



INFRASTRUCTURE SERVICES *Staff Report*

REPORT NO: IS-2025-01

TO: Committee of the Whole

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REVIEWED BY: Greg Clark, Acting Chief Administrative Officer

DATE: 2025-01-06

SUBJECT: **Knipfel Private DWS System – Project Update**

RECOMMENDATION:

THAT Council directs Staff to proceed with the detailed design for replacing the Knipfel Private Distribution Water System with a new municipal watermain and services that meets current municipal and provincial design and safety standards, including design for service connections for all existing users and properties fronting the proposed watermain layout in northeast Petersburg, Notre Dame Drive, and Snyder's Road East.

SUMMARY:

This report updates Council on the Knipfel Private Drinking Water System (DWS) and recommends proceeding with design for replacement of the existing infrastructure based on the MTE Consultant's system assessment. The assessment identified critical deficiencies, including an undersized watermain, aging materials, water quality issues, inadequate pressure, inability to locate and out-of-order servicing layout.

A public meeting was held on October 10th, where residents were informed about these challenges and the proposed improvements. Responses to questions raised during the meeting were posted on the Region's Engage webpage for transparency.

The proposed replacement system will address the identified issues and includes the potential to extend service to properties in the Deerfield Subdivision, Notre Dame Drive, and Snyder's Road East. Although the Region's Environmental Assessment (EA) to evaluate the potential for additional connections is scheduled for 2027, the Township plans to proceed with detailed design, ensuring alignment with the EA's findings.

BACKGROUND:

At the June 10th council meeting, staff presented an information report (IS-2024-18) updating the status of the Knipfel DWS conversion project. Since then, water meter installations have been completed and individual meter billing began on September 1st, 2024. MTE consultants have assessed the Knipfel DWS and provided recommendations, along with cost estimates, for replacing the system to comply with municipal and provincial standards, legislation and the Township's Drinking Water Quality Management System. In addition, Township staff have been working with the Region to establish timelines for the studies required to evaluate the system's ability and capacity to service additional properties in the Petersburg community.

It is noted, the Township had a similar process for St. Agatha Private DWS conversion to municipal system in the early to mid 2000's.

REPORT:

Public Engagement

A public meeting was held on Thursday, October 10, at the St. Agatha Community Centre to engage with residents on project background, current system challenges, proposed improvements, and financial considerations. Township and Regional staff were present to provide support, offering clarification and addressing questions as residents reviewed the informational slides prepared by the Township and Region.

To maintain transparency, questions raised during the meeting have been answered and posted on the Engage Webpage, allowing residents to review and deepen their understanding of the project.

To ensure their receipt, all forms of public engagement have been hand delivered, sent by mail and posted to the Region's Engage webpage - <https://www.engagewr.ca/petersburg-water-system>.

MTE Consultant's Knipfel DWS Assessment

MTE's assessment of the Knipfel DWS has identified several deficiencies that highlight the need for system replacement. The existing watermain is undersized with materials nearing the end of their service life, which increases the risk of system failures. The material type and era of construction also have a high likelihood of higher health risk materials, like presence of lead. Water quality concerns surrounding discoloration have been raised by system users, which is

due to the material type and the significant length of dead-ends within the system and the absence of flushing capabilities along Redford Drive and Notre Dame Drive. The system does not provide adequate pressure demands for system users and lacks essential features such as isolation valves, system looping, and detectable tracer wire. All of these are operational liabilities to the Township operating under the DWQMS, which will be financial liabilities, as well as licensing liabilities with high potential for further reporting requirements and corrective actions required on the system at each annual audit cycle. In addition to this, the asset life cycle activities indicate this asset is within the replacement window and in higher risk of service delivery failure. This has been confirmed through data and information collection, as well as field activity conducted by MTE and Township staff.

Based on these deficiencies and the inability of the system to meet municipal design standards, the Ministry of the Environment Conservation and Parks (MECP) Design Guidelines for Drinking Water Systems, and the Ontario Building Code (OBC), as well as where it currently sits in it's life cycle, MTE has recommended two replacement scenarios:

1. Servicing only currently connected properties
 - a. Watermain replacement only
 - b. Road urbanization
2. Servicing currently connected properties and properties fronting the proposed watermain in the northeast quadrant of the Petersburg community, Notre Dame Drive, and Snyder's Road East. (watermain replacement only)

Scenario 1a) would completely replace the water distribution system along with the services to each property with restoration limited only to areas affected by watermain replacement. Roadwork and storm sewer repairs would only be included if they were disturbed as part of the replacement.

In addition to complete system replacement and service installation, Scenario 1b) would transition the currently rural road cross section within the Deerfield subdivision to a semi urban road cross section (no sidewalks, but introduction of curbs and drainage features). This would include full width and depth asphalt replacement on local roads along with the installation of concrete curbs, catch basins, and storm sewers. Boulevards would also be graded to drain onto the roads.

Scenario 2 is identical to Scenario 1a), except it also includes servicing additional properties not currently connected to the Knipfel DWS. These properties are located within the Deerfield subdivision and along Notre Dame Drive and Snyders Road East, where the proposed design includes watermain fronting their property. This scenario comes with the challenge of adding approximately 20 additional units to the servicing count, which can help lower the cost per service of the installation, but it is yet to be determined if the Region's wellhouse has capacity to provide drinking water to these additional units.

MTE has recommended a complete replacement of the existing Knipfel DWS due to several identified deficiencies. It is proposed that the new system design includes servicing additional

properties in the Deerfield Subdivision, as well as along Snyders Road East and Notre Dame Drive, to create a more cost-effective solution. Servicing these additional properties could reduce overall costs by approximately \$10,000 per service if new connections were apportioned similar costs as the existing system users, as expenses would be distributed among more benefiting property owners, resulting in lower individual costs.

Municipal Water Service Extension

Township staff conducted surveys of properties within the Petersburg community that are not currently connected to the Knipfel DWS. The goal was to assess interest in extending municipal water services and understand the status of private well servicing. The survey results showed that 76% of respondents were not interested in the extension, while 19% expressed interest including properties that would directly benefit from the proposed watermain layout. The remaining 5% of respondents had no opinion on the matter.

To evaluate the feasibility of connecting additional properties to the Knipfel DWS and to explore options for expanding the system, the Township intends to work with the Region on an Environmental Assessment (EA) for the Petersburg Water System. This will provide a long-term water supply strategy for the community. While the Region had initially scheduled the EA for 2027, the Township has requested an expedited timeline. However, the Region has confirmed that its capital plans are fixed and cannot be adjusted at this time. Nonetheless, preparatory work, including condition assessments of the reservoir, treatment building roof, and wells, is underway to ensure readiness for the EA process and determine capacity of the existing supply system.

Given the critical deficiencies of the current system and its inability to meet municipal and provincial standards, staff recommend proceeding with detailed design of the initial phase of existing system replacement to ensure that the final design and construction has the opportunity to align with or accommodate outcomes of the Region’s EA. Staff recommend that the proposed design will serve additional properties within the Deerfield Subdivision, along Notre Dame Drive, and on Snyder’s Road East, which are not currently connected to the Knipfel DWS but will benefit from the new watermain once it is in place. A decision can be made at the time of construction whether these properties should be connected, which will also impact the cost per service. In addition, if the outcome of the EA is such that additional expansion to the remainder of the settlement area could be accommodated, serviced area could be adjusted in a phased approach in the future.

Summary of Costs to Date

Cost Category	Details	Amount
Contracted Services	Weitzel Pumps and Water Treatment for water meter installation	\$51,700
	Miller Thompson Law Firm for cost recovery review	\$2,600
	MTE Consulting for system assessment	\$7,600
Materials	Water Meters	\$8,600

	MXU Radios	\$14,500
	Couplers	\$2,100
Administration Account Setup	Water account setup fee	\$2,600
Building Permits	Water meter installation permits	\$17,900
Extra Private Plumbing Costs	Private plumbing work required to allow for water meter installation. Costs to be recovered on a non-equal basis and only charged to the individual properties that incurred additional fees.	\$25,000

ALIGNMENT WITH THE TOWNSHIP OF WILMOT STRATEGIC PLAN:

This initiative supports the goals and strategies of enhancing Responsible Governance through Active Communications, Fiscal Responsibility, and Infrastructure Investments.

FINANCIAL CONSIDERATIONS:

Typically, a reserve fund would have been established by the owners of the Knipfel Private DWS, collecting contributions over the years and put away in a reserve to fund necessary infrastructure improvements and ensure the system complies with municipal and provincial standards. However, no reserves or any funds have been transferred to the Township by Knipfel DWS when the Ministry assigned responsibility for the distribution system to the Township from Knipfel DWS. This operations transfer occurred after the previous owners notified the Ministry of their intention to cease operating the system, resulting in the Township and Region being appointed as the operator by default. As a result, the financial implications for addressing these upgrades are outlined in the scenarios below.

The total cost for MTE’s Scenario 1a) is \$2,520,210, covering 65 properties, resulting in an estimated cost per service of \$38,700. Scenario 1b) is projected to cost \$1,503,720; however, this estimate includes only the road semi-urbanization expenses, with watermain replacement costs excluded. Scenario 2 is estimated at \$2,658,210, which, when distributed across 88 connected properties, equates to an approximate cost per service of \$30,200.

Scenario 2 is recommended as the most cost-effective option with a cost per service of \$30,200, proceeding with design at this time is minimal impact to costs. As noted earlier, incorporating additional properties into the system design reduces the overall costs per benefitting property. Note that this number does not include design or other supplemental costs for the system – it is based entirely on the construction estimate alone. And further it is noted that the design can be adjusted prior to construction if it is determined that servicing is not feasible, or if servicing can be expanded to other quadrants of the Petersburg community.

Both preliminary costing and construction planning will return to Council before proceeding to the next steps of the project. This will likely be in late 2025 or early 2026. This will also include outlining financial planning options and recovery options at that time.

Based on the system's age, if Council opts against the recommended replacement, it is advised to recover a portion of costs from the existing users to establish the reserve that should be in place, based on the asset's remaining lifespan. Additionally, the operating budget will need to be increased to manage the elevated risks associated with the aging system and to prepare for its eventual shorter-term replacement.

On December 3, 2024, Regional council approved a *By-law to Impose a Charge Upon Owners of Land Who Derive or Will Derive a Benefit from the Water System Located in the Community of Petersburg in the Township of Wilmot*. This by-law outlines the cost recovery process for the upgrades the Region has made to the supply system. For more details, please refer to the council report and by-law linked below:

- Report - <https://pub-regionofwaterloo.escribemeetings.com/filestream.ashx?DocumentId=10458>
- By-law - <https://pub-regionofwaterloo.escribemeetings.com/filestream.ashx?DocumentId=10459>

ATTACHMENTS:

Attachment 1: Knipfel Private Water Distribution System Assessment