

Addendum to Long Term Water Supply to Clearview Schedule B Class EA



Public Information Centre

March 5, 2020

4:00 p.m. – 7:00 p.m.

Township of Clearview Municipal Office

Welcome

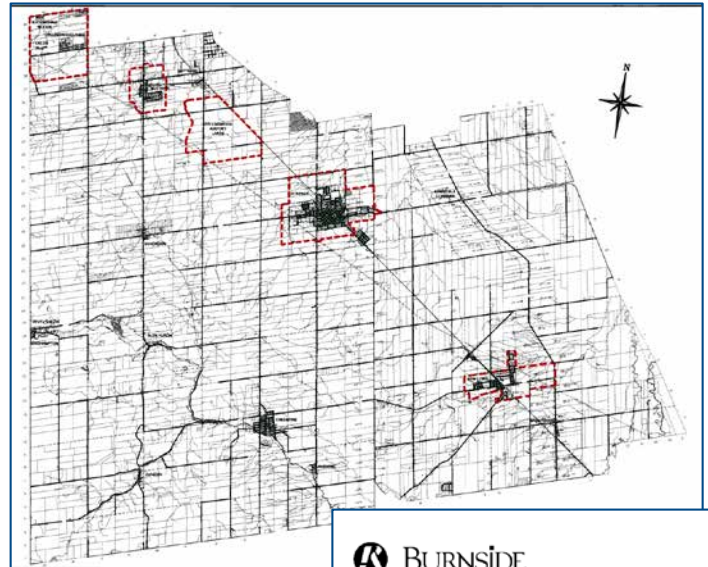
to the Public Information Centre for the Addendum to Long Term Water Supply to Clearview Schedule B Class EA



- Please Sign In
- Meet with Study Team
- Review display materials and discuss your questions and ideas with Study Team
- Please fill out a comment sheet and return to Study Team in person, email or mail by March 27, 2020

Study Background

- Schedule B Municipal Class Environmental Assessment (EA) completed in 2008 by Township for Long-Term Water Supply. Several alternative solutions were considered.
- Since completion of 2008 EA, a groundwater source for local water supply to Stayner was identified based on a 2018 water supply exploration program, which has made “Expand Existing Groundwater System” the most preferred alternative over the previously identified preferred alternative.



BURNSIDE

Township of Clearview
Long Term Water Supply for Clearview
Schedule B Municipal Class EA

PROJECT FILE REPORT

Prepared by

R.J. Burnside & Associates Limited
5 Ronell Crescent, Collingwood, ON L9Y 4J6 Canada

February 13, 2008

File No: MG 03 4062

This Addendum is being undertaken specifically for the **Community of Stayner** and includes an overview of the significant modifications to the project or changes in the environment since the 2008 EA.

Stayner Water Environmental Assessment

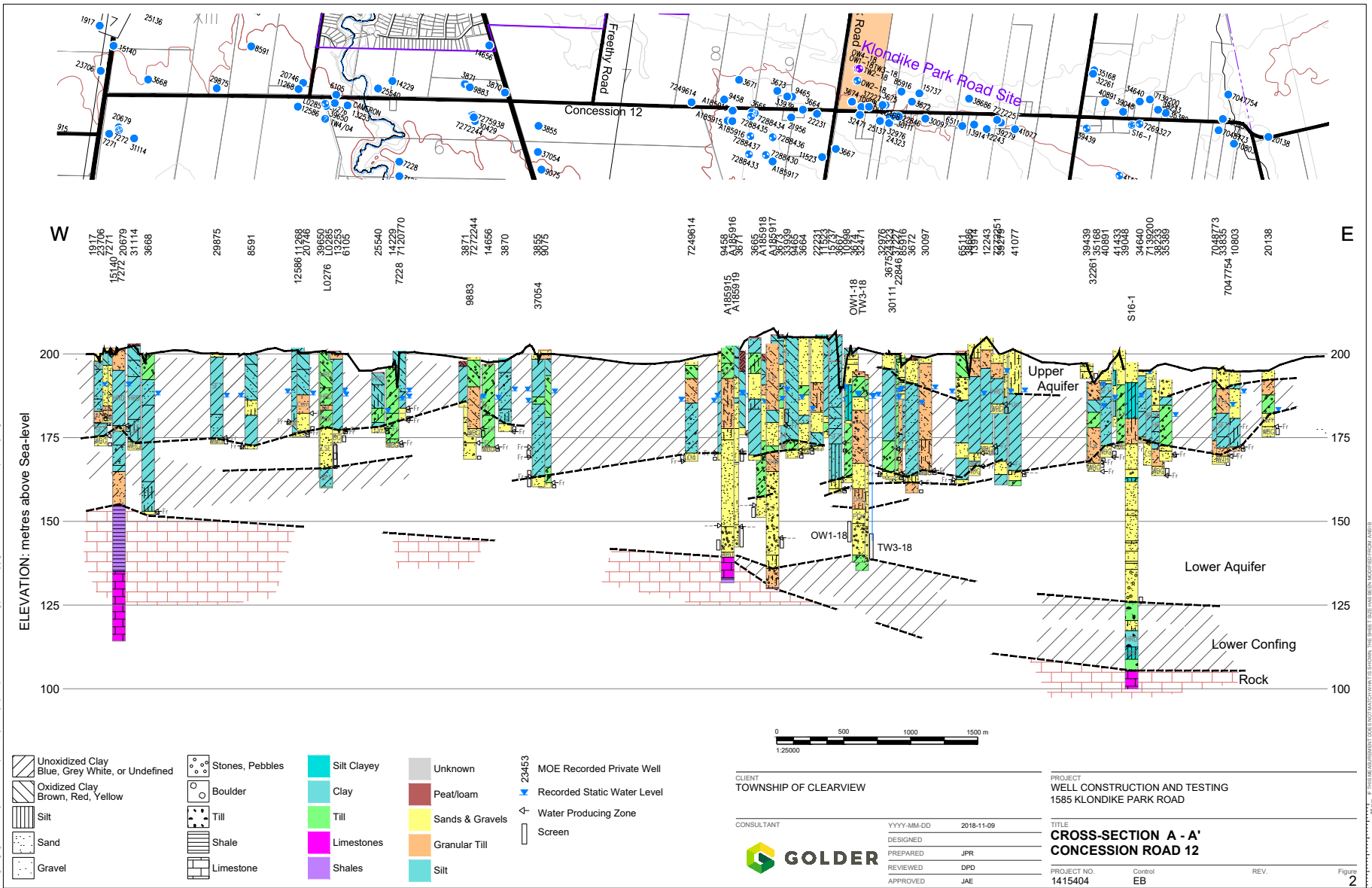
WATER SUPPLY EXPLORATION PROGRAM

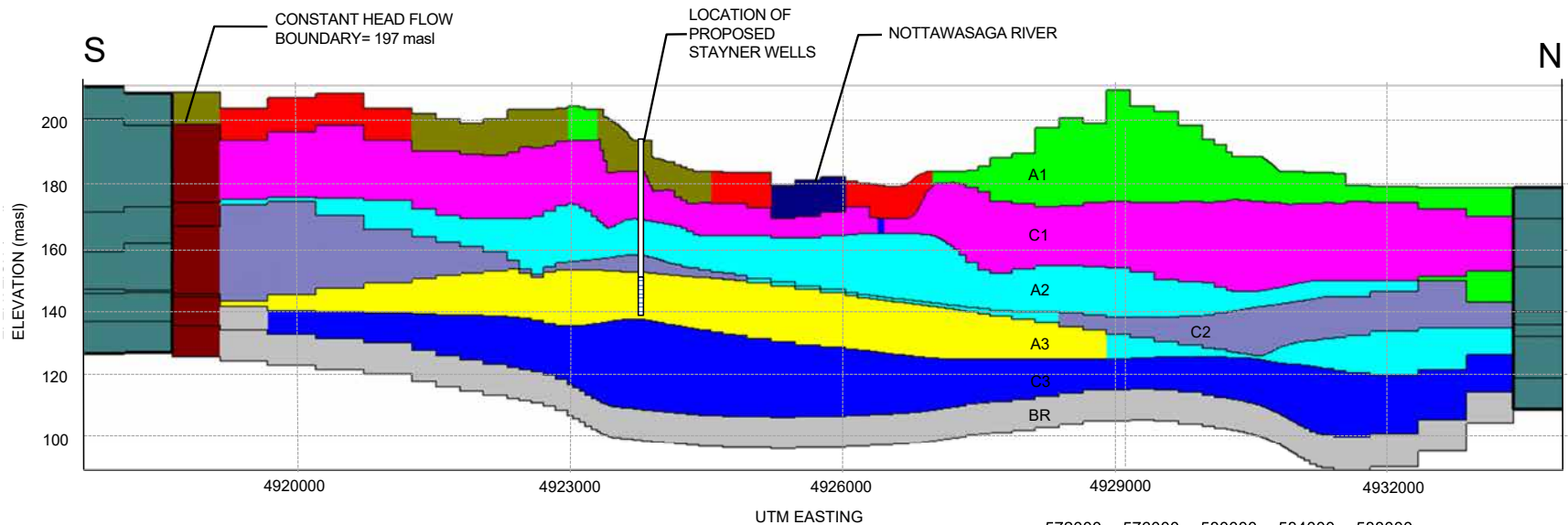
- Stayner is reliant on groundwater for its municipal water supply.
- Current system (four wells) is capable of supplying a total max taking of 64 litres per second (L/s).
- Future system must supply an average of 164 L/s and max of 313 L/s to accommodate projected population growth beyond year 2034.
- Between 2014 and 2018, Golder carried out a hydrogeologic water supply exploration program to find additional sources of water near Stayner.
- Target water source was deep (40 m+) regionally extensive aquifer “A3”.
- Program included borehole drilling, well installations, pumping tests, water level measurements, soil and water sampling.
- Additional data from South Georgian Bay Lake Simcoe Region’s Source Protection Plan, Ontario Geologic Survey, and MECP Water Well Database.
- Test well at 1585 Klondike Park Road indicated high aquifer yield and good water quality.

Stayner Water Environmental Assessment

GROUNDWATER MODELLING

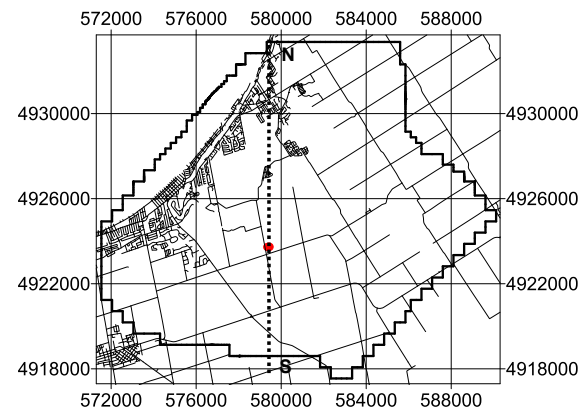
- Computer-based (MODFLOW) numerical groundwater modelling conducted to determine effect of future pumping of three wells (total pumping 60 L/s) at 1585 Klondike Park Road.
- Model based on prior “Wasaga Beach” 3D MODFLOW model used in South Georgian Bay Lake Simcoe Region’s Source Protection Plan with updates based on field testing.
- Potential long-term aquifer drawdown, private well interference, stream baseflow changes, and well capture zones assessed.
- Drawdown in Aquifer A3 estimated at ~3 m beneath Site with zone of influence reaching 800 m.
- 14 private wells with zone of influence; all completed above A3 in intermediate Aquifer A2:
 - Drawdown at 11 wells <10% of the available water column – adverse effects unlikely.
 - Drawdown at 3 wells >10% of available water column – monitoring program should be established.
- Baseflow losses at Nottawasaga River, Marl Creek and McIntyre Creek within acceptable threshold (<10%).
- Klondike combined well capture zones trend to the southeast, reaching a width of 1.5 km and upgradient length of 2.3 km after 25 years – at least 300 m west and cross-gradient from landfill.
- Wasaga Beach capture zones minimally affected as a result of Klondike Road pumping.





LEGEND

SURFICIAL TILL (K= 1E-6 M/S)	A3 SAND AND GRAVEL AQUIFER (K= 1E-3 M/S)
A1 SAND AQUIFER (K= 1E-4 M/S)	C3 CLAY TILL (K= 5E-5 M/S)
SURFICIAL CLAY/ ORGANICS (K= 5E-7 M/S)	BEDROCK (K= 2E-9 M/S)
C1 SILT CLAY AQUITARD (K= 1E-7 M/S)	INACTIVE FLOW BOUNDARY
A2 SAND AQUIFER (K= 5E-4 M/S)	RIVER BOUNDARY
C2 SILT CLAY TILL AQUITARD (K= 5E-6 M/S)	CONSTANT HEAD BOUNDARY



NOTES

1. Vertical exaggeration is 35x
2. Horizontal to vertical hydraulic conductivity for each model layer = 1:1

CLIENT
TOWNSHIP OF CLEARVIEW

CONSULTANT



YYYY-MM-DD 2019-06-25
PREPARED HW
DESIGN HW
REVIEW DAH
APPROVED DAH

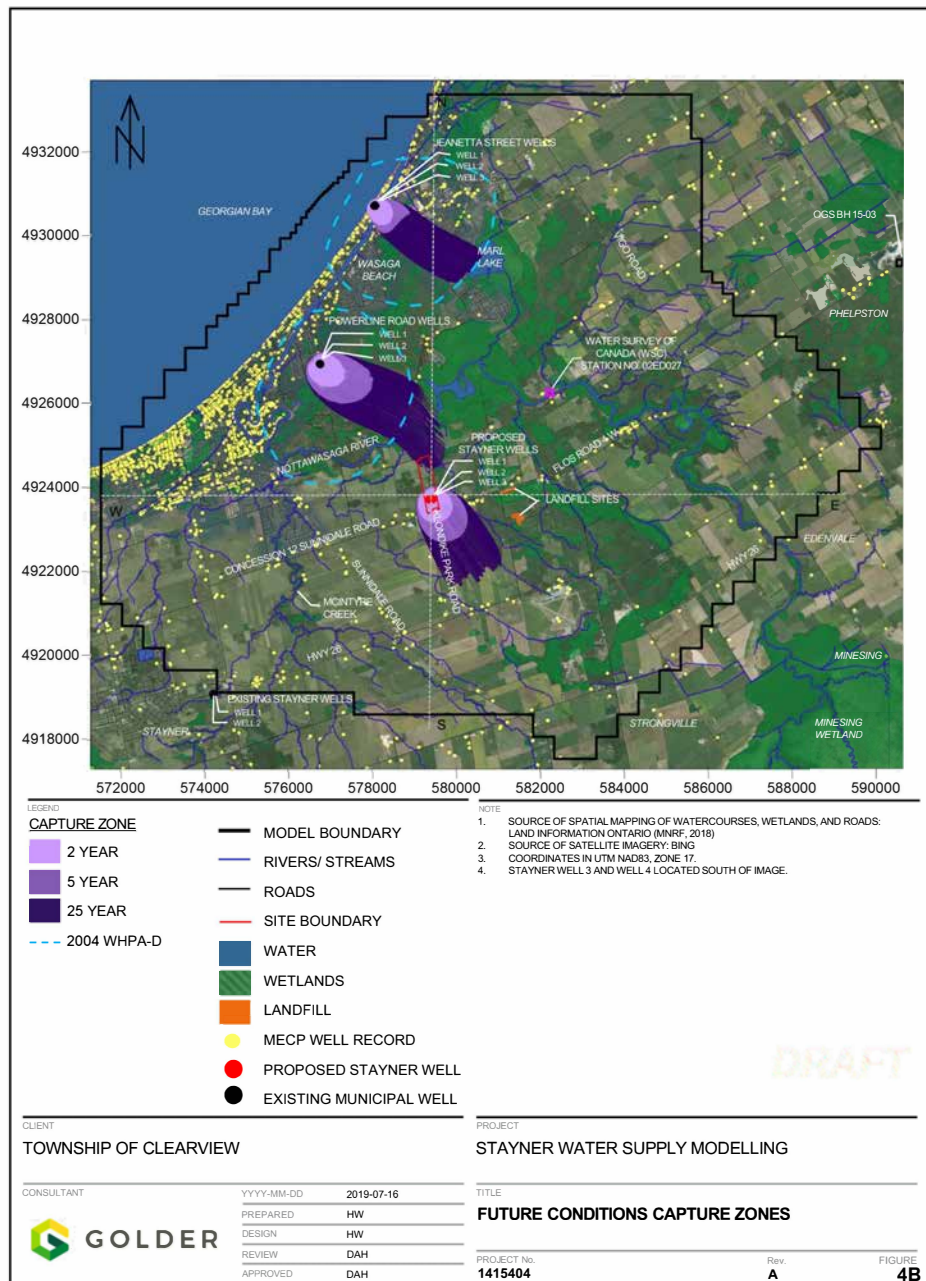
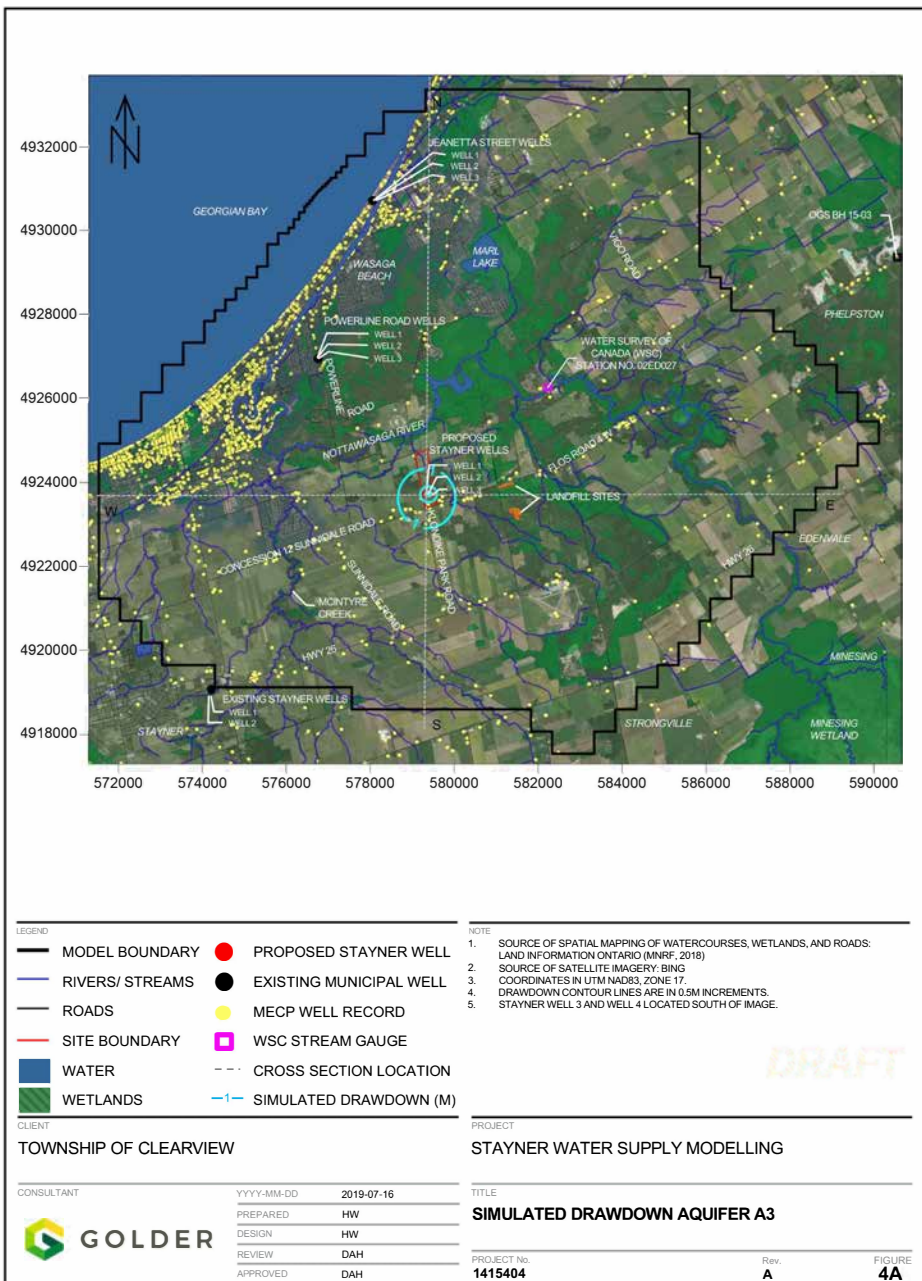
PROJECT
STAYNER WATER SUPPLY MODELLING

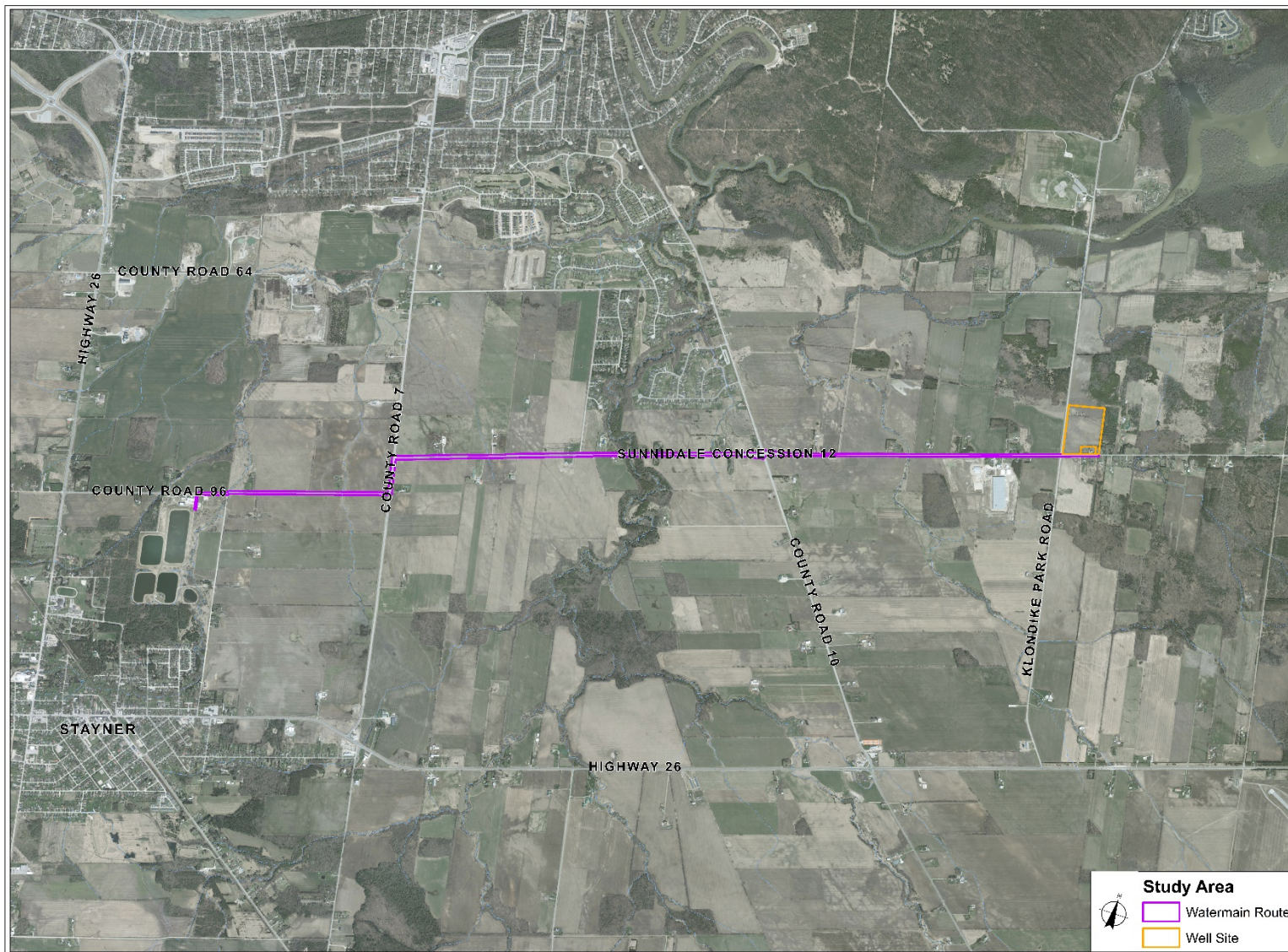
TITLE
SOUTH-NORTH MODEL CROSS SECTION

PROJECT No.
1415404

Rev.
A

FIGURE
3





Existing Conditions

Technical Environment

- Well Site located at 1585 Klondike Park Road, approximately 9 km northeast of Stayner, north of Concession 12 Sunnidale Road.
- Watermain to connect the Well Site to the existing water distribution system proposed to run within existing rights-of-way (ROW) varying from 20 m to 30 m.
- Existing gas main and hydro poles along areas of the Watermain Route. No existing water or storm sewers along Route. Existing sanitary forcemain on a portion of Nottawasaga 27/28 Sideroad (County Road 96).



Existing Conditions

Natural Environment

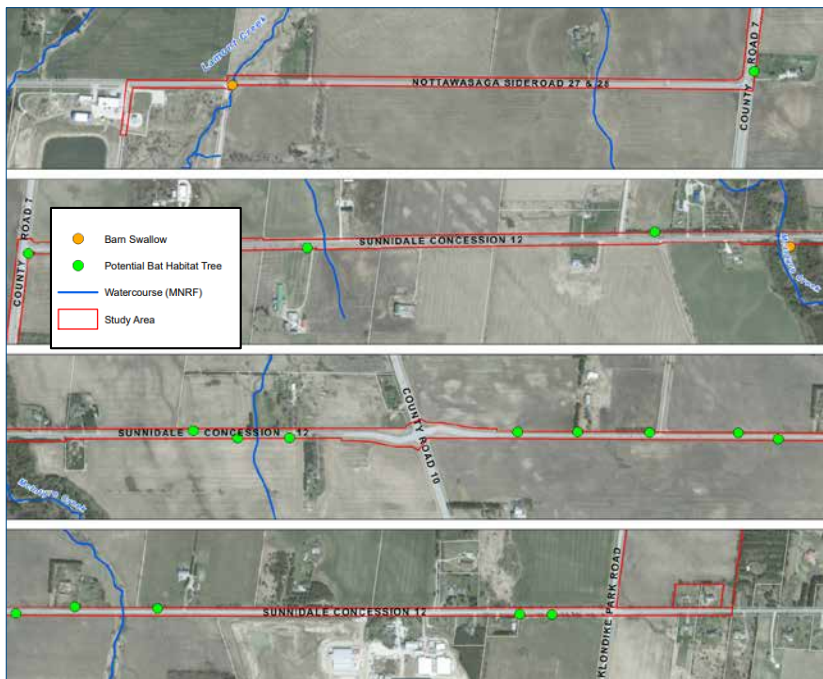
Terrestrial Habitat & Vegetation:

Five distinct ecological land classification (ELC) vegetation communities:

- Agriculture
- Meadow Marsh
- Naturalized Deciduous Hedge-Row
- Rural Property
- Right-of-Way

Potential for Species at Risk (SAR):

- Barn Swallow nests under watercourse structures
- Potential roosting Bat habitat within treed areas
- Monarch Butterfly
- Turtle habitat within / adjacent to watercourses



Fish and Fish Habitat:

- Three cool-water and three cold-water watercourse crossings in Study Area
- No Aquatic SAR located in Study Area
- Based on species that inhabit watercourses, in-water works must be completed July 15 to September 30
- Fisheries Act Letter of Advice must be obtained for in-water works

Existing Conditions

Social/Cultural Environment

Land Use

The Township owns the property at 1585 Klondike Park Road (Well Site). The Watermain Route to connect the Well Site with the existing water distribution system for Stayner is proposed to run within existing ROW.

Archaeological

Portions of the Study Area along the Watermain Route and some areas of the Well Site exhibit archaeological potential and will need to be studied further through a Stage 2 Archaeological Assessment.



Well Site exhibits archaeological potential

Cultural Heritage

Ten cultural heritage resources (six residences and three farmscapes) were identified within or immediately adjacent to the Watermain Route. No cultural heritage resources were identified on or immediately adjacent to the Well Site.

Alternative Solutions

Alternatives Solutions have been reviewed and refined through the Addendum Study process.

Alternative 1: Expand Existing Groundwater System

Alternative 2: Connect to Creemore

Alternative 3: Connect to Wasaga Beach

Alternative 4: Connect to Collingwood-New Tecumseth (C-NT) pipeline

Alternative 5: New Surface Water Plant

Modification were made to the “Expand Existing Groundwater System” Alternative in light of 2018 Hydrogeology Studies and newly identified ground water sources.

Evaluation Criteria

- Meets Supply Capacity
- Impact to Natural Environment
- Temporary Construction Disturbances
- Required Time to Complete
- Impact to Social Environment
- Water Quality
- Probability Raw Water Capacity can be Located
- Capital and Operational Costs

Through this Addendum Study the evaluation of alternative solutions from the 2008 EA was revisited with respect to meeting the study objectives, impacts to the natural, social, economic and technical environments.

Evaluation of Alternative Solutions

Alternative 1: Expand Existing Groundwater System

Suitable new identified municipal well location. Alternative 1 favorable on operational side, has moderate cost and anticipated impacts to natural environment are similar to other alternatives. **Most preferred.**

Alternative 2: Connect to Creemore

While Alternative 2 is attractive from cost and control perspective, it is not anticipated that Creemore aquifer would be capable of supporting the projected demand for Stayner. **Not preferred.**

Alternative 3: Connect to Wasaga Beach

Wasaga Beach has good groundwater supply. Costs less than connection to C-NT pipeline but certainty of supply not confirmed. Terms of the cost agreement not established. **Not preferred.**

Alternative 4: Connect to Collingwood-New Tecumseth Pipeline

Certainty of water supply not confirmed. Alternative 4 relatively quick to implement but would take more time than Alternative 1. Costs associated with purchase of water are highest of all alternatives. **Not preferred.**

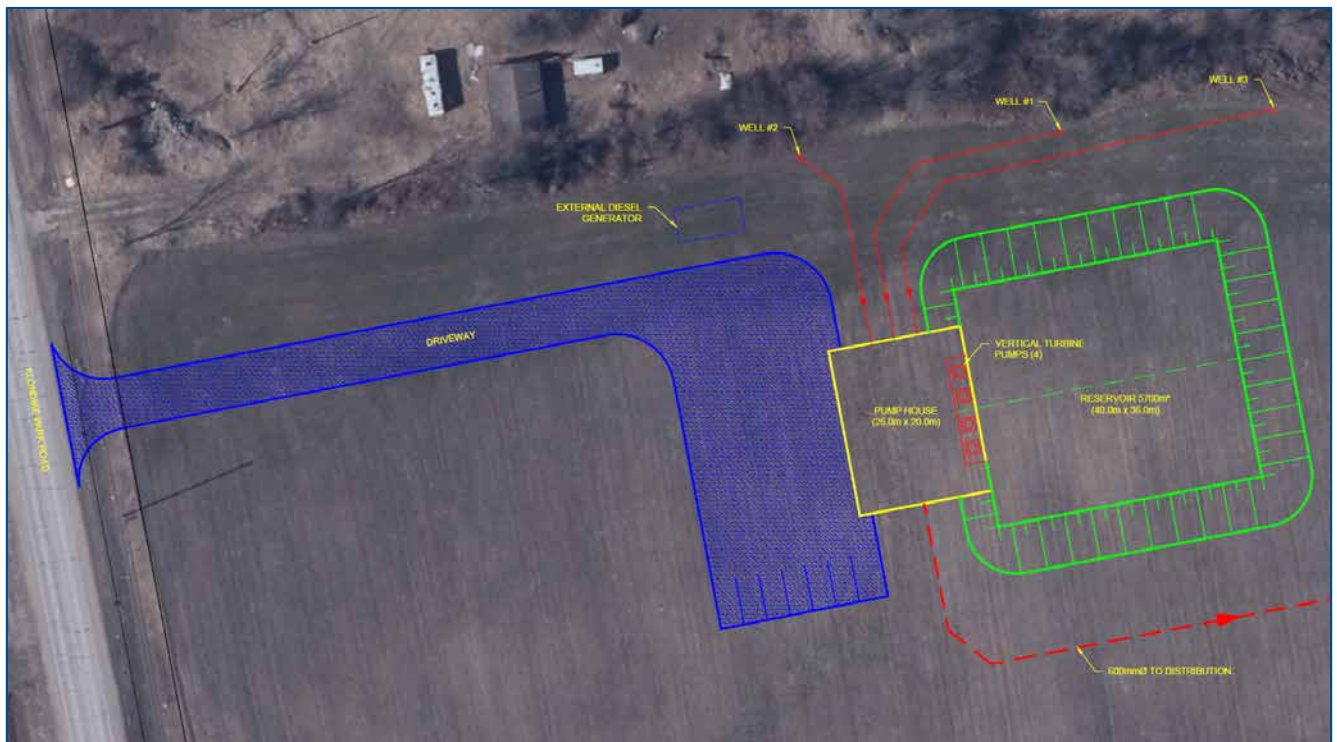
Alternative 5: New Surface Water Plant

Capital cost estimates for Alternative 5 favorable for ultimate demands. Time to complete project is long, even when considering phased treatment capacity. Land acquisition and construction of new plant costly and time consuming. **Not preferred.**

Preferred Solution

Expand Existing Groundwater System

- Revised preferred solution includes three new production wells and associated pumphouses, treatment and further expansion of storage.
- Watermain to connect into existing 200 mm watermain near Public Works Building, which connects to overall Stayner water distribution system.
- Trenchless technologies will be used to the extent possible, particularly in high traffic areas and watercourse crossings to minimize traffic and fish habitat impacts.



Next Steps

- Review feedback from PIC
- Finalize EA Addendum Report
- Issue Notice of EA Addendum
- EA Addendum Report available for public review for 30 calendar days

You are invited to provide comments by completing the comment sheet provided.

Please submit comment sheets to a Study Team member below on or before March 27, 2020.

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Thank-you for attending