# Petersburg
# Water System

Public Meeting
October 10, 2024

Township of Wilmot

Region of Waterloo

# *Welcome*

**Region of Waterloo**
Water Supply & Treatment

- Mari MacNeil

**Township of Wilmot**
Water Distribution Customer Billing

- Jeff Molenhuis

**Ministry of Environment, Conservation and Parks**

- Lisa Williamson

# Project Background:
# Transition of Knipfel-Petersburg Drinking Water System

## Background & Initial Assessment:

**Early 1960s**

- **System Construction:** Establishment of the private drinking water system, including a four-inch iron watermain, two groundwater wells, storage reservoir with booster pumps, chemical system, and pressure tank.

**2021/22**

- **Ministry Advisory:** System owner advised to consult with the Ministry on converting to a municipal system.

## Authority & Regulatory Actions:

**January 15, 2024**

- **MECP Notice of Intent:** Ministry of the Environment, Conservation and Parks (MECP) communicates intent to order the Region of Waterloo and Township of Wilmot to assume operation of the private system by May 13, 2024.

**February 26, 2024**

- **Municipality Response:**
  - **Township of Wilmot:** Agrees to take on operation and maintenance of the water distribution system as a non-municipal year-round residential water system per O. Reg. 170/03.
  - **Region of Waterloo:** Collaborates with the Township to manage extraction and treatment responsibilities.

## Engineering Evaluation:

**March 26, 2024: Consultant Engagement:**

- **MTE Consultants Hired:** The Township engages MTE Consultants to conduct an engineering evaluation of the Knipfel DWS.
- **Objective:** Assess the current system and provide recommendations to bring it to Ministry standards, including cost estimates for required upgrades.

# Project Background:
# Transition of Knipfel-Petersburg Drinking Water System

## Public Engagement & Communication

**April 4, 2024**

- **Public Information Meeting:**
- **Agenda:** Discussed MECP's Notice of Intent, municipal responses, and next project steps.
- **Outcome:** Provided residents with information and opportunities to ask questions.

**June 10, 2024**

- **Council Information Report:**
- **Topics Covered:**
  - Water meter installation bid process.
  - Water meter installation plan.
  - Interim billing for water usage before meter installation.
  - Account transition plan for setting up water billing with the Township.

## Operational Transition

**May 13, 2024**

- **Assumption of Operations:**
- **Action:** Region and Township begin operating and maintaining the Knipfel DWS as a non-municipal water system.
- **Compliance:** Ensure system operations align with SDWA regulations and municipal standards.

## Water Meter Installation & Billing

**June - August 2024**

- **Water Meter Installation:** The Township coordinated and hired a contractor to install water meters on all properties connected to the system.
- **Purpose:** This was done to improve the reliability of water usage data for billing purposes and provide fair billing for system users based on individual water use.

**September 1, 2024**

- **Billing Commencement:** The Township began bi-monthly billing based on individual water use per property, ensuring a fair and accurate billing process for each user.

## System Assessment

**WHEN?** In early 2024 and on-going

**WHY?** Part of Ministry Notice, the Township undertook a system assessment in relation to condition, performance and how it meets current Ministry and Municipal system requirements

**WHO?** MTE Consultants

**HOW?** Through records review (limited), interviewing system owner/operator, operator experience

**WHAT?** Distribution system was assessed based on various elements of condition, performance and meeting standards for the Ministry and the Township

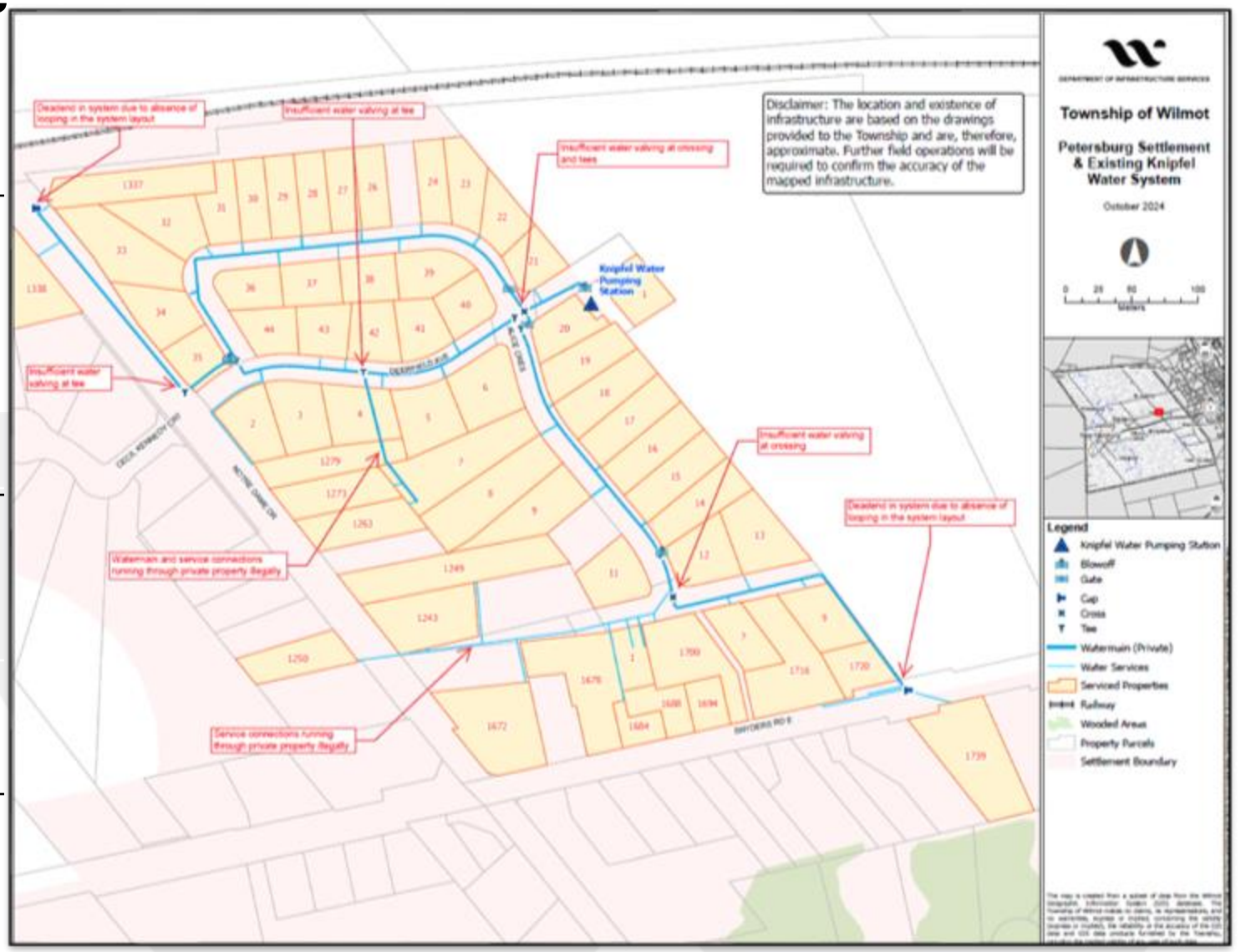
**It's important to note:** Assessment information presented is the best information we have available to us today. Further assessment may be needed in specific areas and where noted, and we will continue to review these areas. Further, we will provide this information in the next steps of the project in 2024 and 2025.

# Current System: Functionality and Performance

**The existing watermain system does not loop, causing potential issues with water quality, service reliability, pressure, and efficiency.**

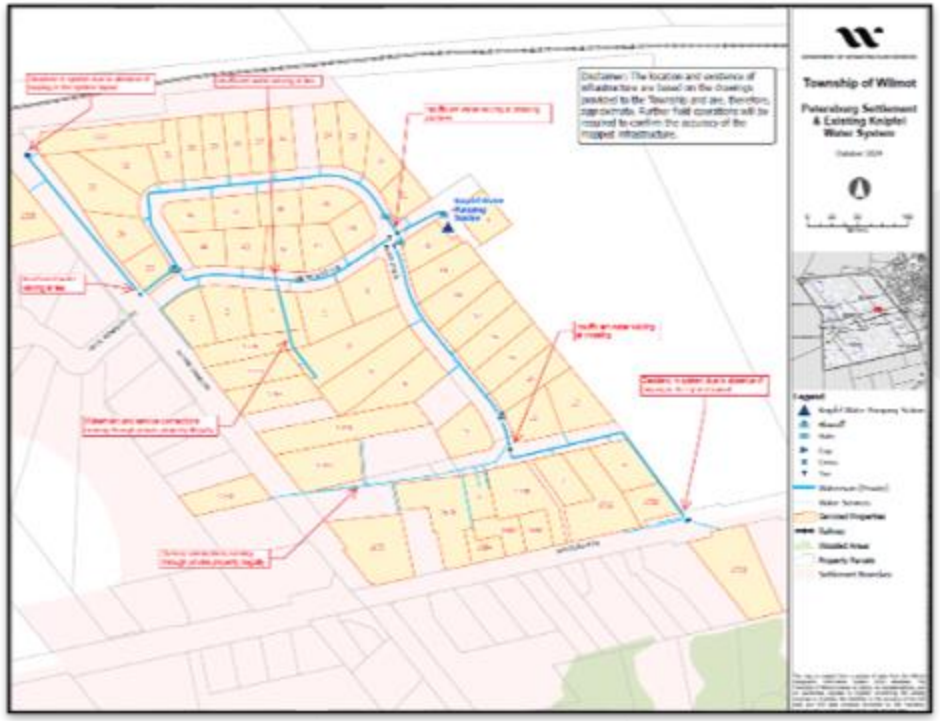
Looping a municipal watermain system is essential for several reasons:

| | |
|---|---|
| Water **Quality:** | **Stagnation**: Looping ensures continuous water circulation throughout the system, minimizing areas where water can stagnate. Stagnant water can lead to issues like bacterial growth and unpleasant taste or odor.<br><br>**Flushing Dead Ends**: Without looping, water at the ends of a system can become stagnant, requiring frequent flushing. A looped system prevents this by maintaining flow through all areas. |
| **Reliability and Redundancy:** | **Service Disruptions:** If a watermain break or maintenance occurs in a looped system, water can still be supplied from other directions. This redundancy reduces the likelihood of complete service shutdowns in affected areas.<br><br>**Backup Supply:** Looping provides multiple pathways for water to flow, ensuring a backup supply route if one section is compromised. |
| **Water Pressure:** | **Balanced Distribution:** In a looped system, pressure is more evenly distributed, reducing pressure drops in areas far from the main supply. This consistency is crucial during peak demand periods when pressure issues can arise. |



# Current System: Layout Challenges

**The existing system includes multiple pipe runs and private services that run through other private properties, generally prohibited due to potential property rights violations, lack of necessary easements, liability and property disputes, and challenges in maintenance and access.**




Overall, running watermain services through private properties without proper authorization undermines legal frameworks, property rights, and regulatory compliance, leading to significant legal and operational challenges.

1. Property Rights: Private property laws grant landowners the right to control what occurs on their property. Running neighbouring utility lines through private property without permission, easement or need can violate property rights and can lead to legal disputes.

2. Easement Issues: Utilities typically require easements—legal agreements that allow them to install and maintain infrastructure on private land, for situations that there is no other reasonable option available. If there is no easement in place for the watermain or services, the installation could be deemed illegal.

3. Liability Concerns: Private watermain services running through neighboring properties can create significant liability issues. If a leak or failure occurs, it could cause damage to the neighboring property, potentially resulting in legal action against the service owner for trespassing or negligence.

4. Access and Maintenance: The Township must have the legal right to access their infrastructure for maintenance and emergency repairs. If watermains are on private property without permission, or clear framework for permissions, accessing them can be complicated or impossible, hindering effective system management. In addition, private property disputes could conflict with servicing expectations.

5. Regulatory Compliance: Municipal regulations and building codes often require that utility infrastructure be installed in designated public rights-of-way or with proper easements. Non-compliance can result in fines, penalties, or mandates to relocate the infrastructure.

6. Impact on Property Transfers: Township watermain and private watermain services connections running through neighboring properties are a property encumbrance and can create challenges for property owners due to concerns about potential damage and disruptions, leading to disputes and regulatory compliance issues. Further challenges could arise from transfer of ownership as new owners may dispute private infrastructure on their property.

7. Public Safety and Health: Watermain installations must comply with safety and health regulations. Unauthorized lines may not meet required standards, posing risks to public health and safety.

# Current System: Controls Configuration

**The current system does not have adequate isolation capabilities or full flushing capabilities due to valving, necessitating the installation of additional valves and more flushing ports. Proper valving is essential for isolating sections for maintenance, minimizing service disruptions, managing water pressure, and ensuring compliance with regulations.**

Valving is essential for ensuring operational control, enhancing system flexibility, and improving the overall efficiency and safety of the watermain network.

Having an adequate number of valves in a watermain system is crucial for several reasons:

**Isolating Sections for Repairs**: Valves allow specific sections of the watermain to be isolated when repairs or maintenance are needed. Without enough valves, larger portions of the system may need to be shut down, causing widespread water service disruptions.

**Minimizing Water Loss**: In the event of a watermain break or supporting leak detection, valves can be used to quickly shut off the affected area, minimizing water loss and preventing flooding or property damage. Adequate valving ensures faster response and reduces waste during emergencies.

**Enhanced Emergency Response**: In situations like contamination or pipe failure, valves enable quicker containment of the problem, allowing operators to isolate the impacted area while maintaining service in unaffected parts of the network. This localized control is critical for public safety and efficient system management.

**Flexibility for System Expansion**: Valves provide flexibility for future system modifications, or tie-ins to system work without requiring large-scale shutdowns. This keeps the water system adaptable and efficient as the municipality grows.

**Pressure Management**: Valves help control pressure throughout the watermain system by isolating or adjusting flow to certain areas, preventing over-pressurization in some parts and maintaining consistent pressure in others.

**Maintenance Scheduling**: With proper valving, operators can schedule maintenance more easily, allowing them to perform work on specific sections without impacting the entire water network. This reduces disruptions to customers and ensures system reliability. In addition, valve locations allow for flushing activities to take place; in this system, some sections cannot be adequately flushed based on the system configuration.

**Regulatory Compliance**: Ministry standards require a specific amount of valving to ensure the water system can be safely operated and maintained. Adequate valve placement helps meet these requirements, preventing potential legal and maintenance issues. **According to MECP regulations, valves should be positioned at intervals no greater than 240 m. Additionally, a minimum of 2 valves is required at T-intersections and 3 valves are needed at cross intersections**.

# Current System: Locating Capabilities

**The existing watermain system does not have tracer wire, making accurate locating very difficult and subject to risk for the owner. This limitation increases the risk for operators, system owners, and contractors during underground works. Accurate locating is essential to ensure efficient maintenance, prevent damage to the infrastructure, and protect public safety.**

The Township requires tracer wire to be installed in accordance with the Design Guidelines and Supplemental Specifications for Municipal Standards (DGSSMS). Specifically, the tracer wire must be #8-gauge TWU multi-strand copper, secured to the top center of all non-metallic watermains and service pipes at 5-meter intervals. Compliance with this regulation not only meets the Township's standards but also aligns with Ministry standards.

The ability to locate municipal watermains is essential for several reasons:

1. **Infrastructure Maintenance and Repair**: Knowing the exact location of watermains allows for efficient repairs, minimizing disruptions to water service and preventing accidental damage to other utilities during maintenance work.
2. **Watermain Replacements**: In projects like watermain replacements, accurate location information ensures that excavation and replacement work can proceed safely and effectively.
3. **Emergency Response**: During watermain breaks or leaks, being able to quickly locate the watermain is critical to stopping the flow of water, reducing damage, and restoring service.
4. **Utility Coordination**: When planning other infrastructure projects, such as road improvements or construction, it is important to know the watermain locations to avoid conflicts with other utilities like gas, electricity, or telecommunications.
5. **Permitting and Regulatory Compliance**: Locating watermains ensures compliance with local standards or regulations, preventing accidental breaches and ensuring proper procedures are followed.
6. **Public Safety**: Accurate watermain location helps prevent unintended disruptions that could affect public safety, such as road collapses or contamination from cross-connections with other utilities.
7. **Cost Efficiency**: Reducing the time spent searching for buried infrastructure helps lower project costs and keeps timelines on track.

# Current System: Service Pressure

**Service pressure is low, making it difficult to maintain adequate levels during normal usage. Although increasing system pressure is important for meeting Ministry of Environment, Conservation and Parks (MECP) and Ontario Building Code (OBC) requirements, concerns about aging materials that construction integrity restrict this. Adequate pressure is vital for a reliable water supply and community needs.**

## Ministry Pressure Needs

- The MECP requires that a water distribution system shall be designed to maintain a minimum pressure of 140 kPa at all points within the system under maximum day demand plus fire flow conditions (fire flow not applicable in this system). The normal operating pressure should be approximately 350-480 kPa and shall not exceed 700 kPa.

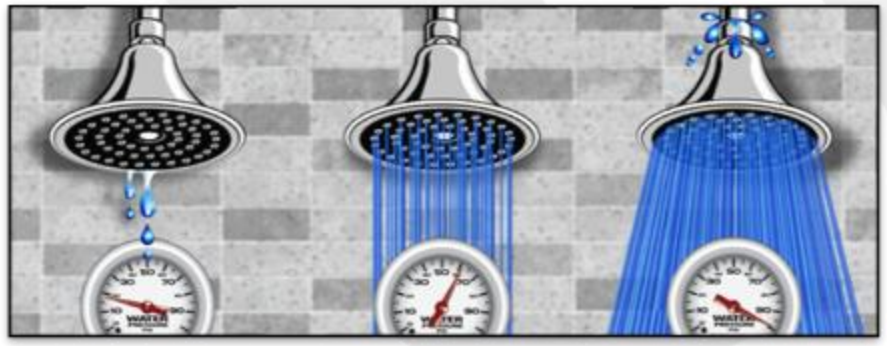
## OBC pressure needs

- O.Reg 332/12: Building code states that the minimum water pressure to be supplied at the entrance to a building is 200 kPa.

## Current System Pressure

- At high points in the system, rough operating pressure is 190kPa based on pump operating pressure. This would decrease drastically during peak operating times.

Properly balancing watermain pressure is vital to keeping the entire water distribution system safe, reliable, and cost-effective.



# Current System: Service Pressure

**Reason why adequate system pressure in a watermain is crucial:**

1

**Reliable Water Supply**:

- Adequate pressure ensures water can be delivered consistently to homes, businesses, and public facilities. Insufficient pressure may result in weak flow, making it difficult for users to access water, especially in higher elevations or multi-story buildings.

2

**Preventing Contamination**:

- Adequate system pressure helps prevent contaminants from entering the water supply through leaks or cross-connections. If pressure drops too low, backflow can occur, allowing potentially contaminated water from the surrounding environment or other systems to enter the watermain.

3

**Efficient System Operation**:

- A stable pressure maintains the efficiency of the water distribution system. It reduces the wear and tear on pumps, valves, and pipes, lowering maintenance costs and prolonging the lifespan of the infrastructure.

4

**Compliance with Standards**:

- Ensuring that system pressure is within the required range is often a regulatory requirement under the MECP and OBC. Failure to maintain pressure can result in fines, shutdowns, or other penalties.

5

**Customer Satisfaction**:

- Adequate water pressure is necessary to meet the expectations of consumers, whether for daily activities like showering or running appliances that depend on consistent water flow.

# Current System: Age & Material

## Service Connections Material

- **Watermain Material:** Iron-based pipe from 1960 era. Determination of material type is still being reviewed whether it is ductile iron or cast iron
- The services are suspected to be made from a lower-grade plastic material that does not meet current Township and Ministry standards for water service lateral pipes. Specifically, any materials used in the construction of watermains must comply with NSF/ANSI 61, as mandated by the OPSS. This material is below the required standard for performance, which may increase the risk of leaks and system failures.

## Service Life Expectancy:

- Cast iron constructed around 1940 had production changes post-WWII, so life expectancy is shorter (50-60 years); older cast iron (1940s) has an 80-year expectancy. Ductile iron pipes would be in the order of 80-100 expectancy. DI construction of this era typically would have lead joint sealing.

## Likelihood of Failure:

- The aging iron watermain and noncompliant service connection material increases the risk of failure, especially when system pressures are raised to meet community needs.

## Challenges with Increased Pressures:

- Water losses are currently undetectable; however, these losses are expected to increase as system pressure rises, particularly at service connections and joints. The aging cast iron materials are prone to corrosion and degradation, which can lead to the development of cracks and weakened joints over time. As pressure is increased, these compromised areas may no longer be able to contain the water, resulting in leaks. Additionally, the higher pressure can exacerbate existing vulnerabilities, making it more likely for these joints and connections to fail, further increasing the risk of water loss.

**Examples of failed cast iron watermain pipes**

# Current System:
# Age & Material

## Potential for Lead:

- With iron pipe construction of this era, it would be expected the pipe joint fittings would be lead-based material. With the presence of lead in drinking water system construction or materials, this could be a health risk to the system users.

## Cathodic Protection:

- There is no cathodic protection installed on the system, which significantly increases the risk of failure due to material type and age. The absence of this protective measure can lead to rust accumulation, further compromising the integrity of the iron pipes.

## Main Breaks:

- The system owner has reported minimal break records; however, it is noted that the system has been operated at lower pressures, which would avoid overstressing the aging infrastructure. If pressures are increased to meet community needs, the likelihood of failure is expected to rise significantly.

## Recommendation:

- Given that the system is approaching or at the end of its service life and no longer complies with current standards, it is imperative that the entire system be replaced with materials and components that meet Ministry and Township requirements. Upgrading the infrastructure will ensure safe, reliable water service and reduce the risk of future failures or potential fo health concerns.

# Replacement Plan:
# Asset Lifecycle Assessment

**Asset Lifecycle Chart – Based on Age and Condition**
In this case, if this infrastructure was a Township asset, the existing watermain would be prioritized for replacement based on the Asset Lifecycle Chart. The risk of failure is high, as the asset has surpassed or is approaching its intended useful life and does not meet performance standards. This would be identified in our Quality Management System as a priority project.

**Reasons for Replacement Based on Asset Lifecycle:**

## Service Life:

- The iron pipes, installed in the 1960s, have a service life of 50-60 years or 80-100 years. If the material is DI, it likely contains lead joint packing.

## High Risk of Failure:

- As assets age, the likelihood of failure increases. The iron watermain is at or has exceeded the end of its lifecycle, making it more prone to breaks, leaks and failures.

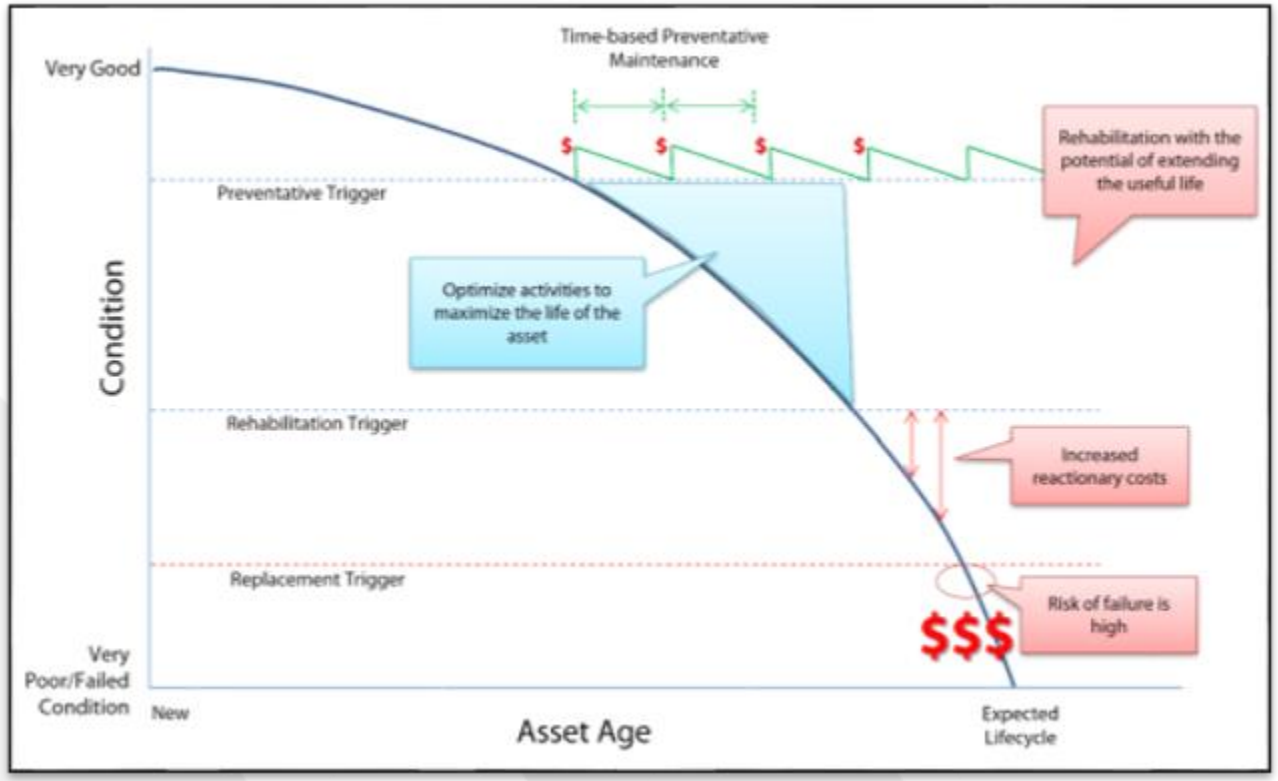
## Increased Maintenance Costs:

- Older assets typically require more frequent repairs, and maintenance activities, leading to higher ongoing maintenance costs.

## Asset Deterioration:

- The condition of the iron material will have degraded over time, contributing to diminished performance and a higher risk of malfunction.

## Asset Lifecycle Chart




Replacing this watermain with materials that align with ministry standards is essential to meet the performance objectives outlined in the asset lifecycle chart and to reduce the risk of system failures.

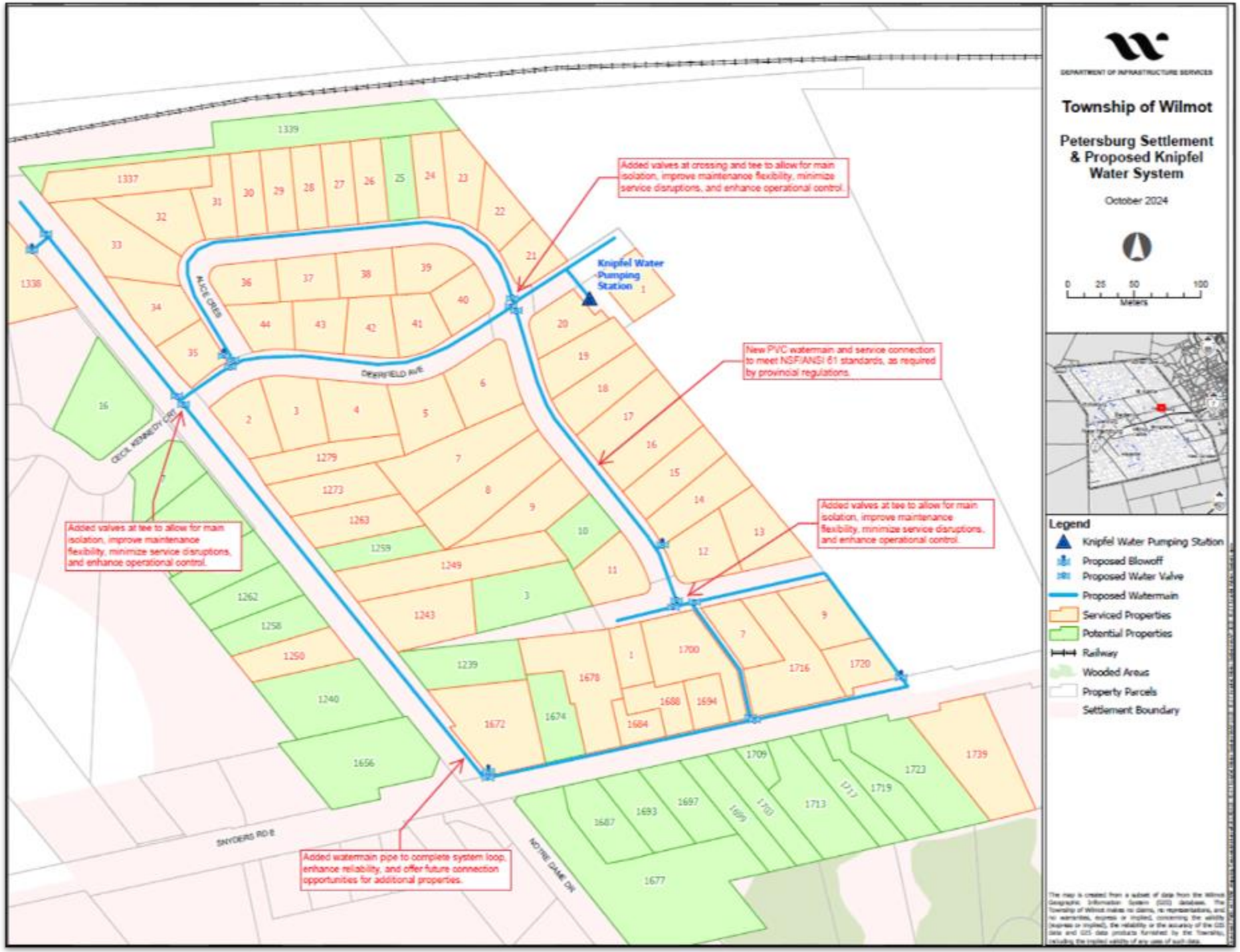
# Replacement Plan: Overview & Details

## Servicing Layout Review

- Township is currently reviewing the servicing layout based on preliminary design.

## Proposed Improvements

- **System Looping:** Update system layout to ensure watermain looping.
- **Valves Placement:** New valve placements to enable effective isolation, enhance maintenance, minimize disruptions, and improve emergency response.
- **Watermain Frontage:** Install watermain in front of all properties to prevent illegal Township watermain or private services running through neighboring properties.
- **Compliance with Standards:** New PVC watermain and service connections will meet NSF/ANSI 61 standards as mandated by provincial regulations.
- **Consideration for Service Expansion**
  The Township will evaluate potential capabilities for future service expansion.



# Replacement Plan: Construction Methods

The Township is exploring various construction methods to ensure the watermain is installed efficiently, with minimal disruptions to the public and at the most cost-effective rates. These methods include the **open cut trench method** and **trenchless technology method**, both of which have distinct advantages and limitations.

**Open Cut Trench Method**
This is the traditional approach where a trench is excavated to the desired depth, and the watermain is laid directly into the ground before being backfilled.

## Pros:

- **Widely Used and Familiar**: Contractors and crews are highly experienced with this method, and it is easy to execute in most environments.
- **Lower Initial Cost**: Typically, open cut trenching has lower upfront costs for installation in areas with accessible terrain.
- **Easy to Inspect**: The open excavation allows for clear visual inspection and hands-on access for any required repairs or adjustments during installation.

## Cons:

- **Significant Disruption**: It requires large sections of roadways, sidewalks, or landscaping to be dug up, causing inconvenience to traffic, businesses, and residents.
- **Environmental Impact**: Open excavation can lead to damage to nearby utilities, trees, or green spaces, as well as increased noise and dust during construction.
- **Longer Restoration Time**: The need to fully restore the surface (roads, sidewalks, etc.) adds to the project timeline and cost.

# Replacement Plan: Construction Methods

**Trenchless Technology Method**
Trenchless technology involves minimal surface disruption, as the watermain is installed underground through methods like directional drilling, pipe bursting, or microtunneling.

## Pros:

- **Minimal Surface Disruption**: This method allows for watermain installation with little to no disturbance to the surface, reducing the impact on traffic, businesses, and the community.
- **Faster Installation**: In many cases, trenchless methods can reduce the installation time compared to open cut trenching.
- **Environmentally Friendly**: Since there's less excavation, this method reduces the need for large-scale digging and surface restoration, leading to fewer environmental impacts.
- **Ideal for Urban Areas**: Trenchless technology is well-suited for congested urban environments where minimizing disruption is critical.

## Cons:

- **Higher Initial Costs**: While trenchless technology reduces restoration expenses, it typically requires more expensive specialized equipment and skilled operators, increasing upfront costs.
- **Limited by Ground Conditions**: This method may not be suitable in all areas, especially where underground utilities, hard rock, or challenging soil conditions exist.
- **More Complex Planning**: Trenchless methods may require more detailed site assessments, advanced planning, and precise execution to avoid interference with other buried infrastructure.

# Financials:
# Detailed Replacement Costs

**Watermain Replacement Project Cost Estimate - Deerfield Subdivision, Petersburg**

**Project Overview:**

**62 existing properties** affected
Replacement of watermain with modern materials in accordance with Ministry and Township standard

This estimate encompasses all major components of watermain works, including contingency costs, and provides a high-level breakdown of construction, materials, and necessary infrastructure improvements to ensure the watermain meets Ministry standards.

This is subject to continued refinement through the course of the process of transitioning this water system to the ownership of the Township. This will include further refinement based on the project area, service layout and construction methods.

This is provided for information only at this time. Further reporting will be required over the life of the 2-year design and construction organization process.

Staff are looking to expand road repairs and ditching works as part of watermain construction works; however, the costs for this work are not included within the costs presented here.

**Estimated Costs** (Including 20% contingency):

| | |
|---|---|
| **General Requirements:** | • Mobilization, traffic control, bonds, insurance, and site management<br>• **Total**: $225,800 |
| **Removals:** | • Asphalt, concrete, and curb removal for construction<br>• **Total**: $128,000 |
| **Watermain:** | • Installation of 150mm watermain, gate valves, hydrants, and house service connections<br>• **Total**: $1,455,500 |
| **Restoration:** | • Excavation, base, surface works repair<br>• **Total**: $757,025 |

**Total Estimated Replacement Cost: $3,079,590.00**

# Financials: Detailed Replacement Costs

The Township is considering three options under the **Municipal Act, 2001** for recovering capital costs associated with the required watermain upgrades. These options are designed to provide a fair and equitable approach to sharing costs among benefitting properties.

Provided is an outline of each option, along with its process and potential advantages:

**Local Improvement Charges**

**(O. Reg. 586/06 – Municipal Act, 2001)**

- **Overview:** This option allows the Township to impose special charges on properties that directly abut the upgraded works, with charges based on the per-metre frontage of each property.
- **Process:** The Township must provide an estimate of per-metre rates, the total cost of the project, and the expected lifetime of the infrastructure. There process includes opportunities for public input, and any concerns being addressed through Township review.
- **Advantages:** Charges have priority lien status and can be collected in the same way as property taxes, providing secure cost recovery.

**Special Service Charge**

**(s. 326 – Municipal Act, 2001)**

- **Overview:** This option allows the Township to levy a special charge for the water system improvements, applicable to a designated area of the municipality.
- **Process:** Charges are applied as a separate tax rate based on the assessed value of properties within the area benefiting from the upgrades. The process is streamlined, allowing for efficient implementation without the need for a formal objection process, while still considering community input.
- **Advantages:** This option ensures that costs are allocated proportionally based on property values, making it adaptable to different property types and sizes.

**Fee for Services**

**(s. 391 – Municipal Act, 2001)**

- **Overview:** This option allows the Township to impose fees directly on those benefiting from the watermain upgrades.
- **Process:** A simple by-law is passed to implement the fees, which are generally applied equally to all benefitting users. Water supply-related fees have priority lien status, offering secure cost recovery.
- **Advantages:** This option allows for equal charges to all beneficiaries, ensuring simplicity and fairness without requiring calculations based on property frontage or assessment values.

# Interim Billing

## Interim Billing Period: May 13 to August 31

- Covers total water usage by the community.
- Amount will be evenly divided among **62 connected properties**.
- The interim billing amount is **lower** than previous monthly charges; some residents had requested to continue with the old billing method until meter installation.

## Future Billing Cycle

- **Transitioned to Bi-Monthly Cycle** as of **September 1, 2024**.
- Based on **individual water usage**.

## Interim Billing Summary

**Knipfel - Petersburg DWS: 62 Properties**

**Water Volume Based Charges**

| | Rate | Volume (m3) | Charge |
|---|---|---|---|
| May | $ 2.304 | 1019.12 | $ 2,348.05 |
| June | $ 2.304 | 963.54 | $ 2,220.00 |
| July | $ 2.304 | 963.54 | $ 2,220.00 |
| August | $ 2.304 | 1627.74 | $ 3,750.31 |
| | **Total (62 Properties)** | **4573.94** | **$ 10,538.36** |
| | **Total Per Property** | **73.77** | **$ 169.97** |

**Township Infrastructure Fee**

| | | |
|---|---|---|
| Annual Fixed Charge $130/year prorated to 111 days | **Total (62 Properties)** | **$ 2,451.12** |
| | **Total Per Property** | **$ 39.53** |

| | |
|---|---|
| **Total Charge per Property May-August 2024** | **$ 209.50** |
| **Average Monthly Charge per Property May-August 2024** | **$ 59.86** |

# Water Meter Details

## Water Meter Overview

- The Township of Wilmot has installed water meters at each property to track actual water usage.
- The total cost encompasses the meter, installation, building permit fees, and account setup.
- Homeowners are responsible for the costs associated with connecting the water meter. This process is similar to new homes connecting to the Township's water system, where builders purchase the meter and hire a plumber for installation.

## Cost Overview for Water Meter Installations

- **Base Cost Per Household:** $840.50
  - This includes:
    - **Installation Cost:** $514.15
    - **Building Permit Fee:** $284.35
    - **Account Setup Fee:** $42.00

## Additional Plumbing Repairs

- Any required plumbing repairs will be charged to the property through capital recovery as part of the overall system improvements.

# Process Next Steps:
# Knipfel – Petersburg Drinking Water System Transition

## Before 2025

- Report back to Council with public feedback from the Public Information Centre and the engineering watermain system evaluation.
- Continue exploring cost-saving measures for system upgrades, including alternate construction methods or potential system expansion to meet Ministry and Township standards.

## Anticipated Timeline for Capital Project

- **Final Design Completion:** Q3 2025
- **Construction Period:** 2026 to 2027
- **Capital Billing Start:** 2028 (to recover costs)

# Contact Information

## Region of Waterloo

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## Township of Wilmot

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Emergency Only Utilities (Water and Wastewater) After-Hours on-Call Phone: 519-998-1862

## EngageWR

https://www.engagewr.ca/petersburg-water-system

# Petersburg Water Supply Public Meeting #2

## Treatment Upgrades and Costs

Region of Waterloo

# Region of Waterloo Treatment Upgrades – Use of Existing Equipment

All essential upgrades to the wellhouse and treatment system have been completed to Region standard.  Where feasible, existing equipment was used.

Examples of using existing equipment:

- Pump building
- Electrical switch
- Well pump
- Concrete reservoir (not shown)

# Region of Waterloo Treatment Upgrades – New Equipment

## New equipment where necessary was installed.

New equipment: monitoring equipment, plant piping, metering

# Treatment Costs Incurred

The Region's portion of the costs for treatment upgrades is:

| | |
|---|---|
| Design | $110,344 |
| Equipment | $47,359 |
| Geotechnical Investigation | $2,185 |
| Topographic Survey | $3,909 |
| Designated Substance Survey | $5,029 |
| Yard hydrant and Isolation Valve | $28,167 |
| Construction | $161,876 |
| | $358,869 (results in $5,588 per household) |

The Region will absorb future costs through its wholesale water rate for:

- SCADA (system monitoring) upgrades
- Well pump, building structure, and reservoir inspection and upgrades
- Further studies for the long-term planning of the system

Cost to be recovered, and payment options will be presented to Regional Council on December 3 and communicated back to residents.

Climate aligned growth

# Questions?

**Contact:**

Kaoru Yajima

Manager, Engineering & Planning

Water & Wastewater Services

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226-753-0065

**Project information:**

engagewr.ca/petersburg-water-system

Climate aligned growth