Water Infrastructure Upgrades in Erin & Hillsburgh to support Planned New Development

GEMTEC
Consulting Engineers and Scientists

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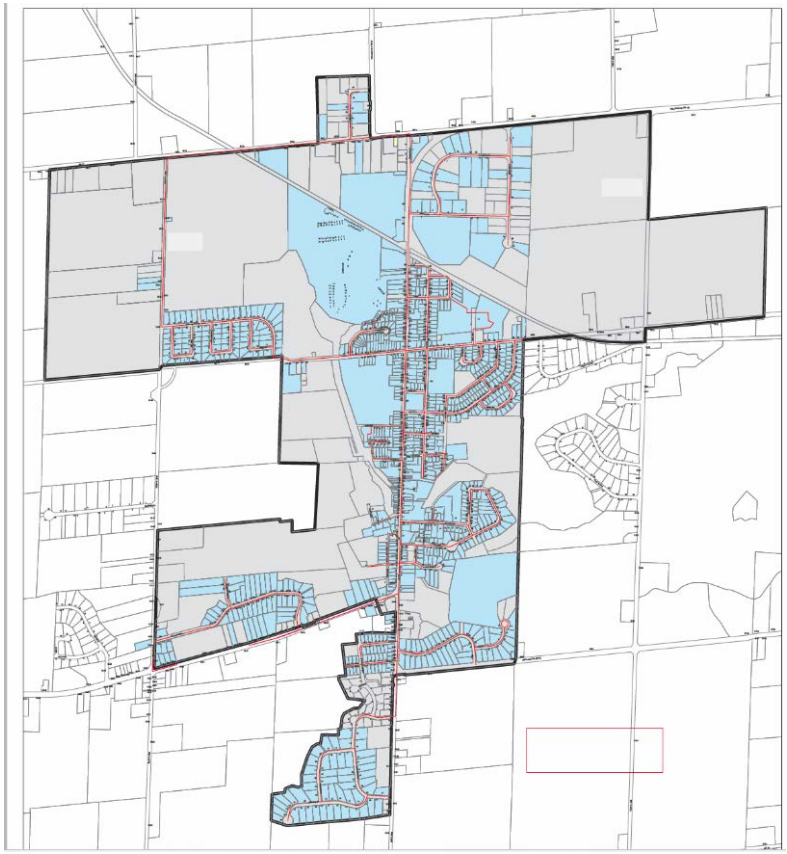
Presentation Outline

1. Overview of Existing Water System & 2020 Water Class EA
2. Future Water System Concerns/Issues
3. Proposed Water Infrastructure Upgrades, including Next Steps & Timelines:
    a) New Well E9 Pumphouse and Transmission Main in Erin
    b) Well Drilling and Exploration Program in Erin & Hillsburgh
    c) Erin/Hillsburgh Water Booster Station
    d) Hillsburgh Water Storage Reservoir
4. Summary of Proposed Costs
5. Questions

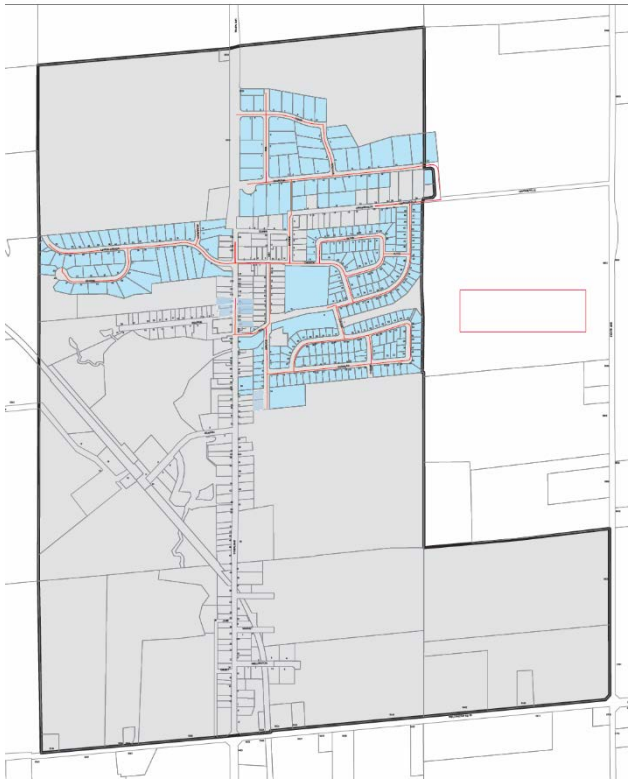
Existing Municipal Water Systems

Erin



- Approx. 90% of the properties within the existing community are serviced by the Erin Water System (areas in blue).

Hillsburgh



- Approx. 55% of the properties within the existing community are serviced by the Hillsburgh Water System (areas in blue).

2020 Water Servicing Class EA

- In 2020 Triton Engineering completed the Water Servicing Class Environmental Assessment (Water Class EA) which recommended the following new water infrastructure in Erin & Hillsburgh:
  - A new Well E9 on Wellington Rd 23 in Erin.
  - A new Well H4 within the Ballantry Subdivision in Hillsburgh.
  - The inter-connection of the Erin and Hillsburgh Water Systems via a new watermain along the Elora Cataract Trail.
  - A new Elevated Water Tower within the Solmar Subdivision in Erin.
  - A new Elevated Water Tower within the Ballantry Subdivision in Hillsburgh.

Future Water System Concerns/Issues

- In Jan 2023 the Ministry of the Environment, Conservation and Parks (MECP) issued a new Permit To Take Water (PTTW) to the Town which restricted the capacity of the new Well H4 & existing Well H3 in Hillsburgh, due to interference between them.
- The MECP recommends Municipalities have “extra” well capacity or “firm capacity” to meet supply needs, to accommodate the largest well being out of service. The 2020 Water Class EA did not provide any extra well capacity for either community.
- Well E9 in Erin needs to be brought on-line as soon as possible, to support the on-going new development in Erin.

Future Water System Concerns/Issues

- The Water Class EA recommended the inter-connection of the Erin & Hillsburgh Water systems, to provide system redundancy, however, no property was identified in Erin for a Booster Pumping Station, to pump water from Erin to Hillsburgh.
- The Water Class EA identified a site for a new Elevated Water Tower within the proposed Ballantry Subdivision in Hillsburgh. However, the location is very close to existing residential homes on Douglas Crescent.

Proposed Water Infrastructure Upgrades

To accommodate the new Development in Erin & Hillsburgh we are proceeding with the following Water Infrastructure projects, as per the 2020 Water Class EA, while addressing the future water system concerns/issues:

1. Design & Construction of Well E9.
2. A Well Drilling and Exploration Program in Erin & Hillsburgh to find additional Water Capacity.
3. The selection of a location, followed by design & construction of the Erin - Hillsburgh Water Booster Station.
4. The selection of a new location, followed by the design & construction of the Hillsburgh Water Storage Reservoir.

Further details regarding each of the components will be discussed in greater detail in the following slides.

Well E9 Pumphouse & Transmission Main

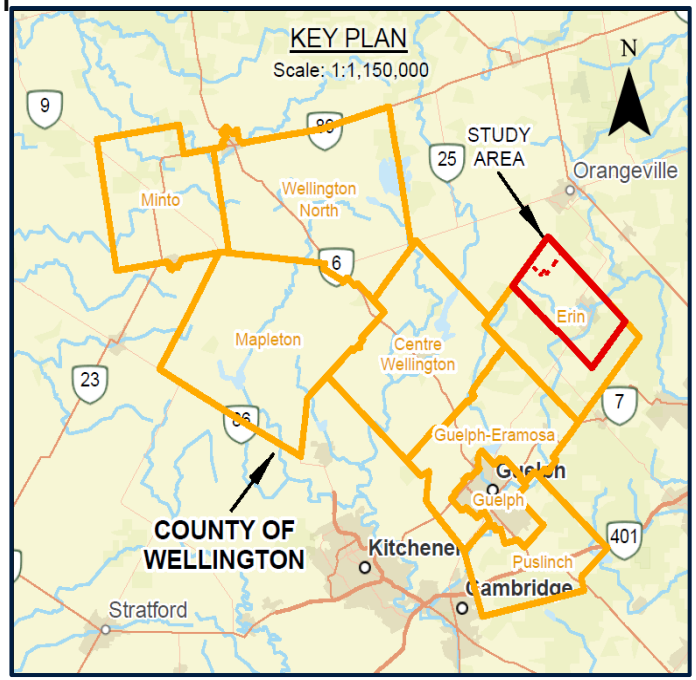
Site Map

Well E9 Pumphouse & Transmission Main
Next Steps & Timelines

- **Well E9 Pumphouse and Transmission Main**
  - Finalize Detailed Design & Contract Specifications (Ongoing).
  - Tender and Award the Project (Winter 2024).
  - Construction (Winter 2024 to Winter 2025).

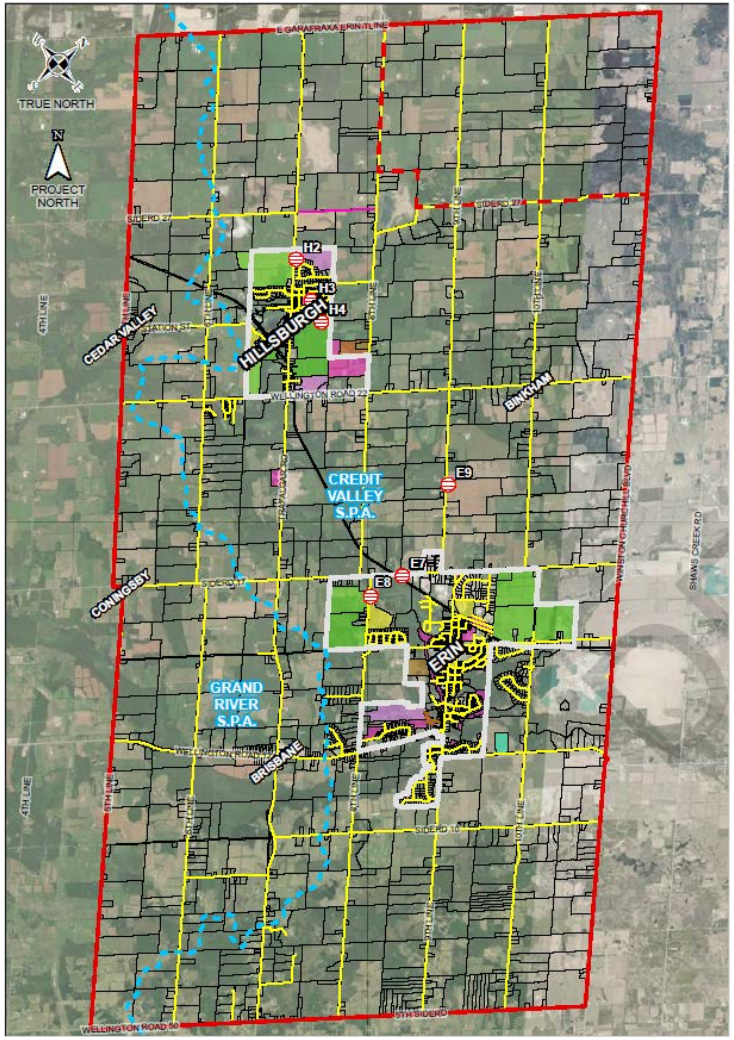
Well Drilling and Exploration Program
Existing Materials Reviewed

- Existing Reports (SSMP, Schedule “B” Class EA, Investigations, Wellington Source Water Protection Information, Other)
- Municipal Well Records (existing and old wells)
- Water Well Records
  - Geology, water quality, yield, location
- 3D Geological Mapping (soil and bedrock)
- Active Water Taking Permits (bedrock)
- Bedrock Vulnerability Mapping
- ANSI, Provincially Significant Wetlands



- Overall, there is a good amount of information available plus, updated geological mapping/modelling. However, the information does not predict well yield; it must be assessed with field work.

Well Drilling and Exploration Program
Selection Criteria

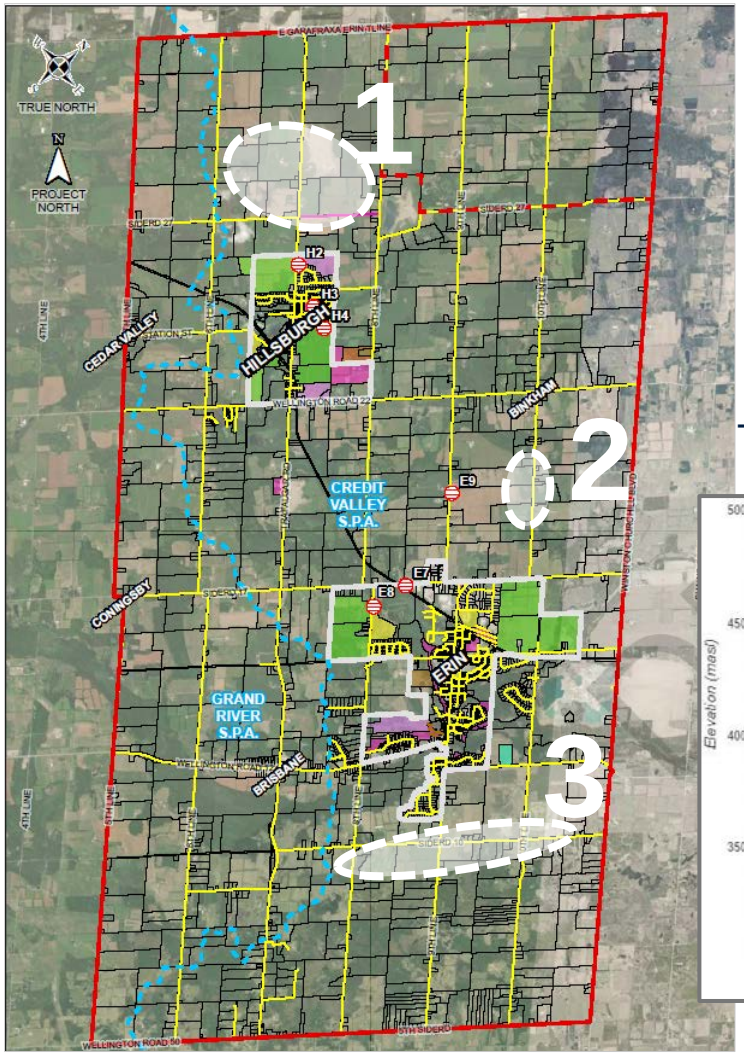


From Schedule “B” Class EA
[*considerations in this study*]

1. Avoid Well Head Protection Areas (WHPA)
   [*or acceptable mutual interference effects*]
2. Natural Protection from Soils to be Present
   [*a key consideration*]
3. Avoid Poor Groundwater Quality
   [*a key consideration*]
4. Avoid Drawing Surface Water Directly into Well (GUDI)
   [*results from implementing #2. above*]
5. Aim for Areas with Well Yield >1,000 m^3/day (11.6 L/s)
   [*demonstrably difficult to predict; predict aquifers present instead*]
6. Close to Existing Distribution System
   [*lower priority criterion for this study*]

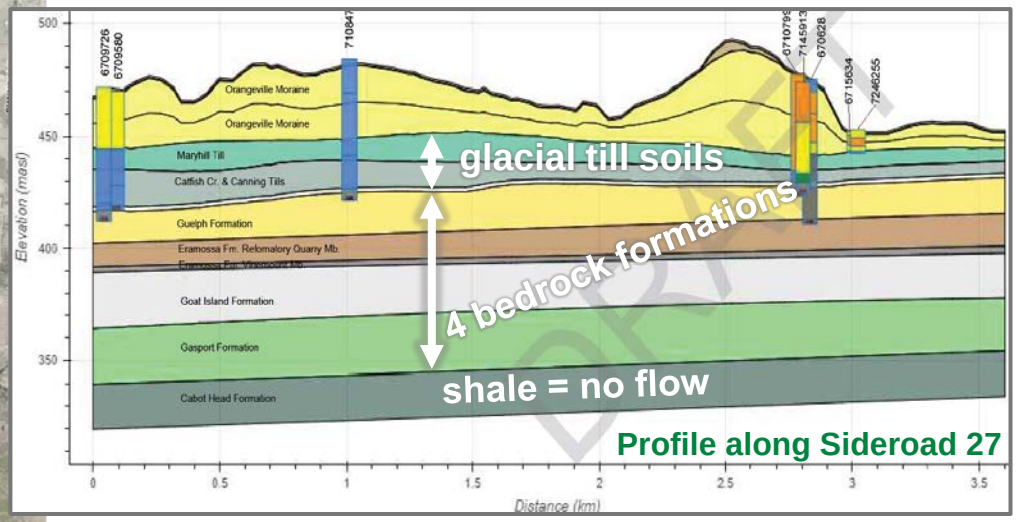
Well Drilling and Exploration Program

Three Main Exploration Areas



1. Sideroad 27 and Northward
2. Tenth Line (one conc. east of Well E9)
3. Sideroad 10 at 8th, 9th, 10th Lines

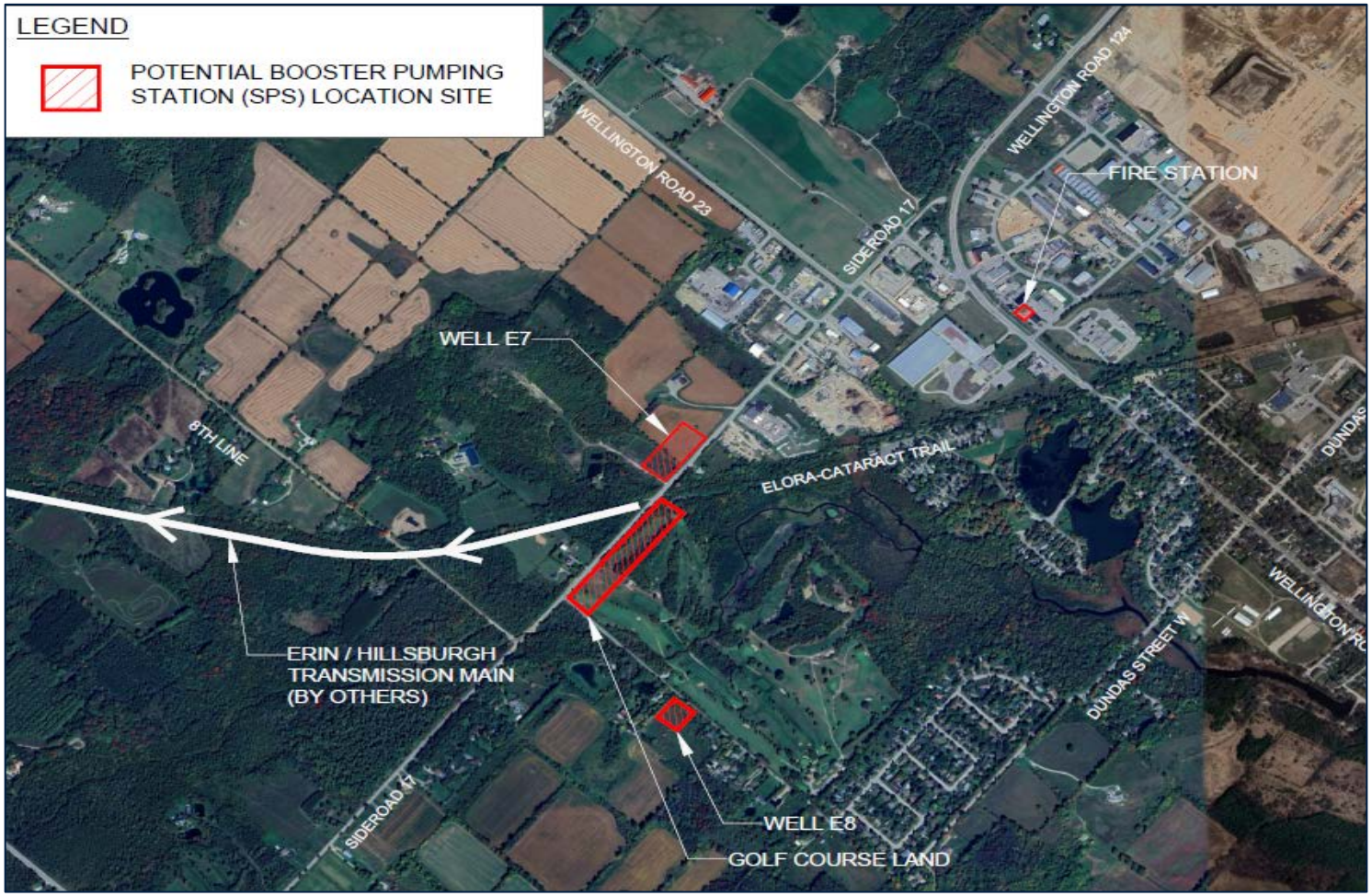
Target is four bedrock formations underlying glacial till



Well Drilling and Exploration Program
Next Steps & Timelines

- **Well Exploration & Drill Program**
  - Issue Municipal Tenders to undertake the Well Exploration & Drilling Program (Ongoing).
  - Contact Property owners in Hillsburgh & Erin to get permission to initiate a Well Drilling program(s) on their property (Ongoing).
  - Award the Well Drilling Program in the identified areas in Hillsburgh and Erin (throughout 2025).
  - Complete Class EA requirements for new Municipal Well (throughout 2025).
  - Municipal Well Approvals and Implementation (2026 & 2027).

Erin/Hillsburgh Water Booster Station
Possible Locations



Erin/Hillsburgh Water Booster Station
Next Steps & Timelines

- **Booster Pumping Station for Erin to Hillsburgh**
  - Proceed with Preliminary & Detailed Design (Ongoing).
  - Contact Property owners in Erin about possible property acquisition for Booster Station (Ongoing).
  - Finalize Detailed Design & Contract Specifications (Spring/Summer 2025).
  - Tender & Award the Construction (Late Summer 2025).
  - Construction (Start Fall 2025 to Fall 2026).

Hillsburgh Water Storage Reservoir
Possible Locations

Hillsburgh Water Storage Reservoir
Next Steps & Timelines

- **Water Storage Reservoir in Hillsburgh**
  - Proceed with Preliminary & Detailed Design (Ongoing).
  - Contact Property owners in Hillsburgh about possible property acquisition for Water Storage Reservoir (Ongoing).
  - Finalize Detailed Design & Contract Specifications (Spring/Summer 2025).
  - Tender & Award the Construction (Late Summer 2025).
  - Construction (Start Fall 2025 to Fall 2026).

Summary of Proposed Costs

The following table provides a summary of proposed capital costs to deliver the Water Infrastructure projects.

Program Component	Estimated Costs 2024$ (Class D)
Overall Project Management	$250,000
Class EA Components	$200,000
Well E9 Pump House and Transmission Main	$11,000,000
Erin/ Hillsburgh Booster Pumping Station	$6,650,000
Hillsburgh Water Storage Reservoir, including Booster Station & Transmission Main	$12,000,000
Well Exploration and Drilling Program (includes Well Drilling Contractors)	$5,000,000
New Well in Erin	$10,000,000
Two New Wells in Hillsburgh	$20,000,000
TOTAL (Excluding HST):	**$65,100,000**

- The projects will be designed and constructed over the next 5 years to support the planned new development in each community.
- All project costs will be funded through Water Development Charges, which are paid to the Town as Development proceeds in each community.

Questions?