TUSCARORA TWP – PHASE I & II SEWER SYSTEM EXPANSION

Scope of Work & Construction Summary

PERFORMANCE ENGINEERS, INC.

September 6, 2022

Tuscarora Township Sewer System History

Tuscarora Township has been considering options for providing municipal sewer to its residents for over 50 years. Serious efforts were made in the 1970s and 1990s but obtaining adequate funding was difficult. In 2012 the Township finally succeeded in obtaining USDA grant and loan funding which resulted in the construction in 2014 of a municipal waste water treatment facility (WWTF) and a collection system that began serving primarily commercial users along the South Straights Highway area. The WWTF itself was constructed on the east side of I-75 about 1.5 miles from the service area and was designed to be expandable in the future if additional funding was obtained.

HISTORY

Tuscarora Township Sewer System Expansion

Tuscarora Township has recently obtained additional USDA grant and loan funding for expansion of the WWTF and collection system in two phases.

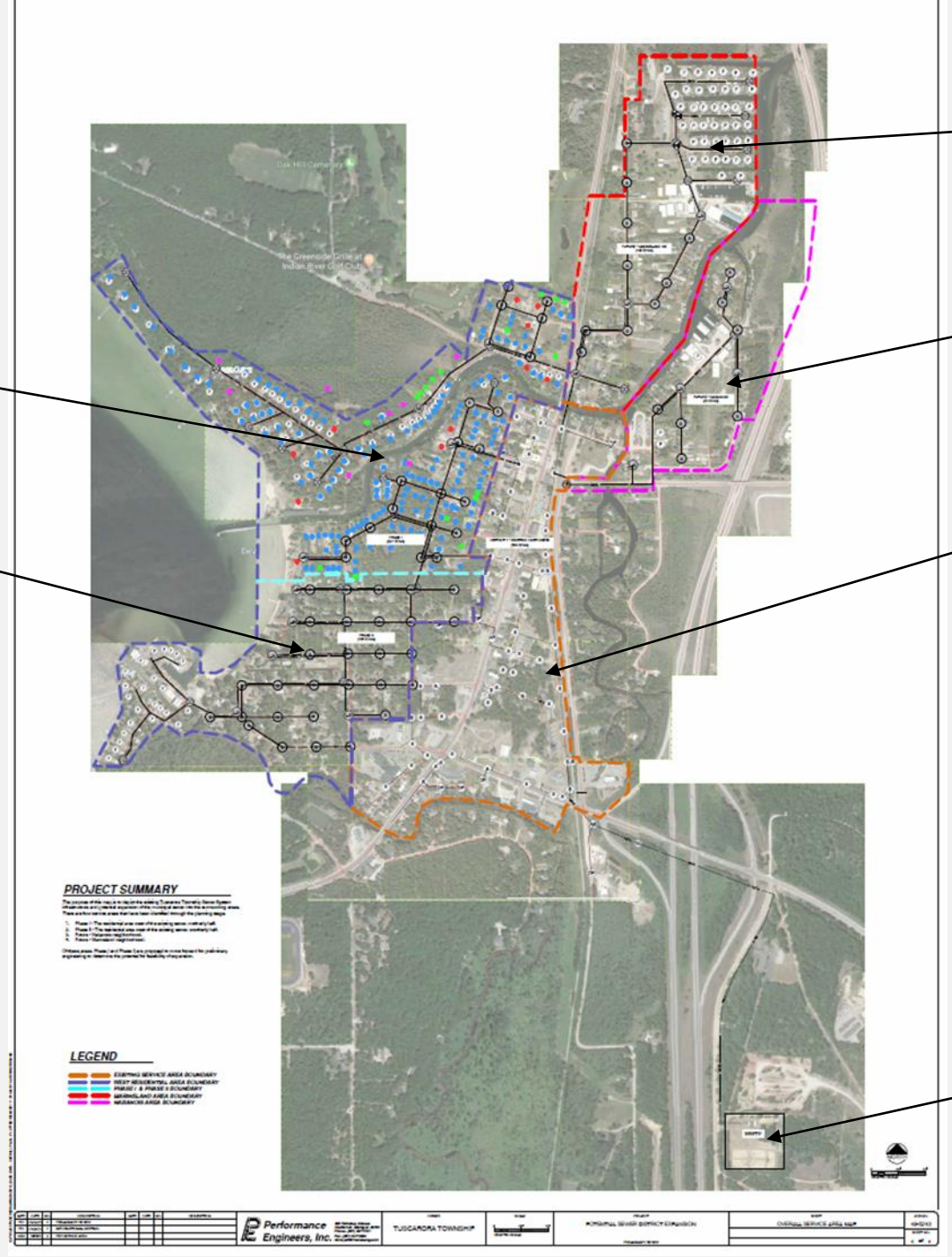
Phase I will cover the area west of the existing service area including the Columbus Beach Club and south to Mack Ave, an additional 202 properties.

Phase II will cover from Mack Ave south to Burt Lake State Park, an additional 185 properties.

The collection system expansion will double the current capacity at the WWTF.

EXPANSION

SYSTEM MAP



FUTURE MARINELAND AREA EXPANSION

FUTURE NABANOIS AREA EXPANSON

PHASE I EXPANSION

PHASE II EXPANSION

EXISTING SERVICE AREA

WWTF

WWTF EXPANSION

Additional AeroMod extended aeration modules will be installed to double the capacity of the WWTF. Additional rapid infiltration beds will also be constructed.

Low pressure force mains with individual grinder pumps will be used in the Columbus Beach Club due to the topography and high water table along the waterfront. Two or more properties may be connected to one grinder pump in many locations in order to minimize costs.

Conventional gravity sewer lines will be used south of the river with the exception of the properties along the waterfront which will need low pressure force mains and grinder pumps.

PHASE I EXPANSION MAP

Conventional gravity sewer lines will also be used in Phase II with the exception of the properties along the waterfront which will need low pressure force mains and grinder pumps.

PHASE II EXPANSION MAP

TYPICAL CONSTRUCTION

Many of the sewer lines will be installed using directional drilling equipment. This will minimize the amount of open excavation work and subsequent restoration work required.

TYPICAL CONSTRUCTION

This photo shows a sewer line that has been installed under a road via directional drilling.

TYPICAL CONSTRUCTION

This is a photo of a typical drill rig for installing sewer lines through directional drilling for service to an individual property.

TYPICAL CONSTRUCTION

Many of the sewer lines will be installed using directional drilling equipment which will minimize the amount of open excavations and site disturbance.

TYPICAL CONSTRUCTION

Some of the sewer lines will need to be installed using conventional trenching methods. The length of the active open trench is typically kept to a maximum of about 60 feet.

TYPICAL CONSTRUCTION

Excavations will also be required where sewer lines are connected.

TYPICAL CONSTRUCTION

Once work in an open trench is complete it is backfilled and compacted. It will also be re-seeded as part of the restoration work.

TYPICAL GRINDER PUMP

This photo shows three individual grinder pumps prior to installation. They will be buried with only the top of the lid showing. The connections to the incoming and outgoing sewer lines are made in the middle (narrow) section.

TYPICAL GRINDER PUMP

An excavation will be made for the installation of the grinder pump.

TYPICAL GRINDER PUMP

There will be an excavation for an isolation valve located where the sewer line from the individual grinder pump is connected to the sewer force main. A riser will extend to the surface so the valve can be opened or closed if necessary without additional excavating in the future.

TYPICAL GRINDER PUMP

After installation of the isolation valve is complete there will be a small cover plate visible where the connection to the sewer force main is located.

TYPICAL GRINDER PUMP

After installation of the grinder pump all that will be visible is the access lid at ground level.

TYPICAL CONTROL PANEL

A weather proof box containing the control panel for the grinder pump is typically attached to the side of the residence.

TYPICAL MANHOLE

In areas where gravity sewer lines are installed there will be larger excavations for manholes.

RESTORATION

The construction will look rough for some period of time, but restoration back to existing conditions is coordinated with the owners.

RESTORATION

Some portions of the project will be along narrow roads that will require more traffic disruption and patches to pavement.

DRAFT PROJECT SCHEDULE

Phase I

Dec 2022: Draft design complete.
Jan 2023: Final design and bid documents complete.
Mar 2023: Award construction contract.
Apr 2023: On site work begins at WWTF.
May 2023: On site work begins at Columbus Beach Club.
Jul 2023: On site work begins from bridge south to Mack Ave.
Dec 2023: Substantial completion.
May 2024: Punch list and restoration work complete.

Phase II

Similar to Phase I but with most of the construction occurring in 2024.

ANY QUESTIONS REGARDING PHASE I ?

If you have a question but can't attend the meeting or think of something after the meeting please email your question to:

trustee1@tuscaroratwp.com

ANY QUESTIONS REGARDING PHASE II ?

If you have a question but can't attend the meeting or think of something after the meeting please email your question to:

trustee1@tuscaroratwp.com