
**TOWNSHIP OF ASHFIELD-COLBORNE-WAWANOSH
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT FOR
EXPANSION OF CENTURY HEIGHTS DRINKING WATER
SYSTEM
ENVIRONMENTAL SCREENING REPORT**

DRAFT

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List of Acroynms

ACW	Ashfield-Colborne-Wawanosh
ADF	Average Day Flow
ANSI	Area of Natural and Scientific Interest
ATRIS	Aboriginal and Treaty Rights Information System
BMROSS	B.M. Ross and Associates Limited
CBO	Chief Building Official
CHER	Cultural Heritage Evaluation Report
COTTFN	Chippewas of the Thames First Nation
DFO	Department of Fisheries and Oceans
DNAPLs	Dense non-aqueous phase liquids
EA Act	Environmental Assessment Act of Ontario
ECA	Environmental Compliance Approvals
ESA	Endangered Species Act
ESR	Environmental Study Report
GUDI	Groundwater under the Direct Influence of Surface Water
HIA	Heritage Impact Assessment
MCEA	Municipal Class Environmental Assessment
MCM	Ministry of Citizenship and Multiculturalism
MDF	Maximum Day Flow
MECP	Ministry of Environment, Conservation and Parks
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MNRF	Ministry of Natural Resources and Forestry
MVCA	Maitland Valley Conservation Authority
NDMNRF	Ministry of Northern Development, Mines, Natural Resources and Forestry
NHIC	Natural Heritage Information Centre
ODWQS	Ontario Drinking Water Quality Standards
OP	Official Plan
PIC	Public Information Centre
PPS	Provincial Policy Statement
PTTW	Permit to Take Water
SARA	Species at Risk Act
SGRA	Significant Groundwater Recharge Area
SON	Saugeen Ojibway Nation
WHPA	Wellhead Protection Area



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1.0 INTRODUCTION

1.1 Introduction

The Township of Ashfield-Colborne-Wawanosh (ACW) initiated a Municipal Class Environmental Assessment (MCEA) study in March 2022 to investigate expanding the Century Heights Drinking Water System in the community of Saltford. The study process followed the procedures set out in the Municipal Class Environmental Assessment document, dated June 2000, as amended in 2007, 2011 and 2015 (Municipal Engineers Association, 2000). B. M. Ross and Associates Limited (BMROSS) was engaged to conduct the MCEA investigation on behalf of the Township.

The current system (Century Heights Water System) services 84 properties from a groundwater supply. An expansion of the existing drinking water system is required to accommodate future development within the urban settlement area. The MCEA will investigate options with respect to increasing the existing drinking water supply and expanding the distribution system. The purpose of this report is to document the MCEA planning and design process followed for this project. The report includes the following major components:

- An overview of the general project area.
- A summary of the deficiencies associated with the existing structure.
- A description of the alternative solutions considered for resolving the defined problem(s).
- A synopsis of the decision-making process conducted to select a preferred alternative.
- A detailed description of the preferred alternative.

1.2 Municipal Class Environmental Assessment (MCEA) Process

Municipalities must adhere to the Environmental Assessment Act of Ontario (EA Act) when completing road, sewer or waterworks activities. The Act allows the use of the Municipal Class Environmental Assessment process for most types of municipal infrastructure projects. A MCEA is an approved planning document which describes the process that proponents must follow in order to meet the requirements of the EA Act. The MCEA approach allows for the evaluation of alternatives to a project, and alternative methods of carrying out a project, and identifies potential environmental impacts. The process involves mandatory requirements for consultation. MCEA studies are a method of dealing with projects that include the following common characteristics:

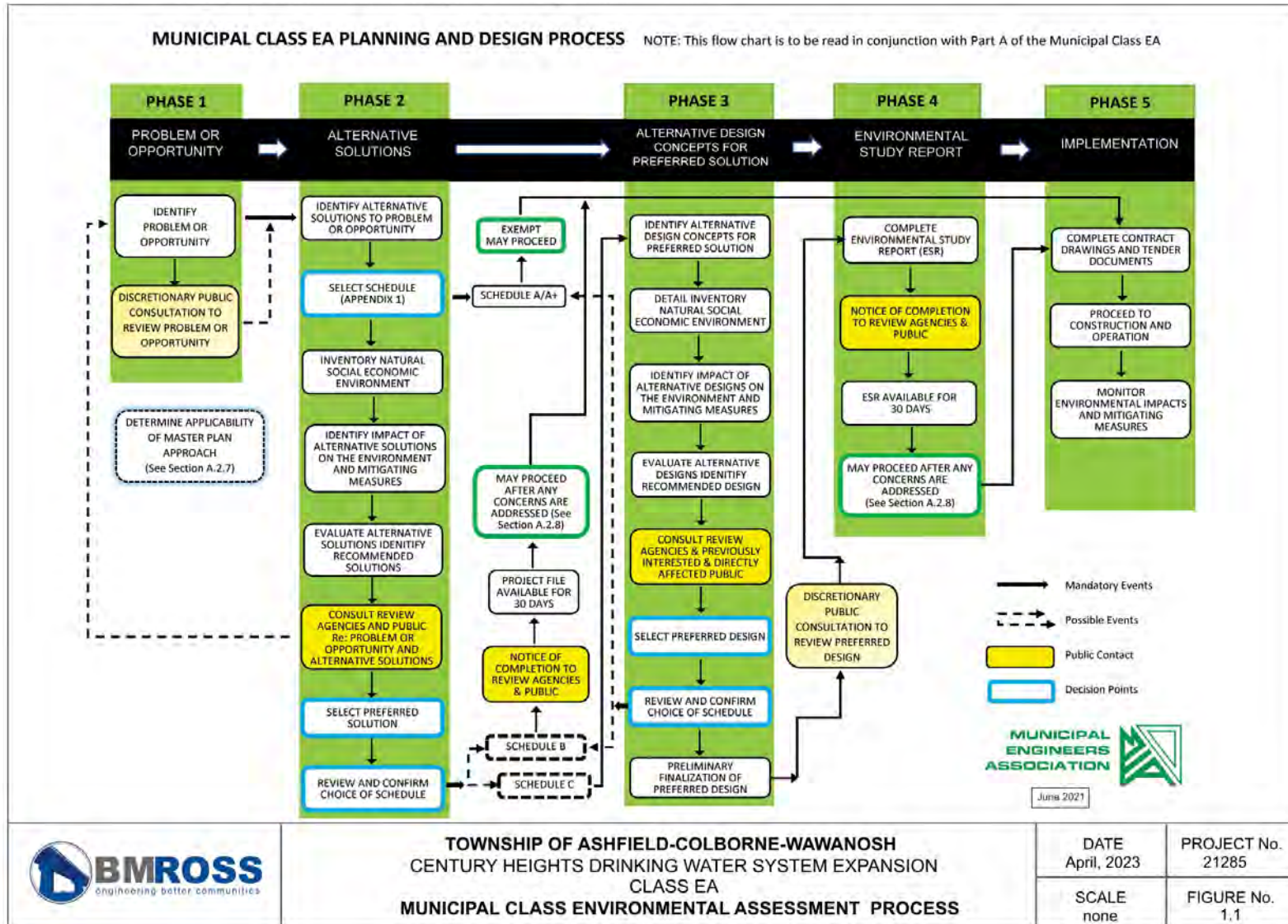
- They are recurring.
- They are usually similar in nature.
- They are usually limited in scale.
- They have a predictable range of environmental effects.
- They are responsive to mitigating measures.

If a MCEA planning process is followed, a proponent does not have to apply for formal approval under the EA Act. The development of this investigation has followed the procedures set out in the MCEA. Figure 1.1 presents a graphical outline of the procedures. The MCEA planning process is divided into the following phases:

- Phase 1 – Problem identification.
- Phase 2 – Evaluation of alternative solutions to the defined problems and selection of the preferred solution.
- Phase 3 – Identification and evaluation of alternative design concepts and selection of a preferred design concept.
- Phase 4 – Preparation and submission of an Environmental Study Report (ESR) for public and government agency review.
- Phase 5 – Implementation of the preferred alternative and monitoring of any impacts.

Throughout the MCEA process, proponents are responsible for having regard for these principles of environmental planning:

Figure 1.1 Municipal Class Environmental Assessment Process



- Consultation with affected parties throughout the process.
- Examination of a reasonable range of alternatives.
- Consideration of effects on all aspects of the environment.
- Application of a systematic methodology for evaluating alternatives.
- Clear documentation of the decision-making process to permit traceability.

1.3 Classification of Project Schedules

Projects are classified into different project schedules according to the potential complexity and the degree of environmental impacts that could be associated with the project. The following schedules are included in the MCEA process:

- Exempt and exempt following completion of the archaeological potential screening and/or collector road screening.
- Schedule B – Projects that are approved following the completion of a screening process that incorporates Phase 1 and 2 of the MCEA process as a minimum.
- Schedule C – Projects that are approved subject to following the full MCEA process.

The MCEA process is self-regulating, and municipalities are expected to identify the appropriate level of environmental assessment based upon the project and alternatives they are considering.

1.4 Mechanism to Request a Higher Level of Environmental Assessment

Under the terms of the MCEA, the requirements to prepare an Individual Environmental Assessment for approval is waived. However, if it is found that a project going through the MCEA process has associated with it significant environmental impacts, a person/party may request that the proponent voluntarily elevate the project to a higher level of environmental assessment. A request may be made to the Ministry of Environment, Conservation and Parks (MECP) for an order requiring a higher level of study, or that a condition be imposed on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on Aboriginal and treaty rights. Requests made to the Ministry on other grounds will not be considered.

2.0 BACKGROUND REVIEW

2.1 Methodology

A background review was carried out to obtain a general characterization of the project study area and to identify factors that could influence the selection of alternative solutions to the defined problem.

The background review for this MCEA process incorporated the following activities:

- Assembly of information on the existing infrastructure and the environmental setting.
- Identification of infrastructure deficiencies at the site.
- Preliminary assessment of the defined deficiencies and potential remediation.

A desktop analysis of the project setting was completed as part of the background review process. The following represents the key sources of information for this analysis:

- Huron County GIS Mapping Services (Huron County, 2022).
- Government of Canada, Species at Risk Public Registry website (Government of Canada, 2017).
- Ministry of Natural Resources and Forestry, Natural Heritage Information Centre website (Ministry of Northern Development, Mines, Natural Resources and Forestry, 2017).
- Atlas of Breeding Birds of Ontario website (Bird Studies Canada, 2009).
- Maitland Valley Source Protection Area, Maitland Valley Source Protection Area Assessment Report (Maitland Valley Source Protection Area, 2019).
- County of Huron, Official Plan (OP) and Zoning By-Law.
- Township of Ashfield-Colborne-Wawanosh, Official Plan (OP) and Zoning By-Law.

2.2 EA Framework

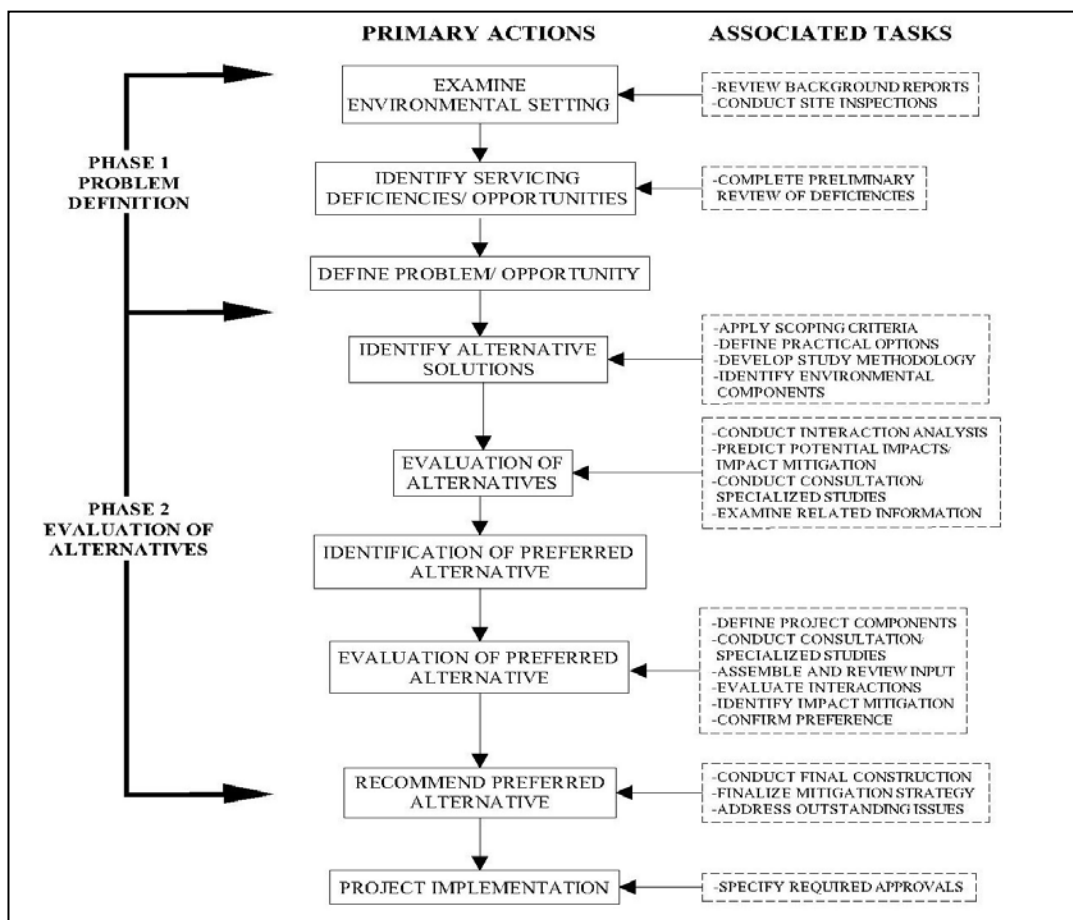
2.2.1 General MCEA Approach

The Township of Ashfield-Colborne-Wawanosh initiated a formal MCEA process in March 2022 to investigate the expansion of the Century Heights Drinking Water System in the community of Saltford. It was identified at the outset of the MCEA process that the proposed project may include components which would categorize the work as a Schedule B activity (e.g., establish a well at a new municipal well site, or install new wells or deepen existing wells or increase pump capacity of existing wells at an existing municipal well site where the existing rated yield will be exceeded). The assessment followed the environmental screening process prescribed for Schedule B projects in the MCEA document. The Schedule B screening process incorporates the following primary components:

- Background review.
- Problem/opportunity definition.
- Identification of practical solutions.
- Evaluation of alternative solutions.
- Selection of a preferred alternative solution and implementation.

Figure 2.1 illustrates the general tasks associated with the screening process. The following section of this report document the findings associated with each stage of the assessment.

Figure 2.1 MCEA Process and Tasks for Schedule B Activities



2.3 General Description of the Study Area

The Township of ACW is located within the northwestern portion of the County of Huron. The Township shares a boundary with the Town of Goderich to the south as well as the Municipality of Central Huron. The Municipality of North Huron is located to the east. The northern boundary is shared with the Township of Huron-Kinloss, which is located in Bruce County. To the west of the Township is Lake Huron. The Township is comprised

mainly of agricultural lands with a number of small villages and hamlet. These communities include Saltford, Port Albert, Benmiller, Dungannon and Nile. In 2021, the Township had a population of approximately 5,885 people. The community of Saltford is located at the southwest corner of the Township, bordered by the Maitland River and Goderich to the south and west.

Figure 2.2 illustrates the location of the Township of ACW and Saltford.

2.4 Project Study Area Description

Saltford is a semi-urban community located northeast of Goderich. The Saltford urban area includes properties along Saltford Road (County Road 31), Bisset's Hill, Dunlop Drive, Westmount Line, Maitland Ave, Fern Drive and Colborne Place. There is a large amount of land within Saltford that is planned for future residential development on the west and east sides of Westmount Drive.

The Maitland River is south of Saltford and forms the boundary with Goderich. Moving north from the river, the land rises from approximately 185 m above sea level to 235 m at Westmount Drive. Saltford Road generally runs parallel to the bluff associated with the river valley.

The Century Heights Drinking Water System supplies water to approximately 85 residential houses and 250 residents. The system consists of two 150mm wells drilled to a depth of 66 metres. Well #1 was installed in 1976 and well #2 in 2005. Both wells are located at a pumphouse at 81270 Pump House Lane. Water from both wells is sourced from bedrock.

2.5 Environmental Setting

2.5.1 Significant Natural Areas

The study area is situated north of Goderich and the Maitland River. A review of sensitive natural heritage features in the vicinity of the project area was carried out through the course of the MCEA process. The Ontario Ministry of Natural Resources and Forestry's (MNR) Natural Heritage Information Centre (NHIC) database was consulted to verify the current status of significant features in the general vicinity of the intersection. From this database, four significant natural areas were identified within a 2 km radius of the site (Ministry of Natural Resources and Forestry, 2021). Figure 2.3 illustrates the natural features located within the vicinity of the site.

2.5.2 Areas of Natural and Scientific Interest (ANSI)

The MNR has identified significant natural features that are representative of significant terrestrial and geologic features within the landscape, such as wetlands, woodlands and geologic formations. There are four ANSI features located within 2 km of the site including:

Figure 2.2 General Study Area Location

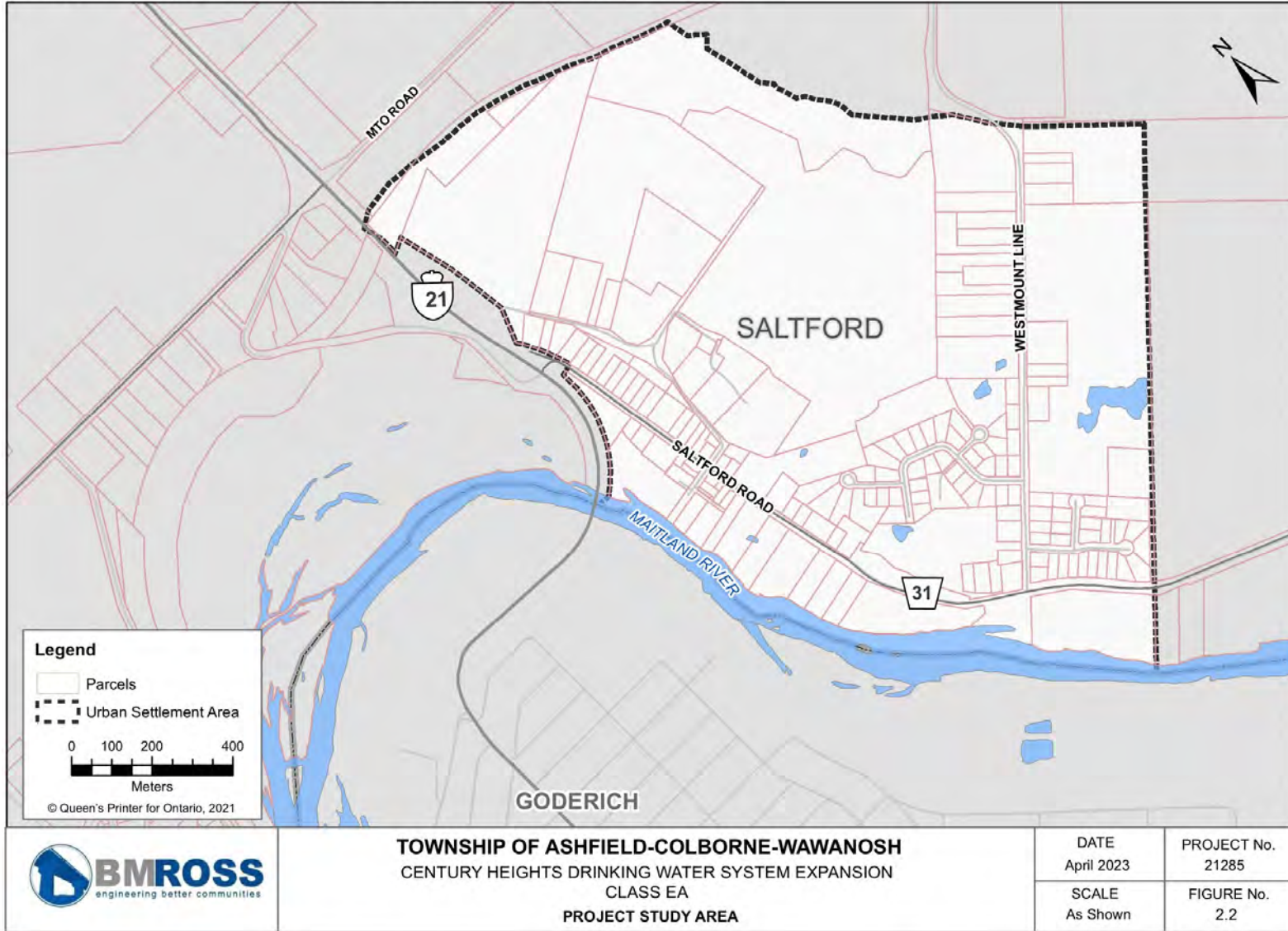
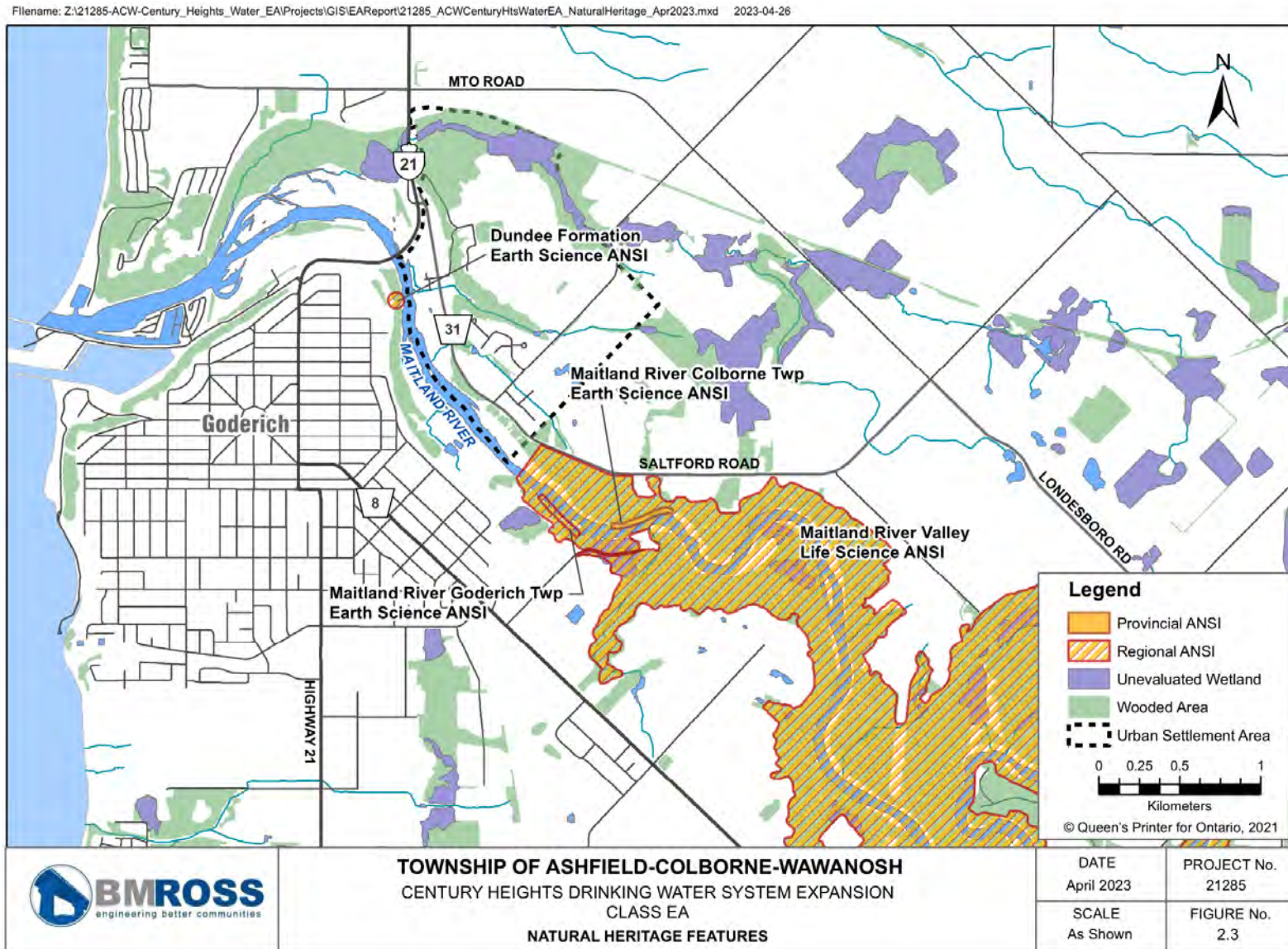


Figure 2.3 Natural Heritage Features in the Vicinity of the Study Area



- Maitland River Valley is a regionally significant life science ANSI located adjacent to the study area. The Maitland River Valley contains multiple wildlife concentration areas including colonial waterbird nesting areas and provides habitat to aquatic and terrestrial life.
- Dundee Formation is a regionally significant earth science ANSI located 670 metres northwest of the study area.
- Maitland River Goderich Township is a regionally significant earth science ANSI located 1 km southeast of the study area.
- Maitland River Colborne Township is a provincially significant earth science ANSI located 1.4 km southeast of the study area.

2.5.3 Aquatic Habitat

The project study area is located within the Lower Maitland River watershed, which is managed by the Maitland River Conservation Authority (MVCA). The Maitland River is home to many aquatic species at risk including the Black Redhorse, Northern Sunfish, Wavy-rayed Lampmussel and the Rainbow mussel. The Shortnose Cisco, a provincially and federally endangered fish species, is present within Lake Huron and potentially utilizes deep water areas at the mouth of the Maitland River. Impacts to the Maitland River and surrounding aquatic environments will be assessed later during the evaluation of alternatives.

2.6 Species at Risk

An evaluation of the presence of significant species and their associated habitats within the area of the intersection has been incorporated into the project planning process. The protection for species at risk and their associated habitats is directed by the following federal and provincial legislation:

- The Federal Species at Risk Act, 2002 (SARA) provides for the recovery and legal protection of listed wildlife species and associated critical habitats that are extirpated, endangered, threatened or of special concern and secures the necessary actions for their recovery on lands that are federally owned. Only aquatic species and bird species included in the Migratory Bird Convention Act (1994) are legally protected on lands not federally owned; and
- The provincial Endangered Species Act, 2007 (ESA) provides legal protection of endangered and threatened species and their associated habitat in Ontario. Under this legislation, measures to support their recovery are also defined.

A number of sources were consulted for information related to the occurrence of species at risk and their associated habitats. The sources are listed below. A summary of federally and provincially recognized species with the potential to be present within the project study area are listed in Table 2.1.

- Ministry of Natural Resources and Forestry, Species at Risk by Area.
- Natural Heritage Information Centre, Make a Natural Heritage Map.
 - The 1 km NHIC square corresponding with the study area is 17MJ4443 and 17MJ4444.
- Environment Canada, Species at Risk Public Registry. SARA Schedule 1 Species List (Government of Canada, 2017).
- Ontario Reptiles and Amphibian Atlas (Ontario Nature, 2020).
 - The 10 km square corresponding with the study area is Square 17MJ44.
- Ontario Breeding Bird Atlas (Birds Canada, 2001-2005).
 - The 10 km square corresponding with the study area is Square 17MJ44.
- Ontario Butterfly Atlas (Toronto Entomologist Associate, 2018).
 - The 10 km square corresponding with the study area is Square 17MJ44.
- Atlas of the Mammals of Ontario (Federation of Ontario Naturalists, 1994).
- iNaturalist
 - Observations in the Saltford Area

Table 2.1 Species at Risk Within General Study Area

Type	Species Common Name	Species Scientific Name	Federal Status	Provincial Status	Likelihood of Presence or Impact to Habitat
Bird	Bank Swallow	<i>Riparia riparia</i>	Threatened	Threatened	Low
Bird	Barn Swallow	<i>Hirundo rustica</i>	Threatened	Threatened	Low
Bird	Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened	Threatened	Low
Bird	Canada Warbler	<i>Cardellina canadensis</i>	Threatened	Special Concern	Low
Bird	Chimney Swift	<i>Chaetura pelagica</i>	Threatened	Threatened	Low
Bird	Common Nighthawk	<i>Chordeiles minor</i>	Threatened	Special Concern	Low
Bird	Eastern Meadowlark	<i>Sturnella magna</i>	Threatened	Threatened	Low

Type	Species Common Name	Species Scientific Name	Federal Status	Provincial Status	Likelihood of Presence or Impact to Habitat
Bird	Eastern Wood-Pewee	<i>Contopus virens</i>	Special Concern	Special Concern	Low
Bird	Grasshopper Sparrow	<i>Ammodramus savannarum pratensis</i>	Special Concern	Special Concern	Low
Bird	Henslow's Sparrow	<i>Ammodramus henslowii</i>	Endangered	Endangered	Potential
Bird	Wood Thrush	<i>Hylocichla mustelina</i>	Threatened	Special Concern	Low
Insect	Monarch	<i>Danaus plexippus</i>	Special Concern	Special Concern	Low
Mammal	Eastern Small-footed Myotis	<i>Myotis leibii</i>	-	Endangered	Low
Mammal	Little Brown Myotis	<i>Myotis lucifugus</i>	Endangered	Endangered	Low
Mammal	Northern Myotis	<i>Myotis septentrionalis</i>	Endangered	Endangered	Low
Mammal	Tri-coloured Bat	<i>Perimyotis subflavus</i>	Endangered	Endangered	Low
Plant	Butternut	<i>Juglans cinerea</i>	Endangered	Endangered	Potential
Plant	Green Dragon	<i>Arisaema dracontium</i>	-	Special Concern	Potential
Plant	Hairy Valerian	<i>Valeriana edulis</i>	-	Threatened	Potential
Plant	Tuberous Indian-plantain	<i>Arnoglossum plantagineum</i>	Special Concern	Special Concern	Potential
Reptile	Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	Threatened	Threatened	Low

Type	Species Common Name	Species Scientific Name	Federal Status	Provincial Status	Likelihood of Presence or Impact to Habitat
Reptile	Eastern Milksnake	<i>Lampropeltis triangulum</i>	-	Special Concern	Low
Reptile	Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	Special Concern	Special Concern	Low
Reptile	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	-	Special Concern	Low
Reptile	Northern Map Turtle	<i>Graptemys geographica</i>	Special Concern	Special Concern	Low
Reptile	Queensnake	<i>Regina septemvittata</i>	Endangered	Endangered	Low
Reptile	Snapping Turtle	<i>Chelydra serpentina</i>	Special Concern	Special Concern	Potential

The above table is based on potential habitat and occurrences throughout the general study area. This large area includes a wide variety of environs that include terrestrial and aquatic habitat. The bolded species have been recorded within 1km of the site. Vegetation removal within forested or open areas and along watercourses could potentially impact species. Impacts to the natural environment will be assessed later during the evaluation of alternatives. Depending on the selected option, mitigation measures to avoid or minimize harm may need to be implemented to avoid impacts to the listed species.

2.7 Breeding Birds

The Atlas of Breeding Birds of Ontario (2001-2005) was consulted to identify the bird species with confirmed, probable and possible breeding habitat in proximity to the study area. The study area lies within the 100 km² area covered in the Atlas as Square 17MJ44, in Region 6: Huron-Perth. Within the square, a total of 51 birds are confirmed to be breeding within the area, including species at risk such as: Canada Warbler, Bank Swallow, Chimney Swift and Barn Swallow. An additional 34 species were categorized as having probable breeding status and 22 are considered to have possible breeding status in the area (Bird Studies Canada, 2009).

The survey area includes key habitat for identified species, such as forest (in all stages of growth), riverine areas, agricultural areas, wetlands and shoreline areas. The project area

forms a very small portion of this region and habitat opportunities are limited based on the location of the site. Impacts to breeding birds are not anticipated.

2.8 Source Water Protection

The project study area is located within the Maitland Valley Source Protection Area (Maitland Valley Source Protection Area, 2019). The Salford area is currently serviced by the Century Heights Drinking Water System that consists of two wells located at a single well site. The project study area is located within Well Head Protection Areas (WHPA) of the existing wells within zones A, B and E. WHPA-A is defined as the 100 metre buffer around the wellhead. WHPA-B is defined as the surrounding area where groundwater could reach the well within 2 years. WHPA-E is applicable when the well is defined as a GUDI well. GUDI wells (groundwater under the direct influence of surface water) are directly impacted by surface water inputs and surface water in this area can reach the well rapidly (within 2 hours). The WHPA-A has a vulnerability score of 10, WHPA-B has a vulnerability score of 6 and WHPA-E has a vulnerability score of 7.2. The project study area is also located within a Significant Groundwater Recharge Area (SGRA) (low vulnerability score). A highly vulnerable aquifer is located northwest of the project study area.

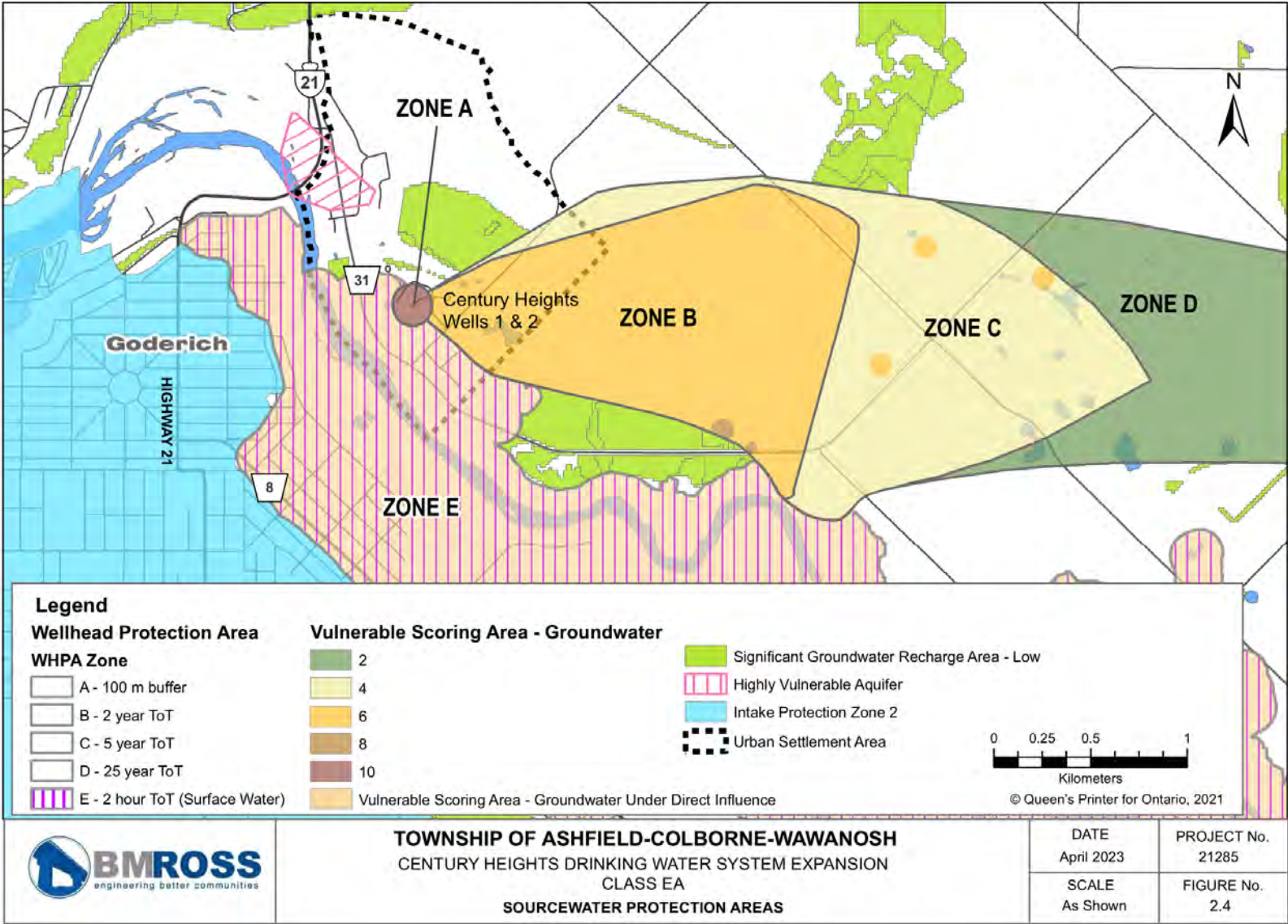
Revisions to existing WHPAs associated with the existing wells may be required depending on the preferred option selected (i.e. supply increases at the existing well sites or new well installation). Consultation and approval from appropriate agencies (MECP, Drinking Water Source Protection Committee) will be required if revisions to the existing WHPA are proposed. Figure 2.4 illustrates the source water protection areas within the project study area.

2.9 Climate Change

As part of the MCEA process, the impacts associated with climate change need to be evaluated. Some of the phenomena associated with climate change that will need to be considered include:

- Changes in the frequency, intensity and duration of precipitation, wind and heat events.
- Changes in soil moisture.
- Changes in sea/lake levels.
- Shifts in plant growth and growing seasons.
- Changes in the geographic extent of species ranges and habitat.

Figure 2.4 Source Water Protection Areas in Vicinity of Study Area



There are two approaches that can be utilized to address climate change in project planning. These are as follows:

- I. Climate Change Mitigation – reducing a project’s impact on climate change. Strategies may include:
 - a. Reducing impact of greenhouse gas emissions related to the project.
 - b. Alternative method to completing the project that would reduce adverse contributions to climate change.
- II. Climate Change Adaption – increasing the projects and local ecosystems resilience to climate change. Strategies may include:
 - a. Reducing vulnerability to climate-related severe weather events.
 - b. Alternative methods of carrying out the project that would reduce negative impacts associated with climate change.

Through the evaluation of alternatives of the MCEA process, a consideration of each of these approaches is included and considered in the final determination of the preferred approach to completing a project.

2.10 Adjacent Land Uses

The project study area is composed primarily of semi-urban, residential properties. Other current land uses within the Salford settlement area include agricultural and natural areas. The bluff associated with the river valley is treed and there are agricultural fields to the east and west of Westmount Line. There are two draft approved residential developments for 81316 Westmount Line and 81321 Westmount Line, and it is expected these developments will proceed.

2.11 Planning Policies

2.11.1 Provincial Planning Policy

The Provincial Policy Statement, 2020 (PPS) provides policy direction related to land use planning and development across the province. Local planning policies and land use decisions must conform with the policies of the PPS. The intent of the PPS is to promote the long-term prosperity, environmental health, public safety and social wellbeing through efficient land use and development patterns (Ministry of Municipal Affairs and Housing, 2020).

With respect to municipal infrastructure projects, there are a number of policies within the PPS that need considered. The first section of the PPS identifies policies directing land use to achieve efficient and resilient development and land use patterns. Policy 1.1 outlines the goal of healthy, liveable and safe communities that are sustained by: 1.1 g) necessary infrastructure and public service facilities to meet current and projected needs and i) preparing for the regional and local impacts of a changing climate.

Section 1.6 of the PPS is dedicated to infrastructure and public services facilities. The policies in this section of the PPS promotes the efficient provision of public infrastructure and service facilities, that are prepared for the impacts of climate change and will accommodate future needs. Planned infrastructure is to be financially viable over their life cycle and sufficient to meet existing and future needs. Additionally, per Section 1.6.4, infrastructure should support the effective and efficient delivery of emergency services and ensure the protection of public health and safety.

With respect to sewage, storm and stormwater systems, the PPS promotes the efficient use and optimization of municipal water services (Section 1.6.6.1). They are to be provided in a manner that can be sustained by available water resources, considers the impacts of climate change, are feasible and financially viable and protects human health and safety and the environment. The PPS promotes systems that allow for water conservation and water use efficiency. The PPS supports the intensification and redevelopment of existing municipal water services in settlement areas when required (Section 1.6.6.2).

With respect to water resources, the PPS supports the restriction of development if it will impact municipal drinking water supplies, designated vulnerable areas and sensitive surface water and groundwater features (Section 2.2.1). The implementation of mitigation measures and/or development of alternatives may be required to mitigate impacts. The use of water resources should be done in an efficient and sustainable manner that will conserve water and sustain water quality.

2.11.2 Land Use Planning

The Township of ACW Official Plan (OP) and Zoning By-Law were consulted to determine land use designations within the project study area and related planning policies.

The Official Plan for ACW outlines a number of goals related to community facilities and infrastructure, including: ensuring appropriate and adequate servicing and recognizing infrastructure uses as public and required throughout the Township. Settlement area, including villages, are intended for development with the provision of appropriate and adequate services.

Under the Township of ACW OP, land use designations within the study area include Village, Village with Flood and Natural Environment. The primary use within villages is single detached dwellings. Natural Environment areas are generally protected against development.

Within the Township of ACW OP, it is stated that public infrastructure including facilities for water utilities are permitted in any land use designation but must be located in an area that will provide for community function while minimizing disturbances to adjacent land uses and natural environment.

In the Township of ACW Zoning By-law, it is stated that public services and utilities such as pump stations and watermains can be installed in any land use, as long as the Township is in approval, approval has been obtained through the Environmental Assessment Act and the land has been rezoned to Communication & Utilities (U) Zone. The zoning in the project area includes: Village Residential 1, Open Space, and Future Development.

2.12 Cultural Heritage Environment

An assessment of potential impacts to archaeological resources, built heritage resources and cultural heritage landscapes must be undertaken in conjunction with the MCEA process. To aid in the determination of potential for cultural heritage landscapes and archaeological and built heritage resources, the Ministry of Citizenship and Multiculturalism (MCM) provides screening checklists. The checklists were completed and are included in Appendix C.

2.12.1 Archaeological Resources

The MCM Criteria for Evaluating Archaeological Potential was completed for the potential new well site and is included in Appendix A. The potential for archaeological resources is low based on the outcome of the checklist.

2.12.2 Built Heritage Resources

The project study area does not contain potential cultural heritage value based on the MCM Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes. Therefore, a Cultural Heritage Evaluation Report (CHER) and Heritage Impact Assessment (HIA) are not required. A copy of the MCM Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes can be found in Appendix A.

2.13 Air Quality, Dust and Noise

The study area includes residences, which are considered sensitive receptors. The existing well sites are located within a residential area and are not considered to be an existing source of noise, air quality or dust emissions. The expansion of the Century Heights Drinking Water System is not expected to result in an increase in noise or dust emissions or a decrease in air quality. There may be temporary impacts related to construction, which will be evaluated as part of the evaluation of alternative and potential mitigation measures.

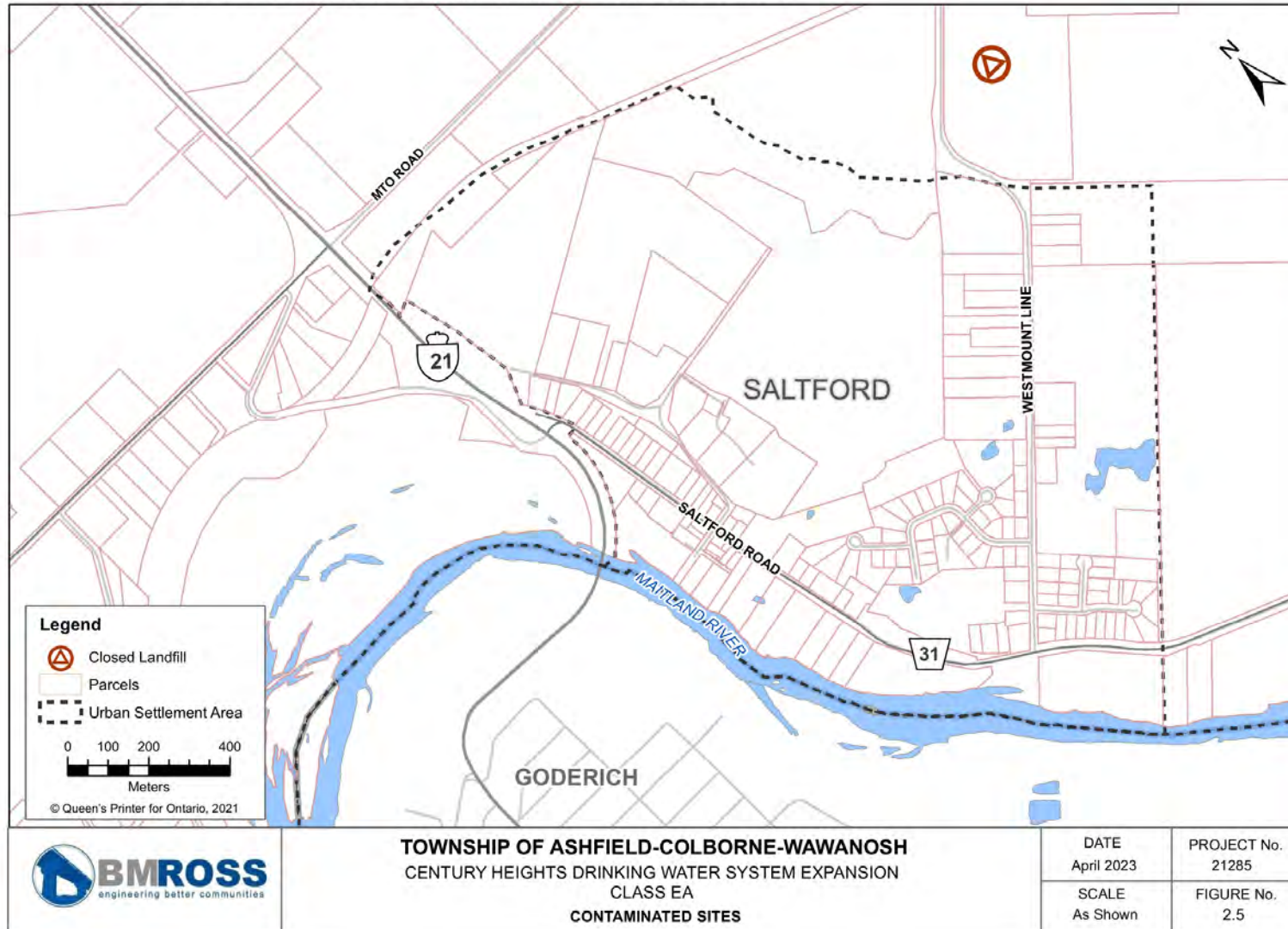
2.14 Contaminated Sites

There is one closed landfill located within 1 km of the study area. The location of the closed landfill is shown in Figure 2.5.

2.15 Servicing, Utilities and Facilities

In the study area, water is provided by Century Heights Drinking Water System as well as by private wells. Sewage servicing is provided by private, on-site sewage systems. Within the study area, electrical service is provided utilizing overhead lines. Internet/cable/telephone services are located within the road allowances in the study area. Natural gas utilities are also located within the road allowances.

Figure 2.5 Contaminated Sites in Vicinity of Study Area



3.0 TECHNICAL REVIEW

3.1 Existing Century Heights Well System

The existing Century Heights Well System consists of two groundwater supply wells, located at 81270 Pumphouse Lane. Well 1 is 66 m deep and is rated for 4.2 L/s. Well 2 is 86 m deep and rated for 4.3 L/s. Together, the wells provide 8.5 L/s of capacity. The treatment and pumping equipment located at the common wellhouse is similarly rated for 8.5 L/s. The existing Average Day Flow (ADF) and Max Day Flow (MDF) are 104 m³/day and 382 m³/day respectively.

These wells are considered GUDI. The system is currently not designed to provide fire protection or water storage. The existing system, including wells and distribution system are shown in Figure 3.1. The system currently services approximately 85 customers or 225 people. At this time, the estimated reserve capacity is 15 customers.

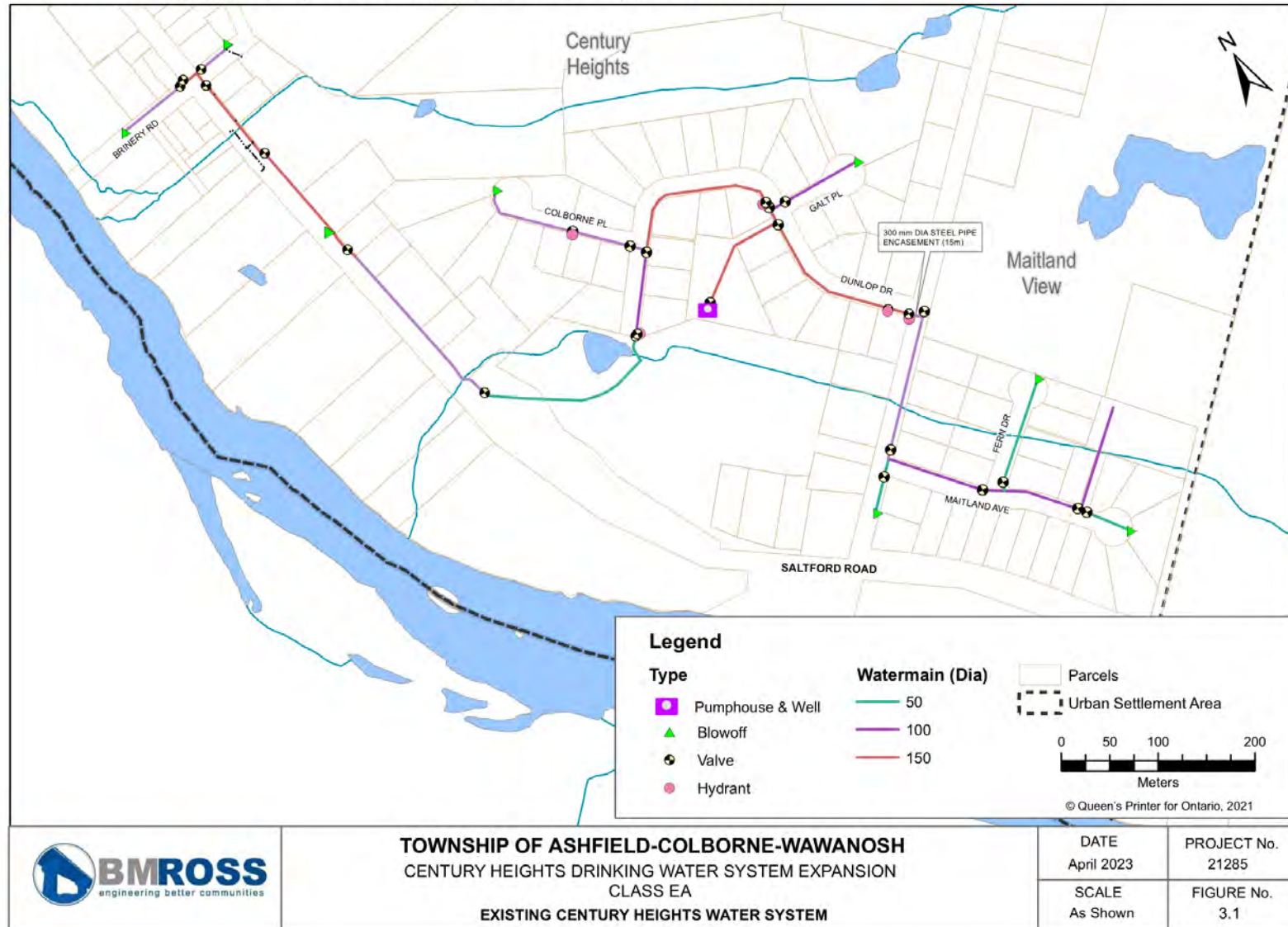
3.2 Future Demand

The Township of ACW recently approved two Plans of Subdivision within the study area, equating to 96 additional properties requiring municipal water. Additionally, there are other future development lands with the potential for an additional 60 units. Given this, the anticipated future demand based on available lands for development is an additional 156 customers. At the time of this report, Council directed BMROSS not to consider unserved properties within the study area. It is anticipated that these properties will continue to be serviced by private wells.

Anticipated demands for future development are expected to be similar to existing demands on a per capita basis. The projected maximum day flows to service future growth are 1,084 m³/day or 12.5 L/s and the peak day flows are 1,752 m³/day or 20.3 L/s.

Figure 3.1 Existing Century Heights Water System

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4.0 MCEA PROCESS

4.1 Phase 1 - Identification of the Problem/Opportunity

The first phase of the MCEA process is the identification and definition of the problem or opportunity to be addressed. The problem/opportunity statement is the framework for identifying practical and feasible alternative solutions.

The capacity of the existing Century Heights water system to supply additional customers is limited. It is anticipated that there are approximately 156 future customers within the Saltford settlement area that will require municipal water servicing. Given this, the Municipality has identified the need to investigate options to expand the water supply.

For the purposes of this MCEA, the following problem statement has been identified based on the above-noted needs.

The Century Heights Drinking Water System does not have sufficient water supply to service anticipated future developments.

4.2 Phase 2 – Identification of Practical Alternatives

The second phase of the MCEA process involves the identification and evaluation of feasible and practical alternative solutions to the defined problem. Once the feasible and practical alternatives are identified, the technical, economic, and environmental impacts associated with implementation of each are evaluated. Mitigation measures that could lessen environmental impacts are also defined. A preferred solution or solutions is then selected.

4.2.1 Initial List of Alternative Solutions

Initially, a long list of alternatives is generated as part of Phase 2 of the MCEA process. These alternatives are evaluated in terms of practicality and feasibility to produce a short list of practical alternatives for a more detailed evaluation and review. The long list of alternatives and their evaluation is summarized in Table 4.1.

Table 4.1 Long List of Alternative Solutions

Alternative	Initial Evaluation	Carried Forward for Further Evaluation (Yes or No)
1 - Do Nothing	<ul style="list-style-type: none">• Considered if impacts of other alternatives are too great or cannot be mitigated.• Does not address the need for additional supply.• Limits future growth opportunities• Will be used as the benchmark for comparison of other alternatives.	Yes – must always be considered – Carry forward as Alternative 1.

Alternative	Initial Evaluation	Carried Forward for Further Evaluation (Yes or No)
2 – Construct a New Well and treatment building	<ul style="list-style-type: none"> • Addresses the need for additional water supply. • Alternative locations can be considered. • Potential to secure sufficient water supply for current and future needs. • Can connect to existing water distribution system. • Will require drilling of test well. • Will change Source Water Protection areas 	Yes – carry forward for further evaluation.
3 – Expand Existing Well	<ul style="list-style-type: none"> • There is a physical limitation on the repairs that can be done to the existing casing. • Drawdown of existing wells could impact adjacent wells and expose the upper water bearing zones. • Would require major upgrades to existing treatment plant. • Increase in pumping rate could change Source Water Protection areas. 	No – given the limitations of the existing wells, this is not considered practical or feasible.
4 – Connect to Goderich Drinking Water System	<ul style="list-style-type: none"> • Would involve a connection to the Goderich Drinking Water System. • Would have significant capital costs. • Would require watermain crossing the Maitland River. 	No – not considered practical or feasible given the capital costs associated with this option.
5 – Replace groundwater well with surface water (Lake Huron) supply.	<ul style="list-style-type: none"> • Would involve installing a surface water intake in Lake Huron and constructing transmission main to Century Heights. • Would require significant changes to treatment processes. • Significant costs and potential impacts associated with constructing a new surface water intake in Lake Huron. 	No – not considered practical or feasible given capital costs associated with this option.

From the preliminary analysis of the long list of alternatives, there are two alternatives to carry forward for further evaluation:

- Alternative 1 – Do Nothing
- Alternative 2 – Construction of a New Well

Alternatives 3, 4 and 5 are not being carried forward for further investigation. This is primarily because these alternatives are not practical or feasible to implement. Rehabilitation of the existing well (Alternative 3) is not considered practical given the condition of the well and that the small site limits the ability to undertake repairs. Alternatives 4 and 5 would require significant capital expenditure to implement and given the size of the water system and number of users, these alternatives are not considered practical from a fiscal perspective.

The alternatives carried forward for further evaluation are described in additional details in the following subsections.

4.2.2 Alternative 1 – Do Nothing

The Do Nothing would maintain status quo, i.e., the water system would continue to operate as it currently operates. A consequence of this alternative is that future development within Century Heights will be restricted once capacity of the existing wells is reached.

This alternative is carried forward through the MCEA process as it may be implemented should the other alternatives have impacts that are too great (e.g., capital costs) or cannot be sufficiently mitigated.

4.2.3 Alternative 2 – Construction of a New Well and Treatment Building

This alternative involves drilling a new municipal groundwater well to supply the Century Heights water system. In considering this alternative, three potential options for a siting of the new well were identified and further evaluated: the Maitland Well Site (Site 1), a site in the Saltford Estates development (Site 2), and a site in the Saltford Heights development (Site 3). Site 1 is owned by the Township, whereas the other sites are located on private property. The sites are shown in Figure 4.1.

4.2.3 (a) Comparison of Alternative Sites

There are three sites considered for a new well supply for the Century Heights Drinking Water System: 1) the Maitland well site, 2) a site at the Saltford Estates development, and 3) a site at the Saltford Heights development. A comparison of the three sites is summarized in Table 4.2.

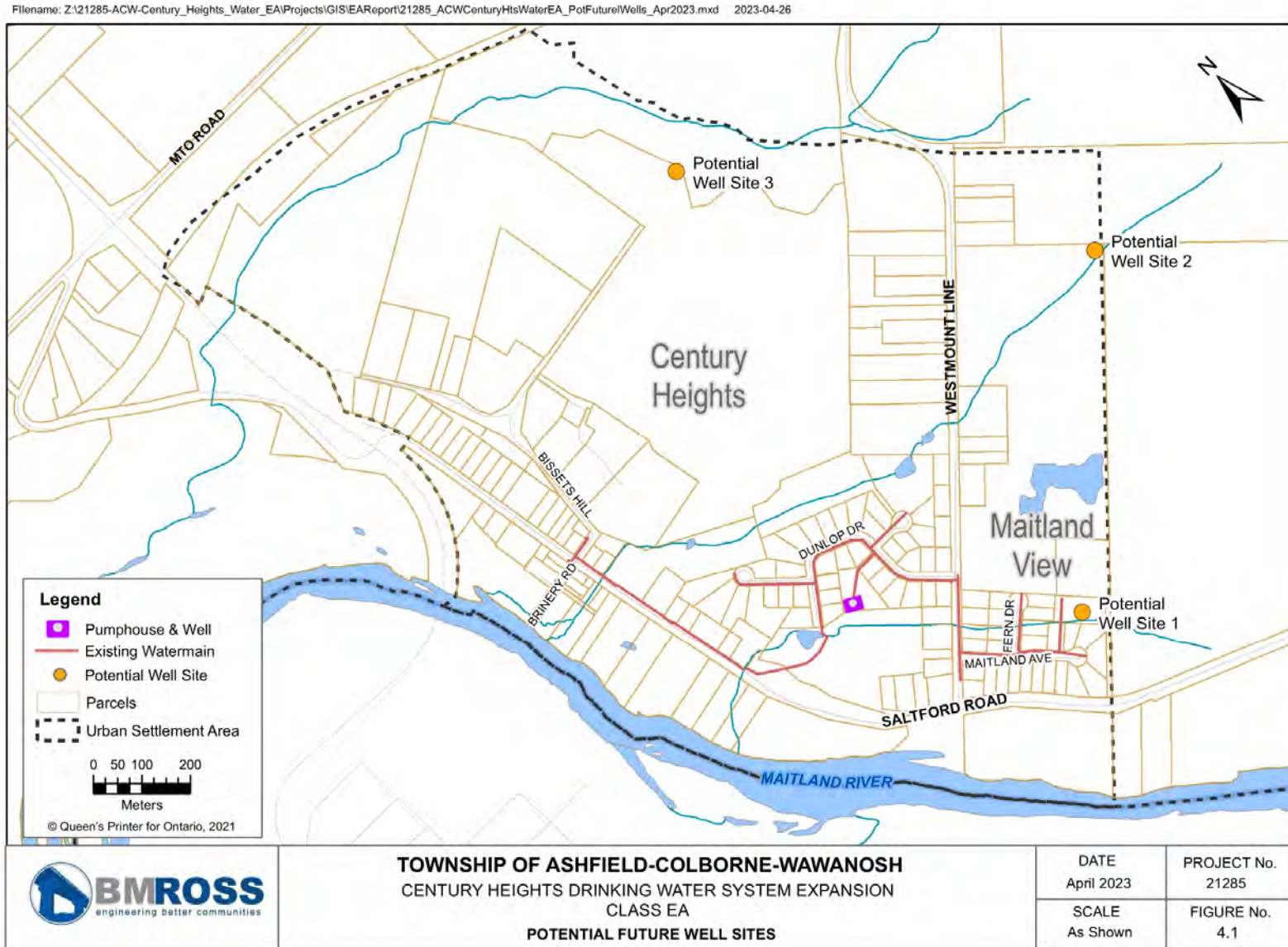
Table 4.2 Summary of Comparison of Alternative Well Sites

Site	Advantages	Disadvantages
Site 1 – Maitland Well Site	<ul style="list-style-type: none"> Former well at this site (decommissioned in 2008) had capacity ranging from 13 to 22 gpm/ft. Greater potential to secure needed yields. 	<ul style="list-style-type: none"> Any properties within 100 m of the well with septic systems will require inspection under Source Water policy. Potential for GUDI conditions.

Site	Advantages	Disadvantages
	<ul style="list-style-type: none"> • Less impacts to future development areas. • Near a connection point to existing system. • Site is municipally owned. 	<ul style="list-style-type: none"> • May require upgrades to existing watermain to supply development areas.
Site 2 – Saltford Estates	<ul style="list-style-type: none"> • Remote from existing well. • Less potential for GUDI conditions. • Site is at a relatively high elevation. 	<ul style="list-style-type: none"> • Potential yield suspected to decline away from the Maitland River. • Per the Source Protection Policy Plan new lots cannot be established within 100 m of the proposed well – will impact development. • Will require easement/driveway to access site. • Site is privately owned.
Site 3 – Saltford Heights	<ul style="list-style-type: none"> • Less potential for GUDI conditions. 	<ul style="list-style-type: none"> • Per the Source Protection Policy Plan new lots cannot be established within 100 m of the proposed well – will impact development. • Potential yield suspected to decline away from the Maitland River. • Will require easement/driveway to access site. • Site is privately owned. • Most remote from existing well/distribution system.

Based on the evaluation of the advantages and disadvantages of the three sites, Site 1 (the Maitland well site) is preferred. Site 1 is municipally-owned, is advantageous in providing a near-connection point to the treatment and storage facility, is easily accessed and not constrained for space. This site is also expected to have the greatest potential for to achieve the required yield. Given this, Site 1 is the only site considered for further evaluation.

Figure 4.1 Potential Future Well Sites



The general location and surroundings of Site 1 are shown in Figure 4.2. The area is currently open space, with vegetation mostly limited to grass that is regularly mowed by the Township. The area is currently utilized by local residents as parkland.

Figure 4.2 Well Site 1 (Maitland Well Site) – Looking West



4.3 Technical Evaluation of Well Site 1

Following the identification of Site 1 (Maitland Well Site) as the preferred site associated with Alternative 2, a test well was drilled to evaluate the water quality and quantity. The technical evaluation of the test well included a 72-hour pump test. The technical evaluation of Well 3 was completed by Ian D. Wilson Associates Limited and is summarized in the following subsections. The report by Ian D. Wilson Associates Limited is included as Appendix B.

4.3.1 Well 3 Construction Details

A test well was drilled in September 2022 at 36604 Maitland Avenue (see Figure 4.2), approximately 450 m southeast of the existing Century Heights wells. The test well was constructed to a depth of 76.2 m into the limestone bedrock. The steel well casing extends from 0.6 m above grade to 35.7 m below grade. A bedrock liner was required in the test well due to unstable bedrock fracturing below 54.3 m.

The well record associated with the test well is A328704.

4.3.2 Well 3 Water Quantity

Well 3 was pumped for a 72-hour period at a rate of 560 L/min, 700 L/min, and 850 L/min from October 3 to October 6. Water levels in Century Heights Well 1, and four off-site wells were monitored during the pumping test. The following summarizes the findings of the pumping test:

- Final Specific Capacity (L/min/m) = 237.4
- Static Water Level (m below grade) = 35.95
- Final Drawdown (m) = 3.58
- Final Pumping Level (M below grade) = 39.53
- Safe Yield (L/min) = 850

Based on the pumping test, the well is consistent with confined aquifer conditions and is not suspected to be Groundwater Under Direct Influence (GUDI). Additionally, with the depth and character of the overburden, the aquifer is considered locally secure and impacts to local surface water resources are not anticipated. The function of the monitored adjacent wells were also not adversely impacted during the pump test of Well 3. A copy of the report on the pump test is included in Appendix B.

4.3.3 Well 3 – Water Quality

Water samples were collected throughout the pumping test for water quality testing. The analysis included all parameters included in the Ontario Drinking Water Quality Objectives.

There were no detectable total coliform, E.coli, or fecal coliform found within the samples. The water from Well 3 is considered bacteriologically secure.

Well 3 is moderately hard, with values ranging from 270 mg/L to 210 mg/L. The fluoride level in the water ranged from 2.2 to 2.3 mg/L. This requires notification of the local Medical Officer of Health, but is below the maximum acceptable level of 2.4 mg/L. The elevated fluoride level is a result of the natural conditions in the bedrock aquifer. All other water quality parameters were below the Ontario Drinking Water Quality Standards (ODWQS). The water from Well 3 is also considered distinct in terms of chemical properties from water sourced from the Maitland River.

4.3.4 Wellhead Protection Area Modeling

Under the Safe Drinking Water Act, municipalities are required to work with source water protection authorities to include changes to municipal drinking water systems (including new wells) in source protection plans. O. Reg. 205/18 under the Clean Water Act specifies that municipalities are responsible to identify vulnerable areas and vulnerability scores in accordance with the technical rules set out in the Clean Water Act. This information must be shared with the source protection authority so it can provide a

confirmation notice necessary when submitting a new or amended Drinking Water Works Permit (DWWP). The regulation also specifies that drinking water cannot be supplied from the new well until the necessary amendments to the source protection plan have been approved.

Matrix Engineering was contracted to undertake modeling of the vulnerable areas associated with the Century Height wells. A local-scale groundwater model was developed based on local and regional characterization work previously completed in 2010 by Waterloo Numerical Modelling Corp, as well as current MECP data sets. Vulnerability scoring was based on existing groundwater vulnerability mapping sourced from Maitland Valley Conservation Authority and Ausable Bayfield Conservation Authority.

The local groundwater model developed for this study extended 17 km east of Lake Huron and 10 km in total from north to south. BMROSS provided the projected future pumping rates, anticipating that Well 3 will supply 156 customers and the number of customers supplied by Wells 1 and 2 will be reduced from 85 to 58 (the 27 customers will be serviced by Well 3 instead). It is anticipated that Well 3 will operate independently at a different pressure than Wells 1 and 2, and that pumping from either system will not have to increase to support the other. Given this, the pumping rates utilized in the modeling are 35 m³/day for Well 1 and 2 and 147 m³/day for Well 3.

Backwards particle tracking was used in the Visual MODFLOW model to identify the 2 year, 5 year and 25 year time of travel areas for the wells, which are the basis for WHPA B, C, and D areas. WHPA A consists of the area within a 100 m radius of the well. The WHPAs were overlain on existing vulnerability mapping to determine the vulnerability scores. The WHPA A areas have a vulnerability score of 10, WHPA B has a score of 6, C has a score of 4 and D has a score of 2. The WHPAs and vulnerability scores are shown in Figure 4.3.

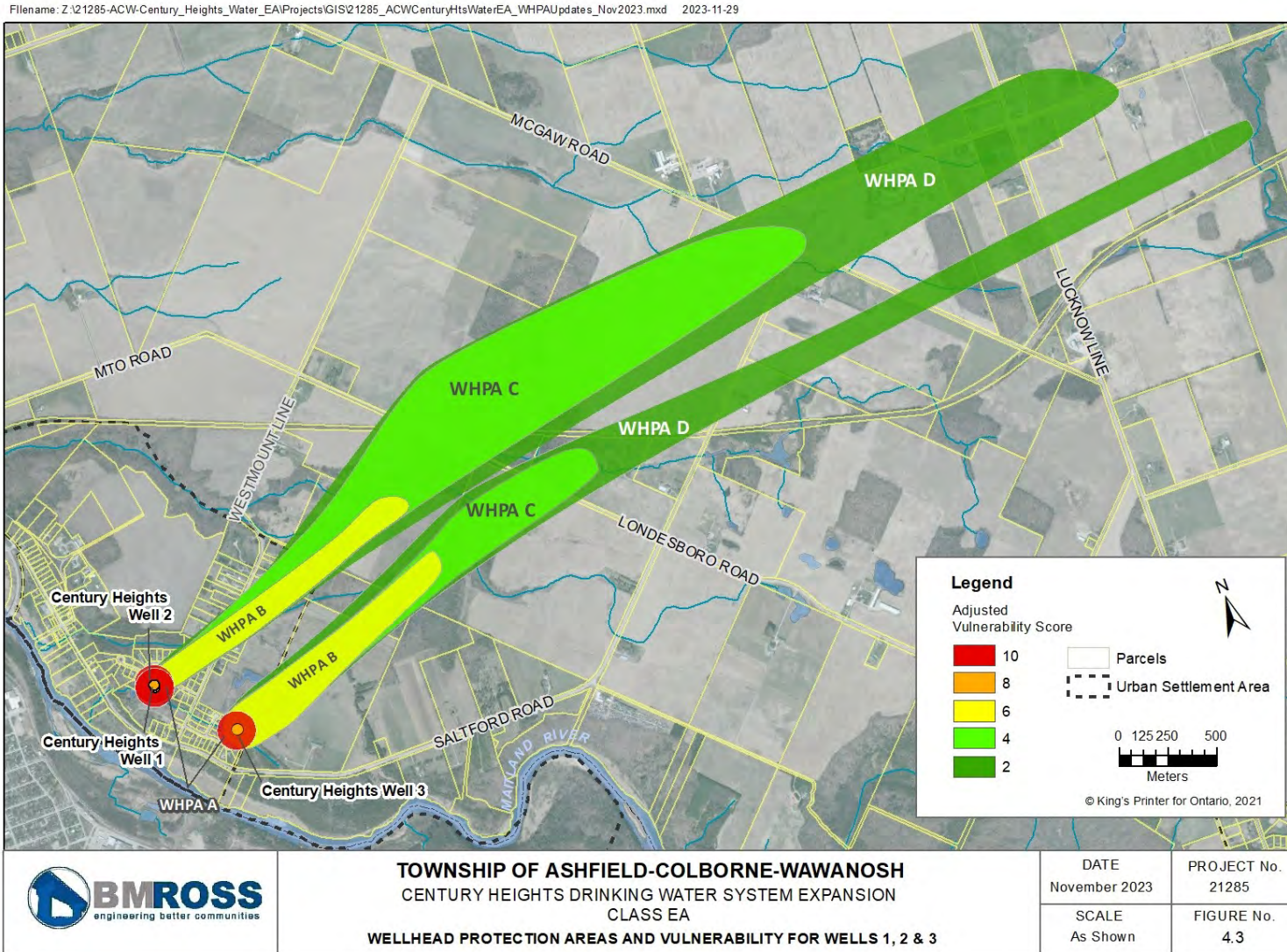
The report regarding the modeling of the WHPAs and vulnerability scores from Matrix Engineering is included as Appendix C.

4.4 Evaluation of Alternatives

Following the identification of practical and feasible alternative solutions, the alternatives are evaluated. The purpose of this is to examine the potential environmental impacts associated with the proposed works and to examine potential mitigation measures for any identified impacts. The evaluation stage generally involved the following activities:

- Evaluation of environmental impacts.
- Preliminary selection of a preferred alternative.
- Consultation with the general public and review agencies.
- Final selection of the preferred alternative.

Figure 4.3 Wellhead Protection Areas and Vulnerable Scores for Wells 1, 2 and 3



4.4.1 Evaluation Methodology and Procedure

The evaluation of alternatives was carried out using a comparative assessment methodology, designed to predict the nature and magnitude of environmental impacts resulting from each defined option and to assess the relative merits of the alternative solutions. The evaluation methodology involved the following principal tasks:

- Identification of existing environmental conditions (baseline conditions, inventories).
- Assessment of existing land use activities, infrastructure, natural features, and socioeconomic characteristics.
- Review of proposed alternatives and related works.
- Determination of the level of complexity required to complete the impact assessment.
- Identification of environmental components and subcomponents that may be affected by the defined alternative (i.e., define evaluation criteria).
- Prediction of the environmental impacts (positive, negative) resulting from the construction and operation of the defined options.
- identification and evaluation of measures to mitigate adverse effects.

Selection of a preferred alternative following a comparative analysis of the relative merits of each option.

4.4.2 Environmental Evaluation Methodology

The second phase of the MCEA process includes the evaluation of impacts associated with the alternative solutions. During the evaluation process, it is necessary to determine what effect or impact the practical alternatives will have on the environment and what measures can be taken to mitigate the impact. The intent of this exercise is to:

- Minimize or avoid adverse environmental effects associated with the project.
- Incorporate environmental factors into the decision-making process.

Under the terms of the EA Act, the environment is divided into five general components:

- Natural environment.
- Social environment.
- Cultural environment.
- Economic environment.
- Technical environment.

Each environmental component can be further subdivided into specific elements that have the potential to be affected by the implementation of a solution. Table 4.4 provides an overview of the preliminary environmental components being considered as part of this investigation.

The environmental effects of each alternative on the specific components are generally determined through an assessment of various impact predictors (i.e., impact criteria). Given the works associated with the alternative solutions, the following key impact criteria were examined during the course of the assessment:

- Nature (direct, indirect or cumulative)
- Magnitude (including the scale, intensity, geographic scope, frequency and duration of potential impacts)
- Technical complexity
- Mitigation potential (which considers avoidance, compensation and degree of reversibility)
- Public perception
- Scarcity and uniqueness of affected components
- Compliance with the applicable regulations and public policy objectives

Table 4.3 Environmental Components Being Evaluated

Environmental Component	Sub-Component
Natural Environment	<ul style="list-style-type: none"> • Significant natural features • Species at Risk • Wildlife • Vegetation • Surface water quality and quantity • Groundwater resources • Air quality, dust and noise • Physiographic features and soils • Drainage characteristics • Climate change • Excess soil
Social	<ul style="list-style-type: none"> • Property access • Source Water Protection • Local disruptions • Health and safety • Construction impacts • Future development
Cultural	<ul style="list-style-type: none"> • Archaeological and cultural heritage resources
Economic	<ul style="list-style-type: none"> • Capital and operating costs

Environmental Component	Sub-Component
Technical	<ul style="list-style-type: none"> • Water quality and quantity • Impacts to existing infrastructure • Source Water Protection

Using the above criteria, the potential impacts of each practical alternative were systematically evaluated. The significance of the potential impacts posed by each alternative were evaluated, considering the anticipated severity of the following:

- Direct changes occurring at the time of project completion.
- Indirect effects following project completion.
- Induced changes resulting from the project.

For the purposes of this MCEA, impact determination criteria developed by Natural Resources Canada have been applied to predict the magnitude of environmental effects resulting from the implementation of the project. Table 4.4 summarizes the impact criteria.

Table 4.4 Level of Impact Effects and Criteria

Level of Effect	General Criteria
High	Implementation of the project could threaten sustainability of the feature and should be considered a management concern. Additional remediation, monitoring and research may be required to reduce impact potential.
Moderate	Implementation of the project could result in a resource decline below baseline, but impact levels should stabilize following project completion and into the foreseeable future. Additional management actions may be required for mitigation purposes.
Low	Implementation of the project could have a limited impact upon the resource during the lifespan of the project. Research, monitoring and/or recovery initiatives may be required for mitigation purposes.
Minimal	Implementation of the project could impact upon the resources during the construction phase of the project but would have negligible impact on the resource during the operation phase.

Given the criteria defined above, the significance of adverse effects is predicted on the following assumptions:

- Impacts from a proposed alternative assessed as having a Moderate or High level of effect on a given feature would be considered significant and;
- Impacts from a proposed alternative assessed as having a Minimal to Low level of effect on a given feature would not be considered significant.

4.5 Environmental Evaluation

The potential interactions between the identified alternatives and environmental features are examined as part of the second phase of the MCEA process. The purpose of this analysis is to determine, in relative terms, the environmental effects of constructing and operating each identified option on the defined environmental component and subcomponents. Table 4.6 summarizes the preliminary evaluation of alternatives. The following symbols are used to indicate:

- Minimal Impact
- ◐ Low Impact
- ◑ Moderate Impact
- High Impact

Table 4.5 Evaluation of Alternative Solutions

Component	Alternative 1 – Do Nothing	Alternative 2 – New Supply Well at Maitland Well Site
Natural – Significant Natural features	<ul style="list-style-type: none"> ○ No significant natural features within the vicinity of or adjacent to the existing wells. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ○ Well site is in area cleared for parkland and former municipal well site. ○ Area is adjacent to Scott’s Point Life ANSI. Drilling of well and operation will not impact the ANSI. ○ Site is approximately 230 m north of Maitland River Valley ANSI. Drilling of well and operation are not expected to impact the ANSI. ○ Well site is approximately 230 m north of the Maitland River. Pumping and water quality test of well indicated the aquifer is secure and not associated with the river. ○ Minimal level of impact.
Natural – Species at risk	<ul style="list-style-type: none"> ○ No change in impacts. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ● Site has small footprint within a previously disturbed area (cleared for parkland). No species at risk present at site. ● Operation of well not expected to impact any Species at Risk or their habitat. ● Low level of impact.
Natural – Wildlife	<ul style="list-style-type: none"> ○ No change in impacts. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ○ Site has small footprint within a previously disturbed area (cleared for parkland). ○ Operation of well not expected to impact any wildlife or their habitat. ○ Minimal level of impact.

Component	Alternative 1 – Do Nothing	Alternative 2 – New Supply Well at Maitland Well Site
Natural – Vegetation	<ul style="list-style-type: none"> ○ No change in impacts. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ☑ Site has small footprint within a previously disturbed area (cleared for parkland). ☑ Vegetation at site is primarily grass that is regularly mowed. ○ Operation or drilling of well is not expected to impact trees or vegetation adjacent to well site. ☑ Low level of impact.
Natural – Surface water quantity and quality	<ul style="list-style-type: none"> ○ No change from current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ○ Pump test identified low risk to function of local surface water bodies. ☑ Water from well pumping tests will be discharged to adjacent ditch. ☑ Low level of impact.
Natural – Air quality, dust and noise	<ul style="list-style-type: none"> ○ No change from current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ☑ Drilling of well will increase noise locally during drilling activities. ☑ Normal operation of well not expected to create additional noise, dust or air quality impacts. ☑ A diesel generator will be installed at site for use emergency power outages. No new impacts associated with back up generator. ☑ Low level of impact.
Natural - Physiographic features and soils	<ul style="list-style-type: none"> ○ No change from current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ☑ Soil and materials excavated during drilling will be disposed of appropriately. ☑ Operation of well not expected to have any impacts on physiographic features or soil conditions. ☑ Low level of impact.
Natural – Drainage characteristics	<ul style="list-style-type: none"> ○ No change in current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ☑ Not expected to impact or change local drainage characteristics. ☑ Low level of impact.

Component	Alternative 1 – Do Nothing	Alternative 2 – New Supply Well at Maitland Well Site
Natural – Climate change	<ul style="list-style-type: none"> ○ No change to current conditions. ☑ Back up diesel generator will be utilized during emergency power outages. ☑ Low level of impact. 	<ul style="list-style-type: none"> ☑ Construction will require heavy equipment that will release Greenhouse Gases (GHG) as emissions. Impacts related to construction may be reduced through equipment and materials selection. ☑ Back up diesel generator will be utilized during emergency power outages. ☑ Low level of impact.
Natural – Excess soil	<ul style="list-style-type: none"> ○ No change to current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ☑ Excess soil from construction of well and treatment building will be disposed of in accordance with O.Reg 406/19. Excess soil is not expected to be contaminated. ☑ Low level of impact.
Social – property access	<ul style="list-style-type: none"> ○ No change from current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ☑ Portion of the site will be closed for public access during construction of the well and treatment building. ☑ Once construction is complete, site will have full public access restored. ☑ Low level of impact.
Social – Source Water Protection	<ul style="list-style-type: none"> ○ No change from current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ☑ New well will have new WHPA areas. ☑ Residents within WHPA A or WHPA B with vulnerability score of 10 will be required to have their septic systems inspected on a 5-year basis. ☑ No new lots serviced by septic systems will be permitted within highly vulnerable area around well. ☑ Residents will be impacted by Source Protection policies in WHPAs around new well. ☑ Moderate level of impact.

Component	Alternative 1 – Do Nothing	Alternative 2 – New Supply Well at Maitland Well Site
Social – local disruptions	<ul style="list-style-type: none"> ○ No change from current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ● Construction of treatment building will result in temporary noise and construction disruptions for adjacent property owners. ● Public access will be restricted during construction of the treatment building. ● Moderate level of impact.
Social – health and safety	<ul style="list-style-type: none"> ○ No change from current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ● Will provide a secure water supply. Pump test identified sufficient water supply at site. ● Water quality similar to existing well. ● Low level of impact.
Social – future development	<ul style="list-style-type: none"> ● Opportunity for future residential development will be restricted under this scenario due to limited capacity in existing wells. ● High level of impact. 	<ul style="list-style-type: none"> ○ Will provide a secure water supply. Pump test identified sufficient water supply at site. ○ Water quality similar to existing well. ○ Minimal level of impact.
Cultural – Archaeological and cultural heritage resources	<ul style="list-style-type: none"> ○ No change from current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ● Checklist indicated low potential for cultural heritage landscape and built heritage resources. ● Low level of impact.
Economic – capital cost and operating costs	<ul style="list-style-type: none"> ○ No capital costs associated with this alternative. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ○ No additional land acquisition required. ● Preliminary probable cost for new well is: \$105,000 + HST. There will be additional costs associated with construction of a wellhouse building. ● Expected to be paid through existing rates, reserves and development charges. Minimal costs expected to be attributed to existing residents. ● Similar operating costs to existing well. ● Moderate level of impact.

Component	Alternative 1 – Do Nothing	Alternative 2 – New Supply Well at Maitland Well Site
Technical – water quality and quantity	<ul style="list-style-type: none"> ○ No change from current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ☉ Water quality and quantity are similar to existing well (see Section 4.3). ☉ Test well showed non-GUDI conditions and sufficient water quantity to meet anticipated needs. ☉ Low level of impact.
Technical – impacts to existing infrastructure	<ul style="list-style-type: none"> ☉ Limited redundancy in system ☉ Moderate level of impact. 	<ul style="list-style-type: none"> ☉ Will result in increased redundancy for the system. Beneficial if repairs or rehabilitation of other wells is required in the future. ☉ Low level of impact.
Technical – Source Water Protection	<ul style="list-style-type: none"> ○ No change from current conditions. ○ Minimal level of impact. 	<ul style="list-style-type: none"> ☉ Requires modeling of new WHPAs and determination of vulnerability scores. ☉ Moderate level of impact.

4.6 Evaluation Summary

The evaluation completed in the previous section identified the potential impacts associated with the two alternative solutions. The evaluation process included a consideration of natural, social, economic, cultural and technical criteria.

The Do Nothing alternative (Alternative 1) has minimal impacts associated with the natural environment and is the most economical option, as there are no capital costs associated with it. This alternative does not address the need for additional supply capacity to service approved future development. Given that this alternative does not address the identified problem/opportunity, it should only be considered should the other alternatives be considered completely unfeasible.

The second alternative is the installation of a new well (Well 3) at the site of the former Maitland well site. From an environmental perspective, the impacts of a new well are expected to be minimal, as the site is already cleared and has previously been used for municipal infrastructure. The installation of a new well will have temporary impacts related to noise and limited public access to the site. The new well will require the construction of a treatment building. A new well at this site will result in new WHPAs, which will encompass different property owners compared to the WHPAs associated with the existing well. The estimated capital costs associated with this alternative are: \$105,000 + HST. Additional costs will be associated with construction of the wellhouse building.

4.7 Selection of Preferred Alternative

From the evaluation of alternatives, a preferred solution was identified. The installation of a new supply well at the Maitland well site is considered the preferred alternative. Expansion of the existing wells is not considered practical or feasible alternatives, given the physical limitations of the wells and associated aquifer. The installation of a new well at the Maitland well site makes use of a public site with good access to the existing water distribution system. Drilling a new well at the treatment site will also allow for continued operation of the existing wells while the new well is constructed and minimal interruptions to supply.

The alternatives considered and preferred solution were presented to the public at a Public Information Centre (PIC) to obtain feedback and input.

During consultation with adjacent property owners, stakeholders and the public, concerns and questions were raised regarding continued use of the proposed site as parkland, location of the test well, and impacts related to source water protection.

This option does not require any purchasing of private land to accommodate the new well and associated infrastructure. This significantly reduces the economic impacts associated with this option.

5.0 CONSULTATION PROGRAM

5.1 General

Consultation is an integral component of the MCEA process. Consultation allows for an exchange of information which assists the proponent in making informed decisions during the evaluation of alternative solutions. During Phases 1 and 2 of the study process, consultation was undertaken to obtain input from the general public, review agencies, and stakeholders that might have an interest in the project.

The components of the consultation program employed during the initial MCEA study are summarized in this section of the Screening Report and documented in Appendix D.

5.2 Initial Notice

Contents: General study area description, summary of proposed works

Issued: March 9, 2022

Placed in: Goderich Signal Star, ACW website

Circulated to: 129 adjacent property owners, 8 review agencies

Input period: April 8, 2022

Comments received from the public as a result of the Notice are include within Table 5.1.

Table 5.1 Summary of Initial Public Comments

Member of Public	Comments	Action/Response
Property Owner March 16, 2022 (via email)	<ul style="list-style-type: none">- Requested further information regarding the project and Class EA process.	<ul style="list-style-type: none">- Provided an overview of the project and Class EA process.
Eight Property Owners March 28, 2022 (via email)	<ul style="list-style-type: none">- Inquired if adjacent properties to the proposed subdivisions would be required to connect to municipal well or water systems. If so, they request that associated costs be charged to the subdivision developers.- Requested information regarding impacts from the installation of new septic systems, groundwater, drainage and stormwater management once MVCA has peer reviewed plans.- Requested additional information regarding recommended best practices to protect and manage SGRA.	<ul style="list-style-type: none">- Provision of municipal water to the proposed developments associated is being considered as part of this EA.- Comments shared with County Planning Department.

Member of Public	Comments	Action/Response
<p>Five property owners April 4, 2022 (via email)</p>	<ul style="list-style-type: none"> - Requested information regarding impacts from the installation of new septic systems, groundwater, drainage and stormwater management once MVCA has peer reviewed plans. - Requested additional information regarding recommended best practices to protect and manage SGRA. - Requested that written communication stating that existing property owners will not be required to connect to any municipal well or water system as a result of the proposed and future development to retain quality and autonomy of existing wells. States that some wells have been installed recently (within the last 2 years). If they are required to connect to the municipal well or water system, they request that associated cost be charged to the subdivision developer. - Requested that written communication stating that appropriate and effective mitigation of stormwater and drainage infrastructure is installed to prevent potential flooding into adjacent properties, especially where a swale existing adjacent to 81280 Westmount Line and 81286 Westmount Line. - Requested that written communication stating that groundwater vulnerable scores will be updated to ensure that they remain in a safe range as a result of the increased water intake from the proposed development. - Requested a more in-depth study be completed at the gravel pit site to determine impacts to wildlife species including species at risk, natural habitats, and microhabitats. - Inquired how the gravel pit contributes to the existing groundwater and drainage issues within the field located behind the existing houses or the location of the proposed new subdivision. - Inquires if this study considers the proposed 66 detached residential subdivision west of Westmount Line 	<ul style="list-style-type: none"> - Provision of municipal water to the proposed developments associated is being considered as part of this EA. - Comments shared with County Planning Department.

Member of Public	Comments	Action/Response
	and the 25-30 home subdivision on the east side of Westmount Line.	
Property Owner March 15, 2022 (via email)	<ul style="list-style-type: none"> - Inquired how it is determined that there is sufficient water to expand the system. - Inquired if costs associated with the proposed expansion will be apportioned to the existing users. 	<ul style="list-style-type: none"> - Will be examining capacity of existing wells and forecasting future demands. A digital model will also be examined to look at pressures and flows. - If components of the expansion benefit existing users, there may be costs apportioned to users. These costs may be paid from existing reserves or rates.
Property Owner, March 30, 2022 (via email)	<ul style="list-style-type: none"> - Asked if the project will result in an expense to those already on the water system. 	<ul style="list-style-type: none"> - At this time it is not known if the expansion will include any upgrades or improvements that would benefit the existing users. If an upgrade or improvement that benefits existing users, often those costs are paid through reserves or user fees.

5.3 Government Review Agencies

Input into the MCEA process was solicited from government review agencies by way of email correspondence. Agencies that might have an interest in the project were initially sent a letter describing the nature of the project and a copy of the Notice of Study Commencement. Appendix D contains a copy of the information circulated to the review agencies and a list of the agencies requested to comment on the project. Formal written correspondence from the agencies is also provided. A summary of the comments received can be found in Table 5.2.

Table 5.2 Summary of Review Agency Comments

Review Agency	Comments	Action Taken
Patrick Huber-Kidby, MVCA March 16, 2022 (via email)	<ul style="list-style-type: none"> • Offered to provide mapping related to regulated areas around Salford. • Acknowledged that a Hydrogeological investigation is being completed by Ian D. Wilson & Associates Limited. • No further comment at this time but look forward to discussing details of the project. 	<ul style="list-style-type: none"> • Information noted and filed.
Joseph Harvey, Heritage Planner, MHSTCI April 1, 2022 (via email)	<ul style="list-style-type: none"> • Stated that under the Class EA process, impacts from project on known and potential cultural heritage resources need to be identified. • Provided screening checklists to identify the potential for archaeological resources, built heritage resources and cultural heritage landscapes within the project site. • Engagement with Indigenous communities about potential cultural heritage resources of value to them is required. • Recommendations from technical cultural heritage studies need to be addressed and incorporated into the project. • Provide all technical cultural heritage studies to the MHSTCI before issuing a Notice of Completion or commencing work on the site. 	<ul style="list-style-type: none"> • Information noted and filed.
Mark Badali, Regional Environmental Planner – Southwest Region, MECF March 30, 2022 (via email)	<ul style="list-style-type: none"> • Acknowledged that the ACW is following the approved environmental planning process for a Schedule B project under the Municipal Class EA. • Attached an “Area of Interest” document that provides guidance from the ministry regarding the Class EA process. All areas of interest are required to be addressed during the process. • Consultation with Aboriginal communities is required during the MCEA process. Resources are attached regarding steps required during Aboriginal consultation. • Stated that the Director of Environmental Assessment Branch must be contacted under circumstances stated in the letter. • Stated that a draft report must be sent 	<ul style="list-style-type: none"> • Information noted and filed.

Review Agency	Comments	Action Taken
	directly to contact prior to filing of a final report. A copy of the final notice needs to be sent to the ministry's Southwest Region EA notification email address after the draft report has been reviewed and finalized.	
Karina Černiavskaja, District Planner, NDMNRF, March 11, 2022 (via email)	<ul style="list-style-type: none"> • Stated that screening for natural heritage or other resource values for this project was not completed. • Provided information regarding: Natural Heritage and Endangered Species Act, Petroleum Wells and Oil, Gas and Salt Resources Act, Public Lands Act and Lakes and Rivers Improvement Act 	<ul style="list-style-type: none"> • Information noted and filed.
Donna Clarkson, Co-DWSP Program Supervisor, August 24, 2022 (via telephone)	<ul style="list-style-type: none"> • Discussed modeling of future WHPA. Donna provided information regarding former Maitland View Estate well. 	<ul style="list-style-type: none"> • Information noted and filed.

Throughout the EA process, BMROSS staff were in contact with local Source Water Protection staff, regarding the review of WHPA modeling efforts and report. Comments were received from Source Water Protection staff on the draft WHPA delineation and vulnerability scoring report and incorporated into the final report (see Appendix C).

5.4 Aboriginal Consultation

5.4.1 Aboriginal Consultation Process

The Crown has a duty to consult with First Nation and Métis communities if there is a potential to impact on Aboriginal or treaty rights. This requirement is delegated to project proponents as part of the MCEA process, therefore, the project proponent has a responsibility to conduct adequate and thorough consultation with Aboriginal communities as part of the MCEA consultation process.

5.4.2 Background Review

In order to identify Aboriginal Communities potentially impacted by the project the Aboriginal and Treaty Rights Information System (ATRIS) was consulted. A search was conducted for Aboriginal Communities, including their traditional territories that would lie within a 50 km radius of the project study area. Utilizing this process and feedback received from the MECP, eleven aboriginal communities/organizations were identified in

conjunction with this project including: Chippewas of Kettle and Stony Point First Nations, Chippewas of Nawash Unceded First Nation, Chippewas of Saugeen First Nation, Saugeen Ojibway Nation (SON), Aamjiwnaang First Nations, Chippewas of the Thames First Nations, Oneida Nation of the Thames, Métis Nation of Ontario, Walpole Island First Nation (Bkejwanong Territory), Great Lakes Métis Council, and Historic Saugeen Métis. Correspondence was subsequently forwarded to each community/ organization detailing the proposed project and asking for input.

5.4.3 Aboriginal Consultation Log

A response to the initial letter and Notice of Study Commencement was received from the Chippewas of the Thames First Nation. All the First Nation and Métis communities identified were circulated a copy of the Notice of Commencement in addition to a letter outlining the project. A summary of the comments received are included below in Table 5.3.

Table 5.3 Summary of First Nation and Métis Community Comments

To	From	Comments	Action Taken/Response
SON Environmental Office (via email) – Emily Martin and Juanita Meekins, March 9, 2022	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope, and map of project area. 	<ul style="list-style-type: none"> • No response
Chief Anoquot, Chippewas of Saugeen First Nation (via email), March 9, 2022	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope and map of project area. 	<ul style="list-style-type: none"> • No response
Chief Nadjiwon, Chippewas of Nawash Unceded First Nation (via email), March 9, 2022	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope and map of project area. 	<ul style="list-style-type: none"> • No response.
Chief Jason Henry (cc: Valeria George) Chippewas of Kettle and Stony Point First Nation (via email), March 9, 2022	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope and map of project area. 	<ul style="list-style-type: none"> • No response.

To	From	Comments	Action Taken/Response
Aamjiwnaang First Nation Administration Office (via email), March 9, 2022	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope and map of project area. 	<ul style="list-style-type: none"> • No response.
Walpole Island First Nation, Bkejwanong Territory (via email), March 9, 2022	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope and map of project area. 	<ul style="list-style-type: none"> • No response.
Oneida of the Thames (via email)	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope and map of project area. 	<ul style="list-style-type: none"> • No response.
Great Lakes Métis Council (via email), March 9, 2022	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope and map of project area. 	<ul style="list-style-type: none"> • No response.
Historic Saugeen Métis (HSM) (via email), March 9, 2022	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope and map of project area. 	<ul style="list-style-type: none"> • No response
Chippewas of the Thames First Nation (via NationsConnect.ca), March 9, 2022	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope and map of project area. 	<ul style="list-style-type: none"> • Response received April 6, 2022
Métis Nation of Ontario (via email) – March 9, 2022	BMROSS	<ul style="list-style-type: none"> • Provided letter outlining project scope and map of project area. 	<ul style="list-style-type: none"> • No response.
BMROSS	Fallon Burch, Consultation Coordinator, Chippewa of the Thames First Nation (via email) April 6, 2022	<ul style="list-style-type: none"> • Acknowledged the proposed project. • Stated that the project is located within the Chippewas of the Thames First Nation (COTTFN) Big Bear Creek Additions to Reserve land selection area and COTTFN's traditional territory. • No concerns were identified with the proposed project. • Requested notification if any changes are made to the proposed project. • Requested consultation with First Nation communities in close proximity to the proposed project. 	<ul style="list-style-type: none"> • Noted.

To	From	Comments	Action Taken/Response
SON Environmental Office (via email, April 27, 2022)	BMROSS	<ul style="list-style-type: none"> Follow up email regarding Notice of Commencement 	<ul style="list-style-type: none"> Response received May 4
ACW (via email August 16, 2022)	SON Environmental Office	<ul style="list-style-type: none"> Provided a Letter of Agreement for review of Class EA 	<ul style="list-style-type: none"> Signed Letter of Agreement returned to SON.

5.5 Public Information Centre

A Public Information Centre (PIC) was held on December 1, 2022 at the Benmiller Community Hall from 6:30-8:30 PM. A Notice of Public Information Centre was mailed to each property owner within the Saltford urban settlement area and placed on the Township's website. Residents that had previously submitted comments were also emailed a copy of the Notice. The format of the meeting included an open house component with display boards as well as a formal presentation with a question and answer period. Representatives from BMROSS and the Township of ACW were in attendance. The meeting was arranged to serve several purposes:

- Provide local residents and other stakeholders with additional details on the MCEA process and a forum to express their views.
- Provide area residents with an overview of the alternatives being considered and potential impacts associated with each.
- Provide residents with an opportunity to ask questions.
- Identify the preliminary preferred alternative.

There were approximately 20 residents in attendance. A copy of the presentation materials is included in Appendix D. The questions and comments received during and following the PIC are summarized in Table 5.4.

Table 5.4 Comments and Questions from PIC

Question/Comment	Response
Will residents who have private wells be forced to connect to the municipal system?	At this time Council has not required mandatory connections to the water system.
How was the site for the test well chosen?	The location of the test well was chosen to try and reduce potential impacts related to source water on future development lands, access to the water distribution system, and use of the land for other purposes (e.g. passive recreation).

Question/Comment	Response
Who is paying for this new well? Will there be a cost to residents who are already connected to the system?	Future development will pay for majority of costs through development charges. If there are upgrades that benefit existing users, those costs will be recovered through rates and reserves.
What impacts will there be to residents next to the new well site?	Property owners within WHPA A and WHPA B where the vulnerability score is 10 will be required to have their septic systems inspected on a 5-year basis, a risk management plan for large quantities of fuel stored and may be subject to other Source Protection policies.
If a septic system is inspected near the well and there are issues, will the property owner be required to fix or replace the system?	Under the Building Code Act, the CBO can require repairs or replacement of septic systems.
Will another well be drilled to use as the supply well?	Currently it is anticipated the test well will be utilized for a supply well.
The site with the test well previously had a municipal well on it. Why was the original abandoned?	The well was abandoned following the connection of the Century Heights and Maitland Estates water systems and construction of a second well at the Century Heights well site. At the time, the Maitland Estates well was not needed and there was little anticipated future growth. The well was decommissioned to avoid contamination of the aquifer.

6.0 IDENTIFICATION OF POTENTIAL IMPACTS AND MITIGATION MEASURES

6.1 Framework of Analysis

Following the selection of Alternative 2 as the preliminary preferred solution, a study framework was developed to further evaluate the potential impacts of implementing this project. For reference, Figure 6.1 illustrates the preferred solution. The purpose of this review was to assess the environmental interactions resulting from the construction and operation of the proposed works, and to determine if the identified interactions that would generate potential environmental impacts.

The assessment of the preferred alternative incorporated these activities:

- Preliminary assessment of potential design options.
- Assessment of the construction and operational requirements of the proposed works.

- Consultation with the public, stakeholder groups and government agencies.
- Reviewing engineering methodologies associated with the construction of a new well and associated facilities.
- Prediction of the environmental interactions between the proposed works and the identified environmental components.
- Evaluation of the potential impacts of the project on the environmental features, including residual effects following mitigation.

6.2 General Project Scope

The works summarized below and illustrated conceptually in Figure 6.1 represent the scope of construction planned for this project. It is expected that the test well will be utilized as the new supply well. The project is expected to involve the following general components:

- Municipality applies for Drinking Water Works Permit amendment and new Permit to Take Water.
- Wellhead modeling and technical information forwarded to Source Water Protection Authority.
- Contractor mobilization to the site.
- Well pump and riser piping installed in new well.
- New watermain and power conduits/cables installed from well to new treatment building.
- Construct new treatment building.
- Construct watermain from new treatment building to the existing water distribution system.
- Site restoration (seeding/topsoil)

Figure 6.1 Preferred Solution (New Well Site)

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6.3 Impact Assessment and Mitigation Measures

6.3.1 Assessment of Impacts

In reviewing the various criteria identified in Section 4.3 of this report and additional comments received during the consultation program, a number of specific environmental elements were identified which could be adversely affected by the implementation of the preferred alternative. The potential impacts are associated with the following environmental or project components:

- Source Water Protection
- Local Disruptions
- Capital and Operating Costs
- Construction-Related Impacts

6.4 Discussion of Potential Impacts

6.4.1 Source Water Protection

The construction of a new well at a new site will result in new WHPA areas. Properties within the WHPAs will be subject to source protection policies. The modeled WHPAs for the existing wells and new well site are shown in Figure 4.3.

The WHPAs for the existing wells and new well extend northeast from the well sites. The modeled pumping rate for Wells 1 and 2 has significantly decreased from the rate used in 2010, which was 160 m³/day compared to 35 m³/day. The decrease in pumping rate, as a result of reduced demand from the well (see Section 4.3.4) resulted in smaller WHPA areas for Wells 1 and 2 compared to the 2010 WHPA areas.

The WHPAs for Wells 1 and 2, which overlap given the close proximity of the wells, extend slightly beyond the intersection of School Road and Lucknow Line. The WHPAs for Well 3 extend in a similar direction, crossing Lucknow Line. For Wells 1 and 2, the WHPA A to D intersect with 57 properties: 14 in WHPA A, 33 in WHPA B, 48 in WHPA C and 57 in WHPA D. Note, the property counts include all properties that intersect with that particular WHPA and a number of properties intersect with multiple WHPAs so the property counts represent cumulative totals. Within WHPA A, land uses include: residential, forested lands, and the municipal well site. In WHPA B, similar to WHPA A, there are residential land uses, and agricultural uses. The agricultural uses are limited to cropping operations. In WHPA C, the land uses are agricultural and residential. In WHPA D, the land uses are primarily agricultural, including livestock operations and fields.

For Well 3, the WHPAs intersect with 29 properties: 12 in WHPA A, 16 in WHPA B, 18 in WHPA C and 29 in WHPA D. In WHPA A, the land uses are primarily residential, including an area of future residential development. WHPA B includes agricultural and

wooded areas. WHPA C includes wooded areas and agricultural lands. WHPA D includes primarily agricultural lands, including a livestock barn. The total area within the delineated WHPAs for each well are summarized in Table 6.1.

Table 6.1 Land Area within Well 1-2 and 3 WHPAs

WHPA	Well 1 and 2	Well 3
A	3.14 ha	3.14 ha
B	21.5 ha	26.1 ha
C	144.02 ha	51.3 ha
D	251.9 ha	128.7 ha

For the WHPAs, a desktop analysis of potential and future significant drinking water threats was undertaken. The threats were based on the circumstances established in the 2021 Technical Rules, previous threat assessment work completed by the Source Protection Authority, the WHPAs, vulnerability scores and potential activities as determined from aerial photography and zoning designations. The threat categories and number of properties with potential of significant drinking water threats are summarized in Table 6.2.

Table 6.2 Century Heights WHPAs: Enumeration of Potential Significant Threats

Threat	Chemicals	Pathogens	DNAPL
i. Waste Disposal Site	1		
i. Sewage System		20	
3. Agricultural Source Material Application			
4. Agricultural Source Material Storage			
5. Agricultural Source Material – Aquaculture			
6. Non-agricultural Source Material Application			
7. Non-agricultural Source Material Handling/Storage			
8. Commercial Fertilizer Application			
9. Commercial Fertilizer Handling/Storage			
10. Pesticide Application			
11. Pesticide Handling/Storage			

Threat	Chemicals	Pathogens	DNAPL
12. Application of Road Salt			
13. Handling and Storage of Road Salt			
14. Storage of Snow			
15. Fuel Handling/Storage			
16. Dense Non-Aqueous Phase Liquid Handling/Storage			2
17. Handling and Storage of Organic Solvents			
18. Management of Runoff from Aircraft Deicing			
21. Grazing/Pasturing Livestock			
22. Establishment/Operation of Pipelines			
Total	1	20	2

From the enumeration of potential significant threats, there are 9 additional significant threats associated with Well 3. The significant threats for Well 1 and 2 remain unchanged from previous enumerations. The threats are associated with the existing septic systems located in the vicinity of the well. There were no other significant threats identified in WHPA A for Well 3 given the current uses (residential). In WHPAs B to D, there were no significant threats identified as a result of the vulnerability score and land uses.

The Source Protection Policy was reviewed to identify policies that have the potential to impact residents and property owners within the WHPAs associated with the new well. Table 6.1 summarizes the policy and potential impact for property owners. There are policies in place relating to grazing, pasturing and confinement areas, sewage works, waste disposal sites, organic solvents, salt handling, storage and application, and application, handling and storage of agricultural source materials, non-agricultural source material, pesticides and commercial fertilizer, and snow storage; however, given the existing residential land uses and low likelihood of such activities taking place as a result of the limited land for such activities within WHPA A, they are excluded from Table 6.3.

Table 6.3 Source Water Policies that may Impact Property Owners

WHPA Areas and Scores where policies apply	Policy	Impact to Property Owners
A (10)	R.1.1 – Planning Prohibition of Future Septic Systems	New lots will only be permitted where serviced by municipal sewers or septic systems are located outside of the vulnerable area.
A (10)	R.1.3 Specific Action for Future Septic Systems	Future lots that will include a septic system will require a hydrogeological assessment to determine an appropriate development density
A (10)	R.1.4 Planning Policy Regarding Location of Future/Replacement Septic Systems	Future and replacement septic systems need to be located as far as practically possible from the wellhead.
A (10)	R.1.9 Specific Action for Existing and Future Septic Systems	Septic systems within areas with a vulnerability score of 10 are required to be inspected on a 5-year basis.
A (10)	R.2.1 Prohibition of Future Fuel Handling and Storage	Prohibits the storage of more than 250 L of liquid fuel.
A (10)	R.2.2 Risk Management Plan for Existing Fuel Handling and Storage	A Risk Management Plan is required for existing liquid fuel storage and handling over 250 L.
A, B, C, D	R.6.1 Prohibition for Future DNAPL Handling and Storage	Handling and storage of over 25 L of DNAPLs is prohibited.
A, B, C, D	R.6.2. Risk Management for Existing DNAPL Handling and Storage	A Risk Management Plan is required to existing DNAPL handling and storage over 25 L.

Most of the Source Water Protection policies will apply to properties located within WHPA A or within 100 m of the proposed well. The policies that are expected to have the greatest impact on residential property owners is the requirement for mandatory septic inspections. Currently, the Township of ACW has a septic inspection program for other properties around municipal wells. It is expected that the properties around the new well would be included in that program. Residents are not charged for inspections; however, if repairs or replacement are identified as needed, the property owner will be responsible for those costs.

The Township will be required to include updated WHPAs and vulnerable areas within the Official Plan and Zoning Bylaw. The Salt Management Plan and Emergency Response Plan will also need to be updated to reflect the new WHPAs and well site.

6.4.2 Local Disruptions

Bringing the new well into service will require a contractor to mobilize to the site, install a pump, treatment building, and install a new watermain connection from the new well and water treatment building to the distribution system. Should the water supply need to be interrupted, the Township will endeavour to provide notice to residents in a timely manner.

Much of the construction will be within the Maitland well site. Public access to the property will be restricted during construction and the site will be fenced.

Adjacent property owners will experience temporary and short-term increases in noise and local activity associated with the construction of the treatment building. These impacts are expected to be minimal in length and will cease once construction is completed.

6.4.3 Capital and Operating Costs

The cost of the new well will be paid primarily through development charges, as the project is driven by growth needs. Should there be improvements that benefit the existing customers, those costs will be recovered through the water system rates and reserves.

6.4.4 Construction-Related Impacts

Construction-related activities associated with project implementation have the potential to impact upon existing environmental features, the general public, and construction workers. The Contractor will therefore be responsible for carrying out these activities in accordance with industry safety standards and all applicable legislation. Mitigation measures will also be incorporated into the construction specifications to ensure that operations are conducted in a manner that limits detrimental effects to the environment.

Table 6.2 outlines a series of mitigation measures that are typically incorporated into construction specifications. For this project, contract specifications may need to be modified depending on the nature of the construction activities and any additional requirements of the regulatory agencies.

Table 6.4 Summary of Mitigation Measures for Construction Activities

Construction Activity	Planned Mitigation
Refuelling and Maintenance	<ul style="list-style-type: none">• Identify suitable locations for designated refueling and maintenance areas outside of WHPA A.• Restrict refuelling or maintaining equipment near watercourses.• Avoid cleaning equipment in watercourses and in locations where debris can gain access to sewers or watercourses.• Prepare to intercept, clean-up, and dispose of any spillage which may occur (whether on land or water).

Construction Activity	Planned Mitigation
Traffic Control	<ul style="list-style-type: none"> • The Contractor shall prepare and submit a traffic plan to the Project Engineer for review and acceptance. If it is necessary to detour traffic, the Contractor will co-ordinate the routing and provide adequate signage and barricades. • Traffic flow for private access should generally be maintained at all times during construction. If access to a private driveway has to be restricted for a period of time the property owner will be notified and access would be restored by the end of each working day. • A minimum of one lane of traffic, controlled by barricades, delineators, etc. shall be maintained for emergency vehicles to access the road. • Provide adequate signage and barricades.
Disposal	<ul style="list-style-type: none"> • Dispose of all construction debris in approved locations. • Avoid emptying fuel, lubricants or pesticides into sewers or watercourses.
Silt Control	<ul style="list-style-type: none"> • Silt fences shall be installed and maintained down slope from any stockpile locations.
Work in Sensitive Areas	<ul style="list-style-type: none"> • All work will occur in dry conditions. • Any slopes disturbed by the construction will be stabilized upon completion of the work
Drainage and Water Control	<ul style="list-style-type: none"> • All portions of the work should be properly and efficiently drained during construction. • Provide temporary drainage and pumping to keep excavation and site free from water. • Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with approval agency requirements. • Provide settling ponds and sediment basins as required. • Do not direct water flow over pavements, except through approved pipes/troughs.
Dust Control	<ul style="list-style-type: none"> • Cover or wet down dry materials and rubbish to prevent blowing dust or debris. • Avoid the use of chemical dust control products.
Site Clearing	<ul style="list-style-type: none"> • Protective measures shall be taken to safeguard trees from construction operations. • Equipment or vehicles shall not be parked, repaired or refuelled near the dropline area of any tree not designated for removal. • Minimize stripping of topsoil and vegetation. • Soils excavated from the site are to be re-used on site if possible or disposed of in accordance with Excess Soil regulations.

Construction Activity	Planned Mitigation
Sedimentation and Erosion Control	<ul style="list-style-type: none"> • Erect sediment fencing to control excess sediment loss during construction period. • Protect ditches from sediment intrusion. • Complete restoration works following construction.
Noise Control	<ul style="list-style-type: none"> • Site procedures should be established to minimize noise levels in accordance with local bylaws. • Employ devices to minimize noise levels in the construction area (as practical). • Nighttime or Sunday work shall not be permitted, except in emergency situations.

6.4.5 Operational Phase

All waterworks facilities are operated and maintained by the Township of ACW, or their agent, in accordance with MECP guidelines and current provincial water regulations. The Municipality currently has all required approvals for the existing Century Heights Drinking Water System and uses an accredited operating authority.

6.4.6 Health and Safety

The planned works involve construction work that has the potential to adversely impact the health and safety of the workers and the general public. A series of measures will be set out in the construction contract documentation to minimize the risk posed by construction in a manner consistent with health and safety regulations. These specifications may need to be altered depending upon the nature of the construction activity and requirements of regulatory agencies.

7.0 APPROVALS AND ENVIRONMENTAL COMMITMENTS

7.1 General

Implementation of the recommended solution is subject to the receipt of all necessary approvals. Following a review of the existing framework of legislation, it was determined a number of approvals are required prior to implementation of the preferred solution. This section of the report identifies the applicable legislation and summarizes the intent of the associated approvals process.

7.2 Environmental Assessment Act

The recommended solution is considered a Schedule B project under the terms of the MCEA document, as the project involves the construction of a new municipal well. This project is considered approved under the requirements of the MCEA and Environmental Assessment Act following the completion of an environmental screening process.

The following activities are required in order to complete the formal MCEA screening process:

- Complete the 30-day review period, defined in the Notice of Completion.
- Address any outstanding issues.
- Finalize the Screening Report.
- Advise the Township and MECP when the MCEA study process is complete.

7.3 Safe Drinking Water Act

Modifications to the water system require an amendment to the Township's Municipal Drinking Water License and Drinking Water Works Permit, issued under the Safe Drinking Water Act. Furthermore, O. Reg 205/18 requires submission of a notice from the local source protection authority identifying satisfactory completion of technical work associated with new vulnerable areas and vulnerability scores.

7.4 Ontario Heritage Act

If archaeological resources are impacted by EA project work, please notify MCM at archaeology@ontario.ca. All activities impacting archaeological resources must cease immediately, and a licensed archaeologist will carry out an archaeological assessment in accordance with the Ontario Heritage Act and the Standards and Guidelines for Consultant Archaeologists.

If human remains are encountered, all activities must cease immediately, and the local police and coroner notified. In situations where human remains are associated with archaeological resources, MCM should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.

7.5 Ontario Water Resources Act

The Ontario Water Resources Act and Environmental Protection Act require a Permit to Take Water (PTTW) prior to any water extractions over 50,000 L/day. A PTTW will be required for the new well. Data from the test well pumping will be provided to the MECP in support of the PTTW application.

8.0 CONCLUSIONS AND PROJECT IMPLEMENTATION

8.1 Selection of a Preferred Alternative

Given the foregoing, Alternative 2 – Installation of New Well is identified as the preferred solution to the identified problem. The test well installed at this site would be converted to a supply well, and the existing well will be decommissioned. Figure 6.1 illustrates the location of the preferred solution.

8.2 Impact Mitigation

Based upon a review of the current environmental setting, there were no impacts associated with the implementation of the preferred alternative that could not be mitigated. Therefore, the implementation of the proposed preferred alternative is appropriate for the identified problem and is not expected to result in any significant impacts to the natural, social, economic, cultural, or technical environment. The merits of this option were also seen to substantially outweigh those identified for the other alternative solution considered in this process.

8.3 Final Public Consultation

A Notice of Completion will be circulated to local residents, stakeholders, government review agencies and Indigenous communities. The Notice will identify the preferred alternative and provide the process for providing comments and submitting a Section 16 Order request to the Minister of Environment, Conservation and Parks.

8.4 Environmental Commitments

As an outcome of the MCEA process, the Township is committed to carrying out the following measures to mitigate potential environmental impacts related to project implementation:

- Implementation of standard construction mitigation measures (e.g., sediment and erosion control, site restoration) as presented in Table 6.4, where appropriate, during the construction phase of the project to minimize constructed-related impacts to the natural and social environments.
- Construction area should be fenced to prevent wildlife from entering the disturbed area. The active construction area should be inspected for wildlife before heavy equipment is moved within the project area. The Contract will include provisions requiring the Contractor not to harm, feed or unnecessarily harass wildlife.
- Wildlife encountered during construction activities should be allowed to exit the site on their own, via safe routes. Removal of wildlife should be done by a qualified wildlife service provider.
- Any activities occurring as a result of the construction that result in the management of excess soil will be completed in accordance with Ontario Regulation 406/19, On-Site and Excess Soil Management, and current guidance documents entitled Management of Excess Soil – A Guide for Best Management Practices.
- Submission of relevant applications for required approvals, as well as implementation of all conditions issued in association with the subsequent approvals.
- Adjacent property owners will be advised in advance of the construction.

9.0 SUMMARY

This report documents the Municipal Class Environmental Assessment process conducted to investigate expanding the Century Heights Drinking Water System. Additional supply is required to accommodate approved future residential growth within the study area.

The MCEA process considered several options to address the identified problem – expansion of the existing wells, a new supply well, connection to the Goderich Drinking Water System, conversion to a surface supply, and do nothing. Expansion of the existing wells, connecting to the Goderich Drinking Water System and conversion to a surface supply were not considered practical or feasible solutions given costs, aquifer limitations, and distance from connection points. A test well was constructed at the former Maitland well site. A pump test confirmed a suitable quantity and quality of water from the test well. The WHPAs and vulnerability scores that would be created by the new well were modeled.

Following the receipt of input from agencies, First Nation and Métis communities and adjacent property owners, a new well and water treatment building at 81270 Pumphouse Lane was identified as the preferred solution. This represents the most practical approach to resolving the defined problem.

The proposed project is a Schedule B activity under the terms of the MCEA and is approved subject to the completion of a screening process. The Township of Ashfield-Colborne-Wawanosh intends to proceed with implementation of this project upon completion of the MCEA investigation and after receipt of all necessary approvals.

All of which is respectively submitted.

Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per

Lisa J. Courtney, MCIP, RPP

Environmental Planner

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