



Committee of the Whole Report

Report Number: ENG2022-017

Meeting Date: June 7, 2022

Title: **Woodville Water Treatment Plant Capacity Assessment**

Description: This report examines the water service capacity availability of the existing system for future development in the Village of Woodville.

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Recommendation:

That Report ENG2022-17, Woodville Water Treatment Plant Capacity Assessment, be received; and

That this recommendation be brought forward to Council for consideration at the next Regular Council Meeting.

Department Head: _____

Financial/Legal/HR/Other: _____

Chief Administrative Officer: _____

Background:

At the January 11, 2022 Committee of the Whole Meeting and subsequent Council Meeting of January 25, 2022, Council adopted the following resolution:

CW2022-020

That the Memorandum from Councillor Veale, **regarding the Water Service Capacity for the Village of Woodville**, be received;

That Staff report back to Council by Q2, 2022, with an update on water service capacity of the existing system in the Village of Woodville; and

That the report includes, but not be limited to, existing capacity availability for future development, and the feasibility of service expansion (including existing test well capabilities and use).

Carried

The Woodville Drinking Water System (DWS) consists of two groundwater production wells (Well 1 and Well 2), one pond makeup well (Well 3), one water treatment plant (WTP), a water distribution network and one storage reservoir (standpipe). The rated capacity of the plant is 588 m³/day (6.8 L/s). The water treatment facility is currently operated by the Ontario Clean Water Agency (OCWA) on behalf of the City.

The Engineering and Corporate Assets department retained OCWA to undertake flow testing and a desktop capacity assessment to confirm the current available capacity of the Woodville WTP, as well as provide some insight into how much development can be accommodated in the community of Woodville within the current available capacity.

OCWA completed forty-five 1-hour flow tests between April 26, 2022 and May 9, 2022 at the Woodville WTP. The test results confirmed that the existing WTP facility is capable of producing good quality drinking water at the maximum flow rates (rated capacity) for which the facility was originally designed (6.8 L/s). This could be achieved using either one well pump at a time or both well-pumps combined up to the maximum water taking allowed in the Permit to take Water (PTTW) and using either one treatment train or both trains at once.

Using the historical average treated water flow as baseline water demand, OCWA estimates that the existing system has capacity to accommodate an estimated maximum additional 60 single houses before reaching 80% of the rated capacity. An

estimated additional 20 single houses would then bring the capacity up from 80% to the full rated capacity.

Planning Division's Comment:

There are a number of development opportunities in Woodville including proposed subdivisions, vacant lots, severance potential for new lots, and intensification potential. There are three remaining unbuilt subdivision proposals in Woodville at this time.

- The Mancini Maple Hills Phase 3 has 35 lots that are draft approved.
- The Mancini Primavera Estates has 22 lots that were deemed in 2014 and the development potential was transferred to the Mancini Maple Hills Phase 2 subdivision. The deeming could be reversed to allow this development to proceed.
- 250039 Developments Limited known as Woodville Estates had 44 lots but the draft plan approval has lapsed in 1997.

This would total 101 lots if the lapsed draft plan of subdivision was reinstated.

There are also a number of larger development parcels that could accommodate development; however, an exercise to determine development yields for these properties will be conducted during the Growth Management Strategy update. Staff would however estimate that there is an opportunity for approximately 15 residential units through development of existing vacant lots, severance potential of larger lots, and intensification of larger existing buildings (infill potential).

The amount of additional development that can be accommodated as part of the maximum 60 units is a function of the number of units in the Maple Hills Phase 2 that are not currently connected as well as the amount of development potential that needs to be assigned to infill potential.

Staff will work with active proposals and commitments to implement modest and immediate development within the current known system capacity limitations. Proposals and approved future development exceeding current capacity will be considered and accommodated for, where appropriate, through the future Growth Management and Master Servicing Plans.

Rationale:

The Ministry of the Environment, Conservation and Parks (MECP) recommends that the actions should be taken to avoid potential flow exceedances and/or compliance issue during the operation of water and wastewater facilities in instances where the flow demand is at or exceeding 80% of the rated capacity as specified in the Approval. Therefore, once the 80% of rated capacity limit is reached the water demands should be re-assessed to determine more accurate water flows and spare capacity before approving the construction of additional houses. In addition, once the 80% of rated capacity limit is reached, the municipality should start investigating any needed expansion/upgrades to the existing system based on development plans.

The City is currently undertaking a new Growth Management Strategy (GMS) and Water and Wastewater Servicing and Capacity Master Plan Update. The GMS study will establish a foundation and guidance for the preparation and implementation of the Water and Wastewater Servicing and Capacity Master Plan Update and will help to guide the necessity for future system upgrades. Typically, to expand/upgrade any given treatment system above and beyond the existing rated capacity, a full Municipal Class Environmental Assessment (a schedule C EA) is required. The whole process of EA, Design and Construction can take 4 to 5 years until the DWS is expanded/updated.

The existing capacity of the WTP facility should not be maxed out until the new upgraded WTP facility is fully functional. Operating at full rated capacity increases the risk for water shortages should there be a failure in the system and also limits the operational flexibility of the system to manage planned standard operating procedures such as flushing, maintenance and/or repair operations, and unplanned events.

Other Alternatives Considered:

Not applicable.

Alignment to Strategic Priorities

Water-wastewater infrastructure is critical in supporting a vibrant and growing economy.

Financial/Operation Impacts:

Not applicable.

Servicing Implications:

The existing WTP provides filtration, the critical process units of this water treatment system, through two treatment trains in parallel, each consisting of two cartridge filter assemblies. Adding new service connections (new houses) to the existing ones translate into higher water demand (additional flows). The effective life of the existing filtration units will shorten as the flow through these treatment trains increase and/or the longer the run time (hours of operation) these treatment systems are on whether independently or combined to meet the new demand. Therefore, any future growth/development could directly impact the performance and life of these filters.

Consultations:

Manager, Infrastructure Design and Construction

Ontario Clean Water Agency

Attachments:

Appendix A: Woodville Water Treatment Plant (WTP) Capacity Assessment



Woodville WTP -
Capacity Assessment

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Department Head: Juan Rojas, Director of Engineering and Corporate Assets