



City of Blaine Anoka County, Minnesota

Blaine City Hall
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Legislation Text

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Workshop Item *Jon Haukaas, Director of Public Works*

Title

Long Term Water Treatment Plant Capacities

Executive Summary

Staff is scoping the extent of renovations at Water Treatment Plants 1-3. Recent investigations have highlighted that the long-term filter plant capacity can have an effect on the design of these renovations. Staff will review the future projections and how various levels of filter improvement affect our ability to supply fully filtered versus needing to blend in an amount of unfiltered water during high demand at our projected build out population.

Background

The City of Blaine has historically provided filtered water from Water Treatment Plants (WTP) 1-3 to all residents during lower demand periods of the year, November through March. As demand increases, additional seasonal wells were turned on to provide more water to the system. These wells were chemically treated to meet health standards and still had higher levels of iron and manganese that could impact the aesthetic properties of the water. This impact to water quality was mitigated to a certain extent by blending the direct seasonal wells' water with the filtered water from the water treatment plants. This occurred mainly during the summer months when demand was higher from the use of irrigation systems. At highest demand, as much as 60%-70% of the water provided to our residents could be chemically treated unfiltered water.

The City's investment in the water system in the past several years has added treatment capacity to the point where it provides fully filtered water throughout the entire year. Only at times when we need to remove a water treatment plant from service in the high demand season would we need to turn on an unfiltered seasonal well. This past year we estimate that less than 10% of water demand would have been met from seasonal wells.

As Blaine's population increases, so will the demand and need to blend in these unfiltered wells. The question to be addressed is what is an acceptable level of blending that should be designed for. The current pressure filters at WTP 1-3 have had problems over the past several years keeping up with their original design capacities for filtered water. Running the plants at design capacity has led to filter failures and multiple media change outs. Staff believes the filters cannot be run long term at their design capacities and should be downgraded. This changes the long-term projections of how much filtered water can be provided at our build out population.

- If there is a desire to maximize the amount of filtered water (>90%) provided to our residents at our build out population, we need to include filter improvements to the current renovation scope.

- If continuing to blend unfiltered water in the future is acceptable, it reduces the amount of additional investment we need to make to the water treatment plants at this time. Many water providers continue to blend 20% to 50% during the summer months when much of the water is delivered for irrigation.

Staff will review the attached Water Treatment Plant Capacity Trigger Chart to show how capacity changes over time as our population grows and lead a discussion of the options versus potential impacts.

Strategic Plan Relationship

This project directly addresses the Strategic Plan Outcome of Reliable Utility Systems within the Priority for Well-maintained Infrastructure.

Financial Impact

Costs for any project will be worked into our upcoming rate studies to ensure the Water Enterprise Fund has sufficient revenues to pay for these improvements.

Question for the City Council

Does the City Council desire to maximize the amount of filtered water provided to our residents even at our build out population or is there an amount of blending that is acceptable?