

Comprehensive Study Scoping Document

Township of Centre Wellington: Upgrading of the Elora Well System

1.0 INTRODUCTION

1.1 Purpose of the Scoping Document

Industry Canada is considering whether to provide funding to enable the proposed upgrading of the Elora well system (the Project). Pursuant to section 5 of the *Canadian Environmental Assessment Act*, an environmental assessment under that Act must be conducted before a funding decision can be made. As such, Industry Canada has determined that it is a responsible authority for the project, and therefore must ensure that the environmental assessment is conducted as early as is practicable in the planning stages of the project and before irrevocable decisions are made.

The Canadian Environmental Assessment Agency, as the federal environmental assessment coordinator, has determined that there is no other responsible authority that is required to conduct an environmental assessment for this project. However, Environment Canada, Natural Resources Canada, and Health Canada will provide expert advice in relation to the project.

This document describes the proposed scope of the project for the purposes of the environmental assessment, the factors proposed to be considered in the environmental assessment and the proposed scope of those factors. This document is intended to provide information to assist the public in commenting on this proposed approach to the environmental assessment as described in this document (see section 3.0 for further details).

1.2 Environmental Assessment Process

The upgrading of the Elora well system is subject to a comprehensive study under the *Canadian Environmental Assessment Act*, pursuant to paragraph 10 of the *Comprehensive Study List Regulations*.

Industry Canada has initiated the environmental assessment and, pursuant to section 21(2) of the Act, must provide a report to the Minister of the Environment, following public consultation, and recommend whether the environmental assessment should be continued by means of a comprehensive study, or the project should be referred to a mediator or review panel.

The report from the responsible authority to the Minister of Environment must include:

- the scope of the project, the factors to be considered in the assessment and the scope of those factors;
- public concerns in relation to the project;
- the project's potential to cause adverse environmental effects; and
- the ability of the comprehensive study to address issues relating to the project.

After considering the responsible authority's report and recommendation, the Minister of the Environment will decide whether to refer the project back to the responsible authority so that it may continue the comprehensive study process, or refer the project to a mediator or review panel.

If the Minister of Environment determines that the environmental assessment may continue as a comprehensive study, the responsible authority will provide the public with an additional opportunity to participate in the comprehensive study process. Further, on completion of the comprehensive study report, the Canadian Environmental Assessment Agency (the Agency) will seek public comments on the comprehensive study report. The Agency will also provide participant funding in order to assist the public in participating in the comprehensive study process.

If the Minister decides to refer the project to a mediator or a review panel, the project will no longer be subject to the comprehensive study process under the Act. The Minister, after consulting the responsible authority and other appropriate parties, will set the terms of reference for their review, and appoint the mediator or review panel members. The public will have an opportunity to participate in the mediation or the panel review, and participant funding will be provided.

1.3 Project Background

Project Overview

Elora, in the Township of Centre Wellington, is located on Wellington County Road 18 approximately five kilometres west of Fergus. Elora is located on the Grand River, which flows through Elora in an east to west direction. The proposed project is located partially within Elora at the E2 well site, westerly beyond the community boundary along Wellington County Road 21 to Cottontail Road, and south along Cottontail Road to the new well site. The project sites, which are the subject of this study, are shown in Appendices 1 and 2.

To address the need for additional supply capacity within the community for a 10-year planning period, the Township of Centre Wellington, the project proponent, submitted a proposal to upgrade the Elora well system.

The proposed project involves the construction of a new well (E4), the construction of a treatment and pumphouse building, the installation of approximately 1 275 m of transmission watermain to connect the new well site to the Elora distribution system, and the decommissioning of the E2 well site in Elora.

Background

The Elora well supply is an integrated well system that consists of three drilled bedrock wells, each with its own pumphouse and treatment facility, a distribution system, and two elevated storage tanks. There is one watermain crossing of the Grand River, at Metcalf Street, which

provides a connection between the northern and southern portions of the distribution system.

The Elora water system was first commissioned with one well (E1) in 1949. Additional wells were added to the system in 1958 (E2) and 1991 (E3). Well E2, which is located approximately halfway between the Well E1 and E3 sites, was removed from service in 1996 and its disinfection system removed.

Well E1 is a duty well. The site is located adjacent to a residential area near the northern boundary of Elora. There are no existing industries in the area. The well is located outside of its pumphouse. Raw water is disinfected, using chlorine gas, prior to being pumped to distribution. The *Engineer's Report, Fergus and Elora Water Systems*, prepared in 2000, indicated that this site did not meet provincial water treatment requirements because it did not provide sufficient disinfection time prior to distribution. This was rectified with upgrades to the site that were completed in 2003. The permitted capacity for this well is 1 741 m³/d.

The E2 well site is located south of the core area of the village. The site is located in a residential area adjacent to several roads that have adequate storm water control. This site is the closest of the three wells to the Grand River, it being approximately 220 m south of the river. Because of the well's location relative to the Grand River, it is deemed to be groundwater under the influence of surface water. There are no readily apparent potential sources of contamination immediately adjacent to the wellhead. However, there are potential sources of contamination from several industries located within the well's capture zone. The site is currently not in use and its disinfection system has been removed. When this well was in use, it was known to have interference effects with Well E3. Although the well is not in use, its permit to take water is still valid with an allowable withdrawal value of 2 273 m³/d.

Well E3 is also a duty well. The well site is located on the north side of First Line Road, the southern boundary of the community. The site is relatively flat. Lands to the east and south of the site are primarily agricultural. New industrial development has taken place directly north of the site and residential development has occurred 500 m to the west. Well E3 is inside of a masonry and brick pumphouse and treatment facility. Raw water is disinfected, using chlorine gas, prior to being pumped to distribution. The *Engineer's Report, Fergus and Elora Water Systems*, prepared in 2000, indicated that this site did not meet provincial water treatment requirements because it did not provide sufficient disinfection time prior to distribution. This was rectified with upgrades to the site that were completed in 2003. The well has a permitted capacity of 1 963 m³/d.

The new well, E4, will be located along an unopened road right-of-way that is locally known as Cottontail Road on Lot 1, Concession 1 and 2, EGR, Pilkington Township, Centre Wellington. The right-of-way was disturbed in 2000 in order to provide an access road to the International Ploughing Match. Land use around this site is agricultural in nature. The capacity of this well will be 1 963 m³/d.

Overall, the Elora well system services 1 922 households, as well as a number of industrial, commercial, and institutional operations. The existing system has a permitted treatment capacity of 3 704 m³/d and produces approximately 2 521 m³/d of treated water (average 2002 - 2004).

Because of the interference effects of Well E2 on Wells E1 and E3, the combined daily withdrawal rate from Wells E1 and E2 is limited to 2 273 m³/d and Well E3 is limited to 1 963 m³/d. Based on population projections, including existing committed residential development, and other usage assumptions, peak demand is expected to increase from the 2002 – 2004 levels to 3 704 m³/d at the 2015 planning horizon.

The proposed project will require the construction of physical works and includes: the construction of a new well with a production capacity of approximately 22.7 L/s; the construction of a treatment building to house pumping, treatment, and monitoring and control equipment; the construction of approximately 1 275 m of transmission watermain to connect the new well to the Elora distribution system; and, the decommissioning of the E2 well site. Other ancillary works will also be required. In the completion of this project, no watercourse crossings will be required and no works will occur within 200 m of a watercourse.

Project Schedule

It is anticipated that the project will take eight months to bring into service following the start of construction.

This schedule is largely dependent on: the completion of the design for the new Well #4, treatment facility and associated works; and, receipt of the Certificate of Approval for the proposed works from the Provincial Ministry of Environment.

Environmental Assessment Schedule

The responsible authority expects to submit its report and recommendation to the Minister of Environment late in the summer of 2005 on whether the environmental assessment should continue by means of a comprehensive study or be referred to a mediator or review panel. If the comprehensive study process continues, the public will have an opportunity to provide additional input into the comprehensive study process. The responsible authority proposes to submit the comprehensive study report to the Agency in the winter of 2006. The Agency is required to have a public comment period on the comprehensive study report. The final comprehensive study report is expected to be presented to the Minister of the Environment late in the winter of 2006 for the environmental assessment decision statement.

2.1 SCOPE

2.1 Scope of the Project

The proposed scope of the project refers to the various components of the proposed undertaking that are considered as part of the project for the purpose of the environmental assessment. The scope of the project includes undertakings in relation to the physical works or physical activities related to the construction and operation of the proposed new well site.

Specifically, the scope of the project for the environmental assessment of the Elora well system upgrades is:

- decommission and abandon the E2 well site (this may include the demolition of the existing pumphouse facility);
- construction of well components capable of providing a supply of approximately 22.7 L/s (1 963 m³/d, 716 495 m³/a) at the E4 well site;
- construction of a pumphouse (approximately 50 m² in size) to house treatment and pumping equipment, and an in-ground reservoir (approximately 178 m³ in size);
- installation of a transmission water main approximately 1 275 m in length along existing road allowances to connect the E4 well site to the Elora distribution system;
- construction equipment access, laydown areas;
- operation and maintenance of the new well, pumphouse, treatment processes, and the transmission watermain;
- site rehabilitation; and
- decommission the E4 well site at the end of the project's operational life.

2.2 Scope of assessment

2.2.1 Factors to be Considered

The CEA Act requires that the following factors be considered in the environmental assessment (sections 16(1) and 16(2)):

- *the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;*
- *the significance of the effects referred to in the previous paragraph;*
- *comments from the public that are received in accordance with this Act and its regulations;*
- *measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project;*
- *the purpose of the project;*
- *alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means;*
- *the need for, and the requirements of, any follow-up program in respect of the project; and*
- *the capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future.*

2.2.2 Scope of Factors to be Considered

The following provides details on the proposed scope of the factors to be considered in the environmental assessment.

Physical and Natural Environment

- ground water quantity and quality;
- surface water quantity and quality;

- vegetation, including wildlife habitat and biodiversity;
- wetlands, if applicable, and their functions;
- species at risk;
- migratory birds, particularly with respect to the potential for disturbance or destruction of migratory birds or their nests;
- wildlife;
- noise;
- air quality - local and downwind airborne emissions (including odours and volatiles).

Socio-Economic and Cultural Environments

- adjacent land uses;
- local neighbourhood and residents;
- worker health and safety;
- public health and safety;
- aesthetics;
- heritage and historical cultural resources.

Malfunctions and Accidents

The probability of possible malfunctions or accidents associated with the project during construction, operation, modification, decommissioning, abandonment or other undertaking in relation to the work, and the potential adverse environmental effects of these events, should be identified and described. The description should include:

- accidental spills where possible;
- contingency plans and measures for responding to emergencies.

Any change to the project that may be caused by the environment

The environmental hazards that may affect the project should be described and the predicted effects of these environmental hazards should be documented. The following issues should be addressed in the environmental assessment and the design of the project:

- seismic activity;
- climate change.

Cumulative Environmental Effects

The cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out should be identified and assessed. The approach and methodologies used to identify and assess cumulative effects should be explained. The cumulative effects assessment should focus on, but not necessarily be limited to:

- cumulative effects of the proposed project with the possible replacement and/or installation of new water mains within Elora;
- cumulative effects of the project with other developments that are planned within Elora such as road and/or residential construction, or additional groundwater takings.

Sustainability of the Resource

The environmental assessment shall consider the renewable resources that may be significantly affected by the project and the criteria used in determining whether their sustainable use will be affected. The Comprehensive Study will emphasize in particular the sustainable use of the ground water system.

Spatial and Temporal Boundaries

The proposed project is located both within and outside of the Elora community limits. The following are proposed spatial boundaries for the project:

- The right-of-way includes any land area that is directly disturbed by the construction activities of the project. This includes: the new E4 well site; the E2 well site; the route of the transmission water main along Wellington County Road 21 and Cottontail Road; and, any associated construction equipment access routes and lay down areas.
- The corridor includes any area beyond the right-of-way, which could be disturbed by project effects. This includes effects during construction (noise, dust, vehicle emissions, traffic, etc) and would include a proposed area approximately 250 m beyond the right-of-ways. The corridor also includes possible effects, including accidents and malfunctions (for example - chemical spills, transmission water main failure, etc) as it relates to operation of the water system and would include an area of approximately 500 m beyond the right-of-way.
- The regional boundary will include an area beyond the project corridor, this being the greater of one kilometre or the extent of the area affected by the project. This could include the effects of construction activities (noise, dust, vehicle emissions, etc), operational activities (possible negative effects of draw down because of the system's groundwater withdrawal), and effects that the increased system capacity could have on the Elora sewage treatment system (possible negative effects from increased treatment volumes and decreased surface water quality).

The following are proposed temporal boundaries for the project:

- The short term temporal boundary of the project would last approximately eight months and includes the construction and commissioning phases of the project. It can include activities such as: the construction and commissioning of the new well; the construction and commissioning of the new pumphouse; the construction and commissioning of the transmission water main and its connection to the Elora distribution system; and, the decommissioning of the E2 well site. It can also include activities related to construction equipment access, lay down areas as well as any accidents and malfunctions that may be associated with the construction phase of the project.
- The medium term temporal boundary of the project is expected to be in the two to three year range and includes activities such as: the effectiveness of site restoration; possible accidents and malfunctions (for example - chemical spills, transmission water main failure, etc) as it relates to operation of the water system; and, possible negative effects of draw down because of the system's groundwater withdrawal.
- The long term temporal boundary for the project would last up to the operational life expectancy of the project which is 10 years and includes the operation and maintenance, and eventual decommissioning of the project, in addition to activities such as: possible accidents and malfunctions (for example - chemical spills, transmission water main

failure, etc) as it relates to operation of the water system; and, possible negative effects of draw down because of the system's groundwater withdrawal.

Proposed design of the Follow-up Program

The purpose of a follow-up program is to verify the accuracy of impact predictions and determine the effectiveness of mitigation measures. Elements of the follow-up program will be identified in the Comprehensive Study.

3.0 PUBLIC PARTICIPATION

The public is invited to provide its views at this stage of the environmental assessment of the project on the following areas:

- the proposed scope of the project;
- the factors proposed to be considered in the assessment and the proposed scope of those factors; and
- the ability of the comprehensive study to address issues relating to the project.

Persons wishing to submit comments may do so in writing to Industry Canada. Please be as detailed as possible and clearly reference the Elora well system and File Number 320 on your submission. Comments must be received by the close of business July 20, 2005. Comments may be sent by electronic mail to COIP-PICO@ic.gc.ca, by facsimile to (416) 954-6654, or by mail to:

Industry Canada
Canada-Ontario Infrastructure Program
151 Yonge Street, 3rd Floor
Toronto, Ontario
M5C 2W7

Should a comprehensive study be conducted for the project, Industry Canada will provide the public with an additional opportunity for input into comprehensive study process. Once the comprehensive study report has been submitted to the Agency, the public will be provided an opportunity to review and provide comments during the Agency's public comment period, prior to final recommendation to the Minister of Environment.

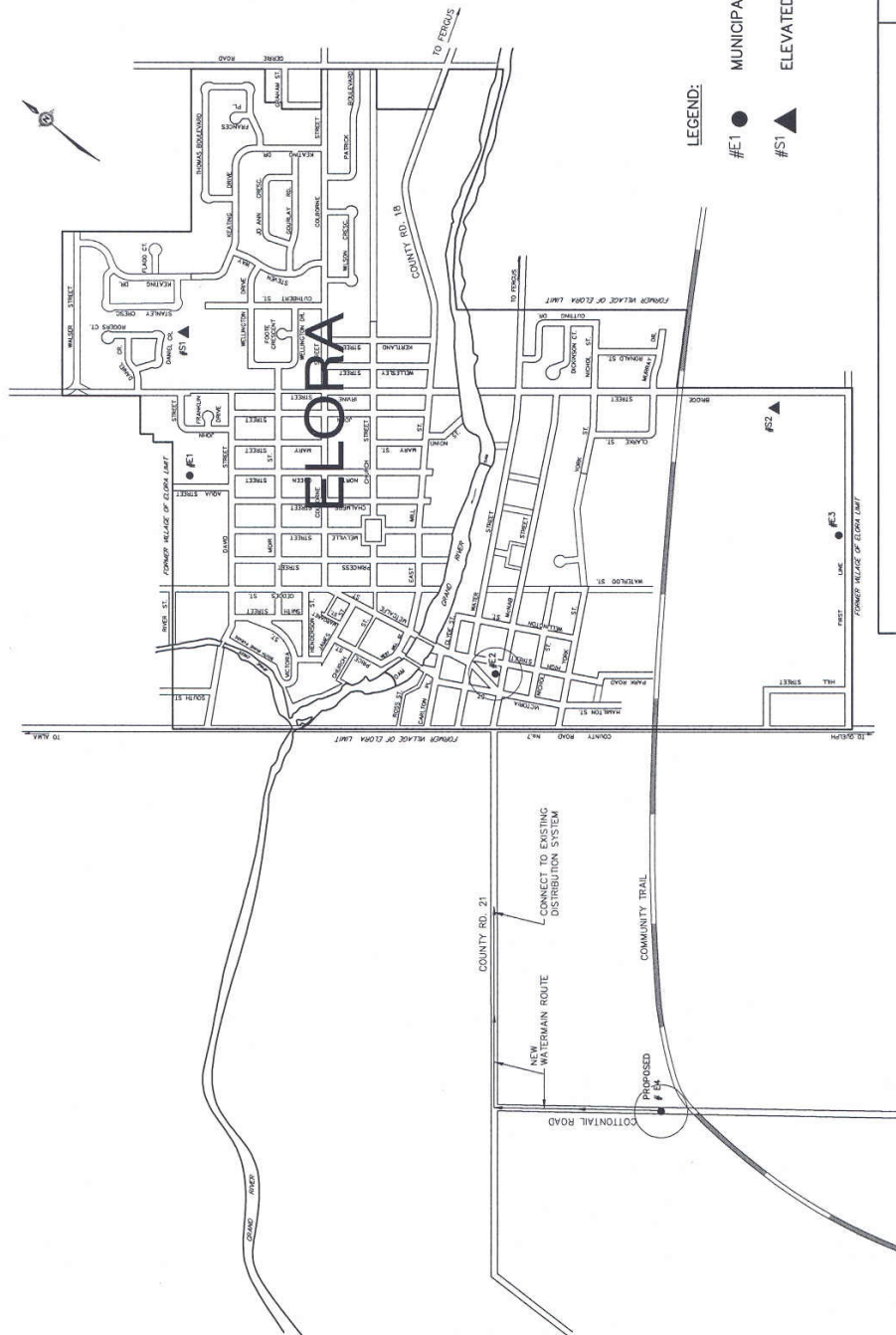
The public will also have opportunities to participate in the review, should the project be referred to a mediator or a review panel.

Following the Minister's decision on the type of environmental assessment that is to be conducted (comprehensive study, mediation, or panel review), funding will be available from the Canadian Environmental Assessment Agency for members of the public to participate in the environmental assessment.

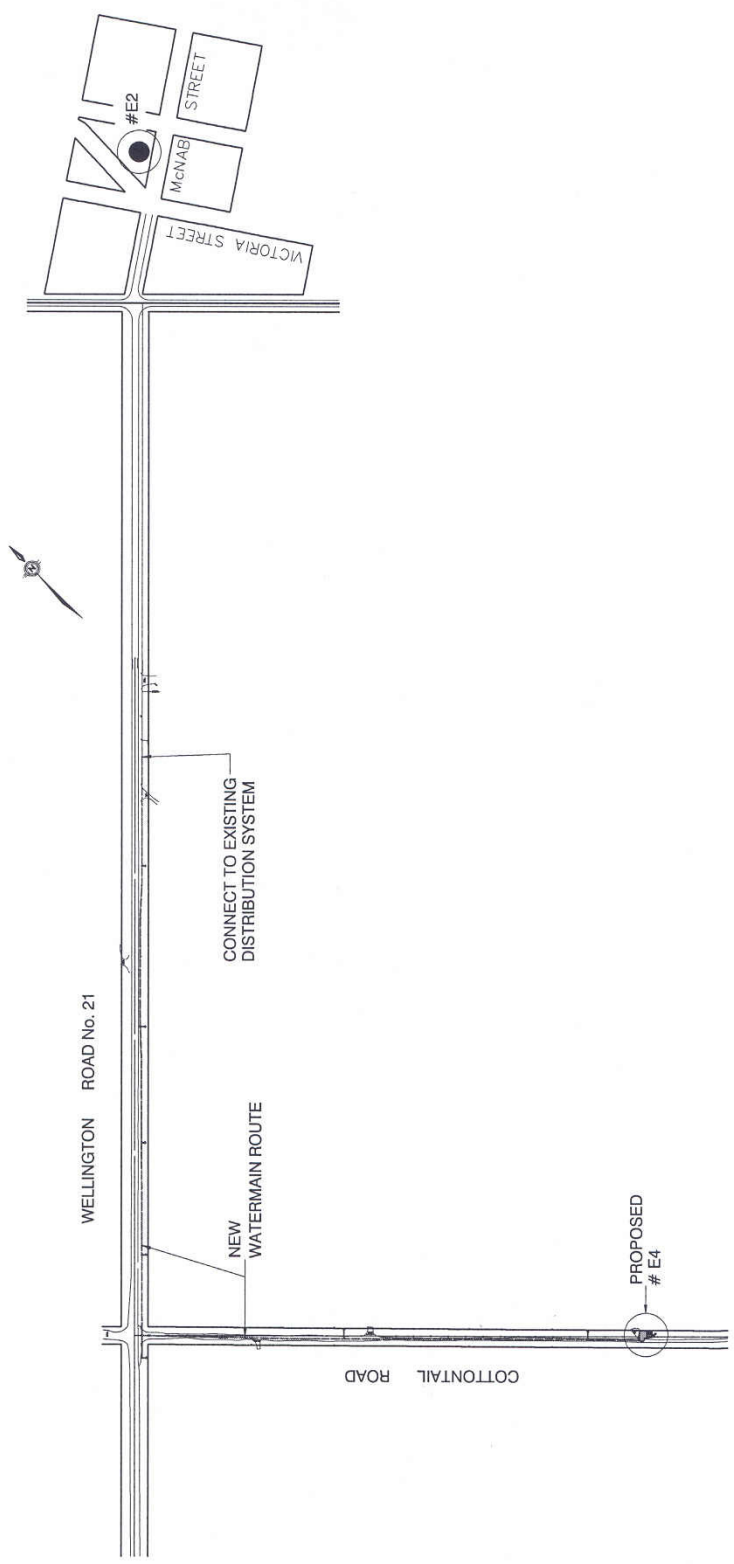
References

Triton Engineering Services Limited, *Engineer's Report, Fergus and Elora Water Systems*, 2000.

Triton Engineering Services Limited, *Township of Centre Wellington, Elora Well Exploration, Class EA Project File*, 2003.



TOWNSHIP OF CENTRE WELLINGTON ELORA WELL SYSTEM EXISTING WATER SUPPLY FACILITIES	APPENDIX 1
	SCALE 1:20,000



APPENDIX 2	TOWNSHIP OF CENTRE WELLINGTON COMMUNITY OF ELORA PROPOSED WELL SITE #4 AND WATERMAIN ROUTE
SCALE 1:7,500	