency

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Efficiency

There is not really much opportunity for energy efficiency or water conservation associated with the collection system construction either independently, or in comparison between the alternatives.

Alternatives Considered - Green Infrastructure

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Alternative 1 - Gravity Services Green Infrastructure

There is not really much opportunity for green infrastructure associated with the collection system construction either independently, or in comparison between the alternatives.

Collection

System Component Name:

Collection Sewer Expansion

Alternative Name:

Alternative 1 - Gravity Services

Annual O&M		
Expense Item	Description	Annual Amount
Contract Services - Other	Contract Operations - Collection System	\$27,000.00
Repairs/Maintenance	Repairs & Maintenance	\$10,000.00
Utilities	Utilities	\$8,500.00
	Total:	\$45,500.00

Alternative 1 - Gravity Services O&M

The costs associated with providing gravity services to all homes will require the Township to take on the utility costs associated with the pumping stations, all of the routine maintenance activities, as well as all repair costs. The bulk of the costs are associated with the duplex pumping stations and the larger lift stations, with the routine maintenance of the gravity collection system being relatively inexpensive.

Alternatives Considered - Project Costs

System Component Type:

Collection

System Component Name:

Collection Sewer Expansion

Alternative Name:

Alternative 1 - Gravity Services

Construction Costs

Item	Description	Cost
Development (Construction)	Construction Costs	\$3,255,000.00
	Total Construction	\$3,255,000.00

Non Construction Costs

Item	Description	Cost
Contingencies	Contingencies - 10%	\$325,500.00
Engineering - Design	Design Engineering, Survey, Contract/Bid docs - 8%	\$260,400.00
Legal Services	Legal & Bond Counsel	\$42,500.00
Engineering - Construction Administration	Engineering, Construction Oversight & Contract Admin - 8%	\$260,400.00
	Total Non Construction	\$888,800.00

Alternatives Considered - Project Costs

**Alt 1 Gravity Services Cost Summary
DISTRICT 2 - PHASE I - GRAVITY SERVICES**

ENGINEERS EST 03/18/21

<u>No.</u>	<u>Unit</u>	<u>Description</u>	<u>TOTAL</u>	<u>Unit Price</u>	<u>Amount</u>
1	LS	MOBILIZATION, MAX. ____	1.0	\$ 250,000.00	\$ 250,000.00
2	LS	TRAFFIC CONTROL	1.0	\$ 35,000.00	\$ 35,000.00
3	LS	CONSTRUCTION STAKING SP	1.0	\$ 25,000.00	\$ 25,000.00
4	STA	MACHINE GRADING, MOD	8.6	\$ 3,250.00	\$ 27,950.00
5	FT	CULV, REM, LESS THAN 24 INCH	850.0	\$ 5.00	\$ 4,250.00
6	FT	CURB AND GUTTER, REM	200.0	\$ 3.50	\$ 700.00
7	SYD	HMA, SURFACE, REM	2,200.0	\$ 4.00	\$ 8,800.00
8	SYD	HMA, SURFACE, PULVERIZE	19,500.0	\$ 2.25	\$ 43,875.00
9	SYD	PAVT, REM	600.0	\$ 12.50	\$ 7,500.00
10	EA	SIGN, TYPE III, ERECT, SALV	45.0	\$ 100.00	\$ 4,500.00
11	SYD	AGGREGATE BASE, REPLACE ONSITE MATERIALS, 6 INCH	22,500.0	\$ 2.50	\$ 56,250.00
12	SYD	AGGREGATE BASE, 6 INCH	2,200.0	\$ 13.25	\$ 29,150.00
13	SYD	SHOULDER CL II, 4 INCH	500.0	\$ 13.25	\$ 6,625.00
14	CYD	SUBGRADE UNDERCUTTING, TYPE II	1,500.0	\$ 22.00	\$ 33,000.00
15	FT	CULV, CL B, 12 INCH	850.0	\$ 25.00	\$ 21,250.00
16	FT	DEWATERING SYSTEM, TRENCH, WELL POINTS	1,600.0	\$ 22.00	\$ 35,200.00
17	FT	DEWATERING SYSTEM, TRENCH, OTHER	6,900.0	\$ 12.00	\$ 82,800.00
18	FT	SEWER, HPDE (SDR-11), 1 1/2 INCH	-	\$ 13.50	\$ -
19	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 1 1/2 INCH	400.0	\$ 37.00	\$ 14,800.00
20	FT	SEWER, HPDE (SDR-11), 2 INCH	-	\$ 21.00	\$ -
21	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 2 INCH	2,200.0	\$ 48.00	\$ 105,600.00
22	FT	SEWER, HPDE (SDR-11), 3 INCH	1,300.0	\$ 23.50	\$ 30,550.00
23	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 3 INCH	800.0	\$ 61.00	\$ 48,800.00
24	FT	SEWER, HPDE (SDR-11), 4 INCH	1,700.0	\$ 28.00	\$ 47,600.00
25	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 4 INCH	1,650.0	\$ 70.00	\$ 115,500.00
26	FT	SEWER SERVICE, PVC (SDR-26), 6 INCH	7,885.0	\$ 18.50	\$ 145,872.50
27	FT	SEWER, PVC (SDR-26), 8 INCH	5,250.0	\$ 58.50	\$ 307,125.00
28	EA	SEWER CLEANOUT, 6 INCH	-	\$ 235.00	\$ -
29	EA	SAN STRUCTURE, 48 INCH DIA.	23.0	\$ 4,800.00	\$ 110,400.00
30	EA	SAN STRUCTURE, 60 INCH DIA., AIR RELIEF	2.0	\$ 13,500.00	\$ 27,000.00
31	EA	SAN STRUCTURE, 60 INCH DIA., CLEANOUT	7.0	\$ 11,200.00	\$ 78,400.00
32	EA	SAN STRUCTURE, 24 INCH DIA., CLEANOUT	4.0	\$ 2,950.00	\$ 11,800.00
33	EA	GATE VALVE AND BOX, 2 INCH	5.0	\$ 3,000.00	\$ 15,000.00
34	EA	GATE VALVE AND BOX, 3 INCH	4.0	\$ 4,100.00	\$ 16,400.00
35	EA	GATE VALVE AND BOX, 4 INCH	6.0	\$ 5,200.00	\$ 31,200.00
36	EA	LIFT STATION - A	1.0	\$ 175,000.00	\$ 175,000.00
37	EA	LIFT STATION - B	2.0	\$ 58,500.00	\$ 117,000.00
38	EA	SAN TIE INTO EX. STRUCTURE, COMPLETE	1.0	\$ 7,500.00	\$ 7,500.00
39	EA	PUMP STATION, DUPLEX, COMPLETE	11.0	\$ 42,000.00	\$ 462,000.00
40	EA	LIFT STATION, UPGRADES, COMPLETE	1.0	\$ 180,000.00	\$ 180,000.00
41	LS	TREATMENT PLANT	1.0	\$ 850,000.00	\$ 850,000.00
42	FT	CURB AND GUTTER, CONC, DET C4	200.0	\$ 22.00	\$ 4,400.00
43	SYD	DRIVEWAY, NONREINF CONC, 6 INCH	600.0	\$ 52.00	\$ 31,200.00
44	TON	HMA, 4E1, MOD, TOP	3,290.0	\$ 120.00	\$ 394,800.00
45	LS	SITE RESTORATION	1.0	\$ 105,000.00	\$ 105,000.00

TOTAL PROJECT \$ 4,104,797.50

ENGINEERING, SURVEY, & CONTRACT ADMIN (16%) \$ 656,767.60

LEGAL & BOND COUNSEL (1.5%) \$ 61,571.96

TOTAL PROJECT COSTS \$ 4,823,137.06

10% CONTINGENCY \$ 410,479.75

TOTAL PROJECT COST ESTIMATE \$ 5,233,616.81

Alternative 1 - Gravity Services Cost Summary

The total estimated cost to provide gravity service leads to each customer is \$4.2M. There are 190 estimated connections in Phase I, which would result in a per resident cost of approximately \$22,000 each. This cost, even amortized over a 40-year loan repayment period is unaffordable for this intermediate income level community. Therefore, the Township is requesting grant support for the project in order to make this much needed project affordable. Without grant assistance, the cost of the collection system in conjunction with the treatment plant upgrades will not be affordable to the community.

Alternatives Description Details	
System Component Type: Collection	System Component Name: Collection Sewer Expansion
Description	
Alternative Name: Alternative 2 - Gravity & FM Hybrid	
Is this alternate solution feasible or is it not feasible?	
Feasibility	✓ Yes

Alternative 2 - Gravity & FM Hybrid

This alternative encompasses the same traditional gravity sewer collection system for the residential area between the rivers as Alternative 1, but for the forcemain piping instead of the Township owning the grinder pump stations, these would be individually owned. This project is still over 80% gravity sewer connections, with the lower terrain around the Burt Lake shoreline being served with individual pumps and low pressure sewer connections. It is understood that this alternative creates a greater differential in upfront cost between the gravity sewer connections and the low pressure sewer connections due to the retrofit required for situating an individual grinder pump package on the property.

Alternatives Considered - Map

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 2 - Gravity & FM Hybrid

Alternative 2 - Gravity & FM Hybrid

A full-size map of the proposed gravity sewer and forcemain hybrid service area plan is included in the appendices for reference.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion
Alternative Name: Alternative 2 - Gravity & FM Hybrid

Alternative 2 - Gravity & FM Hybrid Environmental Impacts

The primary environmental impacts associated with this alternative are that it will require construction in areas that are near water bodies, it will require dewatering, and it will involve boring under water bodies. Each of these impacts are further addressed below:

The bulk of the construction will take place within road right-of-ways where staging of excavated soil and restoration of disturbed ground will require special attention to ensure that this material is not eroded or otherwise discharged to adjacent ditches and stormwater conveyance systems that could ultimately impact the receiving waters of the Sturgeon River, the Indian River, or Burt Lake. Soil erosion controls will include silt fencing, a stockpile management plan, and/or transport of excavation spoils off-site, as appropriate.

Where dewatering is required, control of the discharged groundwater poses a potential for erosion and possible direct discharge of sediment to the receiving water bodies. The impact of the dewatering activities will be mitigated by reducing the discharge velocity to non-erosive levels before release from the construction zone, use of well points for a more constant, but lower discharge flow rate, and the use of silt or sediment bags, as appropriate.

Finally, where it is necessary to cross the Sturgeon River or Indian River with a sewer pipe, this crossing will be done with directional drilling technology. This technology allows for the construction to proceed while tracking the actual location and depth of the pipe. A minimum of 5-foot depth below the river bottom will be maintained to prevent the accidental release of drilling fluids. This process may require permitting from the State and any additional permit requirements will be incorporated into the project.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 2 - Gravity & FM Hybrid

Alternative 2 - Gravity & FM Hybrid Construction Issues

There is always the potential for construction problems associated with excavating in road right-of-ways, such as utility conflicts. With this project in particular, there are some areas of limited access in the platted roads, narrowed by deep ditches on either side. There is also a high groundwater level in the lower lying areas that will need to be handled with dewatering equipment. On the positive side, the District 2 service area does not have a public water supply system, so there is not a concern over maintaining separation from a water main. Another potential construction issue is the process of obtaining easements from the individual property owners for the installation of the pumping equipment.

System Component Type: Collection **System Component Name:** Collection Sewer Expansion

Alternative Name: Alternative 2 - Gravity & FM Hybrid

Alternative 2 - Gravity & FM Hybrid Green Infrastructure Summary

There is not much opportunity for green infrastructure associated with the collection system construction either independently, or in comparison between the alternatives.

Alternatives Considered - Annual O&M

Collection

System Component Name:

Collection Sewer
Expansion

Alternative Name:

Alternative 2 - Gravity & FM Hybrid

Annual O&M		
Expense Item	Description	Annual Amount
Contract Services - Other	Contract Operations - Collection System	\$26,000.00
Repairs/Maintenance	Repairs & Maintenance	\$7,500.00
Utilities	Utilities	\$3,500.00
	Total:	\$37,000.00

Alternative 2 - Gravity & FM Hybrid O&M Cost Summary

The costs associated with the gravity sewer are minimal. The main cost items are associated with the weekly inspections and maintenance activities at the pumping stations. The maintenance of the individual grinder pumps requires some additional costs, but can be managed along with the larger lift stations and ancillary forcemain equipment.

Alternatives Considered - Project Costs

System Component Type:

Collection

System Component Name:

Collection Sewer Expansion

Alternative Name:

Alternative 2 - Gravity & FM Hybrid

Construction Costs

Item	Description	Cost
Development (Construction)	Construction Costs	\$3,084,000.00
	Total Construction	\$3,084,000.00

Non Construction Costs

Item	Description	Cost
Contingencies	Contingency - 10%	\$308,000.00
Legal Services	Legal & Bond Counsel	\$46,000.00
Engineering - Design	Design Engineering, Survey, Contract/Bid docs - 8%	\$240,000.00
Engineering - Construction Administration	Engineering, Construction Oversight, & Contract Admin - 8%	\$240,000.00
	Total Non Construction	\$834,000.00

Alt 2 Hybrid Services Cost Summary
DISTRICT 2 - PHASE I - HYBRID GRAVITY - LPS

ENGINEERS EST 03/18/21

<u>No.</u>	<u>Unit</u>	<u>Description</u>	<u>TOTAL</u>	<u>Unit Price</u>	<u>Amount</u>
1	LS	MOBILIZATION, MAX. ____	1.0	\$ 250,000.00	\$ 250,000.00
2	LS	TRAFFIC CONTROL	1.0	\$ 35,000.00	\$ 35,000.00
3	LS	CONSTRUCTION STAKING SP	1.0	\$ 25,000.00	\$ 25,000.00
4	STA	MACHINE GRADING, MOD	8.6	\$ 3,250.00	\$ 27,950.00
5	FT	CULV, REM, LESS THAN 24 INCH	850.0	\$ 5.00	\$ 4,250.00
6	FT	CURB AND GUTTER, REM	200.0	\$ 3.50	\$ 700.00
7	SYD	HMA, SURFACE, REM	2,200.0	\$ 4.00	\$ 8,800.00
8	SYD	HMA, SURFACE, PULVERIZE	19,500.0	\$ 2.25	\$ 43,875.00
9	SYD	PAVT, REM	600.0	\$ 12.50	\$ 7,500.00
10	EA	SIGN, TYPE III, ERECT, SALV	45.0	\$ 100.00	\$ 4,500.00
11	SYD	AGGREGATE BASE, REPLACE ONSITE MATERIALS, 6 INCH	22,500.0	\$ 2.50	\$ 56,250.00
12	SYD	AGGREGATE BASE, 6 INCH	2,200.0	\$ 13.25	\$ 29,150.00
13	SYD	SHOULDER CL II, 4 INCH	500.0	\$ 13.25	\$ 6,625.00
14	CYD	SUBGRADE UNDERCUTTING, TYPE II	1,500.0	\$ 22.00	\$ 33,000.00
15	FT	CULV, CL B, 12 INCH	850.0	\$ 25.00	\$ 21,250.00
16	FT	DEWATERING SYSTEM, TRENCH, WELL POINTS	1,600.0	\$ 22.00	\$ 35,200.00
17	FT	DEWATERING SYSTEM, TRENCH, OTHER	6,900.0	\$ 12.00	\$ 82,800.00
18	FT	SEWER, HPDE (SDR-11), 1 1/2 INCH	960.0	\$ 13.50	\$ 12,960.00
19	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 1 1/2 INCH	1,440.0	\$ 37.00	\$ 53,280.00
20	FT	SEWER, HPDE (SDR-11), 2 INCH	-	\$ 21.00	\$ -
21	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 2 INCH	2,200.0	\$ 48.00	\$ 105,600.00
22	FT	SEWER, HPDE (SDR-11), 3 INCH	1,300.0	\$ 23.50	\$ 30,550.00
23	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 3 INCH	800.0	\$ 61.00	\$ 48,800.00
24	FT	SEWER, HPDE (SDR-11), 4 INCH	1,700.0	\$ 28.00	\$ 47,600.00
25	FT	SEWER, DIRECTIONALLY DRILLED, HPDE (SDR-11), 4 INCH	1,650.0	\$ 70.00	\$ 115,500.00
26	FT	SEWER SERVICE, PVC (SDR-26), 6 INCH	7,885.0	\$ 18.50	\$ 145,872.50
27	FT	SEWER, PVC (SDR-26), 8 INCH	5,250.0	\$ 58.50	\$ 307,125.00
28	EA	SEWER CLEANOUT, 6 INCH	-	\$ 235.00	\$ -
29	EA	SAN STRUCTURE, 48 INCH DIA.	23.0	\$ 4,800.00	\$ 110,400.00
30	EA	SAN STRUCTURE, 60 INCH DIA., AIR RELIEF	2.0	\$ 13,500.00	\$ 27,000.00
31	EA	SAN STRUCTURE, 60 INCH DIA., CLEANOUT	7.0	\$ 11,200.00	\$ 78,400.00
32	EA	SAN STRUCTURE, 24 INCH DIA., CLEANOUT	4.0	\$ 2,950.00	\$ 11,800.00
33	EA	GATE VALVE AND BOX, 2 INCH	5.0	\$ 3,000.00	\$ 15,000.00
34	EA	GATE VALVE AND BOX, 3 INCH	4.0	\$ 4,100.00	\$ 16,400.00
35	EA	GATE VALVE AND BOX, 4 INCH	6.0	\$ 5,200.00	\$ 31,200.00
36	EA	LIFT STATION - A	1.0	\$ 175,000.00	\$ 175,000.00
37	EA	LIFT STATION - B	2.0	\$ 58,500.00	\$ 117,000.00
38	EA	SAN TIE INTO EX. STRUCTURE, COMPLETE	1.0	\$ 7,500.00	\$ 7,500.00
39	EA	PUMP STATION, INDIVIDUAL, COMPLETE	24.0	\$ 10,000.00	\$ 240,000.00
40	EA	LIFT STATION, UPGRADES, COMPLETE	1.0	\$ 180,000.00	\$ 180,000.00
41	LS	TREATMENT PLANT	1.0	\$ 850,000.00	\$ 850,000.00
42	FT	CURB AND GUTTER, CONC, DET C4	200.0	\$ 22.00	\$ 4,400.00
43	SYD	DRIVEWAY, NONREINF CONC, 6 INCH	600.0	\$ 52.00	\$ 31,200.00
44	TON	HMA, 4E1, MOD, TOP	3,290.0	\$ 120.00	\$ 394,800.00
45	LS	SITE RESTORATION	1.0	\$ 105,000.00	\$ 105,000.00

TOTAL PROJECT \$ 3,934,237.50

ENGINEERING, SURVEY, & CONTRACT ADMIN (16%) \$ 629,478.00

LEGAL & BOND COUNSEL (1.5%) \$ 59,013.56

TOTAL PROJECT COSTS \$ 4,622,729.06

10% CONTINGENCY \$ 393,423.75

TOTAL PROJECT COST ESTIMATE \$ 5,016,152.81

Alternative 2 - Gravity & FM Hybrid Cost Summary

The total estimated cost to provide sewer service to each resident is \$4M. There are 190 estimated connections, which would result in a per resident cost of approximately \$21,000 each. This cost, even amortized over a 40-year loan repayment period is unaffordable for this intermediate income level community. Therefore, the Township is requesting a grant for the project in order to make this much needed project affordable. Without the grant assistance, the cost of the collection system in conjunction with the treatment plant upgrades will not be affordable to the community.

Selection of Alternative - Life Cycle Cost Analysis Details

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 2 - Add Parallel Treatment

Lifecycle Cost Analysis Details	
Planning Period (in Years)	20
Expected/Useful Life of System Component (In Years)	40
Real Discount Rate	0.3%
Salvage Value (SV)	\$650,000
Total Capital Costs	\$1,680,000
Annual Operations & Maintenance (O&M)	\$167,950
Single Present Payment Worth Factor	0.9418
Single Payment Present Worth (SPPW) of SV	\$612,202
Uniform Series Present Worth Factor	19.3836
Uniform Series Present Worth of O&M	\$3,255,480
Net Present Value (NPV)	\$4,323,277.77

Alt 2 - Add Parallel Treatment Life Cycle Cost Summary

The life cycle cost analysis for the parallel treatment alternative is provided here.

Selection of Alternative - Life Cycle Cost Analysis Details

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative Name: Treatment Alt 1 - Expansion of Existing Technology

Lifecycle Cost Analysis Details	
Planning Period (in Years)	20
Expected/Useful Life of System Component (In Years)	40
Real Discount Rate	-0.5%
Salvage Value (SV)	\$425,000
Total Capital Costs	\$1,079,500
Annual Operations & Maintenance (O&M)	\$185,200
Single Present Payment Worth Factor	1.1054
Single Payment Present Worth (SPPW) of SV	\$469,815
Uniform Series Present Worth Factor	21.0896
Uniform Series Present Worth of O&M	\$3,905,800
Net Present Value (NPV)	\$4,515,484.75

Treatment Alt 1 - Expansion of Existing Technology Life Cycle Cost Summary

The life cycle cost analysis for the AeroMod expansion alternative is provided here.

Selection of Alternative - Life Cycle Cost Analysis Details

System Component Type: Collection

System Component Name: Collection Sewer Expansion

Alternative Name: Alternative 3 - Low Pressure Sewer

Lifecycle Cost Analysis Details	
Planning Period (in Years)	20
Expected/Useful Life of System Component (In Years)	40
Real Discount Rate	-0.5%
Salvage Value (SV)	\$2,119,000
Total Capital Costs	\$5,424,000
Annual Operations & Maintenance (O&M)	\$40,000
Single Present Payment Worth Factor	1.1054
Single Payment Present Worth (SPPW) of SV	\$2,342,445
Uniform Series Present Worth Factor	21.0896
Uniform Series Present Worth of O&M	\$843,585
Net Present Value (NPV)	\$3,925,140.69

Alternative 3 - LPS Life Cycle Cost Summary

The life cycle cost analysis for the low pressure sewer alternative is provided here.

Selection of Alternative - Life Cycle Cost Analysis Details

System Component Type: Collection

System Component Name: Collection Sewer Expansion

Alternative Name: Alternative 1 - Gravity Services

Lifecycle Cost Analysis Details	
Planning Period (in Years)	20
Expected/Useful Life of System Component (In Years)	40
Real Discount Rate	-0.5%
Salvage Value (SV)	\$1,627,500
Total Capital Costs	\$4,143,800
Annual Operations & Maintenance (O&M)	\$45,500
Single Present Payment Worth Factor	1.1054
Single Payment Present Worth (SPPW) of SV	\$1,799,117
Uniform Series Present Worth Factor	21.0896
Uniform Series Present Worth of O&M	\$959,578
Net Present Value (NPV)	\$3,304,261.45

Alternative 1 - Gravity Services Life Cycle Cost Summary

The life cycle cost analysis for the gravity services alternative is provided here.

Selection of Alternative - Life Cycle Cost Analysis Details

System Component Type: Collection

System Component Name: Collection Sewer Expansion

Alternative Name: Alternative 2 - Gravity & FM Hybrid

Lifecycle Cost Analysis Details	
Planning Period (in Years)	20
Expected/Useful Life of System Component (In Years)	40
Real Discount Rate	-0.5%
Salvage Value (SV)	\$1,542,000
Total Capital Costs	\$3,918,000
Annual Operations & Maintenance (O&M)	\$37,000
Single Present Payment Worth Factor	1.1054
Single Payment Present Worth (SPPW) of SV	\$1,704,601
Uniform Series Present Worth Factor	21.0896
Uniform Series Present Worth of O&M	\$780,316
Net Present Value (NPV)	\$2,993,715.38

Alternative 2 - Gravity and FM Hybrid Life Cycle Cost Summary

The life cycle cost analysis for the gravity and pressure sewer services alternative is provided here.

Selection of Alternative - Life Cycle Cost Analysis

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative List			
Alternative Name	Net Present Value (NPV)	Created By	Best NPV
Treatment Alt 1 - Expansion of Existing Technology	\$4,515,484.75	A Nordman	
Treatment Alt 2 - Add Parallel Treatment	\$4,323,277.77	A Nordman	✓

Selection of Alternative - Non-Monetary Factors

System Component Type: Treatment

System Component Name: WWTF Expansion

Non-Monetary Factors						
Alternative Name	Social Considerations	Environmental Considerations	Regulatory Considerations	Operational Considerations	Total	Best
Treatment Alt 2 - Add Parallel Treatment	3	6	3	6	18	
Treatment Alt 1 - Expansion of Existing Technology	10	8	10	8	36	✓

Non-Monetary Factors Summary

While all WWTF projects involve non-monetary factors, these usually have the most impact when proposing a new facility. In this case we have proposed an expansion to an existing facility, which mitigates some of these concerns. The caveat being that proposing a lagoon could draw some social and regulatory concerns that would not be associated with the selected alternate (expand existing treatment technology).

Selection of Alternative - Non-Monetary Factors

System Component Type: Collection

System Component Name: Collection Sewer Expansion

Non-Monetary Factors						
Alternative Name	Social Considerations	Environmental Considerations	Regulatory Considerations	Operational Considerations	Total	Best
Alternative 3 - Low Pressure Sewer	2	9	5	9	25	
Alternative 1 - Gravity Services	10	7	8	5	30	✓
Alternative 2 - Gravity & FM Hybrid	8	8	6	7	29	

Non-Monetary Factors Summary

The non-monetary factors play a key role in the Township's alternative selection. Primarily, this is the social aspect of how the community would react to the requirement to have their own pumping equipment for connection to the Township sewer. This shifts some of the cost burden of the project to a homeowner cost for providing an electrical supply to their grinder pump and the ongoing issues associated with individual pump stations. The Township has received much public input and believes that this aspect of the alternative selection is very important.

Selection of Alternative - Alternative Selection Summary

System Component Type: Treatment

System Component Name: WWTF Expansion

Alternative List					
Alternative Selected	Alternative Name	NPV	Best NPV	Non Monetary Factor	Best Non Monetary Factor
✓	Treatment Alt 1 - Expansion of Existing Technology	\$4,515,484.75		36	✓
	Treatment Alt 2 - Add Parallel Treatment	\$4,323,277.77	✓	18	

Selection of Alternative - Alternative Selection Summary

System Component Type: Collection

System Component Name: Collection Sewer Expansion

Alternative List					
Alternative Selected	Alternative Name	NPV	Best NPV	Non Monetary Factor	Best Non Monetary Factor
	Alternative 2 - Gravity & FM Hybrid	\$2,993,715.38	✓	29	
✓	Alternative 1 - Gravity Services	\$3,304,261.45		30	✓
	Alternative 3 - Low Pressure Sewer	\$3,925,140.69		25	

Justification for selection

The Township has determined that the customers should not be required to have their own grinder pumps, if at all possible. Therefore, any individual pumping stations would have to be owned and maintained by the municipality, which in turn requires easements from each of the property owners that will have a pump installed on their property. The logistics of this have been deemed too difficult to pursue. The rationale is that the residents should be treated equally, being provided access to a "gravity" type connection out of their home.

Design Summary

Tuscarora Township directed the engineering evaluation to include all possible options for providing sewer service to the proposed expansion area. To that end, many alternatives were evaluated and eliminated. The selected alternative includes an expansion of the WWTF with the same modular technology currently used to accommodate the additional flow and an expansion of the rapid infiltration beds for discharge of the treated effluent. Since the Township has already invested in these treatment and disposal methods, there is no economical alternative that could be found other than expanding the existing technology to accommodate the additional demand.

On the collection system side, the recommended alternative is primarily a gravity sewer system with low pressure sewer at the north (Columbus Beach Club) and south (Sturgeon Island) ends, where terrain and groundwater table conditions make gravity sewer cost prohibitive. Within the low pressure sewer, the residents will be provided with gravity service connections to Township owned duplex pumping stations.

Details for Proposed Project - Waste Water Collection

Wastewater Collection Types Type			
✓ Conventional Gravity	✓ Small Diameter	✓ Grinder Pumps	✓ Pump Station/Forcemain

Proposed Project Collection System

In the Phase I residential area west of District 1 and bound between the Sturgeon River and Mack Ave, typical gravity sewer collection infrastructure is proposed. Since the terrain along the Sturgeon Island shoreline area is relatively flat, low-lying ground, construction of gravity collection system infrastructure became too costly in these areas. Therefore, this alternative includes some force main piping and duplex pumping stations that will be installed in the right-of-way and owned by the Township to serve these residents. The residents will then be provided with a gravity service lead that connects to the Township duplex pumping station. In this way, all residents are being treated equal in terms of no one being required to have to utilize pumping equipment on their property.

Similarly, the Phase II residential area between Mack Ave and Indian River would mostly have gravity sewer, with Township owned grinder pump stations in the right-of-way serving the lower lying areas around Columbus Beach and the Indian River shoreline.

Details for Proposed Project - Waste Water Treatment

Physical Unit Operations

- ✓ Screening
- ✓ Grit Removal
- ✓ Aeration

Chemical Unit Processes

- ✓ Precipitation

Suspended Growth Biological Treatment

- ✓ Other-Extended aeration

Attached Growth Biological Treatment

Anaerobic Treatment

Advanced Wastewater Treatment

- ✓ Advanced Wastewater Treatment

Disinfection

Treatment Summary

The current plant has a 96,000 gpd AeroMod extended aeration system (patented SEQUOX technology) that will be duplicated to double the plant capacity. The treatment plant is a pre-packaged modular system, which was originally designed to be expandable. The current project will add another 420 EDUs, or approximately 88,200 gpd (half in Phase I and half in Phase II). Since the existing WWTP is already experiencing peak flows at 80% of plant capacity, a doubling of the 96,000 gpd modular system is the minimum upgrade that would be adequate. The new design peak flow would be 165,000 gpd and the plant capacity would be 192,000, leaving some room for increased use of the system.

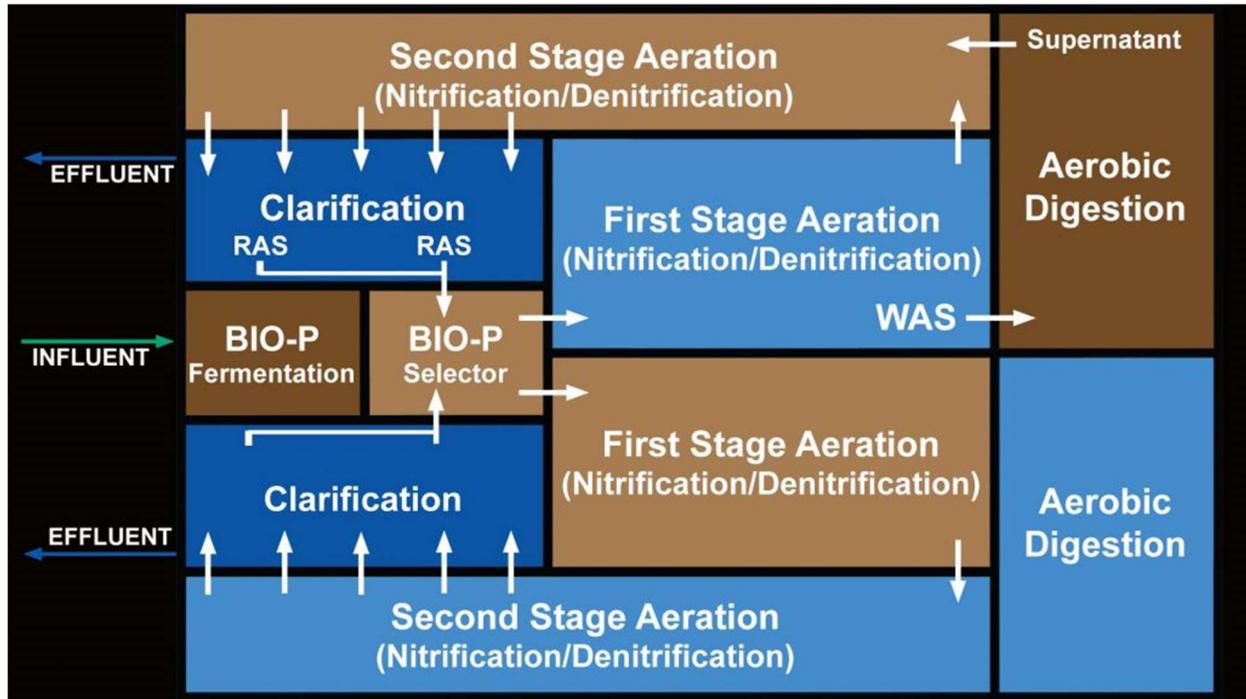
Proposed Project - Wastewater - Treatment

There will also be some modification to the headworks and the building associated with the expansion project to improve the trash and grit removal efficiency at the higher flows associated with the expansion and relocate the chemical feed process to reduce the corrosion occurring within the building.

A process schematic for the AeroMod unit is included below for reference.

AeroMod Schematic

AeroMod Treatment Schematic



Details for Proposed Project - Waste Water Effluent Discharge

Wastewater Discharge Type

- ✓ Rapid Infiltration

Effluent Discharge Summary

The final stage of the treatment process contains a 62,000 gallon storage tank with a decant chamber and discharge pumping equipment. The discharge effluent is sent through a rapid infiltration flow control structure that consists of a 3-nch Parshall flume and a 6-foot diameter manhole, 3-feet in depth. There are (5) gate valves with operators that control discharge to the rapid infiltration basins. These structures consist of five earthen basins totaling approximately 39,000 square feet and 2-feet deep for infiltration of the treated effluent to groundwater.

Proposed Project - Wastewater - Project Schedule

Project Schedule		
Type	Description	Date
Milestone Date	Funding approval	07/01/2021
Milestone Date	Survey and plan preparation	08/01/2021
Milestone Date	Permitting complete	12/01/2021
Milestone Date	Plan review & approval for bidding	02/01/2022
Milestone Date	Contract Award	04/06/2022

Proposed Start of Construction	Construction Begins	05/01/2022
Proposed End of Construction	Construction Complete	11/30/2022
Milestone Date	Project Closeout	02/01/2023

Project Schedule

A project implementation schedule is included for reference.

Land Rights	
Number of Acres To Be Acquired - Fee Simple	.0
Number of Acres To Be Acquired - Lease	.0
Acres To Be Acquired - Purchase Price	\$.00
Acres To Be Acquired - Value	\$.00
Number of Acres Now Owned - Fee Simple	70.0
Number of Acres Now Owned - Lease	.0
Acres Now Owned - Purchase Price	\$.00
Acres Now Owned - Value	\$178,618.00
Describe Other Rights (such as water rights or rights-of-way)	Collection system to be constructed within road right-of-ways.

Land Rights

Tuscarora Township already owns two parcels totaling 69.82 acres for the WWTF and disposal area. There would be no new property acquisition with the proposed project, only and expanded use within currently owned property.

All of the collection system facilities will be installed within the public road right-of-way.

Permitting

The proposed sewer collection system, WWTF expansion, and additional rapid infiltration basins will require a Part 41 Permit for Construction through the State of Michigan Department of Environment, Great Lakes, and Energy (EGLE). The additional demand will also require a modification to the existing Part 22 Groundwater Discharge Permit, also reviewed and issued through EGLE to approximately double the existing annual and daily discharge volumes.

Additional permits that will be required are a Soil Erosion permit through the County, a permit from EGLE for the river crossings, a permit from the County Road Commission for work within their right-of-way, a permit from MDOT for work within their right-of-way, and a building permit from the County for the modifications to the building at the WWTF.

Sustainability

The sustainability of the proposed project has been primarily implemented in the original construction project (District 1). This is where decisions were made regarding the wastewater treatment technology, the siting of the WWTF and groundwater discharge, the evaluation of the receiving environment, etc. At this point, the proposed project is carrying forward the sustainability decisions previously made in regard to the wastewater treatment and disposal.

Where we are improving the sustainability of wastewater treatment is within the proposed service area (District 2). This area is currently served by onsite septic systems, a situation that is clearly not sustainable. Looking at development pressure and wastewater loading trends over the past 40 years indicates that this area is not suitable for individual onsite septic systems. Documentation of this is provided under the Need for Project section.

Proposed Project - Wastewater - Total Project Cost

Total Project Cost (Engineer's Opinion of Probable Cost)		
Cost Classification	Description	Cost
Development (Construction)	WWTF Expansion - Development (Construction) - Rapid Infiltration Beds Expansion	\$80,000.00
Development (Construction)	WWTF Expansion - Development (Construction) - WWTF Headworks & Integration	\$245,000.00
Development (Construction)	WWTF Expansion - Development (Construction) - AeroMod Package - 96,000 gpd	\$525,000.00
Development (Construction)	Collection Sewer Expansion - Development (Construction) - Construction Costs	\$3,255,000.00
Contingencies	WWTF Expansion - Contingencies - Contingency	\$85,000.00
Engineering - Design	WWTF Expansion - Engineering - Design - Engineering Design through Construction	\$136,000.00
Bond Counsel	WWTF Expansion - Bond Counsel - Legal & Bond Counsel	\$8,500.00
Engineering - Design	Collection Sewer Expansion - Engineering - Design - Design Engineering, Survey, Contract/Bid docs - 8%	\$260,400.00
Engineering - Construction Administration	Collection Sewer Expansion - Engineering - Construction Administration - Engineering, Construction Oversight & Contract Admin - 8%	\$260,400.00
Legal Services	Collection Sewer Expansion - Legal Services - Legal & Bond Counsel	\$42,500.00
Contingencies	Collection Sewer Expansion - Contingencies - Contingencies - 10%	\$325,500.00
	Total:	\$5,223,300.00

Construction Cost Summary

The total estimated cost for the project is just over \$5.2M. The project costs can be broken down into the following general cost items:

Proposed Project - Wastewater - Total Project Cost

WWTP Upgrade	\$0.85M
Collection System Expansion	\$ 1.5M
Duplex Pumping Stations	\$ 0.46M
Lift Stations	\$ 0.47M
Surface Removal/Replacement	\$ 0.75M
Engineering/Legals/Bonding	\$ 0.69M
Project Contingency (10%)	\$0.48M
Total Project Cost:	\$5.2M

Annual Operating Budget - Income		
Type of Income	Description	Yearly Income
Operating Income - Retail	O&M User Charge	\$230,800.00
Non-Operating Income - Tap Fees	New Connection Fees	\$8,000.00
Non-Operating Income - Assessments	Debt Retirement - District 1	\$119,000.00
Non-Operating Income - Assessments	Debt Retirement - District 2	\$189,000.00
Non-Operating Income - Interest Income	Interest Income	\$72,000.00
	Total:	\$618,800.00

Current User Charge Summary

The sewer system is currently supported by a user charge system that includes two categories; an O&M charge that covers all of the operating expenses and funds for RR&I and a Debt Retirement charge that covers repayment costs for the current USDA loan obligation. The current rate structure O&M expense is slightly under-funded on an annual basis, with the difference made up through additional tap fees. However, the Township has been implementing periodic rate increases to bring the O&M rate charges into alignment with the actual O&M costs.

The current user charges are \$60.33/mo per EDU, broken down as follows:

O&M revenue = \$32/mo

Debt Retirement = \$28.33/mo

Proposed Rate Structure

The proposed rate structure will continue the same two user charge categories; an O&M charge that covers all of the operating expenses and funds for RR&I, and a Debt Retirement charge that covers the repayment costs for the loan obligations. All of the customers will pay the same O&M rate. The debt retirement will be differentiated so that the existing customer base (District 1) will continue to pay their debt retirement and then the new customers (District 2) will pay their own debt retirement rate.

The proposed user charges for District 1 are \$63.50/mo per EDU, broken down as follows:

O&M revenue = \$35/mo

Debt Retirement = \$28.50/mo

The resulting user charges for District 2 without any grant support are \$118/mo per EDU, broken down as follows:

O&M revenue = \$35/mo

Debt Retirement = \$83/mo

Operating Budget

**Operating Budget
For First Full Year After Construction**

Community Name: Tuscarora Township **County:** Cheboygan

Address:
3546 S. Straits Highway
Indian River, MI 49749

A. Applicant Fiscal Year: From: 1-Jul To: 30-Jun

B. Operating Income:	From	Sewer Rates & Charges:	\$230,340
		Other	\$500
		Total Operating Income:	\$230,840

C. Operating Expenses:			
Utilities			\$50,000
Insurance/Audit			\$4,000
Contract Operations			\$125,300
Other - Lab or other Costs			\$14,900
Other - Vehicle Expenses			\$500
Administrative/Office			\$0
Repairs/Maintenance			\$25,000
Supplies			\$4,000
Engr. & Legal			\$7,000
Commodity Charges			\$0
		Total Operating Expenses:	\$230,700

D.	Net Operating Income:	\$140
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E. Non Operating Income:			
District 1	Debt Retirement		\$119,000
District 2	Debt Retirement		\$189,000
Other:	Interest Income		\$72,000
Other:	New Connections		\$8,000
		Total Non Operating Income:	\$388,000

F.	Net Income	\$388,140
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G. Expenditures/Transfers			
Repair, Replacement & Improvement Fund			\$9,483
Bond Reserve			\$30,800
Payment to USDA Loan District 1			\$120,000
Payment to USDA Loan District 2			\$188,900
		Total Expenditures/Transfers:	\$349,183
		Excess/Deficit over net income:	\$38,957

Annual Operating Budget - O&M Costs		
Expense Item	Description	Annual Amount
Utilities	WWTF Expansion - Utilities - Utilities	\$41,500.00
Engineering	WWTF Expansion - Engineering - Engineering/Legal	\$7,000.00
Other	WWTF Expansion - Other - Lab, Vehicle, & Computer Costs	\$15,400.00
Supplies	WWTF Expansion - Supplies - Misc. Supplies	\$4,000.00
Contract Waste Treatment	WWTF Expansion - Contract Waste Treatment - Contract Operation of WWTF	\$98,300.00
Repairs/Maintenance	WWTF Expansion - Repairs/Maintenance - Repairs & Maintenance	\$15,000.00
Insurance	WWTF Expansion - Insurance - Insurance/Audit	\$4,000.00
Contract Services - Other	Collection Sewer Expansion - Contract Services - Other - Contract Operations - Collection System	\$27,000.00
Repairs/Maintenance	Collection Sewer Expansion - Repairs/Maintenance - Repairs & Maintenance	\$10,000.00
Utilities	Collection Sewer Expansion - Utilities - Utilities	\$8,500.00
	Total:	\$230,700.00

Operation & Maintenance Cost Summary

The proposed O&M budget has been developed through a review and analysis of the existing Township Sewer Fund budget reports. Since the current proposal will utilize the same treatment plant processes, disposal methodology, and collection system infrastructure type, we have extrapolated the cost implications of the expansion with a firm basis centered on the actual costs for running the existing system. This O&M budget is included in the overall operating budget, included as an exhibit to this report.

Proposed Project - Wastewater - Debt Repayments

Does the potential applicant have any Existing Debt with Terms?					✓Yes			
Annual Operating Budget - Debt Repayments								
Type of Loan	Owed to	Purpose	Terms(yrs)	Date of First Payment	Annual Payment	Annual Reserve	Interest Rate	Due Date
Existing USDA Loan	USDA	District 1 Construction	40	03/01/2018	\$119,000.00	\$11,900.00	.31%	03/01/2058

Existing Loan Commitment

Tuscarora Township already has an existing USDA loan that was acquired to develop the original WWTP, disposal site, and the District 1 collection system infrastructure. The original USDA funded project was a combination of grant and loan, where \$3.0M came in grant funding and the Township took on a \$4.5M loan. The Township is in the early stages of repayment, approximately 5-years into the 40-year loan. The Township has met all of its financial obligations associated with the funding.

Proposed Project - Wastewater - Short Lived Asset Reserves

Does the client have any Short Lived Assets to report?

✓Yes

No

Annual Operating Budget - Short Lived Asset Reserves			
Description	Replacement Cost	Useful Life	Annual Reserve
Duplex Pumps - Existing	\$8,000.00	6-10 yrs	\$800.00
Lift Station Pumps - Existing	\$15,000.00	6-10 yrs	\$1,500.00
Lift Station Controls - Existing	\$6,000.00	11-15 yrs	\$400.00
Chem. Feed Equip. - Existing	\$8,000.00	6-10 yrs	\$800.00
Process Equip. - Existing	\$20,000.00	11-15 yrs	\$1,333.33
Process Controls - Existing	\$15,000.00	11-15 yrs	\$1,000.00
	Total: \$72,000.00		Total: \$5,833.33

Short Lived Asset Summary

The proposed project will add some short lived assets to the Township's infrastructure, which already has many of these asset categories already installed. A table has been prepared below that includes a list of the existing and proposed short lived assets, the approximate replacement cost, and the expected useful life. This information is used to calculate a recommendation for the RR&I annual budget set-aside.

Short Lived Assets

Short Lived Depreciated Assets

(items listed, life expectancy, are just examples, use your own data)

Item	Years of Life Expectancy	Number of Units	Replacement Cost	Funds to Set Aside Yearly	Note:
Duplex Pumps	10	11	2500	\$2,750	This is not intended to
Lift Station Pumps	15	4	7500	\$2,000	include every piece of
Lift Station Controls	15	2	12000	\$1,600	equipment in the system. It is
Chem. Feed Equipment	10	1	8000	\$800	to itemize the critical
Process Equipment	15	1	20000	\$1,333	equipment or maintenance
Process Controls	15	1	15000	\$1,000	items that money should
Total RR&I Budget:				\$9,483	be set aside for via rates and
					charges.

No short lived assets with more than 15 years of life expectancy

Total Cost		
Project Type: Wastewater		
Non Construction Total:	\$1,118,300.00	
Construction Total:	\$4,105,000.00	
Total Cost For Project Type:	\$5,223,300.00	
Grand Total		
Grand Total All Types:	\$5,223,300.00	

Project Conclusions & Recommendations

Tuscarora Township has identified the need for municipal sewer in this area since the mid 1970's when the first effort was made to construct a sewer collection, treatment, and disposal system. This is primarily due to obvious limitations in appropriately placing onsite septic systems in this area due to a combination of small lot size and poor soil/groundwater conditions. In 2014 the Township made a huge step towards this goal with the first WWTF constructed near the industrial park and a collection system installed for the commercial properties with District 1. The success of this original project has led to widespread community interest and support for expanding the municipal sewer into the surrounding residential area, proposed as District 2. However, due to the size and cost of the complete District 2 area, it has been subdivided into a Phase I (south half) and Phase II (north half). The key to this project is building off of the infrastructure installed with the original project, leveraging this to reduce the expansion costs.

Unfortunately, the construction costs associated with expanding municipal sewer services can often make projects unaffordable, especially to intermediate income level communities, such as Tuscarora Township. Therefore, a key component to making this project viable is the availability of grant funding through the USDA. Without the availability of grant funds, this project will most likely be unaffordable to the residents. The application of grant funds to this project will truly benefit the wider community by eliminating this high density of onsite septic systems in an area poorly suited for such a system and directly adjacent to water bodies that are used by so many.

Michigan Department of Natural Resources
Surface Water Quality Division
Report of Sanitary Survey and Water Quality Study
Indian River, Michigan
August 5-7, 1988

I Summary

A sanitary survey and surface water quality study were conducted in Indian River by staff of the Department of Natural Resources on August 5-7, 1988.

The surface waters in the area: the Indian River, the Sturgeon River, and the Little Sturgeon River, did not appear to be significantly impacted by passing through Indian River.

However, one residential direct discharge of sanitary sewage was found. At least four other storm sewer discharges had sample results which are at least suspected of being contaminated by partially treated human sewage.

There are a very large number of flowing well discharges to the rivers and storm sewers. These provide a high degree of dilution for any contamination which may be present. Should the area change to mostly full time residences, and there is more development, it could overwhelm the present dilution effect. Observable water quality problems could thus result.

II Background

Indian River is an unincorporated village in Tuscarora Township, Cheboygan County. There are no municipal water or sewer systems. This is primarily a resort community. Development is mainly commercial and residential. A large number of the residences are part time: week end and vacation use only. Some residential areas are very densely developed, yet each has its own well and sewage disposal system. Many of the areas have high water tables, clay or marl soils, or both. Because of this, questions are often raised as to the environmental and health implications. This survey was done to determine if any water quality problems exist in the surface waters of the Indian River area. Since the area has such a large number of weekend and vacation only residences, it was decided that this survey should be done on a weekend when the people and their potential impacts were there. The particular weekend (August 5-7) happened to be one of the busiest of the year. There were boat races going on Saturday and Sunday.

III Observations and Sampling Locations

On August 5, 1988, conditions along the Sturgeon River were observed by canoe starting upstream of Indian River and going downstream to Burt Lake.

As buildings and houses were encountered, it was readily noticeable that most had pipes discharging clear water to the river. These appeared to be overflow waters from free flowing wells. One of these was sampled (sample #1). None of these had any odors, colors, or turbidity.

At the M-27 bridge, a 12" black plastic pipe storm drain was observed on the south bank, east side of the bridge. There was a low flow of clear water. There was no color, turbidity, or odor. A sample was collected (sample #2).

The Sturgeon River itself was sampled at the starting point, about one mile upstream (sample #4), at the M-27 bridge (sample #5), and near the mouth about 50 yards upstream of Burt Lake (sample #3). There were about 25 ducks present in the area of sample #3.

In summary, the Sturgeon River appeared to be very clean. No visual evidence was found of direct or indirect sewage discharges in the river stretch observed.

On August 6, 1988, the Village of Indian River was observed by car and by foot. Samples were collected at various locations.

Sample #6 was collected in the Indian River about 10 yards upstream of the M-27 bridge.

Sample #7 was collected from the clear flow coming out of a storm sewer on the east side of the bridge on the south bank. The sewer is high up over the water, and the flow must drop down to it. There was no odor, color, or turbidity in this storm sewer discharge. The flow was about 20 gallons per minute (estimated). There was no visual evidence of human sewage in the pipe or in the river below the pipe.

The Little Sturgeon River was sampled at W. Onaway Road (sample #8) and upstream at I-75 (sample #9).

The Victoria Drive area was observed by car. Houses were only on the west side of the road (river side). Many of these had new mound septic systems. No obvious sewage problems were detected in this area.

The Nabantois Trail area was also observed by car. No obvious sewage problems were observed here either.

Waterway Lane, Cressy Street, and Martha Street were found to have no obvious sewage problems. These areas were on higher, sandy soil. Spruce Street and Cedar Street likewise were on higher sandy soil than the rest of the town. No obvious sewage problems were found.

Gratiot Steet and Apple Blossom Street had no obvious, visible evidence of sewage problems either.

The rest of the town consisting of the area bounded by M-27, the Indian River, Burt lake, and the Sturgeon River was observed by walking. Every street in this area was walked and every drainage ditch was observed. There were many pipes discharging clear water into these ditches. These all appeared to be coming from free flowing wells at each house. The ditches had vegetation growing in them, but there was no visual evidence of human sewage discharges in any of them. No Sphaerotolis sp. growths were observed.

In the course of looking at the drainage ditches and mapping them, it appeared that they came together and discharged their water at two main locations which were both sampled (fig. 1):

- 1) a 12" corrugated pipe at the east end of a boat canal between Holden Road and Chippewa Road (sample #11)
- 2) an open ditch entering the Indian River on the south bank about 50 feet east of the City park boundary. (Sample 13). This sample was collected from a boat on August 7, 1988.

One other location was sampled this day: a 16" corrugated pipe discharging a clear flow of about 30 gpm to the Indian River at the end of Lake Street (sample #10).

At all three sample locations (10, 11, 13), there was no turbidity, color, or odor in the water.

On August 7, 1988, the shorelines of Indian River were observed by boat. The Indian River, Little Sturgeon River, and boat canals were all checked in this manner. The Indian River itself was sampled just downstream of Burt Lake and at the I-75 bridge (samples 12 and 22 respectively).

Most of these shorelines consisted of seawalls. There was very little natural shoreline. Pipes discharging clear water were observed at almost every house and building. It was obvious that most of these were flowing well overflows. When other pipes were found discharging water, and it wasn't obviously well water, they were sampled. The following is a description of these sampling locations:

Along Pike street about 100 feet south of the bridge to the island,

The Indian River from the Little Sturgeon River mouth to I-75 was then observed by boat. The boat canals along Lori Lane, Bellchase, and Diane Lane were also surveyed. Again, many clear water discharges were observed. These were all apparently flowing well discharges. One larger pipe, a 12" corrugated pipe, was found on the west end at the southwest corner of the canal between Bellchase and Diane Lane. The flow was clear and about 20 gpm. No color, turbidity, or odor were apparent (sample 21). A man whose house was next to the pipe said that the flow was coming from the golf course across M-27.

In summary, the Indian River was clear and free flowing the entire stretch observed. No Sphaerotolis sp. growths were found, nor other visual indicators of sewage (other than sample #18).

IV Sample Results - Discussion

Sample #18, the suspected sewage discharge, was confirmed to be such by sample analyses. The bacteriological analyses revealed extremely high counts of all three forms of coliform bacteria. The ratio of fecal coliform bacteria to fecal strep. was 4:1. This, along with the high counts plus the visual observations, give a high probability of the presence of raw or partially treated human sewage. This information was conveyed to the Cheboygan County Health Department for follow up action.

The chemical data from sample #18 show a very high level of the nutrients found in fresh sewage: high ammonia, Kjeldahl nitrogen, and total phosphorus. Nitrate and nitrite levels were low indicating that the organic material has not yet been broken down.

None of the other samples were as conclusive as to the presence of human sewage. However, samples 10, 13, 17, and 19 show bacteria counts which appear to be significantly higher than the other samples. These samples were all from clear water flows coming from storm drains situated in the densely developed west side of Indian River. This gives an indication that these samples are showing the influence of the many drain fields situated close together. The high dilution of the many flowing well discharges may have kept the counts of bacteria from being higher. The lack of apparent visual evidence in any of these flows precludes a direct conclusion of the presence of recent raw or partially treated human sewage. The sample data does cast some suspicion of that fact, however.

Samples number 10, 20, and 17 showed the highest levels of nutrients (total phosphorus, ammonia nitrogen, and Kjeldahl nitrogen). Sample #20, not mentioned earlier, had relatively lower bacterial counts. It wasn't known what the source of the water in this pipe was. It

**Operating Budget
For First Full Year After Construction**

(Alternate 2 - gravity & FM individual pumps)

Community Name: Tuscarora Township **County:** Cheboygan

Address:
3546 S. Straits Highway
Indian River, MI 49749

A. Applicant Fiscal Year: **From:** 1-Jul **To:** 30-Jun

B. Operating Income:	From	Sewer Rates & Charges:	\$230,340
		Other	\$500
		Total Operating Income:	\$230,840

C. Operating Expenses:			
Utilities			\$45,000
Insurance/Audit			\$4,000
Contract Operations			\$127,300
Other - Lab or other Costs			\$14,900
Other - Vehicle Expenses			\$500
Administrative/Office			\$0
Repairs/Maintenance			\$20,000
Supplies			\$4,000
Engr. & Legal			\$7,000
Commodity Charges			\$0
		Total Operating Expenses:	\$222,700

D.	Net Operating Income:	\$8,140
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E. Non Operating Income:			
District 1	Debt Retirement		\$119,000
District 2	Debt Retirement		\$181,000
Other:	Interest Income		\$72,000
Other:	New Connections		\$8,000
		Total Non Operating Income:	\$380,000

F.	Net Income	\$388,140
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G. Expenditures/Transfers			
Repair, Replacement & Improvement Fund			\$12,233
Bond Reserve			\$30,100
Payment to USDA Loan District 1			\$120,000
Payment to USDA Loan District 2			\$181,000
		Total Expenditures/Transfers:	\$343,333
		Excess/Deficit over net income:	\$44,807

Operating Budget For First Full Year After Construction

(Alternate 3 - LPS all individual pumps)

Community Name: Tuscarora Township **County:** Cheboygan

Address:

3546 S. Straits Highway
Indian River, MI 49749

A. Applicant Fiscal Year: **From:** 1-Jul **To:** 30-Jun

B. Operating Income:	From	Sewer Rates & Charges:	\$252,372
		Other	\$500
		Total Operating Income:	\$252,872

C. Operating Expenses:			
Utilities			\$40,000
Insurance/Audit			\$4,000
Contract Operations			\$117,500
Other - Lab or other Costs			\$14,900
Other - Vehicle Expenses			\$500
Administrative/Office			\$0
Repairs/Maintenance			\$60,500
Supplies			\$4,000
Engr. & Legal			\$7,000
Commodity Charges			\$0
		Total Operating Expenses:	\$248,400

D.	Net Operating Income:	\$4,472
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E. Non Operating Income:			
District 1	Debt Retirement		\$119,000
District 2	Debt Retirement		\$232,000
Other:	Interest Income		\$72,000
Other:	New Connections		\$8,000
		Total Non Operating Income:	\$431,000

F.	Net Income	\$435,472
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G. Expenditures/Transfers			
Repair, Replacement & Improvement Fund			\$14,000
Bond Reserve			\$34,000
Payment to USDA Loan District 1			\$120,000
Payment to USDA Loan District 2			\$232,000
		Total Expenditures/Transfers:	\$400,000
		Excess/Deficit over net income:	\$35,472



NO.	DESCRIPTION	DATE	BY
1	DESIGN	10/20/11	REB
2	REVISION	11/15/11	REB
3	REVISION	12/15/11	REB
4	REVISION	01/10/12	REB
5	REVISION	02/01/12	REB
6	REVISION	02/01/12	REB
7	REVISION	02/01/12	REB
8	REVISION	02/01/12	REB
9	REVISION	02/01/12	REB
10	REVISION	02/01/12	REB

PROJECT NO: 110111
 DATE: 10/20/11
 DRAWN BY: REB
 CHECKED BY: REB

SHEET TITLE: SERVICE AREA MAP
 SHEET: C1 OF 1

FIGURE C1



SERVICE AREA SUMMARY

THE PROPOSED DISTRICT 2 SERVICE AREA IS COMPRISED OF THE PRIMARILY RESIDENTIAL PROPERTIES THAT ARE WEST OF THE EXISTING COMMERCIAL SEWER DISTRICT (DISTRICT 1) TO THE BURT LAKE SHORELINE. THE SERVICE AREA IS SUBDIVIDED INTO A PHASE 1 THAT INCLUDES THE PROPERTIES SOUTH OF BURT AVENUE TO THE STATE PARK AND A PHASE 2 THAT IS NORTH OF BURT AVENUE TO COLUMBUS BEACH CLUB. THE AREA ENCOMPASSES APPROXIMATELY 200 ACRES AND 400 EDUs IN TOTAL. PHASE 1 IS 75 ACRES AND 180 EDUs AND PHASE 2 IS 125 ACRES AND 220 EDUs.

ADDITIONAL SERVICE AREA DETAILS INCLUDE THE FOLLOWING:

- 1) OF THE 450 FEET, 200 ARE PROPOSED TYPICAL GRAVITY SERVICE CONNECTIONS.
- 2) THE INCREASED SERVICE AREA WILL REQUIRE AN EXPANSION OF THE EXISTING WWTTP. APPROXIMATELY DOUBLING THE CURRENT TREATMENT CAPACITY. THERE IS A 50% INCREASE IN PHASE 1 AND ANOTHER 50% IN PHASE 2.
- 3) THE EXISTING LIFT STATIONS WILL BE UPGRADED TO ACCOMMODATE ADDITIONAL FLOW IN THE PHASE 1 PROJECT.

- LEGEND**
- PROPOSED GRAVITY SEWER MANHOLE
 - PROPOSED FORCE MAIN SEWER CLEANOUT
 - PROPOSED FORCE MAIN SEWER AIR RELEASE
 - PROPOSED LIFT STATION
 - PROPOSED DUPLEX STATION
 - EXISTING GRAVITY SEWER MANHOLE
 - EXISTING DUPLEX LIFT STATION

NO.	DESCRIPTION	DATE	BY
1	DESIGN	10/20/11	REB
2	CHECK	10/20/11	REB
3	APPROVE	10/20/11	REB
4	REVISION		
5	REVISION		
6	REVISION		
7	REVISION		
8	REVISION		
9	REVISION		
10	REVISION		

Operating Budget For First Full Year After Construction

Community Name: Tuscarora Township **County:** Cheboygan

Address:

3546 S. Straits Highway
Indian River, MI 49749

A. Applicant Fiscal Year: **From:** 1-Jul **To:** 30-Jun

B. Operating Income:	From	Sewer Rates & Charges:	\$230,340
		Other	\$500
		Total Operating Income:	\$230,840

C. Operating Expenses:			
Utilities			\$50,000
Insurance/Audit			\$4,000
Contract Operations			\$125,300
Other - Lab or other Costs			\$14,900
Other - Vehicle Expenses			\$500
Administrative/Office			\$0
Repairs/Maintenance			\$25,000
Supplies			\$4,000
Engr. & Legal			\$7,000
Commodity Charges			\$0
		Total Operating Expenses:	\$230,700

D.	Net Operating Income:	\$140
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E. Non Operating Income:			
District 1	Debt Retirement		\$119,000
District 2	Debt Retirement		\$189,000
Other:	Interest Income		\$72,000
Other:	New Connections		\$8,000
		Total Non Operating Income:	\$388,000

F.	Net Income	\$388,140
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G. Expenditures/Transfers			
Repair, Replacement & Improvement Fund			\$9,483
Bond Reserve			\$30,800
Payment to USDA Loan District 1			\$120,000
Payment to USDA Loan District 2			\$188,900
		Total Expenditures/Transfers:	\$349,183

Excess/Deficit over net income:	\$38,957
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SERVICE AREA SUMMARY

THE PROPOSED SERVICE AREA IS COMPRISED OF THE PREVIOUSLY RESIDENTIAL PROPERTIES THAT ARE WEST OF THE EXISTING COMMERCIAL SEWER DISTRICT (DISTRICT 1) TO THE BURT LAKE SHORELINE. THE SERVICE AREA INCLUDES THE COLUMBUS BEACH CLUB AT THE NORTHERLY BOUNDARY DOWN TO STURGEON ISLAND AND THE STURGEON RIVER AT THE SOUTHERLY BOUNDARY. THIS AREA ENCOMPASSES APPROXIMATELY 300 ACRES AND 400 RELIA.

ADDITIONAL SERVICE AREA DETAILS INCLUDE THE FOLLOWING:

- 1) OF THE 400 RELIA, 300 ARE PROPOSED GRAVITY SERVICE CONNECTIONS (20% GRAVITY)
- 2) THERE ARE 79 PLANNED INDIVIDUAL PUMPING STATIONS
- 3) THERE WILL BE APPROXIMATELY 17,000 FEET OF NEW DENSITY COVERS AND OVER 50 MANHOLES
- 4) THERE WILL BE OVER 10,000 FEET OF NEW FORCE MAIN WITH ANGLUFT EQUIPMENT
- 5) THE INCREASED SERVICE AREA WILL REQUIRE AN EXPANSION OF THE EXISTING WWTP, APPROXIMATELY DOUBLING THE CURRENT TREATMENT CAPACITY.
- 6) THE EXISTING LIFT STATIONS WILL BE UPGRADED TO ACCOMMODATE ADDITIONAL FLOW.

- LEGEND**
- PROPOSED GRAVITY SEWER MANHOLE
 - PROPOSED FORCE MAIN SEWER CLEANOUT
 - PROPOSED FORCE MAIN SEWER AIR RELEASE
 - PROPOSED LIFT STATION
 - PROPOSED INDIVIDUAL PUMPING STATION
 - PROPOSED INDIVIDUAL ELECTOR PUMP
 - EXISTING GRAVITY SEWER MANHOLE
 - EXISTING DUPLER LIFT STATION

NO.	DESCRIPTION	DATE	BY	CHECKED BY
1	DESIGN	03/15/2023	RSB	RSB
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MICHIGAN RCAP

Environmental Assessment

Tuscarora Township District 2 Sewer
Extension: Cheboygan County, Michigan

2/24/21

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1.0 Purpose and Need of Project

1.1 Project Description

The unincorporated Village of Indian River (Tuscarora Township) in Cheboygan County is proposing to expand its wastewater collection system to the west of the existing service area (District 1) to the Burt Lake Shoreline. The project also will expand the Townships existing wastewater treatment facility. The project involves the construction of approximately 18,500 feet of new gravity sewer main, 50 new manholes, 23 new duplex pump stations, 10 new lift stations, and upgrades to existing pump stations to improve flow within the service area. The new main will be constructed within an open trench typically excavated to a depth of 8 feet and approximately 6 feet in width. Directional boring rather than open trenching will be employed near shorelines and river crossings. The typical excavation and construction area for the new lift stations will be approximately 23-x-23-feet, reaching depths between 12-15 feet below surface. The project is to be constructed within existing road and street rights-of-way and easements. The area of potential effects (APE) for Direct Effects is defined as 65 feet wide centered on existing Indian River streets over the 18,500-foot project length totaling approximately 11.28 hectares (27.87 acres). This area was selected to encompass all known areas of ground disturbance along the main service lines and the proposed locations of the duplex pump and lift stations. The area of indirect effects for this project is defined as 195 feet wide centered on existing Indian River streets over the 18,500-foot project length totaling 33.83 hectares (83.60 acres). The area of direct effects was selected in recognition that most of the project will be placed below ground with visual and sound effects limited to the period of construction and to the immediate vicinity of the proposed lift and pump stations.

The project design concept for the wastewater treatment facility is to expand the existing WWTF utilizing the same modular treatment system. The current plant has a 96,000 gpd AeroMod extended aeration system that will be duplicated to double the plant capacity. In conjunction with expanded treatment capacity, the rapid infiltration beds that discharge the treated effluent to groundwater will be doubled as well.

The treatment plant is a pre-packaged modular system, which was originally designed to be expandable. The current project will add another 420 EDUs, or approximately 88,200 gpd. Since the existing WWTF is already experiencing peak flows at 80% of plant capacity, a doubling of the 96,000 gpd modular system is the minimum upgrade that would be adequate. The new design peak flow would be 165,000 gpd and the plant capacity would be 192,000, leaving some room for additional connections or increased use of the system. There will also be some modification to the headworks and the building associated with the expansion project to improve the trash and grit removal efficiency at the higher flows associated with the expansion.

1.2 Purpose and Need of Project

The proposed service area (District 2) is comprised of the primarily residential properties that are west of the existing service area (District 1) to the Burt Lake Shoreline. The District 2 service area includes the Columbus Beach Club at the northerly boundary, down to Sturgeon Island and the Sturgeon River at the southerly boundary. The homes within District 2 currently rely upon private wells and individual drain fields. Due to a combination environmental concerns including poor soil infiltration, high groundwater, surface water proximity, and well isolation distances on relatively small lots, the majority of existing onsite wastewater disposal systems are believed to be non-conforming to current environmental health standards (Sanitary Code), which can contribute to the degradation of the surrounding water quality. The lack of sewer infrastructure has also become a limiting factor to population and economic growth. Furthermore, there is concern about the constant discharge of excess flow from the artesian wells, which adds to the hydraulic loading within the area.

There are a few environmental resources present at the project location that place constraints on septic design, the first being Burt Lake and the setbacks associated with providing onsite sewage disposal. The lake also influences local groundwater table elevation for properties in the proposed service area. The high groundwater and poor soil filtration are the primary environmental factors limiting onsite sewage disposal for many of the properties within the service area. The high groundwater level and proximity to the lake is also a situation of great concern for many of the properties that have existing onsite septic systems. Though these systems may not be in a failure mode where sewage is present at the surface, it is likely that many of the older septic systems do not adequately provide the aerobic conditions to allow for proper treatment by soil absorption systems. Failing septic fields leading to groundwater contamination are considered a primary threat to drinking water availability in the Township, where water quality rather than quantity is a limiting factor.

Other environmental resources present at the project location include the Indian River, the Sturgeon River, and their associated floodplains. The Sturgeon River flows from Otsego County north into Burt Lake. Indian River connects Burt Lake to Mullet Lake and is an integral part of the Inland Water Route from Crooked Lake to Lake Huron.

The hydric soils, wetlands, and steep slopes throughout this watershed also impose limitations on the implementation of on-site septic (see Figure 3 Septic Limitations).

As previously mentioned, there are environmental conditions in the project service area that make these properties unsuitable for onsite sewage disposal. The primary limitation is a high seasonal groundwater table and poor soil quality that prevent construction of drain fields with adequate isolation for aerobic treatment of septic tank effluent in the soil.

2.0 Alternatives to the Proposed Action

Table 1. List of Alternatives for the Supply and Treatment Systems.

Alternative	Beneficial Environmental Impacts	Potential Adverse Environmental Impacts
1. Gravity Service, WWTF Expansion	Septic tanks along the Indian and Sturgeon rivers and Burt lake will be removed eliminating risk of septic overflow/failure.	None.
2. Gravity and Forcemain Hybrid, WWTF expansion	Septic tanks along the Indian and Sturgeon rivers and Burt lake will be removed eliminating risk of septic overflow/failure.	Maintenance of pumping equipment is the responsibility of the homeowner.
3. Low Pressure Sewer	Septic tanks along the Indian and Sturgeon rivers and Burt lake will be removed eliminating risk of septic overflow/failure.	Maintenance of pumping equipment is the responsibility of the homeowner.
4. Do Nothing	None.	Septic tanks will continue to degrade and potentially contaminate the Indian and Sturgeon Rivers and Burt Lake.

2.1 Alternative 1 – Gravity Service, WWTF Expansion (Recommended Alternative)

Provide typical 8-inch gravity sewer main & 6-inch service leads everywhere that is feasible. Where terrain or groundwater conditions limit the feasibility of typical gravity sewer, forcemain piping will be installed. All residences on the forcemain route will be provided with a 6-inch gravity sewer lead to their property. The gravity sewer leads will then connect to Township owned duplex pumping stations installed in the right-of-way, which in turn will pump to the forcemain portions of the collection system. The rationale behind this design criteria is that all customers are treated similarly in upfront costs. Instead of requiring the Sturgeon Island and Columbus Beach Club property owners to purchase and install their own private pumping equipment, the cost of any pumping stations will be spread out over all the users.

2.2 Alternative 2 – Gravity and Forcemain Hybrid, WWTF expansion

This alternative encompasses the same traditional gravity sewer collection system for the residential area between the rivers as Alternative 1, but for the forcemain piping instead of the Township owning the grinder pump stations, these would be individually owned. This project is still over 80% gravity sewer connections, with the lower terrain around the Burt Lake shoreline being served with individual pumps and low-pressure sewer connections. It is understood that this alternative creates a much greater differential in upfront cost between the gravity sewer connections and the low-pressure sewer connections due to the purchase and installation of their own grinder pump package.

2.3 Alternative 3 – Low Pressure Sewer

All residences will be provided with a 1.5-inch pressure sewer lead to their property. Run the forcemain piping within the road rights-of-ways maintaining minimum depth to prevent freezing. Directionally drill as much of the forcemain as possible to minimize surface disturbance costs. The owners within the pressure sewer area will have to provide their own pumping equipment and connection. The rationale behind this design criteria is to provide each customer with a low-pressure sewer connection at the lowest possible cost to the project. This alternative creates a larger upfront individual connection cost, primarily associated with their purchase of a private grinder pump stations meeting the Township's design criteria.

2.4 Alternative 4 – Do Nothing

This alternative would leave the existing residential septic systems in place. Without creating a centralized collection system, wastewater treatment and handling would remain the responsibility of the homeowner. With the local high water table and aging septic systems; the risk of contaminating the Sturgeon River, Indian River, and Burt Lake would remain. This alternative will not be considered further.

3.0 Affected Environment/Environmental Consequences

3.1 Land Use/Important Farmland/Formally Classified Lands

3.1.1 Affected Environment

The proposed project is to be built on previously disturbed lands including easements, road rights-of-ways, mowed ditches, and municipally owned lands including an existing wastewater treatment facility. All sewer collection lines are to be constructed in the road rights-of-way and directionally bored where necessary. Previous ground disturbing activity has included the construction of roads, ditches, and excavation for utilities. Expansions are proposed at the existing Wastewater Treatment Plant. Previous ground disturbance at this site has included tree removal, the excavation and construction of lagoons, the construction of a headworks building, and frequent mowing. A detailed Soil Resource Report was collected from the USDA NRCS website and can be found in Sections 7.8.1 & 7.8.2 of this document. This report showed that there were no designations of "Prime Farmland". There are some sites that have a hydric soil rating; however these locations are at river crossings and will be directionally bored.

3.1.2 Environmental Consequences

The proposed project will be within existing easements, road rights-of-ways, mowed ditches, and municipally owned lands including an existing wastewater treatment facility. The project will not take place in any areas designated as "Prime Farmland", nor on any sites with hydric soil ratings. No environmental consequences are anticipated as a direct result of this project.

3.1.3 Mitigation

No mitigation is necessary as no direct impact is anticipated regarding prime and important soils nor prime farmland with the proposed project.

3.2 Floodplains

3.2.1 Affected Environment

The project area has been mapped for the FEMA National Flood Insurance Program. According to the FIRM maps, components of the project including collection lines and duplex pump stations will be constructed on the 100- or 500-year floodplain. The FEMA FIRM maps can be seen in Section 7.5. The duplex pump stations will not affect the floodplain as they are buried structures and are not buildings or insurable structures. The electrical components will be above the floodplain. The duplex pump stations do not encourage development in the floodplain because they serve only one or two existing houses and cannot serve others. This project will have no effect on floodplains, furthermore, excavations will be below ground, and the ground returned to its original condition including restored topsoil, grass, and paving, etc.

3.2.2 Environmental Consequences

No long-term environmental consequences associated with the floodplains are anticipated in association with the proposed project.

3.2.3 Mitigation

No mitigation is necessary as no direct impact is anticipated regarding floodplains with the proposed project.

3.3 Wetlands

3.3.1 Affected Environment

The project area was mapped using the USFWS National Wetlands Inventory (NWI) data to determine if there were wetlands within the project area. According to the NWI data, some areas of this project will intersect wetlands. Based on the NWI map, the forcemain along Prospect Road lies within freshwater forested/Shrub wetlands. However, the forcemain will be built entirely within the existing road rights-of-way and will have no effect to any wetlands. There are three points where forcemains will cross under the Indian River and the Sturgeon River. Each of these locations will be directionally bored under the rivers and will therefore have no effect to wetlands. Overall, this project will have no effect to any wetlands. Furthermore, excavations will be below ground, and the ground returned to its original condition including restored topsoil, grass, and paving, etc. The National Final Wetlands Inventory map is shown in Section 7.7.

3.3.2 Environmental Consequences

No long-term environmental consequences associated with wetlands are anticipated with the proposed project.

3.3.3 Mitigation

No mitigation will be required, as no significant adverse impacts exist. Any excavations will be below ground, and the ground returned to its original condition.

3.4 Water Resources

3.4.1 Affected Environment

The environment affected by the proposed project is within existing easements, road rights of ways, mowed ditches, and municipally owned lands including an existing wastewater treatment facility.

3.4.2 Environmental Consequences

This project should not have any negative impact on surface or ground water quality in the area because of the proposed actions. The proposed project should have a water quality benefit to Tuscarora

Township/Indian River by removing the need for private septic systems at each residence. By removing the septic systems, the risk of failure and septic overflow is drastically reduced improving the health of the public, the surrounding rivers, Burt Lake, and the Inland Waterway. These proposed improvements will provide the opportunity for the elimination of associated public health risks and environmental risks.

3.4.3 Mitigation

No mitigation measures are necessary regarding water quality as no negative impacts are anticipated to result from the proposed project.

3.5 Coastal Resources

3.5.1 Affected Environment

Tuscarora Township and the proposed project are not located within the Coastal Zone Management (CZM) Area. Therefore, no affect to coastal resources is anticipated with this project.

3.5.2 Environmental Consequences

No environmental consequences or impacts are anticipated with this project regarding coastal resources.

3.5.3 Mitigation

No mitigation will be required, as there are no environmental impacts anticipated regarding coastal resources.

3.6 Biological Resources

3.6.1 Affected Environment

No environmental consequences are anticipated to occur with the proposed sewer collection system and wastewater treatment facility expansion. The proposed project will be constructed within easements, road rights-of-ways, municipally owned lands including an existing wastewater treatment facility that is frequently mowed. Within Cheboygan County there are known endangered and threatened species including: Northern Long-eared Bat, Piping Plover, Red Knot, Eastern Massasauga Rattlesnake, Hungerford's Crawling Water Beetle, Dwarf Lake Iris, Eastern Prairie Fringed Orchid, Houghton's Goldenrod, Michigan Monkey Flower, and Pitcher's Thistle. The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website was consulted to provide further information about the habitat in this area. According to USFWS IPaC site, there is no known candidate, threatened or endangered species and no known critical habitat or hibernacula within the project area. Please see the attached Species List and General Project Design Guidelines in Section 6 regarding habitat and threatened and endangered species surveys that have been conducted in this area. Below briefly describes each species' habitats and lists the likelihood of affect:

During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. Because no significant tree removal is anticipated, there will be no effect on the NLEB.

This project will not be taking place in any coastal environments, therefore there is no suitable habitat for the Piping Plover, Red Knot, Pitchers Thistle, Houghton's Goldenrod, and Dwarf Lake Iris.

The Michigan Monkey Flower and The Hungerford's Crawling Water Beatle are found in wetlands and/or streams. No portion of the proposed project will be taking place in habitat for these species. All

river crossings will be directionally bored and will not affect streams or wetlands.

Eastern Massasauga Rattlesnake is typically associated with open wetlands and lowland coniferous forests, such as cedar swamps. The project will not be taking place in any wetlands. According to the MNFI report, the project site is located outside of the Tier 1 and Tier 2 habitats for the Eastern Massasauga Rattlesnake.

The Eastern Prairie Fringed Orchid grows in a wide range of habitats from mesic prairie to wetlands such as sedge meadows, marsh edges, even bogs. The mowed ditches, easements, road rights-of-ways, and mowed WWTF property are not suitable habitat for the Eastern Prairie Fringed Orchid.

3.6.2 Environmental Consequences

The components of the proposed project involve the construction of new infrastructure on existing wastewater treatment sites and in easements and road rights-of-ways. The road rights-of-ways, mowed ditches, and the mowed WWTF are not biological habitat. Tree removals are not anticipated with this project. No environmental consequences are anticipated with regards to threatened or endangered species with this project.

3.6.3 Mitigation

No mitigation is required as there are no anticipated effects to endangered species with this project.

3.7 Historic and Cultural Resources

3.7.1 Affected Environment

The land area impacted by the project is easements, road rights-of-ways, mowed ditches, and municipally owned lands. There are no historic sites listed in the National Register or sites identified within the Area of Potential Effect (APE).

3.7.2 Environmental Consequences

The National Historic Preservation Act of 1966 requires a Section 106 review to determine any impacts upon historic properties and cultural resources. The State Historic Preservation Officer (SHPO) requires an archaeological consultant to review the project and conduct any necessary field work to ensure that no cultural or historic sites are affected by the project. The details of this project were reviewed by the archaeological consultant: The University of Illinois Public Service Archaeology & Architecture Program. The archaeologist conducted a preliminary assessment of the project and conducted field research. They determined the project would have no effect on historic or cultural resources. The archaeological report was included within the Section 106 Application and sent in to SHPO, who then conducted their own review of the project. Upon SHPO's review, Historical/cultural sites were NOT identified within the Area of Potential Effect (APE). The 106 Application can be seen in Section 6.4.1 along with the archaeological report. See State Historic Preservation Officer response in Section 6.5.

3.7.3 Mitigation

No mitigation required as there are no anticipated effects to cultural and historic resources.

3.8 Aesthetics

3.8.1 Affected Environment

The proposed project will be constructed within easements, road rights-of-way, and municipally owned lands with existing water infrastructure. There are no visually sensitive areas or landscape features within the area of the proposed project. All areas have been previously developed for either municipal or commercial use.

3.8.2 Environmental Consequences

The construction may have a temporary impact on the aesthetics of the area; however, any excavations will be below ground, and the ground returned to its original condition including: restored topsoil, grass, paving, etc.

3.8.3 Mitigation

No mitigation is required with respect to aesthetics.

3.9 Air Quality

3.9.1 Affected Environment

Air quality in Tuscarora Township/Indian River is generally good. The proposed project is not anticipated to increase in any emissions after construction. Cheboygan County is outside of the Nonattainment areas for both ozone and sulfur dioxide (See Section 7.8).

3.9.2 Environmental Consequences

During construction, there will be short term air quality impacts from fugitive dust as is common with any construction project; however, these impacts will be mitigated using best management practices during construction, such as dampening of the soil to limit dust and use of diesel-powered equipment that will be fueled with low sulfur diesel fuel. Additionally, contractors will be encouraged to limit idling time during operation of heavy equipment to reduce air quality impacts from exhaust.

The National Ambient Air Quality Standards (NAAQS) are health-based pollution standards set by EPA. Areas of the state that are above the NAAQS concentration level are called nonattainment areas. For large increases in emissions requiring permitting, companies in nonattainment areas must meet additional requirements, including the requirement to get offsets. Cheboygan County is NOT located within a nonattainment area for ozone or sulfur dioxide and will not be producing long term air quality impacts, therefore, this project will not require offsets or any other mitigation measures.

3.9.3 Mitigation

No mitigation measures are necessary regarding impacts to air quality as there will be no long-lasting impacts to the air quality in the area resulting from this project.

3.10 Socio-Economic Impact Assessment/Environmental Justice Issues

3.10.1 Affected Environment

According to the American Community Survey 2019, there were 1,883 people living in Indian River, the Census Designated Place within Tuscarora Township that the project lies within. There were 995 households, and 557 families residing in Indian River. The racial makeup was 97.3% White, 0.0% African American, 1.3% Native American, 0.0% Asian, and 1.4% from other races, and Hispanic or Latino of any race made up 1.4% of the population.

There were 995 households out of which 11.0% had children under the age of 18 living with them, 43.3% were married couples living together, 11.9% had a female householder with no husband present, and 44.8% were non-families. Of all households, 35.8% were made up of individuals and 55.5% had someone who was 60 years of age or older. The average household size was 1.89. Indian River has a population range that consists of 8.6% under the age of 18, and 33.7% who were 65 years of age or older. The median age was 56.5 years.

According to the American Community Survey 2019, the median income for a household in Indian River was \$42,989, and the median family income was \$63,472. The per capita income for Indian River was \$32,233. Individuals and families below the poverty line made up 17.3% and 16.9%, of the population, respectively. Out of the total people living in poverty, 13.3% are under the age of 18 and 9.9% are 65 or older.

The wastewater collection and treatment system improvements for Indian River (Tuscarora Township) will serve all of the residents with District 2. The customers are to be charged fairly and equitably according to their usage of the system. The planned improvements in association with this project will benefit all residents within Indian River equally. The cost of the project will be distributed across all users, through user rates. No segment of the population will be treated differently than any other, and discrimination within the Township is prohibited.

3.10.2 Environmental Consequences

No environmental consequences are anticipated regarding socio-economic/ environmental justice issues relating to this project. All residents and users of the system will be treated equally, and all will share equally in the benefits and cost of the improvements proposed.

3.10.3 Mitigation

No mitigation measures are necessary as no socio-economic/environmental justice impacts are anticipated in relation to this project.

3.11 Miscellaneous Issues

3.11.1 Noise

3.11.1.1 Affected Environment

Indian River/Tuscarora Township is a rural community with a mix of residential and commercial in the vicinity of the proposed project. Major sources of noise in the area are traffic related and from local commercial activities.

3.11.1.2 Environmental Consequences

No new sound generating equipment is anticipated in the proposed project. However, during construction, noise levels will increase due to the construction activities and heavy equipment use. The use of best management practices should limit the unnecessary noise from construction by limiting idling time of heavy equipment, and unnecessary noise from construction workers during construction. Construction will be limited to normal daylight hours as well, which will limit the disruption of the normal quiet nature of the community.

3.11.1.3 Mitigation

No mitigation measures are necessary in association with noise control related to this project as no long-

term impacts are anticipated.

3.11.2 Transportation

3.11.2.1 Affected Environment

S. Straits Highway is the main north/south route through the Village of Indian River. The areas of construction for this project have the potential to disrupt the normal flow of traffic along S. Straits Highway and all the residential streets west to Burt Lake. Local transportation may be temporarily affected on these streets by construction, employee, and equipment traffic.

3.11.2.2 Environmental Consequences

The project will have a temporary effect on local transportation due to construction in the road rights-of-ways and construction equipment using these roads to gain access to the construction sites, which is expected to disrupt normal traffic flow. This project is not anticipated to have any lasting impacts on transportation patterns. If street closures or detours are necessary, these will be coordinated with the Michigan Department of Transportation, the local street department and/or the County Road Commission. These should be highly publicized and well-marked during construction.

3.11.2.3 Mitigation

No mitigation measures are necessary in relation to the proposed project with regard to transportation, as no long term impacts are anticipated.

3.11.3 Solid Waste Disposal

3.11.3.1 Affected Environment

Solid waste disposal will not be impacted by this project. During construction, construction crews should be responsible for cleanup of debris on a daily basis, as well as at the end of the construction during the cleanup and restoration phases. There are no new permanent sources of solid waste materials associated with this project.

3.11.3.2 Environmental Consequences

No environmental consequences are anticipated as a result of this project. Solid waste generated by the project will be managed in an appropriate manner as required in the construction agreements. The general contractor will be responsible for adequate and appropriate disposal of all wastes generated during construction. No long term impact on solid waste are anticipated, other than those that will be subject to permitting processes currently in place locally or statewide.

3.11.3.3 Mitigation

No mitigation measures are necessary as no impacts are anticipated to result from the proposed project.

3.12 Health and Human Safety

3.12.1 Electromagnetic fields and interference

3.12.1.1 Affected Environment

This project will not include any equipment that produces any significant electromagnetic fields.

3.12.1.2 Environmental Consequences

No environmental consequences are anticipated in regard to electronic fields.

3.12.1.3 Mitigation

No mitigation measures are necessary as no impacts are anticipated to result from the proposed project.

3.12.2 Environmental Management

3.12.2.1 Affected Environment

EGLE STD (Storage Tank Division) enforces state and federal laws regarding pollution from storage tank leaks or releases and maintains a listing of all known releases of hazardous materials from any registered underground or above ground storage tanks. There are no known releases in the proposed construction area.

3.12.2.2 Environmental Consequences

A search of the EGLE/STD website showed no open or closed underground storage tank locations in or near the proposed construction site. See section 7.9 for a map of known active and closed storage tanks in the vicinity of the project.

Part 213 of the Natural Resources Environmental Protection Act (NREPA) prohibits any exacerbation of any polluted areas (e.g. through excavation and/or dewatering activities). The consultants and contractors will take all necessary precautions when working in potentially contaminated areas.

If, during construction, the contractor encounters any contaminated soil which appears to be the result of an unreported release of hazardous material, the contractor will immediately cease construction and notify the municipal entity, who in turn will notify the EGLE STD of a suspected release. According to law, a discovery of a suspected release of hazardous materials must be reported to EGLE STD within 24 hours. This begins a series of mitigation efforts and/or enforcement actions. These measures are designed to protect the public from any environmental consequences from hazardous spills.

3.12.2.3 Mitigation

No mitigation measures are necessary as no impacts are anticipated to result from the proposed project.

3.13 Corridor Analysis

3.13.1 Affected Environment

The proposed project will be constructed within easements, road rights of ways, and municipally owned lands. There are no visually sensitive areas or landscape features within the area of the proposed project.

3.13.2 Mitigation

No mitigation required for the proposed project.

4.0 Cumulative Effects

No negative long term environmental impacts are anticipated with regard to the District 2 Sewer Extension Project. The project will improve the water quality for the Sturgeon River, Indian River, Burt Lake, and the Inland Waterway by eliminating the need for individual septic systems. When this project is completed, all waste in the Village will be treated far from these bodies of water which will ensure the health of these ecosystems and the residents who utilize them.

5.0 Summary of Mitigation

No mitigation measures are necessary in relation to this project as no long term negative impacts are anticipated to result from the proposed actions.

6.0 Coordination, Consultation, and Correspondence

6.1 Fish and Wildlife Service Review and Section 7 Endangered Species Act Consultation

6.2 U.S. Fish and Wildlife Service General Project Guidelines



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

<http://www.fws.gov/midwest/endangered/section7/s7process/step1.html>

In Reply Refer To:

February 02, 2021

Consultation Code: 03E16000-2021-SLI-0599

Event Code: 03E16000-2021-E-02239

Project Name: Tuscarora Township District 2 Sewer Expansion

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Fish and Wildlife Service if they determine their project may affect listed species or critical habitat.

There are several important steps in evaluating the effects of a project on listed species. Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at <http://www.fws.gov/midwest/endangered/section7/s7process/index.html>. This website contains step-by-step instructions to help you determine if your project may affect listed species and lead you through the section 7 consultation process.

Under 50 CFR 402.12(e) (the regulations that implement section 7 of the Endangered Species Act), the accuracy of this species list should be verified after 90 days. You may verify the list by visiting the ECOS-IPaC website (<http://ecos.fws.gov/ipac/>) at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project area or may be affected by your proposed project.

Please see the “Migratory Birds” section below for important information regarding incorporating migratory birds into your project planning. Our Migratory Bird Program has developed recommendations, best practices, and other tools to help project proponents voluntarily reduce impacts to birds and their habitats. The Bald and Golden Eagle Protection Act prohibitions include the take and disturbance of eagles. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <https://www.fws.gov/midwest/eagle/permits/index.html> to help you avoid impacting eagles or determine if a permit may be necessary.

Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/administrative-orders/executive-orders.php>.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Michigan Ecological Services Field Office

2651 Coolidge Road Suite 101

East Lansing, MI 48823-6360

(517) 351-2555

Project Summary

Consultation Code: 03E16000-2021-SLI-0599

Event Code: 03E16000-2021-E-02239

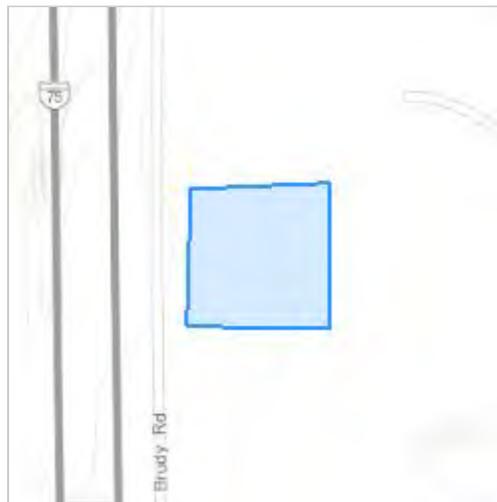
Project Name: Tuscarora Township District 2 Sewer Expansion

Project Type: WASTEWATER FACILITY

Project Description: Tuscarora Township is applying to USDA RD for funding their District 2 Sewer Expansion Project. The project will involve installing gravity sewer lines, forcemain, and pump stations within the predominantly residential District 2 in Tuscarora Township's unincorporated community of Indian River. Work on the collection system will be taking place in the existing road rights-of-ways and easements. The Township also plans to expand their existing waste water treatment plant to handle the increased sewage.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@45.394406849999996,-84.60455669106148,14z>



Counties: Cheboygan County, Michigan

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ecos.fws.gov/docs/tess/ipac_project_design_guidelines/doc5664.pdf	Threatened

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Endangered
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> Only actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ For all Projects: Project is within EMR Range Species profile: https://ecos.fws.gov/ecp/species/2202 General project design guidelines: https://ecos.fws.gov/docs/tess/ipac_project_design_guidelines/doc5280.pdf	Threatened

Insects

NAME	STATUS
Hungerford's Crawling Water Beetle <i>Brychius hungerfordi</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6123	Endangered

Flowering Plants

NAME	STATUS
Dwarf Lake Iris <i>Iris lacustris</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/598	Threatened
Eastern Prairie Fringed Orchid <i>Platanthera leucophaea</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Houghton's Goldenrod <i>Solidago houghtonii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5219	Threatened
Michigan Monkey-flower <i>Mimulus michiganensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5295	Endangered
Pitcher's Thistle <i>Cirsium pitcheri</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8153	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort — no data

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Red-headed
Woodpecker
BCC Rangewide
(CON)



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

General Project Design Guidelines (2 Species)

Generated February 02, 2021 06:55 AM MST, IPaC v5.55.4



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Species Document Availability

Species with general design guidelines

Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*

Northern Long-eared Bat *Myotis septentrionalis*

Species without general design guidelines available

Dwarf Lake Iris *Iris lacustris*

Eastern Prairie Fringed Orchid *Platanthera leucophaea*

Houghton's Goldenrod *Solidago houghtonii*

Hungerford's Crawling Water Beetle *Brychius hungerfordi*

Michigan Monkey-flower *Mimulus michiganensis*

Piping Plover *Charadrius melodus*

Pitcher's Thistle *Cirsium pitcheri*

Red Knot *Calidris canutus rufa*

General Project Design Guidelines - Piping Plover and 9 more species

Published by Michigan Ecological Services Field Office for the following species included in your project

Piping Plover *Charadrius melodus*

Pitcher's Thistle *Cirsium pitcheri*

Michigan Monkey-flower *Mimulus michiganensis*

Houghton's Goldenrod *Solidago houghtonii*

Red Knot *Calidris canutus rufa*

Dwarf Lake Iris *Iris lacustris*

Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*

Eastern Prairie Fringed Orchid *Platanthera leucophaea*

Hungerford's Crawling Water Beetle *Brychius hungerfordi*

Northern Long-eared Bat *Myotis septentrionalis*

Environmental Screening for Eastern Massasauga Rattlesnake in Michigan March 14, 2017

Background

The Eastern Massasauga Rattlesnake (EMR) is listed as a threatened species under the U.S. Endangered Species Act (Act). The Act protects the EMR and their habitat by prohibiting “take” and may require agencies to coordinate with the U.S. Fish and Wildlife Service (Service) before authorizing or funding an activity affecting the species. To streamline coordination, the Service’s Michigan Ecological Services Field Office has developed a set of Best Management Practices (BMPs) for specific activities potentially impacting EMR in Michigan. These BMPs are voluntary and just one of the ways that compliance with the Act may be achieved.

Projects may...

- have no effect to EMR and no need for additional ESA compliance considerations.
- have potential for adverse effects, but use BMPs to avoid adverse effects (i.e., “not likely to adversely affect” EMR) or minimize the adverse effects.
- use surveys to confirm probable absence of EMR (contact the Service for survey guidance).
- use “Informal Consultation” with Service (for actions requiring a Federal permit or funding).
- use “Formal Consultation” with Service (for actions requiring a Federal permit or funding).
- develop a Habitat Conservation Plan and seek an ESA permit, if adverse effects cannot be avoided.

For activities not listed in the BMPs, please contact the Service for project-specific recommendations. In some cases implementation of BMPs may not be sufficient to avoid all adverse impacts to EMR and additional consultation with the Service may be required. The Service can assist planners in determining whether adverse effects are likely as a result of proposed projects, and whether implementation of BMPs is sufficient to remove the risk of adverse effects.

Additional information on compliance with the Act can be found:

For Federal actions/section 7 consultation:

<https://www.fws.gov/midwest/Endangered/section7/s7process/index.html>

For non-Federal actions:

<https://www.fws.gov/midwest/endangered/permits/index.html>

For questions or comments you may contact the Service below:

U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
Phone: (517)351-2555
Email: eastlansing@fws.gov

Definitions

Active Season: The active season begins in the spring when snakes emerge from hibernation, generally when maximum air temperatures are above 50°F, and ends in the fall when EMR have returned to their hibernacula and temperatures are consistently below 45°F. In Michigan, the active season is generally April through October. The active season dates will vary by location and weather. **Contact the Service for project-specific dates based on location when work in EMR habitat is planned near the start or end of the active season.**

Affecting hydrology: We consider “affecting hydrology” to include projects that are likely to appreciably change the elevations of surface water upstream or downstream, or in the local ground water (as estimated pre-project vs. post-project). The concern is for changes to local hydrology (e.g., creating new ditches, creating a new impoundment) that might harm EMR hibernating at or near ground water, or actions that significantly alter available suitable habitat either through flooding or drying of EMR wetlands.

Hibernacula: Areas suitable for EMR to overwinter. For most EMR populations, the locations of hibernacula are not known, but these areas are critical to protect. Unfortunately, we lack information on how to reliably identify these areas. EMR usually hibernate below the frost line in crayfish or small mammal burrows, tree root networks or rock crevices in or along the edge of wetlands or in adjacent upland areas with presumably high water tables (areas where the soil is saturated but not inundated). Following egress from hibernacula in the spring, EMR typically remain aboveground in the vicinity for a week or two, and return to these areas in the fall for several weeks prior to entering hibernation. Surveys in the spring (shortly following egress) or fall (prior to ingress) when snakes are congregating in the vicinity may help identify these important areas. Maintaining stable hydrology of these areas is important during the inactive season.

IPaC: “Information for Planning and Conservation” is a project planning tool available on-line to the public that streamlines the Service’s environmental review process.

EMR Habitat: “Eastern Massasaugas have been found in a variety of wetland habitats. Populations in southern Michigan are typically associated with open wetlands, particularly prairie fens, while those in northern Michigan are known from open wetlands and lowland coniferous forests, such as cedar swamps. Some populations of Eastern Massasaugas also utilize open uplands and/or forest openings for foraging, basking, gestation and parturition (i.e., giving birth to young). Massasauga habitats generally appear to be characterized by the following: (1) open, sunny areas intermixed with shaded areas, presumably for thermoregulation; (2) presence of the water table near the surface for hibernation; and (3) variable elevations between adjoining lowland and upland habitats.” From Michigan Natural Features Inventory (Website: mnfi.anr.msu.edu)

Tier 1 Habitat: Areas known to be occupied by EMR or highly likely to be occupied by EMR.

Tier 2 Habitat: Areas with high potential habitat and may be occupied by EMR.

Within the known range: EMR can occur throughout the Lower Peninsula and on Bois Blanc Island in Mackinac County. Areas within the known range but outside of Tier 1 and Tier 2 are considered less likely to be occupied. EMR is highly secretive and cryptic in nature, and can persist in low densities, which makes them difficult to detect. Further, there are extensive areas of the state that have never been surveyed. It is likely that there are additional and yet-unknown occurrences throughout the Lower Peninsula of Michigan. Mapped habitats are subject to change based on new information identifying current Tier 1 and 2 areas as unsuitable, or based on discovery of new EMR occurrences.

EMR Environmental Screening Step-wise Process

Step 1. Determine if EMR may be present in the action area

- ✓ Determine whether the project is in potential EMR habitat using <https://ecos.fws.gov/ipac>
 - You can search for your project location and define the action area by drawing a polygon or uploading a shapefile.
 - IPaC will give you a list of species that may be present in the area you identified. If you click on the thumbnail for EMR, it will tell you if your project is within Tier 1 or Tier 2 habitat, or within the known range of EMR. If EMR is not listed, you do not need to consider this species. Effects to other listed species should also be considered; contact the Service if you need assistance.
 - If EMR is listed, it does not necessarily mean that the entire action area is potential habitat, only that some potential habitat is within the action area entered. For large-scale (e.g., county-wide or multi-county projects) consider coordinating the Michigan Ecological Services Field Office for direct assistance.

If your project is within the known range of EMR, including Tier 1 or Tier 2 habitat, continue to step 2:

Step 2. Determine if the project has the potential to affect EMR

Projects have no effect on EMR when...

- ✓ There is no suitable EMR habitat in the project area and no potential impact off-site (e.g., water discharge into adjacent EMR habitat). If project site conditions are determined to be wholly unsuitable for EMR (e.g., project is in regularly mowed turf grass, row crop, graveled lot, existing building, or industrial site), it is not suitable EMR habitat.
- ✓ The project occurs within suitable habitat, but the action will have absolutely no effect on the habitat or EMR.
- ✓ In suitable EMR habitat, but the site is entirely unoccupied by the species. This is typically confirmed through surveys (contact the Service for more information). In some cases it may be easier to assume EMR are present and use BMPs than to conduct surveys for the species.

For projects where there is a potential for effects to EMR, continue to the section of the document as follows:

For Tier 1 Habitat Page 5

For Tier 2 Habitat Page 6

Within the range of EMR Page 7

For projects with a combination of Tier 1 and Tier 2 habitat, follow the instructions for Tier 1.

Tier 1 Habitat

Tier 1: Project will not affect EMR if all of the following apply:

1. Project will not result in any changes to suitable EMR habitat quality, quantity, availability or distribution, including changes to local hydrology
2. If EMR are present in the project area, they are not likely to have any response as a result of exposure to the action or any environmental changes as a result of the action
3. Project includes all General Best Management Practices:
 - a. Use wildlife-safe materials for erosion control and site restoration (see Erosion Control Resources side panel). In Tier 1 habitat, immediately eliminate use of erosion control products containing plastic mesh netting or other similar material that could entangle EMR.
 - b. To increase human safety and awareness of EMR, those implementing the project should first watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/-PFnXe_e02w), or review the EMR factsheet (available at <https://www.fws.gov/midwest/endangered/reptiles/eam/pdf/EMRfactsheetSept2016.pdf> or by calling 517-351-2555.
 - c. Require reporting of any EMR observations, or observation of any other listed threatened or endangered species, during project implementation to the Service within 24 hours.

Tier 1: Project Not Affecting EMR Coordination

Recommendation: No pre-project coordination with Service needed. Document the steps above for your records.

Tier 1: All Other Projects: For any other projects in Tier 1 habitat that may affect EMR or its habitat, contact the Service for assistance in evaluating potential impacts. Best Management Practices (starting on page 8) are included for many actions to help with project planning, but may not be sufficient to avoid all adverse impacts. The Service can determine whether additional measures are necessary after a project-specific review.

Erosion Control Resources

There are a variety of products that can be used for soil erosion and control requirements. These products may incorporate plastic mesh netting to help maintain form and function. This plastic netting has been demonstrated to entangle a wide variety of wildlife from birds to small mammals. In Michigan, soil erosion control netting has resulted in the documented mortality of a number of imperiled amphibian and reptile species including the EMR and the Eastern Fox Snake (State Threatened).

Several products for soil erosion and control exist that do not contain plastic netting including net-less erosion control blankets (for example, made of excelsior), loose mulch, hydraulic mulch, soil binders, unreinforced silt fences, and straw bales. Others are made from natural fibers (such as jute) and loosely woven together in a manner that allows wildlife to wiggle free. For more information regarding wildlife-safe erosion control measures contact the [USFWS Michigan Ecological Services Field Office](#).

Tier 2 Habitat

Tier 2: Project is not likely to adversely affect EMR if all of the following apply:

1. Project does not impact more than 1 acre of wetland habitat and includes all applicable activity-specific BMPs (starting on page 8), and
2. Project will not appreciably affect hydrology
3. Project includes all General Best Management Practices:
 - a. Use wildlife-safe materials for erosion control and site restoration (See Erosion Control Resources side panel, page 4). In Tier 2 habitat, eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare EMR as soon as is feasible but no later than January 1, 2018.
 - b. To increase human safety and awareness of EMR, those implementing the project should first watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/-PFnXe_e02w), or review the EMR factsheet (available at <https://www.fws.gov/midwest/endangered/reptiles/eama/pdf/EMRfactsheetSept2016.pdf> or by calling 517-351-2555).
 - c. Require reporting of any EMR observations, or observation of any other listed threatened or endangered species, during project implementation to the Service within 24 hours.

Tier 2: Project Not Likely to Adversely Affect EMR Coordination Recommendation: Informal consultation with Service for actions requiring a Federal permit or funding. For non-Federal projects, document the steps above for your records, but no pre-project coordination with the Service needed.

Tier 2: All Other Projects: Coordinate with the Service for a project-level review to determine potential impacts and whether additional conservation measures are needed to avoid adverse effects.

Within the known range of EMR

For projects within the known range of EMR, but outside of Tier 1 and Tier 2 habitat:

To help ensure your project is unlikely to affect EMR:

1. Project applies the General Best Management Practices:
 - a. Use wildlife-safe materials for erosion control and site restoration (See Erosion Control Resources side panel, page 4). By January 1, 2019, eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare EMR (within the known range but outside of Tier1 or Tier 2 habitat).
 - b. To increase human safety and awareness of EMR, those implementing the project should first watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/-PFnXe_e02w), or review the EMR factsheet (available at <https://www.fws.gov/midwest/endangered/reptiles/eama/pdf/EMRfactsheetSept2016.pdf> or by calling 517-351-2555).
 - c. Require reporting of any EMR observations, or observation of any other listed threatened or endangered species, during project implementation to the Service within 24 hours.
2. Project will not have significant impacts to dispersal, connectivity, or hydrology of existing EMR potential habitat, i.e., filling less than 1 acre of wetland habitat or converting less than 20 acres of uplands of potential EMR habitat (uplands associated with high quality wetland habitat) to other land uses.

Within the Known Range, but Outside Tier 1 or 2 Coordination Recommendation:

Document the steps above for your records and no pre-project coordination with the Service needed. If you cannot implement the General Best Management Practices contact the Service for assistance in evaluating potential impacts.

Activity-Specific Best Management Practices

For Tier 1, BMPs are included; however, even with implementation of the BMPs, project-specific review may be needed to determine whether they are sufficient to avoid all adverse impacts

- In Tier 1 habitat, contact the Service regarding the potential applicability of surveys to determine EMR absence in suitable habitat. In Tier 2, surveys can be conducted to confirm the presence of suitable habitat and/or the presence/probable absence of EMR. If onsite habitat is determined to be wholly unsuitable via desktop analysis (e.g., entirely mowed lawn, row crop, graveled lot, and industrial site), then it can be classified as unoccupied and the BMPs will not be necessary.
- Minimize work in Tier 1 and Tier 2 EMR habitat. When feasible, do not route new construction projects, such as pipelines, facilities, or access roads, through potential EMR habitat. Implement the use of wildlife-friendly corridors (e.g., oversized culverts) into new road design to maintain or enhance habitat connectivity.
- Projects should be designed to minimize the potential for disturbance to EMR during project activities.

Maintenance Activities (includes nominal modifications to existing roads and infrastructure)

1. Ground Disturbing Activities

a. All

- i. No known EMR hibernacula are destroyed or disturbed at any time of year. Because these areas are often not known:
 1. For Tier 1: contact the Service to determine whether adverse impacts are likely as a result of ground disturbing work in Tier 1 habitat.
 2. For Tier 2: when operating in potential hibernation areas (e.g., EMR wetlands and adjacent areas with crayfish burrows, rodent holes, small mammal burrows, etc.), work is conducted well within the active season (June – August) to avoid when snakes are likely to be present. During this time, they are most likely to be able to move out of the way of disturbance and have greater chances to find alternative hibernation sites. Destroying potential hibernacula may still impact snakes indirectly. Potential hibernation areas should be avoided to the extent possible.

b. Grading

- i. When working during EMR active season, use exclusionary fencing to separate EMR habitat from the work site to prevent EMR from accessing the disturbance area. For example, in linear projects exclusionary fencing should run parallel to the disturbance, creating a barrier to snake movement. Each end of the exclusionary fencing should be angled away from the area of disturbance to direct snakes traveling along fencing away from the site. The

- exclusionary fencing will typically be traditional silt fence that is set up outside of all areas of disturbance and other types of fencing (i.e., snow fence used to delineate the work zone). Do not use fencing materials that can entangle or injure snakes.
- ii. Any areas using exclusionary fencing should first be “cleared” by a qualified individual¹ before beginning construction activities. Fencing should be installed a minimum of 1 day before construction activities occur and walked weekly to ensure the integrity of the fence. If snakes are seen within the work zone, activity should stop until the snake can be safely moved, and the fence examined for breeches.
 - iii. Revegetate all disturbed Tier 1 and Tier 2 habitat with appropriate plant species (i.e., native species or other suitable non-invasive species present on site prior to disturbance). Monitor all restoration plantings for proper establishment and implement supplemental plantings as necessary to ensure restorations are of equal to or better habitat quality than previous conditions.
 - iv. In Tier 1 and Tier 2, avoid spread of invasive species into EMR habitat by following best practices. This includes inspecting and cleaning equipment and vehicles between work sites as needed to avoid the spread of invasive plant materials.
- c. Trenching
- i. In Tier 1 and Tier 2, avoid trenching in EMR wetlands when possible. In Tier 1, if open trenching is required install exclusionary fencing (follow measures 1(b)(i)-(iv)) and ensure the area is clear prior to trenching.
- d. Fill
- i. In Tier 1 and Tier 2, ensure all imported fill material is free from contaminants or invasive species could affect the species or habitat through acquisition of materials at an appropriate quarry or other such measures.
 - ii. In Tier 1 and Tier 2, use exclusionary fencing around the area to be filled and have the site “cleared” prior to placing fill by a qualified individual (as in 1(b)(i)-(ii)).
- e. Ditching
- i. For Tier 1 and Tier 2, conduct work well within the active season (June-August) when snakes are not likely to be near hibernation sites and can escape disturbance, or contact Service for project specific recommendations.
 - ii. For Tier 1, use exclusionary fencing around the area to be cleared/graded and have the site cleared by a qualified individual prior to construction activities.
 - iii. For Tier 1, contact the Service for work greater than 200’ for project specific recommendations.

¹ A qualified individual is someone who has received training on the identification and life history of EMR.

2. Site Access with vehicles (both Tiers)
 - a. Limit operating vehicles/equipment, clearing trees, etc., in EMR habitat to the inactive season when the ground is frozen. During this time, under these conditions, EMR are most likely underground and will not be impacted by these activities. When possible, use low-impact equipment such as light weight track mounted vehicles with low ground pressure. In Tier 1, if the ground isn't completely frozen (due to weather conditions during the inactive season or if working near seeps and springs that are less likely to freeze), or if working near potential hibernacula, manual access (on foot) may be required.
 - b. Strictly control and minimize vehicle activity in known/presumed occupied EMR habitat to the extent possible. During EMR active season, speed limits at facilities and access roads (i.e., 2-track and gravel) in occupied habitat should be <15 MPH.
 - c. In Tier 1 and Tier 2 habitat areas, drivers should be aware of the potential danger to the driver of swerving to intentionally drive over snakes as well as legal and conservation implications.

3. Heavy Equipment (both Tiers)
 - a. Spill Prevention for oils/fluids
 - i. Site staging areas for equipment, fuel, materials, and personnel at least 100 feet from the waterway, if available, to reduce the potential for sediment and hazardous spills entering the waterway. If sufficient space is not available, a shorter distance can be used with additional control measures (e.g., redundant spill containment structures, on-site staging of spill containment/clean-up equipment and materials). If a reportable spill has impacted occupied habitat:
 1. Follow spill response plan;
 2. Call MDEQ and the National Response Center (800-424-8802), and the Service's Michigan Ecological Services Field Office (517-351-2555) to report the release.
 - b. Do not use large equipment or perform earth-moving activities, water withdrawal and discharge for hydrostatic testing, or other activities that substantially affect the ground or water levels in potential EMR hibernacula areas. Avoidance measures may include, but are not limited to, re-routing of pipeline and appurtenance facilities, boring or drilling, and timing/weather-related restrictions. Measures will be determined on a site-specific basis, based on local habitat conditions, contact Service for more information.

4. Hydrology impacts (both Tiers)
 - i. Water levels in known/presumed occupied habitats should not be artificially manipulated during the inactive season.

- ii. Where applicable, water levels should be allowed to flow naturally and not be artificially stabilized. This allows for the restoration of early successional habitats.

Habitat Management and Restoration

5. Vegetation Management

a. Mowing

- i. In Tier 1, mow during the inactive season.
- ii. For Tier 2, mowing is unrestricted during the inactive season. During the active season, follow daytime mowing restrictions and mow during times of day when snakes are less likely to be active (Figure 1). Increase mower deck height to >8 inches to reduce likelihood of injury to snakes. Higher deck height will reduce the risk of death or injury to snakes in the area.
- iii. In areas with turf grass or areas where trying to discourage EMR (e.g., in areas around buildings), mow regularly and keep grass relatively short (less than 4-6 inches) to reduce its suitability for EMR. If starting with longer grass (greater than 6 inches), mow during the inactive season initially, and then maintenance mowing can occur during the active season (as long as it is regularly maintained and kept shorter than 4-6 inches, so that EMR is unlikely to use those areas). Unmaintained/longer grass may be used by snakes and make them vulnerable to mortality during the next mowing event.

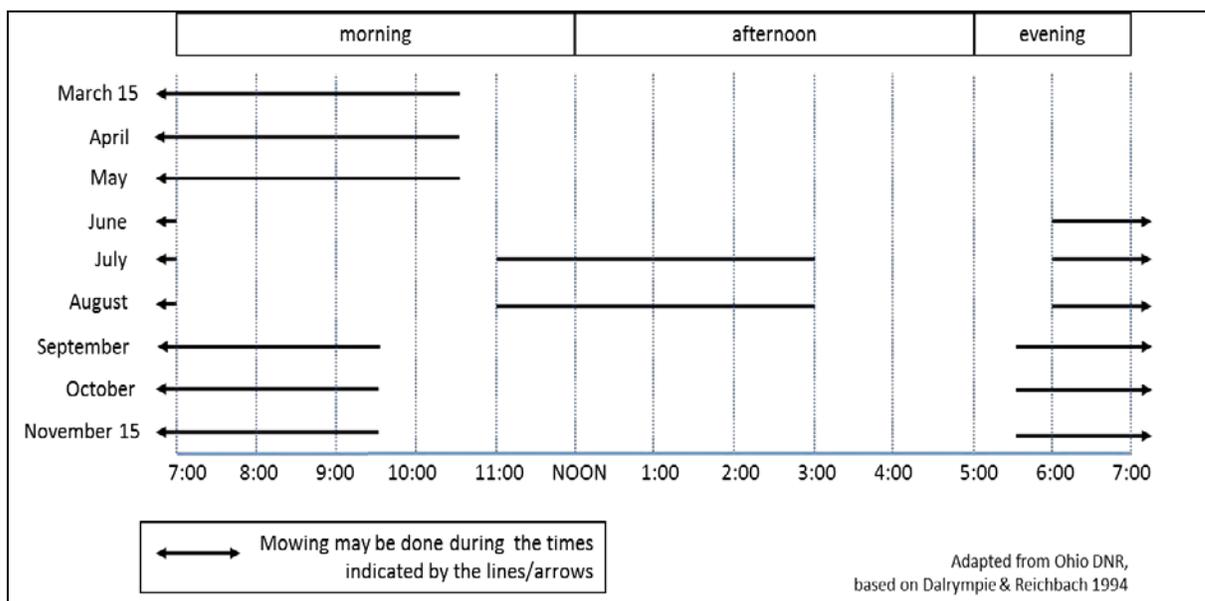


Figure 1. EMR Active season mowing schedule (NiSource Biological Opinion, page 273, USFWS 2015)

- b. Cultivation (e.g., disking)
 - i. In Tier 1 habitat, disking should be limited to the inactive season, and areas within 50 m of known or potential hibernacula should be avoided. In Tier 2, disking can occur in the active season if area is mowed during the inactive season and maintained shorter than 4-5 inches.
- c. Brush/Tree Removal
 - i. In Tier 1, conduct brush or tree removal in known/presumed EMR habitat during the inactive season, when the ground is frozen (such that soils can be left undisturbed).
 - ii. Use low impact harvest methods in Tier 1 and Tier 2 wetlands to cut and remove individual trees. This includes using low-impact equipment such as light weight track mounted vehicles with low ground pressure. In Tier 1, if the ground isn't completely frozen (due to weather conditions during the inactive season or if working near seeps and springs that are less likely to freeze), or if working near potential hibernacula, use hand tools and access site on foot.
 - iii. In Tier 1 and Tier 2, do not burn brush piles during the active season. Dispose of brush offsite or leave in place.
- d. Herbicides
 - i. Follow all appropriate label instructions regarding which herbicide formulation to use in potential EMR habitat. Avoid spray drift beyond the target species/area (observing label instructions regarding optimal wind speed and direction, boom height, droplet size calibration, precipitation forecast, etc.).
 - ii. Avoid broadcast applications of herbicides in Tier 1. Spot spraying or wicking can be used to control invasive plants in occupied habitat. If using broadcast spray in Tier 2, limit the area of exposure to less than half of the available EMR habitat to allow for untreated areas to provide potential areas of refugia from exposure. Contact the Service if you need help in determining this.
- e. Prescribed burning (Tier 1 and Tier 2)
 - i. Conduct prescribed burns during the inactive season before snakes emerge from hibernation. Walk the burn unit following the burn and report any dead or injured EMR to the Service within 24 hours. Burn only a portion (e.g., one-third) of available EMR habitat in any year to leave suitable cover for EMR and its prey.
 - ii. Establish fire breaks using existing fuel breaks (roads, rivers, trails, etc.) to the greatest extent possible. Cultivation (disking or roto-tilling) of burn breaks will be minimized to the extent that human health and safety are not jeopardized. Cultivation and mowing to establish fire breaks will occur during the inactive season.

6. Erosion control
 - a. Use wildlife-safe erosion control blankets (without plastic mesh netting in the layers of material) as required in the general BMPs. Remove all silt fence used for erosion control once soils are stable to reduce barriers to EMR movement.
7. Revegetation
 - a. Revegetate all disturbed Tier 1 and Tier 2 habitat with appropriate plant species (i.e., native species or other suitable non-invasive species present on site prior to disturbance). Monitor all restoration plantings for proper establishment and implement supplemental plantings as necessary to ensure restorations are of equal to or better habitat quality than previous conditions.
8. Invasive species
 - a. In Tier 1 and Tier 2, avoid spread of invasive species into EMR habitat by following best practices. This includes inspecting and cleaning equipment and vehicles between work sites as needed to avoid the spread of invasive plant materials.
9. Wetland restoration
 - a. Restoring natural hydrology in areas that have been drained by tiling and ditching may greatly benefit EMR habitat. Conduct tile breaking or excavation well within the active season to avoid potential hibernacula. Have a qualified individual walk in front of the equipment to clear the area. Work with the Service for Tier 1 habitat to ensure no indirect adverse effects are expected as a result of restoration efforts.
10. Water-level manipulation
 - a. Water levels should not be artificially manipulated during the inactive season to avoid impacts to hibernating snakes. Contact the Service in Tier 1 habitat when water levels will be manipulated during the inactive season or will result in significant alterations to EMR habitat during the active season.

General Project Design Guidelines - Piping Plover and 9 more species

Published by Michigan Ecological Services Field Office for the following species included in your project

Piping Plover *Charadrius melodus*

Pitcher's Thistle *Cirsium pitcheri*

Michigan Monkey-flower *Mimulus michiganensis*

Houghton's Goldenrod *Solidago houghtonii*

Red Knot *Calidris canutus rufa*

Dwarf Lake Iris *Iris lacustris*

Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*

Eastern Prairie Fringed Orchid *Platanthera leucophaea*

Hungerford's Crawling Water Beetle *Brychius hungerfordi*

Northern Long-eared Bat *Myotis septentrionalis*

Northern Long-eared Bat Project Review in Michigan

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I. BACKGROUND INFORMATION

The northern long-eared bat (NLEB) is one of the species of bats most impacted by the disease white-nose syndrome (WNS). Due to declines caused by WNS and continued spread of the disease, the NLEB was listed as threatened under the Endangered Species Act (ESA) on April 2, 2015. The U.S. Fish and Wildlife Service (Service) also developed a final 4(d) rule, which was published in the *Federal Register* on January 14, 2016. The 4(d) rule specifically defines “take” prohibitions for the species.

For more information on NLEB, its listing and the 4(d) rule, visit:
<https://www.fws.gov/Midwest/endangered/mammals/nleb/>

NLEB in Michigan

The NLEB is documented in many Michigan counties and is believed to range throughout the entire state. Therefore, unless presence/absence surveys conducted in accordance with Service guidelines (<https://www.fws.gov/MIDWEST/Endangered/mammals/inba/inbasummersurveyguidance.html>, and also available via IPaC) indicate the probable absence of the species, NLEB are considered potentially present wherever suitable habitat exists within the state.

Suitable Habitat for NLEB:

During the winter, NLEB hibernate in mines, caves, or similar structures. Many NLEB hibernacula have been documented in Michigan; however, our knowledge of these overwintering areas throughout the state is likely incomplete.

Suitable summer habitat for NLEB consists of a wide variety of forested habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats, such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roost trees (i.e., live trees and/or snags ≥ 3 inches DBH that have exfoliating bark, cracks, crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure.

Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1000 feet of other forested/wooded habitat. NLEB have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat boxes; therefore, these structures should also be considered potential summer habitat.

For more information on NLEB, its listing and the 4(d) rule, visit:
<https://www.fws.gov/Midwest/endangered/mammals/nleb/>

II. VOLUNTARY CONSERVATION MEASURES

NLEB benefit from the promotion of mature forest habitat, particularly hardwood/mixedwood stands containing standing snags, dying trees, and waterbodies such as streams, ponds, and forested wetlands. As NLEB are known to avoid traversing large open areas outside of migration, the protection and creation of wooded corridors (such as tree lines) can be extremely beneficial in connecting fragmented patches of suitable roosting/foraging habitat.

In general, projects that involve the trimming, burning, girdling, or clearing of suitable roost trees are encouraged to schedule these activities outside of the summer roosting period, which is generally April through September in Michigan. When winter tree removal is not feasible, avoiding the months of June and July (period when young bats are unable to fly) likely offers some protection for roosting NLEB that may be present.

Implementing conservation measures for NLEB helps to protect other native bat species, several which are experiencing recent population declines as a result of WNS and/or other factors. As significant predators of nocturnal insects, including many crop and forest pests, bats are important to Michigan's agriculture and forests. For example, Whitaker (1995)¹ estimated that a single colony of 150 big brown bats (*Eptesicus fuscus*) would eat nearly 1.3 million pest insects each year. Boyles et al. (2011)² noted that the "loss of bats in North America could lead to agricultural losses estimated at more than \$3.7 billion/year," and using their data for Michigan alone, we totaled the estimated value at over \$500 million per year (assuming standard crop pest survival). Taking proactive steps to help protect bats may be valuable to agricultural and timber producer yields and pest management costs.

Continue to the following sections for ESA guidance for Federal and non-Federal projects in Michigan.

III. ESA GUIDANCE: PRIVATE LANDOWNERS/NON-FEDERAL PROJECTS

NLEB use a wide variety of forested habitats but are not found in all wooded areas in Michigan. The species' local distribution and abundance is influenced by both the distance to hibernacula and the quality of available habitat. Although it can be difficult to predict where the species may occur, once NLEB colonize a forest habitat for raising their young (pups), they will often return to the same areas annually.

As a result of this fidelity to specific locations, the Service's approach to implementation of the ESA is based in part on "known" locations where important habitat for NLEB has been documented; namely, hibernacula and maternity roost trees.

¹ Whitaker, J.O. 1995. Food of the Big Brown Bat *Eptesicus fuscus* from Maternity Colonies in Indiana and Illinois. *American Midland Naturalist* 134(2):346-360.

² Boyles, J.G., P.M. Cryan, G.F. McCracken, and T.H. Kunz. 2011. Economic Importance of Bats in Agriculture. *Science* 332:41-42.

Please note that projects that require State permits or authorizations that implement Federal laws, or are supported by Federal funds (e.g., Clean Water Act, transportation projects), may have additional requirements under or similar to Section 7 of the ESA, as described in [section: IV. ESA GUIDANCE: FEDERAL PROJECTS](#).

Additionally, please contact the Michigan Ecological Services Field Office (contact information at the end of this document) for project-specific recommendations for wind development projects. Utility-scale wind turbines may attract and cause mortality of NLEB and warrant additional considerations.

In Michigan, what is required if there are no known NLEB hibernacula or roost trees near my project?

The Service does not require private landowners to conduct surveys for ESA-listed bats on their lands, nor do we require our guidelines for NLEB to be followed on lands where no roosts or hibernacula are known to occur. However, our records of these locations in Michigan are limited, and we expect NLEB roosts to be present in many locations in addition to those listed in this document.

NLEB 4(d) Rule Take Prohibitions

The definition of “take” pursuant to the ESA includes to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect (see 50 CFR 17.3 for details). Our implementing regulations further define the term “harm” to include any act which actually kills or injures fish or wildlife, and emphasize that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

The final 4(d) rule for the NLEB (50 CFR 17.40(o)) was published on January 14, 2016. Under the final rule, prohibitions in Michigan include:

- Actions that result in the incidental take of NLEB in known hibernacula.
- Actions that result in the incidental take of NLEB by altering a known hibernaculum’s entrance or interior environment if it impairs an essential behavioral pattern, including sheltering NLEB.
- Tree-removal activities that result in the incidental take of NLEB when the activity: (1) occurs within 0.25 mile of a known hibernaculum; or (2) cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot radius of the maternity roost tree, during the pup season (June 1 through July 31).

Please note that not all tree-removal activities within the buffer of a hibernaculum or maternity roost tree will result in take. The timing and extent of tree removal may be an important consideration in those circumstances; please contact the Michigan Ecological Services Field Office to discuss your project plans in more detail. If your activity may result in incidental take that is prohibited based on the above, we will work with you to determine whether a permit pursuant to the ESA may be applicable.

Michigan Known Hibernacula and Roost Tree Locations for NLEB

We have compiled location information for NLEB hibernacula and known roosts trees in Michigan. This information can be used to help project planners in determining the applicability of provisions of the NLEB final 4(d) rule under the ESA. Please use the tables below to see if we have information that may be applicable to your project.

If you are planning a project that may impact suitable habitat in the Michigan townships below, please contact our office with more specific information on the location of your project, and we will confirm for you whether there are any known hibernacula within ¼ mile of your project or any known roost trees within 150 feet of your project.

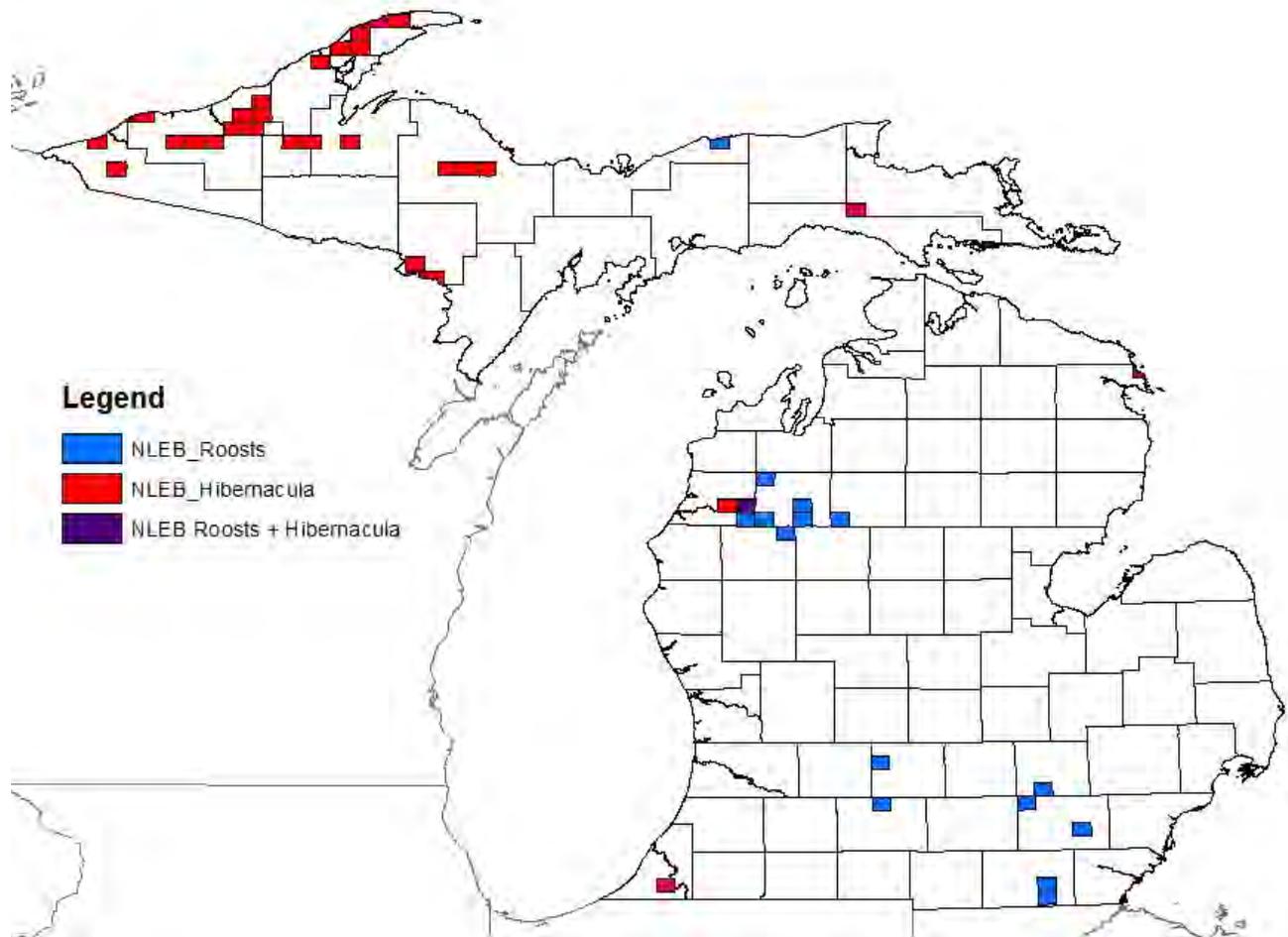
Where are the known NLEB hibernacula in Michigan?

Known NLEB in Michigan			
County	Townships Containing Hibernacula and/or Buffer Areas	Number of Hibernacula	Landownership Within Buffer(s)
Alpena	Alpena (T32NR9E)	1	Public
Baraga	L'Anse (T49NR33W)	1	Private
Berrien	Buchanan (T7SR18W)	1	Private
Dickinson	Breitung (T40NR30W, T39NR30W), Norway (T39NR29W)	8	Private (8)
Gogebic	Ironwood (T49NR46W); Bessemer/Wakefield (T47NR45W)	2	Private (1), public (1)
Houghton	Adams/Quincy/Franklin/Stanton (T55NR34W); Calumet (T56NR33W); Laird (T49NR35W, T49NR36W); Schoolcraft (T56NR32W)	3	Private (1), public (2)
Keweenaw	Allouez (T57NR32W, T58NR32W); Eagle Harbor/Grant (T58NR30W); Eagle Harbor/Houghton (T58NR31W)	10	Private (9), private + public (1)
Mackinac	Hendricks (T44NR7W)	4	Public (4)
Manistee	Dickson (T22NR14W, T22NR13W)	1	Private + public
Marquette	Ely (T47NR28W); Tilden (T47NR27W); Richmond (T47NR26W)	3	Private (3)
Ontonagon	Bohemia (T52NR37W); Carp Lake (T51NR44W, T51NR43W); Greenland (T51NR37W, T51NR38W, T50NR38W); Matchwood (T49NR41W, T49NR42W); Rockland (T50NR39W, T49NR40W)	42	Private (20), public (8), private + public (16)

Where are the known NLEB roost trees in Michigan?

Known NLEB Roost Tree Locations in Michigan			
County	Townships Containing Roosts and/or Buffer Areas	Number of known roosts	Landownership Within Buffer(s)
Alger	Burt (T49NR14W)	5 (all female)	Public (5)
Calhoun	Convis (T1SR6W)	1	Public (1)
Eaton	Vermontville (T3NR6W)	1 (female)	Private (1)
Lake	Dover (T20NR11W)	4 (all female)	Public (4)
Lenawee	Ogden (T8SR4E), Palmyra (T7SR4E)	81	Private (81)
Livingston	Putnam (T1NR4E)	2 (1 female)	Private (1), public (1)
Manistee	Dickson (T22NR13W), Norman (T21NR13W)	4 (all female)	Private (2), public (2)
Missaukee	Richland (T21NR8W)	4 (all female)	Private (4)
Washtenaw	Lyndon (T1SR3E), Pittsfield (T3SR6E)	3 (2 female)	Private (2), public (1)
Wexford	Cherry Grove (T21NR10W), Selma (T22NR10W), South Branch (T21NR12W), Wexford (T24NR12W)	20 (16 female)	Private (17), public (3)

Map of Known NLEB Occurrence, Roosts, and Hibernacula in MI



***Map last updated 7/22/2016. Map will be updated as additional information becomes available.**

IV. ESA GUIDANCE: FEDERAL PROJECTS

1. Standard Section 7 Consultation:

Under the ESA, requirements for Federal projects (i.e., projects funded, authorized, permitted, or implemented by a Federal agency) are different than requirements for wholly private or otherwise non-Federal projects. The ESA mandates all Federal departments and agencies to conserve listed species and to utilize their authorities in furtherance of the purposes of the ESA. Section 7 of the ESA, called “Interagency Cooperation,” is the mechanism by which Federal agencies ensure the actions they conduct, including those they fund or authorize, do not jeopardize the existence of any listed species. Federal agencies must request a list of species and designated critical habitat that may be present in the project area from the Service (i.e., via IPaC, on our website at <https://www.fws.gov/midwest/Endangered/section7/spranges/MIs7listrequest.html>, or by contacting our office). Then they must determine whether their actions may affect those species or critical habitat. If a listed species or critical habitat may be affected, consultation with the Service is required. For general guidance on Section 7(a)(2) obligations for Federal projects, and step-by-step instructions on the process, please visit: <https://www.fws.gov/midwest/Endangered/section7/s7process/index.html>

Please note that Section 7 obligations or similar requirements may also apply to State permits or authorizations that implement Federal laws or projects that are supported by Federal funds (e.g., Clean Water Act, transportation projects).

2. NLEB Streamlined Consultation (optional for Federal projects that may affect but will not involve prohibited take of NLEB):

Federal actions that involve incidental take not prohibited under the final 4(d) rule for the NLEB may still result in effects to individual NLEB. As discussed above, section 7 of the ESA requires consultation with the Service if a Federal agency's action may affect a listed species. This requirement does not change when a 4(d) rule is implemented. However, for the NLEB 4(d) rule, the Service has provided a framework to streamline section 7 consultations when Federal actions may affect the NLEB but will not cause prohibited take. Federal agencies have the option to rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities by using the framework.

For more information on the NLEB Streamlined Consultation process and to download a Streamlined Consultation Form, visit:

<https://www.fws.gov/Midwest/endangered/mammals/nleb/s7.html>

Please note that use of the streamlined framework is optional, and an agency may choose to follow standard section 7 procedures instead. Even when take of NLEB is exempt, we encourage Federal agencies to implement voluntary conservation measures (i.e., winter tree removal) and avoid adverse effects to the species whenever possible.

If your project may result in prohibited take of NLEB (see “[NLEB 4\(d\) Rule Take Prohibitions](#)” above), standard section 7 procedures apply and this framework cannot be used.

3. Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat (optional for Federal transportation projects that may affect NLEB):

The U.S. Fish and Wildlife Service and Federal Highway Administration (FHWA) have standardized their approach to assessing impacts to Indiana bats and NLEB from highway construction and expansion projects; then avoiding, minimizing and mitigating those impacts. This landscape-level conservation strategy encompasses the ranges of both bat species and provides transparency and predictability to FHWA and state Departments of Transportation (DOTs) through proactive planning. Information provided by this consultation and conservation strategy allows transportation agencies to strategically avoid projects in high impact or high risk areas for the Indiana bat and NLEB. For projects that cannot avoid impacts, project proponents receive information on ways to minimize impacts and preclude the need to revise projects later in their development. For large-scale projects or projects with greater impacts, priority conservation areas may be used to offset and minimize the impacts of the take. This approach is intended to increase the consistency of both project design and review, reduce consultation process timeframes and delays, and contribute meaningfully to the conservation of both species.

Please note that use of the Range-wide Programmatic Consultation for Indiana Bat and NLEB is optional for Federal transportation projects, and transportation agencies may choose to follow standard section 7 procedures instead. For more information on the Range-wide Programmatic Consultation for Indiana Bat and NLEB, including User Guide and Project Submittal Form documents, visit:

<https://www.fws.gov/Midwest/endangered/section7/fhwa/index.html>

V. MICHIGAN ECOLOGICAL SERVICES FIELD OFFICE CONTACT INFORMATION

Please contact the Michigan Ecological Services Field Office for more information on any projects occurring in Michigan.

U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
Phone: 517-351-2555
Fax: 517-351-1443
TTY: 1-800-877-8339 (Federal Relay)
e-mail: EastLansing@fws.gov

6.3 State Historic Preservation Office

6.3.1 Application for Section 106 Review



APPLICATION FOR SHPO SECTION 106 CONSULTATION

Submit one application for each project for which comment is requested. Consult the *Instructions for the Application for SHPO Section 106 Consultation Form* when completing this application.

Mail form, all attachments, and check list to: Michigan State Historic Preservation Office, 300 North Washington Square, Lansing, MI 48913

- I. **GENERAL INFORMATION** New submittal
 - More information relating to SHPO ER# *SHPO Project #*
 - Submitted under a Programmatic Agreement (PA)
PA Name/Date: *PA name/date, if applicable*

- a. **Project Name:** Tuscarora Township, District 2 Sewer Expansion
- b. **Project Municipality:** Tuscarora Township
- c. **Project Address (if applicable):** *Project street address*
- d. **County:** Cheboygan

II. FEDERAL AGENCY INVOLVEMENT AND RESPONSE CONTACT INFORMATION

- a. **Federal Agency:** USDA Rural Development
Contact Name: Andrew H. Granskog
Contact Address: 3001 Coolidge Rd, Suite 200 **City:** East Lansing **State:** Michigan **Zip:** 48823
Email: andy.granskog@usda.gov
Specify the federal agency involvement in the project: Project funder.
- b. **If HUD is the Federal Agency: 24 CFR Part 50** **or Part 58**
Responsible Entity (RE): *Name of the entity that is acting as the Responsible Entity*
Contact Name: *RE Contact name*
Contact Address: *RE mailing address* **City:** *RE city* **State:** *RE State* **Zip:** *RE zip code*
RE Email: *RE contact's email* **Phone:** *RE contact's phone #*
- c. **State Agency Contact (if applicable):** *Name of state agency*
Contact Name: *Name of state agency contact*
Contact Address: *State agency contact's mailing address* **City:** *State contact's city* **Zip:** *State contact's zip code*
Email: *State contact's email* **Phone:** *State contact's phone #*
- d. **Applicant (if different than federal agency):** Tuscarora Township
Contact Name: Mike Ridley
Contact Address: 3546 S. Straits Highway **City:** Indian River **State:** Michigan **Zip:** 49749
Email: supervisor@tuscaroratwp.com **Phone:** 231-238-7088
- e. **Consulting Firm (if applicable):** Performance Engineers, Inc.
Contact Name: Aaron Nordman
Contact Address: 406 Petoskey Avenue **City:** Charlevoix **State:** Michigan **Zip:** 49720
Email: anordman@performanceeng.com **Phone:** 231-547-2121
- f. **Consulting Firm (if applicable):** Rural Community Assistance Program
Contact Name: Jacob Mitchell
Contact Address: 911 Augusta Street **City:** Sault Ste. Marie **State:** MI **Zip:** 49783
Email: jsmitchell@glcap.org **Phone:** 1-(906)-322-4734



APPLICATION FOR SHPO SECTION 106 CONSULTATION

III. PROJECT INFORMATION

a. Project Location and Area of Potential Effect (APE)

i. **Maps.** Please indicate all maps that will be submitted as attachments to this form.

- Street map, clearly displaying the direct and indirect APE boundaries
- Site map
- USGS topographic map Name(s) of topo map(s) Indian River Quadrangle
- Aerial map
- Map of photographs
- Other: Identify type(s) of map(s)

ii. **Site Photographs**

iii. **Describe the APE:**

The APE for the main are the trenches where utilities will be laid in existing roads, easements and public rights-of-way identified on the attached maps. Any auditory effects will be temporary due to construction, as no permanent new sources of noise will be created.

iv. **Describe the steps taken to define the boundaries of the APE:**

The APE was defined based on the proposed ground disturbances described in the Preliminary Engineering Report.

b. Project Work Description

Describe all work to be undertaken as part of the project:

This project will install approximately 18,500 feet of new gravity main and over 50 manholes as identified on the attached map. There will also be an additional 23 duplex pump stations, 10 lift stations, and upgrades to existing lift stations to accommodate the additional flow. Typical footprints for lift stations is 20 ft x 20 ft and a depth of 12 ft to 15 ft. Typical trench depth for main is 8 ft x 6 ft, with main directionally bored around shorelines and river crossings. The project will also increase capacity of the existing WWTP, but not the footprint. All improvements are within the existing facility.

IV. IDENTIFICATION OF HISTORIC PROPERTIES

a. Scope of Effort Applied

i. **List sources consulted for information on historic properties in the project area** (including but not limited to SHPO office and/or other locations of inventory data).

See attached report for details of background research sources and methods

- ii. Provide documentation of previously identified sites as attachments.
- iii. **Provide a map** showing the relationship between the previously identified properties and sites, your project footprint and project APE.
- iv. Have you reviewed existing site information at the SHPO: Yes No
- v. Have you reviewed information from non-SHPO sources: Yes No

b. Identification Results

i. **Above-ground Properties**

A. Attach the appropriate Michigan SHPO Architectural Identification Form for each resource or site 50 years of age or older in the APE. Refer to the *Instructions for the Application for SHPO Section 106 Consultation Form* for guidance on this.

B. **Provide the name and qualifications of the person who made recommendations of eligibility for the above-ground identification forms.**

Name Agency/Consulting Firm:



APPLICATION FOR SHPO SECTION 106 CONSULTATION

Is the individual a 36CFR Part 61 Qualified Historian or Architectural Historian Yes No

Are their credentials currently on file with the SHPO? Yes No

If NO attach this individual's qualifications form and resume.



APPLICATION FOR SHPO SECTION 106 CONSULTATION

ii. **Archaeology** (complete this section if the project involves temporary or permanent ground disturbance) Submit the following information using attachments, as necessary.

A. **Attach Archaeological Sensitivity Map.**

B. **Summary of previously reported archaeological sites and surveys:**

Sites 20CN13, CN14, CN21 and CN23 are mapped as occurring with the project area; however, these sites lack well-defined limits and their extent and boundaries have not been field verified. 20CN15 and 20CN34 are located nearby but outside the project area. Prior surveys conducted by Lovis (1976, 1978) include portions of the project area.

C. **Town/Range/Section or Private Claim numbers:** T4S / R3W / 3,4

D. **Width(s), length(s), and depth(s) of proposed ground disturbance(s):** The ground disturbance will generally include a trench 3-6 feet in width, 5-8 feet in depth, and totaling about 36,600 feet.

E. **Will work potentially impact previously undisturbed soils?** Yes No

If YES, summarize new ground disturbance:

Project may impact undisturbed sediments within and beneath existing road and street rights-of-way

F. **Summarize past and present land use:**

Residential, commercial and recreational development since late 19th century

G. **Potential to adversely affect significant archaeological resources:**

Low Moderate High

For moderate and high potential, is fieldwork recommended? Yes No

Briefly justify the recommendation:

Field survey recommended due to presence of several previously reported archaeological sites within the project area and favorable location with respect to shorelines of Burt Lake, Indian and Sturgeon Rivers.

H. **Has fieldwork already been conducted?** Yes No

If YES:

Previously surveyed; refer to A. and B. above.

Newly surveyed; attach report copies and provide full report reference here:

Archaeological Reconnaissance Survey of a Tuscarora Township Wastewater Service Area Expansion in Cheboygan County, Michigan. Gregory R. Walz, Public Service Archaeology & Architecture Program, University of Illinois at Urbana-Champaign, 18 Nov 2020.

I. **Provide the name and qualifications of the person who provided the information for the Archaeology section:**

Name: Gregory R. Walz **Agency/Firm:** Public Service Archaeology & Architecture Program

Is the person a 36CFR Part 61 Qualified Archaeologist? Yes No

Are their credentials currently on file with the SHPO? Yes No

If NO, attach this individual's qualifications form and resume.

Archaeological site locations are legally protected.

This application may not be made public without first redacting sensitive archaeological information.

V. IDENTIFICATION OF CONSULTING PARTIES

a. **Provide a list of all consulting parties**, including Native American tribes, local governments, applicants for federal assistance/permits/licenses, parties with a demonstrated interest in the undertaking, and public comment:

b. **Provide a summary of consultation with consultation parties:**

Summary of consultation with parties other than the SHPO



APPLICATION FOR SHPO SECTION 106 CONSULTATION

c. Provide summaries of public comment and the method by which that comment was sought:

Public comment summary

VI. DETERMINATION OF EFFECT

Guidance for applying the Criteria of Adverse Effect can be found in *the Instructions for the Application for SHPO Section 106 Consultation Form*.

a. Basis for determination of effect:

Provide an explanation for your determination; if historic properties are present, explain why the criteria of adverse effect were or were not applicable.

b. Determination of effect

No historic properties will be affected

Historic properties will be affected and the project will (check one):

have **No Adverse Effect** on historic properties within the APE.

have an **Adverse Effect** on one or more historic properties in the APE and the federal agency, or federally authorized representative, will consult with the SHPO and other parties to resolve the adverse effect under 800.6.

Federally Authorized Signature: _____ Date: _____

Type or Print Name: _____

Title: _____



APPLICATION FOR SHPO SECTION 106 CONSULTATION

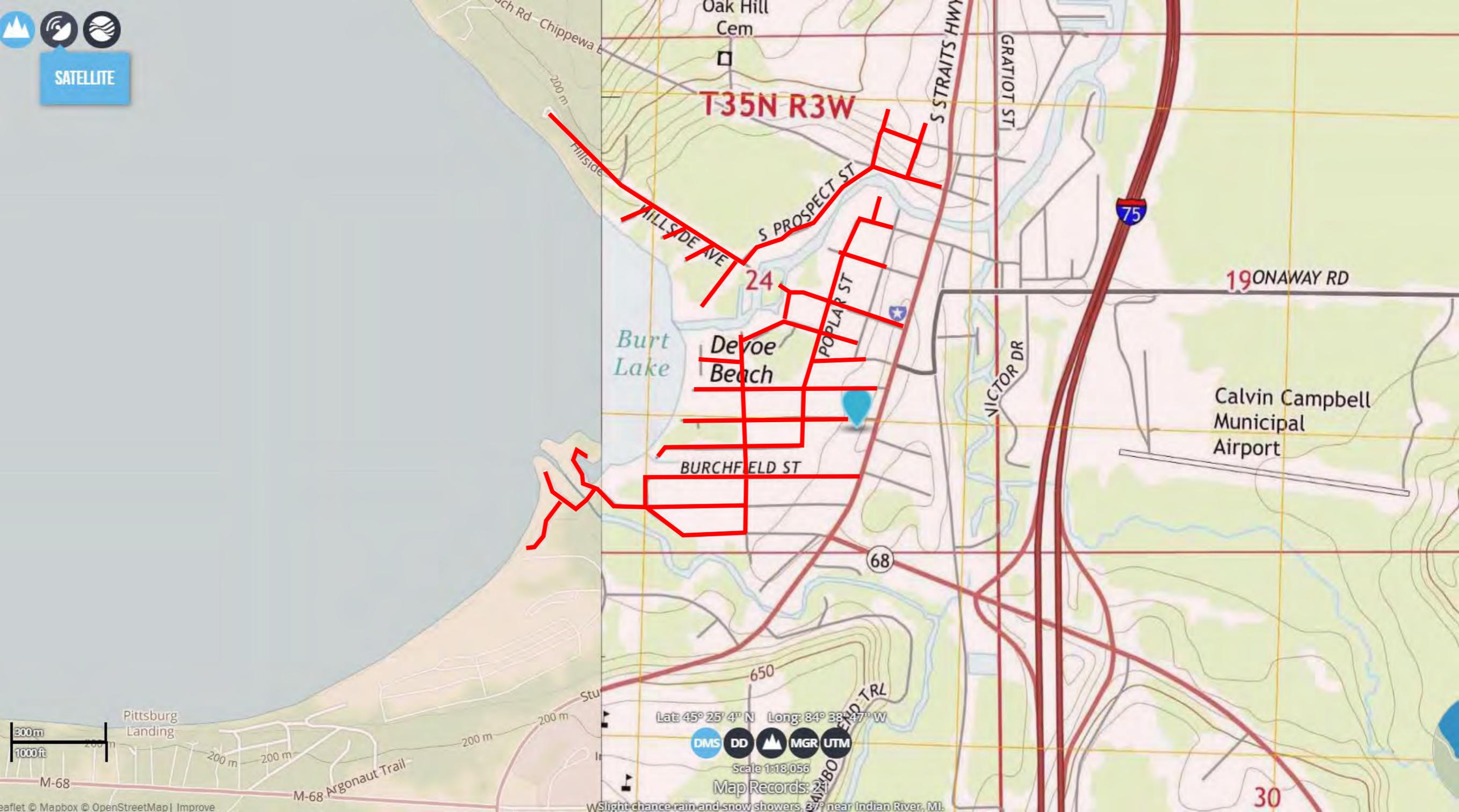
ATTACHMENT CHECKLIST

Identify any materials submitted as attachments to the form:

- Additional federal, state, local government, applicant, consultant contacts
- Maps of project location
 - Number of maps attached: 5
- Site Photographs
 - Map of photographs
- Plans and specifications
- Other information pertinent to the work description: [Identify the type of materials attached](#)
- Documentation of previously identified historic properties
- Architectural Properties Identification Forms
- Map showing the relationship between the previously identified properties, your project footprint, and project APE
- Above-ground qualified person's qualification form and resume
- Archaeological sensitivity map
- Survey report
- Archaeologist qualifications and resume
- Other: [Identify other attached materials](#)



SATELLITE



T35N R3W

Burt Lake

Devoe Beach

Calvin Campbell Municipal Airport

Lat: 45° 25' 4" N Long: 84° 38' 47" W



Scale 1:18,056

Map Records: 21

Slight chance rain and snow showers, 37° near Indian River, MI.

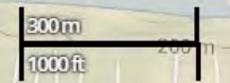




Photo Index Map for the Tuscarora Township Sewer Expansion Project.
 NOT TO SCALE

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



Photo Index Map for the Tuscarora Township Sewer Expansion Project.
 NOT TO SCALE

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



Photo 1: Facing west at the intersection of Barbara Avenue and Witt Blvd.



Photo 2: Facing northwest along Barbara Avenue.



Photo 3: facing east along Barbara Avenue.



Photo 4: facing east at the intersection of Dorothy Avenue, Barbara Avenue, and Doris Pl.



Photo 5: facing north at the intersection of Dorothy Avenue, Barbara Avenue, and Doris Pl.



Photo 6: facing west at the intersection of Dorothy Avenue, Barbara Avenue, and Doris Pl.



Photo 7: Facing southeast at the intersection of Barbara Avenue and Wenonah Avenue.



Photo 8: Facing southwest at the intersection of Barbara Avenue and Wenonah Avenue.



Photo 9: Facing northwest at the intersection of Barbara Avenue and Wenonah Avenue.



Photo 10: Facing northeast along Wenonah Avenue.



Photo 11: Facing northwest along Wenonah Avenue.



Photo 12: Facing northwest at intersection of Wenonah Avenue and Grace Street.



Photo 13: Facing southwest at the intersection of Grace Street and Wenonah Avenue.



Photo 14: Facing south along Wenonah Avenue.



Photo 15: Facing east along West Barbara Avenue.



Photo 16: Facing east at the intersection of Doris Pl and Burchfield Road.



Photo 17: Facing east at the intersection of Burchfield Road and Witt Boulevard.



Photo 18: Facing south at the intersection of Burchfield Road and Witt Boulevard.



Photo 19: Facing north at the intersection of Burchfield Road and Witt Boulevard.



Photo 20: Facing east at the intersection of Witt Boulevard and East Dorothy Avenue.



Photo 21: Facing east at the intersection of Witt Boulevard and Holden Road.



Photo 22: Facing west at the intersection of Witt Boulevard and Holden Road.



Photo 23: Facing east at the intersection of Witt Boulevard and South Avenue.



Photo 24: Facing west at the intersection of Witt Boulevard and South Avenue.



Photo 25: Facing east at the intersection of Witt Boulevard and Mack Avenue.



Photo 26: Facing south at the intersection of Witt Boulevard and Mack Avenue.



Photo 27: Facing west at the intersection of Witt Boulevard and Mack Avenue.



Photo 28: Facing north at the intersection of Witt Boulevard and Oaks Glenn Street.



Photo 29: Facing west at the intersection of Witt Boulevard and Oaks Glenn Street.



Photo 30: Facing northeast at the intersection of Witt Boulevard and Pike Street.



Photo 31: Facing north at the intersection of Constance Street and Pike Street.



Photo 32: Facing east at the intersection of Constance Street and Pike Street.



Photo 33: Facing north at the intersection of Pike Street and Poplar Street.



Photo 34: Facing east at the intersection of Pike Street and Poplar Street.



Photo 35: Facing south at the intersection of Pike Street and Poplar Street.



Photo 36: Facing east at the intersection of Oakley Avenue and Poplar Street.



Photo 37: Facing east at the intersection of Mack Avenue and Poplar Street.



Photo 38: facing west at the intersection of Arthur Street and Constance Street.



Photo 39: facing east at the intersection of Arthur Street and Constance Street.



Photo 40: facing east at the intersection of Arthur Street, Poplar Street, and Floyd Street.



Photo 41: facing north at the intersection of Arthur Street, Poplar Street, and Floyd Street.



Photo 42: facing east at the intersection of Poplar Street, and Lake Street.



Photo 43: facing south at the intersection of Poplar Street, and River Street.



Photo 44: facing east at the intersection of Poplar Street, and River Street.



Photo 45: Facing north at the intersection of Juno Street and River Street.



Photo 46: Facing north along River Street 40 feet east of South Straights Highway.



Photo 47: Facing south along Prospect Road 20 feet east of South Straights Highway.



Photo 48: Facing west at the intersection of Prospect Road and South Straights Highway.



Photo 49: Facing north at the intersection of Prospect Road and Gatewood Avenue.



Photo 50: Facing north at the intersection of Prospect Road and Spruce Street.



Photo 51: Facing south at the Intersection of Prospect Road and Spruce Street.



Photo 52: Facing north at the intersection of Spruce Street and Hemlock Street.



Photo 53: Facing east at the intersection of Spruce Street and Hemlock Street.



Photo 54: Facing north at the intersection of Hemlock Street and Gatewood Avenue.



Photo 55: Facing south at the intersection of Hemlock Street and Gatewood Avenue.



Photo 56: Facing southwest on Prospect Road.



Photo 57: Facing southwest on Prospect Road.



Photo 58: Facing southwest on Prospect Road.



Photo 59: Facing northeast at the intersection of Prospect Road, Pier Avenue, and Hillside Avenue.



Photo 60: Facing northwest at the intersection of Prospect Road, Pier Avenue, and Hillside Avenue.



Photo 61: Facing southwest at the intersection of Prospect Road, Pier Avenue, and Hillside Avenue.



Photo 62: Facing southwest at the intersection of Hillside Avenue and Loren Avenue.



Photo 63: Facing southwest at the intersection of Hillside Avenue and Harrison Avenue.



Photo 64: Facing southwest at the intersection of Hillside Avenue and Cleveland Avenue.



Photo 65: Facing northwest on Hillside Avenue.



Photo 66: Facing northwest on Hillside Avenue.



Photo 67: Facing northwest on Hillside Avenue.



Photo 68: Facing northwest on Hillside Avenue.



Photo 69: Facing northwest on Hillside Avenue.



Photo 70: Facing east along South Straights Highway by Indian River Park.



Photo 71: Facing east at Wastewater Treatment Plant.



Photo 72: Facing southeast at Wastewater Treatment Plant.

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

**Public Service Archaeology
& Architecture Program**

Department of Anthropology
1707 South Orchard Street
Urbana, Illinois 61801



phone (217) 333-1636
fax (217) 244-3490

03 July 2020

Mr. Aaron Nordman
Performance Engineers, Inc.
406 Petoskey Avenue
Charlevoix, Michigan 49720

Dear Mr. Nordman:

Attached is a Michigan Background Findings Report and invoice the proposed Tucarora Township District 2 Wastewater Service Area Expansion Project in Cheboygan County, Michigan. Our desktop investigations documented four known archaeological sites and no recorded historic properties in the project area. Following new guidance from the Michigan State Historic Preservation Office we are recommending a Phase I cultural resource survey be conducted since there is a potential to adversely impact cultural resources. They are indicating this report should be appended to your Michigan Application for Section 106 Review.

Thank you for selecting the Public Service Archaeology & Architecture Program to fulfill your cultural resource compliance needs. We look forward to assisting you again in the future. If you have any questions about the project, please contact me at (847) 287-9045.

Thank you for your interest in the cultural heritage of Michigan.

Sincerely,

A handwritten signature in black ink that reads "Kevin McGowan".

Kevin McGowan

a: Michigan Background Findings Report and Invoice

MICHIGAN ARCHAEOLOGICAL SURVEY
SHORT REPORT

*ARCHAEOLOGICAL RECONNAISSANCE SURVEY OF A
TUSCARORA TOWNSHIP WASTEWATER SERVICE AREA EXPANSION
IN CHEBOYGAN COUNTY, MICHIGAN*

Prepared for and funded by:

Mr. Aaron Nordman, PE
Performance Engineers, Inc.
406 Petoskey Avenue
Charlevoix, Michigan 49720

by:

Mr. Gregory Walz
Project No. 20-303

18 November 2020



PUBLIC SERVICE
ARCHAEOLOGY &
ARCHITECTURE
PROGRAM

Department of Anthropology
1707 South Orchard Street
University of Illinois
at Urbana-Champaign,
Urbana, Illinois 61801

MICHIGAN ARCHAEOLOGICAL SURVEY SHORT REPORT

Locational Information and Survey Conditions

County: Cheboygan

Quadrangle: Cheboygan

Sec: 24 **T.:** 35 North **R.:** 03 West **Township Name:** Tuscarora

Legal Location: Section 24, Township 35 North, Range 03 West

Project Type/Title: New Construction/ Tuscarora Township District 2 Wastewater Expansion

Funding and/or Permitting Federal/State Agencies: USDA-Rural Development

Project Description: Tuscarora Township plans to construct 5,639 meters of new sewer main, construct 23 new pump stations, 10 lift stations and 50 manholes, and upgrade 3 existing pump stations within portions of unincorporated Indian River and Tuscarora Township. All project-related construction activities are to occur within existing road rights-of-way and easements.

Topography: Nearly level lacustrine deposits bordering Burt Lake and Indian River, moderately sloping terrace above lake level, nearly level made land at engineered mouth of Sturgeon River.

Soils: See Continuation Page.

Drainage: Sturgeon River to Burt Lake; Burt Lake to Indian River to Mullett Lake to Black River to Cheboygan River to Lake Huron.

Land Use/Ground Cover (Include % Visibility): Project is within existing road and street rights-of-way and includes grass-covered areas, areas of modern fill and buried utilities. Surface visibility generally below 25 percent throughout.

Survey Limitations: None.

Archaeological and Historical Information

Historic Plats/Atlases/Sources: See Continuation Page and References Cited.

Previously Reported Sites: There are [REDACTED] sites [REDACTED] mapped as occurring within the project area.

Previous Surveys: One prior survey (Lovis 1976) includes a portion of the current project area.

Investigation Techniques: Shovel tests were excavated at staked locations of proposed duplex pump facilities and lift stations within existing surface street rights-of-way, visual reconnaissance within rights-of-way.

Sites Located: [REDACTED] - Records Only.

Cultural Material: None.

Curated at: n/a.

Collection Techniques: n/a.

Areas Surveyed (Hectares/Acres): 0.59 Hectares/1.45 Acres

Results of Investigation and Recommendations: (Check One)

- xxx Phase I Archaeological Reconnaissance Has Located No Archaeological Material; Project Clearance Is Recommended.
- Phase I Archaeological Reconnaissance Has Located Archaeological Materials; Site(s) Does (Do) Not Meet Requirements for National Register Eligibility; Project Clearance Is Recommended.
- Phase I Archaeological Reconnaissance Has Located Archaeological Materials; Site(s) May Meet Requirements For National Register Eligibility; Phase II Testing Is Recommended.

Archaeological Contractor Information

Archaeological Contractor: Public Service Archaeology & Architecture Program, University of Illinois at Urbana-Champaign, 1707 South Orchard Street, Urbana, Illinois 61801.

Surveyor(s): Gregory R. Walz

Survey Date(s): 27-28 October 2020

Report Completed By: Gregory R. Walz

Date: 18 November 2020

Submitted By (Signature and Title):



Project Archaeologist

Attachment Check List

- xxxx 1) Relevant Portion of USGS 7.5' Topographic Quadrangle Map(s) Showing Project Location And Any Recorded Sites;
- xxxx 2) Project Map(s) Depicting Survey Limits And, When Applicable, Approximate Site Limits, And Concentrations of Cultural Materials
- n/a 3) Site Form(s): One Copy of Each Form;
- xxxx 4) Additional Information Sheets As Necessary.

Address Of Owner/Agent/Agency To Whom SHPO Comment Should Be Mailed

Performance Engineers, Inc.
406 Petoskey Avenue
Charlevoix, Michigan 49720

Contact Person: Mr. Aaron Nordman, PE

Phone Number: 231.547.2121

Continuation Page

The Public Service Archaeology & Architecture Program of the University of Illinois at Urbana-Champaign was contacted by Performance Engineers, Inc. of Charlevoix, Michigan to conduct a Phase I reconnaissance survey for portions of the proposed construction project in Cheboygan County, Michigan (Figure 1). The project is entitled the Tuscarora Township District #2 Wastewater Service Area Expansion to be located within unincorporated Indian River, Tuscarora Township in Cheboygan County (Figure 2). The project involves the construction of approximately 5,639 meters of new gravity sewer main, 50 new manholes, 23 new duplex pump stations, 10 new lift stations, and upgrades to existing pump stations to improve flow within the service area. The new main will be constructed within an open trench typically excavated to a depth of 2.4-meters and approximately 1.8-meters in width. Directional boring rather than open trenching will be employed near shorelines and river crossings. The typical excavation and construction area for the new lift stations will be approximately 7.0-x-7.0-meters, reaching depths between 3.6-4.6 meters below surface. The project is to be constructed within existing road and street rights-of-way and easements. The area of potential effects (APE) for Direct Effects is defined as 20 meters wide centered on existing Indian River streets over the 5,639-meter project length totaling approximately 11.28 hectares (27.87 acres). This area was selected to encompass all known areas of ground disturbance along the main service lines and the proposed locations of the duplex pump and lift stations. The area of indirect effects for this project is defined as 60 meters wide centered on existing Indian River streets over the 5,639-meter project length totaling 33.83 hectares (83.60 acres). The area of direct effects was selected in recognition that most of the project will be placed below ground with visual and sound effects limited to the period of construction and to the immediate vicinity of the proposed lift and pump stations. This investigation was conducted in support of a Michigan Application for Section 106 Review with the United States Department of Agriculture, Rural Development Authority as the lead Federal Agency. This project incorporates a previously prepared background investigation, a field reconnaissance survey of the identified duplex pump and lift station locations identified for this project, and the preparation of this report.

The background research for this project included a review of the National Historic Landmarks (National Park Service 2020a), the National Register of Historic Places (National Park Service 2020b), and the Michigan above-ground resources (Michigan State Historic Preservation Office 2020a). Archaeological site file and previous survey information were also examined to determine the extent and efficacy of prior surveys and known site information (Michigan State Historic Preservation Office 2020b). Additionally, the project area was examined in consideration of available historic maps, soils data, physiographic settings, and regional cultural contexts.

The Lower Peninsula of Michigan falls within the Great Lakes Section of the Central Lowland Province, a physiographic region characterized by the remnants of the most recent Wisconsin-aged glacial advances and retreats underlain by Paleozoic carbonate bedrock (Fenneman 1938: 486). The landforms within the project area are primarily composed of lacustrine deposits of sand and gravel with areas of organic soils and the underlying till-floored lake plain (Dorr and Eschman 1970; Michigan Department of Natural Resources 1999; Natural Resources Conservation Service 2004). Prior to the recession of glacial Lake Chicago and the more recent Lake Nipissing high stages in the Lake Michigan/Lake Huron Basin, the project area was inundated by a large embayment. Following the onset of modern lake levels, the former embayment was left as a series of large inland lakes and connecting rivers known as the Inland Waterway. This waterway, comprised of the Cheboygan, Indian and Crooked Rivers and Mullet, Burt, Crooked and Round Lakes extends 61-kilometers across Cheboygan and Emmet counties, between Little Traverse Bay on Lake Michigan and Duncan Bay on Lake Huron (Hough 1958; Larsen 1999; Wikipedia 2020; Wiles 2016).

From a regional ecosystems perspective, the project is located within the Onaway Sub-Subsection, of the Presque Isle Subsection, of the Northern Lacustrine-Influenced Lower Michigan Section of Regional Landscapes Ecosystems (Albert 1995). The Onaway Sub-Subsection includes areas of sandy lake plain including several large lakes (Burt, Crooked, Mullet) and rolling to moderately sloping ground moraine with some localized drumlin fields. Analysis of the United States General Land Office survey notes and plat maps indicates that the project is located within an area having a number of distinct forest habitats and ecotones including jack pine-red pine forest, beech-sugar maple-hemlock forest, white pine-red pine forest, hemlock-white pine forest, cedar swamp, mixed conifer swamp, mixed hardwood swamp, and aspen-birch forest dependent upon soil type, drainage characteristics and elevation (Albert and Comer 2008).

The project area is located within the Tawas-Carbondale-Greenwood soil association characterized by soils primarily classified as wet sandy and organic soils formed on areas of nearly level topography (Michigan State University Agricultural Experiment Station 1981). Owing to the juxtaposition of a variety of glaciofluvial and lacustrine-influenced landforms, a variety of soils are mapped as occurring within and adjacent to the project area including Grousehaven variant muck; Grayling sand, 0 to 8 percent slopes; Rubicon sand, 0 to 6 percent slopes; Rubicon sand, 6 to 18 percent slopes; Rubicon sand, 30 to 60 percent slopes; Cheboygan loamy sand, 12 to 30 percent slopes; Au Gres sand, 0 to 3 percent slopes; Roscommon muck; Udipsamments, nearly level to steep; and Croswell sand, 0 to 6 percent slopes (Natural Resources Conservation Service 2020a). Grouped by drainage characteristics, these soils run from excessively drained-Rubicon and Grayling series soils; well-drained to moderately well-drained-Cheboygan and Croswell series soils; somewhat poorly drained-Riggsville and Au Gres series soils; and finally to poorly and very poorly drained Roscommon and Grousehaven muck soils. The Udipsamments, sandy soils with little to no pedogenic development of horizons, would likely fall into a somewhat poorly drained to poorly drained categorization given their mapped location near the Burt Lake shoreline and Sturgeon River and adjacent soil types (Natural Resources Conservation Service 1999, 2020b).

The State of Michigan possesses a rich and varied archaeological record which includes sites and materials dating from the earliest Native American occupations of the state, during the terminal Pleistocene nearly 11,000 years ago, to numerous historic Native American, European and Euro-American sites, important examples of industrial technology, and numerous shipwrecks throughout the Great Lakes. Excellent summaries of the archaeological record of Michigan are available by Fitting (1975), Halsey (1999), Holman, Brashler and Parker (1996), and Mason (1981). An atlas of archaeological sites compiled by Hinsdale (1931) depicts numerous campsites, villages, mounds, earthworks, and trails throughout the State. However, no such sites are depicted in the immediate vicinity of the project location. A review of the archaeological record of the northern Lower Peninsula of Michigan and adjacent portions of the eastern Upper Peninsula indicates evidence for a long human occupation of the area, extending from Paleoindian to recent times. The landforms and their associated biota (aquatic, wetland, and terrestrial) affected the ways in which Native American and early historic Euro-American peoples utilized the area (e.g. Kapp 1999). Previous archaeological research in the northern Lower Peninsula region has identified areas adjacent to permanent water sources, such as creeks, rivers, marshes, kettle lakes, and the shorelines of the Straits of Mackinac, Lake Michigan and Lake Huron, as having a high potential for archaeological sites (e.g. Brose and Hambacher 1999; Howey and Parker 2008; Lovis 1999; Robertson, Lovis, and Halsey 1999; Schott 1999). The Inland Waterway with its interconnected rivers and lakes and varying topography and native habitats offered many distinct aquatic and terrestrial resources and the closely juxtaposed habitats proved favorable for human occupation (e.g. Lovis 1976, 1978, 1990, 2009).

The 1841 United States General Land Office survey plat (not illustrated) of Township 35 North, Range 03 West depicts the project location as undeveloped and without improvements (Bureau of Land Management 2020a). A subsequent 1856 resurvey (Figure 3) indicates that Section 24 had been

subdivided into a number of smaller parcels, though the area remained without improvements. Both the 1841 and 1856 plat depict the Sturgeon River flowing north to join Mullet's River (Indian River) rather than flowing westward to empty into the south end of "Burt's Lake" as is the case currently. The notes on the 1856 plat also indicate the land to be sandy and gravelly and of "...poor 2nd-3rd rate..." quality, with vegetation including pine-oak forest, mixed hardwood-conifer forest, and a band of swamp forest habitat shown along the lower Sturgeon River. Subsequent plat and atlas maps (Figure 3) dating between the late nineteenth and early twentieth century depict the project area as within and extending beyond the unincorporated community of Indian River. The 1957 Wolverine 15' quadrangle map depicts a number of residences along the Burt Lake shoreline and near the mouth of the Sturgeon River outside the more built-up portion of Indian River (B. F. Bowen and Company 1916; Meyers and Meyers 1902; United States Geological Survey 1957). Federal land sale records indicate several individuals including John B. Clark, Solander Hayes John Johnson, David Smith, and Frank Smith purchased land within Section 24, Township 35 North, Range 03 West between 1878 and 1885 (Bureau of Land Management 2020b).

The review of the Federal and State databases for historic properties identified no listed historic properties within the APE for Direct Effects (Michigan State Historic Preservation Office 2020a, 2020b; National Park Service 2020a, 2020b). One prior archaeological survey is recorded for a portion of the project area (Lovis 1976, 1978). The site file review did identify [REDACTED] archaeological sites [REDACTED] [REDACTED] having Prehistoric Native American components (Table 1) that occur within the defined direct and indirect areas of effect. Precise site boundary and locational data is lacking for all four of these recorded sites. One additional Native American site, [REDACTED]

The background investigations found a contextual high probability for Native American sites to be located with respect to inland lake and riverine settings and that the project has a moderate to high potential to contain archaeological resources. Given the nature of the project, with the proposed construction areas to be confined within existing road rights-of-way and easements and adjacent to existing lift stations, portions of the APE for direct effects are likely to have been previously impacted and disturbed by existing infrastructure adversely affecting any potential cultural resources present. In consultation with the USDA and project engineers it was determined that the survey would be limited to the proposed construction locations of the 23 new duplex pumps, 3 upgraded duplex pumps, and 10 lift stations creating a survey sample of the new waste water collection system.

Field investigation of the proposed project area was conducted on 27-28 October 2020. A general review of the APE for Direct Effects found much of the project is presently beneath asphalt street surfaces and/or occurs within disturbed portions of the rights-of-way adjacent to the paved areas. Ditches are present along many of the streets in Indian River, especially in the nearly level areas along the Burt Lake and Indian River shorelines and standing or flowing water was present in a number of these ditches. It was also noted that the mapped Udipsammits soils appear to have been augmented with sandy fill materials to raise their elevation and permit the construction of a number of residences and several streets near the mouth of the Sturgeon River. Given the disturbance associated with the dredging of the present river mouth, the existence of steel sheet piling along the river and adjacent portions of the Burt Lake shoreline, and high likelihood of the area being augmented with fill, the mapped area of Udipsammits is interpreted to have no potential to contain intact archaeological deposits and they were not shovel tested. The investigation involved the excavation of a single shovel test in a majority of the staked pump and lift station locations (Figure 5) and photo documentation of existing duplex pump stations to be upgraded. Each shovel test sampled a 15 meter by 15 meter area covering 225 square meters each with 26 sample points resulting in a survey of roughly 5,580 square meters or 5 percent of the total project area. The results of the shovel tests (Tables 2 and 3) document the findings at each sample point.

Table 1. Identified Sites in the Direct Effects APE.

Site #	Culture	Component(s)	Function(s)	NRHP Evaluation Status
	Native American	Late Woodland	Undetermined	More information needed. No NRHP determination.
	Native American	Middle Woodland	Camp	More information needed. No NRHP determination.
	Native American	Woodland	Undetermined	More information needed. No NRHP determination.
	Native American	Woodland	Undetermined	More information needed. No NRHP determination.

Table 2. Lift Station Shovel Test Profiles.

Test No.	Total Depth	Soils	Notes
LS#1	50 cm*	0-35 cm: 10YR 3/1 and 10YR 2/2 mottled loamy sand w/ few rounded pebbles 35-50 cm: 10YR 5/2 and 10YR 5/4 mottled sand, moist to wet	Disturbed
LS#2	50 cm	0-15 cm: 10YR 3/2 sand 15-25 cm: 10YR 3/2 sand and gravel 25-40 cm: 10YR 3/2 sand w/ occasional gravel 40-50 cm: 10YR 4/4 coarse sand w/ rounded pebbles	Disturbed
LS#3	22 cm	0-11 cm: 10YR 4/2 wet silty sand 11-22 cm: gravel	Disturbed, refusal at 22 cm.
LS#4	46 cm	0-15 cm: 10YR 3/2 silty sand 15-23 cm: 10YR 4/2 sand w/ rounded pebbles 23-46 cm: 10YR 5/2 and 10YR 5/3 mottled wet sand	
LS#5	30 cm	0-18 cm: 10YR 3/1 sand w/ large tree root 18-30 cm: 10YR 6/1 wet sand	
LS#6	35 cm	0-12 cm: 10YR 3/1 silty sand 12-35 cm: 10YR 5/2 sand w/ few small cobbles	
LS#7	30 cm	0-13 cm: 10YR 3/2 sand 13-30 cm: 10YR 3/2 sand and mottled 7.5 YR 5/6 clayey sand w/ gravel	Disturbed
LS#8	No test	No test excavated-compact gravel and sand driveway fill	Disturbed
LS#9	55 cm	0-18 cm: 10YR 3/2 loamy sand 18-24 cm: 10YR 4/4 and 10YR 4/3 mottled sand 24-36 cm: 10YR 6/2 moist sand	Located in built-up flower bed
LS#10	45 cm	0-20 cm: 10YR 4/4 coarse sand 20-25 cm: 10YR 2/1 sand 25-45 cm: 10YR 5/1 and 10YR 6/1 banded mucky sands	

* Measurements in centimeters below ground surface.

Table 3. Duplex Pump Shovel Test Profiles*.

DP#1	44 cm **	0-24 cm: 10YR 4/2 compact gravel w/ sand 24-26 cm: 10YR 2/1 sand 26-34 cm: 10YR 4/2 and 10YR 5/1 mottled sand 34-44 cm: 10YR 4/6 sand w/ small cobbles and rounded pebbles	Angular gravel fill in upper horizon, disturbed to 24 cm.
DP#2	34 cm	0-20 cm: 10YR 2/1 sand w/ few rounded pebbles 20-22 cm: 10YR 6/2 sand 22-34 cm: 7.5YR 4/4 sand w/ small cobbles and rounded pebbles	
DP#3	47 cm	0-32 cm: 10YR 2/1 organic sand w/ small cobbles and gravel 32-47 cm: 10YR 5/4 and 10YR 6/3 mottled sand w/ small cobbles	Angular gravel fill in upper horizon, disturbed to 32 cm
DP#4	34 cm	0-26 cm: 10YR 3/2 organic sand w/ small cobbles 26-34 cm: 10YR 5/4 and 10YR 6/4 mottled sand w/ small cobbles	
DP#5	36 cm	0-18 cm: 10YR 2/2 sand w/ abundant rock and small cobbles 18-24 cm: 7.5YR 4/3 clayey sand 24-36 cm: 10YR 4/4 sand w/ small cobbles and rounded pebbles	Upper horizons disturbed to approx. 24 cm
DP#6	46 cm	0-10 cm: 10YR 3/2 sand with gravel 10-22 cm: 10YR 4/6 sand w/ asphalt chunk 22-31 cm: 10YR 4/1 compact, loamy sand 31-46 cm: 10YR 5/3 clayey sand w/ cobbles	Disturbed, located between roadway and tennis court
DP#7	15 cm	0-15 cm: 10YR 3/2 sand and compacted angular gravel	Angular gravel fill, refusal at 15 cm.
DP#8	40 cm	0-25 cm: 10YR 3/3 sand w/ angular gravel and common roots 25-40 cm: 10YR 4/2 loamy sand w/ dense angular gravel	Angular gravel fill
DP#9	0 cm	Gravel and asphalt at surface	Disturbed, driveway fill
DP#10	25 cm	0-10 cm: 10YR 3/2 sand w/ angular gravel 10-25 cm: 10YR 5/2 clayey sand w/ angular gravel	Disturbed, refusal at 25 cm.
DP#11	50 cm	0-25 cm: 10YR3/2 very compact silty sand 25-35 cm: 10YR 5/4 wet sand 35-45 cm: 10YR 5/1 and 10YR 3/1 wet sand 45-50 cm: 10YR5/1 saturated sand	Water infiltration at 40 cm
DP#12	No test	No test excavated-existing duplex pump and manhole at this location	Pump marked as #2
DP#13	No test	Duplex pump plotted at this location on small island, no stake found, no test excavated	No shovel test but island consists of built-up fill within steel piling walls, compact gravel driveway
DP#14	27 cm	0-12 cm: 10YR 3/2 sand 12-27 cm: 10YR 4/3 angular gravel and sand	Disturbed, fill beneath lawn No stake, test at location plotted on map
DP#15	No test	No test excavated-existing duplex pump and manhole at this location	Pump marked as #5
DP#16	No test	No test excavated-existing duplex pump and manhole at this location	Pump marked as #4

* Plotted duplex pump locations near mouth of Sturgeon River (n = 10) were not excavated as area is constructed on fill materials classified as Udipsaments on USDA soils map and portions were under water due to high Burt Lake level during October field survey.

** Measurements in centimeters below ground surface.

Field investigations found one plotted duplex pump station location at the end of Arthur Street is located on a small island in the Indian River, but was not staked at the time of the survey. The island is surrounded by steel sheet piles, with the Arthur Street right-of-way covered in compacted gravel. No test was excavated at this location which is interpreted to have a low probability for intact archaeological deposits. A group of 10 planned duplex pump stations located near the mouth of the Sturgeon River were not tested as their locations are within an area composed of Udipsamments soils which are described as being somewhat poorly drained soils generally of recent deposition that have been disturbed by removal of the surface horizon and/or by the deposition of sandy fill (Natural Resources Conservation Service 1999: 438-439; Tardy 1999: 81). This area (See Figure 5) was inundated by high water levels in Burt Lake. Several of the residences in this neighborhood are clearly constructed atop fill raised above the general surface level (Figures 6, 7, and 8). As noted previously, Udipsamment soil project areas were interpreted to have no potential to contain intact archaeological deposits. Similarly, portions of the proposed project located within or directly adjacent to areas mapped as having Grousehaven variant muck or Roscommon muck soils would be expected to have a very low to low potential for archaeological resources, and areas mapped as Au Gres soil would likely have low to moderate potential. The Grousehaven soils occur near the intersection of Chippewa Beach Road, Spruce Street and Prospect Street north of the Indian River at the base of a steep ridge, and the Roscommon muck soils extend along the south bank of the river to the west of Juno and Poplar Streets toward the Sturgeon River. The shovel tests documented varying degrees of integrity, with both surficial and subsurface infrastructure-related disturbance. The shovel tests excavated at the seven staked duplex pump stations and one lift station within the Columbus Beach Club, while exhibiting some degree of surficial disturbance, are located along a raised beach terrace characterized by mainly well- to excessively-drained Rubicon and Croswell soils. Given the drainage characteristics and elevation above the lake level, this portion of the project area would be expected to have a moderate to high potential to contain archaeological resources. None of the excavated tests located artifacts or evidence for the presence of archaeological deposits or sites. The three existing duplex pump stations slated for upgrades include two located along South Avenue and one located at the intersection of Lake Street and Juno Street (Figure 5). These three locations have been previously impacted and disturbed by the construction of the extant pump facilities and their associated subsurface infrastructure and no subsurface tests were excavated (Figures 9, 10, and 11).

The National Register of Historic Places (NRHP) has four criteria by which historic structures and archaeological sites must be evaluated in order to determine their eligibility for listing therein. Properties may be eligible for the National Register if they: A) are associated with events that have made a significant contribution to the broad pattern of history, B) are associated with the lives of persons significant to our past, C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, and D) have yielded, or are likely to yield, information important in prehistory or history. A 5 percent sample (5,850 square meters) of the project area examined 26 locations throughout the proposed project area. The four previously reported sites were evaluated for eligibility within the context of the limited survey.

Sites [REDACTED] are Native American archaeological sites featuring imprecise site limits with the nature and potential significance of their deposits unknown. A total of [REDACTED] locations within the reported site limits were examined by this survey. This includes duplex pump locations [REDACTED]

None of these tests located archaeological materials. These samples are too small to properly evaluate the NRHP eligibility of any of these sites. However, based upon the plans to construct the new sewer collection mains, pump stations and lift stations within the existing rights-of-way, these sample points

suggest the portions of each site to be impacted by the proposed project do not contribute to each sites potential eligibility. Overall each of these four sites will require additional evaluation in order to complete a final NRHP evaluation.

The Public Service Archaeology & Architecture Program conducted a Phase I archaeological reconnaissance survey totaling approximately 5,580 square meters of the 11.28 hectare (27.87 acre) proposed Tuscarora Township District #2 Wastewater Service Area Expansion in Tuscarora Township, Cheboygan County, Michigan. The project is located within existing street rights-of-way and easements within portions of unincorporated Indian River and the Columbus Beach Club. The background research indicated the presence of four previously reported, but poorly defined, Native American archaeological sites [REDACTED] occurring within the project area. The 5 percent survey included locations in each of these sites but found no evidence for these sites or for archaeological sites within any locations examined. Based upon the plans to construct the new sewer collection mains, pump stations and lift stations within the existing rights-of-way, much of the APE for Direct Effects lies beneath paved streets and the field observations included evidence for large areas with a limited archaeological potential due to modified or historically wet soils. Based upon the information collected, a recommendation of *No Adverse Effect to Historic Properties* is made for the area of Direct Effects and clearance of the proposed Tuscarora Township waste water improvements project for cultural resources concerns is recommended. As with all surveys, unanticipated finds may still occur in the project area during construction. Should any archaeological remains or evidence for human burials be exposed, construction activities in the area should cease immediately and the Michigan State Historic Preservation Office should be immediately contacted for further direction.



Figure 1. Location of the project area in Michigan.

Burt Lake & Indian River, MI Quadrangles
Cheboygan County - Michigan
7.5 Minute Series (Topographic) 1986, 1986

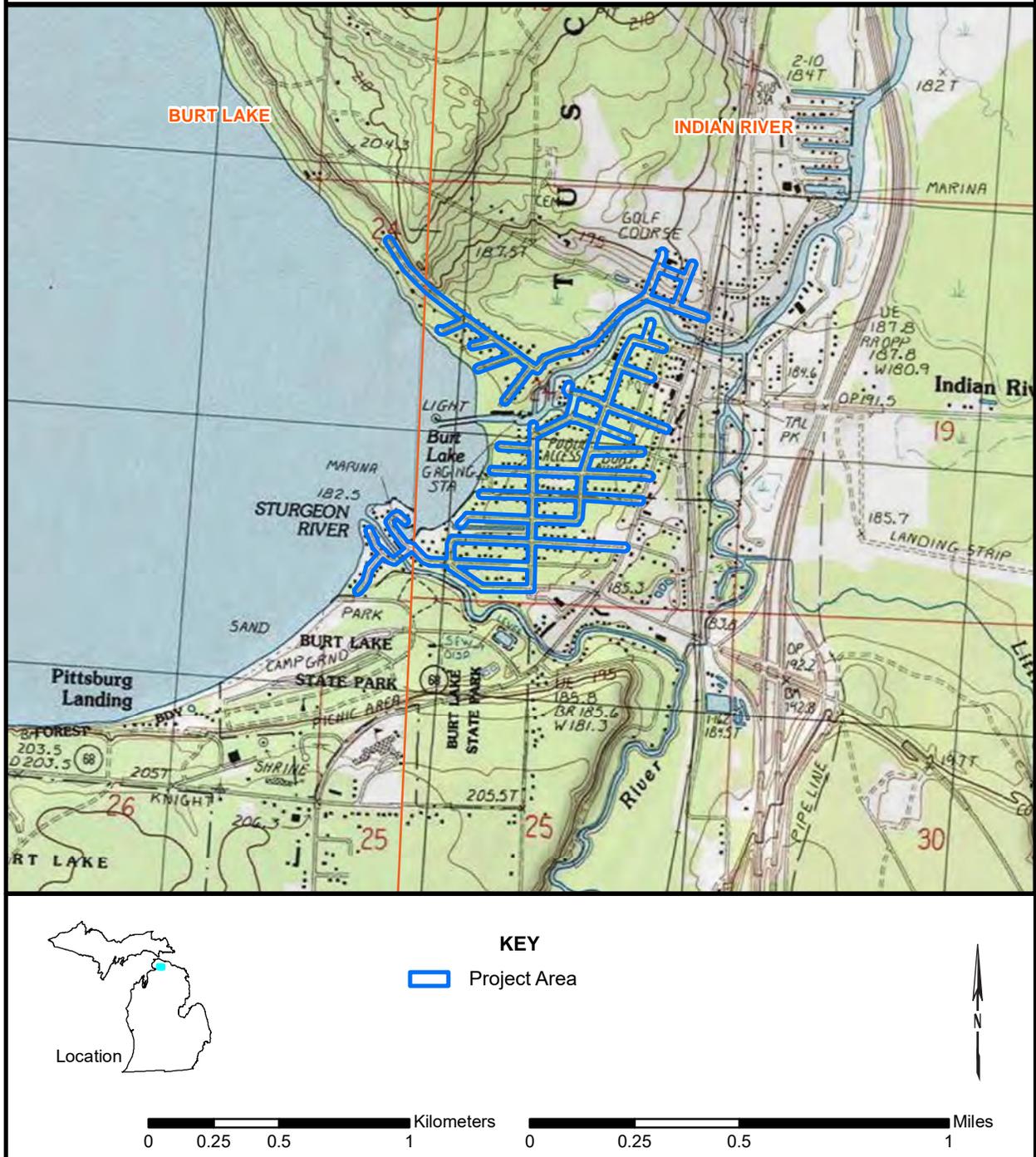


Figure 2. Location of project area.

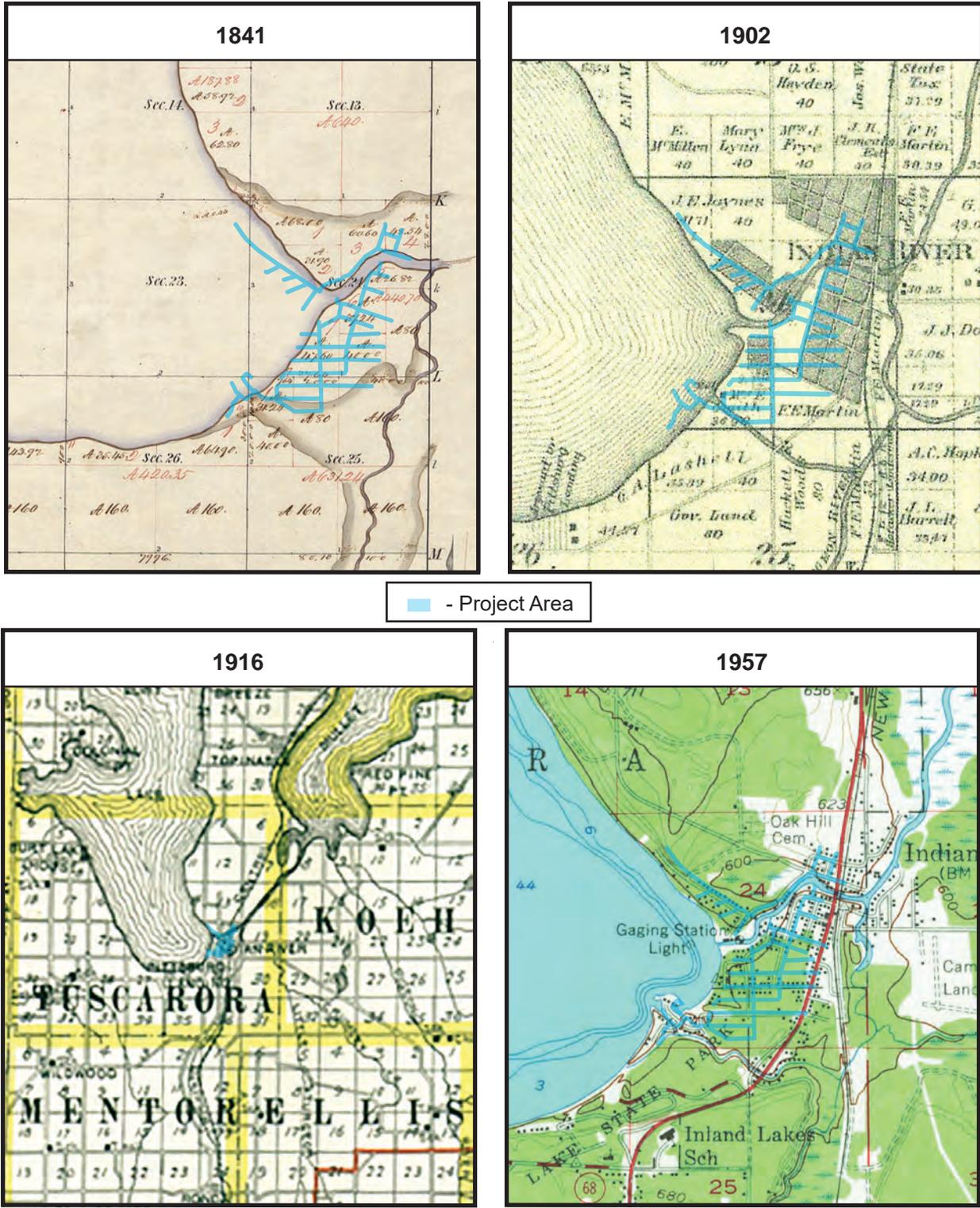
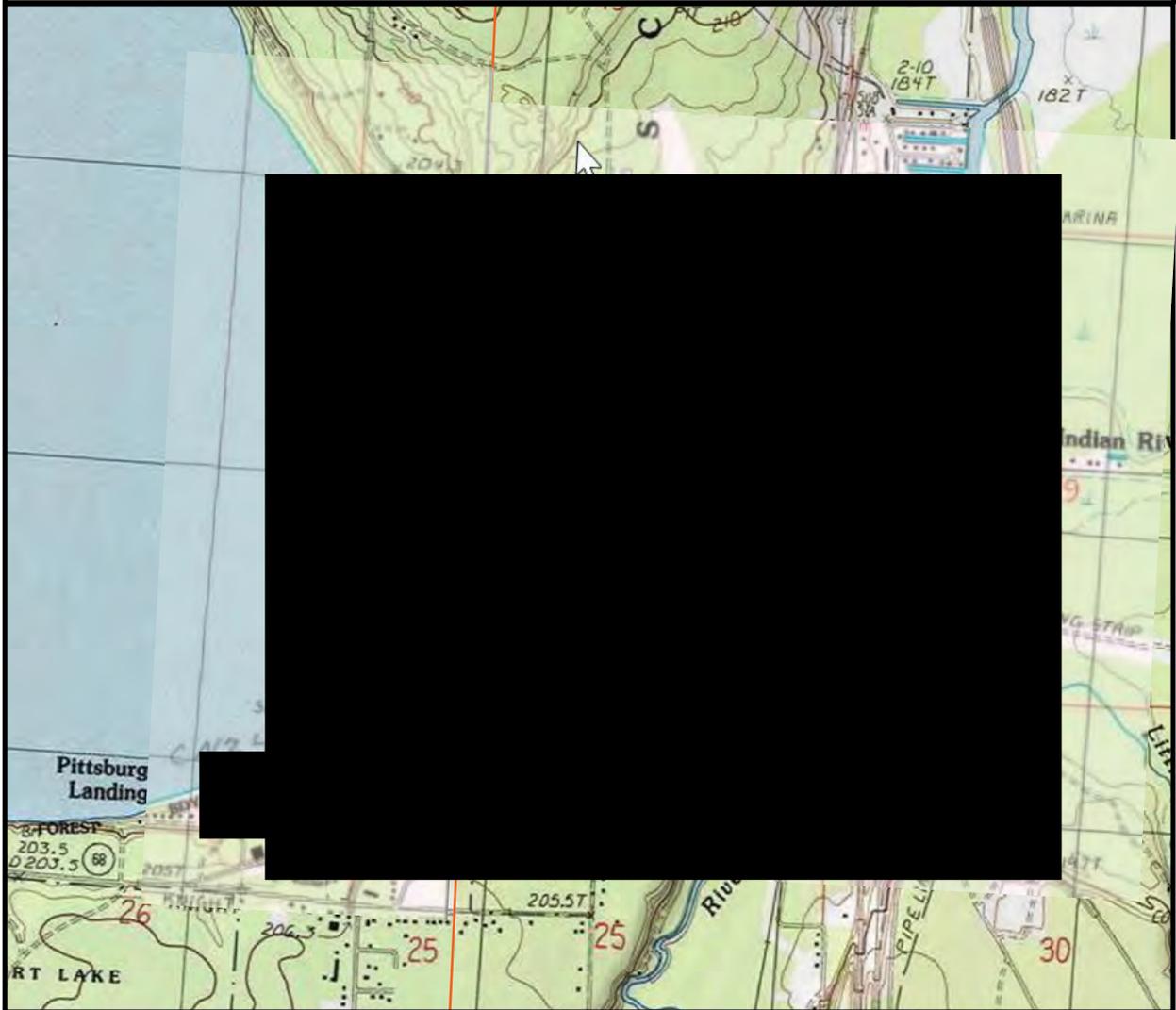


Figure 3. Portions of the 1841 United States General Land Office survey plat, 1902 and 1916 maps of Cheboygan County, Michigan, and the 1957 Wolverine 15' quadrangle.

Burt Lake & Indian River, MI Quadrangles
Cheboygan County - Michigan
7.5 Minute Series (Topographic) 1986, 1986



Privileged Information - Do Not Release



Location

KEY

-  Project Area
-  Previously Surveyed
-  Previously Recorded Site

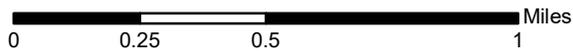


Figure 4. Location of project area with identified sites and adjacent surveys

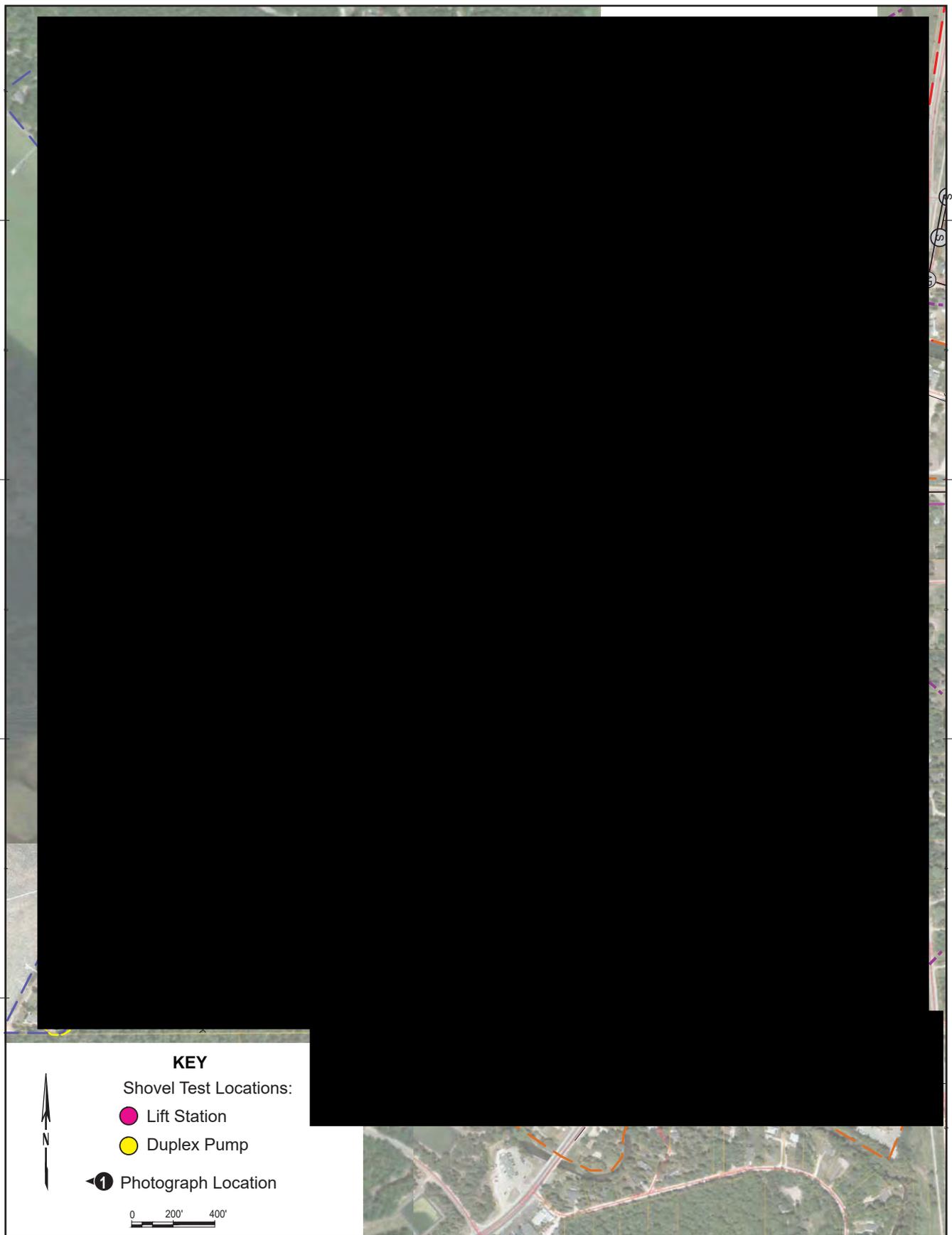


Figure 5. Sketch map of the project area.



Figure 6. Photo 1: Inundated area, Dorothy Avenue, view to west.



Figure 7. Photo 2: Inundated area along Grace Street, view to west.



Figure 8. Photo 3: Inundated area east of Wenonah Avenue, view to south.



Figure 9. Photo 4: Existing duplex pump station #5, South Street, view to north.



Figure 10. Photo 5: Existing duplex pump station #4, South Street, view to west.



Figure 11. Photo 6: Existing duplex pump station #2, Lake Street, view to east.

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- 1986a Burt Lake, Michigan 7.5' Quadrangle Map. United States Geological Survey, Washington D.C.
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6.4 State Historic Preservation Officer Response

6.5 Tribal Coordination



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
MICHIGAN STRATEGIC FUND
STATE HISTORIC PRESERVATION OFFICE

MARK A. BURTON
PRESIDENT

February 8, 2021

ANDREW GRANSKOG
ENVIRONMENTAL COORDINATOR
USDA RURAL DEVELOPMENT OFFICE
3001 COOLIDGE ROAD SUITE 200
EAST LANSING MI 48823

RE: ER21-203 Tuscarora Township, District 2 Sewer Expansion, Sec. 3 & 4, T35N, R3W,
Tuscarora Township, Cheboygan County (USDA/RD)

Dear Mr. Granskog:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, the State Historic Preservation Officer (SHPO) concurs with the determination of the USDA/RD that **no historic properties are affected** within the area of potential effects of this undertaking.

This letter evidences the USDA/RD's compliance with 36 CFR § 800.4 "Identification of historic properties," and the fulfillment of the USDA/RD's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected." **If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.**

We remind you that federal agency officials or their delegated authorities are required to involve the public in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties per 36 CFR § 800.2(d). The National Historic Preservation Act also requires that federal agencies consult with any Indian tribe and/or Tribal Historic Preservation Officer (THPO) that attach religious and cultural significance to historic properties that may be affected by the agency's undertakings per 36 CFR § 800.2(c)(2)(ii).

The State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking.

If you have any questions, please contact Brian Grennell, Cultural Resource Management Coordinator, at 517-335-2721 or by email at GrennellB@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Brian G. Grennell
Cultural Resource Management Coordinator

SAT:BGG





February 12, 2021

SUBJECT: SHPO ER21-203 Tuscarora Township Phase 2 Sewer, Cheboygan County, Michigan
Section 106 Historic Review & Tribal Coordination

TO: Kelli Mosteller, Citizen Potawatomi Nation
Rhonda Hayworth, Ottawa Tribe of Oklahoma
Earl Meshiguad, Hannahville Indian Community
Kade Ferris & Darrel Seki, Red Lake Band of Chippewa Indians
Jonnie Sam, Little River Band of Ottawa Indians
Marcella Hadden, Saginaw Chippewa Indian Tribe
Paula Carrick, Bay Mills Indian Community
Daisy McGeshick, Lac Vieux Desert Band of Lake Superior Chippewa Indians
Alden Connor, Keweenaw Bay Indian Community
Colleen Medicine, Sault Ste. Marie Tribe of Chippewa Indians
Cindy Winslow, Grand Traverse Band of Ottawa & Chippewa Indians
Melissa Wiatrolic, Little Traverse Bay Bands of Ottawa Indians
Sharon Detz, Grand River Band of Ottawa Indians
Douglas Taylor, Nottawaseppi Huron Band of Potawatomi
Matthew Bussler, Pokagon Band of Potawatomi Indians
Jill Hoppe, Fond du Lac Band Reservation
Amy Burnette, Leech Lake Band of Chippewa
Edith Leoso, Bad River Band of Lake Superior Chippewa
Rosemary Berens, Bois Forte Band of Chippewa
Harold Frank, Forest County Potawatomi
Norman DesChamps & Maryann Gagnon, Grant Portage Band of the Minnesota Chippewa Tribe
William Quackerbush, Ho-Chunk Nation of Wisconsin
Louis Taylor, Lac Courte Oreilles Band of Lak Superior Chippewa Indians of Wisconsin
Melinda Young, Lac Du Flambeau Band of Lake Superior Chippewa
Lakota Pochedley, Match-e-be-nash-she-wish (Gun Lake) Band of Potawatomi Indians
Dan Shepherd, Little River Band of Ottawa Indians
Liana Onnen, Prairie Band of Potawatomi Nation
Noah White, Prairie Island Indian Community
Paul Barton, Seneca-Cayuga Nation
Larry Balber, Red Cliff Band
Chris McGeshick, Sokaogon Chippewa (Mole Lake) Community of Wisconsin
Wanda McFaggen, St. Croix Chippewa Indians of Wisconsin
Cayla Olson, White Earth Band of the Minnesota Chippewa Tribe
Diane Hunter, Miami Tribe of Oklahoma
Todd Moilanen, Mille Lacs Band of Ojibwe
David Grignon, Menominee Indian Tribe of Wisconsin
George Strack, Miami Nation
Larry Heady, Delaware Tribe of Indians

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, the State Historic Preservation Office (SHPO) has reviewed the above-mentioned project and concluded that:

- No historic properties are affected by the project (36 CFR § 800.4 (d) (1)), or
 The project will have no adverse effect on historic properties (36 CFR § 800.5)

The project was initially reviewed by a third party archaeologist the meets the minimum federal professional qualifications set forth in 36 CFR Part 61. Further, the SHPO review of this project included a review by the Office of the State Archaeologist (OSA). The OSA review process includes looking at the presence and/or proximity of known archaeological sites near to and within the project area. To do this, they consider a variety of information, including the distribution of archaeological sites in the surrounding region, the amount of previous archaeological surveys in the vicinity and the results of that survey work, topography, surface water, soil types, the presence of old transportation features such as railroad grades and road beds, as well as other factors which may inform on the potential presence or absence of archaeological sites.



United States Department of Agriculture

As a standard requirement of all USDA Rural Development contracts, in the event that historic or archaeological resources are uncovered during excavation, the project engineer and USDA Rural Development will be immediately notified. Construction shall be temporarily halted pending the notification process and further directions issued by USDA Rural Development after coordination with the SHPO and interested tribes.

Based on the SHPO review and opinion, USDA Rural Development is issuing a finding as noted above for the above-mentioned project. If you have site specific information that causes your tribe to disagree with this opinion, please contact our office at (517) 324-5209 within sixty days.

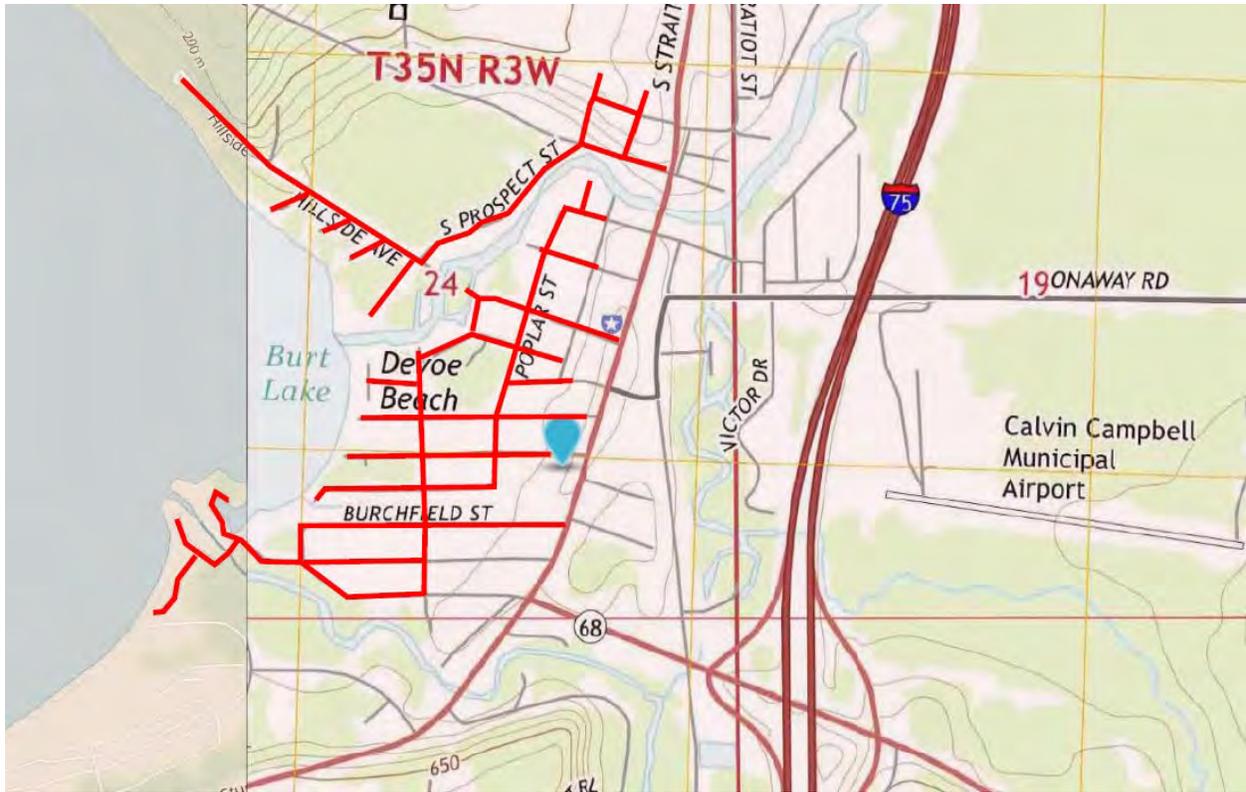
Sincerely,

Andrew H. Granskog, PE
State Environmental Coordinator

cc: USDA-RD Area Office; Martha MacFarlane-Faes--SHPO Environmental Review Coordinator



United States Department of Agriculture



3001 Coolidge Road • Suite 200 • East Lansing, MI 48823
Phone: (517) 324-5156 • Fax: (855) 813-7741 • TDD: (800) 649-3777 • Web: <http://www.rurdev.usda.gov/mi>

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To file a complaint of discrimination write USDA, Director, Office of Civil Rights
1400 Independence Avenue, SW, Washington, DC 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD).

From: [Douglas Taylor](#)
To: [Granskog, Andy - RD, East Lansing, MI](#)
Subject: RE: Tuscarora Township Phase 2 Sewer Tribal Coordination
Date: Friday, February 12, 2021 11:44:38 AM
Attachments: [image001.png](#)

Greetings,

Ref: Tuscarora Township Phase 2 Sewer Tribal Coordination

Thank you for including the Nottawaseppi Huron Band of the Potawatomi in your consultation process. From the description of your proposed project, it does not appear as if any cultural or religious concerns of the Tribe's will be affected. We therefore have no objection to the project. Of course, if the project scope is significantly changed or inadvertent findings are discovered during the course of the project, please contact us for further consultation.

Very Respectfully
Douglas R. Taylor

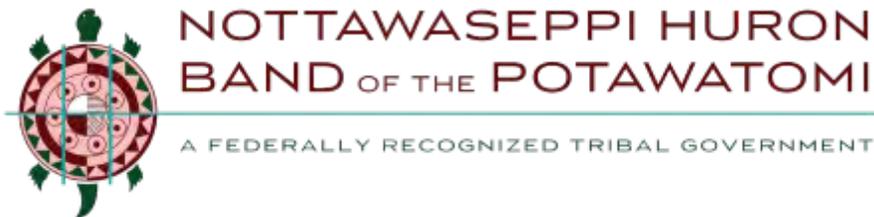
Douglas R. Taylor | Tribal Historic Preservation Officer (THPO)

Pine Creek Indian Reservation

1301 T Drive S, Fulton, MI 49052

o: 269-704-8347 | c: 269-419-9434 | f: 269-729-5920

Douglas.Taylor@nhbp-nsn.gov | www.nhbpi.com



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From: Granskog, Andy - RD, East Lansing, MI <andy.granskog@usda.gov>

Sent: Friday, February 12, 2021 11:37 AM

To: Payment, Aaron <aaronpayment@saulttribe.net>; Alden Connor <aconnor@kbic-nsn.gov>; Farron Jackson <amy.burnette@llojibwe.org>; Bill Latady (<blatady@boisforte-nsn.gov>); Bruce R Hamlin <blbtc@burtlakeband.org>; Cayla Olsen

<cayla.olson@whiteearth-nsn.gov>; McGeshick, Chris <chris.mcgeshick@scc-nsn.gov>; cindy.winslow@gtbindians.com; Colleen Medicine <CMedicine1@saulttribe.net>; Colleen.Wells@llojibwe.org; Daisy McGeshick <daisy.mcgeshick@lvd-nsn.gov>; Dan Green <dan.green@nhbp-nsn.gov>; Dan Shepard <dshepard@lrboi.com>; David grignon <dgrignon@mitw.org>; Diane Hunter <dhunter@miamination.com>; Douglas Taylor <Douglas.Taylor@nhbp-nsn.gov>; Earl Meshigaud <Earlmeshigaud@hannahville.org>; Edith Leoso <THPO@badriver-nsn.gov>; Jill Hoppe <jillhoppe@fdlrez.com>; Jonnie Sam <jsam@lrboi-nsn.gov>; Darrell SekiSr. <kade.ferris@redlakenation.org>; JohnRocky Barrett <kelli.mosteller@potawatomi.org>; Lakota Pochedley <Lakota.Pochedley@glt-nsn.gov>; Larry Heady <lheady@delawaretribe.org>; lena.shawano@fcpotawatomi-nsn.org; Leroy Defoe (leroydefoe@fdlrez.ocm) <leroydefoe@fdlrez.ocm>; Onnen, Liana <liana@pbpnation.org>; Linda Basista (lbasista@sault.com) <lbasista@sault.com>; Marcella Hadden <MIHadden@sagchip.org>; Maryann Gagnon <maryannng@grandportage.com>; Matthew Bussler <Matthew.Bussler@pokagonband-nsn.gov>; Melinda Young <ldfthpo@ldftribe.com>; MelissaWiatrolic <Mwiatrolic@Ltbodawa-nsn.gov>; noah.white@piic.org; Paula Carrick <paulacarrick@bmic.net>; rhonda.oto@gmail.com; Sharon Detz <grbottawa@yahoo.com>; Todd Moilanen <todd.moilanen@millelacsband.com>; Wanda McFaggen <wandam@stcroixtribalcenter.com>; William Quackenbush <BQuackenbush@ho-chunk.com>
Cc: Smith, Blake - RD, Traverse City, MI <blake.smith@usda.gov>; JACOB MITCHELL <JSMitchell@glcap.org>; Martha MacFarlane-Faes <FaesM@michigan.gov>
Subject: Tuscarora Township Phase 2 Sewer Tribal Coordination

***** EXTERNAL EMAIL WARNING - USE CAUTION *****

Good Morning,

Please see the attached Tribal Coordination for the Tuscarora Twp Phase 2 sewer project in the unincorporated community of Indian River, Michigan. A map of the project layout is included and the SHPO letter is attached as well. Feel free to contact me if you have any further questions.

Thank you.

Andrew H. Granskog, PE | State Engineer
Rural Development
U.S. Department of Agriculture
3001 Coolidge Rd, Suite 200 | East Lansing, MI 48823
Phone: 517.324.5209 www.rd.usda.gov

"Together, America Prospers"

Note: my email is changing to andy.granskog@usda.gov; please update your address book.

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7.0 References

7.1 Project Narrative

Introduction

Tuscarora Township is requesting funding assistance through the US Department of Agriculture's Rural Development, Water and Waste Disposal Direct Loans and Grant Program. The purpose of this funding request is to enable the Township to expand the community's wastewater collection system from the downtown commercial district to the surrounding residential area. The current central sewer system was designed and constructed with the intention of expansion into the residential areas and this request would be the first expansion of the original system.

In conjunction with a proposed expansion of the service area, an expansion of the wastewater treatment facility (WWTF) would be necessary to treat the additional flow.

Need

The proposed service area (District 2) is comprised of the primarily residential properties that are west of the existing service area (District 1) to the Burt Lake Shoreline. The District 2 service area includes the Columbus Beach Club at the northerly boundary, down to Sturgeon Island and the Sturgeon River at the southerly boundary.

The homes within District 2 currently rely upon private wells and individual drain fields. Due to a combination environmental concerns including poor soil infiltration, high groundwater, surface water proximity, and well isolation distances on relatively small lots, the majority of existing onsite wastewater disposal systems are believed to be non-conforming to current environmental health standards (Sanitary Code), which can contribute to the degradation of the surrounding water quality. The lack of sewer infrastructure has also become a limiting factor to population and economic growth. Furthermore, there is concern about the constant discharge of excess flow from the artesian wells, which adds to the hydraulic loading within the area.

Scope

The proposed project will provide a gravity sewer system to the District 2 users, building off of the existing infrastructure installed for District 1. The proposed service area encompasses approximately 200 acres and 420 EDUs. The District 2 expansion will include approximately 18,500 feet of new 8-inch gravity sewer, over 50 manholes, approximately 15,000 feet of new force main sewer, 10 lift stations, 23, duplex pumping stations, upgrades to increase capacity in the two existing lift stations, and an expansion to approximately double the capacity of the existing WWTF. The existing WWTF is a modular extended aeration plant that discharges to groundwater through rapid infiltration beds. The proposed expansion would increase the capacity of the plant by approximately 100,000 gpd, which then requires additional infiltration beds installed accordingly.

Summary

The estimated project costs are \$9.36M, which results in an individual cost of \$22,300 per EDU. This is deemed to be unaffordable to the residents, resulting in approximately \$80/month in debt repayment costs, before the sewer use rates are applied. Therefore, a key part of the Township's ability to complete the project is the availability grant funding to offset a part of the resultant debt repayment. With a MHI that places the Township's sewer affordability at about \$63.80/mo (at 1.5% of MHI), adding \$80/mo to the \$39.50/month in sewer O&M cost is a significant burden on residents who truly need municipal sewer.

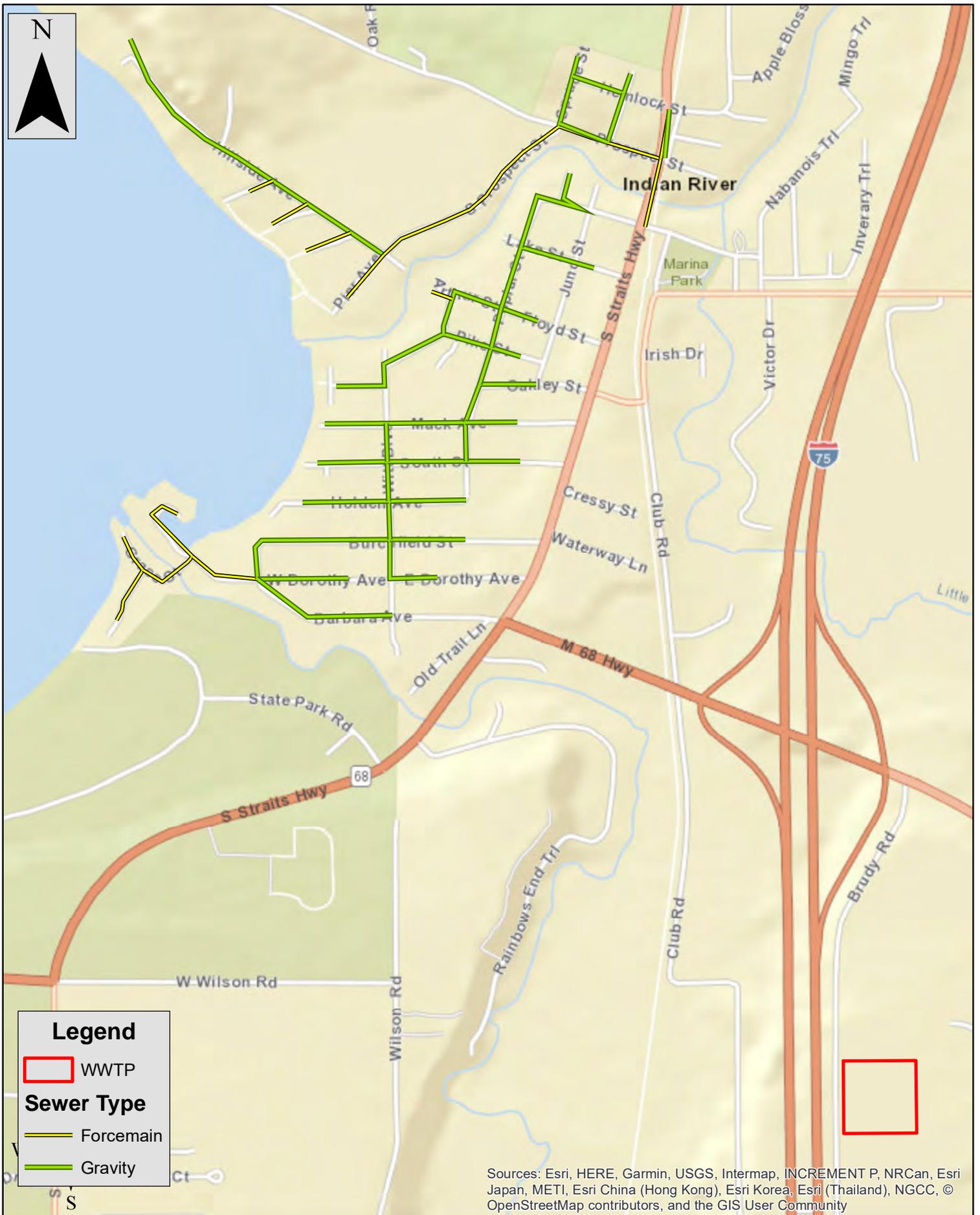
Current Facility Description

The existing WWTF consists of three major components, the first is a headworks building with trash and grit removal, a laboratory, blowers, the treatment process controls, and chemical feed equipment. Next is the 96,000 gpd treatment process unit, which is a proprietary Aero Mod, Inc. SEQUOX, modular treatment system with a dual process train and a decant storage tank with discharge pumping equipment. The treated wastewater is discharged to groundwater through 39,000 square feet of Rapid Infiltration Basins. The existing collection system encompasses primarily the commercial properties along the S. Straights Highway. There are two main pumping stations that transport the wastewater from the service area to the WWTF.

Proposed Facility Description

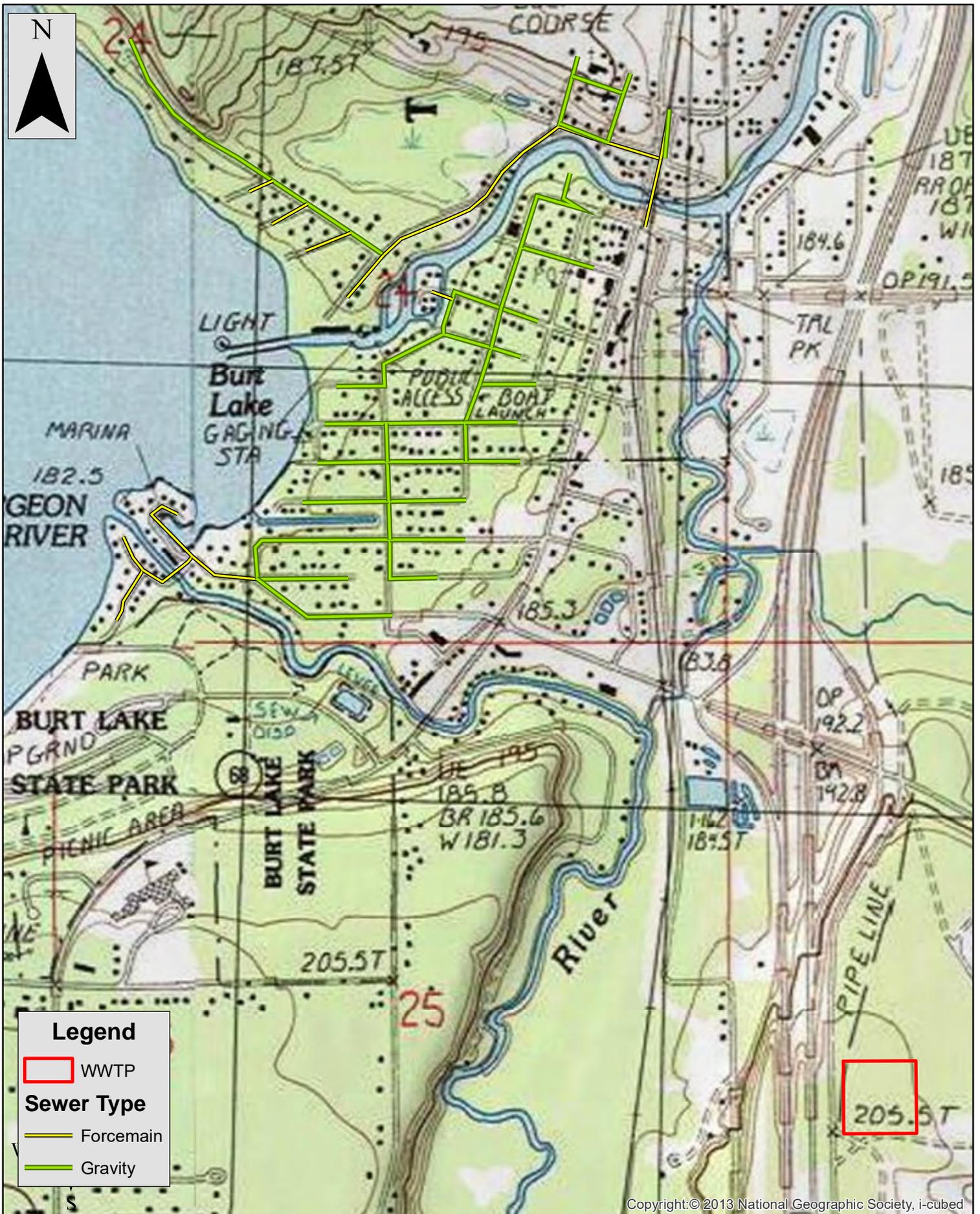
The three major WWTF components will be improved as follows: the existing headworks building will be modified to add trash and grit removal capacity, additional process controls will be integrated into the system and the chemical feed equipment will be modified for the increased capacity. Next, the treatment process unit will be doubled in capacity by adding another 96,000 gpd in modular Aero Mod, Inc. SEQUOX unit, added decant storage capacity and additional discharge pumping equipment. The resulting treatment capacity will be 192,000 gpd to accommodate the additional service area. Finally, there will be a corresponding increase in the Rapid Infiltration Basins, doubling the footprint to 78,000 square feet total for discharge to groundwater. The proposed improvements would add a new service area that will be primarily residential connections. There would be an additional 420 EDUs added from the Columbus Beach Club neighborhood at the north end to the Sturgeon Island area at the south end and extending the existing collection system westerly to the shore of Burt Lake. The collection system extension would add approximately 18,500 feet of gravity sewer with over 50 manholes, over 15,000 feet of force main piping with ancillary equipment, 10 lift stations, 23 new duplex pumping stations and an upgrade to add capacity to both of the existing main sewer pumping stations.

- 7.2 Street Map with Project Locations**
- 7.3 Topographical Map**
- 7.4 Aerial Map**
- 7.5 Flood Insurance Rate Map**
- 7.6 Flood Certificate**
- 7.7 Wetlands Map**
- 7.8 Air Quality: Nonattainment Area Map**



Street Map of the Tuscarora Township District 2 Sewer Expansion Project.
NOT TO SCALE

0 0.125 0.25 0.5 Miles



Topographic Map of the Tuscarora Township District 2 Sewer Expansion Project.
 Adapted from the USGS Quadrangle: Wolverine
 NOT TO SCALE

0 0.125 0.25 0.5 Miles



Legend

WWTP

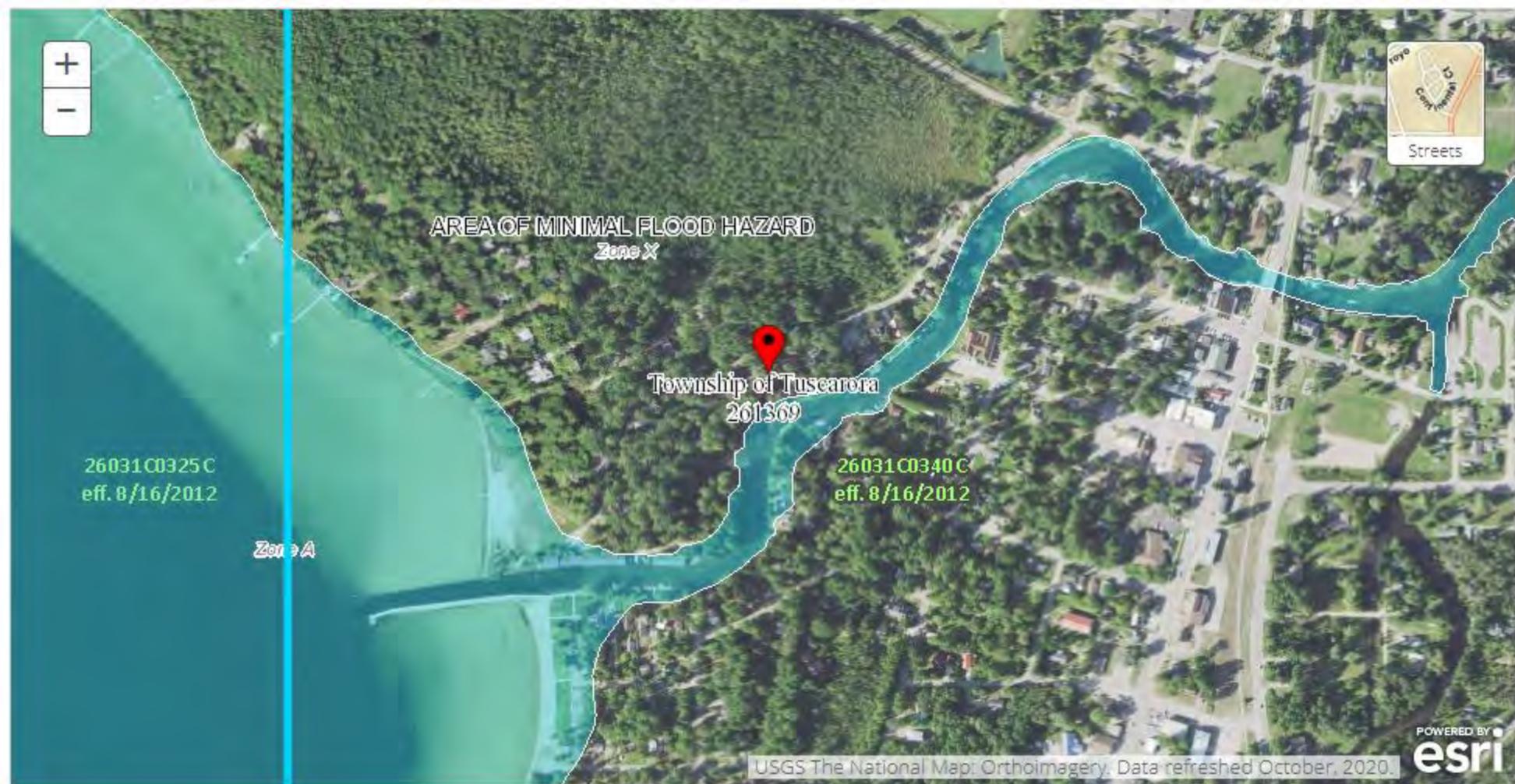
Sewer Type

- Forcemain
- Gravity

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

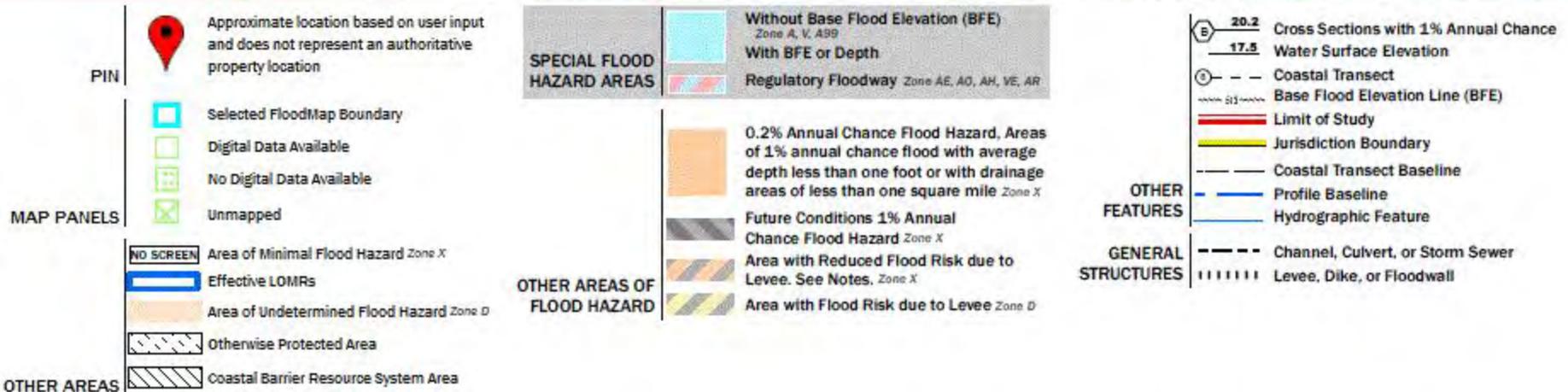
Aerial Map of the Tuscarora Township District 2 Sewer Expansion Project.
NOT TO SCALE

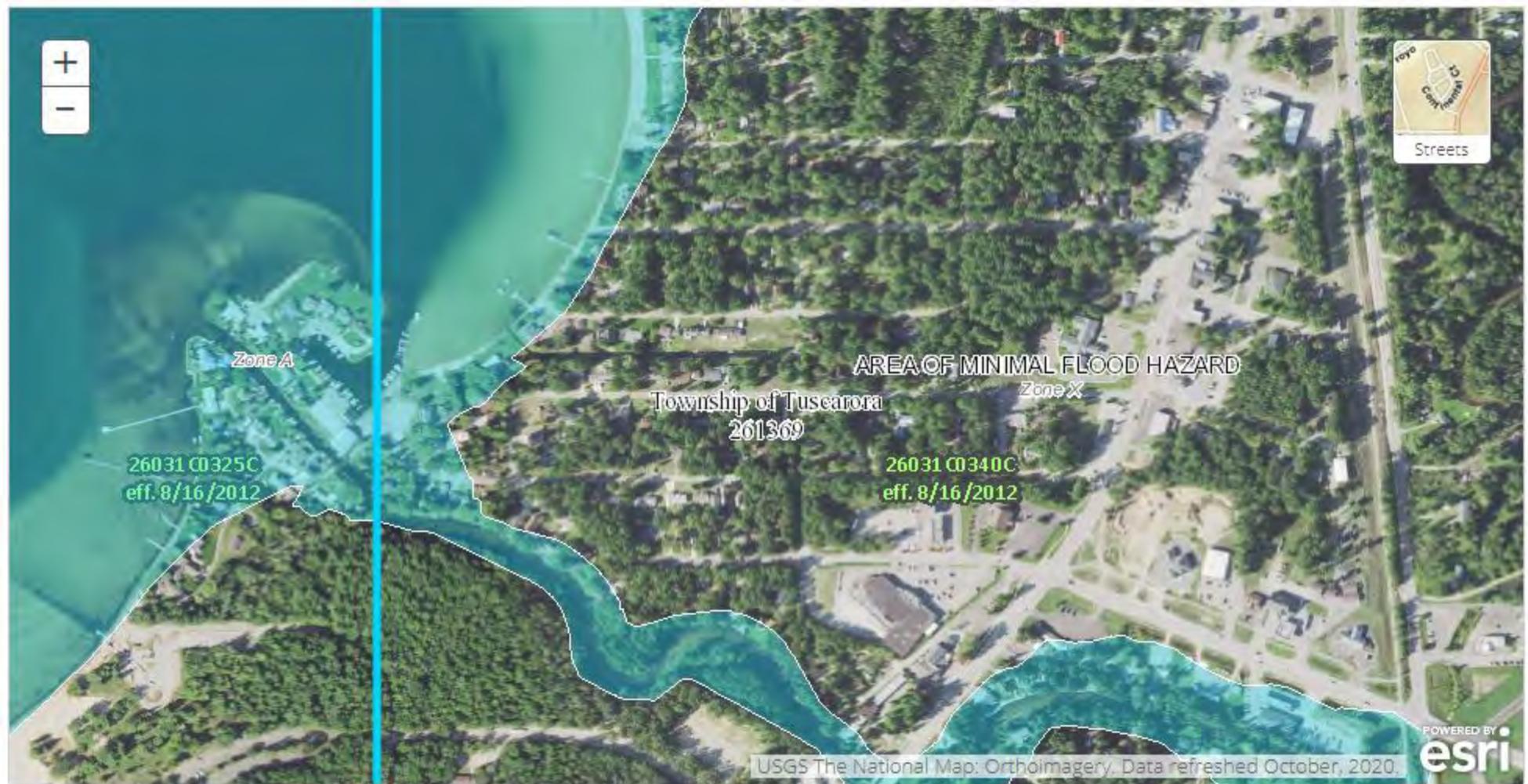
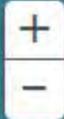
0 0.125 0.25 0.5 Miles



USGS The National Map: Orthoimagery. Data refreshed October, 2020.

POWERED BY **esri**





USGS The National Map: Orthoimagery. Data refreshed October, 2020. **esri** POWERED BY

<p>PIN</p> <ul style="list-style-type: none"> Approximate location based on user input and does not represent an authoritative property location 	<p>SPECIAL FLOOD HAZARD AREAS</p> <ul style="list-style-type: none"> Without Base Flood Elevation (BFE) Zone A, V, A99 With BFE or Depth Regulatory Floodway Zone AE, AO, AH, VE, AR 	<p>OTHER AREAS OF FLOOD HAZARD</p> <ul style="list-style-type: none"> 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X Future Conditions 1% Annual Chance Flood Hazard Zone X Area with Reduced Flood Risk due to Levee. See Notes. Zone X Area with Flood Risk due to Levee Zone D 	<p>OTHER FEATURES</p> <ul style="list-style-type: none"> 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation 17.5 Coastal Transect Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary Coastal Transect Baseline Profile Baseline Hydrographic Feature
<p>MAP PANELS</p> <ul style="list-style-type: none"> Selected FloodMap Boundary Digital Data Available No Digital Data Available Unmapped 	<p>OTHER AREAS</p> <ul style="list-style-type: none"> Area of Minimal Flood Hazard Zone X Effective LOMRs Area of Undetermined Flood Hazard Zone D Otherwise Protected Area Coastal Barrier Resource System Area 	<p>GENERAL STRUCTURES</p> <ul style="list-style-type: none"> Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall 	

DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
STANDARD FLOOD HAZARD DETERMINATION FORM (SFHDF)

OMB Control No. 1660-0040
Expires: 10/31/18

SECTION I - LOAN INFORMATION

1. LENDER/SERVICER NAME AND ADDRESS USDA Rural Development 4300 Goodfellow Blvd FC-231 Bldg 105 St. Louis, MO 63120 Company: CF Requested By: Andrew Granskog		2. COLLATERAL DESCRIPTION (Building/Mobile Home/Property) (See instructions for more information.) 4649 BRUDY RD INDIAN RIVER, MI 49749	
3. LENDER/SERVICER ID # USDA RD	4. LOAN IDENTIFIER	5. AMOUNT OF FLOOD INSURANCE REQUIRED	

SECTION II

A. NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMMUNITY JURISDICTION

1. NFIP Community Name TUSCARORA, TOWNSHIP OF	2. County(ies) CHEBOYGAN	3. State MI	4. NFIP Community Number 261369
---	------------------------------------	-----------------------	---

B. NATIONAL FLOOD INSURANCE PROGRAM (NFIP) DATA AFFECTING BUILDING/MOBILE HOME

1. NFIP Map Number or Community-Panel Number (Community name, if not the same as "A") 26031C 0340C	2. NFIP Map Panel Effective/Revised Date 08/16/12	3. Is there a Letter of Map Change (LOMC)? <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES (if yes, and LOMC date/no. is available, enter date and case no. below).	
4. Flood Zone X	5. No NFIP Map	Date	Case No.

C. FEDERAL FLOOD INSURANCE AVAILABILITY (Check all that apply.)

1. Federal Flood Insurance is available (community participates in the NFIP). Regular Program Emergency Program of NFIP

2. Federal Flood Insurance is not available (community does not participate in the NFIP).

3. Building/Mobile Home is in a Coastal Barrier Resources Area (CBRA) or Otherwise Protected Area (OPA). Federal Flood Insurance may not be available.
CBRA/OPA Designation Date: _____

D. DETERMINATION

IS BUILDING/MOBILE HOME IN SPECIAL FLOOD HAZARD AREA (ZONES CONTAINING THE LETTERS "A" OR "V") ? YES NO

If yes, flood insurance is required by the Flood Disaster Protection Act of 1973.
If no, flood insurance is not required by the Flood Disaster Protection Act of 1973. Please note, the risk of flooding in this area is only reduced, not removed.

This determination is based on examining the NFIP map, any Federal Emergency Management Agency revisions to it, and any other information needed to locate the building/mobile home on the NFIP map.

E. COMMENTS (Optional)

THIS FLOOD DETERMINATION IS PROVIDED TO THE LENDER PURSUANT TO THE FLOOD DISASTER PROTECTION ACT. IT SHOULD NOT BE USED FOR ANY OTHER PURPOSE.

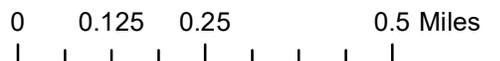
F. PREPARER'S INFORMATION

NAME, ADDRESS, TELEPHONE NUMBER (If other than Lender) CoreLogic Flood Services 1825A Kramer Lane Austin, TX 78758 1-800-447-1772	DATE OF DETERMINATION 02/24/21 at 04:55 AM CST FloodCert #: 2102C83296 *** LIFE-OF-LOAN *** *** SPECIAL PROPERTY ***
---	--





National Wetlands Inventory Map of the Tuscarora Township District 2 Sewer Expansion Project.
NOT TO SCALE



Attainment Status for the National Ambient Air Quality Standards



The National Ambient Air Quality Standards (NAAQS) are health-based pollution standards set by EPA.

Areas of the state that are below the NAAQS concentration level are called attainment areas. The entire state of Michigan is in attainment for the following pollutants:

- Carbon Monoxide
- Lead
- Nitrogen Dioxide
- Particulate Matter

Non-attainment areas are those that have concentrations over the NAAQS level. Portions of the state are in non-attainment for sulfur dioxide and ozone (see map). The ozone non-attainment area is classified as marginal.

LEGEND



Sulfur Dioxide
Nonattainment Area



Ozone
Nonattainment Area

See Page 2 for close-up
maps of partial county
nonattainment areas

7.8.1 Soils Map

7.8.2 Prime and Other Important Farmlands



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Cheboygan County, Michigan

Tuscarora Township Sewer Improvements Project



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:1,370 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cheboygan County, Michigan
 Survey Area Data: Version 16, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Mar 31, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13B	Rubicon sand, 0 to 6 percent slopes	7.9	100.0%
Totals for Area of Interest		7.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cheboygan County, Michigan

13B—Rubicon sand, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2tfr7
Elevation: 580 to 940 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 100 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Rubicon and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rubicon

Setting

Landform: Till-floored lake plains, deltas, drainageways, moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Base slope, interfluve
Down-slope shape: Linear, concave
Across-slope shape: Linear
Parent material: Sandy glaciolacustrine deposits

Typical profile

O_i - 0 to 2 inches: slightly decomposed plant material
A - 2 to 4 inches: sand
E - 4 to 9 inches: sand
B_s - 9 to 18 inches: sand
C - 18 to 80 inches: sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (K_{sat}): High to very high (1.56 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 0.1 mmhos/cm)
Sodium adsorption ratio, maximum: 0.1
Available water capacity: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F094CY031MI - Cool Rich Sandy Drift
Hydric soil rating: No

Minor Components

Au gres

Percent of map unit: 3 percent

Landform: Till-floored lake plains, deltas, drainageways, moraines

Landform position (two-dimensional): Backslope, footslope, summit

Landform position (three-dimensional): Base slope, interfluve

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

East lake

Percent of map unit: 3 percent

Landform: Drainageways, moraines, till-floored lake plains, deltas

Landform position (two-dimensional): Footslope, summit, backslope

Landform position (three-dimensional): Base slope, interfluve

Down-slope shape: Concave, linear

Across-slope shape: Linear

Hydric soil rating: No

Croswell

Percent of map unit: 2 percent

Landform: Till-floored lake plains, deltas, drainageways, moraines

Landform position (two-dimensional): Backslope, footslope, summit

Landform position (three-dimensional): Base slope, interfluve

Down-slope shape: Linear, concave

Across-slope shape: Linear

Hydric soil rating: No

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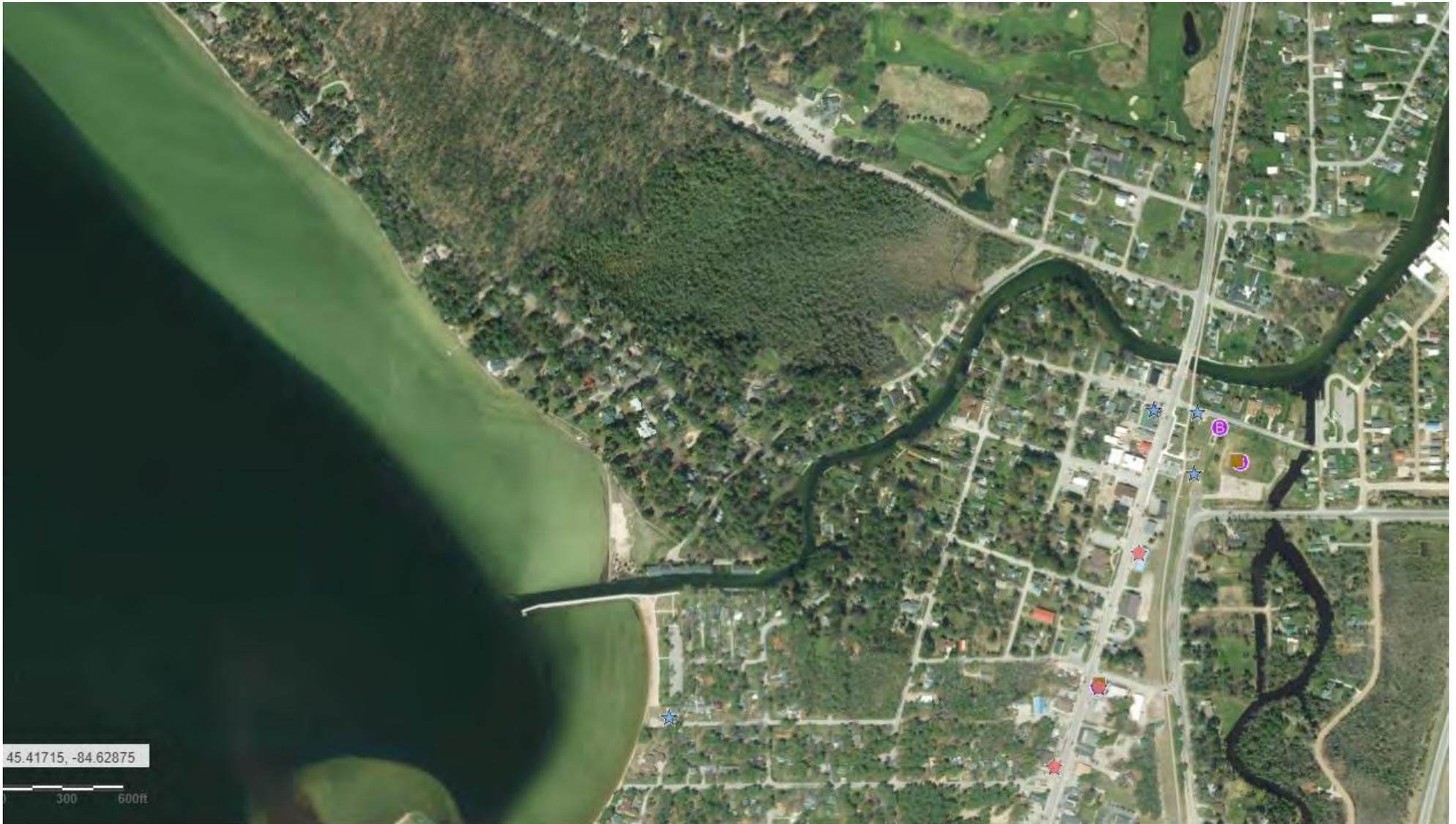
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7.9 Storage Tanks and Sites of Environmental Contamination

Tuscarora Township Sewer District 2: Underground Storage Tanks (North)

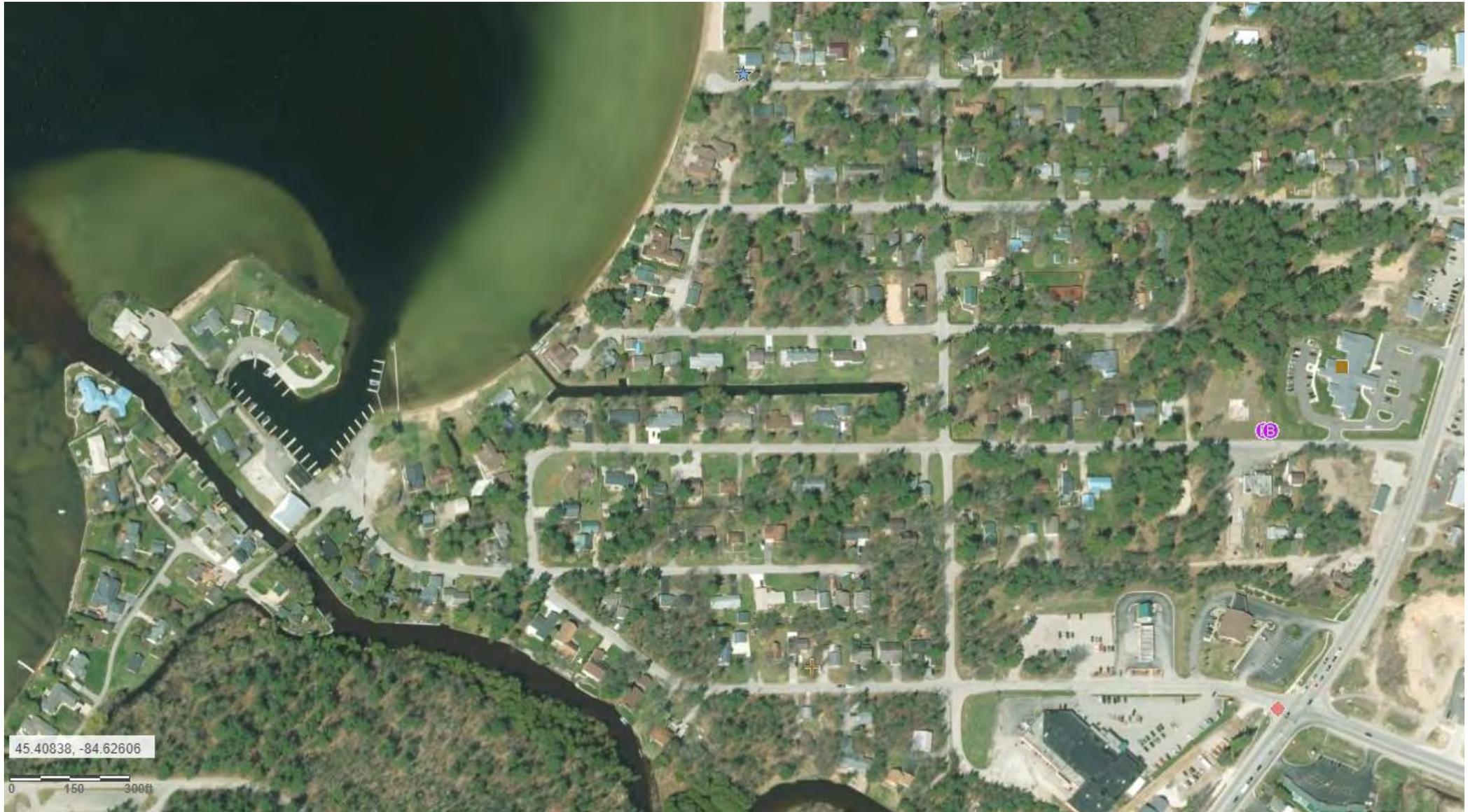


February 23rd, 2021

- | | | | |
|--|-----------------------------------|---|---|
|  | Baseline Environmental Assessment |  | Sites of Environmental Contamination (Part 201) |
|  | Closed Tanks |  | Open |
|  | Active Tanks |  | Closed |

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Tuscarora Township Sewer District 2: Underground Storage Tanks (South)



February 23rd, 2021

- | | | | |
|--|-----------------------------------|---|---|
|  | Baseline Environmental Assessment |  | Sites of Environmental Contamination (Part 201) |
|  | Closed Tanks |  | Open |
|  | Active Tanks |  | Closed |

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

8.0 List of Preparers

Michigan Rural Community Assistance Program (RCAP).

Fund 590 SEWER FUND

GL Number	Description	PERIOD ENDED 04/30/2020	PERIOD ENDED 04/30/2021
*** Assets ***			
Unclassified			
590-000-001.00	SEWER CHECKING	823.43	0.00
590-000-002.00	SEWER SPECIAL ASSESSMENT	71,260.37	74,069.70
590-000-003.00	SEWER O&M	17,148.40	23,847.10
590-000-003.01	RRI ACCOUNT	65,375.12	59,847.40
590-000-004.00	SEWER ADDL REU	292,673.20	293,217.81
590-000-040.00	ACCOUNTS RECEIVABLE	12,235.83	9,802.16
590-000-040.01	RECEIVABLE DEL O & M	13,624.25	9,525.15
590-000-045.00	SPECIAL ASSESSMENTS RECEIVABLE	1,962,928.24	1,925,765.69
590-000-130.00	LAND	178,618.00	178,618.00
590-000-136.00	SEWER PLANT	5,997,070.42	5,997,070.42
590-000-137.00	ACCUMULATED DEPRECIATION	(385,475.12)	(515,275.12)
590-000-156.00	SOFTWARE	6,681.00	6,681.00
590-000-158.00	CONSTRUCTION INPROGRESS	(0.07)	(0.07)
Unclassified		8,232,963.07	8,063,169.24
Total Assets		8,232,963.07	8,063,169.24
*** Liabilities ***			
Unclassified			
590-000-202.00	ACCOUNTS PAYABLE	36.66	0.00
590-000-250.00	CURRENT PORTION LONG TERM DEBT	63,000.00	63,000.00
590-000-251.00	ACCRUED INTEREST	9,170.00	8,391.25
590-000-307.00	USDA LOAN	2,033,000.00	1,855,000.00
Unclassified		2,105,206.66	1,926,391.25
Total Liabilities		2,105,206.66	1,926,391.25
*** Fund Balance ***			
Unclassified			
590-000-375.00	DEBT SERVICE FUND BALANCE RESTRI	187,718.00	187,718.00
590-000-376.00	RRI FUND BALANCE RESTRICTED	33,088.00	59,734.00
590-000-377.00	ADDL REU FUND BALANCE RESTRICTED	422,210.00	292,673.00
590-000-390.00	FUND BALANCE	1,879,559.80	1,876,154.24
590-000-391.00	NET ASSETS	3,767,695.00	3,749,364.00
Unclassified		6,290,270.80	6,165,643.24
Total Fund Balance		6,290,270.80	6,165,643.24
Beginning Fund Balance		6,290,270.80	6,165,643.24
Net of Revenues VS Expenditures		(162,514.39)	(28,865.25)
Ending Fund Balance		6,127,756.41	6,136,777.99
Total Liabilities And Fund Balance		8,232,963.07	8,063,169.24

Fund 101 GENERAL FUND

GL Number	Description	PERIOD ENDED 04/30/2020	PERIOD ENDED 04/30/2021
*** Assets ***			
Unclassified			
101-000-001.00	CHECKING	25,049.56	26,800.55
101-000-002.00	GENERAL FUND IMMA ACCOUNT	772,949.56	731,631.70
101-000-002.03	BOAT LAUNCH IMMA	88,149.85	101,543.85
101-000-002.04	VETERANS PIER IMMA	21,580.06	21,580.06
101-000-018.00	ACCOUNTS RECEIVABLE	1,175.06	1,175.06
101-000-078.00	DUE FROM SOM	45,426.00	0.00
101-000-079.00	DUE FROM FEDERAL GOVERNMENT	0.00	2,496.35
101-000-083.00	DUE FROM EMP BCBS	(1,114.17)	470.50
101-000-084.01	DUE FROM ROAD SAD	0.00	23,000.00
101-000-085.00	DUE FROM DDA	650.23	0.00
101-000-086.00	DUE FROM MISC.	0.00	53.62
Unclassified		953,866.15	908,751.69
Total Assets		953,866.15	908,751.69
*** Liabilities ***			
Unclassified			
101-000-202.00	ACCOUNTS PAYABLE	1,714.26	0.00
101-000-219.00	DUE TO MISCELLANEOUS	(0.01)	0.00
101-000-230.00	DUE TO OTHER UNITS OF GOVT.	0.00	1.00
101-000-237.00	DUE TO SPECIAL ASSESSMENT	70,611.75	70,611.75
101-000-260.00	ACCRUED VACATION	0.00	560.92
101-000-276.00	REFUNDABLE DEPOSITS	0.00	100.00
Unclassified		72,326.00	71,273.67
Total Liabilities		72,326.00	71,273.67
*** Fund Balance ***			
Unclassified			
101-000-375.00	FUND BALANCE FOR LIGHTI - RESTR	11,091.59	6,314.59
101-000-376.00	FIRE PROT. FUND BAL - RESTRICTED	1,105.47	1,540.47
101-000-377.00	BOAT LAUNCH FEES FUND BAL-RESTRI	68,470.45	79,790.45
101-000-386.00	FUND BALANCE FOR PARK - ASSIGNED	70,523.11	75,372.49
101-000-387.00	MARINA PARK FUND BALANCE ASSIGNE	47,741.94	47,741.94
101-000-388.00	V.P. BRICK FUND BALANCE-ASSIGNE	15,766.18	16,269.18
101-000-390.00	GENERAL FUND BALANCE	545,169.21	570,446.96
Unclassified		759,867.95	797,476.08
Total Fund Balance		759,867.95	797,476.08
Beginning Fund Balance		759,867.95	797,476.08
Net of Revenues VS Expenditures		121,672.20	40,001.94
Ending Fund Balance		881,540.15	837,478.02
Total Liabilities And Fund Balance		953,866.15	908,751.69



Heart of the Inland Waterway

TOWNSHIP OF TUSCARORA, MICHIGAN

ANNUAL FINANCIAL REPORT

YEAR ENDED JUNE 30, 2018

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INDEPENDENT AUDITOR'S REPORT

To the Board of Trustees
Township of Tuscarora, Michigan

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township of Tuscarora, Michigan (the "Township") as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the Township's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township, as of June 30, 2018, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, budgetary comparison information, and the pension schedules, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Township's basic financial statements. The combining and individual fund financial statements are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The combining and individual fund financial statements are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the combining and individual fund

financial statements are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 17, 2018, on our consideration of the Township's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Township's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Township's internal control over financial reporting and compliance

A handwritten signature in cursive script that reads "Gabridge & Company".

Gabridge & Company, PLC
Grand Rapids, Michigan
December 17, 2018

Management's Discussion and Analysis

Management's Discussion and Analysis

As management of the Township of Tuscarora, Michigan (The "Township" or "government") we offer readers of the Township's financial statements this narrative overview and analysis of the financial activities of the Township for the fiscal year ended June 30, 2018. We encourage readers to consider the information presented here in conjunction with the financial statements.

Financial Highlights

- The assets and deferred outflows of the Township exceeded its liabilities at the close of the most recent fiscal year by \$10,321,466 (net position). Of this amount, \$2,276,187 represents unrestricted net position, which may be used to meet the government's ongoing obligations to citizens and creditors.
- The Township's total net position decreased \$133,883 during the year. Revenues showed a decrease across all Township funds during the year of \$221,588 and expenses for the Township increased by \$336,315 from the prior fiscal year. The decreases in revenues can largely be attributed to one-time events occurring in the prior year related to Township's sewer project. The increase in expenses can be largely attributed to adjustments to pension expense based on actuarial results and increases to sewer operations cost.
- At the close of the current fiscal year, the Township's governmental funds reported combined fund balances of \$1,336,947 an increase of \$172,519 in comparison with the prior year. Approximately 42% of this amount, or \$566,102, is available for spending at the government's discretion (*unassigned fund balance*).
- At the end of the current fiscal year, unassigned fund balance for the general fund was \$566,102, or approximately 80% of total general fund expenditures.

Overview of the Financial Statements

The discussion and analysis provided here is intended to serve as an introduction to the Township's basic financial statements. The Township's basic financial statements consist of three components: 1) government-wide financial statements, 2) fund financial statements, and 3) the notes to financial statements. This report also includes supplementary information intended to furnish additional detail to support the basic financial statements themselves.

Government-wide Financial Statements. The government-wide financial statements are designed to provide readers with a broad overview of the Township's finances, in a manner similar to a private-sector business.

The *statement of net position* presents financial information on all of the Township's assets, deferred outflows, and liabilities, with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Township is improving or deteriorating.

The *statement of activities* presents information showing how the Township's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. Thus, revenues and expenses are reported for some items that will only result in cash flows in future fiscal periods (e.g., earned but unused vacation leave and accrued interest on long-term debt).

Both of the government-wide financial statements distinguish functions of the Township that are principally supported by taxes and intergovernmental revenues (governmental activities) from other functions that are intended to recover all or a significant portion of their costs through user fees and charges (business-type activities). The governmental activities of the Township include general government, police and fire protection, streets, health and welfare, community and economic development, and recreation and culture. The business-type activities of the Township include sewer services.

The government-wide financial statements include not only the Township itself (known as the primary government), but also the legally separate Downtown Development Authority ("DDA") and Indian River Area Library ("Library"), for which the Township is financially accountable. Financial information for these component units are reported separately from the financial information presented for the primary government itself. Financial statements for the DDA and Library can be located in the other supplemental information section of this report.

Fund Financial Statements. A *fund* is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The Township, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. All of the funds of the Township can be divided into three categories: governmental funds, proprietary funds, and fiduciary funds.

Governmental Funds. *Governmental funds* are used to account for essentially the same functions reported as *governmental activities* in the government-wide financial statements. However, unlike the government-wide financial statements, governmental fund financial statements focus on *near-term inflows and outflows of spendable resources*, as well as on *balances of spendable resources* available at the end of the fiscal year. Such information may be useful in assessing a government's near-term financing requirements.

Because the focus of governmental funds is narrower than that of the government-wide financial statements, it is useful to compare the information presented for *governmental funds* with similar information presented for *governmental activities* in the government-wide financial statements. By doing so, readers may better understand the long-term impact of the government's near-term financing decisions. Both the governmental fund balance sheet and the governmental fund statement of revenues, expenditures, and changes in fund balances provide a reconciliation to facilitate this comparison between *governmental funds* and *governmental activities*.

The Township maintains four individual governmental funds. Information is presented separately in the governmental fund balance sheet and in the governmental fund statement of revenues, expenditures, and changes in fund balances for the general fund and the police fund, which are considered to be major funds. Data from the 2016 special assessment bonds debt retirement and

parks and recreation millage funds is presented as a separate column as they are considered nonmajor funds.

The Township adopts an annual appropriated budget for the general fund and each special revenue fund. A budgetary comparison schedule for the general fund and each major special revenue fund has been provided to demonstrate compliance with these budgets.

Proprietary Funds. The Township maintains one type of proprietary fund, an enterprise fund. *Enterprise funds* are used to report the same functions presented as *business-type activities* in the government-wide financial statements. The Township uses enterprises funds to account for its sewer operations.

Proprietary funds provide the same type of information as the government-wide financial statements, only in more detail. The proprietary fund financial statements provide information for the sewer operations. The sewer fund is considered to be a major fund of the Township.

Fiduciary funds. Fiduciary funds are used to account for resources held for the benefit of parties outside the government. Fiduciary funds are not reflected in the government-wide financial statement because the resources of those funds are not available to support the Township's own programs. The accounting used for fiduciary funds is much like that used for proprietary funds.

Notes to the Financial Statements. The notes provide additional information that is necessary to acquire a full understanding of the data provided in the government-wide and fund financial statements.

Other Information. In addition to the basic financial statements and accompanying notes, this report also presents *required supplementary information* concerning the Township's budgetary comparison schedules and the Townships pension plan schedules.

This report also presents other supplementary information which includes the nonmajor fund and component unit combining and individual statements. The combining statements are presented immediately following the required supplementary information on pensions.

Government-wide Overall Financial Analysis

As noted earlier, net position over time, may serve as a useful indicator of a government's financial position. In the case of the Township, assets and deferred outflows exceeded liabilities by \$10,321,466, at the close of the most recent fiscal year.

	Governmental Activities		Business-type Activities		Total Primary Government	
	2018	2017	2018	2017	2018	2017
ASSETS						
<i>Current Assets</i>						
Cash and Cash Equivalents	\$ 1,359,285	\$ 1,159,101	\$ 255,853	\$ 44,615	\$ 1,615,138	\$ 1,203,716
Accounts Receivable	1,137	1,109	37,712	32,584	38,849	33,693
Due from Other Governments	44,902	42,161	-	-	44,902	42,161
Special Assessments, Current Portion	17,804	73,855	55,813	-	73,617	73,855
Total Current Assets	1,423,128	1,276,226	349,378	77,199	1,772,506	1,353,425
<i>Noncurrent Assets</i>						
Restricted Cash	-	-	410,719	643,016	410,719	643,016
Special Assessments	37,311	-	1,946,180	2,057,805	1,983,491	2,057,805
Capital Assets, Net	3,260,365	3,400,747	5,926,695	6,048,478	9,187,060	9,449,225
Total Assets	4,720,804	4,676,973	8,632,972	8,826,498	13,353,776	13,503,471
DEFERRED OUTFLOWS OF RESOURCES						
Pension Related Deferred Outflows	125,063	181,271	-	-	125,063	181,271
LIABILITIES						
<i>Current Liabilities</i>						
Accounts Payable	34,456	10,174	23,465	12,722	57,921	22,896
Payroll Liabilities	30,421	28,533	-	-	30,421	28,533
Accrued Interest Payable	286	377	9,446	9,721	9,732	10,098
Current Portion of Long-term Debt	21,000	21,000	63,000	63,000	84,000	84,000
Internal Balances	3,500	(764)	(3,500)	764	-	-
Total Current Liabilities	89,663	59,320	92,411	86,207	182,074	145,527
<i>Noncurrent Liabilities</i>						
Compensated Absences	27,001	22,954	-	-	27,001	22,954
Long-term Debt	45,000	66,000	2,096,000	2,159,000	2,141,000	2,225,000
Net Pension Liability	700,214	763,384	-	-	700,214	763,384
Total Liabilities	861,878	911,658	2,188,411	2,245,207	3,050,289	3,156,865
DEFERRED INFLOWS						
Pension Related Deferred Inflows	107,084	72,528	-	-	107,084	72,528
Total Deferred Inflows	107,084	72,528	-	-	107,084	72,528
NET POSITION						
Net Investment in Capital Assets	3,260,365	3,313,747	3,767,695	3,826,478	7,028,060	7,140,225
Restricted	606,500	632,005	410,719	643,016	1,017,219	1,275,021
Unrestricted	10,040	(71,694)	2,266,147	2,111,797	2,276,187	2,040,103
Total Net Position	\$ 3,876,905	\$ 3,874,058	\$ 6,444,561	\$ 6,581,291	\$ 10,321,466	\$ 10,455,349

A portion of the Township's net position, \$7,028,060, reflects its investment in capital assets (e.g., land and land improvements, buildings and improvements, machinery, equipment, vehicles, and infrastructure), less any related outstanding debt that was used to acquire those assets. The Township uses these capital assets to provide a variety of services to its citizens. Accordingly, these assets are not available for future spending. Although the Township's investment in capital assets is reported net of related debt, it should be noted that the resources used to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities.

An additional portion of the Township's net position, \$1,017,219, represents resources that are subject to external restrictions on how they may be used. The remaining balance of \$2,276,187 is unrestricted and may be used to meet the government's ongoing obligations to its citizens and creditors.

A summary of significant changes in assets and liabilities between June 30, 2017 and June 30, 2018 are as follows:

- Cash and restricted cash increased by a net total of 179,125. Receipts of payments for special assessments, increases in sewer billing rates, and minor increases in taxes levies and state shared revenues are all contributing factors to this increase.
- The Township's capital assets decreased by \$262,165 during the current year. This is mostly a result of depreciation expense exceeding the amount of new assets acquired by the Township during the current year.
- Net pension liability decreased by \$63,170 during the current year along with a decrease in related deferred outflows by \$56,208 and an increase in related deferred inflows by \$34,556.

Governmental Activities. While there were significant fluctuations in governmental activities revenues and expenses in the current year, governmental activities net position, in total, remained relatively consistent with the prior year increasing by only \$2,847. A notable component of this change is the increase in unrestricted net position. Township's unrestricted net position increased by \$81,734 from a deficit balance of \$71,694 to a positive balance of \$10,040. Significant events leading to this change are highlighted as follows:

- General fund unrestricted fund balance increased as a result of current year revenues exceeding expenditures by \$198,468
- General fund revenues and transfers in increased by \$53,069 as a result of increased property tax values, additional state revenue sharing dollars, and the closeout of the Parks Fund
- General fund expenditures decreased by 120,402 due mostly to one time expenditures in the previous year related to public works projects.

Business-type Activities. Business-type activities decreased the Township's net position by \$136,730. Overall expenses increased from \$264,023 during 2017 to \$374,436 in 2018 while revenues decreased from \$306,074 to \$237,706.

Significant events impacting revenues and expenses of the business-type activities during the year include:

- Sewer fund charges for services decreased from \$240,038 in the previous year to \$161,529 in the current year mostly due to significantly less new hook-up fee revenues generated during 2018.

- Expenses related to the sewer system operation increased from \$264,023 to \$374,436 during the current year. This is a result of additional costs to run and maintain the system, including utilities, contracted services, and interest on long-term bonds payable.

	Governmental Activities		Business-type Activities		Total Government	
	2018	2017	2018	2017	2018	2017
Revenue						
Program Revenues						
Charges for Services	\$ 91,368	\$ 236,930	\$ 161,529	\$ 240,038	\$ 252,897	\$ 476,968
Operating Grants and Contributions	46,069	92,684	-	-	46,069	92,684
Capital Grants and Contributions	-	-	-	-	-	-
Total Program Revenues	<u>137,437</u>	<u>329,614</u>	<u>161,529</u>	<u>240,038</u>	<u>298,966</u>	<u>569,652</u>
General Revenues						
Property Taxes	1,393,261	1,365,532	-	-	1,393,261	1,365,532
Intergovernmental	250,932	244,580	-	-	250,932	244,580
Interest Income	7,153	2,277	76,177	66,036	83,330	68,313
Total General Revenues	<u>1,651,346</u>	<u>1,612,389</u>	<u>76,177</u>	<u>66,036</u>	<u>1,727,523</u>	<u>1,678,425</u>
Total Revenues	<u>1,788,783</u>	<u>1,942,003</u>	<u>237,706</u>	<u>306,074</u>	<u>2,026,489</u>	<u>2,248,077</u>
Expenses						
General Government	323,940	321,737	-	-	323,940	321,737
Public Safety	1,099,720	715,460	-	-	1,099,720	715,460
Public Works	36,936	170,644	374,436	264,023	411,372	434,667
Community and Economic Development	220	420	-	-	220	420
Recreation and Culture	322,918	346,349	-	-	322,918	346,349
Interest on Long-term Debt	2,202	5,424	-	-	2,202	5,424
Total Expenses	<u>1,785,936</u>	<u>1,560,034</u>	<u>374,436</u>	<u>264,023</u>	<u>2,160,372</u>	<u>1,824,057</u>
Change in Net Position	<u>2,847</u>	<u>381,969</u>	<u>(136,730)</u>	<u>42,051</u>	<u>(133,883)</u>	<u>424,020</u>
Net Position at the Beginning of Period	<u>3,874,058</u>	<u>3,492,089</u>	<u>6,581,291</u>	<u>6,539,240</u>	<u>10,455,349</u>	<u>10,031,329</u>
Net Position at the End of Period	<u>\$ 3,876,905</u>	<u>\$ 3,874,058</u>	<u>\$ 6,444,561</u>	<u>\$ 6,581,291</u>	<u>\$ 10,321,466</u>	<u>\$ 10,455,349</u>

Financial Analysis of Governmental Funds

As noted earlier, the Township uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

Governmental Funds. The focus of the Township's *governmental funds* is to provide information on near-term inflows, outflows, and balances of spendable resources. Such information is useful in assessing the Township's financing requirements. In particular, unassigned fund balance may serve as a useful measure of a government's net resources available for discretionary use as they represent the portion of fund balance which has not yet been limited to use for a particular purpose by either an external party, the Township itself, or a group or individual that has been delegated authority to assign resources for use for particular purposes by the Township's Board.

At June 30, 2018, the Township's governmental funds reported combined fund balances of \$1,336,947 an increase of \$172,519 in comparison with the prior year. Approximately 42% of this amount, \$566,102, constitutes *unassigned fund balance*, which is available for spending at the government's discretion. The remainder of the fund balance is either *nonspendable*, *assigned*, or *restricted* to indicate that it is: 1) restricted for particular purposes \$606,500 (46%) or 2) assigned for particular purposes, \$164,345 or 12%.

The general fund is the chief operating fund of the Township. At the end of the current fiscal year, unassigned fund balance of the general fund was \$566,102. As a measure of the general fund's liquidity, it may be useful to compare unassigned fund balance to total general fund expenditures. Unassigned fund balance represents approximately 80 percent of total general fund expenditures.

The fund balance of the Township's general fund increased by \$198,468 during the current fiscal year. The Township Board monitors the expenditures of the general fund closely to ensure that spending does not exceed the Township's available resources.

The police fund, a major fund, had a \$21,180 increase in fund balance during the current fiscal year which put the overall fund balance at \$466,103. This increase in fund balance is due to the originally budgeted expenditures coming in under-budget, creating an increase in fund balance.

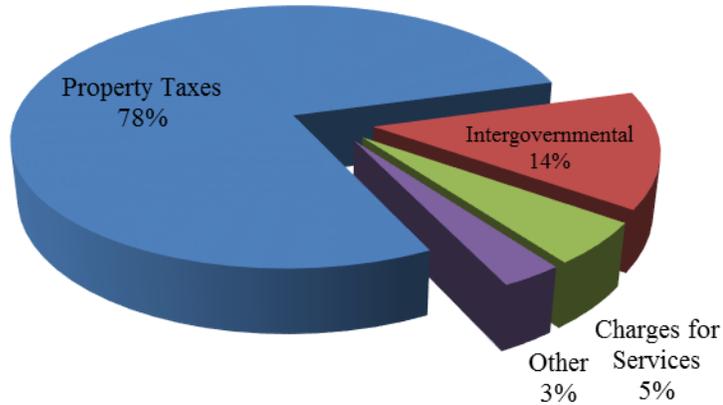
Proprietary Funds. The Township's proprietary funds provide the same type of information found in the government-wide financial statements, but in more detail.

Unrestricted net position at the end of the year was \$2,266,147 for the sewer fund. The decrease in net position was \$136,730 for the sewer fund. A summary of the changes in the sewer fund net position can be found in the business-type activities paragraph found earlier in this report.

Governmental Activities

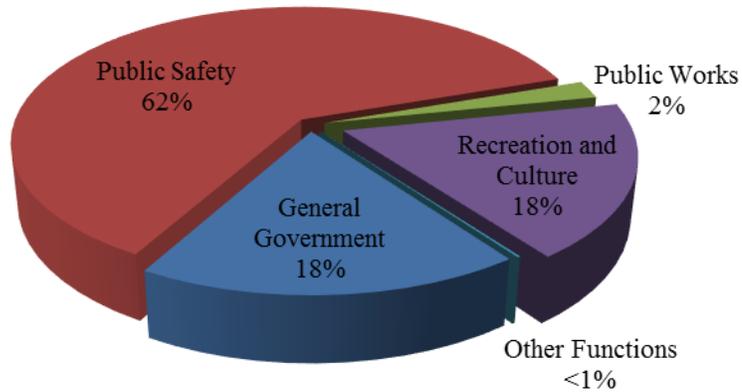
The following chart summarizes the revenue sources for the governmental activities of the Township for the most recent fiscal year end:

Governmental Activities Revenues



The following chart summarizes the expenses for the governmental activities of the Township for the most recent fiscal year end:

Governmental Activities Expenses



General Fund Budgetary Highlights

Original budget compared to final budget. During the year there was a need to adjust expenditures in the final budget to allow for additional wages in the police department and capital outlay purchases in multiple departments.

Final budget compared to actual results. The Township had expenditures in excess of the amount appropriated during the year ended June 30, 2018. See Note 2 for details.

	<u>Amended Budget</u>	<u>Actual</u>	<u>Variance</u>
General Fund			
Treasurer	\$ 34,165	34,421	\$ (256)
Capital Outlay	47,000	53,003	(6,003)

Capital Assets and Debt Administration

Capital assets. The Township's investment in capital assets for its governmental and business-type activities as of June 30, 2018, amounts to \$9,187,060 (net of accumulated depreciation). This investment in capital assets includes land and land improvements, buildings and improvements, machinery, equipment, vehicles, park facilities, and sewer infrastructure.

More detailed information about the Township's capital assets can be found in Note 4.

Long-term Debt

As described in Note 6 to the financial statements, the Township had \$2,252,001 in long-term debt at the end of the fiscal year. The Township is well under its legal debt limit as of year-end.

Economic Condition and Outlook

Management estimates that \$825,665 of revenues will be available for appropriation in the general fund in the upcoming year. The Township continues to review all budget line items for opportunities to reduce expenditures when possible. The budget will be monitored during the year to identify any necessary amendments. In 2019, the Township plans again to use current revenues to provide essential services and to maintain the Township's financial reserves at similar levels. Property tax revenues are expected to change minimally reflecting fairly stable property values.

Contacting the Township

This financial report is designed to provide a general overview of the Township's finances to its citizens, customers, investors, and creditors and to demonstrate the Township's accountability for the resources it receives. Questions regarding any information provided in this report or requests for additional financial information should be addressed to:

The Township of Tuscarora
3546 S Straits Highway
Indian River, MI 49749

Basic Financial Statements

Township of Tuscarora
Statement of Net Position
June 30, 2018

	Primary Government			Component Units
	Governmental Activities	Business-type Activities	Total	
ASSETS				
<i>Current Assets</i>				
Cash and Cash Equivalents	\$ 1,359,285	\$ 255,853	\$ 1,615,138	\$ 676,464
Investments	--	--	--	8,354
Accounts Receivable	1,137	37,712	38,849	20,437
Due from Other Governments	44,902	--	44,902	--
Special Assessments	17,804	55,813	73,617	--
Total Current Assets	1,423,128	349,378	1,772,506	705,255
<i>Noncurrent Assets</i>				
Capital Assets not Being Depreciated	1,383,282	178,618	1,561,900	--
Capital Assets Being Depreciated, Net	1,877,083	5,748,077	7,625,160	788,610
Restricted Cash	--	410,719	410,719	--
Investments - Endowment	--	--	--	5,675
Special Assessments	37,311	1,946,180	1,983,491	--
Total Assets	4,720,804	8,632,972	13,353,776	1,499,540
DEFERRED OUTFLOWS OF RESOURCES				
Pension Related Deferred Outflows	125,063	--	125,063	--
Total Deferred Outflows of Resources	125,063	--	125,063	--
LIABILITIES				
<i>Current Liabilities</i>				
Accounts Payable	34,456	23,465	57,921	1,018
Payroll Liabilities	30,421	--	30,421	2,063
Accrued Interest	286	9,446	9,732	--
Current Portion of Long-term Debt	21,000	63,000	84,000	--
Due to Other Governments	--	--	--	914
<i>Internal Balances*</i>	3,500	(3,500)	--	--
Total Current Liabilities	89,663	92,411	182,074	3,995
<i>Noncurrent Liabilities</i>				
Net Pension Liability	700,214	--	700,214	--
Compensated Absences	27,001	--	27,001	--
Long-term Debt	45,000	2,096,000	2,141,000	--
Total Liabilities	861,878	2,188,411	3,050,289	3,995
DEFERRED INFLOWS OF RESOURCES				
Pension Related Deferred Inflows	107,084	--	107,084	--
Total Deferred Inflows of Resources	107,084	--	107,084	--
NET POSITION				
Investment in Capital Assets	3,260,365	3,767,695	7,028,060	788,610
<i>Restricted for:</i>				
Nonspendable Endowment	--	--	--	5,675
Debt Service	82,750	--	82,750	--
Repair, Replacement, Improvement	--	43,826	43,826	--
Additional Residential Equivalent Units	--	366,893	366,893	--
Police	466,103	--	466,103	--
Fire Protection	804	--	804	--
Boat Launch Fees	56,843	--	56,843	--
<i>Unrestricted</i>	10,040	2,266,147	2,276,187	701,260
Total Net Position	\$ 3,876,905	\$ 6,444,561	\$ 10,321,466	\$ 1,495,545

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Statement of Activities
For the Year Ended June 30, 2018**

Functions/Programs	Expenses	Program Revenues			Net (Expense) Revenue			Component Units
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Governmental Activities	Primary Government Business-type Activities	Total	
Primary Government								
Governmental Activities:								
General Government	\$ 323,940	\$ 15,640	\$ 5,000	\$ --	\$ (303,300)	\$ --	\$ (303,300)	\$ --
Public Safety	1,099,720	31,014	3,623	--	(1,065,083)	--	(1,065,083)	--
Public Works	36,936	6,066	--	--	(30,870)	--	(30,870)	--
Community and Economic Development	220	--	--	--	(220)	--	(220)	--
Recreation and Culture	322,918	38,648	37,446	--	(246,824)	--	(246,824)	--
Interest on Long-term Debt	2,202	--	--	--	(2,202)	--	(2,202)	--
<i>Total Governmental Activities</i>	<u>1,785,936</u>	<u>91,368</u>	<u>46,069</u>	<u>--</u>	<u>(1,648,499)</u>	<u>--</u>	<u>(1,648,499)</u>	<u>--</u>
Business-type Activities:								
Sewer	374,436	161,529	--	--	--	(212,907)	(212,907)	--
<i>Total Business-type Activities</i>	<u>374,436</u>	<u>161,529</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>(212,907)</u>	<u>(212,907)</u>	<u>--</u>
<i>Total Primary Government</i>	<u>\$ 2,160,372</u>	<u>\$ 252,897</u>	<u>\$ 46,069</u>	<u>\$ --</u>	<u>\$ (1,648,499)</u>	<u>\$ (212,907)</u>	<u>\$ (1,861,406)</u>	<u>--</u>
Component Units								
DDA	\$ 67,755	\$ 645	\$ --	\$ --	--	--	--	(67,110)
Indian River Area Library	100,204	5,618	24,220	--	--	--	--	(70,366)
<i>Total Component Units</i>	<u>\$ 167,959</u>	<u>\$ 6,263</u>	<u>\$ 24,220</u>	<u>\$ --</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>(137,476)</u>
General Purpose Revenues and Transfers:								
Revenues								
Property Taxes					1,393,261	--	1,393,261	138,432
Intergovernmental					250,932	--	250,932	22,043
Interest Income					7,153	76,177	83,330	4,148
Transfers					--	--	--	--
<i>Total General Revenues and Transfers</i>					<u>1,651,346</u>	<u>76,177</u>	<u>1,727,523</u>	<u>164,623</u>
<i>Change in Net Position</i>					<u>2,847</u>	<u>(136,730)</u>	<u>(133,883)</u>	<u>27,147</u>
<i>Net Position at Beginning of Period</i>					3,874,058	6,581,291	10,455,349	1,468,398
<i>Net Position at End of Period</i>					<u>\$ 3,876,905</u>	<u>\$ 6,444,561</u>	<u>\$ 10,321,466</u>	<u>\$ 1,495,545</u>

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Balance Sheet
Governmental Funds
June 30, 2018**

	<u>Special Revenue</u>		<u>Other Governmental Funds</u>	<u>Total Governmental Funds</u>
	<u>General</u>	<u>Police</u>		
ASSETS				
Cash and Cash Equivalents	\$ 854,517	\$ 492,630	\$ 12,138	\$ 1,359,285
Accounts Receivable	1,137	--	--	1,137
Due from Other Governments	44,902	--	--	44,902
Special Assessments	--	--	55,115	55,115
Due from Other Funds	--	--	70,612	70,612
<i>Total Assets</i>	<u>\$ 900,556</u>	<u>\$ 492,630</u>	<u>\$ 137,865</u>	<u>\$ 1,531,051</u>
LIABILITIES				
Accounts Payable	\$ 32,553	\$ 1,903	\$ --	\$ 34,456
Payroll Liabilities	5,797	24,624	--	30,421
Due to Other Funds	74,112	--	--	74,112
<i>Total Liabilities</i>	<u>112,462</u>	<u>26,527</u>	<u>--</u>	<u>138,989</u>
DEFERRED INFLOWS OF RESOURCES				
Unavailable Revenue	--	--	55,115	55,115
<i>Total Liabilities and Deferred Inflows of Resources</i>	<u>112,462</u>	<u>26,527</u>	<u>55,115</u>	<u>194,104</u>
FUND BALANCE				
Restricted	57,647	466,103	82,750	606,500
Assigned	164,345	--	--	164,345
Unassigned	566,102	--	--	566,102
<i>Total Fund Balance</i>	<u>788,094</u>	<u>466,103</u>	<u>82,750</u>	<u>1,336,947</u>
<i>Total Liabilities, Deferred Inflows of Resources and Fund Balance</i>	<u>\$ 900,556</u>	<u>\$ 492,630</u>	<u>\$ 137,865</u>	<u>\$ 1,531,051</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Reconciliation of Governmental Funds Balance Sheet to the Statement of Net Position
June 30, 2018

Total Fund Balance - Governmental Funds	\$	1,336,947
In the Statement of Activities, interest is accrued on outstanding bonds, whereas in governmental funds, the interest expenditure is reported when due.		(286)
General government capital assets of \$5,848,064, net of accumulated depreciation of \$2,379,299, are not financial resources, and accordingly are not reported in the funds.		3,260,365
Compensated absences are not due in and payable in the current period, and therefore, are not reported in the funds.		(27,001)
Certain pension-related amounts, such as the deferred amounts are not due and payable in the current period or do not represent current financial resources and therefore are not reported in the funds. This is the amount of deferred outflows in excess in excess of deferred inflows.		17,979
Long-term liabilities are not due and payable in the current period, and therefore, are not reported in the funds.		(66,000)
The net pension liability is not paid form current financial resources and, therefore, is excluded from the fund financial statements but is included as an asset in the government-wide financial statements.		(700,214)
Certain receivables are not available to pay for current period expenditures and, therefore, are unearned in the funds.		55,115
Total Net Position-Governmental Funds	\$	<u>3,876,905</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2018

	<u>Special Revenue</u>			Total Governmental Funds
	<u>General</u>	<u>Police</u>	<u>Other Governmental Funds</u>	
Revenues				
Property Taxes	\$ 512,794	\$ 880,467	\$ --	\$ 1,393,261
Special Assessments	6,049	--	18,757	24,806
Intergovernmental	250,932	583	--	251,515
Grants	5,000	--	--	5,000
Charges for Services	53,237	24,731	--	77,968
Refunds and Reimbursements	1,051	2,249	--	3,300
Other	37,446	7,074	--	44,520
Interest Income	3,768	631	2,754	7,153
Total Revenues	<u>870,277</u>	<u>915,735</u>	<u>21,511</u>	<u>1,807,523</u>
Expenditures				
General Government	277,665	--	--	277,665
Public Safety	161,640	879,540	--	1,041,180
Public Works	36,936	--	--	36,936
Community and Economic Development	220	--	--	220
Recreation and Culture	176,772	--	10,920	187,692
Debt Service - Principal	--	--	21,000	21,000
Debt Service - Interest	--	--	2,293	2,293
Capital Outlay	53,003	15,015	--	68,018
Total Expenditures	<u>706,236</u>	<u>894,555</u>	<u>34,213</u>	<u>1,635,004</u>
Excess of Revenues Over (Under) Expenditures	<u>164,041</u>	<u>21,180</u>	<u>(12,702)</u>	<u>172,519</u>
Other Financing Sources (Uses)				
Transfers In	34,427	--	--	34,427
Transfers Out	--	--	(34,427)	(34,427)
Net Other Financing Sources (Uses)	<u>34,427</u>	<u>--</u>	<u>(34,427)</u>	<u>--</u>
Net Change in Fund Balance	198,468	21,180	(47,129)	172,519
<i>Fund Balance at Beginning of Period</i>	589,626	444,923	129,879	1,164,428
Fund Balance at End of Period	\$ 788,094	\$ 466,103	\$ 82,750	\$ 1,336,947

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Reconciliation of Governmental Funds Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2018

Total Net Change in Fund Balances - Governmental Funds	\$	172,519
Governmental fund report capital outlay as expenditures; however, in the Statement of Activities, the cost of those assets is allocated over the estimated useful lives as depreciation expense. This is the amount of capital outlay expenditures.		68,018
Changes to accrued interest are not shown in the fund financial statements. The net effect of the current year decrease is to increase net position.		91
Change to compensated absences are not shown in the fund financial statements. The net effect of the current year decrease is to increase net position.		(4,047)
Changes to the net pension liability and related pension items are not shown in the fund financial statements. The net effect of the current year increase is to increase net position.		(27,594)
Some receivables are long-term in nature and are collectible over several years. However, the current receipts are reflected as revenues on the fund statements.		(18,740)
Depreciation is not recognized as an expense in governmental funds since it does not require the use of current financial resources. The effect of recording the current year's depreciation is to decrease net position.		(208,400)
Current year long-term debt principal payments on contractual obligations and bonds payable are expenditures in the fund financial statements but are reductions in long-term debt in the government-wide financial statements.		21,000
Changes in Net Position-Governmental Funds	\$	<u>2,847</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Statement of Net Position
Proprietary Funds
June 30, 2018

	<u>Business-type Activities - Enterprise Funds</u>
	<u>Sewer</u>
ASSETS	
<i>Current Assets</i>	
Cash and Cash Equivalents	\$ 255,853
Accounts Receivable	37,712
Special Assessments	55,813
Due from Other Funds	3,500
Total Current Assets	352,878
<i>Noncurrent Assets</i>	
Capital Assets not Being Depreciated	178,618
Capital Assets Being Depreciated, Net	5,748,077
Restricted Cash	410,719
Special Assessments	1,946,180
Total Assets	8,636,472
LIABILITIES	
<i>Current Liabilities</i>	
Accounts Payable	23,465
Accrued Interest	9,446
Current Portion of Long-term Debt	63,000
Total Current Liabilities	95,911
<i>Noncurrent Liabilities</i>	
Long-term Debt	2,096,000
Total Liabilities	2,191,911
NET POSITION	
Net Investment in Capital Assets	3,767,695
<i>Restricted for:</i>	
Repair, Replacement, Improvement	43,826
Additional Residential Equivalent Units	366,893
<i>Unrestricted</i>	2,266,147
Total Net Position	\$ 6,444,561

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Statement of Revenues, Expenses, and Changes in Net Position
Proprietary Funds
For the Year Ended June 30, 2018

	Business-type Activities - Enterprise Funds
	Sewer
Operating Revenues	
Charges for Services	\$ 148,743
Refunds and Reimbursements	12,786
<i>Total Operating Revenues</i>	161,529
Operating Expenses	
Professional Fees	107,021
Utilities	33,491
Supplies	12,796
Repairs and Maintenance	33,480
Insurance	1,132
Depreciation	128,464
<i>Total Operating Expenses</i>	316,384
<i>Operating Income (Loss)</i>	(154,855)
Non-Operating Revenues (Expenses)	
Interest Income	76,177
Interest Expense	(58,052)
<i>Net Non-Operating Revenues (Expenses)</i>	18,125
<i>Change In Net Position</i>	(136,730)
<i>Net Position at Beginning of Period</i>	6,581,291
<i>Net Position at End of Period</i>	\$ 6,444,561

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Statement of Cash Flows
Proprietary Fund
For the Year Ended June 30, 2018**

	Business-type Activities - Enterprise Fund
	Sewer
Cash Flows Used by Operating Activities	
Cash Received from Customers	\$ 156,401
Cash Payments to Suppliers for Goods and Services	(177,177)
Net Cash Provided (Used) by Operating Activities	(20,776)
 Cash Flows from Non-capital and Related Financing Activities	
Due from (to) Other Funds	(4,264)
Payment on Advance	-
Miscellaneous Receipts	-
Grants & Contributions	-
Net Cash Provided (Used) by Non-capital and Related Financing Activities	(4,264)
 Cash Flows from Capital and Related Financing Activities	
Principal Paid	(63,000)
Interest Paid	(58,327)
Capital Grants Received	55,812
Purchase of Equipment	(6,681)
Net Cash Provided (Used) by Capital and Related Financing Activities	(72,196)
 Cash Flows From Investing Activities	
Interest Income	76,177
Proceeds from Sale and Maturities of Investments	-
Purchase of Investments	-
Net Cash Provided (Used) by Investing Activities	76,177
Net Increase in Cash and Equivalents	(21,059)
<i>Cash and Equivalents - Beginning of Year</i>	687,631
<i>Cash and Equivalents - End of Year</i>	\$ 666,572
 Reconciliation of Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities	
Operating Income (Loss)	\$ (154,855)
Adjustments to Reconcile Operating Income to Net Cash Provided (Used) by Operating Activities	
Depreciation Expense	128,464
Changes in Assets & Liabilities	
Special Assessment Receivable	-
Accounts Receivable	(5,128)
Due from State	-
Due from Federal	-
Accounts Payable	10,743
Accrued Interest	-
Deferred Inflows - Unavailable Revenue	-
Net Cash Used by Operating Activities	\$ (20,776)

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Statement of Fiduciary Assets and Liabilities
Fiduciary Funds
June 30, 2018

	Agency
	Property Tax Collection
ASSETS	
Cash and Cash Equivalents	\$ 5,823
<i>Total Assets</i>	5,823
LIABILITIES	
Due to Other Governments	5,823
<i>Total Liabilities</i>	\$ 5,823

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Combining Statement of Net Position
Component Units
June 30, 2018

	<u>DDA</u>	<u>Indian River Area Library</u>	<u>Total Component Units</u>
ASSETS			
<i>Current Assets</i>			
Cash and Cash Equivalents	\$ 408,384	\$ 268,080	\$ 676,464
Investments	--	8,354	8,354
Accounts Receivable	--	20,437	20,437
Total Current Assets	<u>408,384</u>	<u>296,871</u>	<u>705,255</u>
<i>Noncurrent Assets</i>			
Capital Assets Being Depreciated, Net	662,184	126,426	788,610
Investments - Endowment	--	5,675	5,675
Total Assets	<u>1,070,568</u>	<u>428,972</u>	<u>1,499,540</u>
LIABILITIES			
<i>Current Liabilities</i>			
Accounts Payable	--	1,018	1,018
Payroll Liabilities	--	2,063	2,063
Due to Other Governments	600	314	914
Total Current Liabilities	<u>600</u>	<u>3,395</u>	<u>3,995</u>
<i>Noncurrent Liabilities</i>			
Total Liabilities	<u>600</u>	<u>3,395</u>	<u>3,995</u>
NET POSITION			
Net Investment in Capital Assets	662,184	126,426	788,610
<i>Restricted for:</i>			
Nonspendable Endowment	--	5,675	5,675
<i>Unrestricted</i>	407,784	293,476	701,260
Total Net Position	<u>\$ 1,069,968</u>	<u>\$ 425,577</u>	<u>\$ 1,495,545</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Combining Statement of Activities
Component Units
For the Year Ended June 30, 2018

	<u>DDA</u>	<u>Indian River Area Library</u>	<u>Total Component Units</u>
Expenses			
Community and Economic Development	\$ 67,755	\$ --	\$ 67,755
Recreation and Culture	--	100,204	100,204
Total Expenses	<u>67,755</u>	<u>100,204</u>	<u>167,959</u>
Program Revenues			
Charges for services	645	5,618	6,263
Operating grants and contributions	--	24,220	24,220
Total Program Revenues	<u>645</u>	<u>29,838</u>	<u>30,483</u>
Net Program Revenues (Expenses)	<u>(67,110)</u>	<u>(70,366)</u>	<u>(137,476)</u>
General Revenue			
Property Taxes	79,674	58,758	138,432
Intergovernmental	--	22,043	22,043
Interest Income	351	3,797	4,148
Total General Revenues	<u>80,025</u>	<u>84,598</u>	<u>164,623</u>
Change in Net Position	<u>12,915</u>	<u>14,232</u>	<u>27,147</u>
<i>Net Position at Beginning of Period</i>	1,057,053	411,345	1,468,398
Net Position at End of Period	<u>\$ 1,069,968</u>	<u>\$ 425,577</u>	<u>\$ 1,495,545</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Notes to the Financial Statements

Township of Tuscarora

Notes to the Financial Statements

Note 1 – Summary of Significant Accounting Policies

The financial statements of Tuscarora Township, Cheboygan County, Michigan (the “Township” or “government”) have been prepared in conformity with generally accepted accounting principles (GAAP) as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard setting body for establishing governmental accounting and financial reporting principles. The more significant of the Township’s accounting policies are described below.

Reporting Entity

Tuscarora Township is an unincorporated Township, which operates under a Supervisor Board form of government. The Township provides the following services: public safety, highways and streets, public improvements, sewer, and general administrative services. The Township has considered all potential component units in evaluating how to define the Township for financial reporting purposes. The decision to include a potential component unit in the reporting entity was made by applying the criteria set forth in Statement 61 of the Government Accounting Standards Board (GASB), *The Financial Reporting Entity*. The basic criteria includes the appointment of a voting majority of the governing board of the unit; legal separation of the Township and the component unit, fiscal independence of the unit, whether exclusion of the unit would make the Township’s financial statements misleading, and whether there is a potential for the organization to provide specific financial benefits to, or impose specific financial burdens on the Township. There are two component units to be included in these statements.

Discretely Presented Component Units

Downtown Development Authority

The Downtown Development Authority, which was established pursuant to the provisions of Act 197 of 1975, as amended, is governed by the Township Supervisor and an eight-member board. The Authority may issue debt subject to the limitations set forth in the Act and is funded by a specified annual property tax capture of a portion of the Township and County levies which may only be used for activities within the downtown district. The Township also has the ability to significantly influence operations of the Downtown Development Authority. Complete financial statements for the component unit are not separately prepared.

Indian River Library

The Township Library, which was established pursuant to the provisions of Public Act 164 of 1877, as amended, is governed by a six-person Board of Directors elected through general elections. The Library may issue debt subject to the limitations set forth in the Act and is funded by an annual property tax levy and county penal fines. Complete financial statements for the component unit are not separately prepared.

Township of Tuscarora

Notes to the Financial Statements

Government-wide and Fund Financial Statements

The government-wide financial statements (i.e., the statement of net position and the statement of activities) report information on all of the nonfiduciary activities of the primary government and its component units. For the most part, the effect of interfund activity has been removed from these statements. Governmental activities, which normally are supported by taxes and intergovernmental revenues, are reported separately from business-type activities, which rely to a significant extent on fees and charges for support. Likewise, the primary government is reported separately from the legally separate component units for which the primary government is financially accountable.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segments are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function or segment. Program revenues include (1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and (2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported instead as general revenues.

Separate financial statements are provided for governmental funds and proprietary funds. Major individual governmental funds and major individual enterprise funds are reported as separate columns in the fund financial statements.

Measurement Focus, Basis of Accounting and Financial Statement Presentation

The government-wide financial statements are reported using the *economic resources measurement focus* and the *accrual basis of accounting*, as are the proprietary fund and fiduciary fund financial statements. The fiduciary fund financial statements use the economic resources measurement focus, although the agency funds do not have a measurement focus. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the have been met.

Governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the Township considers revenues to be available if they are collected within 60 days of the end of the current fiscal period or within one year for expenditure driven grants. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service and accrued employee benefit expenditures are recorded only when payment is due.

Township of Tuscarora

Notes to the Financial Statements

Property taxes, intergovernmental revenue, charges for services, and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. All other revenue items are considered to be measurable and available only when cash is received by the Township.

The Township reports the following major governmental funds:

The ***general fund*** is the Township's primary operating fund. It accounts for all financial resources of the general government, except those accounted for and reported in another fund.

The ***police fund*** accounts for revenues and expenditures directly attributable to police operations. Revenue is primarily generated from property taxes.

The Township reports the following major proprietary fund:

The ***sewer fund*** accounts for the cost of collecting and treating wastewater. Revenues are primarily from service charges to customers, grants, and special assessments. These revenues are also used to pay principal and interest on revenue bonds which were used to finance improvements to the system.

Additionally, the government reports the following fund types:

Special revenue funds are used to account for and report the proceeds of specific revenue sources that are restricted or committed to expenditure for specific purposes other than debt service or capital projects.

Debt service funds are used to account for all financial resources restricted, committed or assigned to expenditure for principal and interest.

Capital project funds account for the accumulation and disbursement of resources for the construction of governmental fund capital projects.

Agency funds are used to account for assets held on behalf of outside parties, including other governments.

As a general rule the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are payments-in-lieu of taxes and other charges between the Township's sewer function and various other functions of the government. Elimination of these charges would distort the direct costs and program revenues reported for the various functions concerned.

Proprietary funds distinguish *operating* revenues and expenses from *non-operating* items. Operating revenues and expenses generally result from providing services and producing and

Township of Tuscarora

Notes to the Financial Statements

delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the enterprise funds are charges for services. Operating expenses for the enterprise funds include depreciation on capital assets, labor, supplies and contracted services. All revenues and expenses are not meeting this definition are reported as nonoperating revenues and expenses.

Assets, Liabilities, and Equity

Cash and Cash Equivalents

The Township's cash and cash equivalents include amounts in demand deposit accounts, certificates of deposit, and short-term investments with original maturities of three months or less from the date of acquisition. Certificates of deposit are carried at cost plus accrued interest, since the original maturity dates are less than one year.

Investments

Investments consist of the Township's share in an external investment pool and are reported at fair value. This investment pool operates in a manner consistent with the Securities and Exchange Commission's Rule 2a(7) of the Investment Company Act of 1940.

Restricted Assets

Assets which are restricted for specified uses by bond debt requirements are classified as restricted assets. Liabilities payable for such restricted assets are separately classified.

Receivables

All receivables are reported at their gross value and, where appropriate, are reduced by the estimated portion that is expected to be uncollectible. No amounts outstanding at June 30, 2017 were identified by as being uncollectible.

Capital Assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, and similar items), are reported in the governmental and business-type activities columns in the government-wide financial statements. Capital assets are defined by the government as assets with an individual cost of more than \$1,000 and an estimated useful life in excess of five years. Such assets are valued at cost where historical records are available and at an estimated historical cost if purchased or constructed. Donated capital assets are recorded at replacement value at the date of donation.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend asset lives are not capitalized. Major outlays of capital assets and improvement are

Township of Tuscarora

Notes to the Financial Statements

capitalized and depreciated over the remaining useful lives of the related capital assets, as applicable.

No interest expense has been incurred or capitalized on capital assets reported in proprietary funds.

Depreciation on capital, assets (including infrastructure) of the primary government is computed using the straight-line method over the following estimated useful lives:

	<u>Years</u>
Land Improvements	15
Buildings and Improvements	10 - 40
Sewer Infrastructure	30 - 50
Vehicles, Machinery, and Equipment	5 - 10

The Township reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset exceeds its fair value. If it is determined that an impairment loss has occurred, the asset is written down to its net realizable value and a current charge to income is recognized.

Deferred Outflows of Resources

In addition to assets, the balance sheet will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The amounts will be amortized to pension expense within five years.

Deferred Inflows of Resources

In addition to liabilities, the fund level balance sheet or statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of fund balance/net position that applies to a future period and so will not be recognized as an inflow of resources (revenue) until that time.

Pension

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Municipal Employees Retirement System (MERS) of Michigan and additions to/deductions from MERS' fiduciary net position have been determined on the same basis as they are reported by MERS. For this purpose, benefit payments (including refunds of employee

Township of Tuscarora

Notes to the Financial Statements

contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Compensated Absences

Under terms of Township policies, eligible employees are granted vacation, sick, and compensatory time in varying amounts based on length of service. Sick and vacation pay is accrued when incurred in the government-wide financial statements. A liability for these amounts is reported in governmental funds only if they have maturity, for example, as a result of employee resignations and retirements.

Long-term Obligations

In the government-wide financial statements and proprietary fund types in the fund financial statements, the long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type statement of net position. For new bond issuances of governmental funds after the implementation of GASB Statement No. 34 and all proprietary fund bond premiums and discounts are deferred and amortized over the life of the bonds using the straight-line method which approximates the effective interest method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are recognized as an expense in the period that the bond was issued.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

Deferred Inflows of Resources

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The governmental funds report unavailable revenues, which arises only under a modified accrual basis of accounting, from special assessments. These amounts are deferred and recognized as an inflow of resources in the period that the amount becomes available.

Net Position Flow Assumption

Sometimes the government will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted – net position and unrestricted – net position in the government-wide and

Township of Tuscarora

Notes to the Financial Statements

proprietary fund financial statements, a flow assumption must be made about the order in which the resources are considered to be applied.

It is the government's policy to consider restricted – net position to have been depleted before unrestricted – net position is applied.

Fund Balance Flow Assumptions

Sometimes the government will fund outlays for a particular purpose from both restricted and unrestricted resources (the total of committed, assigned, and unassigned fund balance). In order to calculate the amounts to report as restricted, committed, assigned, and unassigned fund balance in the governmental fund financial statements a flow assumption must be made about the order in which the resources are considered to be applied. It is the government's policy to consider restricted fund balance to have been depleted before using any of the components of unrestricted fund balance. Further, when the components of unrestricted fund balance can be used for the same purpose, committed fund balance is depleted first, followed by assigned fund balance. Unassigned fund balance is applied last.

Fund Balance Policies

Fund balance is essentially the difference between the assets and liabilities reported in governmental fund. There are five separate components of fund balance, each of which identifies the extent to which the Township is bound to honor constraints on the specific purpose for which amounts can be spent.

1. Non-spendable fund balance (*inherently non-spendable*)
2. Restricted fund balance (*externally enforceable limitations on use*)
3. Committed fund balance (*self-imposed limitations on use*)
4. Assigned fund balance (*limitation resulting from intended use*)
5. Unassigned fund balance (*the residual classification of the general fund*)

Non-spendable and Restricted Funds - Non-spendable funds are those fund that cannot be spent because they are either (a) not in spendable form – inventories and prepaids - or (b) legally or contractually required to be maintained intact – long-term receivables.

Restricted funds are those funds that have constraints placed on their use by an external party or constitutional provisions or enabling legislations (grants, contributions, specific fee mandates). Non-spendable and Restricted Funds will be maintained and then summarized in the Township's annual financial report by the Townships financial staff.

Committed Funds - In order to commit fund balance, the Township Board, as the highest level of decision making authority, must pass a Resolution to Commitment funds for a specific purpose. These funds must be fully expended for their committed purpose. To make committed funds

Township of Tuscarora

Notes to the Financial Statements

uncommitted, a new resolution must be passed by the Board. Action must be taken before the last day of the fiscal year to commit funds for that year.

Assigned Funds - Assigned funds are amounts that are constrained by the Township's intent to be used for specific purposes, but are neither restricted nor committed. These amounts can be "assigned" by the Township Supervisor, or his/her designee.

Minimum Unassigned Fund Balance - The Township is committed to maintaining a prudent level of financial resources to protect against the need to reduce service levels because of temporary revenue shortfalls or unpredicted expenditures. The goal of the Township Board shall be to maintain a minimum unassigned fund balance of no less than 50% of General Fund expenditures. For purposes of this calculation, "expenditures" will be the annual budgeted expenditures less non-recurring capital expenditures.

If unassigned fund balance approaches a level that greatly exceeds 50% of expenditures, the Township Board will consider using unassigned fund balance for the following purposes: pay down future debt, transfer funds to a Capital Projects fund for future Capital improvements, and other future obligations of the Township.

Fund balance levels will be analyzed each fiscal year after the financial statement audit.

Property Tax Revenue Recognition

Property taxes are levied as of December 1 of each year and are due by February 15 of the following calendar year. Any amounts not received by February 28 are added to the County tax rolls. The Township receives 100% payment for the delinquent taxes by June 30. The Township bills and collects its own property taxes and also taxes for other governmental units. Collections of the other governmental units' taxes and remittance of them to the units are accounted for in the tax collection fund (a fiduciary fund).

The taxable value of the Township totaled \$227,065,886, on which ad valorem taxes consisted of .9971 mills for the Township's operating purposes, .1716 mills for lights, .7270 mills for the fire protection, 3.9948 mills for police protection, and .2591 mills for the component unit library operations.

Interfund Transactions

During the course of normal operations, the Township has numerous transactions between funds, including expenditures and transfers of resources to provide services, construct assets, and service debt. The accompanying financial statements generally reflect such transactions as transfers. Operating subsidies are also recorded as transfers. The amounts recorded as subsidies or advances are determined by the Township.

Township of Tuscarora

Notes to the Financial Statements

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results may differ from those estimates.

Budgetary and Budgetary Accounting

All governmental funds are under formal budgetary control. Budgets shown in the financial statements as “GAAP Basis” are adopted on a basis consistent with generally accepted accounting principles (GAAP) and are not significantly different from the modified accrual basis used to reflect actual results, and consist only of those amounts contained in the formal budget approved and amended by the Township Board. Budgets are adopted on the activity level and control is exercised on that same level.

Note 2 – Statutory Compliance

P.A. 621 of 1978, as amended, provides that a local unit shall not incur expenditures in excess of the amount budgeted. Budgetary control is exercised at the activity level in the general fund and the functional level in other funds.

The Township had the following expenditures in excess of the amounts appropriated during the year ended June 30, 2018:

	Amended Budget	Actual	Variance
General Fund			
Treasurer	\$ 34,165	34,421	\$ (256)
Capital Outlay	47,000	53,003	(6,003)

Note 3 - Cash and Investments

The captions on the government-wide and fund statements relating to cash and investments are as follows:

	Governmental Activities	Business-type Activities	Primary Government	Component Units	Fiduciary Fund
Statement of Net Position					
Cash and Cash Equivalents	\$ 1,359,285	\$ 255,853	\$ 1,615,138	\$ 676,464	\$ 5,823
Investments	-	-	-	8,354	-
Restricted Cash		410,719	410,719	-	-
Investments - Endowment	-	-	-	5,675	-
Total Deposits and Investments	\$ 1,359,285	\$ 666,572	\$ 2,025,857	\$ 690,493	\$ 5,823

Township of Tuscarora

Notes to the Financial Statements

These deposits are held in two financial institutions, both of which are located in Michigan. State policy limits the Treasurer's investing options as described in detail below. All accounts are in the name of the Township and a specific fund or common account. Deposits and investments are recorded in Township records at fair value. Interest is recorded when earned.

Deposits and Investments

Checking and Savings Accounts	\$ 2,707,999
Investments	14,029
Cash on Hand	<u>145</u>
Total Deposits and Investments	<u>\$ 2,722,173</u>

Custodial Credit Risk - Deposits. Custodial credit risk is the risk that, in the event of a bank failure, the Township's deposits might not be returned. State law does not require, and the Township does not have, a policy for deposit custodial credit risk. As of year-end, \$2,006,769 of the Township's bank balance of \$2,708,418, was exposed to custodial credit risk because it was uninsured and uncollateralized. Due to the dollar amounts of cash deposits and the limits of FDIC and NCUA insurances, the Township believes it is impractical to insure all bank deposits. As a result, the Township evaluates each financial institution with which it deposits Township funds and assesses the level of risk of each institution; only those institutions with an acceptable estimated risk level are used as depositories.

Statutory Authority

State statutes authorize the Township to invest in:

- a. Bonds, securities, other obligations, and repurchase agreements of the United States of America, or an agency or instrumentality of the United States of America.
- b. Certificates of deposit, savings accounts, deposit accounts, or depository receipts of a qualified financial institution.
- c. Commercial paper rated at the time of purchase within the two highest classifications established by not less than two standard rating services and that matures not more than 270 days after the date of purchase.
- d. Bankers' acceptances of United States banks.
- e. Obligations of the State of Michigan and its political subdivisions that, at the time of purchase are rated as investment grade by at least one standard rating service.
- f. Mutual funds registered under the Investment Company Act of 1940 with the authority to purchase only investment vehicles that are legal for direct investment by a public corporation.

Township of Tuscarora

Notes to the Financial Statements

- g. External investment pools as authorized by Public Act 20 as amended through December 31, 1997.

Fair Value Measurement

The Township categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

The Township has the following recurring fair value measurements as of June 30, 2018:

- All investments held at the Community Foundation of Northeast Michigan, with a balance of \$14,029 at June 30, 2018, are valued using Level 2 inputs.

Note 4 - Capital Assets

Capital asset activities for governmental activities for the year ended June 30, 2018 were as follows:

Governmental Activities	<u>June 30, 2017</u>	<u>Additions</u>	<u>Disposals</u>	<u>June 30, 2018</u>
Capital Assets not being Depreciated				
Land	\$ 1,383,282	\$ -	\$ -	\$ 1,383,282
Capital Assets being Depreciated				
Land Improvements	2,556,611	-	-	2,556,611
Buildings and Improvements	1,294,142	-	-	1,294,142
Vehicles	157,255	20,915	-	178,170
Equipment	388,757	47,102	-	435,859
Total Capital Assets being Depreciated	<u>4,396,765</u>	<u>68,017</u>	<u>-</u>	<u>4,464,782</u>
Less Accumulated Depreciation				
Land Improvements	1,174,349	139,699	-	1,314,048
Buildings and Improvements	789,297	36,007	-	825,304
Vehicles	93,296	18,064	-	111,360
Equipment	322,358	14,629	-	336,987
Total Accumulated Depreciation	<u>2,379,300</u>	<u>208,399</u>	<u>-</u>	<u>2,587,699</u>
Net Capital Assets being Depreciated	<u>2,017,465</u>	<u>(140,382)</u>	<u>-</u>	<u>1,877,083</u>
Net Capital Assets	<u>\$ 3,400,747</u>	<u>\$ (140,382)</u>	<u>\$ -</u>	<u>\$ 3,260,365</u>

Township of Tuscarora

Notes to the Financial Statements

Capital asset activities for business-type activities for the year ended June 30, 2018 were as follows:

Business-type Activities	<u>June 30, 2017</u>	<u>Additions</u>	<u>Disposals</u>	<u>June 30, 2018</u>
Capital Assets not being Depreciated				
Land	\$ 178,618	\$ -	\$ -	\$ 178,618
Capital Assets being Depreciated				
Sewer System	5,814,433	-	-	5,814,433
Machinery and Equipment	182,637	6,681	-	189,318
Total Capital Assets being Depreciated	<u>5,997,070</u>	<u>6,681</u>	<u>-</u>	<u>6,003,751</u>
Less Accumulated Depreciation				
Sewer System	115,900	116,289	-	232,189
Machinery and Equipment	11,310	12,176	-	23,486
Total Accumulated Depreciation	<u>127,210</u>	<u>128,464</u>	<u>-</u>	<u>255,674</u>
Net Capital Assets being Depreciated	<u>5,869,860</u>	<u>(121,783)</u>	<u>-</u>	<u>5,748,077</u>
Net Capital Assets, Business-type	<u>\$ 6,048,478</u>	<u>\$ (121,783)</u>	<u>\$ -</u>	<u>\$ 5,926,695</u>

Capital asset activities for the component unit activities for the year ended June 30, 2018 were as follows:

Component Unit - DDA	<u>June 30, 2017</u>	<u>Additions</u>	<u>Disposals</u>	<u>June 30, 2018</u>
Capital assets being depreciated				
Land Improvements	\$ 737,066	\$ -	\$ -	\$ 737,066
Less Accumulated Depreciation				
Land Improvements	44,511	30,371	-	74,882
Net Capital Assets, DDA	<u>\$ 692,555</u>	<u>\$ (30,371)</u>	<u>\$ -</u>	<u>\$ 662,184</u>

Township of Tuscarora

Notes to the Financial Statements

Component Unit -

Indian River Area Library	June 30, 2017	Additions	Disposals	June 30, 2018
Capital assets being depreciated				
Books and Periodicals	\$ 194,621	\$ 28,076	\$ -	\$ 222,697
Buildings and Improvements	38,865	-	-	38,865
Equipment	129,028	-	-	129,028
Total Capital Assets being Depreciated	362,514	28,076	-	390,590
Less Accumulated Depreciation				
Books and Periodicals	109,162	18,998		128,160
Buildings and Improvements	5,570	3,367		8,937
Equipment	126,317	750		127,067
Total Accumulated Depreciation	241,049	23,115	-	264,164
Net Capital Assets, Library	\$ 121,465	\$ 4,961	\$ -	\$ 126,426

Depreciation expense was charged to functions of the Township as follows:

Governmental Activities

General Government	\$ 46,275
Public Safety	27,276
Recreation and Culture	134,848
Total Governmental Activities	\$ 208,399

Business-type Activities

Sewer Fund	\$ 128,464
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Discretely Presented Component Units

Tuscarora Township DDA

Community and Economic Development	\$ 30,371
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Indian River Area Library

Recreation and Culture	23,115
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Total Discretely Presented Component Units	\$ 181,951
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Township of Tuscarora

Notes to the Financial Statements

Note 5 - Interfund Transactions

The composition of interfund balances as of June 30, 2018 was as follows:

Receivable Fund	Payable Fund	Amount
2016 Special Assessment	General	\$ 70,612
Sewer	General	3,500

All amounts due from other funds represent advances to other funds to finance operations or capital outlays.

There composition of interfund transfers for the year ended June 30, 2018 was as follows:

Transfer In	Transfer Out	Amount
General	Parks and Recreation	\$ 34,427

The transfers out were intended to close out the Parks and Recreation fund.

Note 6 - Long-term Debt

Long-term debt activity for the year ended June 30, 2018 was as follows:

	6/30/2017	Additions	Reductions	6/30/2018	Due Within One Year
Governmental Activities:					
2016 Special Assessment bonds - Eagles Nest	\$ 87,000	\$ -	\$ 21,000	\$ 66,000	\$ 21,000
Compensated Absences	22,954	4,047	-	27,001	-
Total Governmental Activities	109,954	4,047	21,000	93,001	66,000
Business-type Activities:					
2014 Sewer Special Assessment Bonds used to finance sewer project. \$2,411,000 at 2.625% Interest. Payments to be made through 2052.	2,222,000	-	63,000	2,159,000	63,000
Total Business-type Activities	\$ 2,222,000	\$ -	\$ 63,000	\$ 2,159,000	\$ 63,000
Total Long-term Debt	\$ 2,331,954	\$ 4,047	\$ 84,000	\$ 2,252,001	\$ 129,000

Township of Tuscarora

Notes to the Financial Statements

The annual requirements, excluding accrued employee benefits, to maturity on the total long-term debt obligations outstanding at June 30, 2018 are as follows:

Year Ending June 30	Governmental Activities		
	Principal	Interest	Total
2019	\$ 21,000	\$ 1,716	\$ 22,716
2020	21,000	1,170	22,170
2021	24,000	624	24,624
Totals	\$ 66,000	\$ 3,510	\$ 69,510

Year Ending June 30	Business-type Activities		
	Principal	Interest	Total
2019	\$ 63,000	\$ 58,328	\$ 121,328
2020	63,000	56,674	119,674
2021	63,000	55,020	118,020
2022	63,000	53,366	116,366
2023	63,000	51,713	114,713
2024-2028	311,000	234,045	545,045
2030-2034	315,000	192,938	507,938
2035-2039	317,000	151,515	468,515
2040-2044	320,000	109,594	429,594
2045-2049	321,000	67,568	388,568
2050-2052	260,000	23,468	283,468
Totals	\$ 2,159,000	\$ 1,054,229	\$ 3,213,229

Note 7 - Risk Management

The Township is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees (workers' compensation); and natural disasters. During the year ended June 30, 2018, the Township carried commercial insurance to cover all risks of loss. The Township has had no settled claims resulting from these risks that exceeded their commercial coverage in any of the past three fiscal years. There was no significant change in coverage during the year.

Township of Tuscarora

Notes to the Financial Statements

Note 8 - Defined Benefit Pension Plan

Plan Description

Benefits Provided

Plan Description. The employer’s defined benefit pension plan provides certain retirement, disability, and death benefits to plan members and beneficiaries. The employer participates in the Municipal Employees Retirement System (MERS) of Michigan. MERS is an agent multiple-employer, statewide public employee pension plan established by the Michigan Legislature under Public Act 135 of 1945 and administered by a nine member Retirement Board. Public Act 427 of 1984, as amended, establishes and amends the benefit provisions of the participants in MERS. MERS issues a publicly available financial report that includes financial statements and required supplementary information. This report may be obtained accessing the MERS website at www.mersofmich.com.

Retirement benefits for employees are calculated as follows:

<u>Division</u>	<u>Benefit Multiplier</u>	<u>Employee Contributions</u>	<u>Benefit Maximum</u>	<u>Final Average Compensation (Years)</u>	<u>Normal Retirement Age</u>	<u>Unreduced Benefit (Age/Years of Service)</u>	<u>Reduced Benefit (Age/Years of Service)</u>	<u>Vesting (Years)</u>
Police	2.50%	0.00%	80%	5	60	55/20	50/25 or 55/15	10

Benefit terms, within the parameters established by MERS, are generally established and amended by authority of the Township Board of Trustees, generally after negotiations of these terms with the affected unions.

Employees Covered by Benefit Terms

At the December 31, 2017 measurement date, the following employees were covered by the benefit terms:

Inactive plan members or beneficiaries currently receiving benefits	4
Inactive plan members entitled to but not yet receiving benefits	1
Active plan members	8
Total employees covered by MERS	13

Contributions

Article 9, Section 24 of the State of Michigan constitution requires that financial benefits arising on account of employee service rendered in each year be funded during that year. Accordingly, MERS retains an independent actuary to determine the annual contribution. The employer is required to contribute amounts at least equal to the actuarially determined rate, as established by

Township of Tuscarora

Notes to the Financial Statements

the MERS retirement board. The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by plan members during the year, with an additional amount to finance any unfunded accrued liability. The employer may establish contribution rates to be paid by its covered employees.

For the year ended December 31, 2017, the Township contributed \$92,739 to the plan and the employees did not contribute to the plan.

Net Pension Liability

The net pension liability reported at June 30, 2018 was determined using a measure of the total pension liability and the pension net position as of December 31, 2017. The December 31, 2017 total pension liability was determined by an actuarial valuation performed as of that date.

Changes in the net pension liability during the measurement year were as follows:

Changes in Net Pension Liability	Total Pension Liability	Plan Net Position	Net Pension Liability
Balance at December 31, 2016	\$ 2,282,831	\$ 1,519,447	\$ 763,384
Service cost	51,118	-	51,118
Interest	181,306	-	181,306
Difference between expected and actual experience	(3,609)	-	(3,609)
Changes in benefits	-	-	-
Contributions - employer	-	92,739	(92,739)
Contributions - employee	-	-	-
Net investment income	-	202,446	(202,446)
Benefit payments, including refunds	(84,124)	(84,124)	-
Administrative expenses	-	(3,200)	3,200
Net changes	144,691	207,861	(63,170)
Balance at December 31, 2017	\$ 2,427,522	\$ 1,727,308	\$ 700,214

Net pension liabilities are generally liquidated by the general and police fund within governmental activities.

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended June 30, 2018, the Township recognized pension expense of \$ 127,651. At June 30, 2018, the Township reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

Township of Tuscarora

Notes to the Financial Statements

Source	Deferred Outflows of Resources	Deferred Inflows of Resources
Net difference between projected and actual earnings on pension plan investments	\$ -	\$ 34,833
Net difference in experience	10,520	72,251
Net difference in assumptions	66,908	-
Employer contributions to the plan subsequent to the measurement date	47,635	-
Total	\$ 125,063	\$ 107,084

Amounts reported as deferred outflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended	Amount
June 30	
2019	\$ 13,801
2020	8,963
2021	(17,773)
2022	(34,047)
2023	(600)

Actuarial Assumptions

The total pension liability in the December 31, 2017 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation: 2.5%

Salary Increases: base wage inflation of 3.75% in the long-term.

Investment rate of return: 7.75%, net of investment expense and administrative expense including inflation.

Mortality rates used for non-disabled plan member were based on a weighted blend of RP-2014 mortality tables of a 50% Male and 50% Female blend.

The actuarial assumptions used in the valuation were based on the results of the most recent actuarial experience study.

The long-term expected rate of return on pension plan investments was determined using a model method in which the best-estimate ranges of expected future real rates of return (expected returns, net of investment and administrative expenses and inflation) are developed for each major asset

Township of Tuscarora

Notes to the Financial Statements

class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>
Global equity	57.5%
Global fixed income	20.0%
Real assets	12.5%
Diversifying strategies	10.0%
	<u>100.0%</u>

Discount Rate

The discount rate used to measure the total pension liability is 8.00%. The projection of cash flows used to determine the discount rate assumes that employer and employee contributions will be made at the rates agreed upon for employees and the actuarially determined rates for employers. Based on these assumptions, the pension plan’s fiduciary net position was projected to be available to pay all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the Township, calculated using the discount rate of 8.00 percent, as well as what the Township’s net pension liability would be if it were calculated using a discount rate that is one percentage point lower (7.00 percent) or one percentage point higher (9.00 percent) than the current rate:

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Net pension liability of the Township	<u>\$ 1,041,620</u>	<u>\$ 700,214</u>	<u>\$ 414,410</u>

Township of Tuscarora

Notes to the Financial Statements

Pension Plan Fiduciary Net Position

Detailed information about the pension plan’s fiduciary net position is available in the separately issued plan financial statements.

Note 9 - Subsequent Events

Subsequent events have been evaluated through December 17, 2018, the date the financial statements were available to be issued. Management is not aware of any subsequent events that would have a significant effect on the financial condition of the Township.

Note 10 - Restricted Cash

Restricted cash in the sewer fund is required by the United States Department of Agriculture - Rural Development (the “USDA”) to be maintained at levels consistent with the Township’s bond agreements. Repair, Replacement, and Improvement account funds may be used for the repair, replacement, and improvement of the Township’s sewer system. Restricted cash related to USDA bonds consists of the following:

	June 30, 2018		June 30, 2017	June 30, 2016
<u>Business-type Activities</u>	Required Balance	Actual Balance	Actual Balance	Actual Balance
<i>Repair, Replacement, and Improvement</i>				
2014 Issue, \$10,693 per year	\$ 42,772	\$ 43,826	\$ 33,088	\$ 10,707

Note 11 – Tax Abatements

Governmental Accounting Standards Board (GASB) Statement No. 77 “Tax Abatement Disclosures” requires that State and local governments that have entered into tax abatement agreements disclose information related to those agreements. The Township did not have any active tax abatement agreements at June 30, 2018.

Required Supplementary Information

Township of Tuscarora
Schedule of Revenues, Expenditures, and Changes in Fund Balance-Budget and Actual
General Fund
For the Year Ended June 30, 2018

	Budgeted Amounts		Actual	Variance
	Original	Final		Positive (Negative) Final to Actual
Revenues				
Taxes	\$ 511,550	\$ 511,550	\$ 512,794	\$ 1,244
Special Assessments	5,480	5,480	6,049	569
Intergovernmental	244,000	244,000	250,932	6,932
Grants	--	5,000	5,000	--
Charges for Services	44,850	45,450	53,237	7,787
Refunds and Reimbursements	--	1,500	1,051	(449)
Other	4,000	4,000	37,446	33,446
Nonoperating revenues	--	--	78	78
Interest Income	1,665	1,665	3,690	2,025
Total Revenues	<u>811,545</u>	<u>818,645</u>	<u>870,277</u>	<u>51,632</u>
Other Financing Sources				
Transfers In	--	--	34,427	34,427
Total Revenues and Other Financing Sources	<u>811,545</u>	<u>818,645</u>	<u>904,704</u>	<u>86,059</u>
Expenditures				
General Government				
Township Board	95,497	113,597	81,238	32,359
Supervisor	25,620	25,620	24,200	1,420
Clerk	39,720	39,720	34,870	4,850
Board of Review	2,200	2,200	1,683	517
Treasurer	33,765	34,165	34,421	(256)
Assessor	79,170	79,170	62,019	17,151
Cemetery	21,750	21,750	11,525	10,225
Elections	8,800	8,800	514	8,286
Building and Grounds	22,700	31,700	25,457	6,243
Other	10,000	6,000	1,738	4,262
Total General Government	<u>339,222</u>	<u>362,722</u>	<u>277,665</u>	<u>85,057</u>
Public Safety - Fire Protection	161,640	161,640	161,640	--
Public Works				
Roads	64,000	42,600	14,090	28,510
Street Lighting	42,000	42,000	19,163	22,837
Sanitation	1,000	1,000	584	416
Airport	7,700	7,700	3,099	4,601
Total Public Works	<u>114,700</u>	<u>93,300</u>	<u>36,936</u>	<u>56,364</u>
Community and Economic Development - Planning	4,650	4,650	220	4,430
Recreation and Culture				
Parks	157,850	153,160	137,444	15,716
Boat Launch	35,020	43,210	39,328	3,882
Total Recreation and Culture	<u>192,870</u>	<u>196,370</u>	<u>176,772</u>	<u>19,598</u>
Debt Service				
Principal	15,400	--	--	--
Interest	2,200	--	--	--
Total Debt Service	<u>17,600</u>	<u>--</u>	<u>--</u>	<u>--</u>
Capital Outlay	30,000	47,000	53,003	(6,003)
Total Expenditures	<u>860,682</u>	<u>865,682</u>	<u>706,236</u>	<u>159,446</u>
Excess (Deficiency) of Revenues and Other Sources Over Expenditures	<u>(49,137)</u>	<u>(47,037)</u>	<u>198,468</u>	<u>245,505</u>
Net Change in Fund Balance	<u>(49,137)</u>	<u>(47,037)</u>	<u>198,468</u>	<u>245,505</u>
Fund Balance at Beginning of Period	589,626	589,626	589,626	--
Fund Balance at End of Period	<u>\$ 540,489</u>	<u>\$ 542,589</u>	<u>\$ 788,094</u>	<u>\$ 245,505</u>

Township of Tuscarora
Schedule of Revenues, Expenditures, and Changes in Fund Balance-Budget and Actual
Police
For the Year Ended June 30, 2018

	<u>Budgeted Amounts</u>		<u>Actual</u>	Variance
	<u>Original</u>	<u>Final</u>		Positive (Negative)
				<u>Final to Actual</u>
Revenues				
Taxes	\$ 884,670	\$ 884,670	\$ 880,467	\$ (4,203)
Intergovernmental	1,500	1,500	583	(917)
Charges for Services	10,000	10,000	24,731	14,731
Refunds and Reimbursements	--	--	2,249	2,249
Other	6,000	6,000	7,074	1,074
Interest Income	500	500	631	131
<i>Total Revenues</i>	<u>902,670</u>	<u>902,670</u>	<u>915,735</u>	<u>13,065</u>
Expenditures				
Public Safety - Police	926,919	935,419	879,540	55,879
Capital Outlay	--	18,500	15,015	3,485
<i>Total Expenditures</i>	<u>926,919</u>	<u>953,919</u>	<u>894,555</u>	<u>59,364</u>
<i>Excess (Deficiency) of Revenue</i>				
<i>Over Expenditures</i>	<u>(24,249)</u>	<u>(51,249)</u>	<u>21,180</u>	<u>72,429</u>
<i>Net Change in Fund Balance</i>	<u>(24,249)</u>	<u>(51,249)</u>	<u>21,180</u>	<u>72,429</u>
<i>Fund Balance at Beginning of Period</i>	444,923	444,923	444,923	--
<i>Fund Balance at End of Period</i>	<u>\$ 420,674</u>	<u>\$ 393,674</u>	<u>\$ 466,103</u>	<u>\$ 72,429</u>

Township of Tuscarora
Required Supplementary Information
Schedule of Changes in Net Pension Liability and Related Ratios
Last Four Fiscal Years (Schedule is built prospectively upon implementation of GASB 68)

	2018	2017	2016	2015
Total Pension Liability				
Service Cost	\$ 51,118	\$ 70,378	\$ 66,338	\$ 64,795
Interest	181,303	207,567	186,965	172,980
Changes in Benefit Terms	-	(409,343)	-	-
Differences Between Expected & Actual Experience	(3,609)	(103,865)	21,040	-
Changes in Assumptions	-	-	133,816	-
Benefit Payments, Including Refunds	(84,124)	(82,603)	(81,082)	(56,969)
Net Change in Pension Liability	<u>144,688</u>	<u>(317,866)</u>	<u>327,077</u>	<u>180,806</u>
<i>Total Pension Liability - Beginning</i>	2,282,831	2,600,697	2,273,620	2,092,814
Total Pension Liability - Ending (a)	<u>\$ 2,427,519</u>	<u>\$ 2,282,831</u>	<u>\$ 2,600,697</u>	<u>\$ 2,273,620</u>
Plan Fiduciary Net Position				
Contributions - Employer	\$ 92,739	\$ 86,165	\$ 91,211	\$ 93,992
Contributions - Member	-	5,905	15,816	14,615
Net Investment Income	202,443	156,459	(20,972)	79,029
Benefit Payments, Including Refunds	(84,124)	(82,603)	(81,082)	(56,969)
Administrative Expenses	(3,200)	(3,084)	(3,002)	(2,925)
Net Change in Plan Fiduciary Net Position	<u>207,858</u>	<u>162,842</u>	<u>1,971</u>	<u>127,742</u>
<i>Plan Fiduciary Net Position - Beginning</i>	1,519,447	1,356,605	1,354,634	1,226,892
Plan Fiduciary Net Position - Ending (b)	<u>\$ 1,727,305</u>	<u>\$ 1,519,447</u>	<u>\$ 1,356,605</u>	<u>\$ 1,354,634</u>
Net Pension Liability - Ending (a) - (b)	\$ 700,214	\$ 763,384	\$ 1,244,092	\$ 918,986
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	71.16%	66.56%	52.16%	59.58%
Covered Employee Payroll	\$ 467,843	\$ 465,158	\$ 451,893	\$ 441,383
Net Pension Liability as a Percentage of Covered Employee Payroll	149.67%	164.11%	275.31%	208.21%

* Built prospectively upon implementation on GASB 68

**Township of Tuscarora
Required Supplementary Information
Schedule of Contributions
Last Four Fiscal Years**

	2018	2017	2016	2015
Actuarially Determined Contribution	\$ 92,739	\$ 86,165	\$ 61,855	\$ 93,992
Contributions in Relation to the Actuarially Determined Contribution	92,739	86,165	61,855	93,992
Contribution Deficiency (Excess)	\$ -	\$ -	\$ -	\$ -
Covered Employee Payroll	467,843	465,158	451,893	441,383
Contributions as a Percentage of Covered Employee Payroll	20%	19%	14%	21%

Notes

Valuation Date

Actuarially determined contribution amounts are calculated as of December 31 each year, which is 18 months prior to the beginning of the fiscal year in which the contributions are required.

Methods and assumptions used to determine contribution rates

Actuarial cost method	Entry-age Normal
Amortization method	Level percentage of pay, open
Remaining amortization period	21 Years
Asset valuation method	5 year smoothed
Inflation	2.50%
Salary increases	3.75% - In the long term
Investment rate of return	7.75% net of investment and administrative expense including inflation
Retirement Age	Experience-based tables of rates that are specific to the type of eligibility condition
Mortality	50% Male - 50% Female blend of the 2014 Grouped Annuity Mortality

* Built prospectively upon implementation on GASB 68

OTHER SUPPLEMENTARY INFORMATION

**Township of Tuscarora
Combining Balance Sheet
Nonmajor Governmental Funds
June 30, 2018**

	<u>Debt Service</u>	<u>Capital Projects</u>	
	Assessment Bonds Debt Retirement	Parks and Recreation Millage	Total Nonmajor Governmental Funds
ASSETS			
Cash and Cash Equivalents	\$ 12,138	\$ --	\$ 12,138
Special Assessments	55,115	--	55,115
Due from Other Funds	70,612	--	70,612
<i>Total Assets</i>	<u>\$ 137,865</u>	<u>\$ --</u>	<u>\$ 137,865</u>
DEFERRED INFLOWS OF RESOURCES			
Unavailable Revenue	55,115	--	55,115
<i>Total Deferred Inflows of Resources</i>	<u>55,115</u>	<u>--</u>	<u>55,115</u>
FUND BALANCE			
Restricted	82,750	--	82,750
<i>Total Fund Balance</i>	<u>82,750</u>	<u>--</u>	<u>82,750</u>
<i>Total Deferred Inflows of Resources and Fund Balance</i>	<u>\$ 137,865</u>	<u>\$ --</u>	<u>\$ 137,865</u>

Township of Tuscarora
Combining Statement of Revenues, Expenditures, and Changes in Fund Balance
Nonmajor Governmental Funds
For the Year Ended June 30, 2018

	<u>Debt Service</u>	<u>Capital Projects</u>	
	Assessment Bonds Debt Retirement	Parks and Recreation Millage	<u>Total Nonmajor Governmental Funds</u>
Revenues			
Special Assessments	\$ 18,757	\$ --	\$ 18,757
Interest Income	2,719	35	2,754
Total Revenues	<u>21,476</u>	<u>35</u>	<u>21,511</u>
Expenditures			
Recreation and Culture	--	10,920	10,920
Debt Service - Principal	21,000	--	21,000
Debt Service - Interest	2,293	--	2,293
Total Expenditures	<u>23,293</u>	<u>10,920</u>	<u>34,213</u>
Excess of Revenues Over (Under) Expenditures	<u>(1,817)</u>	<u>(10,885)</u>	<u>(12,702)</u>
Other Financing Sources (Uses)			
Transfers Out	--	(34,427)	(34,427)
Net Other Financing Sources (Uses)	<u>--</u>	<u>(34,427)</u>	<u>(34,427)</u>
Net Change in Fund Balance	(1,817)	(45,312)	(47,129)
<i>Fund Balance at Beginning of Period</i>	84,567	45,312	129,879
Fund Balance at End of Period	<u>\$ 82,750</u>	<u>\$ --</u>	<u>\$ 82,750</u>

**Indian River Library
Statement of Net Position
June 30, 2018**

ASSETS

Current Assets

Cash and Cash Equivalents	\$	268,080
Investments		8,354
Accounts Receivable		20,437
<i>Total Current Assets</i>		296,871

Noncurrent Assets

Capital Assets being Depreciated, Net		126,426
Investments - Endowment		5,675
<i>Total Assets</i>		428,972

LIABILITIES

Current Liabilities

Accounts Payable		1,018
Payroll Liabilities		2,063
Due to Other Governments		314
<i>Total Liabilities</i>		3,395

NET POSITION

Investment in Capital Assets		126,426
<i>Restricted for:</i>		
Nonspendable Endowment		5,675
<i>Unrestricted</i>		293,476
<i>Total Net Position</i>	\$	425,577

**Indian River Library
Statement of Activities
For the Year Ended June 30, 2018**

Functions/Programs	Expenses	Program Revenues			Net (Expense) Revenue
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	
Governmental Activities:					
Recreation and Culture	\$ 100,204	\$ 5,618	\$ 24,220	\$ --	\$ (70,366)
<i>Total</i>	\$ 100,204	\$ 5,618	\$ 24,220	\$ --	\$ (70,366)
General Purpose Revenues:					
					58,758
					20,437
					1,606
					3,797
					84,598
					14,232
					<i>Net Position at Beginning of Period</i>
					411,345
					\$ 425,577

**Indian River Library
Balance Sheet
Governmental Fund
June 30, 2018**

	General
ASSETS	
Cash and Cash Equivalents	\$ 268,080
Investments	8,354
Accounts Receivable	20,437
Investments - Endowment	5,675
<i>Total Assets</i>	\$ 302,546
LIABILITIES	
Accounts Payable	\$ 1,018
Payroll Liabilities	2,063
Due to Other Governments	314
<i>Total Liabilities</i>	3,395
FUND BALANCE	
Nonspendable	5,675
Unassigned	293,476
<i>Total Fund Balance</i>	299,151
<i>Total Liabilities and Fund Balance</i>	\$ 302,546

Indian River Library
Reconciliation of Governmental Fund Balance Sheet to the Statement of Net Position
June 30, 2018

Total Fund Balance - Governmental Fund	\$ 299,151
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.	126,426
Total Net Position - Governmental Fund	\$ <u>425,577</u>

Indian River Library
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Fund
For the Year Ended June 30, 2018

	General
Revenues	
Property Taxes	\$ 58,758
Penal Fines	20,437
State Sources	1,606
Grants and Contributions	24,220
Charges for Services	2,802
Fines	772
Interest Income	3,797
Other Revenues	2,044
<i>Total Revenues</i>	114,436
Expenditures	
Salaries and Wages	43,972
Fringe Benefits	927
Postage	438
Supplies	1,564
Repairs and Maintenance	5,386
Utilities	8,970
Contracted Services	8,165
Printing and Publishing	1,208
Travel and Meals	123
Technology	54
Telephone	2,100
Other Expenditures	4,182
Capital Outlay	28,076
<i>Total Expenditures</i>	105,165
<i>Excess of Revenues Over</i>	
<i>(Under) Expenditures</i>	9,271
<i>Net Change in Fund Balance</i>	9,271
<i>Fund Balance at Beginning of Period</i>	289,880
<i>Fund Balance at End of Period</i>	\$ 299,151

Indian River Library
Reconciliation of Governmental Fund Statement of Revenues, Expenditures, and
Change in Fund Balance with Statement of Activities
For the Year Ended June 30, 2018

Total Net Change in Fund Balance - Governmental Fund	\$	9,271
--	----	-------

Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of these assets is allocated over their useful lives as depreciation expense. This is the amount by which capital outlay expenditures of \$28,076 exceed depreciation expense of \$23,115 during the current year.

4,961

Changes in Net Position - Governmental Fund	\$	<u>14,232</u>
--	-----------	----------------------

Township of Tuscarora DDA
Statement of Net Position
June 30, 2018

ASSETS

Current Assets

Cash and Cash Equivalents	\$	408,384
<i>Total Current Assets</i>		408,384

Noncurrent Assets

Capital Assets being Depreciated, Net		662,184
<i>Total Assets</i>		1,070,568

LIABILITIES

Current Liabilities

Due to Other Governments		600
<i>Total Liabilities</i>		600

NET POSITION

Investment in Capital Assets		662,184
<i>Unrestricted</i>		407,784
<i>Total Net Position</i>	\$	1,069,968

**Township of Tuscarora DDA
Statement of Activities
For the Year Ended June 30, 2018**

Functions/Programs	Expenses	Program Revenues			Net (Expense) Revenue
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	
Governmental Activities:					
Community and Economic Development	\$ 67,755	\$ 645	\$ --	\$ --	\$ (67,110)
<i>Total</i>	\$ 67,755	645	--	--	(67,110)
		General Purpose Revenues:			
		Property Taxes			79,674
		Interest			351
		<i>Total General Revenues</i>			80,025
		<i>Change in Net Position</i>			12,915
		<i>Net Position at Beginning of Period</i>			1,057,053
		<i>Net Position at End of Period</i>			\$ 1,069,968

**Township of Tuscarora DDA
Balance Sheet
Governmental Fund
June 30, 2018**

	General
ASSETS	
Cash and Cash Equivalents	\$ 408,384
<i>Total Assets</i>	\$ 408,384
LIABILITIES	
Due to Other Governments	\$ 600
<i>Total Liabilities</i>	600
FUND BALANCE	
Unassigned	407,784
<i>Total Fund Balance</i>	407,784
<i>Total Liabilities and Fund Balance</i>	\$ 408,384

Township of Tuscarora DDA
Reconciliation of Governmental Fund Balance Sheet to the Statement of Net Position
June 30, 2018

Total Fund Balance - Governmental Fund	\$ 407,784
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.	662,184
Total Net Position - Governmental Fund	\$ <u>1,069,968</u>

Township of Tuscarora DDA
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Fund
For the Year Ended June 30, 2018

	General
Revenues	
Property Taxes	\$ 79,674
Other Revenues	645
Interest	351
<i>Total Revenues</i>	80,670
Expenditures	
Community and Economic Development	37,384
<i>Total Expenditures</i>	37,384
<i>Excess of Revenues Over</i>	
<i>(Under) Expenditures</i>	43,286
<i>Net Change in Fund Balance</i>	43,286
<i>Fund Balance at Beginning of Period</i>	364,498
<i>Fund Balance at End of Period</i>	\$ 407,784

Township of Tuscarora DDA
Reconciliation of Governmental Fund Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2018

Total Net Change in Fund Balance - Governmental Fund \$ 43,286

Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of these assets is allocated over their useful lives as depreciation expense. This is the amount by which depreciation expense of \$30,371 exceeds capital outlay of \$0 during the current year.

(30,371)

Changes in Net Position - Governmental Fund

\$ 12,915

December 14, 2018

To the Board of Trustees
Township of Tuscarora, Michigan

We have audited the financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township of Tuscarora for the year ended June 30, 2018. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards and *Government Auditing Standards* as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated October 18, 2018. Professional standards also require that we communicate to you the following information related to our audit.

Significant Audit Findings

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the Township are described in Note 1 to the financial statements. We noted no transactions entered into by the Township during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the Township's financial statements were:

- Management's estimate of the useful lives of depreciable capital assets is based on the length of time it is believed that those assets will provide some economic benefit in the future.
- Management's estimate of the accrued compensated absences is based on current hourly rates and policies regarding payment of sick and vacation banks.
- The assumptions used in the actuarial valuations of the pension plans are based on historical trends and industry standards.

We evaluated the key factors and assumptions used to develop the estimates in determining that it is reasonable in relation to the financial statements taken as a whole.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated December 14, 2018.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the Township's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the Township's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Other Matters

We applied certain limited procedures to management's discussion and analysis, pension schedules, and budgetary comparison schedules, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were engaged to report on the combining statements and individual fund statements and the schedule of expenditures of federal awards, which accompany the financial statements but are not

RSI. With respect to this supplementary information, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

Restriction on Use

This information is intended solely for the information and use of the Township Board of Trustees and management of the Township and is not intended to be, and should not be, used by anyone other than these specified parties.

Very truly yours,

A handwritten signature in cursive script that reads "Gabridge & Company". The signature is written in dark ink and is positioned above the printed name of the company.

Gabridge & Company, PLC
Grand Rapids, MI

INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

To the Board of Trustees
Township of Tuscarora, Michigan

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, each major fund, the aggregate discretely presented component units, and the aggregate remaining fund information of the Township of Tuscarora, Michigan (the "Township") as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the Township's basic financial statements, and have issued our report thereon dated December 14, 2018.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Township's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Township's internal control. Accordingly, we do not express an opinion on the effectiveness of the Township's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Township's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in cursive script that reads "Galbridge & Company".

Grand Rapids, Michigan
December 14, 2018



Heart of the Inland Waterway

TOWNSHIP OF TUSCARORA, MICHIGAN

ANNUAL FINANCIAL REPORT

YEAR ENDED JUNE 30, 2019

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INDEPENDENT AUDITOR'S REPORT

To the Board of Trustees
Township of Tuscarora, Michigan

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township of Tuscarora, Michigan (the "Township") as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise the Township's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township, as of June 30, 2019, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, budgetary comparison information, and the pension schedules, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Township's basic financial statements. The combining and individual fund financial statements are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The combining and individual fund financial statements are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the combining and individual fund financial statements are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 9, 2019, on our consideration of the Township's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Township's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Township's internal control over financial reporting and compliance

A handwritten signature in cursive script that reads "Gabridge & Company".

Gabridge & Company, PLC
Grand Rapids, Michigan
December 9, 2019

Management's Discussion and Analysis

Management's Discussion and Analysis

As management of the Township of Tuscarora, Michigan (The "Township" or "government") we offer readers of the Township's financial statements this narrative overview and analysis of the financial activities of the Township for the fiscal year ended June 30, 2019. We encourage readers to consider the information presented here in conjunction with the financial statements.

Financial Highlights

- The assets and deferred outflows of resources of the Township exceeded its liabilities and deferred inflows of resources at the close of the most recent fiscal year by \$10,280,608 (net position). Of this amount, \$2,085,809 represents unrestricted net position, which may be used to meet the government's ongoing obligations to citizens and creditors.
- The Township's total net position decreased \$40,858 during the year. Revenues showed an increase across all Township funds during the year of \$297,233 and expenses for the Township increased by \$204,208 from the prior fiscal year.
- At the close of the current fiscal year, the Township's governmental funds reported combined fund balances of \$1,310,905, a decrease of \$26,042 in comparison with the prior year. Approximately 42.6% of this amount, or \$557,825, is available for spending at the government's discretion (*unassigned fund balance*).
- At the end of the current fiscal year, unassigned fund balance for the general fund was \$557,825, or approximately 50.3% of total general fund expenditures.

Overview of the Financial Statements

The discussion and analysis provided here is intended to serve as an introduction to the Township's basic financial statements. The Township's basic financial statements consist of three components: 1) government-wide financial statements, 2) fund financial statements, and 3) the notes to financial statements. This report also includes supplementary information intended to furnish additional detail to support the basic financial statements themselves.

Government-wide Financial Statements. The government-wide financial statements are designed to provide readers with a broad overview of the Township's finances, in a manner similar to a private-sector business.

The *statement of net position* presents financial information on all of the Township's assets, deferred outflows, and liabilities, with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Township is improving or deteriorating.

The *statement of activities* presents information showing how the Township's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. Thus,

revenues and expenses are reported for some items that will only result in cash flows in future fiscal periods (e.g., earned but unused vacation leave and accrued interest on long-term debt).

Both of the government-wide financial statements distinguish functions of the Township that are principally supported by taxes and intergovernmental revenues (governmental activities) from other functions that are intended to recover all or a significant portion of their costs through user fees and charges (business-type activities). The governmental activities of the Township include general government, police and fire protection, streets, health and welfare, community and economic development, and recreation and culture. The business-type activities of the Township include sewer services.

The government-wide financial statements include not only the Township itself (known as the primary government), but also the legally separate Downtown Development Authority (“DDA”) and Indian River Area Library (“Library”), for which the Township is financially accountable. Financial information for these component units are reported separately from the financial information presented for the primary government itself. Financial statements for the DDA and Library can be located in the other supplemental information section of this report.

Fund Financial Statements. A *fund* is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The Township, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. All of the funds of the Township can be divided into three categories: governmental funds, proprietary funds, and fiduciary funds.

Governmental Funds. *Governmental funds* are used to account for essentially the same functions reported as *governmental activities* in the government-wide financial statements. However, unlike the government-wide financial statements, governmental fund financial statements focus on *near-term inflows and outflows of spendable resources*, as well as on *balances of spendable resources* available at the end of the fiscal year. Such information may be useful in assessing a government’s near-term financing requirements.

Because the focus of governmental funds is narrower than that of the government-wide financial statements, it is useful to compare the information presented for *governmental funds* with similar information presented for *governmental activities* in the government-wide financial statements. By doing so, readers may better understand the long-term impact of the government’s near-term financing decisions. Both the governmental fund balance sheet and the governmental fund statement of revenues, expenditures, and changes in fund balances provide a reconciliation to facilitate this comparison between *governmental funds* and *governmental activities*.

The Township maintains four individual governmental funds. Information is presented separately in the governmental fund balance sheet and in the governmental fund statement of revenues, expenditures, and changes in fund balances for the general fund and the police fund, which are considered to be major funds. Data from the 2016 special assessment bonds debt retirement is presented as a separate column as it is considered a nonmajor fund.

The Township adopts an annual appropriated budget for the general fund and each special revenue fund. A budgetary comparison schedule for the general fund and each major special revenue fund has been provided to demonstrate compliance with these budgets.

Proprietary Funds. The Township maintains one type of proprietary fund, an enterprise fund. *Enterprise funds* are used to report the same functions presented as *business-type activities* in the government-wide financial statements. The Township uses enterprises funds to account for its sewer operations.

Proprietary funds provide the same type of information as the government-wide financial statements, only in more detail. The proprietary fund financial statements provide information for the sewer operations. The sewer fund is considered to be a major fund of the Township.

Fiduciary funds. Fiduciary funds are used to account for resources held for the benefit of parties outside the government. Fiduciary funds are not reflected in the government-wide financial statement because the resources of those funds are not available to support the Township's own programs. The accounting used for fiduciary funds is much like that used for proprietary funds.

Notes to the Financial Statements. The notes provide additional information that is necessary to acquire a full understanding of the data provided in the government-wide and fund financial statements.

Other Information. In addition to the basic financial statements and accompanying notes, this report also presents *required supplementary information* concerning the Township's budgetary comparison schedules and the Townships pension plan schedules.

This report also presents other supplementary information which includes the nonmajor fund and component unit combining and individual statements. The combining statements are presented immediately following the required supplementary information on pensions.

Government-wide Overall Financial Analysis

As noted earlier, net position over time, may serve as a useful indicator of a government's financial position. In the case of the Township, assets and deferred outflows of resources exceeded liabilities and deferred inflows of resources by \$10,280,608, at the close of the most recent fiscal year.

Township of Tuscarora's Net Position

	Governmental Activities		Business-type Activities		Total Government	
	2019	2018	2019	2018	2019	2018
ASSETS						
<i>Current Assets</i>						
Cash and Cash Equivalents	\$ 1,338,267	\$ 1,359,285	\$ 223,692	\$ 255,853	\$ 1,561,959	\$ 1,615,138
Accounts Receivable	3,033	1,137	43,893	37,712	46,926	38,849
Due from Other Governments	45,426	44,902	-	-	45,426	44,902
Special Assessments, Current Portion	19,965	17,804	42,233	55,813	62,198	73,617
Total Current Assets	1,406,691	1,423,128	309,818	349,378	1,716,509	1,772,506
<i>Noncurrent Assets</i>						
Restricted Cash	-	-	386,505	410,719	386,505	410,719
Special Assessments	15,722	37,311	1,917,527	1,946,180	1,933,249	1,983,491
Capital Assets, Net	3,466,550	3,260,365	5,796,894	5,926,695	9,263,444	9,187,060
Total Assets	4,888,963	4,720,804	8,410,744	8,632,972	13,299,707	13,353,776
DEFERRED OUTFLOWS OF RESOURCES						
Pension Related Deferred Outflows	228,456	125,063	-	-	228,456	125,063
LIABILITIES						
<i>Current Liabilities</i>						
Accounts Payable	36,489	34,456	18,037	23,465	54,526	57,921
Payroll Liabilities	36,590	30,421	-	-	36,590	30,421
Accrued Interest Payable	195	286	9,170	9,446	9,365	9,732
Current Portion of Long-term Debt	21,000	21,000	63,000	63,000	84,000	84,000
Internal Balances	2,742	3,500	(2,742)	(3,500)	-	-
Total Current Liabilities	97,016	89,663	87,465	92,411	184,481	182,074
<i>Noncurrent Liabilities</i>						
Compensated Absences	29,677	27,001	-	-	29,677	27,001
Long-term Debt	24,000	45,000	2,033,000	2,096,000	2,057,000	2,141,000
Net Pension Liability	913,163	700,214	-	-	913,163	700,214
Total Liabilities	1,063,856	861,878	2,120,465	2,188,411	3,184,321	3,050,289
DEFERRED INFLOWS						
Pension Related Deferred Inflows	63,234	107,084	-	-	63,234	107,084
NET POSITION						
Net Investment in Capital Assets	3,421,550	3,260,365	3,767,695	3,767,695	7,189,245	7,028,060
Restricted	619,049	606,500	386,505	410,719	1,005,554	1,017,219
Unrestricted	(50,270)	10,040	2,136,079	2,266,147	2,085,809	2,276,187
Total Net Position	\$ 3,990,329	\$ 3,876,905	\$ 6,290,279	\$ 6,444,561	\$ 10,280,608	\$ 10,321,466

A portion of the Township's net position, \$7,189,245, or 69.9 percent, reflects its investment in capital assets (e.g., land and land improvements, buildings and improvements, machinery, equipment, vehicles, and infrastructure), less any related outstanding debt that was used to acquire those assets. The Township uses these capital assets to provide a variety of services to its citizens. Accordingly, these assets are not available for future spending. Although the Township's investment in capital assets is reported net of related debt, it should be noted that the resources used to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities.

An additional portion of the Township's net position, \$1,005,554, or 9.8 percent, represents resources that are subject to external restrictions on how they may be used. The remaining balance

of \$2,085,809, or 20.3 percent, is unrestricted and may be used to meet the government's ongoing obligations to its citizens and creditors.

A summary of significant changes between June 30, 2018 and June 30, 2019 are as follows:

- Cash and cash equivalents, including restricted cash, decreased by a net total of \$77,393. The change is attributable to capital asset purchase made throughout the year.
- The Township's capital assets increased by \$76,384 during the current year. This consisted of capital asset purchases of \$428,541, depreciation expense of \$346,589, and net disposal of capital assets of \$5,568.
- Net pension liability increased by \$212,949 during the current year along with an increase in related deferred outflows of resources by \$103,393 and a decrease in related deferred inflows of resources by \$43,850. These were all related to market conditions within the plan assets.

Governmental Activities. There were significant fluctuations in governmental activities revenues and expenses in the current year, governmental activities net position, in total, changed from the prior year increasing by \$113,424. A notable component of this change is the decrease in unrestricted net position. Township's unrestricted net position decreased by \$60,310 from a positive balance of \$10,040 to a deficit balance of \$(50,270). Significant events leading to this change are highlighted as follows:

- Charges for services increased by \$64,718, being mostly attributable to the police fund having a new contract with a local school for an officer. Operating grants and contributions increased by \$222,057 as a result of the Township receiving large contributions from residents for the building of a new ice rink roof. The Township's taxable value increased by 3.5% resulting in an increase in property tax revenue of \$30,008.
- Public safety expenses increased by \$110,240 due to the increase in net pension liability and the changes in the related deferrals. Public works expenses increased by \$30,689 largely due to increased activity at the airport and a need for additional supplies and small equipment. Recreation and culture related expenses increased by \$47,003 as there was an increase in parks and recreation activity leading to increased salaries and wages, expenses related to kayak lunch, and small equipment and supplies needed for other minor projects.

Business-type Activities. Business-type activities decreased the Township's net position by \$154,282. Overall expenses increased from \$374,436 during 2018 to \$361,703 in 2019 while revenues decreased from \$237,706 to \$207,421.

Significant events impacting revenues and expenses of the business-type activities during the year include:

- Sewer fund charges for services decreased from \$148,743 in the previous year to \$124,325 in the current year mostly due to significantly less new hook-up fee revenues generated during 2019.
- Expenses related to the sewer system operation decreased from \$316,384 to \$305,305 during the current year.

Township of Tuscarora's Changes in Net Position

	Governmental Activities		Business-type Activities		Total Government	
	2019	2018	2019	2018	2019	2018
Revenue						
Program Revenues						
Charges for Services	\$ 156,086	\$ 91,368	\$ 125,022	\$ 161,529	\$ 281,108	\$ 252,897
Operating Grants and Contributions	268,126	46,069	8,000	-	276,126	46,069
Total Program Revenues	424,212	137,437	133,022	161,529	557,234	298,966
General Revenues						
Property Taxes	1,423,269	1,393,261	-	-	1,423,269	1,393,261
Intergovernmental	262,248	250,932	-	-	262,248	250,932
Interest Income	6,572	7,153	74,399	76,177	80,971	83,330
Total General Revenues	1,692,089	1,651,346	74,399	76,177	1,766,488	1,727,523
Total Revenues	2,116,301	1,788,783	207,421	237,706	2,323,722	2,026,489
Expenses						
General Government	352,154	323,940	-	-	352,154	323,940
Public Safety	1,209,960	1,099,720	-	-	1,209,960	1,099,720
Public Works	67,625	36,936	361,703	374,436	429,328	411,372
Community and Economic Development	-	220	-	-	-	220
Recreation and Culture	369,921	322,918	-	-	369,921	322,918
Interest on Long-term Debt	1,649	2,202	-	-	1,649	2,202
Loss on Sale of Asset	1,568	-	-	-	1,568	-
Total Expenses	2,002,877	1,785,936	361,703	374,436	2,364,580	2,160,372
Change in Net Position	113,424	2,847	(154,282)	(136,730)	(40,858)	(133,883)
Net Position at the Beginning of Period	3,876,905	3,874,058	6,444,561	6,581,291	10,321,466	10,455,349
Net Position at the End of Period	\$ 3,990,329	\$ 3,876,905	\$ 6,290,279	\$ 6,444,561	\$ 10,280,608	\$ 10,321,466

Financial Analysis of Governmental Funds

As noted earlier, the Township uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

Governmental Funds. The focus of the Township's *governmental funds* is to provide information on near-term inflows, outflows, and balances of spendable resources. Such information is useful in assessing the Township's financing requirements. In particular, unassigned fund balance may serve as a useful measure of a government's net resources available for discretionary use as they represent the portion of fund balance which has not yet been limited to use for a particular purpose by either an external party, the Township itself, or a group or individual that has been delegated authority to assign resources for use for particular purposes by the Township's Board.

At June 30, 2019, the Township's governmental funds reported combined fund balances of \$1,310,905 a decrease of \$26,042 in comparison with the prior year. Approximately 42.6% of this amount, \$557,825, constitutes *unassigned fund balance*, which is available for spending at the

government's discretion. The remainder of the fund balance is either *nonspendable, assigned, or restricted* to indicate that it is: 1) restricted for particular purposes \$619,049 (47.2%) or 2) assigned for particular purposes, \$134,031 or 10.2%.

The general fund is the chief operating fund of the Township. At the end of the current fiscal year, unassigned fund balance of the general fund was \$557,825. As a measure of the general fund's liquidity, it may be useful to compare unassigned fund balance to total general fund expenditures. Unassigned fund balance represents approximately 50.3 percent of total general fund expenditures.

The fund balance of the Township's general fund decreased by \$26,663 during the current fiscal year. The explanations for the change was provided in an earlier section of this report.

The police fund, a major fund, had a \$1,075 increase in fund balance during the current fiscal year which put the overall fund balance at \$467,178. The explanations for the change was provided in an earlier section of this report.

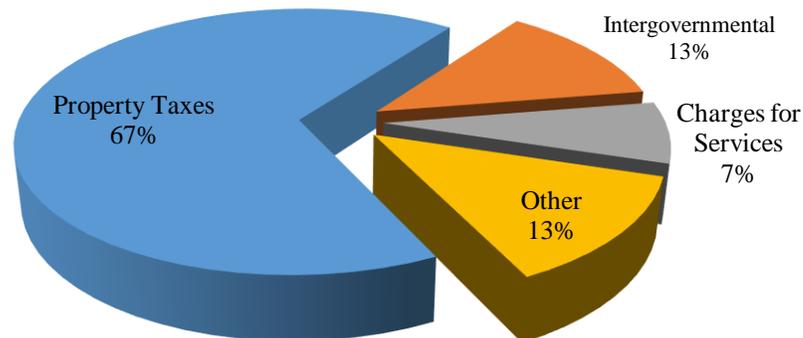
Proprietary Funds. The Township's proprietary funds provide the same type of information found in the government-wide financial statements, but in more detail.

Unrestricted net position at the end of the year was \$2,136,079 for the sewer fund. The decrease in net position was \$154,282 for the sewer fund. A summary of the changes in the sewer fund net position can be found in the business-type activities paragraph found earlier in this report.

Governmental Activities

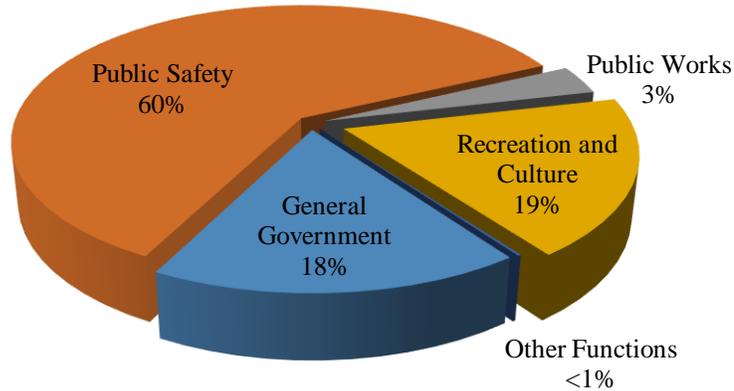
The following chart summarizes the revenue sources for the governmental activities of the Township for the most recent fiscal year end:

Governmental Activities Revenues



The following chart summarizes the expenses for the governmental activities of the Township for the most recent fiscal year end:

Governmental Activities Expenses



General Fund Budgetary Highlights

Original budget compared to final budget. During the year there was a need to adjust expenditures in the final budget to allow for additional expenditures in the airport and boat launch purchases in the parks department.

Final budget compared to actual results. The Township had no expenditures in excess of the amounts appropriated during the year ended June 30, 2019.

Capital Assets and Debt Administration

Capital assets. The Township’s investment in capital assets for its governmental and business-type activities as of June 30, 2019, amounts to \$9,263,444 (net of accumulated depreciation). This investment in capital assets includes land and land improvements, buildings and improvements, machinery, equipment, vehicles, park facilities, and sewer infrastructure.

More detailed information about the Township’s capital assets can be found in Note 4.

Long-term Debt

As described in Note 6 to the financial statements, the Township had \$2,141,000 in long-term debt at the end of the fiscal year. The Township is well under its legal debt limit as of year-end.

Economic Condition and Outlook

Management estimates that \$954,000 of revenues will be available for appropriation in the general fund in the upcoming year. The Township continues to review all budget line items for

opportunities to reduce expenditures when possible. The budget will be monitored during the year to identify any necessary amendments. In 2020, the Township plans again to use current revenues to provide essential services and to maintain the Township's financial reserves at similar levels. Property tax revenues are expected to change minimally reflecting fairly stable property values.

Contacting the Township

This financial report is designed to provide a general overview of the Township's finances to its citizens, customers, investors, and creditors and to demonstrate the Township's accountability for the resources it receives. Questions regarding any information provided in this report or requests for additional financial information should be addressed to:

The Township of Tuscarora
3546 S Straits Highway
Indian River, MI 49749

Basic Financial Statements

Township of Tuscarora
Statement of Net Position
June 30, 2019

	Primary Government			Component Units
	Governmental Activities	Business-type Activities	Total	
ASSETS				
<i>Current Assets</i>				
Cash and Cash Equivalents	\$ 1,338,267	\$ 223,692	\$ 1,561,959	\$ 613,188
Accounts Receivable	3,033	43,893	46,926	17,891
Due from Other Governments	45,426	--	45,426	--
Special Assessments	19,965	42,233	62,198	--
Total Current Assets	1,406,691	309,818	1,716,509	631,079
<i>Noncurrent Assets</i>				
Capital Assets not Being Depreciated	1,383,282	178,618	1,561,900	--
Capital Assets Being Depreciated, Net	2,083,268	5,618,276	7,701,544	842,049
Restricted Cash	--	386,505	386,505	--
Investments - Endowment	--	--	--	5,675
Special Assessments	15,722	1,917,527	1,933,249	--
Total Assets	4,888,963	8,410,744	13,299,707	1,478,803
DEFERRED OUTFLOWS OF RESOURCES				
Pension Related	228,456	--	228,456	--
Total Deferred Outflows of Resources	228,456	--	228,456	--
LIABILITIES				
<i>Current Liabilities</i>				
Accounts Payable	36,489	18,037	54,526	3,925
Payroll Liabilities	36,590	--	36,590	1,638
Accrued Interest	195	9,170	9,365	--
Current Portion of Long-term Debt	21,000	63,000	84,000	--
Internal Balances	2,742	(2,742)	--	--
Total Current Liabilities	97,016	87,465	184,481	5,563
<i>Noncurrent Liabilities</i>				
Net Pension Liability	913,163	--	913,163	--
Compensated Absences	29,677	--	29,677	--
Long-term Debt	24,000	2,033,000	2,057,000	--
Total Liabilities	1,063,856	2,120,465	3,184,321	5,563
DEFERRED INFLOWS OF RESOURCES				
Pension Related	63,234	--	63,234	--
Total Deferred Inflows of Resources	63,234	--	63,234	--
NET POSITION				
Net Investment in Capital Assets	3,421,550	3,767,695	7,189,245	842,049
<i>Restricted for:</i>				
Nonspendable Endowment	--	--	--	5,675
Debt Service	82,296	--	82,296	--
Repair, Replacement, Improvement	--	54,603	54,603	--
Additional Residential Equivalent Units	--	331,902	331,902	--
Police	467,178	--	467,178	--
Fire Protection	1,105	--	1,105	--
Boat Launch Fees	68,470	--	68,470	--
<i>Unrestricted</i>	(50,270)	2,136,079	2,085,809	625,516
Total Net Position	\$ 3,990,329	\$ 6,290,279	\$ 10,280,608	\$ 1,473,240

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Statement of Activities
For the Year Ended June 30, 2019**

Functions/Programs	Expenses	Program Revenues			Net (Expense) Revenue			Component Units
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Governmental Activities	Business-type Activities	Total	
Primary Government								
Governmental Activities:								
General Government	\$ 352,154	\$ 15,240	\$ 6,510	\$ --	\$ (330,404)	\$ --	\$ (330,404)	\$ --
Public Safety	1,209,960	95,779	12,193	--	(1,101,988)	--	(1,101,988)	--
Public Works	67,625	8,503	--	--	(59,122)	--	(59,122)	--
Recreation and Culture	369,921	36,564	249,423	--	(83,934)	--	(83,934)	--
Interest on Long-term Debt	1,649	--	--	--	(1,649)	--	(1,649)	--
Loss on Sale of Asset	1,568	--	--	--	(1,568)	--	(1,568)	--
<i>Total Governmental Activities</i>	<u>2,002,877</u>	<u>156,086</u>	<u>268,126</u>	<u>--</u>	<u>(1,578,665)</u>	<u>--</u>	<u>(1,578,665)</u>	<u>--</u>
Business-type Activities:								
Sewer	361,703	125,022	8,000	--	--	(228,681)	(228,681)	--
<i>Total Business-type Activities</i>	<u>361,703</u>	<u>125,022</u>	<u>8,000</u>	<u>--</u>	<u>--</u>	<u>(228,681)</u>	<u>(228,681)</u>	<u>--</u>
<i>Total Primary Government</i>	<u>\$ 2,364,580</u>	<u>\$ 281,108</u>	<u>\$ 276,126</u>	<u>\$ --</u>	<u>\$ (1,578,665)</u>	<u>\$ (228,681)</u>	<u>\$ (1,807,346)</u>	<u>--</u>
Component Units								
DDA	\$ 114,632	\$ 16,651	\$ --	\$ --	--	--	--	(97,981)
Indian River Area Library	136,758	2,991	34,101	--	--	--	--	(99,666)
<i>Total Component Units</i>	<u>\$ 251,390</u>	<u>\$ 19,642</u>	<u>\$ 34,101</u>	<u>\$ --</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>(197,647)</u>
General Purpose Revenues:								
					262,248	--	262,248	20,236
					1,423,269	--	1,423,269	151,805
					6,572	74,399	80,971	3,301
					<u>1,692,089</u>	<u>74,399</u>	<u>1,766,488</u>	<u>175,342</u>
					113,424	(154,282)	(40,858)	(22,305)
					3,876,905	6,444,561	10,321,466	1,495,545
					<u>\$ 3,990,329</u>	<u>\$ 6,290,279</u>	<u>\$ 10,280,608</u>	<u>\$ 1,473,240</u>

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Balance Sheet
Governmental Funds
June 30, 2019**

	<u>Special Revenue</u>		<u>Debt Service</u>	
	<u>General</u>	<u>Police</u>	<u>2016 Special Assessment Bonds Debt Retirement (Nonmajor Fund)</u>	<u>Total Governmental Funds</u>
ASSETS				
Cash and Cash Equivalents	\$ 818,441	\$ 508,142	\$ 11,684	\$ 1,338,267
Accounts Receivable	3,033	--	--	3,033
Due from Other Governments	45,426	--	--	45,426
Due from Other Funds	--	--	70,612	70,612
Special Assessments	--	--	35,687	35,687
<i>Total Assets</i>	<u>\$ 866,900</u>	<u>\$ 508,142</u>	<u>\$ 117,983</u>	<u>\$ 1,493,025</u>
LIABILITIES				
Accounts Payable	\$ 25,281	\$ 11,208	\$ --	\$ 36,489
Payroll Liabilities	6,834	29,756	--	36,590
Due to Other Funds	73,354	--	--	73,354
<i>Total Liabilities</i>	<u>105,469</u>	<u>40,964</u>	<u>--</u>	<u>146,433</u>
DEFERRED INFLOWS OF RESOURCES				
Unavailable Revenue	--	--	35,687	35,687
<i>Total Liabilities and Deferred Inflows of Resources</i>	<u>105,469</u>	<u>40,964</u>	<u>35,687</u>	<u>182,120</u>
FUND BALANCE				
Restricted	69,575	467,178	82,296	619,049
Assigned	134,031	--	--	134,031
Unassigned	557,825	--	--	557,825
<i>Total Fund Balance</i>	<u>761,431</u>	<u>467,178</u>	<u>82,296</u>	<u>1,310,905</u>
<i>Total Liabilities, Deferred Inflows of Resources and Fund Balance</i>	<u>\$ 866,900</u>	<u>\$ 508,142</u>	<u>\$ 117,983</u>	<u>\$ 1,493,025</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Reconciliation of Governmental Funds Balance Sheet to the Statement of Net Position
June 30, 2019

Total Fund Balance - Governmental Funds	\$	1,310,905
In the Statement of Activities, interest is accrued on outstanding bonds, whereas in governmental funds, the interest expenditure is reported when due.		(195)
General government capital assets of \$6,245,422, net of accumulated depreciation of \$2,778,872, are not financial resources, and accordingly are not reported in the funds.		3,466,550
Compensated absences are not due in and payable in the current period, and therefore, are not reported in the funds.		(29,677)
Long-term liabilities are not due and payable in the current period, and therefore, are not reported in the funds.		(45,000)
Certain pension-related amounts, such as the net pension liability and related deferred amounts are not due and payable in the current period or do not represent current financial resources and therefore are not reported in the funds.		(747,941)
Certain receivables are not available to pay for current period expenditures and, therefore, are unearned in the funds.		35,687
Total Net Position - Governmental Activities	\$	<u>3,990,329</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2019

	<u>General</u>	<u>Special Revenue</u> Police	<u>Debt Service</u> 2016 Special Assessment Bonds Debt Retirement (Nonmajor Fund)	<u>Total Governmental Funds</u>
Revenues				
Property Taxes	\$ 502,194	\$ 921,075	\$ --	\$ 1,423,269
Special Assessments	5,116	--	19,965	25,081
Intergovernmental	268,758	84,672	--	353,430
Charges for Services	51,815	11,506	--	63,321
Refunds and Reimbursements	2,119	858	--	2,977
Other	250,143	10,936	--	261,079
Interest Income	2,185	2,066	2,321	6,572
Total Revenues	1,082,330	1,031,113	22,286	2,135,729
Expenditures				
General Government	363,875	--	--	363,875
Public Safety	166,091	1,034,038	--	1,200,129
Public Works	86,329	--	--	86,329
Recreation and Culture	492,698	--	--	492,698
Debt Service - Principal	--	--	21,000	21,000
Debt Service - Interest	--	--	1,740	1,740
Total Expenditures	1,108,993	1,034,038	22,740	2,165,771
Excess of Revenues Over (Under) Expenditures	(26,663)	(2,925)	(454)	(30,042)
Other Financing Sources (Uses)				
Sale of Capital Asset	--	4,000	--	4,000
Net Other Financing Sources (Uses)	--	4,000	--	4,000
Net Change in Fund Balance	(26,663)	1,075	(454)	(26,042)
<i>Fund Balance at Beginning of Period</i>	788,094	466,103	82,750	1,336,947
Fund Balance at End of Period	\$ 761,431	\$ 467,178	\$ 82,296	\$ 1,310,905

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Reconciliation of Governmental Funds Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2019

Total Net Change in Fund Balances - Governmental Funds	\$	(26,042)
Governmental fund report capital outlay as expenditures; however, in the Statement of Activities, the cost of those assets is allocated over the estimated useful lives as depreciation expense. This is the amount of capital outlay expenditures less depreciation expense.		206,185
Changes to accrued interest are not shown in the fund financial statements. The net effect of the current year decrease is to increase net position.		91
Change to compensated absences are not shown in the fund financial statements. The net effect of the current year increase is to decrease net position.		(2,676)
Changes to the net pension liability and related pension deferrals are not shown in the fund financial statements.		(65,706)
Some receivables are long-term in nature and are collectible over several years. However, the current receipts are reflected as revenues on the fund statements.		(19,428)
Current year long-term debt principal payments on contractual obligations and bonds payable are expenditures in the fund financial statements but are reductions in long-term debt in the government-wide financial statements.		21,000
Changes in Net Position - Governmental Activities	\$	<u>113,424</u>

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Statement of Net Position
Proprietary Fund
June 30, 2019**

	<u>Business-type Activities - Enterprise Fund</u>
	<u>Sewer</u>
ASSETS	
<i>Current Assets</i>	
Cash and Cash Equivalents	\$ 223,692
Accounts Receivable	43,893
Special Assessments	42,233
Due from Other Funds	2,742
Total Current Assets	312,560
<i>Noncurrent Assets</i>	
Capital Assets not Being Depreciated	178,618
Capital Assets Being Depreciated, Net	5,618,276
Restricted Cash	386,505
Special Assessments	1,917,527
Total Assets	8,413,486
LIABILITIES	
<i>Current Liabilities</i>	
Accounts Payable	18,037
Accrued Interest	9,170
Current Portion of Long-term Debt	63,000
Total Current Liabilities	90,207
<i>Noncurrent Liabilities</i>	
Long-term Debt	2,033,000
Total Liabilities	2,123,207
NET POSITION	
Net Investment in Capital Assets	3,767,695
<i>Restricted for:</i>	
Repair, Replacement, Improvement	54,603
Additional Residential Equivalent Units	331,902
<i>Unrestricted</i>	2,136,079
Total Net Position	\$ 6,290,279

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Statement of Revenues, Expenses, and Changes in Net Position
Proprietary Fund
For the Year Ended June 30, 2019

	Business-type Activities - Enterprise Fund
	Sewer
Operating Revenues	
Charges for Services	\$ 124,325
<i>Total Operating Revenues</i>	124,325
Operating Expenses	
Professional Fees	101,678
Utilities	37,979
Supplies	13,153
Repairs and Maintenance	21,337
Insurance	1,357
Depreciation	129,801
<i>Total Operating Expenses</i>	305,305
<i>Operating Income (Loss)</i>	(180,980)
Non-Operating Revenues (Expenses)	
Local Contributions	8,000
Interest Income	74,399
Miscellaneous Revenue	697
Interest Expense	(56,398)
<i>Net Non-Operating Revenues (Expenses)</i>	26,698
<i>Change In Net Position</i>	(154,282)
<i>Net Position at Beginning of Period</i>	6,444,561
<i>Net Position at End of Period</i>	\$ 6,290,279

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Statement of Cash Flows
Proprietary Fund
For the Year Ended June 30, 2019**

	<u>Business-type Activities - Enterprise Fund</u>
	<u>Sewer</u>
Cash Flows Used by Operating Activities	
Cash Received from Customers	\$ 160,377
Cash Payments to Suppliers for Goods and Services	(180,932)
<i>Net Cash Used by Operating Activities</i>	<u>(20,555)</u>
 Cash Flows from Non-capital and Related Financing Activities	
Interfund Balances	758
Miscellaneous Receipts	697
Grants and Contributions	8,000
<i>Net Cash Provided by Non-capital and Related Financing Activities</i>	<u>9,455</u>
 Cash Flows from Capital and Related Financing Activities	
Principal Paid	(63,000)
Interest Paid	(56,674)
<i>Net Cash Used by Capital and Related Financing Activities</i>	<u>(119,674)</u>
 Cash Flows From Investing Activities	
Interest Income	74,399
<i>Net Cash Provided by Investing Activities</i>	<u>74,399</u>
<i>Net Decrease in Cash and Equivalents</i>	(56,375)
<i>Cash and Equivalents - Beginning of Year</i>	666,572
<i>Cash and Equivalents - End of Year</i>	<u>\$ 610,197</u>
 Reconciliation of Operating Loss to Net Cash Used by Operating Activities	
Operating Loss	\$ (180,980)
Adjustments to Reconcile Operating Loss to Net Cash Used by Operating Activities	
Depreciation Expense	129,801
Changes in Assets and Liabilities	
Special Assessment Receivable	42,233
Accounts Receivable	(6,181)
Accounts Payable	(5,428)
<i>Net Cash Used by Operating Activities</i>	<u>\$ (20,555)</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Statement of Fiduciary Assets and Liabilities
Fiduciary Fund
June 30, 2019

	Agency
ASSETS	
Cash and Cash Equivalents	\$ 8,277
<i>Total Assets</i>	8,277
LIABILITIES	
Due to Primary Government	8,277
<i>Total Liabilities</i>	\$ 8,277

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Combining Statement of Net Position
Component Units
June 30, 2019

	<u>DDA</u>	<u>Indian River Area Library</u>	<u>Total Component Units</u>
ASSETS			
<i>Current Assets</i>			
Cash and Cash Equivalents	\$ 424,657	\$ 188,531	\$ 613,188
Accounts Receivable	--	17,891	17,891
Total Current Assets	<u>424,657</u>	<u>206,422</u>	<u>631,079</u>
<i>Noncurrent Assets</i>			
Capital Assets Being Depreciated, Net	631,813	210,236	842,049
Investments - Endowment	--	5,675	5,675
Total Assets	<u>1,056,470</u>	<u>422,333</u>	<u>1,478,803</u>
LIABILITIES			
<i>Current Liabilities</i>			
Accounts Payable	1,438	2,487	3,925
Payroll Liabilities	--	1,638	1,638
Total Liabilities	<u>1,438</u>	<u>4,125</u>	<u>5,563</u>
NET POSITION			
Net Investment in Capital Assets	631,813	210,236	842,049
<i>Restricted for:</i>			
Nonspendable Endowment	--	5,675	5,675
<i>Unrestricted</i>	423,219	202,297	625,516
Total Net Position	<u>\$ 1,055,032</u>	<u>\$ 418,208</u>	<u>\$ 1,473,240</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Combining Statement of Activities
Component Units
For the Year Ended June 30, 2019

	<u>DDA</u>	<u>Indian River Area Library</u>	<u>Total Component Units</u>
Expenses			
Community and Economic Development	\$ 114,632	\$ --	\$ 114,632
Recreation and Culture	--	136,758	136,758
<i>Total Expenses</i>	<u>114,632</u>	<u>136,758</u>	<u>251,390</u>
Program Revenues			
Charges for services	16,651	2,991	19,642
Operating grants and contributions	--	34,101	34,101
<i>Total Program Revenues</i>	<u>16,651</u>	<u>37,092</u>	<u>53,743</u>
<i>Net Program Revenues (Expenses)</i>	<u>(97,981)</u>	<u>(99,666)</u>	<u>(197,647)</u>
General Revenue			
Property Taxes	82,663	69,142	151,805
Intergovernmental	--	20,236	20,236
Interest Income	382	2,919	3,301
<i>Total General Revenues</i>	<u>83,045</u>	<u>92,297</u>	<u>175,342</u>
<i>Change in Net Position</i>	<u>(14,936)</u>	<u>(7,369)</u>	<u>(22,305)</u>
<i>Net Position at Beginning of Period</i>	<u>1,069,968</u>	<u>425,577</u>	<u>1,495,545</u>
<i>Net Position at End of Period</i>	<u>\$ 1,055,032</u>	<u>\$ 418,208</u>	<u>\$ 1,473,240</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Notes to the Financial Statements

Township of Tuscarora

Notes to the Financial Statements

Note 1 – Summary of Significant Accounting Policies

The financial statements of Tuscarora Township, Cheboygan County, Michigan (the “Township” or “government”) have been prepared in conformity with generally accepted accounting principles (GAAP) as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard setting body for establishing governmental accounting and financial reporting principles. The more significant of the Township’s accounting policies are described below.

Reporting Entity

Tuscarora Township is an unincorporated Township, which operates under a Supervisor Board form of government. The Township provides the following services: public safety, highways and streets, public improvements, sewer, and general administrative services. The Township has considered all potential component units in evaluating how to define the Township for financial reporting purposes. The decision to include a potential component unit in the reporting entity was made by applying the criteria set forth in Statement 61 of the Government Accounting Standards Board (GASB), *The Financial Reporting Entity*. The basic criteria includes the appointment of a voting majority of the governing board of the unit; legal separation of the Township and the component unit, fiscal independence of the unit, whether exclusion of the unit would make the Township’s financial statements misleading, and whether there is a potential for the organization to provide specific financial benefits to, or impose specific financial burdens on the Township. There are two component units to be included in these statements.

Discretely Presented Component Units

Downtown Development Authority

The Downtown Development Authority, which was established pursuant to the provisions of Act 197 of 1975, as amended, is governed by the Township Supervisor and an eight-member board. The Authority may issue debt subject to the limitations set forth in the Act and is funded by a specified annual property tax capture of a portion of the Township and County levies which may only be used for activities within the downtown district. The Township also has the ability to significantly influence operations of the Downtown Development Authority. Complete financial statements for the component unit are not separately prepared.

Indian River Library

The Township Library, which was established pursuant to the provisions of Public Act 164 of 1877, as amended, is governed by a six-person Board of Directors elected through general elections. The Library may issue debt subject to the limitations set forth in the Act and is funded by an annual property tax levy and county penal fines. Complete financial statements for the component unit are not separately prepared.

Township of Tuscarora

Notes to the Financial Statements

Government-wide and Fund Financial Statements

The government-wide financial statements (i.e., the statement of net position and the statement of activities) report information on all of the nonfiduciary activities of the primary government and its component units. For the most part, the effect of interfund activity has been removed from these statements. Governmental activities, which normally are supported by taxes and intergovernmental revenues, are reported separately from business-type activities, which rely to a significant extent on fees and charges for support. Likewise, the primary government is reported separately from the legally separate component units for which the primary government is financially accountable.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segments are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function or segment. Program revenues include (1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and (2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported instead as general revenues.

Separate financial statements are provided for governmental funds and proprietary funds. Major individual governmental funds and major individual enterprise funds are reported as separate columns in the fund financial statements.

Measurement Focus, Basis of Accounting and Financial Statement Presentation

The government-wide financial statements are reported using the *economic resources measurement focus* and the *accrual basis of accounting*, as are the proprietary fund and fiduciary fund financial statements. The fiduciary fund financial statements use the economic resources measurement focus, although the agency funds do not have a measurement focus. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the have been met.

Governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the Township considers revenues to be available if they are collected within 60 days of the end of the current fiscal period or within one year for expenditure driven grants. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service and accrued employee benefit expenditures are recorded only when payment is due.

Township of Tuscarora

Notes to the Financial Statements

Property taxes, intergovernmental revenue, charges for services, and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. All other revenue items are considered to be measurable and available only when cash is received by the Township.

The Township reports the following major governmental funds:

The ***general fund*** is the Township's primary operating fund. It accounts for all financial resources of the general government, except those accounted for and reported in another fund.

The ***police fund*** accounts for revenues and expenditures directly attributable to police operations. Revenue is primarily generated from property taxes.

The Township reports the following major proprietary fund:

The ***sewer fund*** accounts for the cost of collecting and treating wastewater. Revenues are primarily from service charges to customers, grants, and special assessments. These revenues are also used to pay principal and interest on revenue bonds which were used to finance improvements to the system.

Additionally, the government reports the following fund types:

Special revenue funds are used to account for and report the proceeds of specific revenue sources that are restricted or committed to expenditure for specific purposes other than debt service or capital projects.

Debt service funds are used to account for all financial resources restricted, committed or assigned to expenditure for principal and interest.

Capital project funds account for the accumulation and disbursement of resources for the construction of governmental fund capital projects.

Agency funds are used to account for assets held on behalf of outside parties, including other governments.

As a general rule the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are payments-in-lieu of taxes and other charges between the Township's sewer function and various other functions of the government. Elimination of these charges would distort the direct costs and program revenues reported for the various functions concerned.

Proprietary funds distinguish *operating* revenues and expenses from *non-operating* items. Operating revenues and expenses generally result from providing services and producing and

Township of Tuscarora

Notes to the Financial Statements

delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the enterprise funds are charges for services. Operating expenses for the enterprise funds include depreciation on capital assets, labor, supplies and contracted services. All revenues and expenses are not meeting this definition are reported as nonoperating revenues and expenses.

Assets, Liabilities, and Equity

Cash and Cash Equivalents

The Township's cash and cash equivalents include amounts in demand deposit accounts, certificates of deposit, and short-term investments with original maturities of three months or less from the date of acquisition. Certificates of deposit are carried at cost plus accrued interest, since the original maturity dates are less than one year.

Investments

Investments consist of the Township's share in an external investment pool and are reported at fair value. This investment pool operates in a manner consistent with the Securities and Exchange Commission's Rule 2a(7) of the Investment Company Act of 1940.

Restricted Assets

Assets which are restricted for specified uses by bond debt requirements are classified as restricted assets. Liabilities payable for such restricted assets are separately classified.

Receivables

All receivables are reported at their gross value and, where appropriate, are reduced by the estimated portion that is expected to be uncollectible. No amounts outstanding at June 30, 2019 were identified by as being uncollectible.

Capital Assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, and similar items), are reported in the governmental and business-type activities columns in the government-wide financial statements. Capital assets are defined by the government as assets with an individual cost of more than \$1,000 and an estimated useful life in excess of five years. Such assets are valued at cost where historical records are available and at an estimated historical cost if purchased or constructed. Donated capital assets are recorded at replacement value at the date of donation.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend asset lives are not capitalized. Major outlays of capital assets and improvement are

Township of Tuscarora

Notes to the Financial Statements

capitalized and depreciated over the remaining useful lives of the related capital assets, as applicable.

No interest expense has been incurred or capitalized on capital assets reported in proprietary funds.

Depreciation on capital, assets (including infrastructure) of the primary government is computed using the straight-line method over the following estimated useful lives:

	<u>Years</u>
Land Improvements	15
Buildings and Improvements	10 - 40
Sewer Infrastructure	30 - 50
Vehicles, Machinery, and Equipment	5 - 10

The Township reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset exceeds its fair value. If it is determined that an impairment loss has occurred, the asset is written down to its net realizable value and a current charge to income is recognized.

Deferred Outflows of Resources

In addition to assets, the balance sheet will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The amounts will be amortized to pension expense within five years.

Deferred Inflows of Resources

In addition to liabilities, the fund level balance sheet or statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of fund balance/net position that applies to a future period and so will not be recognized as an inflow of resources (revenue) until that time.

Pension

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Municipal Employees Retirement System (MERS) of Michigan and additions to/deductions from MERS' fiduciary net position have been determined on the same basis as they are reported by MERS. For this purpose, benefit payments (including refunds of employee

Township of Tuscarora

Notes to the Financial Statements

contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Compensated Absences

Under terms of Township policies, eligible employees are granted vacation, sick, and compensatory time in varying amounts based on length of service. Sick and vacation pay is accrued when incurred in the government-wide financial statements. A liability for these amounts is reported in governmental funds only if they have maturity, for example, as a result of employee resignations and retirements.

Long-term Obligations

In the government-wide financial statements and proprietary fund types in the fund financial statements, the long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type statement of net position. For new bond issuances of governmental funds after the implementation of GASB Statement No. 34 and all proprietary fund bond premiums and discounts are deferred and amortized over the life of the bonds using the straight-line method which approximates the effective interest method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are recognized as an expense in the period that the bond was issued.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

Deferred Inflows of Resources

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The governmental funds report unavailable revenues, which arises only under a modified accrual basis of accounting, from special assessments. These amounts are deferred and recognized as an inflow of resources in the period that the amount becomes available.

Net Position Flow Assumption

Sometimes the government will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted – net position and unrestricted – net position in the government-wide and

Township of Tuscarora

Notes to the Financial Statements

proprietary fund financial statements, a flow assumption must be made about the order in which the resources are considered to be applied.

It is the government's policy to consider restricted – net position to have been depleted before unrestricted – net position is applied.

Fund Balance Flow Assumptions

Sometimes the government will fund outlays for a particular purpose from both restricted and unrestricted resources (the total of committed, assigned, and unassigned fund balance). In order to calculate the amounts to report as restricted, committed, assigned, and unassigned fund balance in the governmental fund financial statements a flow assumption must be made about the order in which the resources are considered to be applied. It is the government's policy to consider restricted fund balance to have been depleted before using any of the components of unrestricted fund balance. Further, when the components of unrestricted fund balance can be used for the same purpose, committed fund balance is depleted first, followed by assigned fund balance. Unassigned fund balance is applied last.

Fund Balance Policies

Fund balance is essentially the difference between the assets and liabilities reported in governmental fund. There are five separate components of fund balance, each of which identifies the extent to which the Township is bound to honor constraints on the specific purpose for which amounts can be spent.

1. Non-spendable fund balance (*inherently non-spendable*)
2. Restricted fund balance (*externally enforceable limitations on use*)
3. Committed fund balance (*self-imposed limitations on use*)
4. Assigned fund balance (*limitation resulting from intended use*)
5. Unassigned fund balance (*the residual classification of the general fund*)

Non-spendable and Restricted Funds - Non-spendable funds are those fund that cannot be spent because they are either (a) not in spendable form – inventories and prepaids - or (b) legally or contractually required to be maintained intact – long-term receivables.

Restricted funds are those funds that have constraints placed on their use by an external party or constitutional provisions or enabling legislations (grants, contributions, specific fee mandates). Non-spendable and Restricted Funds will be maintained and then summarized in the Township's annual financial report by the Townships financial staff.

Committed Funds - In order to commit fund balance, the Township Board, as the highest level of decision making authority, must pass a Resolution to Commitment funds for a specific purpose. These funds must be fully expended for their committed purpose. To make committed funds

Township of Tuscarora

Notes to the Financial Statements

uncommitted, a new resolution must be passed by the Board. Action must be taken before the last day of the fiscal year to commit funds for that year.

Assigned Funds - Assigned funds are amounts that are constrained by the Township's intent to be used for specific purposes, but are neither restricted nor committed. These amounts can be "assigned" by the Township Supervisor, or his/her designee.

Minimum Unassigned Fund Balance - The Township is committed to maintaining a prudent level of financial resources to protect against the need to reduce service levels because of temporary revenue shortfalls or unpredicted expenditures. The goal of the Township Board shall be to maintain a minimum unassigned fund balance of no less than 50% of General Fund expenditures. For purposes of this calculation, "expenditures" will be the annual budgeted expenditures less non-recurring capital expenditures.

If unassigned fund balance approaches a level that greatly exceeds 50% of expenditures, the Township Board will consider using unassigned fund balance for the following purposes: pay down future debt, transfer funds to a Capital Projects fund for future Capital improvements, and other future obligations of the Township.

Fund balance levels will be analyzed each fiscal year after the financial statement audit.

Property Tax Revenue Recognition

Property taxes are levied as of December 1 of each year and are due by February 15 of the following calendar year. Any amounts not received by February 28 are added to the County tax rolls. The Township receives 100% payment for the delinquent taxes by June 30. The Township bills and collects its own property taxes and also taxes for other governmental units. Collections of the other governmental units' taxes and remittance of them to the units are accounted for in the tax collection fund (a fiduciary fund).

The taxable value of the Township totaled \$235,228,452, on which ad valorem taxes consisted of .9971 mills for the Township's operating purposes, .0439 mills for lights, .7317 mills for the fire protection, 4.050 mills for police protection, and .2951 mills for the component unit library operations.

Interfund Transactions

During the course of normal operations, the Township has numerous transactions between funds, including expenditures and transfers of resources to provide services, construct assets, and service debt. The accompanying financial statements generally reflect such transactions as transfers. Operating subsidies are also recorded as transfers. The amounts recorded as subsidies or advances are determined by the Township.

Township of Tuscarora

Notes to the Financial Statements

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results may differ from those estimates.

Budgetary and Budgetary Accounting

All governmental funds are under formal budgetary control. Budgets shown in the financial statements as “GAAP Basis” are adopted on a basis consistent with generally accepted accounting principles (GAAP) and are not significantly different from the modified accrual basis used to reflect actual results, and consist only of those amounts contained in the formal budget approved and amended by the Township Board. Budgets are adopted on the activity level and control is exercised on that same level.

Note 2 – Statutory Compliance

P.A. 621 of 1978, as amended, provides that a local unit shall not incur expenditures in excess of the amount budgeted. Budgetary control is exercised at the activity level in the general fund and the functional level in other funds.

The Township had no expenditures in excess of the amounts appropriated during the year ended June 30, 2019:

Deficit Net Position

The Township’s governmental activities had an unrestricted net position deficit of \$(50,270) as of June 30, 2019.

Note 3 - Cash and Investments

The captions on the government-wide and fund statements relating to cash and investments are as follows:

	Governmental Activities	Business-type Activities	Primary Government	Component Units	Fiduciary Fund
Statement of Net Position					
Cash and Cash Equivalents	\$ 1,338,267	\$ 223,692	\$ 1,561,959	\$ 613,188	\$ 8,277
Restricted Cash		386,505	386,505	-	-
Investments - Endowment	-	-	-	5,675	-
Total Deposits and Investments	\$ 1,338,267	\$ 610,197	\$ 1,948,464	\$ 618,863	\$ 8,277

Township of Tuscarora

Notes to the Financial Statements

These deposits are held in two financial institutions, both of which are located in Michigan. State policy limits the Treasurer's investing options as described in detail below. All accounts are in the name of the Township and a specific fund or common account. Deposits and investments are recorded in Township records at fair value. Interest is recorded when earned.

Deposits and Investments

Checking and Savings Accounts	\$ 2,569,784
Investments	5,675
Cash on Hand	145
Total Deposits and Investments	\$ 2,575,604

Custodial Credit Risk - Deposits. Custodial credit risk is the risk that, in the event of a bank failure, the Township's deposits might not be returned. State law does not require, and the Township does not have, a policy for deposit custodial credit risk. As of year-end, \$2,198,291 of the Township's bank balance of \$2,594,237, was exposed to custodial credit risk because it was uninsured and uncollateralized. Due to the dollar amounts of cash deposits and the limits of FDIC and NCUA insurances, the Township believes it is impractical to insure all bank deposits. As a result, the Township evaluates each financial institution with which it deposits Township funds and assesses the level of risk of each institution; only those institutions with an acceptable estimated risk level are used as depositories.

Statutory Authority

State statutes authorize the Township to invest in:

- a. Bonds, securities, other obligations, and repurchase agreements of the United States of America, or an agency or instrumentality of the United States of America.
- b. Certificates of deposit, savings accounts, deposit accounts, or depository receipts of a qualified financial institution.
- c. Commercial paper rated at the time of purchase within the two highest classifications established by not less than two standard rating services and that matures not more than 270 days after the date of purchase.
- d. Bankers' acceptances of United States banks.
- e. Obligations of the State of Michigan and its political subdivisions that, at the time of purchase are rated as investment grade by at least one standard rating service.
- f. Mutual funds registered under the Investment Company Act of 1940 with the authority to purchase only investment vehicles that are legal for direct investment by a public corporation.

Township of Tuscarora

Notes to the Financial Statements

- g. External investment pools as authorized by Public Act 20 as amended through December 31, 1997.

Fair Value Measurement

The Township categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

The Township has the following recurring fair value measurements as of June 30, 2019:

- All investments held at the Community Foundation of Northeast Michigan, with a balance of \$59,780 at June 30, 2019, are valued using Level 2 inputs.

Note 4 - Capital Assets

Capital asset activities for governmental activities for the year ended June 30, 2019 were as follows:

Governmental Activities	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets not being Depreciated				
Land	\$ 1,383,282	\$ -	\$ -	\$ 1,383,282
Capital Assets being Depreciated				
Land Improvements	2,556,611	39,851	-	2,596,462
Buildings and Improvements	1,294,142	224,315	-	1,518,457
Vehicles	178,170	37,007	(31,183)	183,994
Equipment	435,859	127,368	-	563,227
<i>Subtotal</i>	<u>4,464,782</u>	<u>428,541</u>	<u>(31,183)</u>	<u>4,862,140</u>
Less Accumulated Depreciation				
Land Improvements	1,314,048	139,475	-	1,453,523
Buildings and Improvements	825,304	36,007	-	861,311
Vehicles	111,360	17,962	(25,615)	103,707
Equipment	336,987	23,344	-	360,331
<i>Subtotal</i>	<u>2,587,699</u>	<u>216,788</u>	<u>(25,615)</u>	<u>2,778,872</u>
Capital Assets being Depreciated, Net	<u>1,877,083</u>	<u>211,753</u>	<u>(5,568)</u>	<u>2,083,268</u>
Capital Assets, Governmental Activities	<u>\$ 3,260,365</u>	<u>\$ 211,753</u>	<u>\$ (5,568)</u>	<u>\$ 3,466,550</u>

Township of Tuscarora

Notes to the Financial Statements

Capital asset activities for business-type activities for the year ended June 30, 2019 were as follows:

Business-type Activities	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets not being Depreciated				
Land	\$ 178,618	\$ -	\$ -	\$ 178,618
Capital Assets being Depreciated				
Sewer System	5,814,433	-	-	5,814,433
Machinery and Equipment	189,318	-	-	189,318
<i>Subtotal</i>	<u>6,003,751</u>	<u>-</u>	<u>-</u>	<u>6,003,751</u>
Less Accumulated Depreciation				
Sewer System	232,189	128,465	-	360,654
Machinery and Equipment	23,486	1,336	-	24,822
<i>Subtotal</i>	<u>255,674</u>	<u>129,801</u>	<u>-</u>	<u>385,475</u>
Capital Assets being Depreciated, Net	5,748,077	(129,801)	-	5,618,276
Capital Assets, Business-type Activities	<u>\$ 5,926,695</u>	<u>\$ (129,801)</u>	<u>\$ -</u>	<u>\$ 5,796,894</u>

Capital asset activities for the component unit activities for the year ended June 30, 2019 were as follows:

Component Unit - Downtown Development Authority	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets being Depreciated				
Land Improvements	\$ 737,066	\$ -	\$ -	\$ 737,066
Less Accumulated Depreciation				
Land Improvements	74,882	30,371	-	105,253
Capital Assets, Downtown Development Authority	<u>\$ 662,184</u>	<u>\$ (30,371)</u>	<u>\$ -</u>	<u>\$ 631,813</u>

Component Unit - Indian River Area Library	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets being Depreciated				
Books and Periodicals	\$ 222,697	\$ 12,361	\$ (21,857)	\$ 213,201
Buildings and Improvements	38,865	35,248	-	74,113
Equipment	129,028	59,859	-	188,887
<i>Subtotal</i>	<u>390,590</u>	<u>107,468</u>	<u>(21,857)</u>	<u>476,201</u>
Less Accumulated Depreciation				
Books and Periodicals	128,160	18,060	(21,857)	124,363
Buildings and Improvements	8,937	4,223	-	13,160
Equipment	127,067	1,375	-	128,442
<i>Subtotal</i>	<u>264,164</u>	<u>23,658</u>	<u>(21,857)</u>	<u>265,965</u>
Capital Assets, Indian River Area Library	<u>\$ 126,426</u>	<u>\$ 83,810</u>	<u>\$ -</u>	<u>\$ 210,236</u>

Township of Tuscarora

Notes to the Financial Statements

Depreciation expense was charged to functions of the Township as follows:

Governmental Activities		
General Government	\$	48,138
Public Safety		28,374
Recreation and Culture		140,276
<i>Total</i>		\$ 216,788
 Business-type Activities		
Sewer Fund	\$	129,801
 Discretely Presented Component Units		
Tuscarora Township DDA		
Community and Economic Development	\$	30,371
Indian River Area Library		
Recreation and Culture		23,658
<i>Total</i>		\$ 54,029

Note 5 - Interfund Receivables and Payables

The composition of interfund balances as of June 30, 2019 was as follows:

Receivable Fund	Payable Fund	Amount
2016 Special Assessment	General	\$ 70,612
Sewer	General	2,742

All amounts due from other funds represent advances to other funds to finance operations or capital outlays.

Township of Tuscarora

Notes to the Financial Statements

Note 6 - Long-term Debt

Long-term debt activity for the year ended June 30, 2019 was as follows:

	Beginning Balance	Additions	Reductions	Ending Balance	Due Within One Year
Governmental Activities:					
2016 Special Assessment bonds - Eagles Nest	\$ 66,000	\$ -	\$ (21,000)	\$ 45,000	\$ 21,000
Compensated Absences	27,001	2,884	(208)	29,677	-
Total Governmental Activities:	<u>93,001</u>	<u>2,884</u>	<u>(21,208)</u>	<u>74,677</u>	<u>21,000</u>
Business-type Activities:					
2014 Sewer Special Assessment Bonds used to finance sewer project. \$2,411,000 at 2.625% Interest. Payments to be made through 2052.	2,159,000	-	(63,000)	2,096,000	63,000
Total Business-type Activities:	<u>\$ 2,159,000</u>	<u>\$ -</u>	<u>\$ (63,000)</u>	<u>\$ 2,096,000</u>	<u>\$ 63,000</u>
Total Long-term Debt:	<u>\$ 2,252,001</u>	<u>\$ 2,884</u>	<u>\$ (84,208)</u>	<u>\$ 2,170,677</u>	<u>\$ 84,000</u>

The annual requirements, excluding accrued employee benefits, to maturity on the total long-term debt obligations outstanding at June 30, 2019 are as follows:

Year Ending June 30	Governmental Activities		
	Principal	Interest	Total
2020	\$ 21,000	\$ 1,170	\$ 22,170
2021	24,000	624	24,624
Totals	<u>\$ 45,000</u>	<u>\$ 1,794</u>	<u>\$ 46,794</u>
Year Ending June 30	Business-type Activities		
	Principal	Interest	Total
2020	\$ 63,000	\$ 56,674	\$ 119,674
2021	63,000	55,020	118,020
2022	63,000	53,366	116,366
2023	63,000	51,713	114,713
2024	63,000	50,059	113,059
2025-2029	311,000	225,881	536,881
2030-2034	315,000	184,669	499,669
2035-2039	318,000	143,168	461,168
2040-2044	320,000	101,194	421,194
2045-2049	322,000	59,115	381,115
2050-2052	195,000	15,041	210,041
Totals	<u>\$ 2,096,000</u>	<u>\$ 995,899</u>	<u>\$ 3,091,899</u>

Township of Tuscarora

Notes to the Financial Statements

Note 7 - Risk Management

The Township is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees (workers' compensation); and natural disasters. During the year ended June 30, 2019, the Township carried commercial insurance to cover all risks of loss. The Township has had no settled claims resulting from these risks that exceeded their commercial coverage in any of the past three fiscal years. There was no significant change in coverage during the year.

Note 8 - Defined Benefit Pension Plan

Plan Description

Benefits Provided

Plan Description. The employer's defined benefit pension plan provides certain retirement, disability, and death benefits to plan members and beneficiaries. The employer participates in the Municipal Employees Retirement System (MERS) of Michigan. MERS is an agent multiple-employer, statewide public employee pension plan established by the Michigan Legislature under Public Act 135 of 1945 and administered by a nine member Retirement Board. Public Act 427 of 1984, as amended, establishes and amends the benefit provisions of the participants in MERS. MERS issues a publicly available financial report that includes financial statements and required supplementary information. This report may be obtained accessing the MERS website at www.mersofmich.com.

Retirement benefits for employees are calculated as follows:

Division	Benefit Multiplier	Employee Contributions	Benefit Maximum	Final Average Compensation (Years)	Normal Retirement Age	Unreduced Benefit (Age/Years of Service)	Reduced Benefit (Age/Years of Service)	Vesting (Years)
Police	2.50%	0.00%	80%	5	60	55/20	50/25 or 55/15	10

Benefit terms, within the parameters established by MERS, are generally established and amended by authority of the Township Board of Trustees, generally after negotiations of these terms with the affected unions.

Township of Tuscarora

Notes to the Financial Statements

Employees Covered by Benefit Terms

At the December 31, 2018 measurement date, the following employees were covered by the benefit terms:

Inactive plan members or beneficiaries currently receiving benefits	4
Inactive plan members entitled to but not yet receiving benefits	2
Active plan members	<u>9</u>
Total employees covered by MERS	<u>15</u>

Contributions

Article 9, Section 24 of the State of Michigan constitution requires that financial benefits arising on account of employee service rendered in each year be funded during that year. Accordingly, MERS retains an independent actuary to determine the annual contribution. The employer is required to contribute amounts at least equal to the actuarially determined rate, as established by the MERS retirement board. The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by plan members during the year, with an additional amount to finance any unfunded accrued liability. The employer may establish contribution rates to be paid by its covered employees.

For the year ended December 31, 2018, the Township had the following contribution rates:

<u>Division</u>	<u>Employer Contributions</u>	<u>Employee Contributions</u>
Police	21.80%	0.00%

Net Pension Liability

The net pension liability reported at June 30, 2019 was determined using a measure of the total pension liability and the pension net position as of December 31, 2018. The December 31, 2018 total pension liability was determined by an actuarial valuation performed as of that date.

Township of Tuscarora

Notes to the Financial Statements

Changes in the net pension liability during the measurement year were as follows:

Changes in Net Pension Liability	Increase (Decrease)		
	Total Pension Liability	Plan Net Position	Net Pension Liability
Balance at December 31, 2017	\$ 2,427,522	\$ 1,727,308	\$ 700,214
Service cost	58,652	-	58,652
Interest	193,122	-	193,122
Difference between expected and actual experience	(10,676)	-	(10,676)
Contributions - employer	-	100,545	(100,545)
Net investment income	-	(69,017)	69,017
Benefit payments, including refunds	(85,645)	(85,645)	-
Administrative expenses	-	(3,378)	3,378
Other expenses	(1)	(2)	1
Net changes	155,452	(57,497)	212,949
Balance at December 31, 2018	\$ 2,582,974	\$ 1,669,811	\$ 913,163

Net pension liabilities are generally liquidated by the general and police fund within governmental activities.

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended June 30, 2019, the Township recognized pension expense of \$130,308. At June 30, 2019, the Township reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

Source	Deferred Outflows of Resources	Deferred Inflows of Resources
Net difference between projected and actual earnings on pension plan investments	\$ 125,393	\$ -
Net difference in experience	7,012	63,234
Net difference in assumptions	44,604	-
Employer contributions to the plan subsequent to the measurement date	51,447	-
Total	\$ 228,456	\$ 63,234

Township of Tuscarora

Notes to the Financial Statements

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended	
June 30	Amount
2019	\$ 48,717
2020	21,977
2021	5,709
2022	39,153
2023	(1,781)

Actuarial Assumptions

The total pension liability in the December 31, 2018 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation: 2.50%

Salary Increases: base wage inflation of 3.75% in the long-term.

Investment rate of return: 7.75%, net of investment expense and administrative expense including inflation.

Mortality rates used for non-disabled plan member were based on a weighted blend of RP-2014 mortality tables of a 50% Male and 50% Female blend.

The actuarial assumptions used in the valuation were based on the results of the most recent actuarial experience study.

The long-term expected rate of return on pension plan investments was determined using a model method in which the best-estimate ranges of expected future real rates of return (expected returns, net of investment and administrative expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Township of Tuscarora

Notes to the Financial Statements

The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation
Global equity	55.50%
Global fixed income	18.50%
Real assets	13.50%
Diversifying strategies	12.50%
	100.0%

Discount Rate

The discount rate used to measure the total pension liability is 8.00%. The projection of cash flows used to determine the discount rate assumes that employer and employee contributions will be made at the rates agreed upon for employees and the actuarially determined rates for employers. Based on these assumptions, the pension plan’s fiduciary net position was projected to be available to pay all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the Township, calculated using the discount rate of 8.00 percent, as well as what the Township’s net pension liability would be if it were calculated using a discount rate that is one percentage point lower (7.00 percent) or one percentage point higher (9.00 percent) than the current rate:

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Net pension liability of the Township	\$ 1,268,578	\$ 913,163	\$ 614,325

Pension Plan Fiduciary Net Position

Detailed information about the pension plan’s fiduciary net position is available in the separately issued plan financial statements.

Township of Tuscarora

Notes to the Financial Statements

Note 9 - Subsequent Events

Subsequent events have been evaluated through December 9, 2019, the date the financial statements were available to be issued. The following significant subsequent events were noted:

- The Township's Downtown Development Authority component unit is beginning a streetscape project that is to be funded by a USDA loan of \$1.4 million. Bids are due for the project work in February of 2020. The project is expected to be completed during the Township's fiscal year ending June 30, 2020. Management is not aware of any other subsequent events that would have a significant effect on the financial condition of the Township.
- The Township began renovating its outdoor skating rink during its fiscal year by adding, among other items, a new roof and lighting package. Total project cost is estimated to be \$487,000. At fiscal year end, the Township had expended roughly \$206,000 toward the total cost of the project. The entirety of the project has been financed by donations from residents. The project is expected to be complete by January 1, 2020.

Note 10 - Restricted Cash

Restricted cash in the sewer fund is required by the United States Department of Agriculture - Rural Development (the "USDA") to be maintained at levels consistent with the Township's bond agreements. Repair, Replacement, and Improvement account funds may be used for the repair, replacement, and improvement of the Township's sewer system. Restricted cash related to USDA bonds consists of the following:

<u>Business-type Activities</u>	<u>June 30, 2019</u>	
	<u>Required Balance</u>	<u>Actual Balance</u>
<i>Repair, Replacement, and Improvement</i>		
2014 Issue, \$10,693 per year	\$ 53,465	\$ 54,603

Note 11 – Tax Abatements

Governmental Accounting Standards Board (GASB) Statement No. 77 "Tax Abatement Disclosures" requires that State and local governments that have entered into tax abatement agreements disclose information related to those agreements. The Township did not have any active tax abatement agreements at June 30, 2019.

Required Supplementary Information

Township of Tuscarora
Schedule of Revenues, Expenditures, and Changes in Fund Balance-Budget and Actual
General Fund
For the Year Ended June 30, 2019

	<u>Budgeted Amounts</u>		<u>Actual</u>	Variance
	<u>Original</u>	<u>Final</u>		Positive (Negative) Final to Actual
Revenues				
Property Taxes	\$ 500,350	\$ 500,350	\$ 502,194	\$ 1,844
Special Assessments	5,480	5,480	5,116	(364)
Intergovernmental	260,000	260,000	268,758	8,758
Charges for Services	52,600	52,600	51,815	(785)
Refunds and Reimbursements	--	--	2,119	2,119
Other	5,500	5,500	250,143	244,643
Interest Income	1,735	1,735	2,185	450
Total Revenues	<u>825,665</u>	<u>825,665</u>	<u>1,082,330</u>	<u>256,665</u>
Expenditures				
General Government				
Township Board	109,065	97,765	87,895	9,870
Supervisor	26,332	28,232	26,132	2,100
Clerk	63,452	65,952	47,622	18,330
Board of Review	2,200	2,200	1,980	220
Treasurer	42,565	44,865	38,638	6,227
Assessor	77,950	81,550	67,452	14,098
Cemetery	22,750	23,050	11,437	11,613
Elections	9,300	9,300	6,193	3,107
Building and Grounds	61,000	77,000	74,620	2,380
Other	10,000	8,000	1,906	6,094
Total General Government	<u>424,614</u>	<u>437,914</u>	<u>363,875</u>	<u>74,039</u>
Public Safety				
Fire Protection	166,100	166,100	166,091	9
Public Works				
Roads	51,000	51,000	29,010	21,990
Street Lighting	28,000	28,000	24,206	3,794
Sanitation	1,000	1,000	733	267
Airport	29,150	33,150	32,380	770
Total Public Works	<u>109,150</u>	<u>113,150</u>	<u>86,329</u>	<u>26,821</u>
Community and Economic Development				
Planning	4,600	4,600	--	4,600
Recreation and Culture				
Parks	152,500	193,400	173,090	20,310
Boat Launch	58,300	379,700	319,608	60,092
Total Recreation and Culture	<u>210,800</u>	<u>573,100</u>	<u>492,698</u>	<u>80,402</u>
Total Expenditures	<u>915,264</u>	<u>1,294,864</u>	<u>1,108,993</u>	<u>185,871</u>
Excess (Deficiency) of Revenues				
Over Expenditures	<u>(89,599)</u>	<u>(469,199)</u>	<u>(26,663)</u>	<u>442,536</u>
Net Change in Fund Balance	<u>(89,599)</u>	<u>(469,199)</u>	<u>(26,663)</u>	<u>442,536</u>
Fund Balance at Beginning of Period	788,094	788,094	788,094	--
Fund Balance at End of Period	<u>\$ 698,495</u>	<u>\$ 318,895</u>	<u>\$ 761,431</u>	<u>\$ 442,536</u>

Township of Tuscarora
Schedule of Revenues, Expenditures, and Changes in Fund Balance-Budget and Actual
Police
For the Year Ended June 30, 2019

	<u>Budgeted Amounts</u>		<u>Actual</u>	Variance
	<u>Original</u>	<u>Final</u>		Positive (Negative) Final to Actual
Revenues				
Property Taxes	\$ 924,473	\$ 924,473	\$ 921,075	\$ (3,398)
Intergovernmental	7,500	7,500	84,672	77,172
Charges for Services	10,000	10,000	11,506	1,506
Refunds and Reimbursements	2,300	2,300	858	(1,442)
Other	3,100	3,100	10,936	7,836
Interest Income	750	750	2,066	1,316
<i>Total Revenues</i>	<u>948,123</u>	<u>948,123</u>	<u>1,031,113</u>	<u>82,990</u>
Other Financing Sources				
Sale of Capital Asset	--	--	4,000	4,000
<i>Total Revenues and Other Financing Sources</i>	<u>948,123</u>	<u>948,123</u>	<u>1,035,113</u>	<u>86,990</u>
Expenditures				
Public Safety - Police	955,990	1,141,000	1,034,038	106,962
<i>Total Expenditures</i>	<u>955,990</u>	<u>1,141,000</u>	<u>1,034,038</u>	<u>106,962</u>
<i>Excess (Deficiency) of Revenues and Other Sources Over Expenditures</i>	<u>(7,867)</u>	<u>(192,877)</u>	<u>1,075</u>	<u>193,952</u>
<i>Net Change in Fund Balance</i>	<u>(7,867)</u>	<u>(192,877)</u>	<u>1,075</u>	<u>193,952</u>
<i>Fund Balance at Beginning of Period</i>	466,103	466,103	466,103	--
<i>Fund Balance at End of Period</i>	<u>\$ 458,236</u>	<u>\$ 273,226</u>	<u>\$ 467,178</u>	<u>\$ 193,952</u>

Township of Tuscarora
Required Supplementary Information
Schedule of Changes in Net Pension Liability and Related Ratios
Last Five Plan Years

	2018	2017	2016	2015	2014
Total Pension Liability					
Service Cost	\$ 58,652	\$ 51,118	\$ 70,378	\$ 66,338	\$ 64,795
Interest	193,122	181,306	207,567	186,965	172,980
Changes in Benefit Terms	-	-	(409,343)	-	-
Differences Between Expected & Actual Experience	(10,676)	(3,609)	(103,865)	21,040	-
Changes in Assumptions	-	-	-	133,816	-
Other	(1)	-	-	-	-
Benefit Payments, Including Refunds	(85,645)	(84,124)	(82,603)	(81,082)	(56,969)
Net Change in Pension Liability	155,452	144,691	(317,866)	327,077	180,806
<i>Total Pension Liability - Beginning</i>	<i>2,427,522</i>	<i>2,282,831</i>	<i>2,600,697</i>	<i>2,273,620</i>	<i>2,092,814</i>
Total Pension Liability - Ending (a)	\$ 2,582,974	\$ 2,427,522	\$ 2,282,831	\$ 2,600,697	\$ 2,273,620
Plan Fiduciary Net Position					
Contributions - Employer	\$ 100,545	\$ 92,739	\$ 86,165	\$ 91,211	\$ 93,992
Contributions - Member	-	-	5,905	15,816	14,615
Net Investment Income	(69,017)	202,446	156,459	(20,972)	79,029
Benefit Payments, Including Refunds	(85,645)	(84,124)	(82,603)	(81,082)	(56,969)
Administrative Expenses	(3,378)	(3,200)	(3,084)	(3,002)	(2,925)
Other	(2)	-	-	-	-
Net Change in Plan Fiduciary Net Position	(57,497)	207,861	162,842	1,971	127,742
<i>Plan Fiduciary Net Position - Beginning</i>	<i>1,727,308</i>	<i>1,519,447</i>	<i>1,356,605</i>	<i>1,354,634</i>	<i>1,226,892</i>
Plan Fiduciary Net Position - Ending (b)	\$ 1,669,811	\$ 1,727,308	\$ 1,519,447	\$ 1,356,605	\$ 1,354,634
Net Pension Liability - Ending (a) - (b)	\$ 913,163	\$ 700,214	\$ 763,384	\$ 1,244,092	\$ 918,986
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	64.6%	71.2%	66.6%	52.2%	59.6%
Covered Employee Payroll	\$ 545,997	\$ 467,843	\$ 465,158	\$ 451,893	\$ 441,383
Net Pension Liability as a Percentage of Covered Employee Payroll	167.2%	149.7%	164.1%	275.3%	208.2%

* Built prospectively upon implementation on GASB 68

**Township of Tuscarora
Required Supplementary Information
Schedule of Contributions
Last Five Fiscal Years**

	2019	2018	2017	2016	2015
Actuarially Determined Contribution	\$ 100,545	\$ 92,739	\$ 86,165	\$ 61,855	\$ 93,992
Contributions in Relation to the Actuarially Determined Contribution	100,545	92,739	86,165	61,855	93,992
Contribution Deficiency (Excess)	<u>\$ -</u>				
Covered Employee Payroll	545,997	467,843	465,158	451,893	441,383
Contributions as a Percentage of Covered Employee Payroll	18.4%	19.8%	18.5%	13.7%	21.3%

Notes

Valuation Date

Actuarially determined contribution amounts are calculated as of December 31 each year, which is 18 months prior to the beginning of the fiscal year

Methods and assumptions used to determine contribution rates

Actuarial cost method	Entry-age Normal
Amortization method	Level percentage of pay, open
Remaining amortization period	20 years
Asset valuation method	5 year smoothed
Inflation	2.50%
Salary increases	3.75% - In the long term
Investment rate of return	7.75% net of investment and administrative expense
Retirement Age	Experience-based tables of rates that are specific to the type of eligibility condition
Mortality	50% Male - 50% Female blend of the 2014 Grouped Annuity Mortality

* Built prospectively upon implementation on GASB 68

OTHER SUPPLEMENTARY INFORMATION

**Indian River Library
Statement of Net Position
June 30, 2019**

ASSETS

Current Assets

Cash and Cash Equivalents	\$	188,531
Accounts Receivable		17,891
<i>Total Current Assets</i>		<u>206,422</u>

Noncurrent Assets

Capital Assets being Depreciated, Net		210,236
Investments - Endowment		5,675
<i>Total Assets</i>		<u><u>422,333</u></u>

LIABILITIES

Current Liabilities

Accounts Payable		2,487
Payroll Liabilities		1,638
<i>Total Liabilities</i>		<u>4,125</u>

NET POSITION

Investment in Capital Assets		210,236
------------------------------	--	---------

Restricted for:

Nonspendable - Endowment		5,675
--------------------------	--	-------

Unrestricted

		202,297
<i>Total Net Position</i>	\$	<u><u>418,208</u></u>

**Indian River Library
Statement of Activities
For the Year Ended June 30, 2019**

Functions/Programs	Expenses	Program Revenues			Net (Expense) Revenue
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	
Governmental Activities:					
Recreation and Culture	\$ 136,758	\$ 2,991	\$ 34,101	\$ --	\$ (99,666)
Total	\$ 136,758	\$ 2,991	\$ 34,101	\$ --	\$ (99,666)
		General Purpose Revenues:			
					2,919
					2,328
					17,908
					69,142
					92,297
					(7,369)
					425,577
					\$ 418,208

**Indian River Library
Balance Sheet
Governmental Funds
June 30, 2019**

	General
ASSETS	
Cash and Cash Equivalents	\$ 188,531
Accounts Receivable	17,891
Investments - Endowment	5,675
<i>Total Assets</i>	\$ 212,097
LIABILITIES	
Accounts Payable	\$ 2,487
Payroll Liabilities	1,638
<i>Total Liabilities</i>	4,125
FUND BALANCE	
Nonspendable	5,675
Unassigned	202,297
<i>Total Fund Balance</i>	207,972
<i>Total Liabilities and Fund Balance</i>	\$ 212,097

Indian River Library
Reconciliation of Governmental Funds Balance Sheet to the Statement of Net Position
June 30, 2019

Total Fund Balance - Governmental Funds	\$ 207,972
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.	210,236
Total Net Position - Governmental Activities	\$ <u>418,208</u>

Indian River Library
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2019

	General
Revenues	
Property Taxes	\$ 69,142
Penal Fines	17,908
State Sources	2,328
Grants and Contributions	34,101
Charges for Services	2,234
Fines	405
Interest Income	2,919
Other Revenues	352
<i>Total Revenues</i>	129,389
Expenditures	
Salaries and Wages	53,713
Fringe Benefits	962
Postage	2,988
Supplies	3,054
Repairs and Maintenance	11,279
Utilities	8,138
Contracted Services	7,003
Printing and Publishing	4,418
Travel and Meals	162
Telephone	3,541
Other Expenditures	17,842
Capital Outlay	107,468
<i>Total Expenditures</i>	220,568
<i>Excess of Revenues Over</i>	
<i>(Under) Expenditures</i>	(91,179)
<i>Net Change in Fund Balance</i>	(91,179)
<i>Fund Balance at Beginning of Period</i>	299,151
<i>Fund Balance at End of Period</i>	\$ 207,972

Indian River Library
Reconciliation of Governmental Funds Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2019

Total Net Change in Fund Balances - Governmental Funds \$ (91,179)

Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of these assets is allocated over their useful lives as depreciation expense. This is the amount by which capital outlay expenditures of \$107,468 exceed depreciation expense of \$23,658 during the current year.

83,810

Changes in Net Position - Governmental Activities \$ **(7,369)**

Township of Tuscarora DDA
Statement of Net Position
June 30, 2019

ASSETS

Current Assets

Cash and Cash Equivalents \$ 424,657

Total Current Assets 424,657

Noncurrent Assets

Capital Assets being Depreciated, Net 631,813

Total Assets 1,056,470

LIABILITIES

Current Liabilities

Due to Other Governments 1,438

Total Liabilities 1,438

NET POSITION

Investment in Capital Assets 631,813

Unrestricted 423,219

Total Net Position \$ 1,055,032

**Township of Tuscarora DDA
Statement of Activities
For the Year Ended June 30, 2019**

Functions/Programs	Expenses	Program Revenues			Net (Expense) Revenue
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	
Governmental Activities:					
Community and Economic Development	\$ 114,632	\$ 16,651	\$ --	\$ --	\$ (97,981)
<i>Total</i>	\$ 114,632	\$ 16,651	\$ --	\$ --	\$ (97,981)
General Purpose Revenues:					
					382
					82,663
					83,045
					(14,936)
					1,069,968
					\$ 1,055,032

**Township of Tuscarora DDA
Balance Sheet
Governmental Funds
June 30, 2019**

	General
ASSETS	
Cash and Cash Equivalents	\$ 424,657
<i>Total Assets</i>	\$ 424,657
LIABILITIES	
Due to Other Governments	\$ 1,438
<i>Total Liabilities</i>	1,438
FUND BALANCE	
Unassigned	423,219
<i>Total Fund Balance</i>	423,219
<i>Total Liabilities and Fund Balance</i>	\$ 424,657

Township of Tuscarora DDA
Reconciliation of Governmental Funds Balance Sheet to the Statement of Net Position
June 30, 2019

Total Fund Balance - Governmental Funds	\$ 423,219
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.	631,813
Total Net Position - Governmental Activities	\$ <u>1,055,032</u>

Township of Tuscarora DDA
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2019

	General
Revenues	
Property Taxes	\$ 82,663
Other Revenues	16,651
Interest	382
<i>Total Revenues</i>	99,696
Expenditures	
Community and Economic Development	84,261
<i>Total Expenditures</i>	84,261
<i>Excess of Revenues Over</i>	
<i>(Under) Expenditures</i>	15,435
<i>Net Change in Fund Balance</i>	15,435
<i>Fund Balance at Beginning of Period</i>	407,784
<i>Fund Balance at End of Period</i>	\$ 423,219

Township of Tuscarora DDA
Reconciliation of Governmental Funds Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2019

Total Net Change in Fund Balances - Governmental Funds	\$	15,435
--	----	--------

Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of these assets is allocated over their useful lives as depreciation expense. This is the amount by which depreciation expense of \$30,371 exceeds capital outlay of \$0 during the current year.

		(30,371)
--	--	----------

Changes in Net Position - Governmental Activities	\$	<u>(14,936)</u>
--	-----------	------------------------

December 9, 2019

To the Board of Trustees
Township of Tuscarora, Michigan

We have audited the financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township of Tuscarora for the year ended June 30, 2019. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards and *Government Auditing Standards* as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated September 30, 2019. Professional standards also require that we communicate to you the following information related to our audit.

Significant Audit Findings

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the Township are described in Note 1 to the financial statements. We noted no transactions entered into by the Township during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the Township's financial statements were:

- Management's estimate of the useful lives of depreciable capital assets is based on the length of time it is believed that those assets will provide some economic benefit in the future.
- Management's estimate of the accrued compensated absences is based on current hourly rates and policies regarding payment of sick and vacation banks.
- The assumptions used in the actuarial valuations of the pension plans are based on historical trends and industry standards.

We evaluated the key factors and assumptions used to develop the estimates in determining that it is reasonable in relation to the financial statements taken as a whole.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated December 9, 2019.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the Township's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the Township's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Other Matters

We applied certain limited procedures to management's discussion and analysis, pension schedules, and budgetary comparison schedules, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were engaged to report on the combining statements and individual fund statements and the schedule of expenditures of federal awards, which accompany the financial statements but are not RSI. With respect to this supplementary information, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

Restriction on Use

This information is intended solely for the information and use of the Township Board of Trustees and management of the Township and is not intended to be, and should not be, used by anyone other than these specified parties.

Very truly yours,

A handwritten signature in cursive script that reads "Gabridge & Company". The signature is written in dark ink and is positioned above the printed name of the company.

Gabridge & Company, PLC
Grand Rapids, MI

INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL
REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF
FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING
STANDARDS*

To the Board of Trustees
Township of Tuscarora, Michigan

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, each major fund, the aggregate discretely presented component units, and the aggregate remaining fund information of the Township of Tuscarora, Michigan (the "Township") as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise the Township's basic financial statements, and have issued our report thereon dated December 9, 2019.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Township's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Township's internal control. Accordingly, we do not express an opinion on the effectiveness of the Township's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. *A material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. *A significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Township's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The

results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in cursive script that reads "Galbridge & Company".

Grand Rapids, Michigan
December 9, 2019



Heart of the Inland Waterway

TOWNSHIP OF TUSCARORA, MICHIGAN

ANNUAL FINANCIAL REPORT

YEAR ENDED JUNE 30, 2020

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INDEPENDENT AUDITOR'S REPORT

To the Board of Trustees
Township of Tuscarora, Michigan

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township of Tuscarora, Michigan (the "Township") as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Township's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township, as of June 30, 2020, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, budgetary comparison information, and the pension schedules, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Township's basic financial statements. The combining and individual fund financial statements are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The combining and individual fund financial statements are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the combining and individual fund financial statements are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 4, 2020, on our consideration of the Township's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Township's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Township's internal control over financial reporting and compliance

A handwritten signature in cursive script that reads "Gabridge & Company".

Gabridge & Company, PLC
Grand Rapids, Michigan
December 4, 2020

Management's Discussion and Analysis

Management's Discussion and Analysis

As management of the Township of Tuscarora, Michigan (The "Township" or "government") we offer readers of the Township's financial statements this narrative overview and analysis of the financial activities of the Township for the fiscal year ended June 30, 2020. We encourage readers to consider the information presented here in conjunction with the financial statements.

Financial Highlights

- The assets and deferred outflows of resources of the Township exceeded its liabilities and deferred inflows of resources at the close of the most recent fiscal year by \$10,285,500 (net position). Of this amount, \$1,901,332 represents unrestricted net position, which may be used to meet the government's ongoing obligations to citizens and creditors.
- The Township's total net position increased \$4,892 during the year. Revenues showed an increase across all Township funds during the year of \$114,077 and expenses for the Township increased by \$68,327 from the prior fiscal year.
- At the close of the current fiscal year, the Township's governmental funds reported combined fund balances of \$1,379,815, an increase of \$68,910 in comparison with the prior year. Approximately 41.3% of this amount, or \$570,448, is available for spending at the government's discretion (*unassigned fund balance*).
- At the end of the current fiscal year, unassigned fund balance for the general fund was \$570,448, or approximately 54.6% of total general fund expenditures.

Overview of the Financial Statements

The discussion and analysis provided here is intended to serve as an introduction to the Township's basic financial statements. The Township's basic financial statements consist of three components: 1) government-wide financial statements, 2) fund financial statements, and 3) the notes to financial statements. This report also includes supplementary information intended to furnish additional detail to support the basic financial statements themselves.

Government-wide Financial Statements. The government-wide financial statements are designed to provide readers with a broad overview of the Township's finances, in a manner similar to a private-sector business.

The *statement of net position* presents financial information on all of the Township's assets, deferred outflows, and liabilities, with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Township is improving or deteriorating.

The *statement of activities* presents information showing how the Township's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. Thus,

revenues and expenses are reported for some items that will only result in cash flows in future fiscal periods (e.g., earned but unused vacation leave and accrued interest on long-term debt).

Both of the government-wide financial statements distinguish functions of the Township that are principally supported by taxes and intergovernmental revenues (governmental activities) from other functions that are intended to recover all or a significant portion of their costs through user fees and charges (business-type activities). The governmental activities of the Township include general government, police and fire protection, streets, health and welfare, community and economic development, and recreation and culture. The business-type activities of the Township include sewer services.

The government-wide financial statements include not only the Township itself (known as the primary government), but also the legally separate Downtown Development Authority (“DDA”) and Indian River Area Library (“Library”), for which the Township is financially accountable. Financial information for these component units are reported separately from the financial information presented for the primary government itself. Financial statements for the DDA and Library can be located in the other supplemental information section of this report.

Fund Financial Statements. A *fund* is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The Township, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. All of the funds of the Township can be divided into three categories: governmental funds, proprietary funds, and fiduciary funds.

Governmental Funds. *Governmental funds* are used to account for essentially the same functions reported as *governmental activities* in the government-wide financial statements. However, unlike the government-wide financial statements, governmental fund financial statements focus on *near-term inflows and outflows of spendable resources*, as well as on *balances of spendable resources* available at the end of the fiscal year. Such information may be useful in assessing a government’s near-term financing requirements.

Because the focus of governmental funds is narrower than that of the government-wide financial statements, it is useful to compare the information presented for *governmental funds* with similar information presented for *governmental activities* in the government-wide financial statements. By doing so, readers may better understand the long-term impact of the government’s near-term financing decisions. Both the governmental fund balance sheet and the governmental fund statement of revenues, expenditures, and changes in fund balances provide a reconciliation to facilitate this comparison between *governmental funds* and *governmental activities*.

The Township maintains four individual governmental funds. Information is presented separately in the governmental fund balance sheet and in the governmental fund statement of revenues, expenditures, and changes in fund balances for the general fund and the police fund, which are considered to be major funds. Data from the 2016 special assessment bonds debt retirement is presented as a separate column as it is considered a nonmajor fund.

The Township adopts an annual appropriated budget for the general fund and each special revenue fund. A budgetary comparison schedule for the general fund and each major special revenue fund has been provided to demonstrate compliance with these budgets.

Proprietary Funds. The Township maintains one type of proprietary fund, an enterprise fund. *Enterprise funds* are used to report the same functions presented as *business-type activities* in the government-wide financial statements. The Township uses enterprises funds to account for its sewer operations.

Proprietary funds provide the same type of information as the government-wide financial statements, only in more detail. The proprietary fund financial statements provide information for the sewer operations. The sewer fund is considered to be a major fund of the Township.

Fiduciary funds. Fiduciary funds are used to account for resources held for the benefit of parties outside the government. Fiduciary funds are not reflected in the government-wide financial statement because the resources of those funds are not available to support the Township's own programs. The accounting used for fiduciary funds is much like that used for proprietary funds.

Notes to the Financial Statements. The notes provide additional information that is necessary to acquire a full understanding of the data provided in the government-wide and fund financial statements.

Other Information. In addition to the basic financial statements and accompanying notes, this report also presents *required supplementary information* concerning the Township's budgetary comparison schedules and the Townships pension plan schedules.

This report also presents other supplementary information which includes the nonmajor fund and component unit combining and individual statements. The combining statements are presented immediately following the required supplementary information on pensions.

Government-wide Overall Financial Analysis

As noted earlier, net position over time, may serve as a useful indicator of a government's financial position. In the case of the Township, assets and deferred outflows of resources exceeded liabilities and deferred inflows of resources by \$10,285,500, at the close of the most recent fiscal year.

Township of Tuscarora's Net Position

	Governmental Activities		Business-type Activities		Total Government	
	2020	2019	2020	2019	2020	2019
ASSETS						
<i>Current Assets</i>						
Cash and Cash Equivalents	\$ 1,441,875	\$ 1,338,267	\$ 109,487	\$ 223,692	\$ 1,551,362	\$ 1,561,959
Accounts Receivable	1,410	3,033	41,608	43,893	43,018	46,926
Due from Other Governments	-	45,426	-	-	-	45,426
Special Assessments, Current Portion	17,649	19,965	41,553	42,233	59,202	62,198
Total Current Assets	1,460,934	1,406,691	192,648	309,818	1,653,582	1,716,509
<i>Noncurrent Assets</i>						
Restricted Cash	-	-	352,407	386,505	352,407	386,505
Special Assessments	-	15,722	1,882,174	1,917,527	1,882,174	1,933,249
Capital Assets, Net	3,636,413	3,466,550	5,667,094	5,796,894	9,303,507	9,263,444
Total Assets	5,097,347	4,888,963	8,094,323	8,410,744	13,191,670	13,299,707
DEFERRED OUTFLOWS OF RESOURCES						
Pension Related Deferred Outflows	102,638	228,456	-	-	102,638	228,456
LIABILITIES						
<i>Current Liabilities</i>						
Accounts Payable	18,478	36,489	2,290	18,037	20,768	54,526
Payroll Liabilities	44,992	36,590	-	-	44,992	36,590
Accrued Interest Payable	104	195	8,391	9,170	8,495	9,365
Current Portion of Long-term Debt	24,000	21,000	63,000	63,000	87,000	84,000
Internal Balances	-	2,742	-	(2,742)	-	-
Total Current Liabilities	87,574	97,016	73,681	87,465	161,255	184,481
<i>Noncurrent Liabilities</i>						
Compensated Absences	25,291	29,677	-	-	25,291	29,677
Long-term Debt	-	24,000	1,855,000	2,033,000	1,855,000	2,057,000
Net Pension Liability	909,328	913,163	-	-	909,328	913,163
Total Liabilities	1,022,193	1,063,856	1,928,681	2,120,465	2,950,874	3,184,321
DEFERRED INFLOWS						
Pension Related Deferred Inflows	57,934	63,234	-	-	57,934	63,234
NET POSITION						
Net Investment in Capital Assets	3,612,413	3,421,550	3,749,364	3,767,695	7,361,777	7,189,245
Restricted	669,984	619,049	352,407	386,505	1,022,391	1,005,554
Unrestricted	(162,539)	(50,270)	2,063,871	2,136,079	1,901,332	2,085,809
Total Net Position	\$ 4,119,858	\$ 3,990,329	\$ 6,165,642	\$ 6,290,279	\$ 10,285,500	\$ 10,280,608

A portion of the Township's net position, \$7,361,777, or 71.6 percent, reflects its investment in capital assets (e.g., land and land improvements, buildings and improvements, machinery, equipment, vehicles, and infrastructure), less any related outstanding debt that was used to acquire those assets. The Township uses these capital assets to provide a variety of services to its citizens. Accordingly, these assets are not available for future spending. Although the Township's investment in capital assets is reported net of related debt, it should be noted that the resources used to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities.

An additional portion of the Township's net position, \$1,022,391, or 9.9 percent, represents resources that are subject to external restrictions on how they may be used. The remaining balance

of \$1,901,332, or 18.5 percent, is unrestricted and may be used to meet the government's ongoing obligations to its citizens and creditors.

A summary of significant changes between June 30, 2019 and June 30, 2020 are as follows:

- Long-term liabilities decreased by a total of \$202,000 during the current year. This is a more significant decrease than in the prior year due to the Township making an additional one time principal payment of \$115,000.
- The Township's governmental activities cash increased during the current year by \$103,608. This increase is largely attributable to increased tax revenues due to an increase in taxable values compared to the previous year.
- The increase in net governmental capital assets relates to the completion of the ice rink renovation project and work done to remodel the police station.

Governmental Activities. There were significant fluctuations in governmental activities revenues and expenses in the current year, governmental activities net position, in total, changed from the prior year increasing by \$129,529. A notable component of this change is the decrease in unrestricted net position. The Township's unrestricted net position decreased by \$112,269 from a deficit balance of \$(50,270) to a deficit balance of \$(162,539). Significant events leading to this change are highlighted as follows:

- The Township's taxable value increased by approximately 2.4% and total mills levied across all millages increased by .5137 resulting in an increase in property tax revenue of \$155,476.
- Public safety expenses increased by \$84,987 due to the costs for remodeling the police station . Recreation and culture related expenses decreased by \$24,451 as the costs for completing the ice rink were not as much as in the previous year.

Business-type Activities. Business-type activities decreased the Township's net position by \$124,637. Overall expenses decreased from \$361,703 during 2019 to \$339,843 in 2020 while revenues increased from \$207,421 to 215,206.

Significant events impacting revenues and expenses of the business-type activities during the year include:

- Sewer fund charges for services increased from \$133,022 in the previous year to \$142,844 in the current year mostly due to an increase in the Residential Equivalent Unit (REU) rates and metered rates for service.
- Expenses related to the sewer system operation decreased from \$305,305 to \$285,800 during the current year.

Township of Tuscarora's Changes in Net Position

	Governmental Activities		Business-type Activities		Total Government	
	2020	2019	2020	2019	2020	2019
Revenue						
Program Revenues						
Charges for Services	\$ 139,730	\$ 156,086	\$ 142,844	\$ 125,022	\$ 282,574	\$ 281,108
Operating Grants and Contributions	275,631	268,126	-	8,000	275,631	276,126
Total Program Revenues	415,361	424,212	142,844	133,022	558,205	557,234
General Revenues						
Property Taxes	1,578,745	1,423,269	-	-	1,578,745	1,423,269
Intergovernmental	223,838	262,248	-	-	223,838	262,248
Interest Income	4,649	6,572	72,362	74,399	77,011	80,971
Total General Revenues	1,807,232	1,692,089	72,362	74,399	1,879,594	1,766,488
Total Revenues	2,222,593	2,116,301	215,206	207,421	2,437,799	2,323,722
Expenses						
General Government	367,363	352,154	-	-	367,363	352,154
Public Safety	1,294,947	1,209,960	-	-	1,294,947	1,209,960
Public Works	83,112	67,625	339,843	361,703	422,955	429,328
Community and Economic Development	260	-	-	-	260	-
Recreation and Culture	345,470	369,921	-	-	345,470	369,921
Interest on Long-term Debt	1,912	1,649	-	-	1,912	1,649
Loss on Sale of Asset	-	1,568	-	-	-	1,568
Total Expenses	2,093,064	2,002,877	339,843	361,703	2,432,907	2,364,580
Change in Net Position	129,529	113,424	(124,637)	(154,282)	4,892	(40,858)
Net Position at the Beginning of Period	3,990,329	3,876,905	6,290,279	6,444,561	10,280,608	10,321,466
Net Position at the End of Period	\$ 4,119,858	\$ 3,990,329	\$ 6,165,642	\$ 6,290,279	\$ 10,285,500	\$ 10,280,608

Financial Analysis of Governmental Funds

As noted earlier, the Township uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

Governmental Funds. The focus of the Township's *governmental funds* is to provide information on near-term inflows, outflows, and balances of spendable resources. Such information is useful in assessing the Township's financing requirements. In particular, unassigned fund balance may serve as a useful measure of a government's net resources available for discretionary use as they represent the portion of fund balance which has not yet been limited to use for a particular purpose by either an external party, the Township itself, or a group or individual that has been delegated authority to assign resources for use for particular purposes by the Township's Board.

At June 30, 2020, the Township's governmental funds reported combined fund balances of \$1,379,815, an increase of \$68,910 in comparison with the prior year. Approximately 41.3% of this amount, \$570,448, constitutes *unassigned fund balance*, which is available for spending at the government's discretion. The remainder of the fund balance is either *nonspendable*, *assigned*, or *restricted* to indicate that it is: 1) restricted for particular purposes \$669,984 (48.6%) or 2) assigned for particular purposes, \$139,383 or 10.1%.

The general fund is the chief operating fund of the Township. At the end of the current fiscal year, unassigned fund balance of the general fund was \$570,448. As a measure of the general fund's

liquidity, it may be useful to compare unassigned fund balance to total general fund expenditures. Unassigned fund balance represents approximately 54.6% of total general fund expenditures.

The fund balance of the Township's general fund increased by \$36,045 during the current fiscal year. The explanations for the change was provided in an earlier section of this report.

The police fund, a major fund, had a \$36,566 increase in fund balance during the current fiscal year which put the overall fund balance at \$503,744. The explanations for the change was provided in an earlier section of this report.

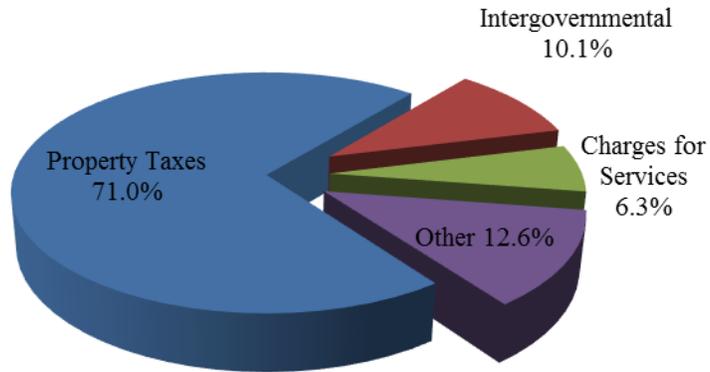
Proprietary Funds. The Township's proprietary funds provide the same type of information found in the government-wide financial statements, but in more detail.

Unrestricted net position at the end of the year was \$2,063,871 for the sewer fund. The decrease in net position was \$124,637 for the sewer fund. A summary of the changes in the sewer fund net position can be found in the business-type activities paragraph found earlier in this report.

Governmental Activities

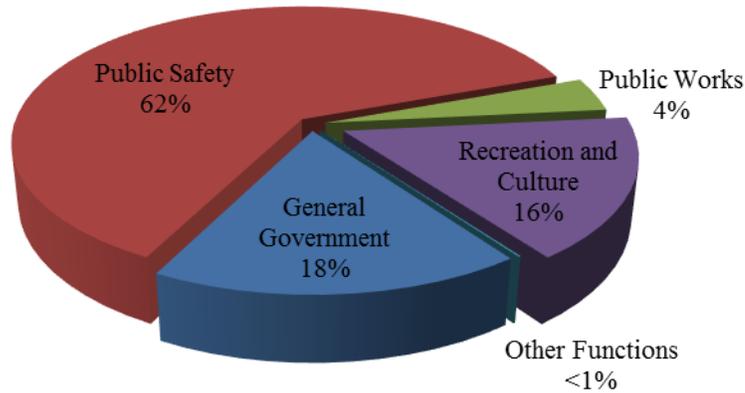
The following chart summarizes the revenue sources for the governmental activities of the Township for the most recent fiscal year end:

Governmental Activities Revenues



The following chart summarizes the expenses for the governmental activities of the Township for the most recent fiscal year end:

Governmental Activities Expenses



General Fund Budgetary Highlights

Original budget compared to final budget. During the year, there was no need to increase authorized expenditures in the general fund as a whole. Budget adjustments were made to allow for increased costs related to the completion of the ice rink project.

Final budget compared to actual results. The Township had no expenditures in excess of the amounts appropriated during the year ended June 30, 2020.

Capital Assets and Debt Administration

Capital assets. The Township’s investment in capital assets for its governmental and business-type activities as of June 30, 2020, amounts to \$9,303,507 (net of accumulated depreciation). This investment in capital assets includes land and land improvements, buildings and improvements, machinery, equipment, vehicles, park facilities, and sewer infrastructure.

More detailed information about the Township’s capital assets can be found in Note 4.

Long-term Debt

As described in Note 6 to the financial statements, the Township had \$1,942,000 in long-term debt at the end of the fiscal year. The Township is well under its legal debt limit as of year-end.

Economic Condition and Outlook

Management estimates that \$954,000 of revenues will be available for appropriation in the general fund in the upcoming year. The Township continues to review all budget line items for

opportunities to reduce expenditures when possible. The budget will be monitored during the year to identify any necessary amendments. In 2021, the Township plans again to use current revenues to provide essential services and to maintain the Township's financial reserves at similar levels. Property tax revenues are expected to change minimally reflecting fairly stable property values. Additionally, management and the Township Board are currently working to determine the significance that the COVID-19 pandemic will have on the Township's upcoming revenues.

Contacting the Township

This financial report is designed to provide a general overview of the Township's finances to its citizens, customers, investors, and creditors and to demonstrate the Township's accountability for the resources it receives. Questions regarding any information provided in this report or requests for additional financial information should be addressed to:

The Township of Tuscarora
3546 S Straits Highway
Indian River, MI 49749

Basic Financial Statements

Township of Tuscarora
Statement of Net Position
June 30, 2020

	Primary Government			Component Units
	Governmental Activities	Business-type Activities	Total	
ASSETS				
<i>Current Assets</i>				
Cash and Cash Equivalents	\$ 1,441,875	\$ 109,487	\$ 1,551,362	\$ 602,819
Accounts Receivable	1,410	41,608	43,018	19,675
Special Assessments	17,649	41,553	59,202	--
Total Current Assets	1,460,934	192,648	1,653,582	622,494
<i>Noncurrent Assets</i>				
Capital Assets not Being Depreciated	1,383,282	178,618	1,561,900	--
Capital Assets Being Depreciated, Net	2,253,131	5,488,476	7,741,607	817,465
Restricted Cash	--	352,407	352,407	--
Investments - Endowment	--	--	--	5,675
Special Assessments	--	1,882,174	1,882,174	--
Total Assets	5,097,347	8,094,323	13,191,670	1,445,634
DEFERRED OUTFLOWS OF RESOURCES				
Pension Related	102,638	--	102,638	--
Total Deferred Outflows of Resources	102,638	--	102,638	--
LIABILITIES				
<i>Current Liabilities</i>				
Accounts Payable	18,478	2,290	20,768	2,497
Payroll Liabilities	44,992	--	44,992	1,532
Accrued Interest	104	8,391	8,495	--
Current Portion of Long-term Debt	24,000	63,000	87,000	--
Total Current Liabilities	87,574	73,681	161,255	4,029
<i>Noncurrent Liabilities</i>				
Net Pension Liability	909,328	--	909,328	--
Compensated Absences	25,291	--	25,291	--
Long-term Debt	--	1,855,000	1,855,000	--
Total Liabilities	1,022,193	1,928,681	2,950,874	4,029
DEFERRED INFLOWS OF RESOURCES				
Pension Related	57,934	--	57,934	--
Total Deferred Inflows of Resources	57,934	--	57,934	--
NET POSITION				
Net Investment in Capital Assets	3,612,413	3,749,364	7,361,777	817,465
<i>Restricted for:</i>				
Nonspendable Endowment	--	--	--	5,675
Debt Service	78,595	--	78,595	--
Repair, Replacement, Improvement	--	59,734	59,734	--
Additional Residential Equivalent Units	--	292,673	292,673	--
Police	503,744	--	503,744	--
Fire Protection	1,540	--	1,540	--
Lights	6,315	--	6,315	--
Boat Launch Fees	79,790	--	79,790	--
<i>Unrestricted</i>	(162,539)	2,063,871	1,901,332	618,465
Total Net Position	\$ 4,119,858	\$ 6,165,642	\$ 10,285,500	\$ 1,441,605

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Statement of Activities
For the Year Ended June 30, 2020**

Functions/Programs	Expenses	Program Revenues			Net (Expense) Revenue			Component Units
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Governmental Activities	Business-type Activities	Total	
Primary Government								
Governmental Activities:								
General Government	\$ 367,363	\$ 22,268	\$ 6,953	\$ --	\$ (338,142)	\$ --	\$ (338,142)	\$ --
Public Safety	1,294,947	85,857	4,275	--	(1,204,815)	--	(1,204,815)	--
Public Works	83,112	6,016	--	--	(77,096)	--	(77,096)	--
Community and Economic Development	260	--	--	--	(260)	--	(260)	--
Recreation and Culture	345,470	25,589	264,403	--	(55,478)	--	(55,478)	--
Debt Service - Interest	1,912	--	--	--	(1,912)	--	(1,912)	--
<i>Total Governmental Activities</i>	<u>2,093,064</u>	<u>139,730</u>	<u>275,631</u>	<u>--</u>	<u>(1,677,703)</u>	<u>--</u>	<u>(1,677,703)</u>	<u>--</u>
Business-type Activities:								
Sewer	339,843	142,844	--	--	--	(196,999)	(196,999)	--
<i>Total Business-type Activities</i>	<u>339,843</u>	<u>142,844</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>(196,999)</u>	<u>(196,999)</u>	<u>--</u>
<i>Total Primary Government</i>	<u>\$ 2,432,907</u>	<u>\$ 282,574</u>	<u>\$ 275,631</u>	<u>\$ --</u>	<u>\$ (1,677,703)</u>	<u>\$ (196,999)</u>	<u>\$ (1,874,702)</u>	<u>--</u>
Component Units								
DDA	\$ 105,150	\$ --	\$ --	\$ --	--	--	--	(105,150)
Indian River Area Library	126,605	2,330	15,490	--	--	--	--	(108,785)
<i>Total Component Units</i>	<u>\$ 231,755</u>	<u>\$ 2,330</u>	<u>\$ 15,490</u>	<u>\$ --</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>(213,935)</u>
General Purpose Revenues and Transfers:								
Revenues								
Intergovernmental					223,838	--	223,838	22,110
Property Taxes					1,578,745	--	1,578,745	159,229
Interest Income					4,649	72,362	77,011	961
Transfers					--	--	--	--
<i>Total General Revenues and Transfers</i>					<u>1,807,232</u>	<u>72,362</u>	<u>1,879,594</u>	<u>182,300</u>
<i>Change in Net Position</i>					129,529	(124,637)	4,892	(31,635)
<i>Net Position at Beginning of Period</i>					3,990,329	6,290,279	10,280,608	1,473,240
<i>Net Position at End of Period</i>					<u>\$ 4,119,858</u>	<u>\$ 6,165,642</u>	<u>\$ 10,285,500</u>	<u>\$ 1,441,605</u>

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Balance Sheet
Governmental Funds
June 30, 2020**

	<u>Special Revenue</u>		<u>Debt Service</u>	
	<u>General</u>	<u>Police</u>	<u>2016 Special Assessment Bonds Debt Retirement (Nonmajor Fund)</u>	<u>Total Governmental Funds</u>
ASSETS				
Cash and Cash Equivalents	\$ 892,742	\$ 541,150	\$ 7,983	\$ 1,441,875
Accounts Receivable	1,410	--	--	1,410
Due from Other Funds	--	--	70,612	70,612
Special Assessments	--	--	17,649	17,649
<i>Total Assets</i>	<u>\$ 894,152</u>	<u>\$ 541,150</u>	<u>\$ 96,244</u>	<u>\$ 1,531,546</u>
LIABILITIES				
Accounts Payable	\$ 17,287	\$ 1,191	\$ --	\$ 18,478
Payroll Liabilities	8,777	36,215	--	44,992
Due to Other Funds	70,612	--	--	70,612
<i>Total Liabilities</i>	<u>96,676</u>	<u>37,406</u>	<u>--</u>	<u>134,082</u>
DEFERRED INFLOWS OF RESOURCES				
Unavailable Revenue	--	--	17,649	17,649
<i>Total Liabilities and Deferred Inflows of Resources</i>	<u>96,676</u>	<u>37,406</u>	<u>17,649</u>	<u>151,731</u>
FUND BALANCE				
Restricted	87,645	503,744	78,595	669,984
Assigned	139,383	--	--	139,383
Unassigned	570,448	--	--	570,448
<i>Total Fund Balance</i>	<u>797,476</u>	<u>503,744</u>	<u>78,595</u>	<u>1,379,815</u>
<i>Total Liabilities, Deferred Inflows of Resources and Fund Balance</i>	<u>\$ 894,152</u>	<u>\$ 541,150</u>	<u>\$ 96,244</u>	<u>\$ 1,531,546</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Reconciliation of Governmental Funds Balance Sheet to the Statement of Net Position
June 30, 2020

Total Fund Balance - Governmental Funds	\$	1,379,815
In the Statement of Activities, interest is accrued on outstanding bonds, whereas in governmental funds, the interest expenditure is reported when due.		(104)
General government capital assets of \$6,641,456, net of accumulated depreciation of \$3,005,043, are not financial resources, and accordingly are not reported in the funds.		3,636,413
Compensated absences are not due in and payable in the current period, and therefore, are not reported in the funds.		(25,291)
Long-term liabilities are not due and payable in the current period, and therefore, are not reported in the funds.		(24,000)
Certain pension-related amounts, such as the net pension liability and related deferred amounts are not due and payable in the current period or do not represent current financial resources and therefore are not reported in the funds.		(864,624)
Certain receivables are not available to pay for current period expenditures and, therefore, are unearned in the funds.		17,649
Total Net Position-Governmental Funds	\$	<u>4,119,858</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2020

	<u>Special Revenue</u>		<u>Debt Service</u>	
	<u>General</u>	<u>Police</u>	<u>2016 Special Assessment Bonds Debt Retirement (Nonmajor Fund)</u>	<u>Total Governmental Funds</u>
Revenues				
Property Taxes	\$ 530,042	\$ 1,048,703	\$ --	\$ 1,578,745
Special Assessments	5,116	--	17,970	23,086
Intergovernmental	230,791	76,914	--	307,705
Charges for Services	43,471	9,332	--	52,803
Refunds and Reimbursements	3,258	3,766	--	7,024
Other	266,431	120	--	266,551
Interest Income	2,459	858	1,332	4,649
Total Revenues	<u>1,081,568</u>	<u>1,139,693</u>	<u>19,302</u>	<u>2,240,563</u>
Expenditures				
General Government	316,439	--	--	316,439
Public Safety	171,198	1,103,127	--	1,274,325
Public Works	60,026	--	--	60,026
Community and Economic Development	260	--	--	260
Recreation and Culture	497,600	--	--	497,600
Debt Service - Principal	--	--	21,000	21,000
Debt Service - Interest	--	--	2,003	2,003
Total Expenditures	<u>1,045,523</u>	<u>1,103,127</u>	<u>23,003</u>	<u>2,171,653</u>
Excess of Revenues Over (Under) Expenditures	<u>36,045</u>	<u>36,566</u>	<u>(3,701)</u>	<u>68,910</u>
Net Change in Fund Balance	<u>36,045</u>	<u>36,566</u>	<u>(3,701)</u>	<u>68,910</u>
<i>Fund Balance at Beginning of Period</i>	761,431	467,178	82,296	1,310,905
Fund Balance at End of Period	<u>\$ 797,476</u>	<u>\$ 503,744</u>	<u>\$ 78,595</u>	<u>\$ 1,379,815</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Reconciliation of Governmental Funds Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2020

Total Net Change in Fund Balances - Governmental Funds	\$	68,910
Governmental fund report capital outlay as expenditures; however, in the Statement of Activities, the cost of those assets is allocated over the estimated useful lives as depreciation expense. This is the amount of capital outlay expenditures less depreciation expense.		186,792
Changes to accrued interest are not shown in the fund financial statements. The net effect of the current year decrease is to increase net position.		91
Change to compensated absences are not shown in the fund financial statements. The net effect of the current year increase is to decrease net position.		(12,543)
Changes to the net pension liability and related pension deferrals are not shown in the fund financial statements.		(116,683)
Some receivables are long-term in nature and are collectible over several years. However, the current receipts are reflected as revenues on the fund statements.		(18,038)
Current year long-term debt principal payments on contractual obligations and bonds payable are expenditures in the fund financial statements but are reductions in long-term debt in the government-wide financial statements.		21,000
Changes in Net Position-Governmental Funds	\$	<u>129,529</u>

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Statement of Net Position
Proprietary Funds
June 30, 2020**

	Business-type Activities - <u>Enterprise Funds</u>
	<u>Sewer</u>
ASSETS	
<i>Current Assets</i>	
Cash and Cash Equivalents	\$ 109,487
Accounts Receivable	41,608
Special Assessments	41,553
Total Current Assets	<u>192,648</u>
<i>Noncurrent Assets</i>	
Capital Assets not Being Depreciated	178,618
Capital Assets Being Depreciated, Net	5,488,476
Restricted Cash	352,407
Special Assessments	1,882,174
Total Assets	<u>8,094,323</u>
LIABILITIES	
<i>Current Liabilities</i>	
Accounts Payable	2,290
Accrued Interest	8,391
Current Portion of Long-term Debt	63,000
Total Current Liabilities	<u>73,681</u>
<i>Noncurrent Liabilities</i>	
Long-term Debt	1,855,000
Total Liabilities	<u>1,928,681</u>
NET POSITION	
Net Investment in Capital Assets	3,749,364
<i>Restricted for:</i>	
Repair, Replacement, Improvement	59,734
Additional Residential Equivalent Units	292,673
<i>Unrestricted</i>	2,063,871
Total Net Position	<u>\$ 6,165,642</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Statement of Revenues, Expenses, and Changes in Net Position
Proprietary Funds
For the Year Ended June 30, 2020

	<u>Business-type Activities - Enterprise Funds</u>
	<u>Sewer</u>
Operating Revenues	
Charges for Services	\$ 142,844
<i>Total Operating Revenues</i>	<u>142,844</u>
Operating Expenses	
Professional Fees	97,391
Utilities	31,418
Supplies	7,668
Repairs and Maintenance	18,126
Insurance	1,397
Depreciation	129,800
<i>Total Operating Expenses</i>	<u>285,800</u>
<i>Operating Income (Loss)</i>	<u>(142,956)</u>
Non-Operating Revenues (Expenses)	
Interest Income	72,362
Interest Expense	(54,043)
<i>Net Non-Operating Revenues (Expenses)</i>	<u>18,319</u>
<i>Change In Net Position</i>	<u>(124,637)</u>
<i>Net Position at Beginning of Period</i>	6,290,279
<i>Net Position at End of Period</i>	<u>\$ 6,165,642</u>

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Statement of Cash Flows
Proprietary Fund
For the Year Ended June 30, 2020**

	<u>Business-type Activities - Enterprise Fund</u>
	<u>Sewer</u>
Cash Flows Used by Operating Activities	
Cash Received from Customers	\$ 181,162
Cash Payments to Suppliers for Goods and Services	(171,747)
<i>Net Cash Used by Operating Activities</i>	<u>9,415</u>
Cash Flows from Non-capital and Related Financing Activities	
Interfund Balances	2,742
<i>Net Cash Provided by Non-capital and Related Financing Activities</i>	<u>2,742</u>
Cash Flows from Capital and Related Financing Activities	
Principal Paid	(178,000)
Interest Paid	(54,822)
<i>Net Cash Used by Capital and Related Financing Activities</i>	<u>(232,822)</u>
Cash Flows From Investing Activities	
Interest Income	72,362
<i>Net Cash Provided by Investing Activities</i>	<u>72,362</u>
<i>Net Decrease in Cash and Equivalents</i>	(148,303)
<i>Cash and Equivalents - Beginning of Year</i>	610,197
<i>Cash and Equivalents - End of Year</i>	<u>\$ 461,894</u>
Reconciliation of Operating Loss to Net Cash Used by Operating Activities	
Operating Loss	\$ (142,956)
Adjustments to Reconcile Operating Loss to Net Cash Used by Operating Activities	
Depreciation Expense	129,800
Changes in Assets and Liabilities	
Special Assessment Receivable	36,033
Accounts Receivable	2,285
Accounts Payable	(15,747)
<i>Net Cash Used by Operating Activities</i>	<u>\$ 9,415</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Statement of Assets and Liabilities
Fiduciary Funds
June 30, 2020

	Agency
	Property Tax Collection
ASSETS	
Cash and Cash Equivalents	\$ 6,688
<i>Total Assets</i>	6,688
LIABILITIES	
Due to Others	6,688
<i>Total Liabilities</i>	\$ 6,688

The Notes to the Financial Statements are an integral part of these financial statements.

**Township of Tuscarora
Combining Statement of Net Position
Component Units
June 30, 2020**

	<u>DDA</u>	<u>Indian River Area Library</u>	<u>Total Component Units</u>
ASSETS			
<i>Current Assets</i>			
Cash and Cash Equivalents	\$ 412,417	\$ 190,402	\$ 602,819
Accounts Receivable	--	19,675	19,675
Total Current Assets	<u>412,417</u>	<u>210,077</u>	<u>622,494</u>
<i>Noncurrent Assets</i>			
Capital Assets Being Depreciated, Net	625,992	191,473	817,465
Investments - Endowment	--	5,675	5,675
Total Assets	<u>1,038,409</u>	<u>407,225</u>	<u>1,445,634</u>
LIABILITIES			
<i>Current Liabilities</i>			
Accounts Payable	--	2,497	2,497
Payroll Liabilities	--	1,532	1,532
Total Current Liabilities	<u>--</u>	<u>4,029</u>	<u>4,029</u>
<i>Noncurrent Liabilities</i>			
Total Liabilities	<u>--</u>	<u>4,029</u>	<u>4,029</u>
NET POSITION			
Net Investment in Capital Assets	625,992	191,473	817,465
<i>Restricted for:</i>			
Nonspendable Endowment	--	5,675	5,675
<i>Unrestricted</i>	412,417	206,048	618,465
Total Net Position	<u>\$ 1,038,409</u>	<u>\$ 403,196</u>	<u>\$ 1,441,605</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Township of Tuscarora
Combining Statement of Activities
Component Units
For the Year Ended June 30, 2020

	<u>DDA</u>	<u>Indian River Area Library</u>	<u>Total Component Units</u>
Expenses			
Community and Economic Development	\$ 105,150	\$ --	\$ 105,150
Recreation and Culture	--	126,605	126,605
Total Expenses	<u>105,150</u>	<u>126,605</u>	<u>231,755</u>
Program Revenues			
Charges for services	--	2,330	2,330
Operating grants and contributions	--	15,490	15,490
Capital grants and contributions	--	--	--
Total Program Revenues	<u>--</u>	<u>17,820</u>	<u>17,820</u>
Net Program Revenues (Expenses)	<u>(105,150)</u>	<u>(108,785)</u>	<u>(213,935)</u>
General Revenue			
Property Taxes	88,329	70,900	159,229
Intergovernmental	--	22,110	22,110
Interest Income	198	763	961
Total General Revenues	<u>88,527</u>	<u>93,773</u>	<u>182,300</u>
Change in Net Position	<u>(16,623)</u>	<u>(15,012)</u>	<u>(31,635)</u>
<i>Net Position at Beginning of Period</i>	1,055,032	418,208	1,473,240
Net Position at End of Period	<u>\$ 1,038,409</u>	<u>\$ 403,196</u>	<u>\$ 1,441,605</u>

The Notes to the Financial Statements are an integral part of these financial statements.

Notes to the Financial Statements

Township of Tuscarora

Notes to the Financial Statements

Note 1 – Summary of Significant Accounting Policies

The financial statements of Tuscarora Township, Cheboygan County, Michigan (the “Township” or “government”) have been prepared in conformity with generally accepted accounting principles (GAAP) as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard setting body for establishing governmental accounting and financial reporting principles. The more significant of the Township’s accounting policies are described below.

Reporting Entity

Tuscarora Township is an unincorporated Township, which operates under a Supervisor Board form of government. The Township provides the following services: public safety, highways and streets, public improvements, sewer, and general administrative services. The Township has considered all potential component units in evaluating how to define the Township for financial reporting purposes. The decision to include a potential component unit in the reporting entity was made by applying the criteria set forth in Statement 61 of the Government Accounting Standards Board (GASB), *The Financial Reporting Entity*. The basic criteria includes the appointment of a voting majority of the governing board of the unit; legal separation of the Township and the component unit, fiscal independence of the unit, whether exclusion of the unit would make the Township’s financial statements misleading, and whether there is a potential for the organization to provide specific financial benefits to, or impose specific financial burdens on the Township. There are two component units to be included in these statements.

Discretely Presented Component Units

Downtown Development Authority

The Downtown Development Authority, which was established pursuant to the provisions of Act 197 of 1975, as amended, is governed by the Township Supervisor and an eight-member board. The Authority may issue debt subject to the limitations set forth in the Act and is funded by a specified annual property tax capture of a portion of the Township and County levies which may only be used for activities within the downtown district. The Township also has the ability to significantly influence operations of the Downtown Development Authority. Complete financial statements for the component unit are not separately prepared.

Indian River Library

The Township Library, which was established pursuant to the provisions of Public Act 164 of 1877, as amended, is governed by a six-person Board of Directors elected through general elections. The Library may issue debt subject to the limitations set forth in the Act and is funded by an annual property tax levy and county penal fines. Complete financial statements for the component unit are not separately prepared.

Township of Tuscarora

Notes to the Financial Statements

Government-wide and Fund Financial Statements

The government-wide financial statements (i.e., the statement of net position and the statement of activities) report information on all of the nonfiduciary activities of the primary government and its component units. For the most part, the effect of interfund activity has been removed from these statements. Governmental activities, which normally are supported by taxes and intergovernmental revenues, are reported separately from business-type activities, which rely to a significant extent on fees and charges for support. Likewise, the primary government is reported separately from the legally separate component units for which the primary government is financially accountable.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segments are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function or segment. Program revenues include (1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and (2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported instead as general revenues.

Separate financial statements are provided for governmental funds and proprietary funds. Major individual governmental funds and major individual enterprise funds are reported as separate columns in the fund financial statements.

Measurement Focus, Basis of Accounting and Financial Statement Presentation

The government-wide financial statements are reported using the *economic resources measurement focus* and the *accrual basis of accounting*, as are the proprietary fund and fiduciary fund financial statements. The fiduciary fund financial statements use the economic resources measurement focus, although the agency funds do not have a measurement focus. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the have been met.

Governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the Township considers revenues to be available if they are collected within 60 days of the end of the current fiscal period or within one year for expenditure driven grants. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service and accrued employee benefit expenditures are recorded only when payment is due.

Township of Tuscarora

Notes to the Financial Statements

Property taxes, intergovernmental revenue, charges for services, and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. All other revenue items are considered to be measurable and available only when cash is received by the Township.

The Township reports the following major governmental funds:

The ***general fund*** is the Township's primary operating fund. It accounts for all financial resources of the general government, except those accounted for and reported in another fund.

The ***police fund*** accounts for revenues and expenditures directly attributable to police operations. Revenue is primarily generated from property taxes.

The Township reports the following major proprietary fund:

The ***sewer fund*** accounts for the cost of collecting and treating wastewater. Revenues are primarily from service charges to customers, grants, and special assessments. These revenues are also used to pay principal and interest on revenue bonds which were used to finance improvements to the system.

Additionally, the government reports the following fund types:

Special revenue funds are used to account for and report the proceeds of specific revenue sources that are restricted or committed to expenditure for specific purposes other than debt service or capital projects.

Debt service funds are used to account for all financial resources restricted, committed or assigned to expenditure for principal and interest.

Capital project funds account for the accumulation and disbursement of resources for the construction of governmental fund capital projects.

Agency funds are used to account for assets held on behalf of outside parties, including other governments.

As a general rule the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are payments-in-lieu of taxes and other charges between the Township's sewer function and various other functions of the government. Elimination of these charges would distort the direct costs and program revenues reported for the various functions concerned.

Township of Tuscarora

Notes to the Financial Statements

Proprietary funds distinguish *operating* revenues and expenses from *non-operating* items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the enterprise funds are charges for services. Operating expenses for the enterprise funds include depreciation on capital assets, labor, supplies and contracted services. All revenues and expenses are not meeting this definition are reported as nonoperating revenues and expenses.

Assets, Liabilities, and Equity

Cash and Cash Equivalents

The Township's cash and cash equivalents include amounts in demand deposit accounts, certificates of deposit, and short-term investments with original maturities of three months or less from the date of acquisition. Certificates of deposit are carried at cost plus accrued interest, since the original maturity dates are less than one year.

Investments

Investments consist of the Township's share in an external investment pool and are reported at fair value. This investment pool operates in a manner consistent with the Securities and Exchange Commission's Rule 2a(7) of the Investment Company Act of 1940.

Restricted Assets

Assets which are restricted for specified uses by bond debt requirements are classified as restricted assets. Liabilities payable for such restricted assets are separately classified.

Receivables

All receivables are reported at their gross value and, where appropriate, are reduced by the estimated portion that is expected to be uncollectible. No amounts outstanding at June 30, 2019 were identified by as being uncollectible.

Capital Assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, and similar items), are reported in the governmental and business-type activities columns in the government-wide financial statements. Capital assets are defined by the government as assets with an individual cost of more than \$1,000 and an estimated useful life in excess of five years. Such assets are valued at cost where historical records are available and at an estimated historical cost if purchased or constructed. Donated capital assets are recorded at replacement value at the date of donation.

Township of Tuscarora

Notes to the Financial Statements

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend asset lives are not capitalized. Major outlays of capital assets and improvement are capitalized and depreciated over the remaining useful lives of the related capital assets, as applicable.

No interest expense has been incurred or capitalized on capital assets reported in proprietary funds.

Depreciation on capital, assets (including infrastructure) of the primary government is computed using the straight-line method over the following estimated useful lives:

	<u>Years</u>
Land Improvements	15
Buildings and Improvements	10 - 40
Sewer Infrastructure	30 - 50
Vehicles, Machinery, and Equipment	5 - 10

The Township reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset exceeds its fair value. If it is determined that an impairment loss has occurred, the asset is written down to its net realizable value and a current charge to income is recognized.

Deferred Outflows of Resources

In addition to assets, the balance sheet will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The amounts will be amortized to pension expense within five years.

Deferred Inflows of Resources

In addition to liabilities, the fund level balance sheet or statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of fund balance/net position that applies to a future period and so will not be recognized as an inflow of resources (revenue) until that time.

Pension

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Municipal Employees Retirement System (MERS) of Michigan and additions to/deductions from MERS' fiduciary net position have been determined on the same basis as they

Township of Tuscarora

Notes to the Financial Statements

are reported by MERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Compensated Absences

Under terms of Township policies, eligible employees are granted vacation, sick, and compensatory time in varying amounts based on length of service. Sick and vacation pay is accrued when incurred in the government-wide financial statements. A liability for these amounts is reported in governmental funds only if they have maturity, for example, as a result of employee resignations and retirements.

Long-term Obligations

In the government-wide financial statements and proprietary fund types in the fund financial statements, the long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type statement of net position. For new bond issuances of governmental funds after the implementation of GASB Statement No. 34 and all proprietary fund bond premiums and discounts are deferred and amortized over the life of the bonds using the straight-line method which approximates the effective interest method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are recognized as an expense in the period that the bond was issued.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

Deferred Inflows of Resources

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The governmental funds report unavailable revenues, which arises only under a modified accrual basis of accounting, from special assessments. These amounts are deferred and recognized as an inflow of resources in the period that the amount becomes available.

Net Position Flow Assumption

Sometimes the government will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted – net position and unrestricted – net position in the government-wide and

Township of Tuscarora

Notes to the Financial Statements

proprietary fund financial statements, a flow assumption must be made about the order in which the resources are considered to be applied.

It is the government's policy to consider restricted – net position to have been depleted before unrestricted – net position is applied.

Fund Balance Flow Assumptions

Sometimes the government will fund outlays for a particular purpose from both restricted and unrestricted resources (the total of committed, assigned, and unassigned fund balance). In order to calculate the amounts to report as restricted, committed, assigned, and unassigned fund balance in the governmental fund financial statements a flow assumption must be made about the order in which the resources are considered to be applied. It is the government's policy to consider restricted fund balance to have been depleted before using any of the components of unrestricted fund balance. Further, when the components of unrestricted fund balance can be used for the same purpose, committed fund balance is depleted first, followed by assigned fund balance. Unassigned fund balance is applied last.

Fund Balance Policies

Fund balance is essentially the difference between the assets and liabilities reported in governmental fund. There are five separate components of fund balance, each of which identifies the extent to which the Township is bound to honor constraints on the specific purpose for which amounts can be spent.

1. Non-spendable fund balance (*inherently non-spendable*)
2. Restricted fund balance (*externally enforceable limitations on use*)
3. Committed fund balance (*self-imposed limitations on use*)
4. Assigned fund balance (*limitation resulting from intended use*)
5. Unassigned fund balance (*the residual classification of the general fund*)

Non-spendable and Restricted Funds - Non-spendable funds are those fund that cannot be spent because they are either (a) not in spendable form – inventories and prepaids - or (b) legally or contractually required to be maintained intact – long-term receivables.

Restricted funds are those funds that have constraints placed on their use by an external party or constitutional provisions or enabling legislations (grants, contributions, specific fee mandates). Non-spendable and Restricted Funds will be maintained and then summarized in the Township's annual financial report by the Townships financial staff.

Committed Funds - In order to commit fund balance, the Township Board, as the highest level of decision making authority, must pass a Resolution to Commitment funds for a specific purpose. These funds must be fully expended for their committed purpose. To make committed funds

Township of Tuscarora

Notes to the Financial Statements

uncommitted, a new resolution must be passed by the Board. Action must be taken before the last day of the fiscal year to commit funds for that year.

Assigned Funds - Assigned funds are amounts that are constrained by the Township's intent to be used for specific purposes, but are neither restricted nor committed. These amounts can be "assigned" by the Township Supervisor, or his/her designee.

Minimum Unassigned Fund Balance - The Township is committed to maintaining a prudent level of financial resources to protect against the need to reduce service levels because of temporary revenue shortfalls or unpredicted expenditures. The goal of the Township Board shall be to maintain a minimum unassigned fund balance of no less than 50% of General Fund expenditures. For purposes of this calculation, "expenditures" will be the annual budgeted expenditures less non-recurring capital expenditures.

If unassigned fund balance approaches a level that greatly exceeds 50% of expenditures, the Township Board will consider using unassigned fund balance for the following purposes: pay down future debt, transfer funds to a Capital Projects fund for future Capital improvements, and other future obligations of the Township.

Fund balance levels will be analyzed each fiscal year after the financial statement audit.

Property Tax Revenue Recognition

Property taxes are levied as of December 1 of each year and are due by February 15 of the following calendar year. Any amounts not received by February 28 are added to the County tax rolls. The Township receives 100% payment for the delinquent taxes by June 30. The Township bills and collects its own property taxes and also taxes for other governmental units. Collections of the other governmental units' taxes and remittance of them to the units are accounted for in the tax collection fund (a fiduciary fund).

The taxable value of the Township totaled \$240,916,681, on which ad valorem taxes consisted of .9971 mills for the Township's operating purposes, .01028 mills for lights, .7365 mills for the fire protection, 4.5 mills for police protection, and .2951 mills for the component unit library operations.

Interfund Transactions

During the course of normal operations, the Township has numerous transactions between funds, including expenditures and transfers of resources to provide services, construct assets, and service debt. The accompanying financial statements generally reflect such transactions as transfers. Operating subsidies are also recorded as transfers. The amounts recorded as subsidies or advances are determined by the Township.

Township of Tuscarora

Notes to the Financial Statements

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results may differ from those estimates.

Budgetary and Budgetary Accounting

All governmental funds are under formal budgetary control. Budgets shown in the financial statements as “GAAP Basis” are adopted on a basis consistent with generally accepted accounting principles (GAAP) and are not significantly different from the modified accrual basis used to reflect actual results, and consist only of those amounts contained in the formal budget approved and amended by the Township Board. Budgets are adopted on the activity level and control is exercised on that same level.

Note 2 – Statutory Compliance

P.A. 621 of 1978, as amended, provides that a local unit shall not incur expenditures in excess of the amount budgeted. Budgetary control is exercised at the activity level in the general fund and the functional level in other funds.

The Township had no expenditures in excess of the amounts appropriated during the year ended June 30, 2020.

Deficit Net Position

The Township’s governmental activities had an unrestricted net position deficit of \$(162,539) as of June 30, 2020.

Note 3 - Cash and Investments

The captions on the government-wide and fund statements relating to cash and investments are as follows:

	Governmental Activities	Business-type Activities	Primary Government	Component Units	Fiduciary Fund
Statement of Net Position					
Cash and Cash Equivalents	\$ 1,441,875	\$ 109,487	\$ 1,551,362	\$ 602,819	\$ 6,688
Restricted Cash		352,407	352,407	-	-
Investments - Endowment	-	-	-	5,675	-
Total Deposits and Investments	<u>\$ 1,441,875</u>	<u>\$ 461,894</u>	<u>\$ 1,903,769</u>	<u>\$ 608,494</u>	<u>\$ 6,688</u>

Township of Tuscarora

Notes to the Financial Statements

These deposits are held in two financial institutions, both of which are located in Michigan. State policy limits the Treasurer's investing options as described in detail below. All accounts are in the name of the Township and a specific fund or common account. Deposits and investments are recorded in Township records at fair value. Interest is recorded when earned.

Deposits and Investments

Checking and Savings Accounts	\$ 2,513,131
Investments	5,675
Cash on Hand	145
Total Deposits and Investments	<u>\$ 2,518,951</u>

Custodial Credit Risk - Deposits. Custodial credit risk is the risk that, in the event of a bank failure, the Township's deposits might not be returned. State law does not require, and the Township does not have, a policy for deposit custodial credit risk. As of year-end, \$1,913,275 of the Township's bank balance of \$2,558,727, was exposed to custodial credit risk because it was uninsured and uncollateralized. Due to the dollar amounts of cash deposits and the limits of FDIC and NCUA insurances, the Township believes it is impractical to insure all bank deposits. As a result, the Township evaluates each financial institution with which it deposits Township funds and assesses the level of risk of each institution; only those institutions with an acceptable estimated risk level are used as depositories.

Statutory Authority

State statutes authorize the Township to invest in:

- a. Bonds, securities, other obligations, and repurchase agreements of the United States of America, or an agency or instrumentality of the United States of America.
- b. Certificates of deposit, savings accounts, deposit accounts, or depository receipts of a qualified financial institution.
- c. Commercial paper rated at the time of purchase within the two highest classifications established by not less than two standard rating services and that matures not more than 270 days after the date of purchase.
- d. Bankers' acceptances of United States banks.
- e. Obligations of the State of Michigan and its political subdivisions that, at the time of purchase are rated as investment grade by at least one standard rating service.
- f. Mutual funds registered under the Investment Company Act of 1940 with the authority to purchase only investment vehicles that are legal for direct investment by a public corporation.

Township of Tuscarora

Notes to the Financial Statements

- g. External investment pools as authorized by Public Act 20 as amended through December 31, 1997.

Fair Value Measurement

The Township categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

The Township has the following recurring fair value measurements as of June 30, 2020:

- All investments held at the Community Foundation of Northeast Michigan, with a balance of \$60,461 at June 30, 2020, are valued using Level 2 inputs.

Note 4 - Capital Assets

Capital asset activities for governmental activities for the year ended June 30, 2020 were as follows:

Governmental Activities	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets not being Depreciated				
Land	\$ 1,383,282	\$ -	\$ -	\$ 1,383,282
Capital Assets being Depreciated				
Land Improvements	2,596,462	6,130	-	2,602,592
Buildings and Improvements	1,518,457	389,905	-	1,908,362
Vehicles	183,994	-	-	183,994
Equipment	563,227	-	-	563,227
<i>Subtotal</i>	<u>4,862,140</u>	<u>396,035</u>	<u>-</u>	<u>5,258,175</u>
Less Accumulated Depreciation				
Land Improvements	1,453,523	135,190	-	1,588,713
Buildings and Improvements	861,311	46,244	-	907,555
Vehicles	103,707	15,051	-	118,758
Equipment	360,331	29,687	-	390,018
<i>Subtotal</i>	<u>2,778,872</u>	<u>226,172</u>	<u>-</u>	<u>3,005,044</u>
Capital Assets being Depreciated, Net	<u>2,083,268</u>	<u>169,863</u>	<u>-</u>	<u>2,253,131</u>
Capital Assets, Governmental Activities	<u>\$ 3,466,550</u>	<u>\$ 169,863</u>	<u>\$ -</u>	<u>\$ 3,636,413</u>

Township of Tuscarora

Notes to the Financial Statements

Capital asset activities for business-type activities for the year ended June 30, 2020 were as follows:

Business-type Activities	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets not being Depreciated				
Land	\$ 178,618	\$ -	\$ -	\$ 178,618
Capital Assets being Depreciated				
Sewer System	5,814,433	-	-	5,814,433
Machinery and Equipment	189,318	-	-	189,318
<i>Subtotal</i>	<u>6,003,751</u>	<u>-</u>	<u>-</u>	<u>6,003,751</u>
Less Accumulated Depreciation				
Sewer System	360,654	128,464	-	489,118
Machinery and Equipment	24,822	1,336	-	26,158
<i>Subtotal</i>	<u>385,475</u>	<u>129,800</u>	<u>-</u>	<u>515,275</u>
Capital Assets being Depreciated, Net	5,618,276	(129,800)	-	5,488,476
Capital Assets, Business-type Activities	<u>\$ 5,796,894</u>	<u>\$ (129,800)</u>	<u>\$ -</u>	<u>\$ 5,667,094</u>

Capital asset activities for the component unit activities for the year ended June 30, 2020 were as follows:

Component Unit - Downtown Development Authority	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets being Depreciated				
Land Improvements	\$ 737,066	\$ 24,550	\$ -	\$ 761,616
Less Accumulated Depreciation				
Land Improvements	105,253	30,371	-	135,624
Capital Assets, Downtown Development Authority	<u>\$ 631,813</u>	<u>\$ (5,821)</u>	<u>\$ -</u>	<u>\$ 625,992</u>

Component Unit - Indian River Area Library	Beginning Balance	Additions	Disposals	Ending Balance
Capital Assets being Depreciated				
Books and Periodicals	\$ 213,201	\$ 8,701	\$ 17,445	\$ 239,347
Buildings and Improvements	74,113	-	-	74,113
Equipment	188,887	-	-	188,887
<i>Subtotal</i>	<u>476,201</u>	<u>8,701</u>	<u>17,445</u>	<u>502,347</u>
Less Accumulated Depreciation				
Books and Periodicals	124,363	16,713	17,445	158,521
Buildings and Improvements	13,160	6,126	-	19,286
Equipment	128,442	4,625	-	133,067
<i>Subtotal</i>	<u>265,965</u>	<u>27,464</u>	<u>17,445</u>	<u>310,874</u>
Capital Assets, Indian River Area Library	<u>\$ 210,236</u>	<u>\$ (18,763)</u>	<u>\$ -</u>	<u>\$ 191,473</u>

Township of Tuscarora

Notes to the Financial Statements

Depreciation expense was charged to functions of the Township as follows:

Governmental Activities

General Government	\$ 50,924
Public Safety	16,929
Public Works	28,408
Recreation and Culture	129,911
<i>Total</i>	\$ 226,172

Business-type Activities

Sewer Fund	\$ 129,800
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Discretely Presented Component Units

Tuscarora Township DDA

Community and Economic Development	\$ 30,371
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Indian River Area Library

Recreation and Culture	27,464
<i>Total</i>	\$ 57,835

Note 5 - Interfund Receivables and Payables

The composition of interfund balances as of June 30, 2020 was as follows:

Receivable Fund	Payable Fund	Amount
2016 Special Assessment	General	\$ 70,612

All amounts due from other funds represent advances to other funds to finance operations or capital outlays.

Township of Tuscarora

Notes to the Financial Statements

Note 6 - Long-term Debt

Long-term debt activity for the year ended June 30, 2020 was as follows:

	Beginning Balance	Additions	Reductions	Ending Balance	Due Within One Year
Governmental Activities:					
2016 Special Assessment bonds - Eagles Nest	\$ 45,000	\$ -	\$ (21,000)	\$ 24,000	\$ 24,000
Compensated Absences	29,677	-	(4,386)	25,291	-
Total Governmental Activities:	<u>74,677</u>	<u>-</u>	<u>(25,386)</u>	<u>49,291</u>	<u>24,000</u>
Business-type Activities:					
2014 Sewer Special Assessment Bonds used to finance sewer project. \$2,411,000 at 2.625% Interest. Payments to be made through 2052.	2,096,000	-	(178,000)	1,918,000	63,000
Total Business-type Activities:	<u>2,159,000</u>	<u>-</u>	<u>(178,000)</u>	<u>1,918,000</u>	<u>63,000</u>
Total Long-term Debt:	<u>\$ 2,252,001</u>	<u>\$ -</u>	<u>\$ (203,386)</u>	<u>\$ 1,967,291</u>	<u>\$ 87,000</u>

The annual requirements, excluding accrued employee benefits, to maturity on the total long-term debt obligations outstanding at June 30, 2020 are as follows:

Year Ending June 30	Governmental Activities		
	Principal	Interest	Total
2021	\$ 24,000	\$ 624	\$ 24,624
Totals	<u>\$ 24,000</u>	<u>\$ 624</u>	<u>\$ 24,624</u>
Year Ending June 30	Business-type Activities		
	Principal	Interest	Total
2021	\$ 63,000	\$ 55,020	\$ 118,020
2022	63,000	53,366	116,366
2023	63,000	51,713	114,713
2024	63,000	50,059	113,059
2025	63,000	48,405	111,405
2026-2030	311,000	217,718	528,718
2031-2035	315,000	176,400	491,400
2036-2040	319,000	134,794	453,794
2041-2045	320,000	92,794	412,794
2046-2050	323,000	50,636	373,636
2051	15,000	6,326	21,326
Totals	<u>\$ 1,918,000</u>	<u>\$ 937,230</u>	<u>\$ 2,855,230</u>

Township of Tuscarora

Notes to the Financial Statements

Note 7 - Risk Management

The Township is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees (workers' compensation); and natural disasters. During the year ended June 30, 2020, the Township carried commercial insurance to cover all risks of loss. The Township has had no settled claims resulting from these risks that exceeded their commercial coverage in any of the past three fiscal years. There was no significant change in coverage during the year.

Note 8 - Defined Benefit Pension Plan

Plan Description

Benefits Provided

Plan Description. The employer's defined benefit pension plan provides certain retirement, disability, and death benefits to plan members and beneficiaries. The employer participates in the Municipal Employees Retirement System (MERS) of Michigan. MERS is an agent multiple-employer, statewide public employee pension plan established by the Michigan Legislature under Public Act 135 of 1945 and administered by a nine member Retirement Board. Public Act 427 of 1984, as amended, establishes and amends the benefit provisions of the participants in MERS. MERS issues a publicly available financial report that includes financial statements and required supplementary information. This report may be obtained accessing the MERS website at www.mersofmich.com.

Retirement benefits for employees are calculated as follows:

Division	Benefit Multiplier	Employee Contributions	Benefit Maximum	Final Average Compensation (Years)	Normal Retirement Age	Unreduced Benefit (Age/Years of Service)	Reduced Benefit (Age/Years of Service)	Vesting (Years)
Police	2.50%	0.00%	80%	5	60	55/20	50/25 or 55/15	10

Benefit terms, within the parameters established by MERS, are generally established and amended by authority of the Township Board of Trustees, generally after negotiations of these terms with the affected unions.

Township of Tuscarora

Notes to the Financial Statements

Employees Covered by Benefit Terms

At the December 31, 2019 measurement date, the following employees were covered by the benefit terms:

Inactive plan members or beneficiaries currently receiving benefits	4
Inactive plan members entitled to but not yet receiving benefits	2
Active plan members	<u>9</u>
Total employees covered by MERS	<u>15</u>

Contributions

Article 9, Section 24 of the State of Michigan constitution requires that financial benefits arising on account of employee service rendered in each year be funded during that year. Accordingly, MERS retains an independent actuary to determine the annual contribution. The employer is required to contribute amounts at least equal to the actuarially determined rate, as established by the MERS retirement board. The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by plan members during the year, with an additional amount to finance any unfunded accrued liability. The employer may establish contribution rates to be paid by its covered employees.

For the year ended December 31, 2019, the Township had the following contribution rates:

<u>Division</u>	<u>Employer Contributions</u>	<u>Employee Contributions</u>
Police	24.15%	0.00%

Net Pension Liability

The net pension liability reported at June 30, 2020 was determined using a measure of the total pension liability and the pension net position as of December 31, 2019. The December 31, 2019 total pension liability was determined by an actuarial valuation performed as of that date.

Township of Tuscarora

Notes to the Financial Statements

Changes in the net pension liability during the measurement year were as follows:

Changes in Net Pension Liability	Increase (Decrease)		
	Total Pension Liability	Plan Net Position	Net Pension Liability
Balance at December 31, 2018	\$ 2,582,974	\$ 1,669,811	\$ 913,163
Service cost	60,668	-	60,668
Interest	205,578	-	205,578
Difference between expected and actual experience	(17,990)	-	(17,990)
Changes in assumptions	87,087	-	87,087
Contributions - employer	-	113,787	(113,787)
Net investment income	-	229,342	(229,342)
Benefit payments, including refunds	(87,166)	(87,166)	-
Administrative expenses	-	(3,952)	3,952
Other expenses	(1)	-	(1)
Net changes	248,176	252,011	(3,835)
Balance at December 31, 2019	\$ 2,831,150	\$ 1,921,822	\$ 909,328

Net pension liabilities are generally liquidated by the general and police fund within governmental activities.

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended June 30, 2020, the Township recognized pension expense of \$189,261. At June 30, 2020, the Township reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

Source	Deferred Outflows of Resources	Deferred Inflows of Resources
Net difference between projected and actual earnings on pension plan investments	\$ 6,913	\$ -
Net difference in experience	3,505	57,934
Net difference in assumptions	36,235	-
Employer contributions to the plan subsequent to the measurement date	55,985	-
Total	\$ 102,638	\$ 57,934

Township of Tuscarora

Notes to the Financial Statements

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended	
June 30	Amount
2021	\$ 2,893
2022	(13,376)
2023	20,068
2025	(20,866)

Actuarial Assumptions

The total pension liability in the December 31, 2019 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation: 2.50%

Salary Increases: base wage inflation of 3.00% in the long-term.

Investment rate of return: 7.35%, net of investment expense including inflation.

Mortality rates used for non-disabled plan member were based on a weighted blend of RP-2014 mortality tables of a 50% Male and 50% Female blend.

The actuarial assumptions used in the valuation were based on the results of the most recent actuarial experience study.

The long-term expected rate of return on pension plan investments was determined using a model method in which the best-estimate ranges of expected future real rates of return (expected returns, net of investment and administrative expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Township of Tuscarora

Notes to the Financial Statements

The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Target Allocation Gross Rate of Return</u>	<u>Long-term Expected Gross Rate of Return</u>	<u>Inflation Assumption</u>	<u>Long-term Expected Real Rate of Return</u>
Global Equity	60.00%	7.75%	4.65%	2.50%	3.15%
Global Fixed Income	20.00%	3.75%	0.75%	2.50%	0.25%
Private Investments	20.00%	9.75%	1.95%	2.50%	1.45%
Total	100.00%		7.35%		4.85%

Discount Rate

The discount rate used to measure the total pension liability is 7.6%. The projection of cash flows used to determine the discount rate assumes that employer and employee contributions will be made at the rates agreed upon for employees and the actuarially determined rates for employers. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to pay all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the Township, calculated using the discount rate of 7.6 percent, as well as what the Township's net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.6 percent) or one percentage point higher (8.6 percent) than the current rate:

	1% Decrease (6.60%)	Current Discount Rate (7.6%)	1% Increase (8.60%)
Net pension liability of the Township	<u>\$ 1,299,619</u>	<u>\$ 909,328</u>	<u>\$ 327,976</u>

Pension Plan Fiduciary Net Position

Detailed information about the pension plan's fiduciary net position is available in the separately issued plan financial statements.

Township of Tuscarora

Notes to the Financial Statements

Note 9 - Subsequent Events

Subsequent events have been evaluated through December 4, 2020, the date the financial statements were available to be issued. The following significant subsequent events were noted:

- The Township's Downtown Development Authority component unit is beginning a streetscape project that is to be funded by a USDA loan of \$1.4 million. The project has been delayed in part to the Covid-19 pandemic. The project is expected to be completed during the Township's fiscal year ending June 30, 2021. During September of 2020, the Township closed on two loans for the project.
- During August 2020, the Township authorized the issuance of special assessment bonds to fund upcoming street projects.
- The Township will be affected by the recent and ongoing outbreak of the Coronavirus (COVID-19) which was declared a pandemic by the World Health Organization in March 2020. COVID-19 has caused significant government and business disruptions through mandated and voluntary closings and stay at home orders. The Township Board and management is in the process of determining the significance that the outbreak will have on the Township's upcoming budget.

Note 10 – USDA Restricted Cash

A portion of the restricted cash in the sewer fund is required by the United States Department of Agriculture - Rural Development (the "USDA") to be maintained at levels consistent with the Township's bond agreements. Repair, Replacement, and Improvement account funds may be used for the repair, replacement, and improvement of the Township's sewer system. Restricted cash related to USDA bonds consists of the following:

	<u>June 30, 2020</u>	
	<u>Required Balance</u>	<u>Actual Balance</u>
<u>Business-type Activities</u>		
<i>Repair, Replacement, and Improvement</i>		
2014 Issue, \$10,693 per year	\$ 64,158	\$ 59,734

The variance from required balance to actual is due to expenditures from that account that have been authorized by the USDA.

Note 11 – Tax Abatements

Governmental Accounting Standards Board (GASB) Statement No. 77 "Tax Abatement Disclosures" requires that State and local governments that have entered into tax abatement agreements disclose information related to those agreements. The Township did not have any active tax abatement agreements at June 30, 2020.

Required Supplementary Information

Township of Tuscarora
Schedule of Revenues, Expenditures, and Changes in Fund Balance-Budget and Actual
General Fund
For the Year Ended June 30, 2020

	Budgeted Amounts		Actual	Variance
	Original	Final		Positive (Negative)
				Final to Actual
Revenues				
Property Taxes	\$ 526,450	\$ 526,450	\$ 530,042	\$ 3,592
Special Assessments	5,150	5,150	5,116	(34)
Intergovernmental	274,500	274,500	230,791	(43,709)
Charges for Services	40,600	40,600	43,471	2,871
Refunds and Reimbursements	--	--	3,258	3,258
Other	216,200	216,200	266,431	50,231
Interest Income	1,680	1,680	2,459	779
Total Revenues	1,064,580	1,064,580	1,081,568	16,988
Expenditures				
General Government				
Township Board	103,321	103,321	91,471	11,850
Supervisor	129,032	49,032	28,534	20,498
Clerk	44,532	44,532	34,982	9,550
Board of Review	2,385	2,385	1,207	1,178
Treasurer	39,240	39,240	37,199	2,041
Assessor	95,900	95,900	77,191	18,709
Cemetery	23,800	23,800	17,106	6,694
Elections	10,450	10,450	4,232	6,218
Building and Grounds	25,550	25,550	20,454	5,096
Other	10,000	10,000	4,063	5,937
Total General Government	484,210	404,210	316,439	87,771
Public Safety				
Fire Protection	171,198	171,198	171,198	--
Public Works				
Roads	51,000	51,000	12,600	38,400
Street Lighting	35,000	35,000	28,728	6,272
Sanitation	1,000	1,000	676	324
Airport	25,500	25,500	18,022	7,478
Total Public Works	112,500	112,500	60,026	52,474
Community and Economic Development				
Planning	4,600	4,600	260	4,340
Recreation and Culture				
Parks	170,775	165,185	155,540	9,645
Boat Launch	269,800	355,390	342,060	13,330
Total Recreation and Culture	440,575	520,575	497,600	22,975
Total Expenditures	1,213,083	1,213,083	1,045,523	167,560
Excess (Deficiency) of Revenues				
Over Expenditures	(148,503)	(148,503)	36,045	184,548
Net Change in Fund Balance	(148,503)	(148,503)	36,045	184,548
<i>Fund Balance at Beginning of Period</i>	761,431	761,431	761,431	--
Fund Balance at End of Period	\$ 612,928	\$ 612,928	\$ 797,476	\$ 184,548

Township of Tuscarora
Schedule of Revenues, Expenditures, and Changes in Fund Balance-Budget and Actual
Police
For the Year Ended June 30, 2020

	<u>Budgeted Amounts</u>		<u>Actual</u>	Variance
	<u>Original</u>	<u>Final</u>		Positive (Negative)
				<u>Final to Actual</u>
Revenues				
Property Taxes	\$ 1,059,998	\$ 1,059,998	\$ 1,048,703	\$ (11,295)
Intergovernmental	73,181	73,181	76,914	3,733
Charges for Services	10,423	10,423	9,332	(1,091)
Refunds and Reimbursements	--	--	3,766	3,766
Other	--	--	120	120
Interest Income	750	750	858	108
Total Revenues	<u>(1,144,352)</u>	<u>(1,144,352)</u>	<u>1,139,693</u>	<u>2,284,045</u>
Expenditures				
Public Safety - Police	1,143,393	1,152,589	1,103,127	49,462
Total Expenditures	<u>1,143,393</u>	<u>1,152,589</u>	<u>1,103,127</u>	<u>49,462</u>
Excess (Deficiency) of Revenues				
Over Expenditures	<u>(2,287,745)</u>	<u>(2,296,941)</u>	<u>36,566</u>	<u>2,333,507</u>
Net Change in Fund Balance	<u>(2,287,745)</u>	<u>(2,296,941)</u>	<u>36,566</u>	<u>2,333,507</u>
<i>Fund Balance at Beginning of Period</i>	467,178	467,178	467,178	--
Fund Balance at End of Period	<u>\$ (1,820,567)</u>	<u>\$ (1,829,763)</u>	<u>\$ 503,744</u>	<u>\$ 2,333,507</u>

Township of Tuscarora
Required Supplementary Information
Schedule of Changes in Net Pension Liability and Related Ratios
Last Six Plan Years

	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$ 60,668	\$ 58,652	\$ 51,118	\$ 70,378	\$ 66,338	\$ 64,795
Interest	205,578	193,122	181,306	207,567	186,965	172,980
Changes in Benefit Terms	-	-	-	(409,343)	-	-
Differences Between Expected & Actual Experience	(17,990)	(10,676)	(3,609)	(103,865)	21,040	-
Changes in Assumptions	87,087	-	-	-	133,816	-
Other	(1)	(1)	-	-	-	-
Benefit Payments, Including Refunds	(87,166)	(85,645)	(84,124)	(82,603)	(81,082)	(56,969)
Net Change in Pension Liability	<u>248,176</u>	<u>155,452</u>	<u>144,691</u>	<u>(317,866)</u>	<u>327,077</u>	<u>180,806</u>
<i>Total Pension Liability - Beginning</i>	<u>2,582,974</u>	<u>2,427,522</u>	<u>2,282,831</u>	<u>2,600,697</u>	<u>2,273,620</u>	<u>2,092,814</u>
Total Pension Liability - Ending (a)	<u>\$ 2,831,150</u>	<u>\$ 2,582,974</u>	<u>\$ 2,427,522</u>	<u>\$ 2,282,831</u>	<u>\$ 2,600,697</u>	<u>\$ 2,273,620</u>
Plan Fiduciary Net Position						
Contributions - Employer	\$ 113,787	\$ 100,545	\$ 92,739	\$ 86,165	\$ 91,211	\$ 93,992
Contributions - Member	-	-	-	5,905	15,816	14,615
Net Investment Income	229,342	(69,017)	202,446	156,459	(20,972)	79,029
Benefit Payments, Including Refunds	(87,166)	(85,645)	(84,124)	(82,603)	(81,082)	(56,969)
Administrative Expenses	(3,952)	(3,378)	(3,200)	(3,084)	(3,002)	(2,925)
Other	-	(2)	-	-	-	-
Net Change in Plan Fiduciary Net Position	<u>252,011</u>	<u>(57,497)</u>	<u>207,861</u>	<u>162,842</u>	<u>1,971</u>	<u>127,742</u>
<i>Plan Fiduciary Net Position - Beginning</i>	<u>1,669,811</u>	<u>1,727,308</u>	<u>1,519,447</u>	<u>1,356,605</u>	<u>1,354,634</u>	<u>1,226,892</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$ 1,921,822</u>	<u>\$ 1,669,811</u>	<u>\$ 1,727,308</u>	<u>\$ 1,519,447</u>	<u>\$ 1,356,605</u>	<u>\$ 1,354,634</u>
Net Pension Liability - Ending (a) - (b)	\$ 909,328	\$ 913,163	\$ 700,214	\$ 763,384	\$ 1,244,092	\$ 918,986
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	67.9%	64.6%	71.2%	66.6%	52.2%	59.6%
Covered Employee Payroll	\$ 562,258	\$ 545,997	\$ 467,843	\$ 465,158	\$ 451,893	\$ 441,383
Net Pension Liability as a Percentage of Covered Employee Payroll	161.7%	167.2%	149.7%	164.1%	275.3%	208.2%

* Built prospectively upon implementation on GASB 68

**Township of Tuscarora
Required Supplementary Information
Schedule of Contributions
Last Six Fiscal Years**

	2020	2019	2018	2017	2016	2015
Actuarially Determined Contribution	\$ 113,787	\$ 100,545	\$ 92,739	\$ 86,165	\$ 61,855	\$ 93,992
Contributions in Relation to the Actuarially Determined Contribution	113,787	100,545	92,739	86,165	61,855	93,992
Contribution Deficiency (Excess)	<u>\$ -</u>					
Covered Employee Payroll	562,258	545,997	467,843	465,158	451,893	441,383
Contributions as a Percentage of Covered Employee Payroll	20.2%	18.4%	19.8%	18.5%	13.7%	21.3%

Notes

Valuation Date

Actuarially determined contribution amounts are calculated as of December 31 each year, which is 18 months prior to the beginning of the fiscal year in which the

Methods and assumptions used to determine contribution rates

Actuarial cost method	Entry-age Normal
Amortization method	Level percentage of pay, open
Remaining amortization period	19 years
Asset valuation method	5 year smoothed
Inflation	2.50%
Salary increases	3.00% - In the long term
Investment rate of return	7.35% net of investment and administrative expense
Retirement Age	Experience-based tables of rates that are specific to the type of eligibility condition
Mortality	50% Male - 50% Female blend of the 2014 Grouped Annuity Mortality

* Built prospectively upon implementation on GASB 68

OTHER SUPPLEMENTARY INFORMATION

**Indian River Library
Statement of Net Position
June 30, 2020**

ASSETS

Current Assets

Cash and Cash Equivalents	\$	190,402
---------------------------	----	---------

Accounts Receivable		19,675
---------------------	--	--------

Total Current Assets		210,077
-----------------------------	--	---------

Noncurrent Assets

Capital Assets being Depreciated, Net		191,473
---------------------------------------	--	---------

Investments - Endowment		5,675
-------------------------	--	-------

Total Assets		407,225
---------------------	--	---------

LIABILITIES

Current Liabilities

Accounts Payable		2,497
------------------	--	-------

Payroll Liabilities		1,532
---------------------	--	-------

Total Liabilities		4,029
--------------------------	--	-------

NET POSITION

Investment in Capital Assets		191,473
------------------------------	--	---------

Restricted for:

Nonspendable - Endowment		5,675
--------------------------	--	-------

<i>Unrestricted</i>		206,048
---------------------	--	---------

Total Net Position	\$	403,196
---------------------------	-----------	----------------

**Indian River Library
Statement of Activities
For the Year Ended June 30, 2020**

<u>Functions/Programs</u>	<u>Expenses</u>	<u>Program Revenues</u>			<u>Net (Expense) Revenue</u>
		<u>Charges for Services</u>	<u>Operating Grants and Contributions</u>	<u>Capital Grants and Contributions</u>	
Governmental Activities:					
Recreation and Culture	126,605	2,330	15,490	--	(108,765)
<i>Total</i>	<u>\$ 126,605</u>	<u>\$ 2,330</u>	<u>\$ 15,490</u>	<u>\$ --</u>	<u>\$ (108,785)</u>

General Purpose Revenues and Transfers:

Revenues

Interest Income	763
State Sources	2,435
Penal Fines	19,675
Property Taxes	70,900

Total General Revenues and Transfers

Change in Net Position

Net Position at Beginning of Period

Net Position at End of Period

<u>93,773</u>
<u>(15,012)</u>
418,208
<u>\$ 403,196</u>

**Indian River Library
Balance Sheet
Governmental Funds
June 30, 2020**

	General
ASSETS	
Cash and Cash Equivalents	\$ 190,402
Accounts Receivable	19,675
Investments - Endowment	5,675
<i>Total Assets</i>	\$ 215,752
LIABILITIES	
Accounts Payable	\$ 2,497
Payroll Liabilities	1,532
<i>Total Liabilities</i>	4,029
FUND BALANCE	
Nonspendable	5,675
Unassigned	206,048
<i>Total Fund Balance</i>	211,723
<i>Total Liabilities and Fund Balance</i>	\$ 215,752

Indian River Library
Reconciliation of Governmental Funds Balance Sheet to the Statement of Net Position
June 30, 2020

Total Fund Balance - Governmental Funds	\$	211,723
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.		191,473
Total Net Position-Governmental Funds	\$	<u>403,196</u>

Indian River Library
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2020

	General
Revenues	
Property Taxes	\$ 70,900
Penal Fines	19,675
State Sources	2,435
Grants and Contributions	15,490
Charges for Services	1,915
Fines	352
Interest Income	763
Other Revenues	63
<i>Total Revenues</i>	111,593
Expenditures	
Salaries and Wages	59,332
Fringe Benefits	914
Postage	3,532
Supplies	1,345
Repairs and Maintenance	5,955
Utilities	7,873
Contracted Services	4,461
Printing and Publishing	3,750
Travel and Meals	501
Telephone	4,522
Other Expenditures	5,573
Capital Outlay	10,084
<i>Total Expenditures</i>	107,842
<i>Excess of Revenues Over</i>	
<i>(Under) Expenditures</i>	3,751
<i>Net Change in Fund Balance</i>	3,751
<i>Fund Balance at Beginning of Period</i>	207,972
<i>Fund Balance at End of Period</i>	\$ 211,723

Indian River Library
Reconciliation of Governmental Funds Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2020

Total Net Change in Fund Balances - Governmental Funds \$ 3,751

Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of these assets is allocated over their useful lives as depreciation expense. This is the amount by which current year depreciation expense of \$24,464 is in excess of capital outlay expenditures of \$8,701. (18,763)

Changes in Net Position-Governmental Funds **\$ (15,012)**

Township of Tuscarora DDA
Statement of Net Position
June 30, 2020

ASSETS

Current Assets

Cash and Cash Equivalents	\$	412,417
<i>Total Current Assets</i>		<u>412,417</u>

Noncurrent Assets

Capital Assets being Depreciated, Net		625,992
<i>Total Assets</i>		<u>1,038,409</u>

LIABILITIES

Current Liabilities

	\$	--
<i>Total Liabilities</i>		<u>--</u>

NET POSITION

Investment in Capital Assets		625,992
<i>Unrestricted</i>		412,417
<i>Total Net Position</i>	\$	<u>1,038,409</u>

**Township of Tuscarora DDA
Statement of Activities
For the Year Ended June 30, 2020**

<u>Functions/Programs</u>	<u>Expenses</u>	<u>Program Revenues</u>			<u>Net (Expense) Revenue</u>
		<u>Charges for Services</u>	<u>Operating Grants and Contributions</u>	<u>Capital Grants and Contributions</u>	
Governmental Activities:					
Community and Economic Development	\$ 105,150	\$ --	\$ --	\$ --	\$ (105,150)
<i>Total</i>	<u>\$ 105,150</u>	<u>\$ --</u>	<u>\$ --</u>	<u>\$ --</u>	<u>\$ (105,150)</u>

**General Purpose Revenues and Transfers:
Revenues**

Interest	198
Property Taxes	88,329
<i>Total General Revenues and Transfers</i>	<u>88,527</u>
<i>Change in Net Position</i>	<u>(16,623)</u>
<i>Net Position at Beginning of Period</i>	1,055,032
<i>Net Position at End of Period</i>	<u>\$ 1,038,409</u>

**Township of Tuscarora DDA
Balance Sheet
Governmental Funds
June 30, 2020**

	General
ASSETS	
Cash and Cash Equivalents	\$ 412,417
<i>Total Assets</i>	\$ 412,417
LIABILITIES	
<i>Total Liabilities</i>	--
FUND BALANCE	
Unassigned	412,417
<i>Total Liabilities and Fund Balance</i>	\$ 412,417

Township of Tuscarora DDA
Reconciliation of Governmental Funds Balance Sheet to the Statement of Net Position
June 30, 2020

Total Fund Balance - Governmental Funds	\$ 412,417
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.	625,992
Total Net Position-Governmental Funds	\$ <u>1,038,409</u>

Township of Tuscarora DDA
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2020

	General
Revenues	
Property Taxes	\$ 88,329
Interest	198
<i>Total Revenues</i>	88,527
Expenditures	
Community and Economic Development	99,329
<i>Total Expenditures</i>	99,329
<i>Excess of Revenues Over</i>	
<i>(Under) Expenditures</i>	(10,802)
<i>Net Change in Fund Balance</i>	(10,802)
<i>Fund Balance at Beginning of Period</i>	423,219
<i>Fund Balance at End of Period</i>	\$ 412,417

Township of Tuscarora DDA
Reconciliation of Governmental Funds Statement of Revenues, Expenditures, and
Changes in Fund Balance with Statement of Activities
For the Year Ended June 30, 2020

Total Net Change in Fund Balances - Governmental Funds \$ (10,802)

Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of these assets is allocated over their useful lives as depreciation expense. This is the amount by which depreciation expense of \$30,371 is in excess of capital outlay of \$24,550 during the current year. (5,821)

Changes in Net Position-Governmental Funds \$ (16,623)

December 4, 2020

To the Board of Trustees
Township of Tuscarora, Michigan

We have audited the financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Township of Tuscarora for the year ended June 30, 2020. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards and *Government Auditing Standards* as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated September 16, 2020. Professional standards also require that we communicate to you the following information related to our audit.

Significant Audit Findings

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the Township are described in Note 1 to the financial statements. We noted no transactions entered into by the Township during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the Township's financial statements were:

- Management's estimate of the useful lives of depreciable capital assets is based on the length of time it is believed that those assets will provide some economic benefit in the future.
- Management's estimate of the accrued compensated absences is based on current hourly rates and policies regarding payment of sick and vacation banks.
- The assumptions used in the actuarial valuations of the pension plans are based on historical trends and industry standards.

We evaluated the key factors and assumptions used to develop the estimates in determining that it is reasonable in relation to the financial statements taken as a whole.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated December 4, 2020.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the Township's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the Township's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Other Matters

We applied certain limited procedures to management's discussion and analysis, pension schedules, and budgetary comparison schedules, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were engaged to report on the combining statements and individual fund statements and the schedule of expenditures of federal awards, which accompany the financial statements but are not RSI. With respect to this supplementary information, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

Restriction on Use

This information is intended solely for the information and use of the Township Board of Trustees and management of the Township and is not intended to be, and should not be, used by anyone other than these specified parties.

Very truly yours,

A handwritten signature in cursive script that reads "Gabridge & Company". The signature is written in dark ink and is positioned above the printed name of the company.

Gabridge & Company, PLC
Grand Rapids, MI

INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

To the Board of Trustees
Township of Tuscarora, Michigan

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, each major fund, the aggregate discretely presented component units, and the aggregate remaining fund information of the Township of Tuscarora, Michigan (the "Township") as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Township's basic financial statements, and have issued our report thereon dated December 4, 2020.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Township's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Township's internal control. Accordingly, we do not express an opinion on the effectiveness of the Township's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. *A material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. *A significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Township's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The

results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in cursive script that reads "Galbridge & Company". The signature is written in dark ink and is positioned above the typed address and date.

Grand Rapids, Michigan
December 4, 2020



Northeast Michigan Council of Governments

80 Livingston Blvd Suite U-108 | PO Box 457 | Gaylord, MI 49734 | Voice: 989.705.3730 | Fax: 989.705.3729 | nemcog.org

March 24, 2021

Robert A. Kramer, Tuscarora Township Trustee
3546 S. Straits Hwy,
Indian River, MI 49749

Re: Tuscarora Township’s Phase 2 Sanitary Sewer Expansion Project Consistency with the Area Comprehensive Development Plan.

Dear Mr. Kramer:

The Northeast MI Council of Governments (NEMCOG) has been contacted to determine whether the Tuscarora Township’s Phase 2 Sanitary Sewer Expansion Project is consistent with the Area Comprehensive Development Plan as a requirement of the United States Department of Agriculture’s (USDA) Rural Economic Development Loan and Grant Program.

Tuscarora Township’s Phase 2 Sanitary Sewer Expansion Project involves the expansion of the modular existing sewer plant and installation of a gravity system with pumps in low lying areas near Burt Lake. The Phase 2 Sewer District includes 410 homes, 2 churches and 2 businesses. The area consists of mostly older homes (some 1900’s) with owners citing problems ranging from onsite Wastewater Treatment System (WWT) failures, inadequate space for replacement of onsite WWT system, to existing WWT system’s inability to meet current codes. In addition, the Project Area falls under the Lake and Stream Protection Zoning District with the majority of the residences being within 1000ft of a body of water, in this case either, Burt Lake, Indian River or the Sturgeon River.

The Area Development Plan for Northeast MI is designed to provide a regional plan for growth and sustainability in the region. The purpose of the plan is to assist the region in fostering job creation, improving the quality of lives for citizens and ensuring a diversified economy.

At the core of economic prosperity and sustainability is basic infrastructure that is required for healthy and vibrant communities, attracting and retaining business and talent and ensuring the public’s health. Infrastructure is a critical component of the Area Development Plan (commonly known as the NE MI Comprehensive Economic Development Strategy). Goal 3: Community, Infrastructure; transportation-motorized and nonmotorized, broadband, wastewater treatment, drinking water; outlines infrastructure objectives and action tasks.

The Tuscarora Township Phase 2 Sanitary Sewer Expansion project is consistent with the Area Comprehensive Development Plan. The project is not only essential to ensure the public’s health but will also protect Burt Lake, and the Indian and Sturgeon River’s water quality from contamination of substandard

Regional Cooperation Since 1968

onsite WWT systems. Protecting the waterbodies and providing adequate WWT measures will ensure that the tourist based local economy will remain strong for future generations to come.

Good luck with your project and please do not hesitate to contact us if we can be of further assistance.
Sincerely,

Sincerely,

Diane Rekowski

Diane Rekowski
Executive Director

Regional
Cooperation
Since
1968

Alcona * Alpena * Cheboygan * Crawford * Emmet * Montmorency * Oscoda * Otsego * Presque Isle

An
Equal Opportunity
Employer



Mr. David Worthington
Michigan Department of Environment, Great Lakes, and Energy
P.O. Box 30817
Lansing, MI 48909-8311

Re: Exemption Request

Dear Mr. Worthington:

The township is requesting an exception to the specific public procedure. The township filed its notice of intent with EGLE in early 2021 but did not vote to proceed with an SRF application until May 20, 2021. Due to time restraints, the township was not able to strictly follow SRF requirements. However, due to the many years of community involvement and following USDA public involvement guidance, we believe we have met the spirit and intent of the SRF guidance.

The township has followed every public notice and public hearing requirements of the USDA as the original intent was to apply to USDA for loans and grants. Although not as stringent as the SRF recommends there were substantial community input, dialog and discussions over many years as noted below.

The township took the unusual step of establishing a Board Sewer Subcommittee for the sole purpose of getting public input and have dialog with its citizens. Two committee meetings have been held to date. At these meetings, three Board members presented information and sought ideas and input from the public. The local newspaper covered these meetings and placed the stories on the front page.

- In August 2018 there was community meeting (standing room only) to discuss moving forward with the project.
- On July 6, 2019 Tuscarora Township hosted an informational presentation on the proposed sewer expansion. In attendance was the Township Attorney and Engineer to answer questions. The meeting was well attended, standing room only. Various alternatives were discussed and the consensus was that a gravity system would be used.
- On July 12, 2019, the township board voted to apply for USDA grants and loans. Public comments were made.
- At the August 6, 2019 regular board meeting, the project was discussed again. Public comments were made.
- At the September 3, 2019 board meeting, the project was discussed again. Public comments were made.
- At the October 1, 2019 board meeting the project was broken into phases. Public comments were made.



- At the December 3 2019 board meeting. The board reviewed the draft Preliminary Engineering Report. The Board voted to break down the project into phases. Public comments were made.
- At the April 6, 2021 meeting, the board voted to establish a sewer subcommittee to provide and seek public dialogue and input.
- In April and May 2021, two subcommittee meetings were held where the public was encouraged to ask questions and give opinions. All minutes were posted and the "Sewer Expansion Project" web page was expanded to ensure project transparency. See <https://www.tuscaroratwp.com/2230/Sewer-Expansion-Project>.
- In April and May 2021, the township followed USDA guidance on public notice and hearings, including where and how the public could look at related documents. The April 6 public hearing had comments from 5 citizens. These 5 citizens asked questions about costs, timelines, hook-up requirements, phases of the project. There were no objections.

The township has followed every public notice and public hearing requirements of the USDA as the original intent was to apply to USDA for loans and grants. Although not as stringent as the SRF recommends there were substantial community input, dialog and discussions over many years as noted below.

We believe we have met the intent and spirit of the guidance and respectfully request the exception.

Sincerely,

Robert A. Kramer
Lt. Colonel, US Army (Ret.)
Trustee/Chair Sewer Committee

We're getting into grass fire season: try to avoid

The ground may look damp and muddy, but grass and brush are dry in spring even if the ground is wet. That means fire can spread fast.

"Everybody wants to get out and clean up their yard, but it's important check conditions before burning and to understand how dry these fuels on the ground are," Paul Rogers, fire pre-

vention specialist with the Michigan Department of Natural Resources, said.

Debris burning is the number one cause of wildfires in Michigan, and some fires already have scorched Lower Michigan landscapes, including a 432-acre fire in the state's Thumb region.

Open burning is allowed where the

ground is still snow-covered. Otherwise, a free burn permit is required. Burn permits in the southern Lower Peninsula are issued by local fire departments and government offices. In the northern Lower Peninsula and the Upper Peninsula, residents can check the map at Michigan.gov/BurnPermit to see if debris/open burning is

permitted

Rogers u when bur campfires tivities, es heat or ga the DNR's

* Place y surface su rather than or loose co

* Keep a saws and spark from

* Be car vehicles, l door mac mower or can ignite dragging o sparks tha

* Never even for debris and guished be

Deadline is noon o for a qu call the e-mail

Mullett Township Notice of Public Accuracy Test

NOTICE IS HEREBY GIVEN that the Public Accuracy Test for the May 4, 2021 Special Election has been scheduled for Monday, March 29, 2021 at 1:00 p.m. in the Township Hall offices, 1491 N. Straits Hwy., Topinabee, MI 49791. The Public Accuracy Test is conducted to demonstrate that the program and computer that will be used to tabulate the results of the election, counts the votes in the manner prescribed by law.

Denise Ackerman,
Mullett Township Clerk
www.mullett-township.com

Public Notices

Notice of Intent to File Application

Tuscarora Township, Michigan intends to file an application for federal assistance with the U.S. Department of Agriculture, Rural Development, Rural Utilities Services. The project includes a Phase 2 expansion of the sanitary sewer system to a residential area in Indian River which includes an area north of Barbara Avenue, including Sturgeon Island, east of Burt Lake, west of Straits Hwy, and the near north side of the Indian River along Prospect, including Columbus Beach. A public meeting for comments will be held at April 6, 2021, 7:00 pm at the Tuscarora Township Hall, 3546 S. Straits Highway, Indian River, or if required by the State of Michigan, at a meeting held by electronic means at the same date and time, to discuss the proposed project and to provide the opportunity for public comment. Any additional information can be found in the "sewer expansion" section of the township web page at tuscaroratwp.com or may be obtained by contacting Tuscarora Township at (231-290-0044).

Business / Service Dir



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Rocks • Mulch • Cleanup • Lawn Installation
Shorelines • Water Features



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Affidavit of Publication
Straitsland Resorter
Indian River, Michigan 49749
Township of Tuscarora
County of Cheboygan
State of Michigan

Kathy A. Swanson, being first duly sworn, says that she is Publisher of the *STRAITSLAND RESORTER*, a newspaper published in the English language for the dissemination of local or transmitted news and intelligence of a general character and legal news, which is a duly qualified newspaper, and that annexed hereto is a copy of a certain order taken from said newspaper in which the order was published.

PUBLICATION DATE March 25, 2021

Kathy Swanson

KATHY A. SWANSON. Publisher

Subscribed and sworn to before me

this 14 day of April, 20 21

Denise L Hand
Notary Public, State of Michigan, County of Cheboygan

My Commission Expires: May 02, 20 25
Acting in the County of Cheboygan

We're getting into grass fire season: try to avoid

The ground may look damp and muddy, but grass and brush are dry in spring even if the ground is wet. That means fire can spread fast.

"Everybody wants to get out and clean up their yard, but it's important check conditions before burning and to understand how dry these fuels on the ground are," Paul Rogers, fire pre-

vention specialist with the Michigan Department of Natural Resources, said.

Debris burning is the number one cause of wildfires in Michigan, and some fires already have scorched Lower Michigan landscapes, including a 432-acre fire in the state's Thumb region.

Open burning is allowed where the

ground is still snow-covered. Otherwise, a free burn permit is required. Burn permits in the southern Lower Peninsula are issued by local fire departments and government offices. In the northern Lower Peninsula and the Upper Peninsula, residents can check the map at Michigan.gov/BurnPermit to see if debris/open burning is

permitted

Rogers u when bur campfires tivities, es heat or ga the DNR's

* Place y surface su rather than or loose co

* Keep a saws and spark from

* Be car vehicles, l door mac mower or can ignite dragging o sparks tha

* Never even for debris and guished be

Deadline is noon o for a qu call the e-mail

Mullett Township Notice of Public Accuracy Test

NOTICE IS HEREBY GIVEN that the Public Accuracy Test for the May 4, 2021 Special Election has been scheduled for Monday, March 29, 2021 at 1:00 p.m. in the Township Hall offices, 1491 N. Straits Hwy., Topinabee, MI 49791. The Public Accuracy Test is conducted to demonstrate that the program and computer that will be used to tabulate the results of the election, counts the votes in the manner prescribed by law.

Denise Ackerman,
Mullett Township Clerk
www.mullett-township.com

Public Notices

Notice of Intent to File Application

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Business / Service Dir



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**PROPOSED MINUTES OF THE SPECIAL IN-PERSON/AUDIO/VIDEO MEETING
OF THE TUSCARORA TOWNSHIP BOARD
April 6, 2021**

Public Comment

Notice of Intent to file for public assistance with the USDA. Comments heard from 5 citizens. Motion to close public comment made by Kramer, Vance supported.

Meeting called to order at 7:13 pm by Supervisor Ridley

Adopt Agenda for this meeting. Vance made a motion, Rodriguez supported, all in favor.

Pledge of Allegiance.

Audio/Video Remote Virtual

Roll call by Clerk Dolly Rodriguez. Board members present were Mike Ridley Supervisor; Dolly Rodriguez, Clerk; Bobbi Balazovic, Treasurer; Robert Kramer, Trustee; Janet Vance, Trustee. A quorum of the board was present.

Minutes of the February 2021 and March 2021 meetings were approved. Will dispense as written.

Public Comment

No public comment.

Treasurer's Report and Pay Bills

General account \$2,721,601.22 and checking account \$57,028.53. Motion to pay bills and accept treasurer's report. Motion made by Vance, supported by Kramer. All in favor.

Police Report

We've had a lot of changes since January 1. Chief Temple stated there have been a lot of policy changes. Snow grant almost completed.

DDA Report

Working on benches, racks, trash receptacles. Paving should begin the first week of May. Discussing finishing things up. Get some new lighting. Move some telephone poles. Build a small park at M-68 and 27. Raising money for the sculpture. Put a small sidewalk by the parking in front of the restrooms. Possibility of putting in a drinking fountain, dog waterer and bottle filler at Chamber of Commerce.

Planning Commission

Regarding approval of food trucks. Meeting March 15, 2021 with county director of zoning and planning to review our finalized food truck ordinance application and checklist. Special meeting scheduled for April 15 at 12:00 p.m. to review ordinance.

Parks Commission

Busy with clean-up in the parks, cemeteries, public beach and marina project.

Library Report

March was extremely busy with over 500 walk-ins and patrons. Classes and events will be starting. The director position is posted. Dan Fletcher serves on the Inland Lakes school board and chair of YES Committee and David Hill, current library board president and member of YES committee. Dan Fletcher reminded people to vote on the library millage May 4th. David Hill explained the reason for the increase in the library millage.

Sewer Report

Bob Kramer said the general public can go to the website to view the sewer expansion report. Performance Engineering will have their part of the USDA application done in a few days and we upload our financial data hopefully next week we can apply for Phase 1. Mike Ridley explained the Burt Lake State Park Earmark Resolution. Bob Kramer discussed congressional earmarks. Informed that Stabenow's office will support our project to the USDA. Vance made motion to approve and Balazovic supported. All in favor.

Resolution of Support

Resolution of Support of Sewer Expansion Project. Offered by board member Kramer, seconded by Vance. Roll call, Ridley, Balazovic, Kramer, Vance, Rodriguez. Unanimous. Resolution has been adopted.

Metro Act Permit

Motion to approve by Vance, supported by Kramer. All in favor.

South Ave Abandonment

One-way sign will be removed. Motion to abandon the road made by Vance, supported by Ridley. Roll call, Ridley, yes; Balazovic, no; Kramer, no; Vance, yes; Rodriguez, no. The motion fails.

Brining Contract/Permit

We have to request a permit for our brining we do in July. Motion to us A-1 Services by Kramer, supported by Vance. All in favor.

Volunteer Appreciation Resolution

Resolution accepted. Roll call, Ridley, yes; Balazovic, yes; Kramer, yes; Vance, yes; Rodriguez, yes. All in favor.

May Meeting Date

May meeting date changed due to the election. The conference room will be in use. Next month's meeting date to be moved to May 11. Motion made by Vance, supported by Kramer. All in favor.

Township Hiring Policy (discussion)

Policy will be put on the agenda for next month.

Fireworks (rain date changed)

Fireworks scheduled for Friday, July 2 and the rain date is Monday, July 5.

Sewer Sub Committee

Sewer Sub Committee consists of Kramer, Ridley and Vance. Special meeting will be on Thursday, April 15. Motion to accept made by Kramer, supported by Vance. All in favor.

Citizen comments

Comments were heard from 5 citizens.

Board comments

Comments were made by Vance, Balazovic and Ridley.

Kramer made motion to adjourn at 8:16 pm, supported by Vance.

Respectfully submitted,

Dolly J. Rodriguez, Clerk

Michael E. Ridley, Supervisor

LEGAL SERVICES AGREEMENT

This Agreement made this 13 day of May, 202021
between Tuscarora Township, Michigan
hereinafter referred to as "Owners," and
Robert S. Huth, Jr.
attorney at law, of Kirk, Huth, Lange & Badalamenti, PLC
hereinafter referred to as "Attorney":

WHEREAS, the Attorney agrees to perform all legal services necessary to the organization, financing, construction, and initial operation of a residential wastewater system system:

WITNESSETH:

That for and in consideration of the mutual covenants and promises between the parties hereto, it is hereby agreed:

SECTION A - LEGAL SERVICES

That the attorney will perform such services as are necessary to accomplish the above recited objectives including, but not limited to, the following:

1. Preparation and filing of petition for incorporation and supervision and assistance in the taking of such other actions as may be necessary or incidental to cause the Owners to become duly organized and incorporated and to be authorized to undertake the proposed system.
2. Furnish advice and assistance to the governing body of the duly incorporated association in connection with (a) the notice for and conduct of meetings; (b) the preparation of minutes of meetings; (c) the preparation and enactment of such resolutions as may be necessary in connection with the authorization, financing, construction and initial operation of the system; (d) the preparation of such affidavits, publication notices, ballots, reports, certifications, and other instruments and advice as may be needed in the conduct of such bond elections as may be necessary; (e) the preparation and completion of such bonds or other obligations as may be necessary to finance the system; (f) the completion and execution of documents for obtaining a loan made or insured or a grant made by the United States of America, U. S. Department of Agriculture (USDA), (g) entering into construction contracts; (h) preparation and adoption of by-laws, rules and regulations, and the rate schedules; (i) such other corporate action as may be necessary in connection with the financing, construction, and initial operation of the system.
3. Review of construction contracts, bid-letting procedure, and surety and contractual bonds in connection therewith.

4. Preparation, negotiation, or review of contract with a city or other source of water supply, when necessary.
5. Preparation, where necessary, and review of deeds, easements and other rights-of-way documents, and other instruments for sites for source of water supply pumping stations, treatment plants, and other facilities necessary to the system and to provide continuous rights-of-way therefor; rendering title opinions with reference thereto; and providing for the recording thereof.
6. Obtain necessary permits and certificates from county and municipal bodies, from state regulatory agencies, and from other public or private sources with respect to the approval of the system, the construction and operation thereof, pipe-line crossings, and the like.
7. Cooperate with the engineer employed by Owners in connection with preparation of tract sheets, easements, and other necessary title documents, construction contracts, water supply contracts, health permits, crossing permits, and other instruments.
8. Preparation and approval of those documents pertaining to the issuance of the Owner's obligations. Preparation of opinions of counsel as required by Owners or the USDA. When applicable, secure assistance of and cooperate with recognized bond counsel in the preparation of the documents necessary for the financing aspects of the system. Where bond counsel is retained, the Attorney will not be responsible for the preparation and approval of those documents pertaining to the issuance of the Owner's obligations.

(Please refer to Michigan Guide 4, Attachment 1 "Legal Requirements Guide" when preparing the required legal documents)

SECTION B - COMPENSATION

1. Owners will pay to the Attorney for professional services rendered in accordance herewith, fees as follows:

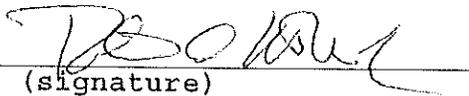
Hourly rate of \$^{125.00}_____ plus expenses; not to exceed
\$^{5000.00}_____;
2. Additional compensation, in excess of the maximum agreed on above, may be increased by amendment to this agreement only when there is sufficient documentation for the increase and approved by USDA Rural Development.

Said fees to be payable in the following manner and at the following times:

SECTION C - OTHER PROVISIONS

1. That upon organization and incorporation the association shall by appropriate resolution adopt and ratify this Agreement, that the association shall be substituted for the individual Owners as a party to this Agreement, and that the Owners as individuals shall thereupon be relieved of all personal liability existing or arising from this Agreement.
2. That upon organization and incorporation should the association fail or refuse to adopt and ratify this Agreement by appropriate resolution within _____ days from the date of the commencement of its legal existence, this Agreement shall terminate and

Owners shall be liable to the Attorney for Payment of \$_____, which sum represents payment in full for the organization and incorporation of the association for all other legal services rendered to Owners under the terms of this Agreement to the date of said termination.

Attorney: 
(signature)

Firm Name: Kirk, Huth, Lange & Badalamenti, PLC

Address:

19500 Hall Road, Suite 100 Clinton Township, MI 48038

Phone: 586.412.4900 x 105

Fax: 586.412.4949

Email: rhuth@KirkHuthlaw.com

Owners: 
(appropriate signature)

(appropriate signature)

USDA, Rural Development Concurrence

By: _____
(signature)

Name, title: _____

This form is available electronically.

Form Approved – OMB No. 0505-0027
Expiration Date: 04/30/2022



**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion AD-1048
Lower Tier Covered Transactions**

The following statement is made in accordance with the Privacy Act of 1974 (5 U.S.C. § 552a, as amended). This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, and 2 C.F.R. §§ 180.300, 180.335, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880. Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

According to the Paperwork Reduction Act of 1995 an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0505-0027. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The provisions of appropriate criminal and civil fraud privacy, and other statutes may be applicable to the information provided.

(Read instructions on page two before completing certification.)

- A. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency;
- B. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

ORGANIZATION NAME Tuscarora Township	PR/AWARD NUMBER OR PROJECT NAME Tuscarora Twp -Sewer
NAME(S) AND TITLE(S) OF AUTHORIZED REPRESENTATIVE(S) Robert S. Huth Jr. Township Attorney	
SIGNATURE(S) 	DATE May 13, 2021

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint \(https://www.ascr.usda.gov/filing-program-discrimination-complaint-usda-customer\)](https://www.ascr.usda.gov/filing-program-discrimination-complaint-usda-customer) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442.

Instructions for Certification

- (1) By signing and submitting this form, the prospective lower tier participant is providing the certification set out on page 1 in accordance with these instructions.
- (2) The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension or debarment.
- (3) The prospective lower tier participant shall provide immediate written notice to the person(s) to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- (4) The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549, at 2 C.F.R. Parts 180 and 417. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
- (5) The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- (6) The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- (7) A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the System for Award Management (SAM) database.
- (8) Nothing contained in the foregoing shall be construed to require establishment of a system of records to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- (9) Except for transactions authorized under paragraph (5) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Founded in 1852
by Sidney Davy Miller

MILLER CANFIELD

STEVEN D. MANN
TEL +1.313.496.7509
FAX +1.313.496.8451
E-MAIL mann@millercanfield.com

Miller, Canfield, Paddock and Stone, P.L.C.
150 West Jefferson, Suite 2500
Detroit, Michigan 48226
TEL (313) 963-6420
FAX (313) 496-7500
millercanfield.com

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CHINA
MEXICO
POLAND
QATAR

May 13, 2021

Via email only

Blake Smith, Area Specialist
Traverse City Area Office
U.S.D.A. Office of Rural Development
1501 Cass St., Suite A
Traverse City, Michigan 49684

Re: Tuscarora Township – USDA Financing Application for Sewer Improvements

Dear Blake,

We have been engaged by the Township of Tuscarora (the “Township”) as bond counsel in connection with sanitary sewer system improvements to be financed through the U.S.D.A. office of Rural Development loan program.

As part of your review and documentation of the loan, we understand that it is necessary to provide documentary support for various cost items listed in the application. We are writing to provide you with an estimate of the various bond-related fees for this project.

This letter will serve to confirm that our fee for bond counsel services for a loan in the approximate amount of \$5,223,000 will be \$36,500. In addition, the issuer should plan to budget for the publication costs related to the financing (approximately \$3,000) and the Treasury filing fee due at closing (approximately \$1,100).

Please let me know if you have any questions.

Sincerely,

Miller, Canfield, Paddock and Stone, P.L.C.

By: 

Steven D. Mann

cc: Aaron Nordman
37655929.1/100955.00006



**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion AD-1048
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(Read instructions on page two before completing certification.)

- A. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency;
- B. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

ORGANIZATION NAME Miller, Canfield, Paddock and Stone, P.L.C.	PR/AWARD NUMBER OR PROJECT NAME Tuscarora Twp - Sewer
NAME(S) AND TITLE(S) OF AUTHORIZED REPRESENTATIVE(S) Steven D. Mann, Principal	
SIGNATURE(S) 	DATE May 13, 2021

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

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**RESOLUTION DEDICATING FUNDS FROM BURT LAKE STATE PARK
AGREEMENT TO OPERATION, MAINTENANCE AND ADMINISTRATION OF
SANITARY SEWER SYSTEM**

Township of Tuscarora
County of Cheboygan, State of Michigan

Minutes of a regular meeting of the Township Board of the Township of Tuscarora, County of Cheboygan, State of Michigan, held in the Township on April 15, 2021, at 12:00 p.m., Eastern Daylight Time.

PRESENT: Members: Balazovic, Kramer, Ridley, Rodriguez, Vance

ABSENT: Members: None

The following preamble and resolution were offered by Member Balazovic and supported by Member Kramer.

WHEREAS, the Township of Tuscarora, County of Cheboygan, State of Michigan (the "Township"), issued its \$2,411,000 2014 Special Assessment Sewer Bond, dated March 19, 2014 (the "Bond"), to pay the cost of acquire, construct, furnish, equip and install a sanitary sewer system (the "Project") to serve the Sewer Special Assessment District (the "District"); and

WHEREAS, the Bond is secured solely by a pledge of special assessments to be collected on the Sewer Special Assessment Roll confirmed on April 11, 2012 (the "Roll"); and

WHEREAS, the State of Michigan was not assessed on the Roll; and

WHEREAS, there was no agreement in place for the Project to provide service to the Burt Lake State Park owned by the State of Michigan at the time the Roll was confirmed nor at the time the Bond was issued; and

WHEREAS, subsequent to confirmation of the Roll and issuance of the Bond, the Township entered into that certain Sewer Agreement between The State of Michigan and The Township of Tuscarora, dated August 5, 2015 and approved by the Michigan State Administrative Board on September 1, 2015 (the "Agreement"); and

WHEREAS, pursuant to the Agreement, the State of Michigan agreed to pay the Township Six Hundred Thousand Dollars (\$600,000) (the "Contract Funds") in return for the Township providing municipal sewer service to Burt Lake State Park; and

WHEREAS, the Township has used the Contract Funds to pay part of the costs of operation, maintenance and administration of the sanitary sewer system; and

WHEREAS, the Township desires to dedicate the remaining Contract Funds to be used on an ongoing basis to continue to pay part of the costs of operation, maintenance and administration of the sanitary sewer system until the Contract Funds are depleted.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Township Board hereby dedicates the remaining Contract Funds to be used on an ongoing basis to continue to pay part of the costs of operation, maintenance and administration of the sanitary sewer system until the Contract Funds are depleted.

2. All resolutions and parts of resolutions insofar as they conflict with the provisions of this resolution be and the same hereby are rescinded.

AYES: Members: Balazovic, Kramer, Ridley, Rodriguez, Vance

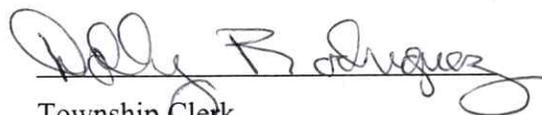
NAYS: Members: None

RESOLUTION DECLARED ADOPTED.



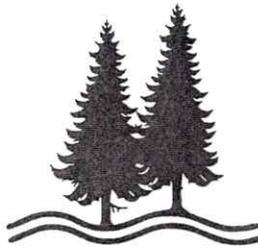
Township Clerk

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the Township Board of the Township of Tuscarora, County of Cheboygan, Michigan, at a regular meeting held on April 15, 2021, and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.



Township Clerk

June 11, 2019



FEDERAL SERVICE DESK **TUSCARORA**
ATTN: SAM.GOV REGISTRATION PROCESSING I P
460 INDUSTRIAL BLVD
LONDON, KY 40741-7285

SUBJECT: Information Required to Activate SAM Entity Registrations

Purpose of Letter

The purpose of this letter is to formally appoint an Entity Administrator for each named Entity and to attest to the accuracy of the information contained in the associated entity registration.

Designation of Entity Administrator

I, Michael E. Ridley, Supervisor, the below signed individual, hereby confirm that the appointed Entity Administrators are authorized officers, agents, or representatives of the Entities. This letter authorizes the appointed Entity Administrators to manage the Entity registration records, associated users, and their roles to the Entities, in the System for Award Management (SAM).

Entities Covered by this Letter

ADD
NO

Entity DUNS® Number	Entity Legal Business Name	Entity Physical Address
117085026	Tuscarora Township Hall	3546 S Straits Hwy, Indian River, MI 49749
957432305	Tuscarora Township Hall	3546 S Straits Hwy, Indian River, MI 49749
100498901	Tuscarora Township Hall	3546 Sturgeon Ave, Indian River, MI 49749

**Add or delete rows as needed.*

Entity Administrator Contact Information

Entity DUNS® Number	Entity Administrator Full Name	Entity Administrator Phone Number	Entity Administrator Email Address
117085026	Susan L Fisher	231-238-0970	clerk@tuscaroratwp.com
957432305	Susan L. Fisher	231-238-0970	clerk@tuscaroratwp.com
100498901	Gordon Temple	231-238-8311	gordontemple@yahoo.com

This institution is an equal opportunity provider and employer
3546 S. Straits Highway • P.O. Box 220 • Indian River, Michigan 49749 • 231.238.7955 Fax

231.238.7088 Supervisor • 231.238.4220 Treasurer • 231.238.0970 Clerk • 231.238.7865 Parks Commission

Account Administration Preference (ONLY CHOOSE ONE)

You must choose **ONE** of the two following statements by checking the applicable box. Remember, there is no cost to register in SAM -- it is free. However, if you choose to have a third-party agent administer your SAM registration, with or without an associated fee, you must check the Third-Party Agent Designation box below.

Self-Administration Confirmation

For the purpose of registering with the United States Government through the online System for Award Management (SAM), I do not authorize any third party to act on behalf of the Entities listed above. I have checked the Self-Administration Confirmation box to indicate that the designated Entity Administrators are not third-party agents.

Third-Party Agent Designation

For the purpose of registering with the United States Government through the online System for Award Management (SAM), I do hereby authorize **[insert full name, phone number, address, and email address of the Third-Party Agent]** (Designated Third-Party Agent) to act on behalf of the Entities listed above. This authorization permits the Designated Third-Party Agent to conduct all normal, common business functions within SAM while binding the signatory to all actions conducted and representations made as a result of authorization granted herein. I have checked the Third-Party Agent Designation box and completed the above information to indicate that the designated Entity Administrator is a third-party agent.

Attestation

I, the below-signed, attest to the following:

- All information contained in this letter is complete and accurate.
- The designated Entity Administrators listed above all have individual SAM User Accounts created with the email addresses provided in this letter.
- The banking information provided for Electronic Funds Transfer on the Financial Information Page in the SAM.gov registration for the Entities above is correct and accurate.

Respectfully,



Michael E. Ridley
Supervisor
supervisor@tuscaroratwp.com
Tuscarora Township Hall
PO Box 220
Indian River, MI 49749

Template 2 - Multiple, Domestic Entities (located in the U.S. or its outlying areas)

TO BE COMPLETED BY NOTARY
(in accordance with State notary requirements)

State of MI

County of Cheboygan

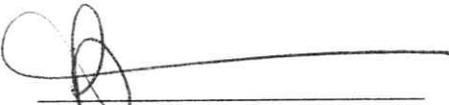
This instrument was acknowledged before me this 11th day of June (month),
2019 (year), by Michael E. Ridley (name of
officer or agent, title or officer or agent) of Tuscarora Township
(name of entity).

Personally Known

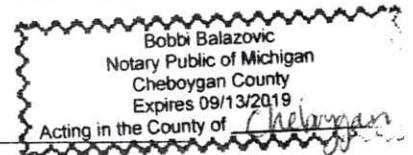
Produced Identification

Type of ID and Number on ID _____

(Seal)



Signature of Notary



Name of Notary
(Typed, Stamped or Printed)

Notary Public, State of _____

End of instructions. Complete the template that follows.



2021 SEWER RATES

(effective April 1, 2021)

\$97.92 Quarterly

Per REU

Annual Special Assessment Cost:

\$391.00

Per REU



May 10, 2021

MEMORANDUM FOR RECORD

SUBJECT: Policy Certification and Disclosure Letter

This letter serves to certify the conflict-of-interest policy and disclose any potential conflicts of interest.

Certification

The Supervisor of Tuscarora Township, Michigan, certifies that we have a draft Conflict of Interest Policy that includes the following:

1. A requirement for those with a conflict or potential conflict to disclose the conflict/potential conflict,
2. A prohibition of interested members of the applicant's governing body from voting on any matter in which there is a conflict, and
3. The specific process defining how the governing body will manage identified or potential conflicts.

Disclosure

There are no planned or potential transactions related to the use of Federal funds that may constitute or present the appearance of personal or organizational conflict of interest.

Sincerely

Michael E. Ridley
Township Supervisor



Northeast Michigan Council of Governments

80 Livingston Blvd Suite U-108 | PO Box 457 | Gaylord, MI 49734 | Voice: 989.705.3730 | Fax: 989.705.3729 | nemcog.org

May 17, 2021

TO WHOM IT MAY CONCERN:

Re: Tuscarora Township Septic to Sewer Expansion and Modernization Project – Protecting Our Community & the Great Lakes

The Northeast Michigan Council of Governments (NEMCOG) strongly supports \$18.6 million Tuscarora Township Septic to Sewer Expansion and Modernization Project.

Tuscarora Township’s project involves the expansion of the modular existing sewer plant and installation of a gravity system with pumps in low lying areas adjacent to Burt Lake, the Little Sturgeon River, the Sturgeon River and the Indian River. This includes 712 homes. The area consists of mostly older homes (some 1900’s) with owners citing problems ranging from onsite Wastewater Treatment System (WWT) failures, inadequate space for replacement of onsite WWT system, to existing WWT system’s inability to meet current codes. In addition, the Project Area falls under the Lake and Stream Protection Zoning District with the majority of the residences being within 1000ft of a body of water, in this case either, Burt Lake, Indian River, Little Sturgeon River or the Sturgeon River. The community sits on the 38-mile Inland Waterway which drains into Lake Huron and the Great Lakes.

This project is consistent with the Area Development Plan for Northeast Michigan which is designed to provide a regional plan for growth and sustainability in the region. The purpose of the plan is to assist the region in fostering job creation, improving the quality of lives for citizens and ensuring a diversified economy.

At the core of economic prosperity and sustainability is basic infrastructure that is required for healthy and vibrant communities, attracting and retaining business and talent and ensuring the public’s health. Infrastructure is a critical component of the Area Development Plan (commonly known as the NE MI Comprehensive Economic Development Strategy). Goal 3: Community, Infrastructure; transportation- motorized and nonmotorized, broadband, wastewater treatment, drinking water; outlines infrastructure objectives and action tasks.

Tuscarora Township Septic to Sewer Expansion and Modernization Project t is not only essential to ensure the public’s health but will also protect the 38-mile Inland Waterway and the Great Lakes water quality from contamination of substandard onsite WWT systems. Protecting the waterbodies and providing adequate WWT measures will ensure that the tourist based local economy will remain strong for future generations to come.

Regional Cooperation Since 1968

Sincerely,

Diane Rekowski

Diane Rekowski
Executive Director

District Health Department No. 4



April 8, 2021

Robert Kramer
Tuscarora Township Trustee
3546 S. Straits Hwy.
Indian River, MI. 49749

Alpena County
100 Woods Circle
Suite 200
Alpena, MI 49707
(989) 356-4507
Fax (989) 356-3529

RE: Proposed Expansion
Indian River Municipal Sewer System
Tuscarora Township
Cheboygan County, Michigan

Cheboygan County
Doris E. Reid Center
825 S. Huron St.
Suite 1
Cheboygan, MI 49721
(231) 627-8850
Fax (231) 627-9466

Dear Mr. Kramer,

As stated previously during the original planning stages of municipal sewer expansion, District Health Department #4(DHD4) offers the following:

Montmorency County
P.O. Box 183
12519 State Street
Atlanta, MI 49709
(989) 785-4428
Fax (989) 785-2217

The expanded service area that encompasses the region due West of the Downtown corridor, between the Indian River to the North and the Sturgeon River to the South, is an area previously highlighted by DHD4, as a problem area for onsite sewage disposal due to a high seasonal groundwater table and very small lots. These issues created lack of isolation for onsite sewage disposal systems from onsite water wells, property lines and surface water and in some cases, critically undersized sewage disposal systems.

The expanded sewer system in the area mentioned above would resolve some of these public health concerns and issues, help improve surface water quality and improve environmental conditions in the residential area.

Presque Isle County
106 E. Huron
Suite A
Rogers City, MI 49779
(989) 734-4723
Fax (989) 734-3866

DHD4 strongly supports the municipal sewer expansion in the area outlined above.

Sincerely,

Kevin Prevost R.S.

Environmental Health Director


Kyle Keller

Environmental Sanitarian

www.dhd4.org

Administrative Services
Alpena County
Office



BOARD OF COMMISSIONERS

County Building
P.O. Box 70, Room 131
Cheboygan, Michigan 49721

Tel ~ (231) 627-8858
Fax ~ (231) 627-8881
E-mail ~ ccao@cheboygancounty.net

April 5, 2021

To Whom It May Concern,

Re: Tuscarora Township Septic to Sewer Expansion and Modernization Project

I unequivocally support Tuscarora Township's Sewer Expansion and Modernization Project. This \$18 million project will protect the public health and our natural resources, including the Inland Waterway and the Great Lakes.

The project area was previously highlighted by Michigan District Health Department No. 4 as a problem area for onsite sewage disposal due to a high seasonal groundwater table and very small lots. These issues create lack of isolation for onsite sewage disposal systems and from onsite water wells, property lines and surface water and in some cases, critically undersized septic disposal systems.

The community has already made a \$5.9 million investment in a system in the commercial area which will provide the backbone for a residential expansion in environmentally sensitive areas currently zoned by Cheboygan County as a Protected Lake and Stream District within 1,000 feet of a body of water. This particular project in the unincorporated area of Indian River in Cheboygan County borders the 38-mile Inland Waterway which drains into Lake Huron and the Great Lakes.

I therefore support Tuscarora Township's Sewer Expansion and Modernization Project which will protect the public health, the Inland Waterway and the Great Lakes.

John B. Wallace
Chairman, Cheboygan County Board of Commissioners

District 1
Mary Ellen Tryban

District 2
Richard B. Sangster
Vice-Chairman

District 3
Michael Newman

District 4
Ron Williams

District 5
Roberta Matelski

District 6
John B. Wallace
Chair

District 7
Steve Warfield



426 Bay St., Petoskey, MI 49770

April 5, 2021

Robert A. Kramer, Tuscarora Township Trustee
3546 S. Straits Hwy
Indian River, MI 49749

Dear Mr. Kramer,

Tip of the Mitt Watershed Council is writing in support of the Tuscarora Township Septic to Sewer Expansion and Modernization Project. The project aligns with Goals and Objectives stated in the EGLE/EPA approved Burt Lake Watershed Management Plan. Specifically, Goal 1: Protect water quality of the Watershed's lakes and streams; Objective 1.2: Reduce nutrient inputs through maintenance or replacement of nonfunctioning septic systems. Additionally, watershed plan Septic System Implementation Step SS.2: Replace individual septic systems in communities where systems are ineffective or insufficient for given demand with community sewer systems.

Situated within the 38-mile Inland Waterway, many of the septic systems in the proposed project area have failed or are not being maintained using best management practices. The project area is in an environmentally sensitive zone, and failing septic systems could impact waters by allowing nutrient pollution. Having a sewer system available to this already crowded, compact, developed area is a definite benefit to keeping the waters clean.

Michigan District Health Department No. 4 (DHD4) noted that this is a problem area for septic systems, due to a high seasonal groundwater table and very small lots. There is not enough isolation from onsite drinking water wells, property lines, and surface water. The expanded sewer system would resolve these public health concerns. Importantly the project leverages the prior \$5.9 million commercial system, specifically the \$2.5 million plant complex investment made by the community that will be the anchor for the project.

For all of these reasons, we are writing this letter of support. Please contact me with any questions, 231-347-1181 ext. 1118 or grenetta@watershedcouncil.org.

Sincerely,

Grenetta Thomassey, PhD
Watershed Policy Director



Burt Lake
Preservation
Association

P.O. Box 632
Indian River, MI 49749
(231) 238-2177

April 7, 2021

Re: Tuscarora Township Septic to Sewer Expansion and Modernization Project

To whom it may concern:

On behalf of Burt Lake Preservation Association (BLPA) and its membership of 900+ families and businesses, we support the Tuscarora Township Septic to Sewer Expansion and Modernization Project. This project is consistent with our mission. In fact, BLPA paid for the initial study and engineering report by donating \$8,000.00 to the township.

The Burt Lake Preservation Association's goal is the preservation and improvement of Burt Lake and its watershed for quality use by future generations. To do this we will unify the lake community to confront the key issues involving the lake and its watershed. Working in cooperation with federal, state, and local government entities, educational institutions, foundations, conservancies, and other resources, the Burt Lake Preservation Association (BLPA) will contribute financial and human resources to fulfill this goal. While supporting and participating in an array of activities, we assume responsibility for the following: The vision of the Burt Lake Preservation Association is to be the leader of preservation and improvement of Burt Lake including its watershed and community.

In a letter written by District Health Department #4 to Tuscarora Township, they strongly support the municipal sewer expansion. The letter included the following statements: *"The expanded service area that encompasses the region due west of the Downtown corridor, between the Indian River to the north and the Sturgeon River to the south, is an area previously highlighted by District Health Department No. 4 (DHD4), as a problem area for onsite sewage disposal due to a high seasonal groundwater table and very small lots. These issues created lack of isolation for onsite sewage disposal systems from onsite water wells, property lines and surface water and in some cases, critically undersized sewage disposal systems. The expanded sewer system in the area mentioned above would resolve some of these public health concerns and issues, help improve surface water quality and improve environmental conditions in the residential area."*

BLPA therefore strongly supports the Tuscarora Township Septic to Sewer Expansion and Modernization Project.

Respectfully,

Jim Burke, President
Burt Lake Preservation Association



WAYNE A. SCHMIDT
37TH DISTRICT
P.O. BOX 30038
LANSING, MI 48905-7538

THE SENATE
STATE OF MICHIGAN

PHONE: (517) 373-2413
TOLL-FREE: (855) 347-8037
FAX: (517) 373-5144
senwschmidt@senate.michigan.gov

April 6, 2021

To Whom It May Concern

Re: Tuscarora Township Septic to Sewer Expansion and Modernization Project

Please accept this letter of support on behalf of the Tuscarora Township's Sewer Expansion and Modernization Project. This \$18 million project in Indian River borders the 38-mile Inland Water which drains into Lake Huron and the Great Lakes and is necessary to protect the public health and our waters.

The Michigan District Health Department No. 4 highlighted this project as an area of concern for onsite sewage disposal due to the high seasonal groundwater table and very small lots.

In addition, many of the septic systems in the proposed area have failed or are not in compliance with local, state or federal recommendations. According to the Michigan District Health Department No. 4, these issues created a lack of isolation for onsite sewage disposal systems and from onsite water wells, property lines and surface water and in some cases, critically undersized septic disposal systems.

The community has already invested \$5.9 million in 2015 for a commercial sewer system with a modular expandable plant. Although this effort has received community support a residential system remains financially out of reach for the community. I am supportive of Tuscarora Townships efforts to secure additional funding for this project because an expanded sewer system would resolve public health concerns, help improve surface water quality, improve environmental conditions in residential areas and protect the Inland Waterway and the Great Lakes.

Thank you for your consideration of this request. Please do not hesitate to contact my office should you need any additional information.

Sincerely,

A handwritten signature in blue ink, consisting of several fluid, connected strokes.

Wayne A. Schmidt
State Senate
37th District



107TH DISTRICT
STATE CAPITOL
P.O. BOX 30014
LANSING, MI 48909-7514

MICHIGAN HOUSE OF REPRESENTATIVES

JOHN N. DAMOOSE

STATE REPRESENTATIVE

PHONE: (517) 373-2629
FAX: (517) 373-8429
JohnDamoose@house.mi.gov

April 5, 2021

Re: Tuscarora Township Septic to Sewer Expansion and Modernization Project

To Whom It May Concern,

Because the Great Lakes are a natural resource of vast importance to Michigan's history, and future, I support Tuscarora Township's Sewer Expansion and Modernization Project. This \$18 million project in this rural community is necessary to protect the public health, the Inland Waterway and Great Lakes.

The project area was previously highlighted by Michigan District Health Department No. 4 as a problem area for onsite sewage disposal due to a high seasonal groundwater table and very small lots. Many of the septic systems in the proposed area have failed or are not in compliance with local, state or federal recommendations and constitute a potential problem. These issues create lack of isolation for onsite sewage disposal systems and from onsite water wells, property lines and surface water and in some cases, critically undersized septic disposal systems.

The community has already made a \$5.9 million investment in a system in the commercial area which will provide the backbone for a residential expansion in environmentally sensitive areas currently zoned Protected Lake and Stream District within 1,000 feet of a body of water. This particular project in Indian River borders the 38-mile Inland Waterway which drains into Lake Huron and the Great Lakes.

I strongly support Tuscarora Township's Sewer Expansion and Modernization Project which will protect the public health, the Inland Waterway and the Great Lakes.

With warmest regards,

John N. Damoose
State Representative
107th District
S-1486 House Office Building
(517) 373-2629



RESOLUTION

Tuscarora Township Septic to Sewer Expansion and Modernization Project –
Protecting Our Community & the Great Lakes

Number 2021-04-06-2

WHEREAS, Public Act 107 of 1941 authorizes a Township to provide sewage disposal services and facilities, and

WHEREAS, the current sewer project area was previously highlighted by Michigan District Health Department No. 4 (DHD4), as a problem area for onsite sewage disposal due to a high seasonal groundwater table and very small lots, and

WHEREAS, these issues created lack of isolation for onsite sewage disposal systems and from onsite water wells, property lines and surface water and in some cases, critically undersized septic disposal systems, and

WHEREAS, an expanded sewer system would resolve these public health concerns and issues, help improve surface water quality and improve environmental conditions, and

NOW, THEREFORE, BE IT RESOLVED that the Tuscarora Township Board of Trustees hereby publicly supports the ongoing Sewer Expansion and Modernization Project to protect our community, the public health and our natural resources, including the Inland Waterway and the Great Lakes.

The foregoing resolution offered by Board Member Kramer.

Second offered by Board Member Vance

Upon roll call vote, the following voted:

"Aye": Balazovic, Kramer, Ridley, Rodriguez, Vance (unanimous)

The Supervisor declared the resolution adopted.

Dolly Rodriguez, Clerk

April 6, 2021