

Memo

To: City Council
From: Matt Griffith, Utility Superintendent
Date: June 10, 2016
Re: Water and Sewer Capital Projects

At the request of the City Manager, following is an outline of the proposed capital outlay projects in the FY 16/17 budget. Listed with each project are the implications of not performing the work in the coming fiscal year.

SEWER

Ferric Chloride Tanks and Shelter:

Ferric Chloride has been utilized since 1978 at the WWTP for the reduction of phosphorus from the wastewater. Ferric Chloride is a liquid salt that is highly corrosive, having the ability to deteriorate metals and concrete. The 2-5000 gallon storage tanks were installed in close proximity to the main electrical systems which feed power into the WWTP. The electrical systems located in this area have been compromised. One of the ferric chloride tanks ruptured in the recent past, which created a costly cleanup within the containment area and affected the treatment process. It has also come to our attention that the current containment area has deficiencies that will need to be addressed in the near future.

Replace Grit Removal Equipment:

The Grit removal equipment was originally installed in 1978, with minor repairs completed in 2000. Because the equipment is not functioning efficiently all of the downstream equipment and processes are negatively impacted. Operators are spending hours of valuable time unplugging piping in downstream processes. Recent blockages in

sludge piping, has had direct effects on the treatment of the bio-solids. Future costs for cleaning of the digester, along with land application of the bio-solids will increase without replacement of this equipment.

Tirrell Lift Station Generator:

This is the main lift station that pumps all of the City's sewage to the treatment plant. The generator has failed during power outages due to its age. Without it in an emergency, we run the risk of a sewer overflow into the Battle Creek River.

Replace Surface Wash Pump:

The surface wash pump currently in operation at the WWTP was installed in 1978. This pump serves as a very critical component within the tertiary treatment process at the WWTP. This pump is necessary for operations in order to avoid negative effects to the process and possible violations of the City's discharge permit. Due to the age and wear on the pump it cannot be repaired. If complete pump failure occurs, the pump will have to be replaced.

Replace Slide Gates at Splitter Boxes:

Slide gates allow operator's to manipulate flow to the clarifiers in order to conduct maintenance and repairs. The slides for the gates are worn to the point that it has become a safety concern for the operators to install or remove these gates when conducting maintenance activities.

Natural Gas Boiler Replacement:

The Natural Gas Boiler currently in operation at the WWTP is the original boiler that was installed in 1978. This boiler supplies hot water for critical heating requirements, mandated by the Michigan Department of Environmental Quality, within the anaerobic sludge digestion process along with all other hot water systems necessary for operations at the WWTP. Replacement components for the boiler are no longer available for purchase. If the boiler were to fail it would have to be replaced.

Lansing Lift Station Check Valves:

The Lansing Lift Station is the 2nd largest pumping station within the city. This station receives wastewater flow from industrial and commercial users. The Check Valves located on the discharge lines from the

pumps located within this pumping station have served their useful life. The components of the valves, along with the housings, are worn to the point that operating efficiencies have diminished greatly.

North Sheldon Replacement Main:

This project is already under construction.

Tertiary Filter Drain Valves:

The Tertiary Drain Valves were all installed in the last WWTP upgrade. Proper operation of these valves is a critical component to the WWTP process. If they are eliminated from the budget it will be necessary to replace them as they fail.

WATER

North Sheldon Street Main:

This project is already under construction.

Water Tower Painting:

This project is before council for award.

North Sheldon Street Main- Engineering:

This project is already under construction.

Street TBD Main Project- Engineering:

This will depend on whether the street project needs to have the watermain replaced prior to fixing the road.

Water Tower Painting- Engineering:

This project is before council for award.

Please let me know if you have any questions.

cc: Gregg Guetschow, City Manager

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