



TO: Mayor and Council

FR: Jennifer Taylor, CAO
Dean Yaremchuk, HMC Management Inc

DATE: October 24, 2019

RE: **Determining Next Steps Regarding Repair or Replacement of the Water Treatment Plant**

ISSUE:

The existing water treatment plant is aging and is in constant need of repair. Moving forward, Council needs to determine the life expectancy of the current water treatment facility and its key components and the projected costs for the design and replacement of this this facility in order to determine next steps including the means of financing what is determined needs to be done to protect this major capital asset.

BACKGROUND:

In 2011 and 2016, the Town has received a Waterworks Assessment Report undertaken by the KGS Groups of Consulting Engineers with similar results. These assessments comply with S.32 of the *Waterworks Regulation Act* whereby the owner of a waterworks system is required to undertake an assessment of their system. Following the legislation which says that assessments need to occur every five years, the next assessment required to be completed would be in 2021.

ALTERNATIVES:

1. To wait to undertake another assessment as legislated in 2021.
2. To proceed to retain a consulting engineering company to use the data contained 2016 waterworks assessment report, combined with their own review of the existing state of the water treatment facility and tis key components, and commence the process of determining the cost/benefit of significant repairs of the existing plant or full replacement of the plant.

FINANCIAL IMPLICATIONS:

There are no funds budgeted in 2019 to undertake any engineering related work on the water plant nor is there any costs identified in the last known 5-year capital plan on file which is from 2014-2018. It is evident from the concerns provided by the Director of Public Works & Utilities that the existing water plant cannot continue to go on without a plan to repair or replace. It is imperative moving forward that Council ascertain some level of cost certainty for repairing or replacing its water treatment plant so that funds can be budgeted for in a responsible manner considering all other capital works that the Town may require to undertake.

ANALYSIS:

The waterworks system has not been ignored over the years and there have been either new components or recent upgrades including the new well #6 being commissioned; two new vertical distribution pumps being installed in 2015 along with a new gas chlorine system; water tower heater was replaced in 2014 and a water tower circulation pump replaced in 2015. In 2019, the water tower also had its liner replaced.

The 2016 KGS report also indicated, among other things, that the existing waterworks system is aging and much of it may require replacement or significant maintenance in the next 15 years. Predesign work on an upgraded water treatment plant should be considered, the report further stated.

The issue at hand is determining what the most cost effective means to secure a quality water treatment system – replacing key components of the existing plant and system whose estimated remaining service life is low or undertaking a major replacement of plant and its key components.

This determination would be best made by a qualified engineering firm who could provide Council with an opinion on the current service life of key components and their replacement versus an opinion of probable costs regarding design of a new water plant.

With this information at hand, Council may then make informed determinations as how best to proceed and commence the allocation of funds and means of repayment in 2020.

ADMINISTRATIVE RECOMMENDATION(S):

1. That the Council of the Town of Wadena authorizes Administration to prepare and present to Council, a Request for Proposal (RFP), process with projected timelines, that would secure from qualified engineering firms, a feasibility study to determine the most cost effective means to secure a quality water treatment system , which would include an analysis of the existing water plant and its key components, recognizing the information in the 2016 KGS waterworks assessment report in comparison to undertaking a replacement of water plant and its key components and further that the RFP request total engineering costs for design and project management for the construction of a new water plant as well.

Appendix A - From the 2016 KGS Water Assessment Report

REMAINING SERVICE LIFE AND REPLACEMENT COST

ITEM	TYPICAL SERVICE LIFE	ESTIMATED REMAINING SERVICE LIFE	TOTAL COST (\$)
Raw Water Supply			
Well Buildings	40-60 Years	0-20 Years	75,000.00
Wells	20-30 Years	10-20 Years	75,000.00
Supply Lines	40-60 Years	30-50 Years	750,000.00
Subtotal			900,000.00
Water Treatment Plant and Distribution Pumping			
Water Treatment Plant Building	40-60 Years	5-15 Years	250,000.00
Retention Chamber	40-60 Years	5-15 Years	25,000.00
Filters	20-30 Years	5-15 Years	80,000.00
Aerator	20-30 Years	5-15 Years	40,000.00
Mechanical	20-30 Years	5-15 Years	80,000.00
Electrical	20-30 Years	5-15 Years	80,000.00
Chemical Feed Systems	10-20 Years	5-15 Years	20,000.00
Gas Chlorination Equipment	20-30 Years	15-25 Years	15,000.00
Filter Pumps	20-30 Years	5-15 Years	10,000.00
Distribution Pumps	20-30 Years	5-15 Years	60,000.00
Standby Pump	20-30 Years	5-15 Years	75,000.00
Water Tower	20-30 Years	10-20 Years	600,000.00
Water reservoirs	40-60 Years	10-20 Years	750,000.00
Subtotal			2,085,000.00
Distribution System			
Assume 14 km	40-60 Years	0-20 Years	1,870,000.00
Hydrants	20-30 Years	0-20 Years	370,000.00
Subtotal			2,240,000.00
Contingency & Engineering			1,567,500.00
TOTAL ESTIMATED REPLACEMENT COST			6,792,000.00