Schedule “B” Project File Report

Construction of New Water Supply Well

Arran-Elderslie Water Works

Municipality of Arran-Elderslie

23-012

June 2025

Prepared By:
GSS Engineering Consultants Ltd.
Suite 230, 945 3rd Ave., E.
Owen Sound, ON, N4K 2K8
Tel.: 519-372-4828

Table of Contents

APPENDICES

Appendix A	Publications/Notices Issued
Appendix B	Review Agency Contact List and Project Information Letters Issued
Appendix C	Responses from Agencies
Appendix D	First Nation Consultation Documentation
Appendix E	Correspondence with Private Well Owners Impacted by New Well
Appendix F	PowerPoint Presentation For Phase 2 Public Meeting

GLOSSARY OF TERMS

ANSI	Areas of Natural Scientific Interest
DFO	Department of Fisheries and Oceans
EA	Environmental Assessment
ECA	Environmental Compliance Approval
ESA	Environmentally Sensitive Areas
ESR	Environmental Study Report
MNRF	Ministry of Natural Resources and Forestry
MOECC	Ministry of the Environment and Climate Change
MPAC	Municipal Properties Assessment Corporation
PSW	Provincial Significant Wetlands
PWQO	Provincial Water Quality Objectives
SVCA	Saugeen Valley Conversation Authority
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

1 INTRODUCTION

1.1 Background

Arran-Elderslie Water Works, which includes three (3) water supply wells and Arran-Elderslie Water Treatment Plant building, all located in Community Park in Chesley, is owned and operated by the Municipality of Arran-Elderslie. The facilities are used for the raw water supply, its treatment and supply of treated water to distribution systems in Chesley and Paisley.

Water supply wells include CPW #1 that was originally constructed in 1960's. CPW #2 & #3 were constructed approximately in 2002-03. Following completion of a Sch C EA, a new Water Treatment Plant building was constructed in 2004-05. A gravity trunk watermain, approximately 18 km in length, was also constructed to supply treated water from Chesley to Paisley.

1.2 Problem Statement

Well CPW #1, since the upgrading of the well in approximately 2002-03, started showing signs of iron bacteria contamination, even though before 2002-03 there was no evidence of iron bacteria fouling. Iron bacteria started forming a clogging film over the well screen, which restricted the free flow of water from aquifer into well. The film started reducing the amount of water that could be withdrawn from the well, even though aquifer was capable of suppling much larger water quality. Remedial measures such as acidification, super chlorination, sonic treatments were expensive and recurring cost and not enough to fully restore well yield.

A reduction of well yield is a serious matter and if remains unattended, could reduce treatment capacity of the water works, which is undesirable. The plant can lose its available redundancy in raw water supply, which could become problematic for plant operation in future.

Accordingly, Arran-Elderslie must take all steps necessary to reinstate raw water supply lost from well CPW #1.

1.3 Plant Rated Capacity and Capacity Utilization

Chesley Water Treatment Plant has a rated capacity of 5,564 m³/day (850 igpm). The raw water supply is obtained from three (3) water wells. Ministry has issued Permit To Take Water for three wells as follows:

CPW 1	:	1,800 m³/day (275 igpm)
CPW 2	:	2,127 m³/day (325 igpm)
CPW 3	:	2,946 m³/day (450 igpm)

The capacity utilization has been summarized in **Table 1.3** overleaf, for a period from 2012 – 2024.

Table 1.3
Rated Capacity Utilization
Arran-Elderslie Water Works
Municipality of Arran-Elderslie

Year	Max Day (m^3/day)	% Rated Capacity
2024	1,876	33.7%
2023	1,490	26.8%
2022	1,687	30.3%
2021	1,512	27.2%
2020	1,820	32.7%
2019	1,765	31.7%
2018	1,778	32.0%
2017	1,436	25.8%
2016	1,905	34.2%
2015	1,851	33.3%
2014	1,862	33.5%
2013	1,720	30.9%
2012	1,939	34.8%
Rated Capacity of Water Works		**5,564 m^3/day**

1.4 Environment Assessment Process

1.4.1 Overview

The Ontario Environmental Assessment Act, in applying its requirements for undertakings, identifies two (2) types of environmental assessment (EA) planning and approval processes”

- Comprehensive Environmental Assessments – A comprehensive EA includes a terms of reference (approved by the Minister) and an EA (Minister with (Lieutenant Governor in Council (Cabinet) approval). Individual EAs are generally required for large-scale, complex projects with a potential for significant environmental effects. The projects that must follow the comprehensive EA process set out in Part II.3 of the EAA are identified in the regulation(s) made under the EAA.

- Streamlined EAs – Streamlined EA’s include Class EAs, and various regulatory process, including processes applicable to waste, transit and electricity projects. Class EAs establish a process that proponents may follow for an established class of projects, which if followed allows the proponents to proceed with the undertaking without requiring further approval.

1.4.2 Municipal Class Environmental Assessments

The Municipal Engineers Association (MEA) developed Class EA documents for municipal road, water, and wastewater projects which, since 1997, are approved under the Ontario EA Act. A review and update of the Municipal Class EA took place in 1993 and their approval was extended. In 2000, the Class EAs for municipal road, water, and wastewater projects were consolidated and updated, and subsequently approved and included in the amended Municipal Class EA document – October 2000, as amended in 2007 and 2011. EA process was again reviewed and broad consultation process took place with various stakeholders, and resulted in Municipal Class EA document, February 2020 revision.

1.4.3 Planning and Design Process

1.4.3.1 Project Category

A Class EA is a planning document which sets out the process that a proponent must follow in order to meet the requirements of the EA Act for a class or category. Projects are divided into schedules based on the type of projects and activities. Schedules are categorized as Exempt, B, and C with reference to the magnitude of their anticipated environmental impact.

Exempt:

Various maintenance, operation, rehabilitation, and other small projects that are limited in scale and have minimal adverse environmental effects are exempt from the EAA. Previously, many of these projects were classified as Schedule A or A+ and as a result were exempt from the Act through s. 15.3(3) of the Act and are now identified simply as exempt in the table. Exempt projects are identified in the first column of the table in Appendix 1 of the Municipal Class EA document.

While these projects are exempt from the EAA, municipalities should consider whether notice about the project should be given or consultation on the project should be carried out outside of the MECP process. Municipalities should address any concerns raised with respect to the project, as appropriate. Proponents are also responsible for obtaining any other applicable permits, approvals and authorizations for their project.

Other projects may be eligible for exemption if they meet the requirements of the conditional exemptions including the completion of the archaeological screening process.

Schedule B
Schedule B projects have the potential for some adverse environmental effects. Proponents are required, at a minimum, to complete phases one and two of the planning process, including mandatory consultation with Indigenous Communities, directly affected public and relevant review agencies, to ensure that they are aware of the project and that their concerns are identified and considered, and documenting the assessment requirements in the Project File Report. Schedule B projects generally include improvements and minor expansions to existing facilities as well as new smaller scale projects.

Schedule C
Schedule C projects have the potential for significant environmental effects and must proceed through the full planning and documentation procedures set out in Section A.2 Municipal Class EA document. This includes mandatory consultation with Indigenous Communities, directly affected public and relevant review agencies, to ensure that they are aware of the project and that their concerns are identified and considered. An Environmental Study Report must be prepared and filed for review by Indigenous Communities, the public and the review agencies.

1.4.3.2 Planning Process

There are five (5) key elements in the Class EA planning process. These include:

Phase 1 – Identification of problem (deficiency) or opportunity;

Phase 2 – Identification of alternative solutions to address the problem or opportunity. Public and review agency contact is mandatory during this phase and input received along with information on the existing environment is used to establish the preferred solution. It is at this point that the appropriate Schedule (B or C) is chosen for the undertaking. If Schedule B is chosen, the process and decisions are then documented in a Project File. Schedule C projects; however, proceed through the following Phases;

Phase 3 – Examination of alternative methods of implementing the preferred solution established in Phase 2. This decision is based on the existing environment, public and review agency input, anticipated environmental effects and methods of minimizing negative effects and maximizing positive effects;

Phase 4 – Preparation of an ESR summarizing the rationale, planning, design and consultation process of the project through Phases 1-3. The ESR is then to be made available to agencies and the public for review; and

Phase 5 – Following completion of contract drawings and documents, construction and operation commences. Construction is to be monitored for adherence to environmental provisions and commitments. Monitoring during operation may be necessary if there are special conditions. **Exhibit A.2** provided overleaf illustrates the Municipal Class EA Planning and Design Process.

1.4.4 New Water Well for Arran-Elderslie Water Treatment Plant

This project is being conducted as a Schedule B project under the Municipal Class Environmental Assessment process. The selection as a Schedule B project recognizes that the proposed works falls under the category of “Establish a well at a new municipal well site” as referenced in **Table A** of the Municipal Class Environmental Assessment (Municipal Engineers Association, 2024) document.

1.4.5 Project File Report (PFR)

For projects following Schedule B, a Project File Report (PFR) is to be completed as part of Phase 2 and placed on public record for a period of at least 30 calendar days. Prior to filing PFR, a Notice of Completion to Review Agencies and Public is required to be issued.

1.4.6 Changing Project Status – Section 16 Orders

The EAA provides the Minister (or delegate) with the authority to make two types of orders with respect to an undertaking proceeding in accordance with a Class EA.

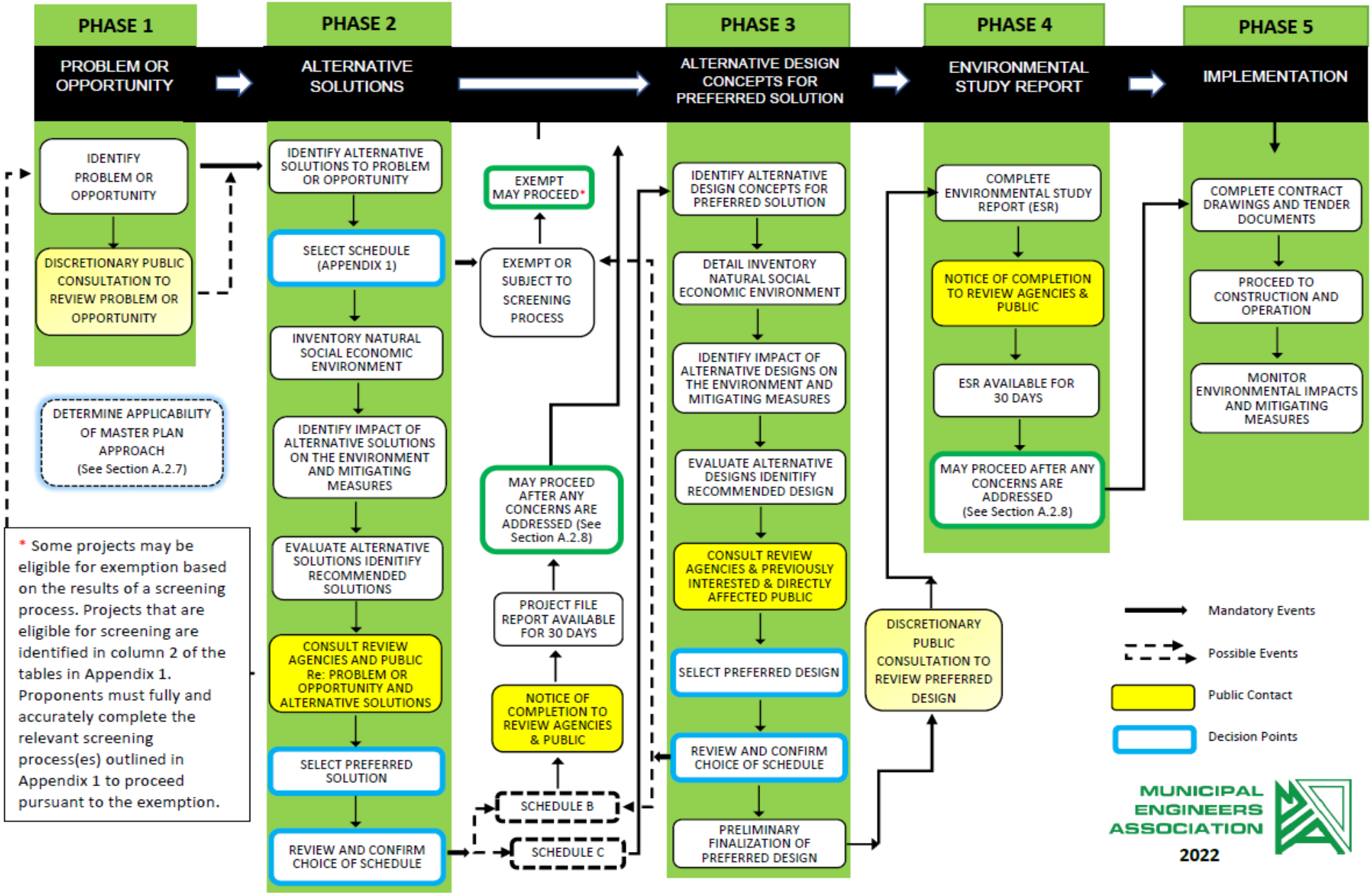
The Minister (or delegate) may order a proponent, under section 16 and 16.1 of the EAA, and the prohibitions in s.15.1.1. before proceeding, to undertake a comprehensive EA or may impose conditions on the undertaking.

Section 16(1) and 16(3) Orders
The Minister (or delegate) may, on their own initiative, within a time limited period, require a proponent to undertake a comprehensive EA, referred to as a s.16(1) order, or impose conditions on an undertaking, referred to as a s.16(3) order.

If the Minister (or delegate) is considering making an order on their own initiative, the Minister must make the order no later than 30 days after the end of the comment period set out in the Notice of Completion or Notice of Addendum, unless a Notice of Proposed Order is provided to the proponent. If the Director provides a Notice of Proposed Order to the proponent within the 30-day period, the Minister must make the order within 30 days of the Director’s notice being provided to the proponent unless the notice also includes a request for information.

EXHIBIT A.2. MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS

NOTE: This flow chart is to be read in conjunction with Part A of the MCEA



The Minister (or delegate) will have 30 days to make an order following completion of certain procedures. In this case, the following are the outcomes:

- If the Minister (or delegate) issues a s.16(1) order, the proponent cannot proceed with the project without first seeking and obtaining approval under Part II of the Act (i.e., comprehensive EA).
- If the Minister (or delegate) issues a s.16(3) order, the proponent must meet the conditions outlined in the order.
- If the Minister (or delegate) does not issue an order within 30 days of the Director giving a Notice of Satisfactory Response, the proponent can proceed with their project.

There are further details on procedures in the EA document, which is not provided here. Reader is referred to Municipal Class EA document issued February 2024.

Requests for s.16 orders on the grounds that the order may prevent, mitigate or remedy adverse impacts on Aboriginal and treaty rights.

In addition, the EAA allows a person with concerns pertaining to potential adverse impacts to Aboriginal or treaty rights, to request under section 16 of the EAA that the Minister make an order requiring a comprehensive EA) or that conditions be imposed on the project. A request can only be made on the grounds that the order may prevent, mitigate or remedy adverse impacts on Constitutionally protected Aboriginal or treaty rights. Requests that are not made on these grounds will not be considered by the Minister. If a section 16 order request is received by the Minister, the proponent shall not proceed with their project until a decision is made by the Minister on the request, or the ministry notifies the proponent that they may proceed.

The information in the notices should include what the grounds for a request must be (i.e., that the order may prevent, mitigate or remedy adverse impacts on Constitutionally protected Aboriginal or treaty rights), how to submit a request for a section 16 order, and timing for the public comment period, and information that must be submitted to the ministry in making a request. This includes:

a. requester contact information, including full name;
b. project name;
c. proponent name;
d. the type of order that is being requested (requiring a comprehensive EA before being able to proceed, or that conditions be imposed on the project);
e. specific reasons on how an order may prevent, mitigate or remedy potential adverse impacts on Aboriginal and treaty rights;
f. information about efforts to date to discuss and resolve concerns with the proponent; and
g. any other information in support of statements in the request.

If a request for a section 16 order is received by the ministry that meets the grounds in section 16(6), the ministry will contact the proponent for a response to the concerns raised in the section 16 order request. The proponent must respond in a timely manner with complete information to any request.

1.4.7 Canadian Environmental Assessment Act

The Canadian Environmental Assessment Act (CEAA) forms the basis of the federal environmental assessment process at the project level. There are two (2) main conditions for the Act to apply:

- The proposed project has to meet the definition of “designated project” as set out in the Act. A “designated project” means one or more physical activities designated by the regulations; and

- Each physical activity must be linked to one of the following responsible authorities:
    - Canadian Environmental Assessment Agency;
    - Canadian Nuclear Safety Commission; or
    - National Energy Board.

This project currently does not meet the conditions for a federal environmental assessment.

2 INTENT OF PROJECT FILE REPORT (PFR)

The intent of this report is to outline the steps that Arran-Elderslie has taken to satisfy the requirements of the Municipal Class Environmental Assessment Planning Process for a Schedule B project. The Project File Report (PFR) details the following:

- Background of the project;
- Review of nature and extent of the problem or opportunity, outlines the source of the concern or issue;
- Inventory of Natural, Social, Economic Environment
- Identifies the solutions that are possible and impact of solutions on the environment and the mitigating measures;
- Evaluate alternative solutions and identify recommended solutions.

3 PUBLIC AND REVIEW AGENCY CONSULTATION

3.1 Consultation

3.1.1 General

The consultation process is an integral component of the Municipal Class EA process. This section details the consultation process adopted by the proponent.

3.1.2 Stakeholder Consultation

Potential stakeholders included but are not limited to:

- Public – This includes individual members of the public including property owners who may be affected by the project, individual citizens who may have a general interest in the project, special interest groups, community representatives and the general public;
- Review agencies – This includes government agencies who represent the policy positions of their respective departments, ministries, authorities or agencies; and
- Identified Aboriginal Communities.

Members of the public were notified of project commencement and invited to attend the Public Consultation/Meetings by way of notices published by the proponent.

A list of relevant agencies and the appropriate contact person was developed at the onset of the process and was updated after determining the impact of new well on private residence’s water supplies. These contacts were sent letters notifying them of the project and milestones including the development of the preferred planning alternative and the preferred design solutions.

3.1.3 Aboriginal Consultation

A list of relevant Aboriginal Communities were provided with letters notifying them of project commencement and project details.

Appendix A contains the contact list for the review agencies and Aboriginal communities. **Appendix C** contains a copy of each response received.

3.2 Notice of Commencement

The Notice of Commencement for “New Well for Arran-Elderslie Water Works” was posted on the municipal website. A copy of the notice is included in **Appendix B**.

3.3 Public Information Meetings

3.3.1 General

The general public was notified of Discretionary Public Consultation and Phase 2 meeting through advertising and postings on municipal website. Copies of these notifications can be found in **Appendix B**.

3.3.2 Discretionary Public Consultation

A discretionary public consultation was undertaken by way of providing the following information on municipal website:

- Background
- Identification of the Problem Statement
- Description of Alternative Solutions and pertinent information relating to each solution. A total of seven (7) Alternative Solutions were presented.
- Screening of alternative solutions and rationale of carrying or not carrying forward
- Preliminary recommended alternative
- Comment Sheet

No comment sheet was received in response to the posted information.

3.3.3 Phase 2 Public Meeting

Phase 2 Mandatory Public Meeting was held on Thursday, May 2, 2024 at Arran-Elderslie’s Chesley Community Centre. A formal PowerPoint presentation was made at 7:00 pm. The presentation outlined the following:

- Highlights of information provided for Discretionary Public Consultation.
- Review of alternative solutions and selection of the Preliminary Recommended alternative.

Only six (6) people were in attendance in addition to presenters. They were all municipal staff or council members. Following the presentation, a question period was held. No comment sheets were received in response to Public Meeting.

3.4 Notice of completion

The Notice of Completion is intended to be published in Owen Sound Sun Times. The publishing of this notice will be the beginning of the 30 day review period. The PFR will be available for public viewing at the following locations:

- Arran-Elderslie Municipal Office
- Arran-Elderslie Public Library
- Arran-Elderslie Municipal Website

4 GUIDING/SERVICING PRINCIPLES

In general, Servicing principles/guide should:

- Allow the proponent to translate the Municipalities Strategic Plan and Official Plan policies into more specific servicing proprieties;
- Allow the proponent to identify other servicing principles such as population growth and committed development. This was not a factor or concern for this project.
- Allow for proposed solutions to be tested based on whether or not they meet the proponent’s priorities; and
- Allow for comparison and ranking of proposed solutions (number of principles met, to what degree, etc.).

Chesley and Paisley being small towns do not have a Master Plan or a Strategic Development plan that must be adhered to. Paisley community does have a potential for subdivisions development as a few developers have submitted proposals for draft plan approval or final design approval.

The water works rated capacity utilization is low, and there is no need to increase water works capacity. Therefore, the only guiding principle that must be considered is ensuring that rated capacity of the water works remain unchanged.

5 NATURAL ENVIRONMENT REVIEW

5.1 Overview

As required by the Municipal Class EA, a review of the Natural Environment was considered to characterize the significance and sensitivity of the natural features in the study area and consider potential impacts and appropriate measures in order to avoid or minimize potential negative impacts on the surrounding environment.

A detailed natural environment list was not attempted because the well construction was in the existing Community Park and not too far from existing well CPW #3, thereby causing little impact to the environment.

5.2 Study Area

The study area is defined as the geographical area that could be affected by any of the project alternatives and was designed on the basis of the expected range of social and natural environmental effects associated with the construction of new well. For practical purposes, the study area was considered to be the urban area of Chesley and Paisley and additionally the area within the anticipated cone of depression of well during its short-term and extended use.

The following describes the project study area, including its location, existing land uses, natural environmental features and socio economic environment. The following information was considered when reviewing potential effects of alternative solutions and design concepts.

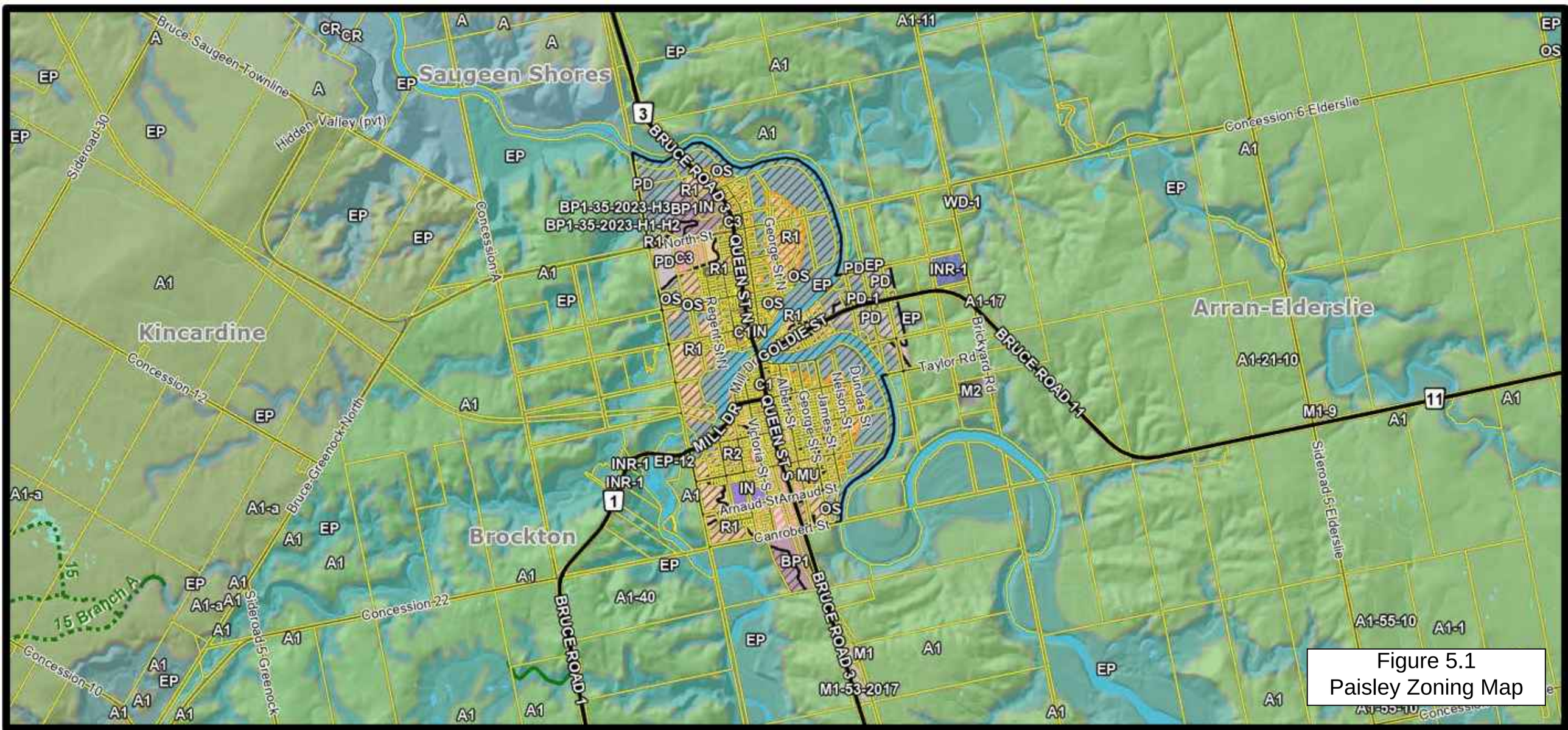
5.2.1 Existing Land Use

Land uses within Chesley and Paisley can generally be described as predominantly urban development including residential communities, institutional, recreational and commercial downtown core. Refer to **Figures No**. **5.1 and 5.2.**

5.2.2 Future Land Use

Future land use changes anticipated in the Chesley area include minor growth in the urban area, (i.e. additional urban development) and new residential development in Paisley community. New residential development in Chesley will occur on vacant land area where full municipal services are available. Based on the past population growth pattern, the urban area is anticipated to have enough land to provide for 10-15 years of residential growth in Chesley. Chesley’s Official Plan anticipated that the existing pattern of development will remain unchanged in the future.

Paisley, however, is experiencing growth of land development by developers and is anticipated to run out of lands identified for development. Bruce County has identified some vacant land that could be developed by way of zoning changes. Such developments are not anticipated to exert adverse impact on rated capacity of Arran-Elderslie Water Works.


Saugeen Shores
Kincardine
Brockton
Arran-Elderslie
Bruce-Saugeen-Townline
Hidden Valley (pvt)
Sideroad-30
Concession-A
Concession-12
Bruce-Greenock-North
Concession-22
Sideroad-5-Greenock
Concession-10
15 Branch A
Concession-6-Elderslie
Brickyard-Rd
Taylor-Rd
Sideroad-5-Elderslie
BRUCE ROAD 3
BRUCE ROAD 11
BRUCE ROAD 1
QUEEN ST N
QUEEN ST S
GOLDIE ST
MILL DR
North St
George St N
Regent St N
Mill Dr
Albert St
Victoria St S
George St S
James St
Nelson St
Dundas St
Arnaud St
Canrobert St
BP1-35-2023-H3
BP1-35-2023-H1-H2
M1-53-2017
Figure 5.1
Paisley Zoning Map

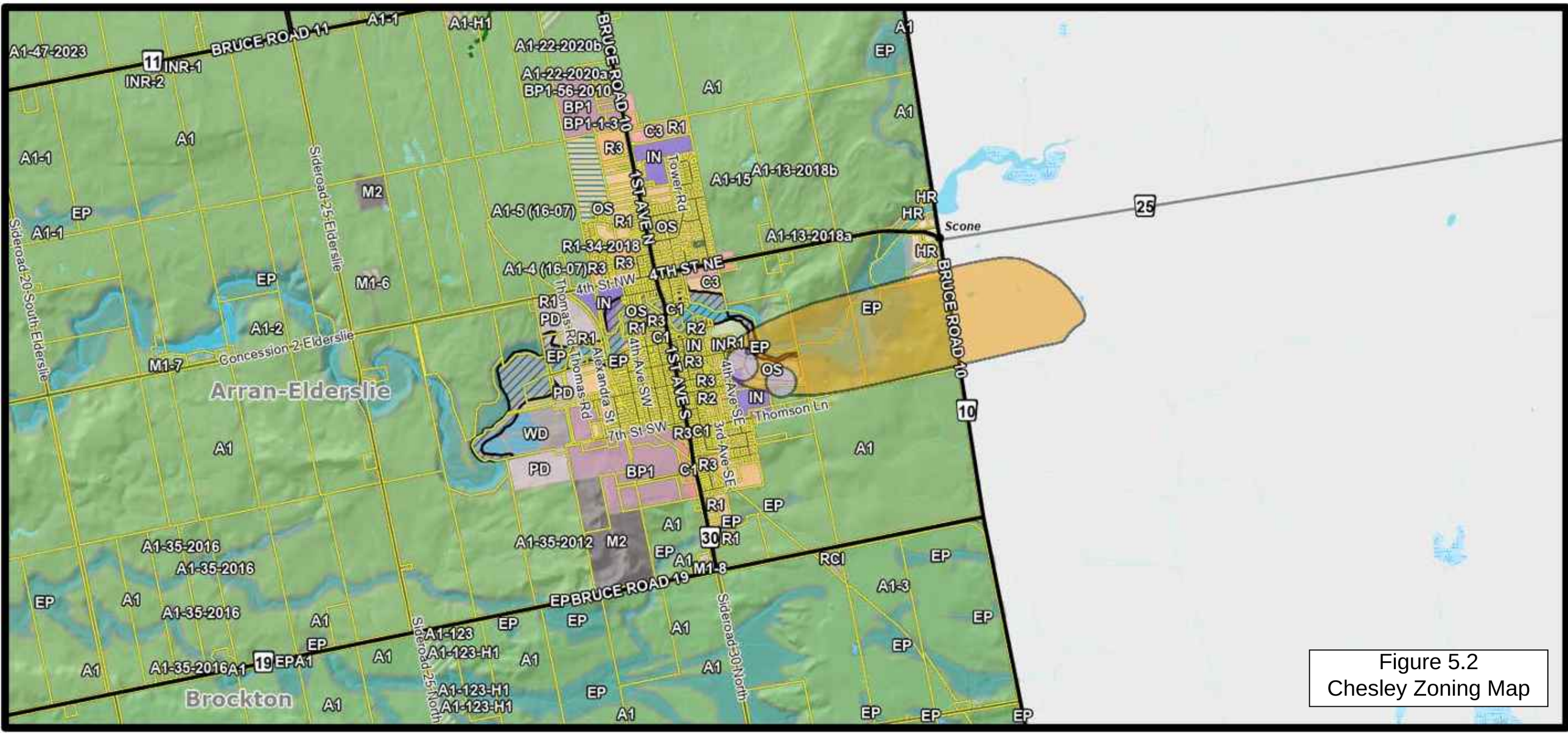


Figure 5.2
Chesley Zoning Map

5.2.3 Socio Economic Environment

Based on its location, Chesley and Paisley have a mix of commercial, institutional and minor recreational tourism based economy. The Municipality intends to maintain existing vibrant commercial activity in the downtown area. The Bluewater District School Board has its head office in Chesley and is the largest employer in Chesley. Paisley is located approximately 20 minutes’ drive away from Bruce Nuclear Plant, who is the largest employer in Bruce County. The development potential and pressure in Paisley is due to relatively affordable housing availability and proximity to the nuclear plant

5.2.4 Natural Environment

Chesley is developed along the banks of the North Saugeen River, whereas Paisley is located at the confluence of North Saugeen River and Teeswater River. Significant natural features of the area include the lands adjacent to the riverbanks. The North Saugeen River provides a warm water fish habitat and provides sport fishing opportunities to local anglers. The predominant species are thought to be bass and potentially northern pike.

5.3 Field Studies and Investigations

Field work was not incorporated into the natural environment characterization due to very limited disturbance that will be caused by the construction of test well and production well.

5.4 Hydrology

The study area is under the jurisdiction of the Saugeen Valley Conservation Authority (SVCA) and falls in the North Saugeen River watershed. However, no impact was anticipated by well construction unless well would be directly under the influence of surface water or has a direct draw of water from the river.

5.5 Aquatic Resources

The North Saugeen River and Teeswater River watershed supports warm water fish communities. Rainbow mussel and Hungerford’s Crawling Water Beetle were identified as possible Species at risk in the subject area by SVCA and MNR. No potential impact was anticipated on aquatic resources by construction of a drilled bedrock well.

5.6 Wetlands

There are no identified wetlands in the study area, which could be impacted by proposed upgrades.

5.7 Significant Woodlots and Natural Areas

Testing or construction of a new well was anticipated to be confined to the existing community park site and therefore there is no significant woodlot or natural areas that is anticipated to be impacted by the well construction or the raw water piping from well to the Arran-Elderslie Water Treatment Plant Building.

6 IDENTIFICATION OF ALTERNATIVE SOLUTIONS

The Municipal Class EA process recognizes that there are several ways to solve the problem and requires that various alternative solutions are considered. The list of alternative solutions that were considered are as follows:

1) Do nothing;

2) Decommission CPW 1 well;

3) Increased water supply from existing well(s);

4) Construct new groundwater supply source in currently utilized aquifer(s) and continue to use existing water treatment plant;

5) Construct new water supply well in a different aquifer and construct new treatment equipment as needed in existing treatment plant building or new building;

6) Construct new surface water supply source intake and associated treatment plant;

7) Treated water supply from another Water Work in Arran-Elderslie or adjacent municipality

A description of each alternative and applicable comments are provided in **Table 6.1**

ALTERNATIVE	DESCRIPTION	COMMENTS
1. Do Nothing	• No improvements or changes would be undertaken to CPW 1 well problem.	"Do Nothing" alternative represents what would occur if none of the alternative solutions were implemented
2. Decommission CPW 1 well	• Decommission and remove well CPW 1 from water works • Obtain amendment to Licence and Permit from MECP • Decommissioning will lead to reduction in water supply capacity of existing AE WW • May limit residential growth in Paisley & Chesley	➢ Does not address problem ➢ Irresponsible to reduce water supply capacity of existing water system ➢ Will limit growth in Chesley & Paisley
3. Increased water supply from existing well(s)	• Hydrogeological investigation to determine if existing well(s) CPW 2 and 3 can supply more water • If yes, obtain permits and approval from MECP • Undertake Sch B EA	➢ May not provide additional supply in adequate quantity is suitable ➢ Alternative is suitable to supplement other viable alternative(s)
4. Construct new groundwater supply source in currently utilized aquifer(s) and continue to use existing water treatment plant	• Drill new water well for additional water supply, (preferably near existing water treatment building's locations) from aquifers that are currently being utilized • Obtaining water form existing utilized aquifer will ensure raw water is similar and will avoid need for new and different treatment equipment, that could be expensive • Undertake detailed hydrogeological investigation to ensure long-term water supply capabilities • Undertake EA and obtain new License & Permit from MECP • Undertake Source Water Protection study as needed • Connect to exiting water treatment plant	➢ Risks are associated with new drilled well being incapable of supplying adequate quantity of water, or water quality not complying with ODWS ➢ Relatively easier method to add additional treatment capacity

ALTERNATIVE	DESCRIPTION	COMMENTS
5. Construct new water supply well in a different aquifer and construct new treatment equipment as needed in existing treatment plant building or new building	• Drill new water well for needed water supply, preferably near existing water treatment plant building location. • Undertake detailed hydrogeological assessment • Undertake EA • Obtain PTTW and Licence & Permit from MECP • Undertake Source Water Protection study as needed • Construct new or upgrade existing water treatment plant equipment and building, as required • Procure new land(s) as needed.	➢ Risks are associated with new drilled well capability of supplying adequate water quantity, or water quality not complying with ODWS ➢ This alternative is next best solution after a combination of alternatives #3 and #4 and can be pursued if alternatives #3 & #4 fail.
6. Construct new surface water supply source intake and associated treatment plant	• N. Saugeen River is a potential water supply source • Determine suitable location and construct river water intake, after obtaining all approvals • May be required to construct raw water pumping station to supply water to treatment plant • Construct new WTP building or expand existing treatment plant building and connect to existing water distribution networks. Existing plant building shall not have room to accommodate new treatment equipment • Undertake Sch C EA • Obtain PTTW and also complete Source Water Protection Study	➢ Surface water sources are more prone to contamination and have more variable water quality ➢ Treatment process can be far more complex and expensive when compared to groundwater source ➢ Operators need to remain on guard during period of water quality changes during spring and fall and take timely corrective steps. Highly skilled operation is required ➢ Generally, less desirable option when good groundwater supply source is readily available ➢ Capital Project Cost is anticipated to be highest among all alternatives ➢ Timeline for this alternative is anticipated to be much longer than other viable alternatives

ALTERNATIVE	DESCRIPTION	COMMENTS
7. Treated water supply from another Water Work in Arran-Elderslie or adjacent municipality	• Will require approval from County and neighbouring municipality that could supply water • Arran-Elderslie has Tara WW, but with insufficient spare capacity to support Arran-Elderslie Water Works • Shall require construction of long water mains, associated booster pumping system and re-chlorination facility(ies) • Hanover is another water works that may be able to spare supply, but is at a significant distance	➢ Not likely a viable option ➢ Tara water works is not capable to supply additional water without significant upgrading of existing water works ➢ Hanover is another water works that may be able to spare supply, but is at a significant distance ➢ Typically, neighbouring municipalities saves surplus capacity of their water works for their own use rather than provide to others

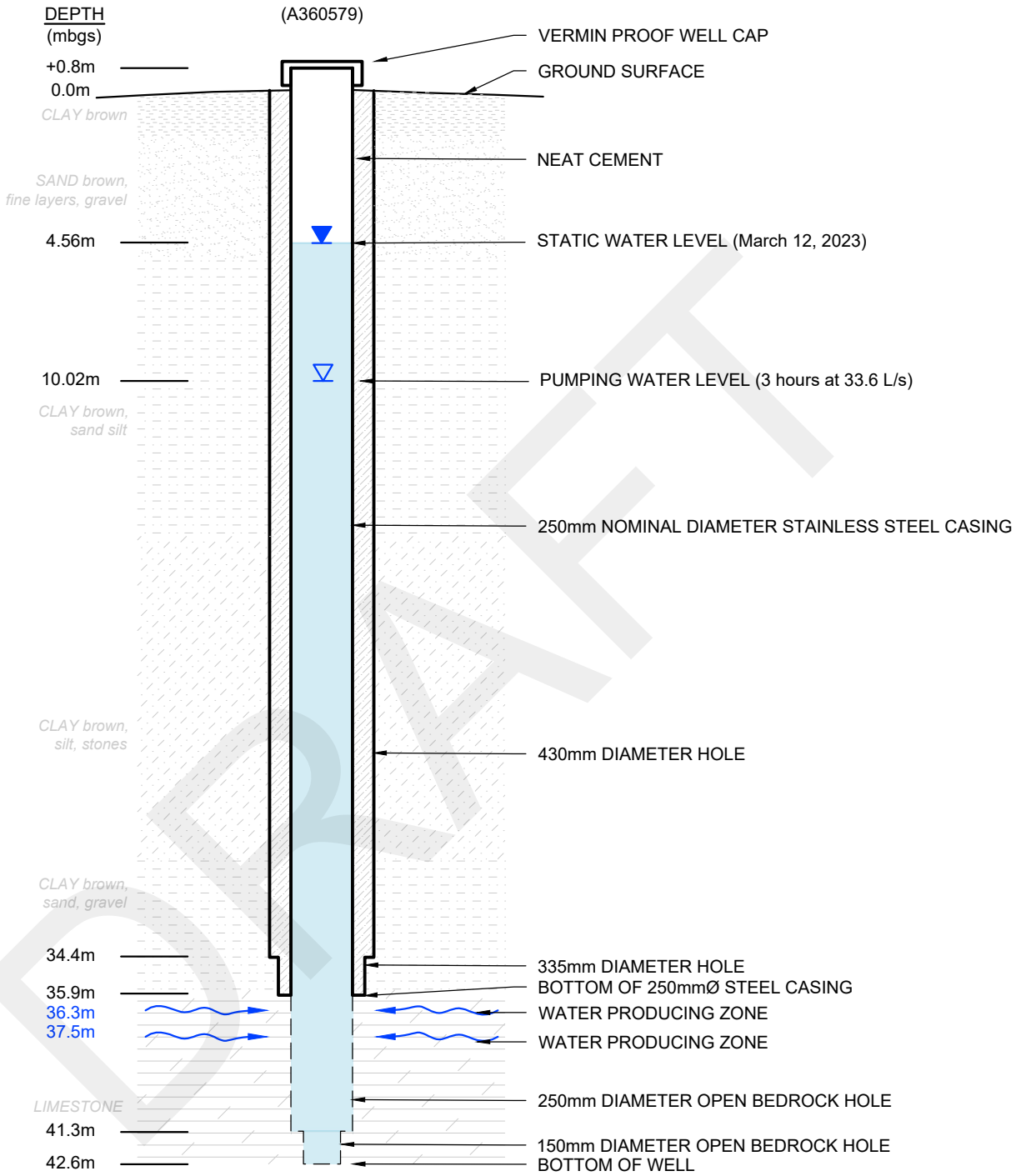
7 NEW WATER SUPPLY INVESTIGATION PROGRAM

Arran-Elderslie began exploration of new well supply in 2022 by hiring R.J. Burnside Engineers. A test well TW1-22 was drilled in Community Park and tested in 2022. However, during testing it was found to be a low-yield well. Therefore, the efforts for another well commenced. Another test well TW1-23 was drilled in Community Park, to the west of municipal well CPW #3 and TW1-22. The short term and long term pumping tests as well as water quality testing to Drinking Water standards, confirmed this well’s capacity to be developed into a municipal well. However, during testing, it was noted by way of water level measurement and data logging that cone of influence of the new well would affect eight (8) private wells due to increased drawdown at their wells.

Private property owners were contacted and were informed about the concern. They were informed that municipality would consider providing them with new well pumps installed at deeper depths to ensure that over a period of time, the static water level or the pumping level does not drop below their pump’s settling depth.

The above investigation program was presented at Phase 2 Public Meeting Presentation. Following the comment period expiration and no objections, council by way of a resolution authorized the construction of a production well at location of TW2-23. The new well CPW #4 construction detail is provided overleaf, which has been borrowed from RJ Burnside’s report entitled “Chesley Well CPW4 Production Well Construction and PTTW Application, April 2025”. A copy of the well log is also included overleaf. The testing of the well confirms that it is capable of providing a long term well yield of 34 L/sec.

Following the commissioning of CPW #4, the existing well CPW #1 will be decommissioned in accordance with O.Reg 903.



BURNSIDE

Figure Title

CHESLEY WELL CPW4

WELL CONSTRUCTION DETAIL

Client

MUNICIPALITY OF ARRAN-ELDERSLIE
CHESLEY, ONTARIO

Drawn	Checked	Date	Figure No.
SK	JD	April 2025	3
Scale		Project No.	
N.T.S.		300057828	

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print Below) A360579

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	
	Municipality of Arran-Elderslie	Water@arran-elderslie.com	[ ] Well Constructed by Well Owner

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
1925 Bruce RD 10, PO Box 70	Chesley	ONT	N0G 1L0	5193631309

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
129 4th Ave SE	Arran-Elderslie		

County/District/Municipality	City/Town/Village	Province	Postal Code
Bruce	Chesley	Ontario	N0G1L0

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	419372	4919047		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay			0	1.8
Brown	Sand		Fine	1.8	3.1
Brown	Sand	Gravel		3.1	6.7
Brown	Clay	Sand Silt		6.7	17.7
Brown	Clay	Silt Stones		17.7	30.5
Brown	Clay	Sand Gravel		30.5	35.7
Grey	Limestone			35.7	38.7
Brown	Limestone			38.7	39.6
Grey	Limestone			39.6	42.6

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	35.9	Neat Portland Cement	3.3

Method of Construction

[ ] Cable Tool [ ] Diamond
[X] Rotary (Conventional) [ ] Jetting
[ ] Rotary (Reverse) [ ] Driving
[ ] Boring [ ] Digging
[ ] Air percussion
[ ] Other, specify

Well Use

[ ] Public [ ] Commercial [ ] Not used
[ ] Domestic [X] Municipal [ ] Dewatering
[ ] Livestock [ ] Test Hole [ ] Monitoring
[ ] Irrigation [ ] Cooling & Air Conditioning
[ ] Industrial
[ ] Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
25.4	Stainless Steel	+0.177	0	35.9

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Status of Well

[X] Water Supply
[ ] Replacement Well
[ ] Test Hole
[ ] Recharge Well
[ ] Dewatering Well
[ ] Observation and/or Monitoring Hole
[X] Alteration (Construction)
[ ] Abandoned, Insufficient Supply
[ ] Abandoned, Poor Water Quality
[ ] Abandoned, other, specify
[ ] Other, specify

Water Details

Water found at Depth (m/ft)	Gas	Kind of Water	Other, specify
365-375	[ ]	[ ] Fresh [X] Untested	
375-?	[ ]	[ ] Fresh [ ] Untested	
	[ ]	[ ] Fresh [ ] Untested	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	34.4	43.2
34.4	35.9	35.6
35.9	41.3	25.4
41.3	42.6	15.6

Results of Well Yield Testing

After test of well yield, water was:
[X] Clear and sand free
[ ] Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft): 25.35

Pumping rate (l/min / GPM): 540

Duration of pumping: 6 hrs + 0 min

Final water level end of pumping (m/ft): 11.50

If flowing give rate (l/min/GPM):

Recommended pump depth (m/ft): 25.35

Recommended pump rate (l/min/GPM):

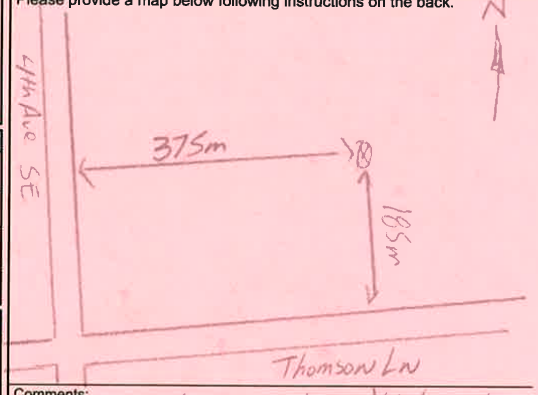
Well production (l/min/GPM): >500

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	6.07		
1	7.22	1	10.39
2	7.47	2	10.24
3	7.58	3	10.09
4	7.74	4	9.98
5	7.82	5	9.87
10	8.35	10	9.48
15	8.54	15	9.09
20	8.53	20	8.85
25	8.62	25	8.70
30	8.74	30	8.58
40	8.93	40	8.33
50	9.06	50	8.15
60	9.21	60	7.98

Map of Well Location

Please provide a map below following instructions on the back.



Comments: 6" Casing Removed, Reamed hole and installed 10" casing, Reamed Rock.

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Well Initiatives Limited	7122

Business Address (Street Number/Name)	Municipality
15 Townline RD	Orangeville

Province	Postal Code	Business E-mail Address
ONT	L9W3R4	info@wellinitiatives.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
5194846820819	Blek, Phil

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3912		2020-05-06

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[ ] Yes [X] No	2020-05-06	2020-05-06

Ministry Use Only

Audit No. Z411147

Received

0506E (2020/06) © Queen's Printer for Ontario, 2020

Well Owner's Copy

8 SCREENING OF ALTERNATIVE SOLUTIONS

It is probable that environmental components as identified in Section 5.0 will not necessarily be adversely impacted by all of the alternative solutions. In view of this, it is imperative that the identified alternative solutions are screened for suitability and short-listed before a detailed review process is undertaken.

The rational for screening of the alternative solution was based on the following:

- Inability of an Alternative to address the problem statement;
- Time consuming, especially if other suitable alternative is available; and
- Too expensive, especially if other suitable alternative is available.

A summary of the screening process is presented in **Table 8.1**, which is self-explanatory. Alternatives #1 and #4 were considered for a more detailed investigation.

Preliminary Recommended Alternative

Based on information outlined in **Table 6.1 and Table 8.1**, Arran-Elderslie proposed to undertake further steps to complete Alternative #3 and Alternative #4 simultaneously.

Alternative #3 was to explore hydrogeological assessment of existing water supply wells CPW #2 & #3 by way of desk top assessment of background reports and wells operational data to determine if the existing water wells could supply additional water on long term basis. The desktop analysis confirmed that additional water supply cannot be obtained from remaining wells CPW #2 and #3, if CPW #1 supply is lost completely.

Alternative #4 was to focus on long term pump testing of new Well CPW #4 to determine whether it can match or exceed water supply that was originally available from existing Well CPW #1.

Alternative #5 was to be pursued only if Alternatives #3 and #4 were unsuccessful. However, construction and testing of the new test well TW2-23 indicated that there was no need to pursue Alternative #5.

TABLE 8.1 – Screening of Alternative Solutions

ALTERNATIVE	DECISION	RATIONALE FOR NOT CARRYING FORWARD
1. Do Nothing	✓	Carried forward – must be considered
2. Decommission CPW 1	X	Screened – does not address the problem
3. Increased water supply from existing well(s)	✓	Carried forward in conjunction with Alternative #4
4. Construct new groundwater supply source in currently utilized aquifer and continue to use existing water treatment plant)	✓	Carried forward – feasible alternative
5. Construct new water supply well in a different aquifer and construct new treatment equipment as needed in existing treatment plant building or new building	✓	Carried forward – feasible alternative, and to be pursued only if Alternatives #3 & #4 are unable to address problem definition
6. Construct new surface water supply source intake and associated treatment plant	X	Screened – addresses the problem but time consuming and expensive and with operational challenges
7. Treated water supply from another Water Work in Arran-Elderslie or adjacent municipality	X	Screened – not a feasible alternative

9 EVALUATION METHODOLOGY

9.1 Development of Evaluation Framework and Criteria

Evaluation criterion for the short listed alternative solutions were developed based on the following environmental components which address the broad definition of the environment described in the EAA[1].

The environmental components are briefly described in **Table 9.1** as follows:

Table 9.1 Environmental Components

Environmental Component	Description
Public Health and Safety	• Component having regard for protecting the public’s health and safety including drinking water.
Natural Environment	• Component having regard for protecting the natural and physical components of the environment (i.e. air, land, water and biota) including natural heritage-environmentally sensitive areas.
Social/Cultural	• Component that evaluates potential effects on residents, neighborhoods, businesses, community character, social cohesion, community features and historical/archaeological and heritage components in addition to municipal development objectives.
Legal/Jurisdictional	• Component that considers the Municipality’s ability to control such as water rates as well as land and approval requirement for each alternative. • Component that considers the Aboriginal/First Nations Community rights.
Technical	• Component that considers technical suitability and other engineering aspects of the system including constructability and operations.
Economic/Financial	• Component that addresses estimated capital and operating costs.

Based on the above environmental components, the evaluation criteria were developed and used to evaluate the short list of alternative solutions. Refer to **Table 9.2**

[1] The Environmental Assessment Act (Section 1. (i)(a) to (f), defines the “environment’ as: “air, land, water, plant and animal life including human life; the social, economic and cultural conditions that influence the life of humans or a community; any building, structure, machine or other device or thing made by humans; any solid, liquid, gas, odor, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or; any part or combination of the foregoing and the interrelationship between any two (2) or more of them in or of Ontario”. This definition of the environment is used and is reflected in the environmental components used in the Phase Two evaluation.

Table 9.2 Criteria for Evaluating Short List Alternative Solutions

Criteria	Short List Evaluation Criteria
Public Health and Safety	• Ability to comply with Provincial Ontario Drinking Water Quality Standards

Natural Environment	• Potential effects to natural environment (air, land, water):
	• Environmentally Sensitive Areas and Species:
	  • Distance to or impact on designated natural heritage areas (lands classified as ESAs, ANSIs, PSWs); and
	  • Vulnerable, threatened and/or endangered species identified by the MNR, SVCA, DFO in the area.
	  • Wetlands
	• Vegetation:
	  • Amount of vegetation, woodlands, hedgerows, etc. affected or removed.
	• Wildlife and birds
	  • Potential impact by construction and prolonged use of the constructed asset.
	• Potential private well interference

Social/Cultural	• Policies and guidelines
	  • Conformity with planning policies and guidelines;
	  • Official Plan;
	  • Zoning By-Law:
	  • Provincial Policy Statement; and
	  • MECP policies.
	• Land Use:
	  • Compatibility with current and future land uses;
	  • Residential
	  • Open Space;
	  • Agricultural
	  • Size of buffer zone; and
	  • Aesthetics.
	• Archaeological and Cultural Areas, First Nations Land Claims:
	  • Potential impact to cultural and/or archeological resources; and
	  • Existence of land claims
	• Potential interference with private well supplies

Criteria	Short List Evaluation Criteria

Legal/Jurisdictional	• Required Approvals:
	  • Complexity and timeline for approvals.
	• Ability to control operations and rates:
	  • Nature of required inter-municipal agreements.
	• Land Acquisition:
	  • Amount required; and
	  • Nature of property acquisition (public vs. private)
	• Source Water Protection Areas (SWPA)
	  • Potential impact of SWPA of the new well

Technical	• Ability to meet capacity requirements:
	  • Ability to supply water equal to or more than capacity of Well CPW #1
	• Compatibility with existing infrastructure:
	  • Ability to reuse existing infrastructure and the amount of new infrastructure required.
	• Degree of Operation Complexity:
	  • Level of treatment required; and
	  • Number of facilities to operate.
	• Construction Issues and Impacts:
	  • Impact to general public; and
	  • Degree of mitigation required.

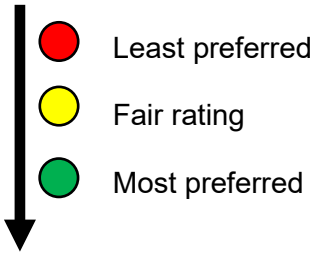
Economic/Financial	• Capital and operating costs
	• Impact on Cost Recovery:
	  • Water Rates; and
	  • Government Grants.

9.2 Use of Descriptive Information and Qualitative Evaluation

An evaluation of screened alternative was completed based on the previously described evaluation criteria components. Alternatives were ranked under each evaluation criteria.

The evaluation used in this report is not based on a descriptive or qualitative evaluation and considers the suitability of alternative solutions. In this respect, the trade-offs that have been made between alternatives are described in the text of the report and these trade-offs form the rationale for the identification of the preferred solution(s). Trade-offs involve forfeiting an advantage or accepting a disadvantage to address a higher priority consideration. The screened alternatives have been ranked in order of preference (based on advantages/disadvantages) under the discussion with respect to each aspect of the environment. This is intended to assist the reader in understanding the results of the evaluation process.

As shown on **Table 10.1** (in Section 10), the following colored rating symbols were used to summarize the results of the evaluation.



10 EVALUATION OF SHORT LIST ALTERNATIVE SOLUTIONS

During first public consultation, Alternative #5 was intended to be pursued, if Alternative #4 investigation was unsuccessful. Construction of test well confirmed that new well could be constructed in the aquifer and it was possible to continue to utilize existing water treatment plant. Accordingly, Alternative #5 was not pursued.

10.1 Evaluation of Short List of Alternative Solutions

The evaluation of short listed solutions was undertaken and summarized in **Tables 10.1 to 10.3** overleaf. Significant findings of this evaluation are presented below.

10.1.1 Public Health and Safety

Ability of Alternative to comply with Ontario Drinking Water Standards, MECP issued license and permit for Water Works.

Continued population growth in Chesley and Paisley would ultimately lead to Alternative No. 1 resulting in non-compliance with MECP issued license and permits, as water demands will exceed water supply permitted. Alternatives 4 would allow for continued growth while complying with ODWS, license and permit..

10.1.2 Natural Environmental Considerations

Potential effects to the natural environment: effect on air, land, water and biota considerations or constraints (where applicable).

Potential impact on air, land, biota is minimal to non-existent. However, there will be potential impact on aquifer supplying water to the well. Indiscriminate withdrawal can deplete aquifer faster than it can recuperate. However, detailed hydrogeological studies and investigations, and review and approval by MECP will eliminate/minimize such impact.

Alternative 4 may have an impact but it is manageable.

10.1.3 Social/Cultural Considerations

Conformity with local, county and provincial planning policies and guidelines.

Alternative No. 1 is incompatible with Arran-Elderslie and Bruce County Official Plans and policies as well as Provincial Policy Statement requirements. Alternative No. 4 conforms with Arran-Elderslie and Bruce County Official Plan goals and policies as well as the Provincial Policy Statement requirements.

Table 10.1: Evaluation of Alternative Solutions (Public Health Natural Environment, Social/Cultural/Legal)

Shortlist Alternative Solutions	Public Health and Safety	Natural Environment	Evaluation Summary
	Ability to comply with ODWO, License & Permits	Potential Effects on Natural Environment	Least Preferred ● ↓ ● Most Preferred ●
Alternative 1 Do nothing	• Noncomp-liance if growth continues	• None	●
Alternative 4 Construct New Groundwater Supply in Currently Utilized Aquifer(s) & continued to Use Existing Water Treatment Plant	• Can comply with Ontario Drinking Water Standards	• Impact on Aquifer, but per Provincial Approval	●
	Conformity with local, county, provincial planning policies & guidelines	Potential land use impacts & cultural/heritage/agricultural resources	
Alternative 1 Do Nothing	Incompatible with: * Municipal goals and * Provincial policies		●
Alternative 4 Construct New Groundwater Supply in Currently Utilized Aquifer(s) & continued to Use Existing Water Treatment Plant	Will Meet: * Provincial Policies * MECP License & Permit	* Private wells interference	●

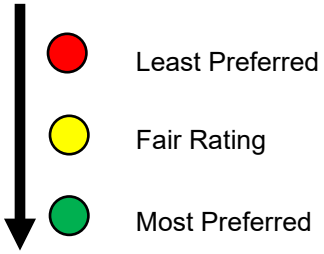


Table 10.2: Evaluation of Alternative Solutions: (Technical, Economical/ Financial)

Shortlist Alternative Solution	Technical			Evaluation Summary
	Capability, Reliability, Flexibility	Implementation and Operability	Construction Issues and Approvals	
Alternative 1 Do Nothing	• Cannot meet capacity requirements	* None	* No construction impact	
Alternative 4 Construct New Groundwater Supply in Currently Utilized Aquifer(s) & continued to Use Existing Water Treatment Plant	* Will meet capacity requirements * Higher level of redundancy	* Utilizes existing infrastructure * Plant operation will not change	* Construction impact limited to site * Some traffic impact * Construction impact minimal (with proper mitigation measures * Approvals under AE control	

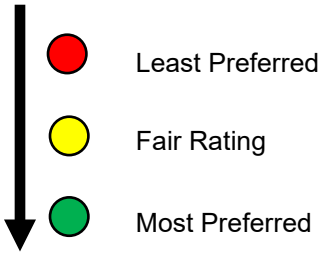
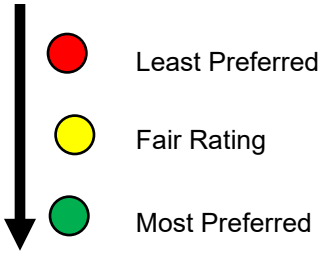


Table 10.3: Evaluation Summary

Shortlist Alternative Solutions	Public Health and Safety and Natural Environment	Social/Cultural Legal Jurisdiction	Technical	Overall
Alternative 1				
Alternative 4				



10.1.4 Legal/Jurisdictional Considerations

Potential land use impacts including compatibility with surrounding land uses as well as cultural/heritage/agricultural resources.

Alternatives No. 4 achieves conformity with Provincial Planning policies, guidelines and MECP issued License & Permit requirements. Land impact will be negligible and can be mitigated by appropriate construction practices. Alternative No. 4 requires consultation with the First Nations communities.

10.1.5 Technical Considerations

Capability, Reliability, Flexibility

Alternative No. 1 cannot meet current water works rated capacity requirements; while Alternative No. 4 meets the capacity requirements and will utilize proven technology and provide redundancy as needed, which is anticipated to be better than Well CPW #1.

Implementation and Operability

Alternatives No. 1 and 4 will utilize the existing water treatment facility/infrastructure, treated water conveyance and water distribution system. Construction of replacement well to Well CPW #1 will not lead to any significant changes in operability of the water works.

Construction Issues and Impacts

Construction related impacts for Alternative No. 4 is limited to on-site impacts only. Alternative No. 4 will have minimal traffic impact in the town during construction of well and raw watermain.

Construction issues and impacts for Alternative No. 4 is typical and minimal. No specific mitigation measures are needed during evaluation of design concepts, development of Contract Documents and appropriate construction techniques.

Approval, Implementation Requirements

To implement Alternative No. 1, a development freeze would be required. License & Permit requirements for Alternative No. 4 would be limited to obtaining review and approval by MECP. Implementation impact for Alternatives No. 4 will be manageable.

Alternative No. 4 has no additional property or easement requirements, as the municipality already owns the land at the proposed well site.

Alternative No. 4 will allow approvals to remain completely under the control of the Municipality.

10.1.6 Economic/Financial Considerations

Lifecycle Costs

Alternative No. 1 would cost the least as there will be no capital expense. However, as demonstrated previously, it would not allow for planned community growth. As such, the cost of restricting community development cannot be justified.

Alternative No. 4 will have costs associated with construction of test well and production well, well testing, hydrogeological investigation and study report, construction of well and associated raw watermain to the existing Water Treatment Plant building. The plant will have reduced O & M cost as iron bacteria related maintenance cost will be eliminated.

11 PRELIMINARY RECOMMENDED ALTERNATIVE

Based on the above evaluation, Alternative No. 4, which requires construction of new Well CPW #4 at the Community Park site is the recommended alternative to address the problem statement presented in Section 1.2.

12 RECOMMENDED MITIGATIVE MEASURES

It is recognized that construction and operation of the proposed well and the associated raw water main may have potential negative impacts on the environment and local residents. To understand the net effect of construction and operation, a cursory assessment of the impacts and the mitigation measure to mitigate or negate these potential negative impacts has been prepared and is discussed in the following section. It is important to note that for this Municipal Class EA, potential impacts related to the construction of the new well are limited and short term.

Based on the evaluation of potential effects, the new well construction project is not expected to create any significant environmental impacts. However, a number of mitigate measures are recommended to ensure that any disturbances are managed by the best available methods.

12.1 Construction Related Impacts

Impacts related to construction of the proposed well and associated raw watermain are short-term and minor. By incorporating proper construction techniques and controls, these impacts can be minimized. Anticipated construction related impacts are summarized below along with the associated mitigation measures. It is recommended that these mitigating measures be employed as required.

Table 12.1 Mitigate Measures

Potential Impact	Mitigation Measures
NATURAL ENVIRONMENT	
Vegetation	• Removal of vegetation will not occur in the preferred design concept; • Restore any disturbed areas to natural or better conditions
Contamination of Soils Through Spills and Leaks	• This can be avoided by ensuring that fuel storage, refueling and maintenance of construction equipment are handled properly and not allowed in or adjacent to watercourses; and • Contingency plans must be prepared before projects begin for the control and cleanup of a spill if one should occur.
SOCIO ECONOMIC ENVIRONMENT	
Noise, Vibration and Dust	• Construction operations will be restricted to the day shift except a 24 to 72 pumping test. The contractor will be required to adhere to local noise bylaws; • Dust control, if required, by spraying water

Potential Impact	Mitigation Measures
Traffic	• Develop traffic plan for deliveries; • Make contractor responsible to maintain road conditions.
Public Communications	• Develop communications plan so that the public is aware of activities and planned work.
Private Wells Affected by Long-Term Drawdown	• In consultation with private well owners (already completed), make improvements to well-head and provide new well pumps at deeper depths to ensure aquifer drawdown does not affect their well water supplies.

13 FIRST NATIONS CONSULTATION

The proponent undertook a consultation with the following:

- Saugeen Ojibway Nation (SON)
- Historic Saugeen Metis (HSM)
- Great Lakes Metis Council (GLMC)

A preliminary project information letter was provided to all the First Nations. HSM responded to the letter and indicated that they have no comments or concerns.

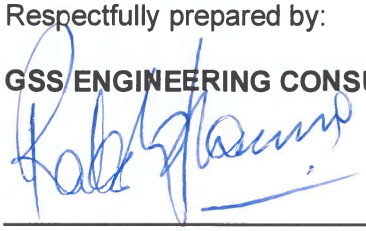
14 RECOMMENDATIONS

It is recommended that following the EA Approval process, the following are undertaken:

- An application for PTTW is submitted to MECP and the permit is obtained.
- Following PTTW, owner should submit the application to the MECP Approval Branch for license and permits amendment.
- The raw watermain from new well CPW #4 should be constructed and connected to existing WTP building. The existing water treatment plant is to be utilized to provide necessary treatment.
- Following commissioning of new well CPW #4, existing well CPW #1 should be decommissioned in accordance with O.Reg 903.

Respectfully prepared by:

GSS ENGINEERING CONSULTANTS LTD.



Rakesh Sharma, P Eng., Secretary-Treasurer
Designated Consulting Engineer

RS/mg

APPENDIX A

Publications/Notices Issued

GSS ENGINEERING CONSULTANTS LTD

PUBLIC NOTICE

Schedule B EA (Phase 1 and 2) for
New Water Supply Well for Arran-Elderslie Water Works
Municipality of Arran-Elderslie
(23-012)

Background

The Municipality of Arran-Elderslie has Arran-Elderslie Water Works that is located in Chesley and provide potable water supply to Chesley & Paisley communities. The water works receives raw water supply from three (3) drilled wells, namely CPW 1, CPW 2 and CPW 3 which are located in Community Park of Chesley. CPW 1 and CPW 2 obtain the raw water supply from one aquifer whereas CPW 3 obtain water supply from a different aquifer. CPW 1 well got contaminated with iron bacteria and has been remediated several times by hiring specialized contractor to restore the water supply in this well. The restoration cost is rising and the frequency for remedial work is increasing, thereby forcing the Municipality to look for an alternative source of water supply.

Generally, well CPW 3 provides comparatively better water supply than CPW 1 and CPW 2. Accordingly, if Arran-Elderslie were to replace the CPW 1 with a new well, it would be better to obtain it from aquifer supplying water to CPW 3 well.

Problem Statement

Arran-Elderslie must replace raw water supplied form Well CPW 1 with an equivalent raw water supply. The new water supply source could be either a new drilled well in the same aquifer or a different aquifer. It can also be an additional water supply from existing well(s) or even a different water supply source such as a river, pond or lake.

Alternatives

Several alternative solutions are available to replace the water supply of well CPW 1. A brief description of each viable alternative and applicable comments are provided in **Table 1** and screening of alternatives is provided in **Table 2**.

Public Input

Arran-Elderslie has prepared this EA document that outlines the problem statement, list of alternatives and their brief details, that are being pursued to upgrade Water Work. Screening of Alternative Solutions is also provided in this document, based on which a Preliminary Recommended Alternative Solution(s) have been identified. Comments from all property owners and stakeholders is being requested.

It may be noted that Arran-Elderslie shall conduct a Public Meeting after completion of Preliminary Recommended Alternative Solution(s).

Please review documentation including Comment Sheet on Arran-Elderslie website at www.arran-elderslie.ca. Provide your comments on the comment sheet and send it to undersigned on June 16, 2023.

Issued on: June 2, 2023

Municipality of Arran-Elderslie
Scott McLeod, Public Works Manager
1925 Bruce Rd 10, Box 70
Chesley, ON N0G 1L0

GSS Engineering Consultants Ltd.
Rakesh Sharma, P. Eng.
Suite 230 945 3rd Avenue East
Owen Sound, ON N4K 2K8

Public Input for
Schedule B EA
for Construction of Replacement Well
Municipality of Arran-Elderslie

June 2, 2023 23-012

Comment Sheet

Background

The Municipality of Arran-Elderslie, Arran-Elderslie needs to replace existing well CPW 1 with a new well to maintain water supplies in sufficient quantity and obtain Province's License and Permit for Water Works. The Municipality is obligated to search for methods to replace the well with an equivalent capacity well in order that the water works can continue to supply potable water meeting Ontario Drinking Water Standards to water consumers.

Question and Comments

Question 1 Do you agree that this project is needed? Please indicate why or why not?

Question 2 Construction and testing of a new ground water supply well (Alternative #4) and hydrogeological assessment of existing wells (Alternative #3) has been identified as the **Preliminary Recommended Alternative Solution**. Do you agree with this solution? Is there any other information that should be considered?

Question 3 Is there any other information or comment that you would like to provide or be considered in the EA process?

_____

_____

_____

_____

Question 4 You are: (check all those that apply):

___Resident or Business Owner of Arran-Elderslie (please specify Town/village)_____.

___Member of an Interest group (Please specify)_____.

___Agency Representative (Please specify)_____.

___Other (Please specify)_____.

Thank you for participating in this study.

Please return this completed Comment Sheet to Municipal Office to the attention of Mr. Scott McLeod by **June 16, 2023**.

Municipality of Arran-Elderslie
Scott McLeod, Public Works Manager
1925 Bruce Rd 10, Box 70
Chesley, ON N0G 1L0

GSS Engineering Consultants Ltd.
Rakesh Sharma, P. Eng.
Suite 230 945 3rd Avenue East
Owen Sound, ON N4K 2K8

NOTICE OF PUBLIC MEETING

Arran-Elderslie Water Works, Arran-Elderslie

Municipal Class Environmental Assessment

THE STUDY

The Municipality of Arran-Elderslie is completing a Municipal Class Environmental Assessment (Class EA) that will address need for replacement of existing water supply Well CPW #1 with a new well.

THE PROCESS

The study is being conducted in accordance with the requirements as described in the Municipal Engineers Association's "Municipal Class Environmental Assessment" document. The Class EA process includes public and review agency consultation, an evaluation of alternatives and design concepts, an assessment of the impacts of the proposed improvements, and identification of measures to mitigate any adverse impacts.

PUBLIC INFORMATION CENTRE

As part of the study, a public meeting is being held to provide background information on the study and various alternatives considered, including a comparative analysis of those alternatives. Representatives from the Municipality and its consultants, GSS Engineering Consultants Ltd and R.J. Burnside Ltd. will be present at the meeting to answer questions and discuss the next steps in the study. The meeting is scheduled for:

Date: Thursday, May 2, 2024

Time: 7:00 p.m.

Location: Chesley Community Centre

You are encouraged to attend the meeting and provide your comments so that they may be included in the study. Comments received through the course of the study will be considered in finalizing the recommended solution as well as mitigation measures. Comments and information regarding this project will be collected in accordance with the municipal *Freedom of Information and Protections of Privacy Act* for the purpose of meeting environmental assessment requirements.

Upon completion of the study, an Environmental Study Report (ESR) documenting the planning process followed and will be made available for public review for a period of 30 calendar days. The public will be notified of the date, time and location of the filing of the ESR at the appropriate time through similar newspaper notices and flyer mailing.

Scott McLeod, Public Works Manager
The Municipality of Arran-Elderslie
1925 Bruce Road #10, P.O. Box 70
Chesley, Ontario N0G 1L0
smcLeod@arran-elderslie.ca

Rakesh Sharma P. Eng.
GSS Engineering Consultants Ltd.
Suite 230, 945 3rd Ave. E.
Owen Sound, ON N4K 2K8
rakeshsharma@gssengineering.ca

Public Meeting for Class Environmental Assessment Study for
the Construction of New Well CPW #4

Thursday, May 2, 2024 – Chesley Community Centre

Sign In Sheet

Name	Address	Signature
Peter Steinacker	85 River St Tara	
Maiken Penner	149 Arnaud St.	
Darryl Hampton	42, 3rd St. NW	
Sylvia Kirkwood	758 Bline, Dobbinton	
Chris Legge	72 concession 8	
Scott McLeod	649 Bruce Rd 17	

APPENDIX B

Review Agency Contact List and

Project Information Letter Issued

Agency Contact List

23-012

1	Ministry of the Environment, Conservation and Parks Owen Sound District Office 101 17th St. East Owen Sound, ON N4K 0A5 Tel: 519-371-2901 Fax: 519-371-2905	John Ritchie Director john.s.ritchie@ontario.ca
2	Ministry of Natural Resources and Forestry, Owen Sound District Office 1450 7th Ave East Owen Sound, ON N4K 2Z1 Tel: 519-376-3860	John Almond District Manager john.almond@ontario.ca
3	Ministry of Transportation, Owen Sound District Office 1450 7th Ave East Owen Sound, ON N4K 2Z1 Tel: 519-376-7350	Fred Hemstock Contract Services Administrator fred.hemstock@ontario.ca
4	Ministry of Citzenship and Multiculturalism, Citizenship Inclusion and Heritage Division, 5th Floor, 400 University Ave. Toronto, ON M7A 2R9 Tel: 613-242-3743	Joseph Harvey Heritage Planner Joseph.Harvey@ontario.ca
5	Ministry of Citizenship and Multiculturalism, Heritage Planning Branch 5th Floor, 400 University Ave. Toronto, ON M7A 2R9 Tel: 416-660-1027	Karla Barboza Team Lead Karla.Barboza@ontario.ca
6	Ministry of Agriculture, Food and Agribusiness Environmental Management Branch 3rd Floor, 1 Stone Road West Guelph, ON N1G 4Y2 Tel: 1-888-466-2372 ext 63325	Cale Selby Director cale.selby@ontario.ca

7	Fisheries and Oceans Canada, District Office 520 Exmouth St. Sarnia, ON N7T 8B1 Tel: 519-383-1809	To Whom it May Concern info@dfo-mpo.gc.ca
8	The County of Bruce 30 Park Street Walkerton, ON N0G 2V0 Tel: 519-881-1291	Department of Planning and Development bcplwa@brucecounty.on.ca
9	Niagara Escarpment Commission, Owen Sound Office 1450 7th Ave. Owen Sound, ON N4K 2Z1 Tel: 519-371-1001	Laurie Golden Municipal Representative – Bruce County nec@ontario.ca
10	Saugeen Valley Conservation Authority 1078 Bruce Rd. #12, Formosa, ON N0G 1W0 Tel: 519-362-1255	Erik Downing Manager, Environmental Planning and Regulations e.downing@svca.on.ca
11	Grey Sauble Conservation Authority 237897 Inglis Falls Rd., Owen Sound, ON N4K 5N6 Tel: 519-376-3076	MacLean Plewes Manager of Environmental Planning m.plewes@greysauble.on.ca
12	Saugeen Ojibway Nation, Environment Office 10129 Highway 6 Georgian Bluffs, ON N0H 2T0 Tel: 519-534-5507	Charlene Leonard Resources & Infrastructure Manager Manager.ri@saugeenojibwaynation.ca
13	Historic Saugeen Métis 204 High St. Southampton, ON N0H 2L0 Tel: 519-483-4000	To Whom it May Concern saugeenmetis@bmts.com

14	Great Lakes Métis Council Tel: 519-370-0435	Peter Coture President Peterc1908@hotmail.com
15	Grey Bruce Public Health 101 17th St. East Owen Sound, ON N4K 0A5 Tel: 519-376-9420	To Whom it May Concern publichealth@publichealthgreybruce.on.ca
16	Ministry of Municipal Affairs and Housing 2nd Floor, 659 Exeter Rd. London, ON N6E 1L3 Tel: 519-873-4020	Dianne Gould-Brown, Municipal Advisor dianne.gould-brown@ontario.ca Jane Parnell, Municipal Advisor jane.parnell@ontario.ca Reed Waldick, Municipal Advisor reed.waldick@ontario.ca Sebastien Haley, Municipal Advisor sebastien.haley@ontario.ca

GSS ENGINEERING CONSULTANTS LTD

Similar Letter Issued to all Agencies

July 18, 2024

23-012

The County of Bruce – Department of Planning and Development
30 Park St.
Walkerton, Ontario
N0G 2V0

To Whom it May Concern,

We are writing this letter to inform you that the Municipality of Arran-Elderslie initiated a Schedule B Class Environmental Assessment for the review of alternatives to replace the existing municipal well CPW #1 in Chesley with a new well.

The Chesley water works draws water from three wells (CPW 1-3). CPW #1 supplies 1,800 m^3/day. The location of all three (3) wells is indicated in the attached Figure #1.

CPW #1 is experiencing significant iron bacteria formation that has clogged the well screen. This has led to a significant reduction in water supply from CPW #1. Methods to control the iron bacteria have become expensive and largely ineffective. The loss of water supply from CPW #1 results in loss of redundancy for the Chesley water works and is a serious issue. The Municipality therefore must proceed to reinstate the water supply lost from CPW #1.

As part of the EA process the following alternatives were explored:

Alternative 1	Do Nothing;
Alternative 2	Decommission CPW 1;
Alternative 3	Increased Water Supply from Existing Well(s);
Alternative 4	Construct New Groundwater Supply Source in Currently Utilized Aquifer(s) and Continue to Use Existing Water Treatment Plant. PREFERRED;
Alternative 5	Construct New Water Supply Well in a Different Aquifer;

Alternative 6	Construct New Surface Water Supply Source Intake and Associated Treatment Plant; and
Alternative 7	Treated Water Supply from Another Water Work in Arran-Elderslie or Adjacent Municipality.

Alternative 4 is the preferred alternative as determined from two public consultations. This alternative is to construct a new ground water supply source well (CPW #4).

In 2022 a test well (TW #1) was drilled east of CPW #3, however, it was considered unsuitable due to low capacity. A second test well (TW #2) was drilled between CPW #3 and TW #1 which will draw water from the same aquifer as CPW #3. It has been determined to be a suitable location for a new municipal well. Therefore, construction of a new well (CPW #4) at the location of TW #2 is the preferred alternative. After the construction of CPW #4 in place of TW #2, CPW #1 shall be decommissioned after a PTTW and approval from MECP's Approval Branch is obtained.

It may be noted that per investigations completed to date, the new well shall potentially impact a few nearly private wells where well pumps shall have to be lowered to deeper depth. Those well owners have been contacted by Arran-Elderslie, and their wells shall be improved at municipal expense.

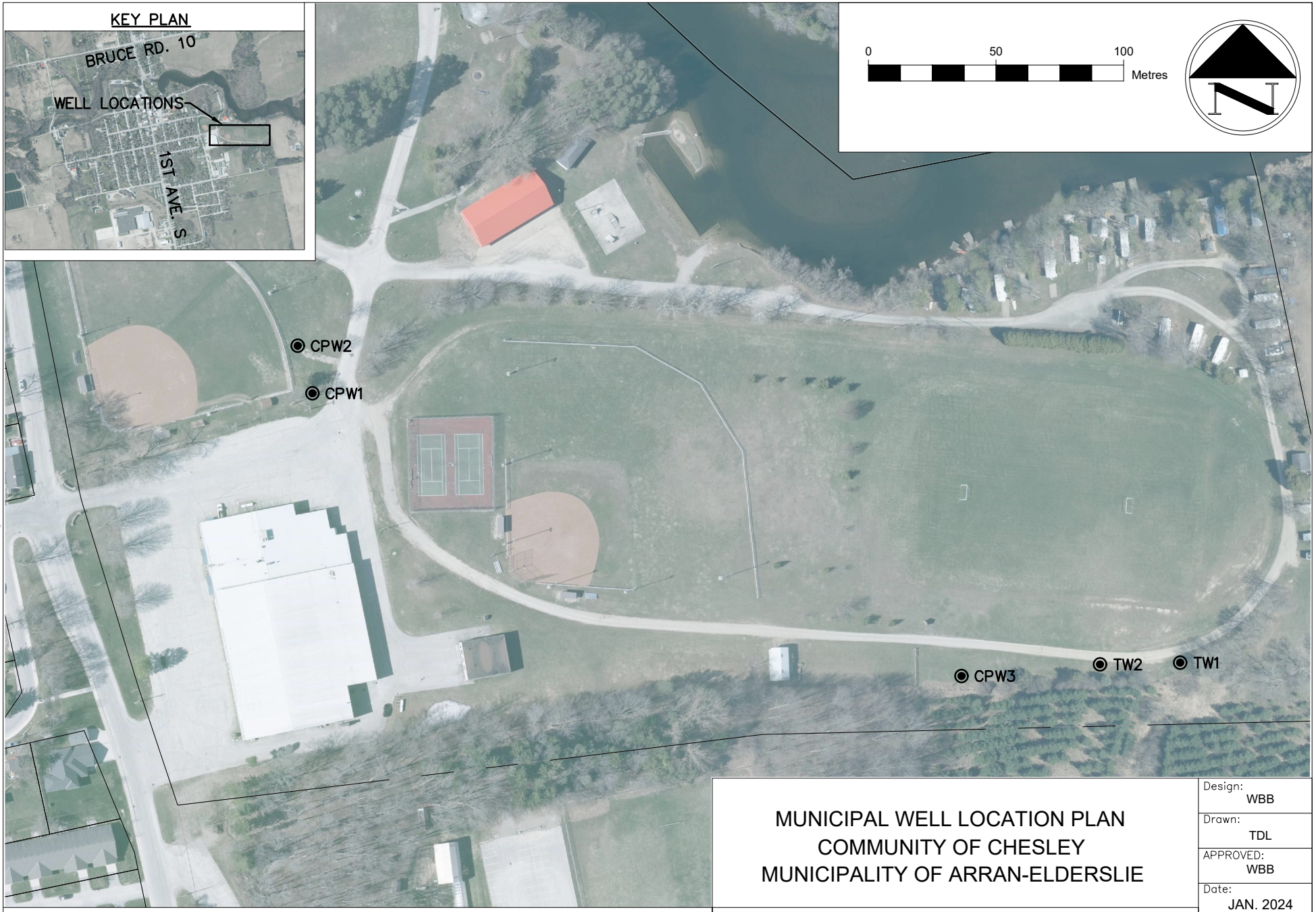
By way of this letter, on behalf of the Municipality, we request you to inform us if your office has any concerns or requirements that must be addressed through the EA process for construction of a new water supply well to replace CPW #1 for the Chesley water works.

Yours sincerely,

Rakesh Sharma, MASc., Eng., P. Eng.,
GSS Engineering Consultants Ltd.

RS/JB

cc Scott McLeod, Manager of Public Works, Arran-Elderslie



July 16, 2024 10:37:46 AM

MUNICIPAL WELL LOCATION PLAN
COMMUNITY OF CHESLEY
MUNICIPALITY OF ARRAN-ELDERSLIE

Design:	WBB
Drawn:	TDL
APPROVED:	WBB
Date:	JAN. 2024
Scale:	1:2000
FILE No.	23-012
FIG. No.	1

GSS ENGINEERING CONSULTANTS LTD

REFERENCES:
BRUCE COUNTY PARCEL MAPPING
BRUCE COUNTY MAPS IMAGE (2020)

\\GSS_Common\GSS Common\GSS Common\2023\23-012 - Schedule B EA - Arran-Elderslie WW\Drawings\23-012.dwg Jul 16, 2024 - 10:37am

APPENDIX C

Summary of Responses from Agencies

From: Harvey, Joseph (MCM)
To: Jacob Bartley
Cc: Nancy Cluthe
Subject: FW: File 0022161: Letter of Initiation for a Schedule B EA for Chesley Water Works (23-012)
Date: Monday, August 12, 2024 2:51:25 PM
Attachments: image002.jpg
image001.png
MCM Heritage Planning Branch - Karla Barboza.pdf
2024-08-12_ChelseyWW-MCM-Ltr.pdf

Jacob Bartley,

Please find attached our initial advice on the above referenced undertaking.

Please remove Lorraine Dooley from circulation and continue to send any notices, report and/or documentation to both Karla Barboza and myself.

Please do not hesitate to contact me with any questions or concerns.

Regards,

Joseph Harvey
Heritage Planner | Heritage Branch | Citizenship Inclusion and Heritage Division
Ministry of Citizenship and Multiculturalism | Ontario Public Service
613.242.3743 | Joseph.Harvey@ontario.ca

From: Nancy Cluthe <nancycluthe@gssengineering.ca>
Sent: Friday, July 19, 2024 9:48 AM
To: Barboza, Karla (She/Her) (MCM) <Karla.Barboza@ontario.ca>
Subject: Letter of Initiation for a Schedule B EA for Chesley Water Works (23-012)

Good Morning,

In regard to the above Schedule B EA, please find attached our Letter of Initiation.

If you have any questions, please contact Jacob Bartley at jacobbartley@gssengineering.ca.

Thank you

Nancy Cluthé | *Senior Administrative Assistant*
GSS Engineering Consultants Ltd.
Suite 230, 945 3rd Avenue East
Owen Sound, ON N4K 2K8
Tel: 519-372-4828 Ext. 101 | nancycluthe@gssengineering.ca
http://www.gssengineering.ca/

Ministry of Citizenship and Multiculturalism

Heritage Planning Unit
Heritage Branch
Citizenship, Inclusion and Heritage Division
5th Flr, 400 University Ave
Tel.: 613.242.3743

Ministère des Affaires civiques et du Multiculturalisme

Unité de la planification relative au patrimoine
Direction du patrimoine
Division des affaires civiques, de l'inclusion et du patrimoine
Tél.: 613.242.3743

August 12, 2024 EMAIL ONLY

Jacob Bartley
Project Consultant
GSS Engineering Consultants Ltd
Suite 230, 945 3rd Avenue East
Owen Sound, ON N4K 2K8
jacobbartley@gssengineering.ca.

MCM File	**:**	**0022161**
Proponent	**:**	**Municipality of Arran-Elderslie**
Subject	**:**	**Municipal Class Environmental Assessment – Schedule B - Notice of Commencement**
Project	**:**	**Chesley Water Works**
Location	**:**	**Municipality of Arran-Elderslie**

Dear Jacob Bartley:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Commencement for the above-referenced project.

Please note that the responsibility for administration of the *Ontario Heritage Act* and matters related to cultural heritage recently transferred from the Ministry of Tourism, Culture and Sport (MTCS) to the Ministry of Citizenship and Multiculturalism (MCM). Individual staff roles and contact information remain unchanged. Please continue to send any notices, report and/or documentation to both Karla Barboza and [Insert planner name].

MCM's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- archaeological resources, including land and marine;
- built heritage resources, including bridges and monuments; and
- cultural heritage landscapes.

Under the EA process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources.

Project Summary
The Municipality of Arran-Elderslie initiated a Schedule B Class Environmental Assessment for the review of alternatives to replace the existing municipal well CPW #1 in Chesley with a new well.

Identifying Cultural Heritage Resources
While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation.

Archaeological Resources
This EA project may impact archaeological resources and should be screened using the Ministry's *Criteria for Evaluating Archaeological Potential* and *Criteria for Evaluating Marine Archaeological Potential* to determine if an archaeological assessment is needed. MCM archaeological sites data are available at *archaeology@ontario.ca*.

If the EA project area exhibits archaeological potential, then an archaeological assessment (AA) shall be undertaken by an archaeologist licenced under the *Ontario Heritage Act (OHA)*, who is responsible for submitting the report directly to MCM for review.

Built Heritage Resources and Cultural Heritage Landscapes
The Ministry's *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* should be completed to help determine whether this EA project may impact built heritage resources and/or cultural heritage landscapes.

If there is potential for built heritage resources and/or cultural heritage landscapes on the property or within the project area, a Cultural Heritage Evaluation Report (CHER) should be undertaken by a qualified person to determine the cultural heritage value or interest of the property (or project area). If the property (or project area) is determined to be of cultural heritage value or interest and alterations or development is proposed, MCM recommends that a Heritage Impact Assessment (HIA), prepared by a qualified consultant, be completed to assess potential project impacts. Please send the HIA to MCM (and Municipality of Arran-Elderslie) for review and comment and make it available to local organizations or individuals who have expressed interest in review.

Community input should be sought to identify locally recognized and potential cultural heritage resources. Sources include, but are not limited to, municipal heritage committees, historical societies and other local heritage organizations.

Cultural heritage resources are often of critical importance to Indigenous communities. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to them.

Environmental Assessment Reporting
All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. Please advise MCM whether any technical cultural heritage studies will be completed for this EA project and provide them to MCM before issuing a Notice of Completion or commencing any work on the site. If screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file.

Please remove Lorraine Dooley from circulation and continue to send any notices, report and/or documentation to both Karla Barboza and myself.

- Karla Barboza, Team Lead - Heritage | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-660-1027 | karla.barboza@ontario.ca
- Joseph Harvey, Heritage Planner | Heritage Planning Unit (Citizenship and Multiculturalism) | 613-242-3743 | joseph.harvey@ontario.ca

Thank you for consulting MCM on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, please do not hesitate to contact me.

Joseph Harvey
Heritage Planner
joseph.harvey@Ontario.ca

Copied to: Nancy Cluthé, Senior Administrative Assistant, GSS Engineering Consultants Ltd.

From: Gordon, Alison (MNR)
To: Jacob Bartley
Subject: RE: Letter of Initiation for a Schedule B EA for Chesley Water Works (July 22, 2024)
Date: Monday, July 22, 2024 10:12:45 AM
Attachments: image002.jpg
image003.jpg
MNRF Owen Sound Office - John Almond.pdf
2024-07-22_MNRF_Response.pdf

Good morning Jacob,

I hope you're well. The Ministry of Natural Resources (MNR) received your Letter of Initiation on July 18, 2024. Thank you for circulating this to our office. Please note that we have not competed a screening of natural heritage or other resource values for the project at this time. This response, however, does provide information (attached) to guide you in identifying and assessing natural features and resources as required by applicable policies and legislation, as well as engaging with the Ministry for advice as needed.

Thank you,

Alison Gordon (She/Her)
Regional Planner | Land Use Planning and Strategic Issues Section
Ministry of Natural Resources | Ontario Public Service
(289)380-0540 | alison.gordon@ontario.ca

Taking pride in strengthening Ontario, its places and its people

As part of providing accessible customer service, please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Nancy Cluthe <nancycluthe@gssengineering.ca>
Sent: Friday, July 19, 2024 9:23 AM
To: Almond, John (MNRF) <john.almond@ontario.ca>
Subject: Letter of Initiation for a Schedule B EA for Chesley Water Works (23-012)

Good Morning,

In regard to the above Schedule B EA, please find attached our Letter of Initiation.

If you have any questions, please contact Jacob Bartley at jacobbartley@gssengineering.ca.

Thank you

Nancy Cluthé | *Senior Administrative Assistant*
GSS Engineering Consultants Ltd.
Suite 230, 945 3rd Avenue East
Owen Sound, ON N4K 2K8
Tel: 519-372-4828 Ext. 101 | nancycluthe@gssengineering.ca
http://www.gssengineering.ca/

From: Michael Oberle
To: Jacob Bartley
Cc: Rakesh Sharma; Scott McLeod; Moiken Penner - Arran-Elderslie
Subject: SVCA comment-Schedule B EA for Chesley Water Works (23-012)
Date: Tuesday, July 30, 2024 12:46:46 PM
Attachments: image002.jpg
01a. SVCA - Erik Downing.pdf
SVCA Map - Municipality of Arran-Elderslie.pdf

Good afternoon Jacob Bartley,

This email is further to the email of below regarding the above referenced proposal (attached).

The proposed work area will include lands that are not within the SVCA's Approximate Screening Area/SVCA Approximate Regulated Area, based on SVCA mapping (attached for reference), therefore review/permit of the proposal is not required. The SVCA environmental planning and regulations department does not have the mandate or ability to provide meaningful assistance to this proposal for lands that are beyond/outside of the SVCA Approximate Screening Area. We thank you for circulating the SVCA on this proposal, and the SVCA looks forward to continue working together with our municipal partners, where required.

I trust that the above is helpful at this time. Any questions, please do not hesitate to ask.

As per SVCA practice I am copying on this email, the Arran-Elderslie Manager of Public Works, and the SVCA director who represents Arran-Elderslie.

Kind regards,
Mike
Michael Oberle
Environmental Planning Coordinator
Cell: 519-373-4175
1078 Bruce Road 12, PO Box 150, Formosa, ON N0G 1W0
m.oberle@svca.on.ca
www.saugeenconservation.ca

From: Nancy Cluthe <nancycluthe@gssengineering.ca>
Sent: Friday, July 19, 2024 11:39 AM
To: Erik Downing <E.Downing@SVCA.ON.CA>
Subject: Letter of Initiation for a Schedule B EA for Chesley Water Works (23-012)

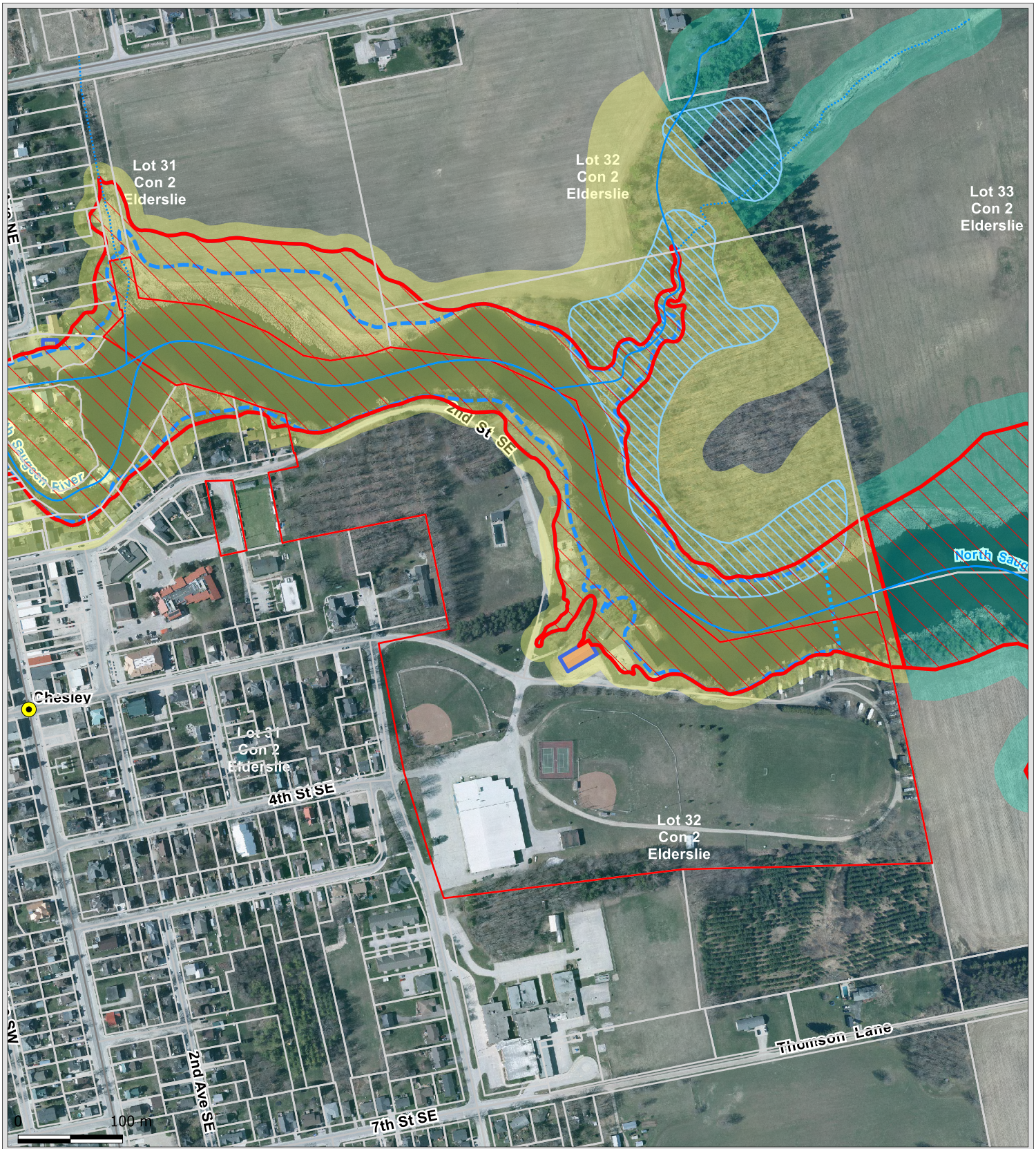
Good Morning,

In regard to the above Schedule B EA, please find attached our Letter of Initiation.

If you have any questions, please contact Jacob Bartley at jacobbartley@gssengineering.ca.

Thank you

Nancy Cluthé | *Senior Administrative Assistant*
GSS Engineering Consultants Ltd.
Suite 230, 945 3rd Avenue East
Owen Sound, ON N4K 2K8
Tel: 519-372-4828 Ext. 101 | nancycluthe@gssengineering.ca
http://www.gssengineering.ca/



The included mapping has been compiled from various sources and is for information purposes only. Saugeen Valley Conservation Authority (SVCA) is not responsible for, and cannot guarantee, the accuracy of all the information contained within the map.

This mapping contains products of the South Western Ontario Orthophotography Project 2020 (SWOOP2020). These images were taken in 2020 at 16cm resolution by Mapcon Mapping Ltd. They are the property of Saugeen Valley Conservation Authority ©2024.

July 26, 2024

N

UTM Zone 17N, NAD 83

1:5000

Legend

- 100 Year Flood line
- Watercourse
- Regulatory Flood Line
- Unevaluated Wetland
- Hazard Lands
- SVCA Regulated Area
- SVCA Screening Area

Municipality of Arran-Elderslie
129 4th Avenue SE
Roll No. 410339000205200
Park PT Lot A to Pt Lot D, Plan 149
Geographic Town of Chelsey
Municipality of Arran-Elderslie

Saugeen CONSERVATION

APPENDIX D

First Nation Consultation Documentation

GSS ENGINEERING CONSULTANTS LTD

July 18, 2024

23-012

Historic Saugeen Métis
204 High St.
Southhampton, Ontario
N0H 2L0

To Whom it May Concern,

We are writing this letter to inform you that the Municipality of Arran-Elderslie initiated a Schedule B Class Environmental Assessment for the review of alternatives to replace the existing municipal well CPW #1 in Chesley with a new well.

The Chesley water works draws water from three wells (CPW 1-3). CPW #1 supplies 1,800 m^3/day. The location of all three (3) wells is indicated in the attached Figure #1.

CPW #1 is experiencing significant iron bacteria formation that has clogged the well screen. This has led to a significant reduction in water supply from CPW #1. Methods to control the iron bacteria have become expensive and largely ineffective. The loss of water supply from CPW #1 results in loss of redundancy for the Chesley water works and is a serious issue. The Municipality therefore must proceed to reinstate the water supply lost from CPW #1.

As part of the EA process the following alternatives were explored:

Alternative 1	Do Nothing;
Alternative 2	Decommission CPW 1;
Alternative 3	Increased Water Supply from Existing Well(s);
Alternative 4	Construct New Groundwater Supply Source in Currently Utilized Aquifer(s) and Continue to Use Existing Water Treatment Plant. PREFERRED;
Alternative 5	Construct New Water Supply Well in a Different Aquifer;

Alternative 6	Construct New Surface Water Supply Source Intake and Associated Treatment Plant; and
Alternative 7	Treated Water Supply from Another Water Work in Arran-Elderslie or Adjacent Municipality.

Alternative 4 is the preferred alternative as determined from two public consultations. This alternative is to construct a new ground water supply source well (CPW #4).

In 2022 a test well (TW #1) was drilled east of CPW #3, however, it was considered unsuitable due to low capacity. A second test well (TW #2) was drilled between CPW #3 and TW #1 which will draw water from the same aquifer as CPW #3. It has been determined to be a suitable location for a new municipal well. Therefore, construction of a new well (CPW #4) at the location of TW #2 is the preferred alternative. After the construction of CPW #4 in place of TW #2, CPW #1 shall be decommissioned after a PTTW and approval from MECP's Approval Branch is obtained.

It may be noted that per investigations completed to date, the new well shall potentially impact a few nearly private wells where well pumps shall have to be lowered to deeper depth. Those well owners have been contacted by Arran-Elderslie, and their wells shall be improved at municipal expense.

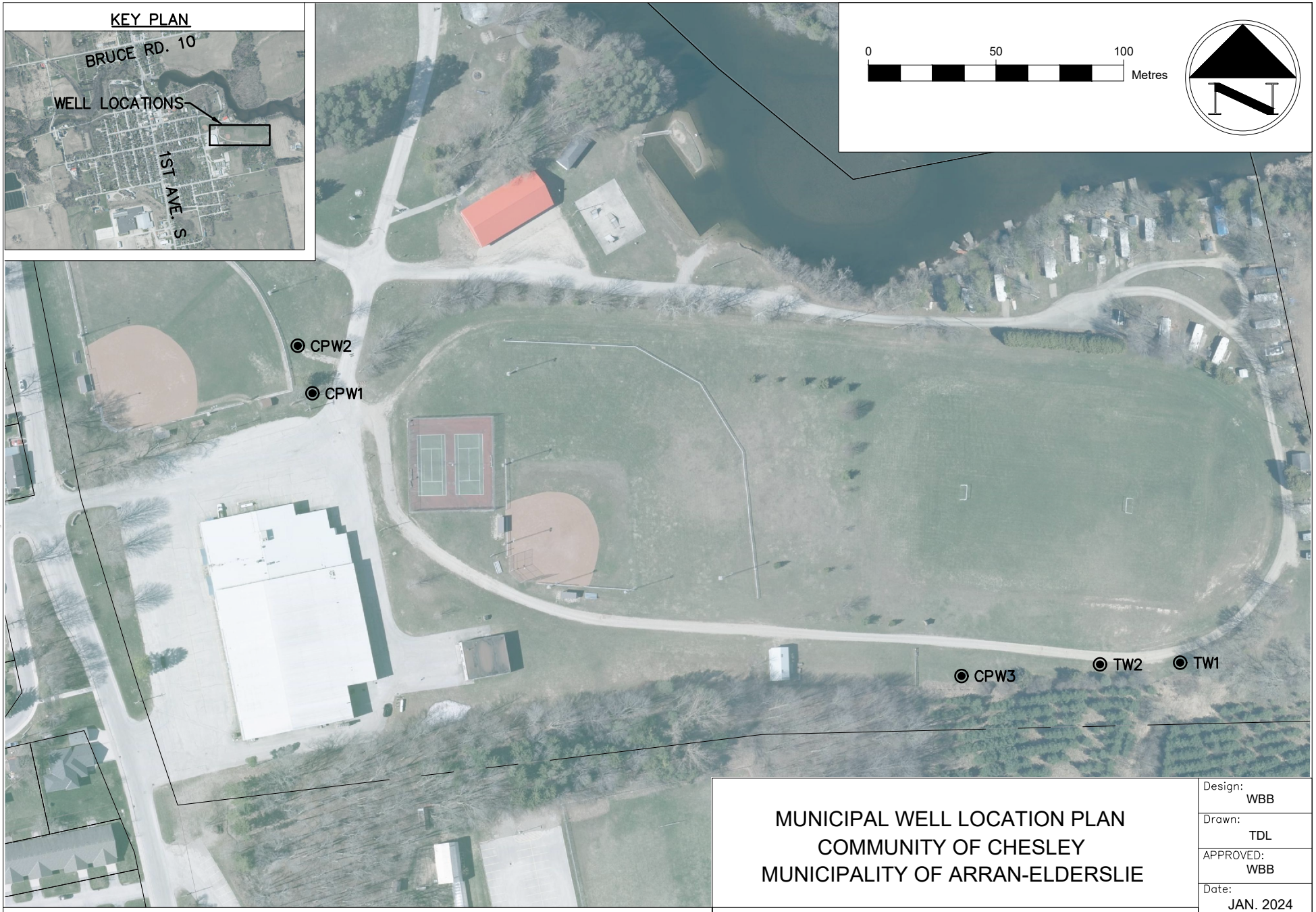
By way of this letter, on behalf of the Municipality, we request you to inform us if your office has any concerns or requirements that must be addressed through the EA process for construction of a new water supply well to replace CPW #1 for the Chesley water works.

Yours sincerely,

Rakesh Sharma, MASc., Eng., P. Eng.,
GSS Engineering Consultants Ltd.

RS/JB

cc Scott McLeod, Manager of Public Works, Arran-Elderslie



July 16, 2024 10:37:46 AM

MUNICIPAL WELL LOCATION PLAN
COMMUNITY OF CHESLEY
MUNICIPALITY OF ARRAN-ELDERSLIE

Design:	WBB
Drawn:	TDL
APPROVED:	WBB
Date:	JAN. 2024
Scale:	1:2000
FILE No.	23-012
FIG. No.	1

GSS ENGINEERING CONSULTANTS LTD

REFERENCES:
BRUCE COUNTY PARCEL MAPPING
BRUCE COUNTY MAPS IMAGE (2020)

\\GSS_Common\GSS Common\GSS Common\2023\23-012 - Schedule B EA - Arran-Elderslie WW\Drawings\23-012.dwg Jul 16, 2024 - 10:37am

From:	Coordinator LRC HSM
To:	Jacob Bartley
Subject:	Notice of Environmental Assessment Chesley Well Environmental Assessment
Date:	Monday, July 22, 2024 3:11:28 PM
Attachments:	PastedGraphic-5.png

Municipality of Arran-Elderslie

The Historic Saugeen Métis (HSM) Lands, Waters and Consultation Department has received your notice of Class B Environmental Assessment for the municipal well in Chesley. HSM does not have any comments or concerns at this time but wishes to remain informed with any updates as the assessment progresses.

Thank you for the opportunity to engage and consult on this project.

Regards,

Georgia Lumley

Coordinator, Lands, Waters & Consultation
Historic Saugeen Métis
204 High Street
Southampton, ON
saugeenmetis.com
519.483.4000

GSS ENGINEERING CONSULTANTS LTD

July 18, 2024 23-012

Saugeen Ojibway Nation – Environment Office
10129 Highway 6
Georgian Bluffs, Ontario
N0H 2T0

Attention: Charlene Leonard; Resources & Infrastructure Manager

Dear Ms. Leonard,

We are writing this letter to inform you that the Municipality of Arran-Elderslie initiated a Schedule B Class Environmental Assessment for the review of alternatives to replace the existing municipal well CPW #1 in Chesley with a new well.

The Chesley water works draws water from three wells (CPW 1-3). CPW #1 supplies 1,800 m^3/day. The location of all three (3) wells is indicated in the attached Figure #1.

CPW #1 is experiencing significant iron bacteria formation that has clogged the well screen. This has led to a significant reduction in water supply from CPW #1. Methods to control the iron bacteria have become expensive and largely ineffective. The loss of water supply from CPW #1 results in loss of redundancy for the Chesley water works and is a serious issue. The Municipality therefore must proceed to reinstate the water supply lost from CPW #1.

As part of the EA process the following alternatives were explored:

Alternative 1	Do Nothing;
Alternative 2	Decommission CPW 1;
Alternative 3	Increased Water Supply from Existing Well(s);
Alternative 4	Construct New Groundwater Supply Source in Currently Utilized Aquifer(s) and Continue to Use Existing Water Treatment Plant. PREFERRED;
Alternative 5	Construct New Water Supply Well in a Different Aquifer;

Alternative 6	Construct New Surface Water Supply Source Intake and Associated Treatment Plant; and
Alternative 7	Treated Water Supply from Another Water Work in Arran-Elderslie or Adjacent Municipality.

Alternative 4 is the preferred alternative as determined from two public consultations. This alternative is to construct a new ground water supply source well (CPW #4).

In 2022 a test well (TW #1) was drilled east of CPW #3, however, it was considered unsuitable due to low capacity. A second test well (TW #2) was drilled between CPW #3 and TW #1 which will draw water from the same aquifer as CPW #3. It has been determined to be a suitable location for a new municipal well. Therefore, construction of a new well (CPW #4) at the location of TW #2 is the preferred alternative. After the construction of CPW #4 in place of TW #2, CPW #1 shall be decommissioned after a PTTW and approval from MECP's Approval Branch is obtained.

It may be noted that per investigations completed to date, the new well shall potentially impact a few nearly private wells where well pumps shall have to be lowered to deeper depth. Those well owners have been contacted by Arran-Elderslie, and their wells shall be improved at municipal expense.

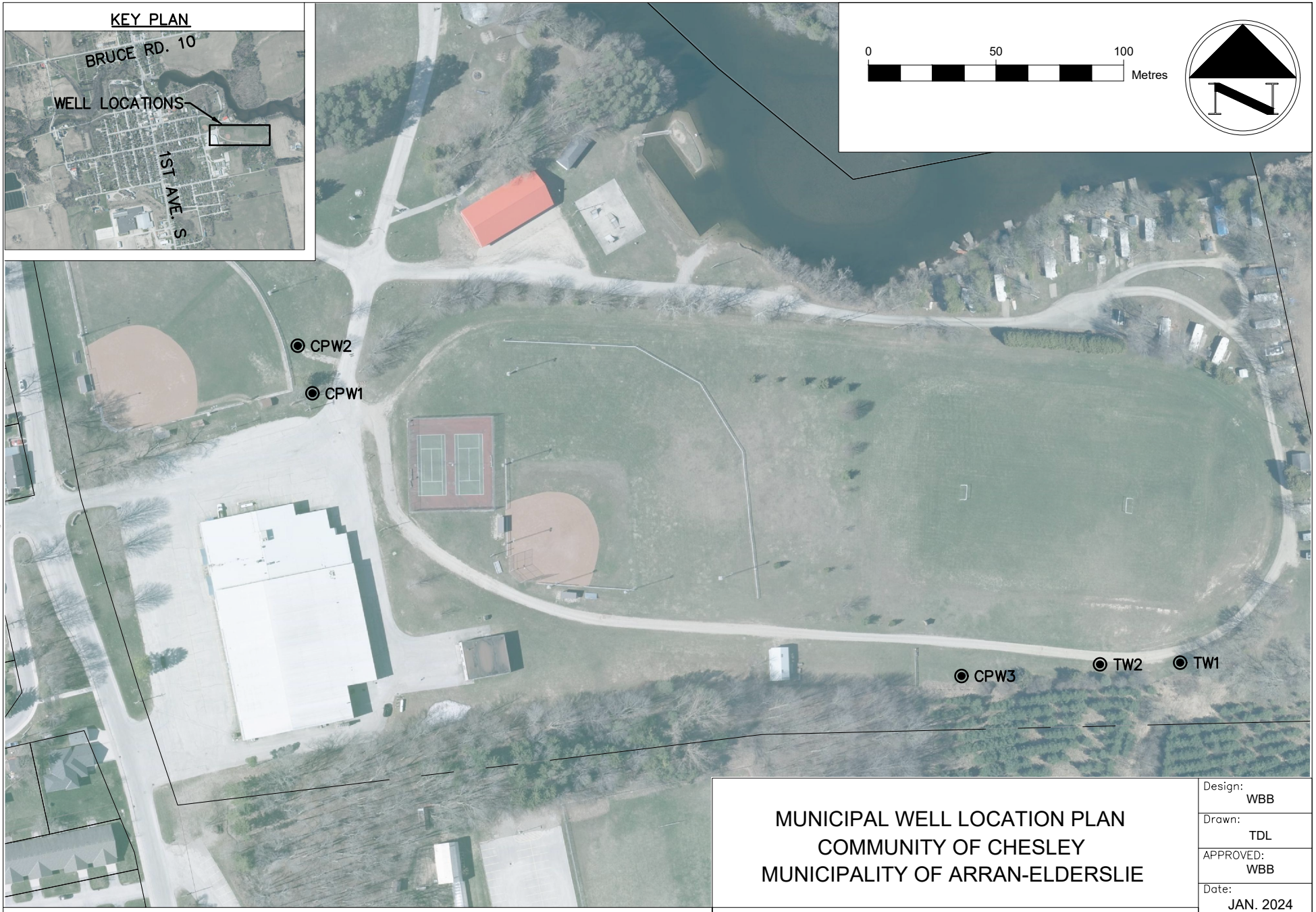
By way of this letter, on behalf of the Municipality, we request you to inform us if your office has any concerns or requirements that must be addressed through the EA process for construction of a new water supply well to replace CPW #1 for the Chesley water works.

Yours sincerely,

Rakesh Sharma, MASc., Eng., P. Eng.,
GSS Engineering Consultants Ltd.

RS/JB

cc Scott McLeod, Manager of Public Works, Arran-Elderslie



July 16, 2024 10:37:46 AM

MUNICIPAL WELL LOCATION PLAN
COMMUNITY OF CHESLEY
MUNICIPALITY OF ARRAN-ELDERSLIE

Design:	WBB
Drawn:	TDL
APPROVED:	WBB
Date:	JAN. 2024
Scale:	1:2000
FILE No.	23-012
FIG. No.	1

GSS ENGINEERING CONSULTANTS LTD

REFERENCES:
BRUCE COUNTY PARCEL MAPPING
BRUCE COUNTY MAPS IMAGE (2020)

\\GSS_Common\GSS Common\GSS Common\2023\23-012 - Schedule B EA - Arran-Elderslie WW\Drawings\23-012.dwg Jul 16, 2024 - 10:37am

GSS ENGINEERING CONSULTANTS LTD

July 18, 2024 23-012

Great Lakes Métis Council

Attention: Peter Coture: President

Dear Mr. Coture,

We are writing this letter to inform you that the Municipality of Arran-Elderslie initiated a Schedule B Class Environmental Assessment for the review of alternatives to replace the existing municipal well CPW #1 in Chesley with a new well.

The Chesley water works draws water from three wells (CPW 1-3). CPW #1 supplies 1,800 m^3/day. The location of all three (3) wells is indicated in the attached Figure #1.

CPW #1 is experiencing significant iron bacteria formation that has clogged the well screen. This has led to a significant reduction in water supply from CPW #1. Methods to control the iron bacteria have become expensive and largely ineffective. The loss of water supply from CPW #1 results in loss of redundancy for the Chesley water works and is a serious issue. The Municipality therefore must proceed to reinstate the water supply lost from CPW #1.

As part of the EA process the following alternatives were explored:

Alternative 1	Do Nothing;
Alternative 2	Decommission CPW 1;
Alternative 3	Increased Water Supply from Existing Well(s);
Alternative 4	Construct New Groundwater Supply Source in Currently Utilized Aquifer(s) and Continue to Use Existing Water Treatment Plant. PREFERRED;
Alternative 5	Construct New Water Supply Well in a Different Aquifer;

Alternative 6	Construct New Surface Water Supply Source Intake and Associated Treatment Plant; and
Alternative 7	Treated Water Supply from Another Water Work in Arran-Elderslie or Adjacent Municipality.

Alternative 4 is the preferred alternative as determined from two public consultations. This alternative is to construct a new ground water supply source well (CPW #4).

In 2022 a test well (TW #1) was drilled east of CPW #3, however, it was considered unsuitable due to low capacity. A second test well (TW #2) was drilled between CPW #3 and TW #1 which will draw water from the same aquifer as CPW #3. It has been determined to be a suitable location for a new municipal well. Therefore, construction of a new well (CPW #4) at the location of TW #2 is the preferred alternative. After the construction of CPW #4 in place of TW #2, CPW #1 shall be decommissioned after a PTTW and approval from MECP's Approval Branch is obtained.

It may be noted that per investigations completed to date, the new well shall potentially impact a few nearly private wells where well pumps shall have to be lowered to deeper depth. Those well owners have been contacted by Arran-Elderslie, and their wells shall be improved at municipal expense.

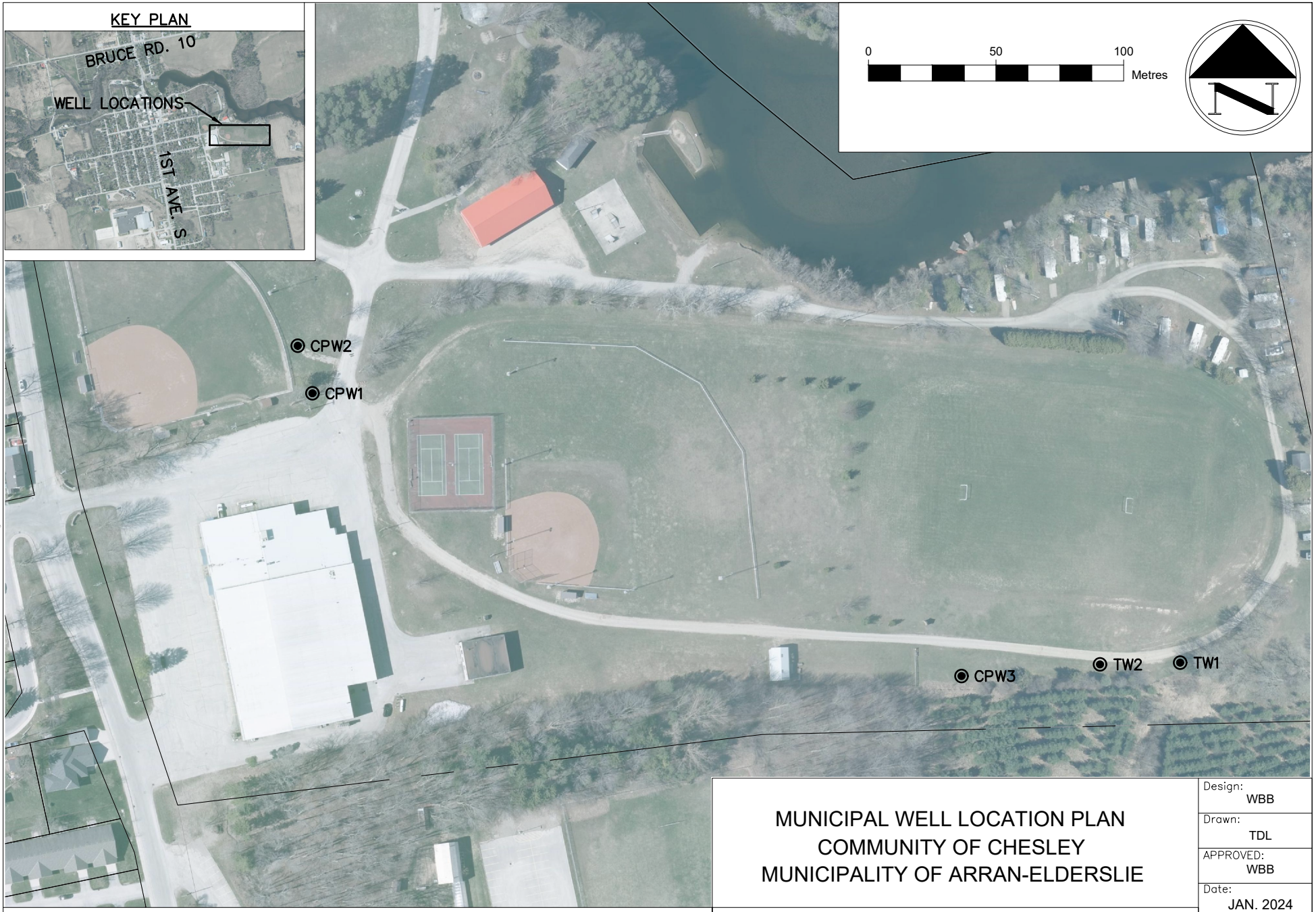
By way of this letter, on behalf of the Municipality, we request you to inform us if your office has any concerns or requirements that must be addressed through the EA process for construction of a new water supply well to replace CPW #1 for the Chesley water works.

Yours sincerely,

Rakesh Sharma, MASc., Eng., P. Eng.,
GSS Engineering Consultants Ltd.

RS/JB

cc Scott McLeod, Manager of Public Works, Arran-Elderslie



July 16, 2024 10:37:46 AM

MUNICIPAL WELL LOCATION PLAN
COMMUNITY OF CHESLEY
MUNICIPALITY OF ARRAN-ELDERSLIE

Design:	WBB
Drawn:	TDL
APPROVED:	WBB
Date:	JAN. 2024
Scale:	1:2000
FILE No.	23-012
FIG. No.	1

GSS ENGINEERING CONSULTANTS LTD

REFERENCES:
BRUCE COUNTY PARCEL MAPPING
BRUCE COUNTY MAPS IMAGE (2020)

\\GSS_Common\GSS Common\GSS Common\2023\23-012 - Schedule B EA - Arran-Elderslie WW\Drawings\23-012.dwg Jul 16, 2024 - 10:37am

APPENDIX E

Correspondence with Private Well Owners

Impacted by New Well

The Municipality of Arran-Elderslie
1925 Bruce Road 10, PO Box 70, Chesley, ON N0G 1L0
Phone 519.363.3039 Fax 519.363.2203
info@arran-elderslie.ca

May 8, 2024

HAND DELIVERED

TIBBO JAYNE
THOMSON JACKIE
Property Address: 224 Thomson Lane, Chesley

Re: Construction of New Municipal Well CPW #4 in County Park, Chesley

Dear Resident,

You may be aware that Arran-Elderslie commenced an Environmental Assessment (EA) Study process in June 2023 aimed at replacing the existing municipal well CPW #1 with a new well. CPW #1 is an ± 80-year-old well experiencing significant iron bacteria fouling which has become expensive to control, and without much success.

In an effort to replace the well and associated water supply, several alternatives were considered and investigated. As part of the EA process, a test well TW2-23 was drilled last year and tested for quality and quantity. During pumping test, it was noted that water withdrawal from a new well at TW2-23 site, will impact some wells water supply, in the long term. In short-term, impact will likely not be noticeable.

Your private well is among the wells that will be impacted. Arran-Elderslie, as responsible municipal government, will implement all remedial measures as needed to ensure that your water supply is not adversely affected.

The remedial measures that may be necessary include:

- Improvement to Well Head, i.e., replace a well pit with Pitless adapter, to prevent accidental contamination of aquifer that supplies water to TW2-23.
- Lower the well pump in the casing to deeper depth, or replace existing pump with a new pump.
- Extension of well casing, at least 400 mm above grade.
- Provision of new well caps
- Any other measures, that may be relevant to an individual situation

While viewing the above list, note that all specified measures might not be needed at your property. Municipality's representative shall contact you and work with you to address the problem.

On May 2, 2024, a public meeting was held and a detailed presentation was made. A copy of the presentation was posted on the municipal website. No comments have been received on the Preliminary Recommended Alternative. In the next few weeks, the municipality shall formally adopt the Preliminary Recommended Alternative and proceed to implement it by constructing a new well CPW #4 at the location of TW2-23. Additional pump test and water level monitoring (in private wells also) shall be completed. At that time, we will undertake additional investigations at your property and confirm the remedial measures needed and how they will be implemented.

The implementation methods for remedial measure shall be reviewed at a council meeting to determine the best course to execute them and you will be informed accordingly.

If you have any questions or require any additional information, please feel free to contact this office.

Yours sincerely,

Scott McLeod
Manager of Public Works

The Municipality of Arran-Elderslie
1925 Bruce Road 10, PO Box 70, Chesley, ON N0G 1L0
Phone 519.363.3039 Fax 519.363.2203
info@arran-elderslie.ca

May 8, 2024

HAND DELIVERED

THOMSON JEFFREY
Property Address: 256 Thomson Lane, Chesley

Re: Construction of New Municipal Well CPW #4 in County Park, Chesley

Dear Resident,

You may be aware that Arran-Elderslie commenced an Environmental Assessment (EA) Study process in June 2023 aimed at replacing the existing municipal well CPW #1 with a new well. CPW #1 is an ± 80-year-old well experiencing significant iron bacteria fouling which has become expensive to control, and without much success.

In an effort to replace the well and associated water supply, several alternatives were considered and investigated. As part of the EA process, a test well TW2-23 was drilled last year and tested for quality and quantity. During pumping test, it was noted that water withdrawal from a new well at TW2-23 site, will impact some wells water supply, in the long term. In short-term, impact will likely not be noticeable.

Your private well is among the wells that will be impacted. Arran-Elderslie, as responsible municipal government, will implement all remedial measures as needed to ensure that your water supply is not adversely affected.

The remedial measures that may be necessary include:

- Improvement to Well Head, i.e., replace a well pit with Pitless adapter, to prevent accidental contamination of aquifer that supplies water to TW2-23.
- Lower the well pump in the casing to deeper depth, or replace existing pump with a new pump.
- Extension of well casing, at least 400 mm above grade.
- Provision of new well caps
- Any other measures, that may be relevant to an individual situation

While viewing the above list, note that all specified measures might not be needed at your property. Municipality's representative shall contact you and work with you to address the problem.

On May 2, 2024, a public meeting was held and a detailed presentation was made. A copy of the presentation was posted on the municipal website. No comments have been received on the Preliminary Recommended Alternative. In the next few weeks, the municipality shall formally adopt the Preliminary Recommended Alternative and proceed to implement it by constructing a new well CPW #4 at the location of TW2-23. Additional pump test and water level monitoring (in private wells also) shall be completed. At that time, we will undertake additional investigations at your property and confirm the remedial measures needed and how they will be implemented.

The implementation methods for remedial measure shall be reviewed at a council meeting to determine the best course to execute them and you will be informed accordingly.

If you have any questions or require any additional information, please feel free to contact this office.

Yours sincerely,

Scott McLeod
Manager of Public Works

The Municipality of Arran-Elderslie
1925 Bruce Road 10, PO Box 70, Chesley, ON N0G 1L0
Phone 519.363.3039 Fax 519.363.2203
info@arran-elderslie.ca

May 8, 2024

HAND DELIVERED

JACQUES MATTHIEU CHARLES
JACQUES SARA LYNN
Property Address: 1689 Bruce Road 10, Chesley

Re: Construction of New Municipal Well CPW #4 in County Park, Chesley

Dear Resident,

You may be aware that Arran-Elderslie commenced an Environmental Assessment (EA) Study process in June 2023 aimed at replacing the existing municipal well CPW #1 with a new well. CPW #1 is an ± 80-year-old well experiencing significant iron bacteria fouling which has become expensive to control, and without much success.

In an effort to replace the well and associated water supply, several alternatives were considered and investigated. As part of the EA process, a test well TW2-23 was drilled last year and tested for quality and quantity. During pumping test, it was noted that water withdrawal from a new well at TW2-23 site, will impact some wells water supply, in the long term. In short-term, impact will likely not be noticeable.

Your private well is among the wells that will be impacted. Arran-Elderslie, as responsible municipal government, will implement all remedial measures as needed to ensure that your water supply is not adversely affected.

The remedial measures that may be necessary include:

- Improvement to Well Head, i.e., replace a well pit with Pitless adapter, to prevent accidental contamination of aquifer that supplies water to TW2-23.
- Lower the well pump in the casing to deeper depth, or replace existing pump with a new pump.
- Extension of well casing, at least 400 mm above grade.
- Provision of new well caps
- Any other measures, that may be relevant to an individual situation

While viewing the above list, note that all specified measures might not be needed at your property. Municipality's representative shall contact you and work with you to address the problem.

On May 2, 2024, a public meeting was held and a detailed presentation was made. A copy of the presentation was posted on the municipal website. No comments have been received on the Preliminary Recommended Alternative. In the next few weeks, the municipality shall formally adopt the Preliminary Recommended Alternative and proceed to implement it by constructing a new well CPW #4 at the location of TW2-23. Additional pump test and water level monitoring (in private wells also) shall be completed. At that time, we will undertake additional investigations at your property and confirm the remedial measures needed and how they will be implemented.

The implementation methods for remedial measure shall be reviewed at a council meeting to determine the best course to execute them and you will be informed accordingly.

If you have any questions or require any additional information, please feel free to contact this office.

Yours sincerely,

Scott McLeod
Manager of Public Works

The Municipality of Arran-Elderslie
1925 Bruce Road 10, PO Box 70, Chesley, ON N0G 1L0
Phone 519.363.3039 Fax 519.363.2203
info@arran-elderslie.ca

May 8, 2024

HAND DELIVERED

KUEPFER KEITH
KUEPFER KATHRYN MAE
Property Address: 1720 Bruce Road 10, Chesley

Re: Construction of New Municipal Well CPW #4 in County Park, Chesley

Dear Resident,

You may be aware that Arran-Elderslie commenced an Environmental Assessment (EA) Study process in June 2023 aimed at replacing the existing municipal well CPW #1 with a new well. CPW #1 is an ± 80-year-old well experiencing significant iron bacteria fouling which has become expensive to control, and without much success.

In an effort to replace the well and associated water supply, several alternatives were considered and investigated. As part of the EA process, a test well TW2-23 was drilled last year and tested for quality and quantity. During pumping test, it was noted that water withdrawal from a new well at TW2-23 site, will impact some wells water supply, in the long term. In short-term, impact will likely not be noticeable.

Your private well is among the wells that will be impacted. Arran-Elderslie, as responsible municipal government, will implement all remedial measures as needed to ensure that your water supply is not adversely affected.

The remedial measures that may be necessary include:

- Improvement to Well Head, i.e., replace a well pit with Pitless adapter, to prevent accidental contamination of aquifer that supplies water to TW2-23.
- Lower the well pump in the casing to deeper depth, or replace existing pump with a new pump.
- Extension of well casing, at least 400 mm above grade.
- Provision of new well caps
- Any other measures, that may be relevant to an individual situation

While viewing the above list, note that all specified measures might not be needed at your property. Municipality's representative shall contact you and work with you to address the problem.

On May 2, 2024, a public meeting was held and a detailed presentation was made. A copy of the presentation was posted on the municipal website. No comments have been received on the Preliminary Recommended Alternative. In the next few weeks, the municipality shall formally adopt the Preliminary Recommended Alternative and proceed to implement it by constructing a new well CPW #4 at the location of TW2-23. Additional pump test and water level monitoring (in private wells also) shall be completed. At that time, we will undertake additional investigations at your property and confirm the remedial measures needed and how they will be implemented.

The implementation methods for remedial measure shall be reviewed at a council meeting to determine the best course to execute them and you will be informed accordingly.

If you have any questions or require any additional information, please feel free to contact this office.

Yours sincerely,

Scott McLeod
Manager of Public Works

The Municipality of Arran-Elderslie
1925 Bruce Road 10, PO Box 70, Chesley, ON N0G 1L0
Phone 519.363.3039 Fax 519.363.2203
info@arran-elderslie.ca

May 8, 2024

HAND DELIVERED

BLACK THOMAS MACDONALD
BLACK LORRAINE GLADYS
Property Address: 1735 Bruce Road 10, Chesley

Re: Construction of New Municipal Well CPW #4 in County Park, Chesley

Dear Resident,

You may be aware that Arran-Elderslie commenced an Environmental Assessment (EA) Study process in June 2023 aimed at replacing the existing municipal well CPW #1 with a new well. CPW #1 is an ± 80-year-old well experiencing significant iron bacteria fouling which has become expensive to control, and without much success.

In an effort to replace the well and associated water supply, several alternatives were considered and investigated. As part of the EA process, a test well TW2-23 was drilled last year and tested for quality and quantity. During pumping test, it was noted that water withdrawal from a new well at TW2-23 site, will impact some wells water supply, in the long term. In short-term, impact will likely not be noticeable.

Your private well is among the wells that will be impacted. Arran-Elderslie, as responsible municipal government, will implement all remedial measures as needed to ensure that your water supply is not adversely affected.

The remedial measures that may be necessary include:

- Improvement to Well Head, i.e., replace a well pit with Pitless adapter, to prevent accidental contamination of aquifer that supplies water to TW2-23.
- Lower the well pump in the casing to deeper depth, or replace existing pump with a new pump.
- Extension of well casing, at least 400 mm above grade.
- Provision of new well caps
- Any other measures, that may be relevant to an individual situation

While viewing the above list, note that all specified measures might not be needed at your property. Municipality's representative shall contact you and work with you to address the problem.

On May 2, 2024, a public meeting was held and a detailed presentation was made. A copy of the presentation was posted on the municipal website. No comments have been received on the Preliminary Recommended Alternative. In the next few weeks, the municipality shall formally adopt the Preliminary Recommended Alternative and proceed to implement it by constructing a new well CPW #4 at the location of TW2-23. Additional pump test and water level monitoring (in private wells also) shall be completed. At that time, we will undertake additional investigations at your property and confirm the remedial measures needed and how they will be implemented.

The implementation methods for remedial measure shall be reviewed at a council meeting to determine the best course to execute them and you will be informed accordingly.

If you have any questions or require any additional information, please feel free to contact this office.

Yours sincerely,

Scott McLeod
Manager of Public Works

The Municipality of Arran-Elderslie
1925 Bruce Road 10, PO Box 70, Chesley, ON N0G 1L0
Phone 519.363.3039 Fax 519.363.2203
info@arran-elderslie.ca

May 8, 2024

HAND DELIVERED

RHODY NATHAN JOHN
RHODY CHRISTINA LYNN
Property Address: 1747 Bruce Road 10, Chesley

Re: Construction of New Municipal Well CPW #4 in County Park, Chesley

Dear Resident,

You may be aware that Arran-Elderslie commenced an Environmental Assessment (EA) Study process in June 2023 aimed at replacing the existing municipal well CPW #1 with a new well. CPW #1 is an ± 80-year-old well experiencing significant iron bacteria fouling which has become expensive to control, and without much success.

In an effort to replace the well and associated water supply, several alternatives were considered and investigated. As part of the EA process, a test well TW2-23 was drilled last year and tested for quality and quantity. During pumping test, it was noted that water withdrawal from a new well at TW2-23 site, will impact some wells water supply, in the long term. In short-term, impact will likely not be noticeable.

Your private well is among the wells that will be impacted. Arran-Elderslie, as responsible municipal government, will implement all remedial measures as needed to ensure that your water supply is not adversely affected.

The remedial measures that may be necessary include:

- Improvement to Well Head, i.e., replace a well pit with Pitless adapter, to prevent accidental contamination of aquifer that supplies water to TW2-23.
- Lower the well pump in the casing to deeper depth, or replace existing pump with a new pump.
- Extension of well casing, at least 400 mm above grade.
- Provision of new well caps
- Any other measures, that may be relevant to an individual situation

While viewing the above list, note that all specified measures might not be needed at your property. Municipality's representative shall contact you and work with you to address the problem.

On May 2, 2024, a public meeting was held and a detailed presentation was made. A copy of the presentation was posted on the municipal website. No comments have been received on the Preliminary Recommended Alternative. In the next few weeks, the municipality shall formally adopt the Preliminary Recommended Alternative and proceed to implement it by constructing a new well CPW #4 at the location of TW2-23. Additional pump test and water level monitoring (in private wells also) shall be completed. At that time, we will undertake additional investigations at your property and confirm the remedial measures needed and how they will be implemented.

The implementation methods for remedial measure shall be reviewed at a council meeting to determine the best course to execute them and you will be informed accordingly.

If you have any questions or require any additional information, please feel free to contact this office.

Yours sincerely,

Scott McLeod
Manager of Public Works

The Municipality of Arran-Elderslie
1925 Bruce Road 10, PO Box 70, Chesley, ON N0G 1L0
Phone 519.363.3039 Fax 519.363.2203
info@arran-elderslie.ca

May 8, 2024

HAND DELIVERED

P.K.W. FARMS LTD.
Property Address: 1748 Bruce Road 10, Chesley

Re: Construction of New Municipal Well CPW #4 in County Park, Chesley

Dear Resident,

You may be aware that Arran-Elderslie commenced an Environmental Assessment (EA) Study process in June 2023 aimed at replacing the existing municipal well CPW #1 with a new well. CPW #1 is an ± 80-year-old well experiencing significant iron bacteria fouling which has become expensive to control, and without much success.

In an effort to replace the well and associated water supply, several alternatives were considered and investigated. As part of the EA process, a test well TW2-23 was drilled last year and tested for quality and quantity. During pumping test, it was noted that water withdrawal from a new well at TW2-23 site, will impact some wells water supply, in the long term. In short-term, impact will likely not be noticeable.

Your private well is among the wells that will be impacted. Arran-Elderslie, as responsible municipal government, will implement all remedial measures as needed to ensure that your water supply is not adversely affected.

The remedial measures that may be necessary include:

- Improvement to Well Head, i.e., replace a well pit with Pitless adapter, to prevent accidental contamination of aquifer that supplies water to TW2-23.
- Lower the well pump in the casing to deeper depth, or replace existing pump with a new pump.
- Extension of well casing, at least 400 mm above grade.
- Provision of new well caps
- Any other measures, that may be relevant to an individual situation

While viewing the above list, note that all specified measures might not be needed at your property. Municipality's representative shall contact you and work with you to address the problem.

On May 2, 2024, a public meeting was held and a detailed presentation was made. A copy of the presentation was posted on the municipal website. No comments have been received on the Preliminary Recommended Alternative. In the next few weeks, the municipality shall formally adopt the Preliminary Recommended Alternative and proceed to implement it by constructing a new well CPW #4 at the location of TW2-23. Additional pump test and water level monitoring (in private wells also) shall be completed. At that time, we will undertake additional investigations at your property and confirm the remedial measures needed and how they will be implemented.

The implementation methods for remedial measure shall be reviewed at a council meeting to determine the best course to execute them and you will be informed accordingly.

If you have any questions or require any additional information, please feel free to contact this office.

Yours sincerely,

Scott McLeod
Manager of Public Works

The Municipality of Arran-Elderslie
1925 Bruce Road 10, PO Box 70, Chesley, ON N0G 1L0
Phone 519.363.3039 Fax 519.363.2203
info@arran-elderslie.ca

May 8, 2024

HAND DELIVERED

METZGER HOLDINGS CORPORATION
Property Address: 1773 Bruce Road 10, Chesley

Re: Construction of New Municipal Well CPW #4 in County Park, Chesley

Dear Resident,

You may be aware that Arran-Elderslie commenced an Environmental Assessment (EA) Study process in June 2023 aimed at replacing the existing municipal well CPW #1 with a new well. CPW #1 is an ± 80-year-old well experiencing significant iron bacteria fouling which has become expensive to control, and without much success.

In an effort to replace the well and associated water supply, several alternatives were considered and investigated. As part of the EA process, a test well TW2-23 was drilled last year and tested for quality and quantity. During pumping test, it was noted that water withdrawal from a new well at TW2-23 site, will impact some wells water supply, in the long term. In short-term, impact will likely not be noticeable.

Your private well is among the wells that will be impacted. Arran-Elderslie, as responsible municipal government, will implement all remedial measures as needed to ensure that your water supply is not adversely affected.

The remedial measures that may be necessary include:

- Improvement to Well Head, i.e., replace a well pit with Pitless adapter, to prevent accidental contamination of aquifer that supplies water to TW2-23.
- Lower the well pump in the casing to deeper depth, or replace existing pump with a new pump.
- Extension of well casing, at least 400 mm above grade.
- Provision of new well caps
- Any other measures, that may be relevant to an individual situation

While viewing the above list, note that all specified measures might not be needed at your property. Municipality's representative shall contact you and work with you to address the problem.

On May 2, 2024, a public meeting was held and a detailed presentation was made. A copy of the presentation was posted on the municipal website. No comments have been received on the Preliminary Recommended Alternative. In the next few weeks, the municipality shall formally adopt the Preliminary Recommended Alternative and proceed to implement it by constructing a new well CPW #4 at the location of TW2-23. Additional pump test and water level monitoring (in private wells also) shall be completed. At that time, we will undertake additional investigations at your property and confirm the remedial measures needed and how they will be implemented.

The implementation methods for remedial measure shall be reviewed at a council meeting to determine the best course to execute them and you will be informed accordingly.

If you have any questions or require any additional information, please feel free to contact this office.

Yours sincerely,

Scott McLeod
Manager of Public Works

APPENDIX F

PowerPoint Presentation for Phase 2 Public Meeting

Public Meeting

Class Environmental Assessment Study for Construction of a New Well CPW #4

Thursday, May 2, 2024
Chesley Community Centre
7:00 p.m.

23-012

GSS ENGINEERING CONSULTANTS LTD

Welcome

- Please sign on sheet provided
- Please take a comment sheet and provide your comments

GSS ENGINEERING CONSULTANTS LTD

Study Purpose/Problem Statement

- Existing well CPW #1 got fouled by Iron Bacteria. Well age is 80yrs approx.
- Iron Bacteria formed a clogging film over the well screen
- Remedial measures adopted were expensive and ineffective
- There was a significant reduction in Water Supply from CPW #1.
- Available water supply capacity reduction is a serious matter
- Losing redundancy in raw water supply source is also serious issue.
- Arran-Elderslie must take all steps necessary to reinstate from CPW #1

Arran-Elderslie Water Works Facts

Rated Capacity 5,564 m³/day (850 lgpm)

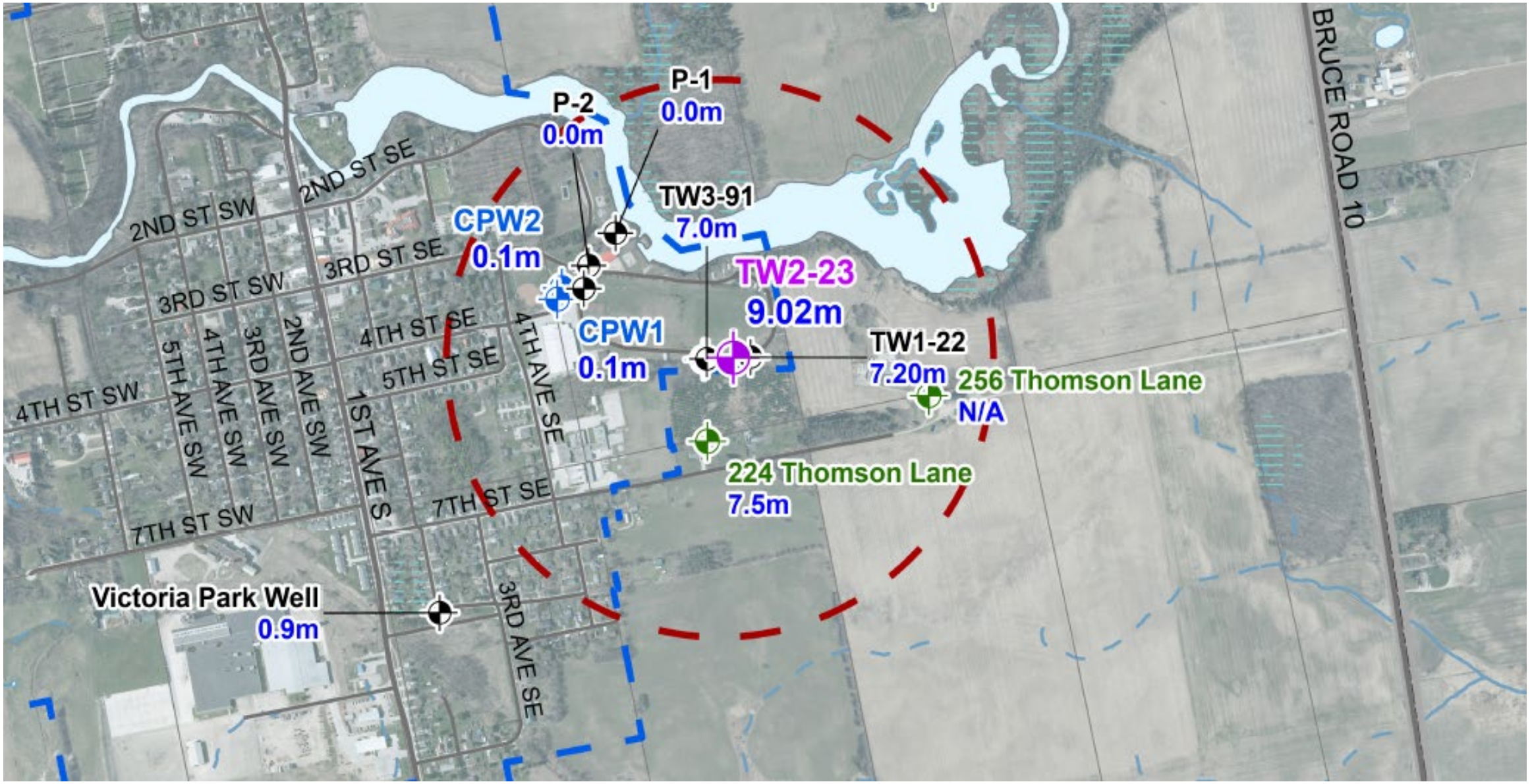
Permit to Take Water Information:

CPW #1	1,800 m³/day (275 lgpm)
CPW #2	2,127 m³/day (325 lgpm)
CPW #3	2,946 m³/day (450 lgpm)

Rated Capacity Utilization

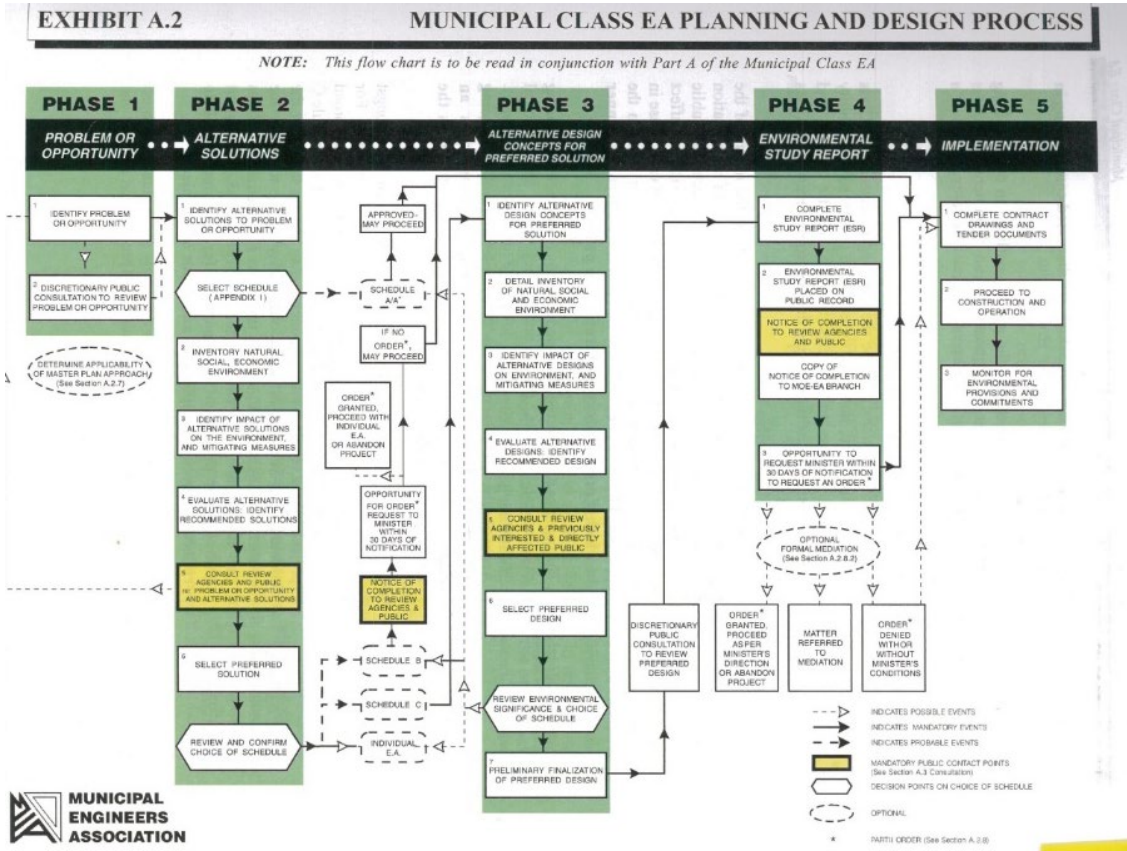
Year	Max Day (m^3/day)	% Rated Capacity
2023	1,490	**26.8%**
2022	1,687	**30.30%**
2021	1,512	**27.2%**
2020	1,820	**32.7%**
2019	1,765	**31.7%**
2018	1,778	**32.0%**
2017	1,436	**25.8%**
2016	1,905	**34.2%**
2015	1,851	**33.3%**
2014	1,862	**33.5%**
2013	1,720	**30.9%**
2012	1,939	**34.8%**
Rated Capacity of Water Works		**5,564m^3/day**

ENGINEERING CONSULTANTS LTD


P-1
0.0m
P-2
0.0m
TW3-91
7.0m
CPW2
0.1m
TW2-23
9.02m
CPW1
0.1m
TW1-22
7.20m
256 Thomson Lane
N/A
224 Thomson Lane
7.5m
Victoria Park Well
0.9m
2ND ST SW
2ND ST SE
3RD ST SW
3RD ST SE
4TH ST SW
4TH ST SE
5TH ST SE
7TH ST SW
7TH ST SE
5TH AVE SW
4TH AVE SW
3RD AVE SW
2ND AVE SW
1ST AVE S
4TH AVE SE
3RD AVE SE
BRUCE ROAD 10

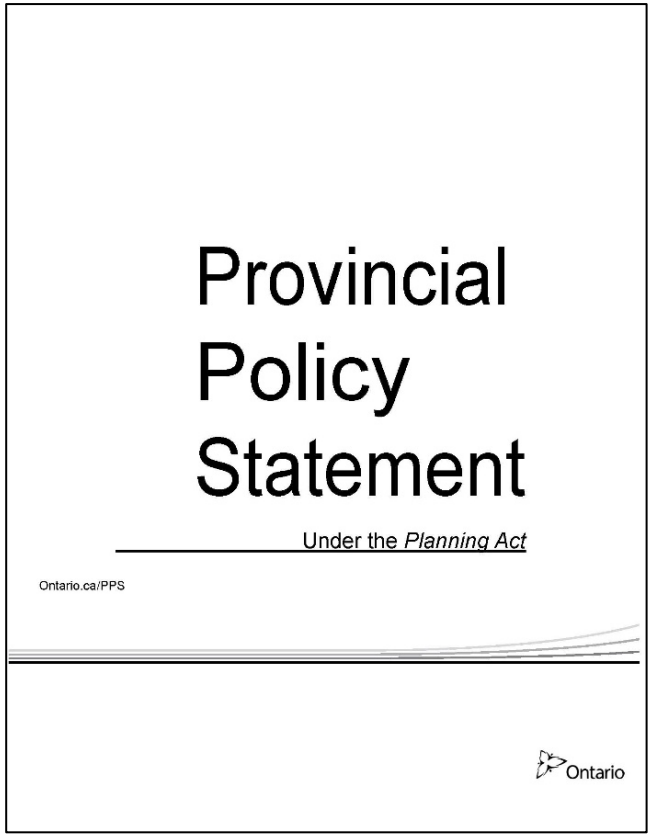
Overview of Class EA Study Process

- Address water treatment capacity requirements by:
  - Completing a systematic evaluation of alternatives
  - Considering advantages and disadvantages including net environmental effects; and
  - Providing clear documentation that describes decision making.
- Following Schedule B
- Requires completion of Phase 1 & 2; and
- Will file ESR for 30-day review



Population Forecast Planning Considerations

- Need to comply with Provincial Policy Statement;
- Ensure Sustainable growth within Arran-Elderslie Settlement Area; (Chesley & Paisley)
- Typically, 10 – 20 year projection/planning period.
- ONLY looking to replace capacity lost from CPW #1.



Description of Alternative Solutions

Alternative # 1: Do Nothing

- No improvements or changes would be undertaken to address problem statement;
- Will reduce Rated Capacity of Water Works;
- This alternative represents what would likely occur if none of the alternative solutions were implemented
- Irresponsible to “Do Nothing”

Alternative # 2 - Decommission CPW 1 Well

- Decommission and remove well CPW 1 from water works
- Obtain amendment to Licence and Permit from MECP
- Will reduce rated capacity of Water Works eventually
- May limit residential growth in Paisley & Chesley
- Does not address problem
- Irresponsible to reduce water supply capacity of existing water system

GSS ENGINEERING CONSULTANTS LTD

Alternative #3 - Increased Water Supply from Existing Well(s)

- Hydrogeological investigation to determine if existing well(s) CPW #2 and #3 can supply more water
- If yes, obtain permits and approvals from MECP
- Undertake Schedule B EA
- Hydrogeological analysis indicates a decline in efficiency of CPW #2

Alternative #3 - Additional Supply from Existing Wells CPW #2 & #3…..continued

- The permitted capacity of CPW #2 is available on short-term basis only
- Additional long-term capacity for CPW #2 beyond current permitted capacity is unlikely
- Need for rehabilitation of CPW #2 to restore capacity
- A pump test after rehabilitation is needed to confirm rehabilitation success

Alternative #4 - Construct New Groundwater Supply Source in Currently Utilized Aquifer(s) and continue to Use Existing Water Treatment Plant

- Drill new water well for additional water supply
- Preferably near existing plant building's and in currently used aquifers
- Advantages:
  - Raw water is similar to existing wells
  - Can use existing WTP building and equipment
- Detailed hydrogeological investigation to ensure long-term water supply capabilities
- Undertake EA and obtain new License and Permit from MECP
- Undertake Source Water Protection study as needed
- Connect to existing water treatment plant

Alternative #5 - Construct New Water Supply Well in a Different Aquifer

- Drill new water well for needed water supply, preferably near existing water treatment plant building location.
- Undertake detailed hydrogeological assessment.
- Undertake EA.
- Obtain PTTW and license & permit from MECP.
- Undertake Source Water Protection study as needed.
- Construct new or upgraded existing water treatment plant equipment and building, as required.
- Procure new land(s) as needed.

Alternative #5 - Construct New Water Supply Well in a Different Aquifer…..continued

- Risks are associated with new drilled well capability of supplying adequate water quantity, or water quality not complying with ODWS.
- This alternative is the next best solution after a combination for alternatives #3 and #4 and can be pursued if alternatives #3 & #4 fail.

Alternative #6 - Construct New Surface Water Supply Source Intake and Associated Treatment Plant

- N. Saugeen River is a potential water supply source
- Surface water sources are more prone to contamination and have more variable water quality.
- Suitable location and river water intake needed, after obtaining approvals
- Need raw water pumping station to supply water to treatment plant
- Treatment process shall be more complex and expensive
- Construct new WTP building or expand existing treatment plant building and connect to existing water distribution networks
- Existing plant building shall not have room to accommodate new treatment equipment

Alternative #6 - Construct New Surface Water Supply Source Intake and Associated Treatment Plant……continued

- Operators need to remain on guard during period of water quality changes during spring and fall and take timely corrective steps. Highly skilled operation is required.
- Undertake Sch C EA
- Obtain PTTW and also complete Source Water Protection Study
- Capital Project Cost is anticipated to be highest among all alternatives
- Timeline for this alternative is anticipated to be much longer than other viable alternatives

Alternative #7 - Treated Water Supply from Another Water Work in Arran-Elderslie or Adjacent Municipality

- Will require approval from County and neighbouring municipality that could supply water
- Arran-Elderslie has Tara WW, but with insufficient spare capacity
- Require construction of long watermains, associated booster pumping system and re-chlorination facility(ies)
- Hanover is another water works that may be able to spare supply but is at a significant distance

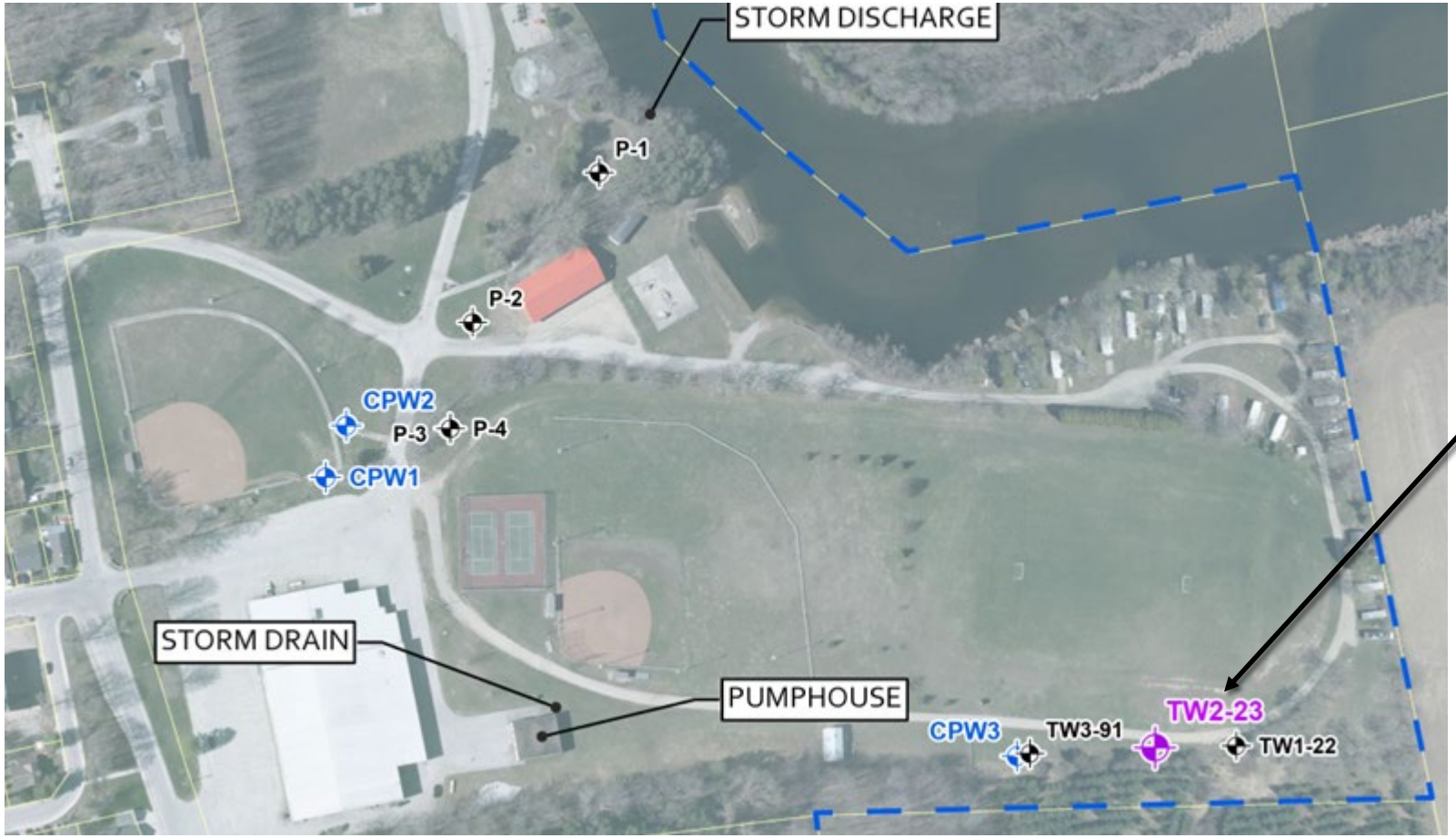
Screening of Alternative Solutions

ALTERNATIVE	DECISION	RATIONALE FOR NOT CARRYING FORWARD
1. Do Nothing	✓	Carried forward – must be considered
2. Decommission CPW 1	X	Screened – does not address the problem
3. Increased water supply from existing well(s)	✓	Carried forward in conjunction with Alternative #4
4. Construct new groundwater supply source in currently utilized aquifer and continue to use existing water treatment plant)	✓	Carried forward – feasible alternative
5. Construct new water supply well in a different aquifer and construct new treatment equipment as needed in existing treatment plant building or new building	✓	Carried forward – feasible alternative, and to be pursued only if Alternatives #3 & #4 are unable to address problem definition
6. Construct new surface water supply source intake and associated treatment plant	X	Screened – addresses the problem but time consuming and expensive and with operational challenges
7. Treated water supply from another Water Work in Arran-Elderslie or adjacent municipality	X	Screened – not a feasible alternative

ENGINEERING CONSULTANTS LTD

New Well TW2 - 23/CPW #4

- Construction Program commenced in 2022



- Test Well TW1-22 was drilled and tested in 2022 and considered to be an unsuitable location for a new well due to low capacity
- Test Well TW2-23 was drilled and tested in 2023 and determined as a suitable location for a new well

GSS ENGINEERING CONSULTANTS LTD

BURNSIDE

New Well TW2 - 23/CPW #4

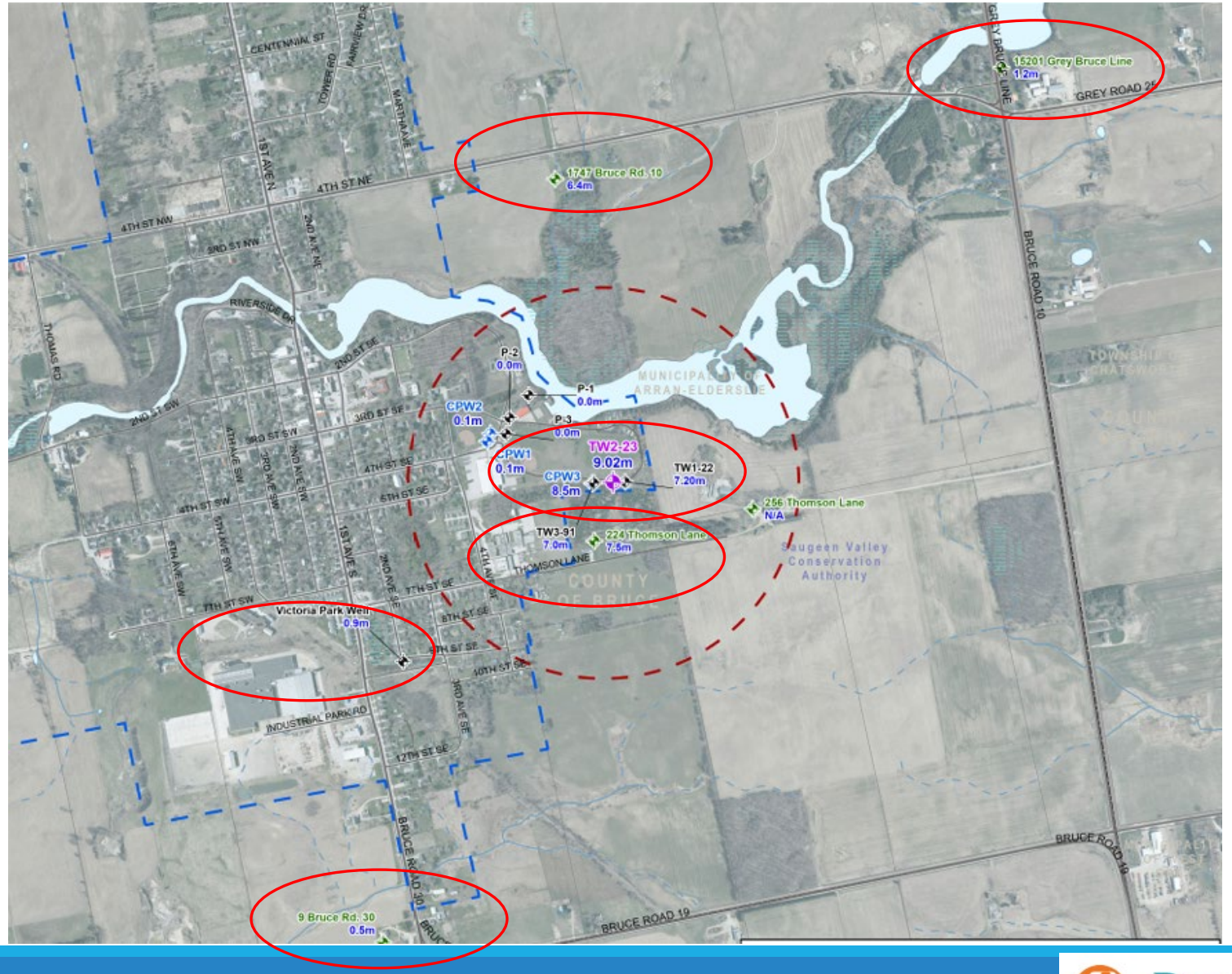
- Construction of Test Wells East of CPW#3

- Test Well TW1-22 was drilled and tested in 2022 and considered to be an unsuitable location for a new well due to low capacity
    - Test Well TW2-23 was drilled and tested in 2023 and determined as a suitable location for a new well

ENGINEERING CONSULTANTS LTD

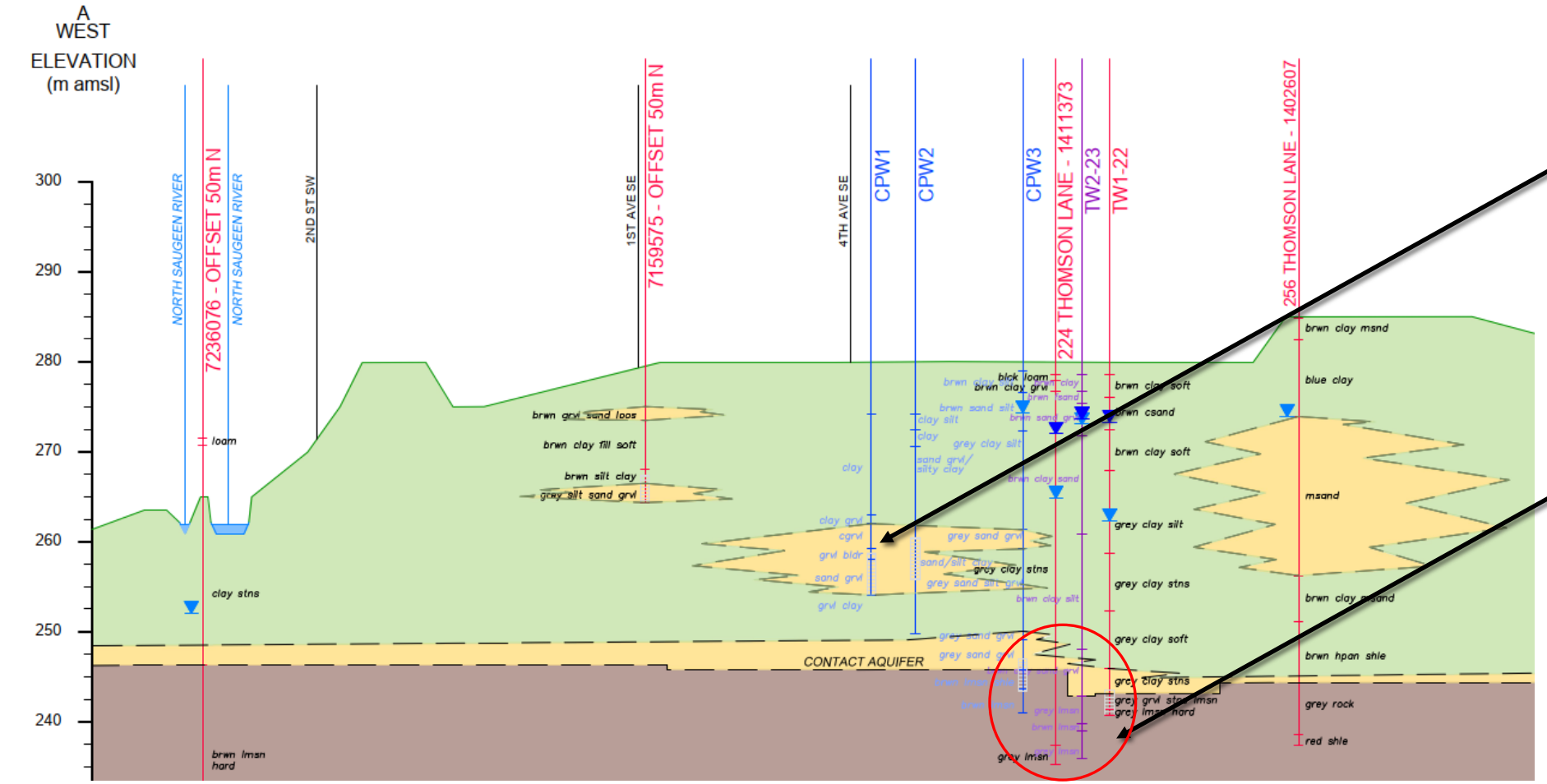
BURNSIDE

Existing Well Survey and Monitoring Program



Long Term Test of TW2 - 23/CPW #4

Cross Section Though the Existing and New Wells



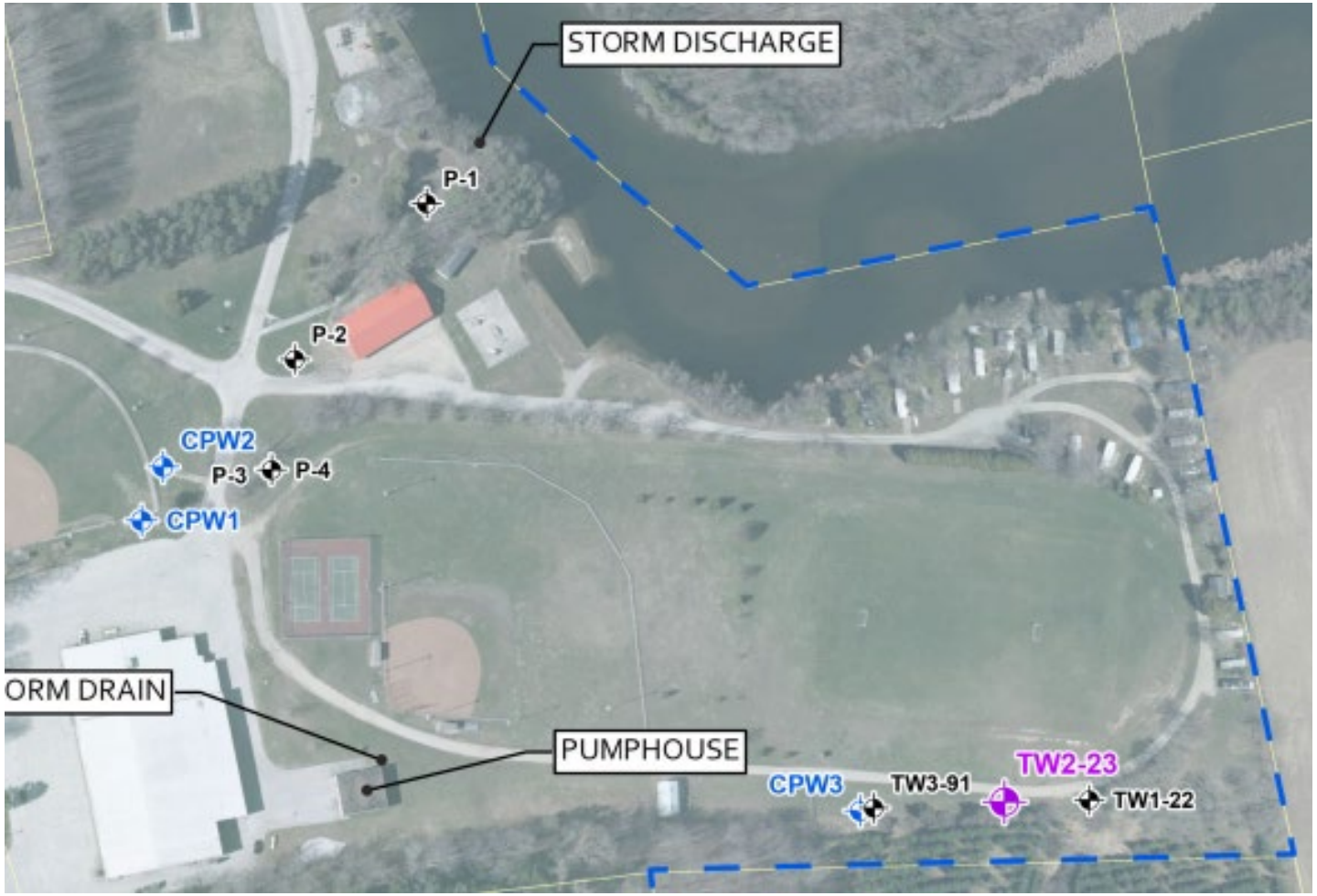
Intermediate Aquifer
CPW1 and CPW2

Deep Contact Aquifer
CPW3 and TW2-23

GSS ENGINEERING CONSULTANTS LTD

BURNSIDE

Pumping Test of TW2-23 – Water Pumped to storm sewer beside Pumphouse at 22 L/s for 3 days



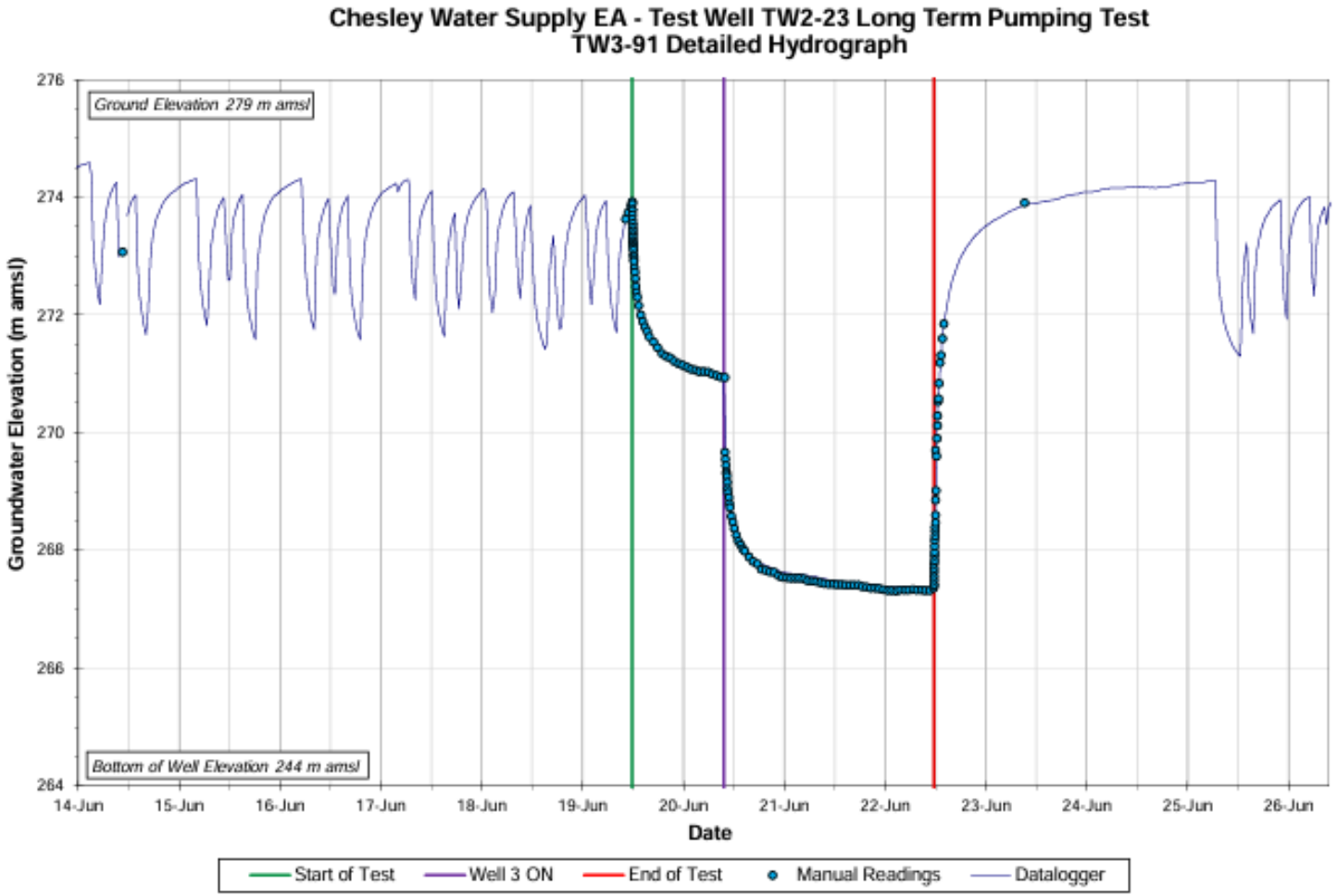
ENGINEERING CONSULTANTS LTD

BURNSIDE

Long Term Test of TW2 - 23/CPW #4

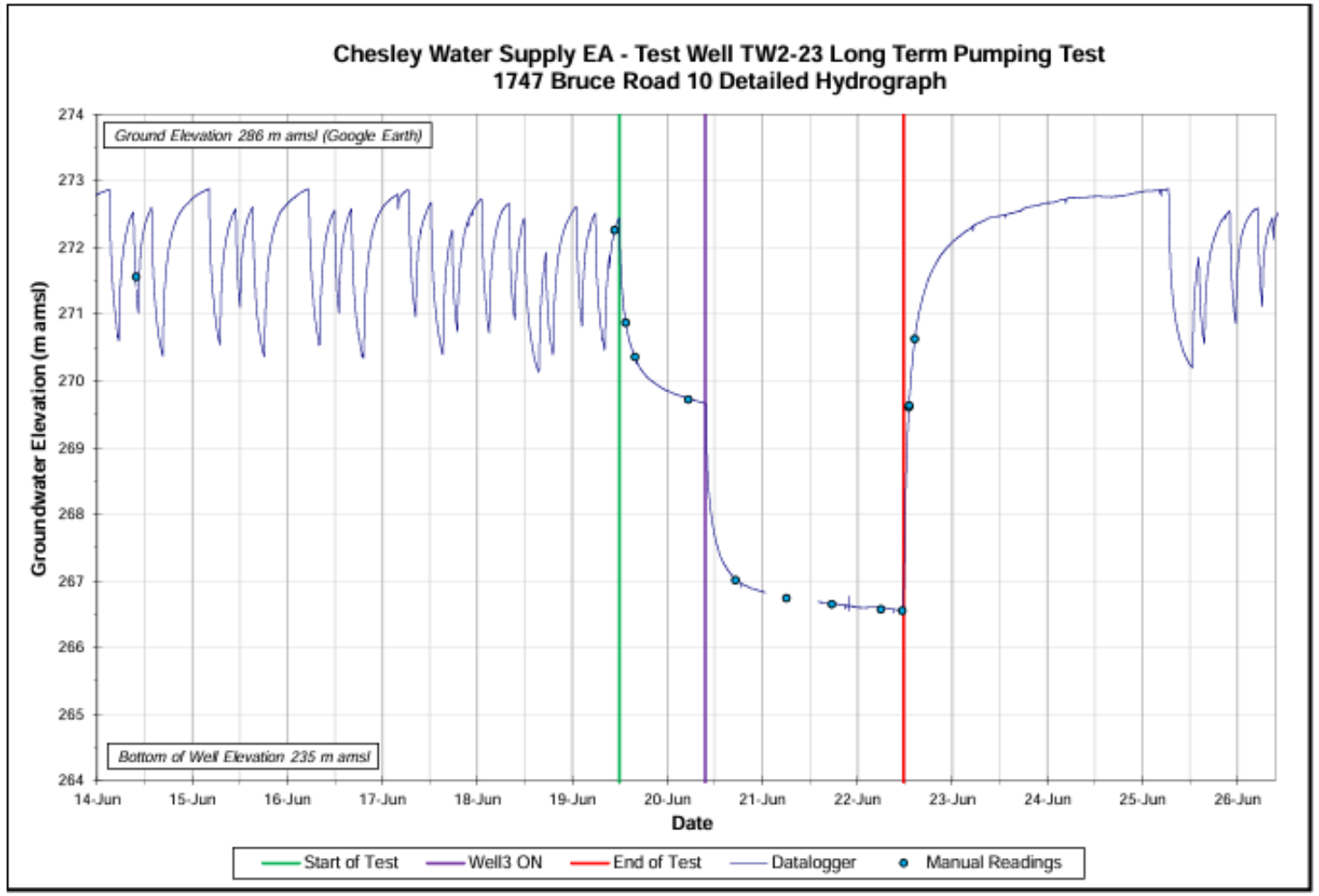
TW2-23 Long Test Test
Supervised 24 hours per day for 3 days

Pumping Test of TW2-23 – Site Well - Direct Connection

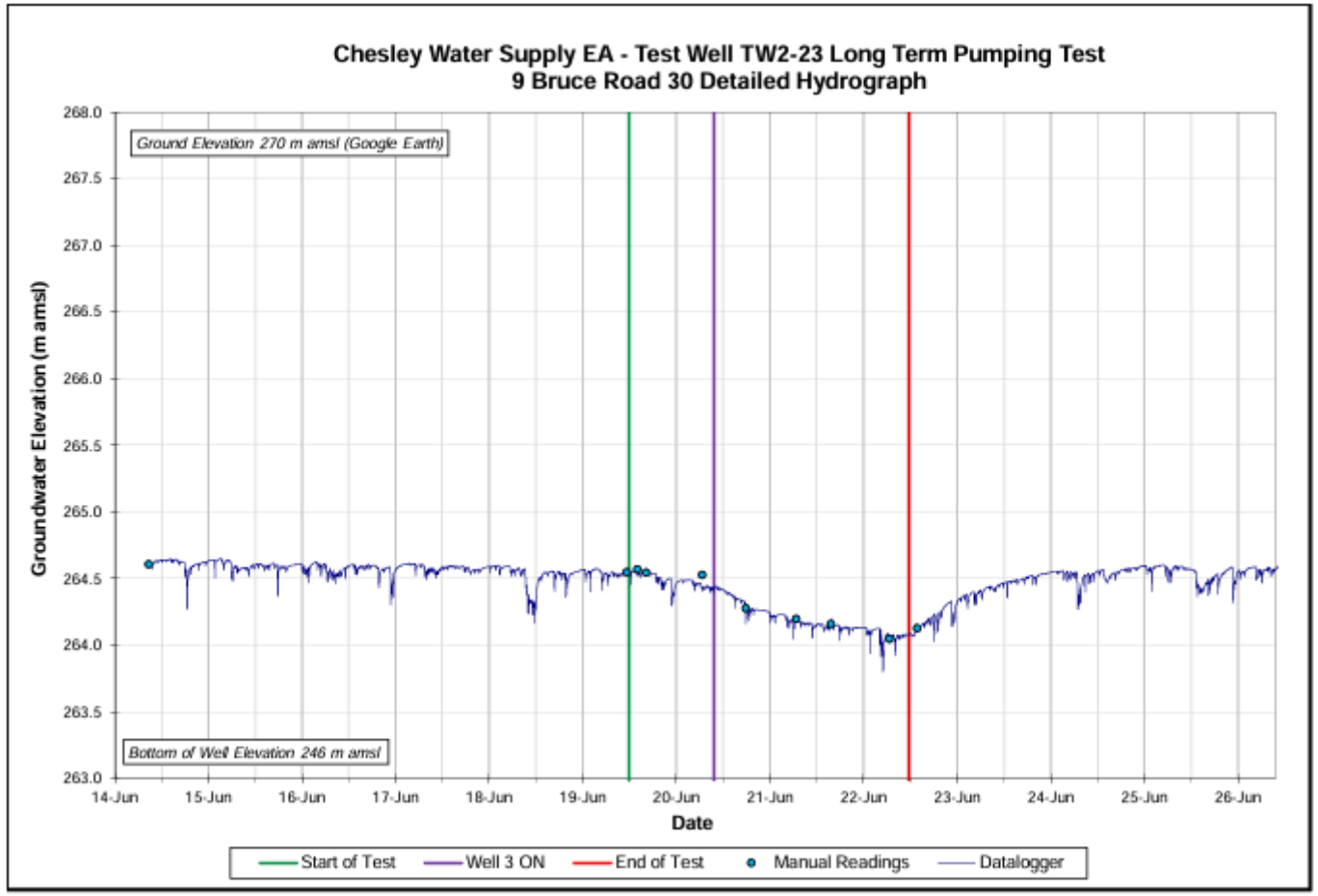


Pumping Test of TW2-23

Private Well to the North - Significant Affect



Pumping Test of TW2-23 – Private Well Slightly Affected



ENGINEERING CONSULTANTS LTD

BURNSIDE

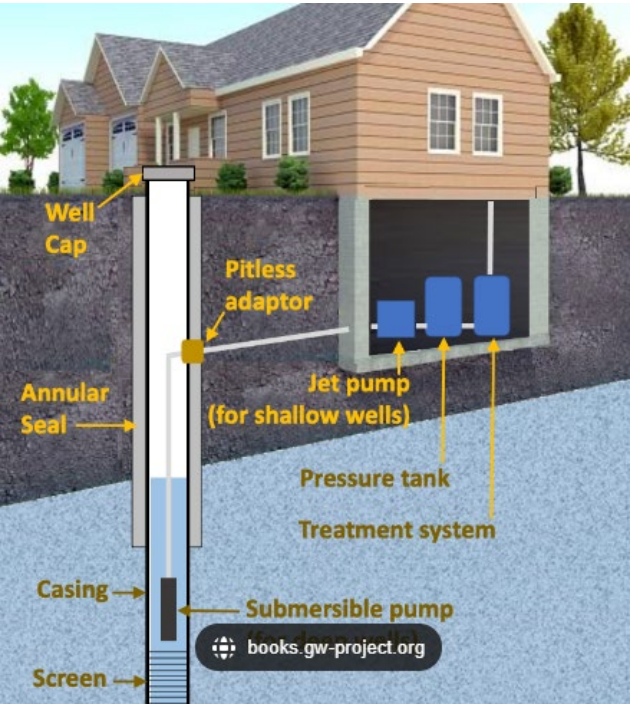
Recommendations if TW2-23 is selected as the source as part of the Water Supply EA

1. Reconstruct TW2-23 with larger diameter stainless steel casing that is cemented from the surface into the top of the rock.
2. Complete short term testing to confirm TW2-23 test results.
3. Sample for the complete Ontario Drinking Water Standards.
4. Upgrade nearby private wells to maintain water supplies and monitor water levels in a selected well.
5. Apply for an Amended Permit to Take Water and related approvals.

Private Well Upgrades

- Eight(8) private wells in the area are and will continue to be affected by pumping from Chesley Wells CPW#2, CPW#3 and the CPW#4
- Survey of pump depths is ongoing

Aquifer Protection - Private Well Upgrades



Summary of recommended well upgrades to ensure the water supplies are not affected by the Chesley Wells and to protect the aquifer

- 3 Private Wells need to be extended 16 inches above grade
- 4 Private Wells need new well caps
- 2 Pumps need to be lowered to deeper depths in the well
- 4 Pump depths to be confirmed and potentially lowered

Screening of Alternative Solutions

ALTERNATIVE	DECISION	RATIONALE FOR NOT CARRYING FORWARD
1. Do Nothing	✓	Carried forward – must be considered
2. Decommission CPW 1	X	Screened – does not address the problem
3. Increased water supply from existing well(s)	X	Screened- existing wells unable to solve the problem
4. Construct new groundwater supply source in currently utilized aquifer and continue to use existing water treatment plant)	✓	Carried forward – feasible alternative
5. Construct new water supply well in a different aquifer and construct new treatment equipment as needed in existing treatment plant building or new building	X	Screened – Alternatives #4 can address problem definition cost effectively. This alternative no longer needed.
6. Construct new surface water supply source intake and associated treatment plant	X	Screened – addresses the problem but time consuming and expensive and with operational challenges
7. Treated water supply from another Water Work in Arran-Elderslie or adjacent municipality	X	Screened – not a feasible alternative

ENGINEERING CONSULTANTS LTD

Evaluation Criteria: Categories for Evaluating Short List

- Public Health and Safety
- Natural Environment
- Social/Cultural/Legal Jurisdictional
- Economic/Financial
- Technical

Evaluation Criteria…..continued

- Public Health and Safety
  - Ability to comply with Provincial ODWQS

Natural Environment

- Potential effects to natural environment (air, land, water)
- Environmentally Sensitive Area
- ANSI (Areas of Natural & Scientific Interest)
- Woodlots

Evaluation Criteria: Natural Environment…continued

- Creeks
- Wetlands
- Wildlife and birds
- Vegetation
- Air Quality
- Groundwater

Evaluation Criteria…..continued

Social/Cultural/Legal Jurisdictional

- Conformity with local, county and Provincial policies and guidelines:
  - Official Plan
  - Zoning by laws
  - Provincial Policy Statement
  - MECP Policies
- Potential Private Wells Interference

Evaluation Criteria: Social/Culture/Legal Jurisdictional…continued

- Compatibility with Cultural/Heritage/Agricultural resources:
  - Land use
  - Community issues: Private wells interference
  - Odours
  - Noise
  - Vibrations

Evaluation Criteria-Social/Cultural/Legal Jurisdictional…. continued

- Compatibility with Cultural/Heritage/Agricultural resources: (cont.)
  - Heritage Sites
  - Agricultural Lands
  - Archaeology, Native land claims and Indian Affairs
  - Aesthetics
  - Property requirements including negotiations and agreements

Evaluation Criteria….continued

Technical

- Capability, Reliability, Flexibility
- Utilization of existing infrastructure
- Operating complexity
- Construction issues-on and off site
- Approvals, Implementation requirements

GSS ENGINEERING CONSULTANTS LTD

Evaluation Criteria….continued

Economic/Financial

- Capital cost
- Annual O & M costs

Short-Listed Evaluation Criteria

Applicable Evaluation Criteria are:

- Public Health & Safety
- Natural Environment
- Social
- Technical

Evaluation of Alternative Solutions

Shortlist Alternative Solution	Public Health & Safety	Natural Environment	Evaluation Summary
	Ability to comply with ODWO, License & Permits	Potential Effects for Natural Environment:	Least Preferred ● ● Most Preferred ●
<u>Alternative 1</u> Do Nothing	✶ Non-Compliance if Growth Continues	✶ None	●
<u>Alternative 4</u> Construct New Groundwater Supply in Currently Utilized Aquifer(s) & continued to Use Existing Water Treatment Plant	✶ Can comply with Ontario Drinking Water Standards	✶ Impact on Aquifer, <u>but</u> per Provincial Approval	●

Evaluation of Alternative Solutions (cont.)

Shortlist Alternative Solution	Social/Cultural/Legal Jurisdictional		Evaluation Summary
	Conformity with local, county, provincial planning policies & guidelines	Potential land use impacts & cultural/heritage/agricultural resources	
<u>Alternative 1</u> Do Nothing	Incompatible with: ✶ Municipal goals and ✶ Provincial policies		
<u>Alternative 4</u> Construct New Groundwater Supply in Currently Utilized Aquifer(s) & continued to Use Existing Water Treatment Plant	Will Meet: ✶ Provincial Policies ✶ MECP License & Permit	✶ Private wells interference	

Evaluation of Alternative Solutions (cont.)

Shortlist Alternative Solution	Technical			Evaluation Summary
	Capability, Reliability, flexibility	Implementation & Operability	Construction Issues & Approvals	
<u>Alternative 1</u> Do Nothing	* Cannot meet capacity requirements	* None	* No construction impact	
<u>Alternative 4</u> Construct New Groundwater Supply in Currently Utilized Aquifer(s) & continued to Use Existing Water Treatment Plant	* Will meet capacity requirements * Higher level of redundancy	* Utilizes existing infrastructure * Plant operation will not change	* Construction impact limited to site * Some traffic impact * Construction impact minimal (with proper mitigation measures * Approvals under AE control	

Evaluation of Alternative Solutions (cont.)

Shortlist Alternative Solutions	Public Health & Safety and Natural Environment	Social/Cultural Legal Jurisdictional	Technical	Overall
Alt # 1	●	●	●	●
Alt # 4	●	●	●	●

PRELIMINARY RECOMMENDED ALTERNATIVE

Alternative 4:

- Construct New Well CPW #4 at the location of TW2 – 23 and confirm it can produce 34 L/sec (450 igpm) which matches CPW #3 supply

Thank You
Comment Sheets
Questions?????