MUNICIPALITY OF BLUEWATER

CLASS ENVIRONMENTAL ASSESSMENT FOR A NEW WATER STORAGE FACILITY COMMUNITY OF HENSALL

SCREENING REPORT

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CLASS ENVIRONMENTAL ASSESSMENT FOR A NEW WATER STORAGE FACILITY COMMUNITY OF HENSALL

SCREENING REPORT

July 8, 2020

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street
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File No. 17277

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File No. 17277

MUNICIPALITY OF BLUEWATER
CLASS ENVIRONMENTAL ASSESSMENT
FOR A NEW WATER STORAGE FACILITY
COMMUNITY OF HENSALL

SCREENING REPORT

1.0 INTRODUCTION

1.1 Purpose of Document

The Municipality of Bluewater has conducted a Class Environmental Assessment study process to determine the best solution for resolving water storage deficiencies for the community of Hensall. The study process followed the procedures set out in the Municipal Class Environmental Assessment (Class EA) document, dated October 2000, as amended in 2007, 2011 and 2015 (Ref. 1). The purpose of this report is to document the planning and design process followed during the Class EA investigation. The report identifies the key deficiencies with the municipal water storage in Hensall, as well as the alternative solutions considered to address these matters. The report further details the decision-making process carried out to define a preferred storage solution.

1.2 Environmental Assessment Process

Municipalities must adhere to the Environmental Assessment Act of Ontario when completing road, sewer or waterworks activities. The Act allows the use of Class Environmental Assessments for most municipal projects. A Class EA is an approved planning document which describes the process that proponents must follow in order to meet the requirements of the EA Act. The Class EA 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 public input. Class EA studies are a method of dealing with projects which have the following important characteristics in common:

- 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 Class EA planning process is followed, a proponent does not have to apply for formal approval under the EA Act. The development of this study has followed the procedures set out in the Class EA. Figure 1.1 presents a graphical outline of the procedures.

The Class EA 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 a preferred solution.
- Phase 3 - Identification and evaluation of alternative design concepts in 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 Class EA process, proponents are responsible for having regard for the following key principles of environmental planning:

- 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 process to permit traceability of decision-making.

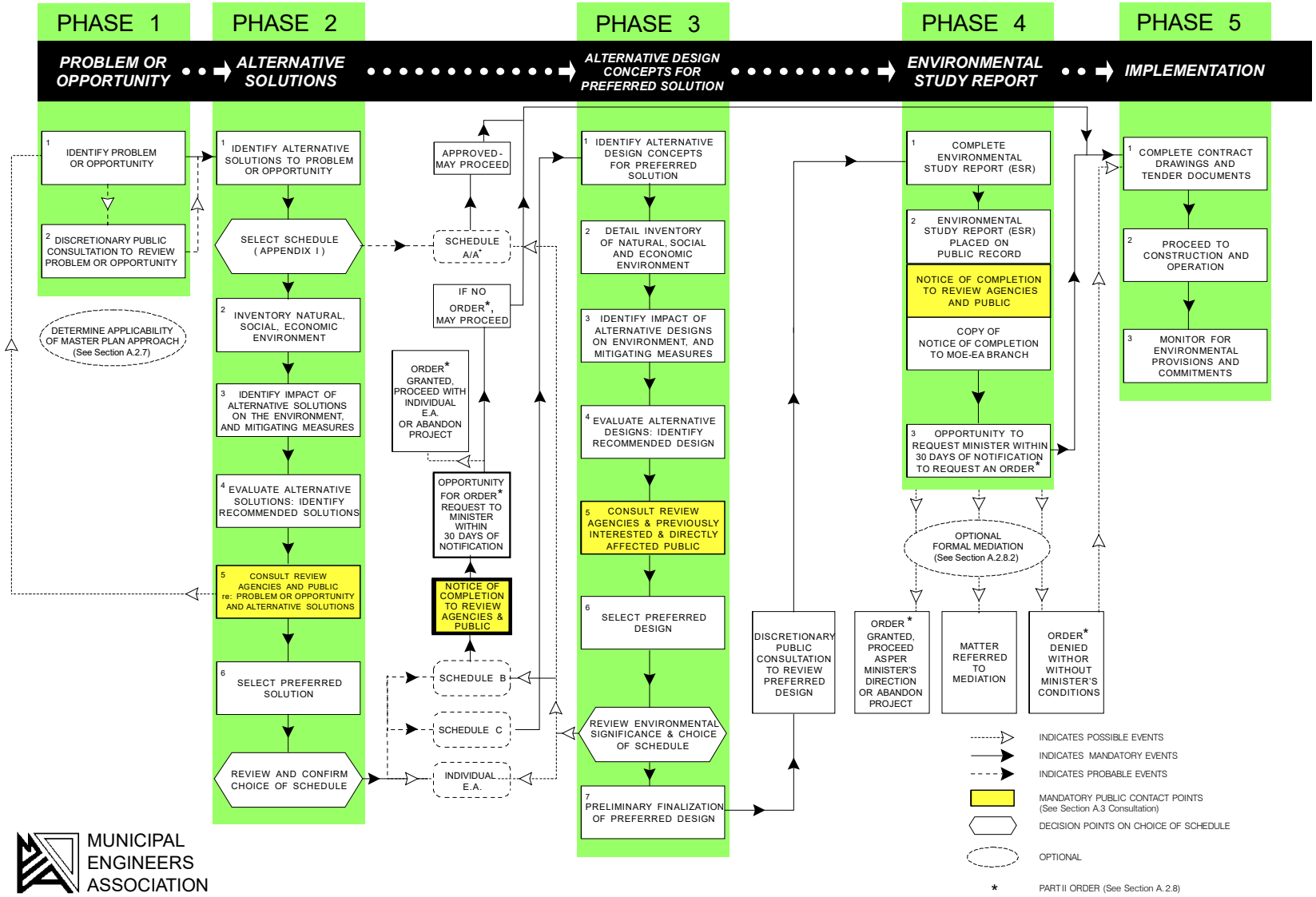
1.3 Classification of Project Schedules

Projects are classified to different project schedules according to the potential complexity and the degree of environmental impacts that could be associated with the project. There are four levels of schedules:

- Schedule A - Projects that are approved with no need to follow the Class EA process.
- Schedule A+ – Projects that are pre-approved but require some form of public notification.
- Schedule B - Projects that are approved following the completion of a screening process incorporating Phases 1 and 2 of the Class EA process, as a minimum.
- Schedule C - Projects that are approved subject to following the full Class EA process.

The Class EA process is self-regulatory and municipalities are expected to identify the appropriate level of environmental assessment based upon the project they are considering.

NOTE: *This flow chart is to be read in conjunction with Part A of the Municipal Class EA*



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CLASS ENVIRONMENTAL ASSESSMENT
FOR A NEW WATER STORAGE FACILITY

CLASS EA PROCESS

DATE	PROJECT No.
JULY 18, 2018	17277
SCALE	FIGURE No.
None	1.1

1.4 Study Organization and Management

The Municipality of Bluewater is considered the project proponent under the terms of the Class EA document. The Municipality engaged B. M. Ross and Associates Limited (BMROSS) to carry out the Class EA process on its behalf. Municipal staff and Council provided direction to the study.

1.5 Mechanism to Request a Higher Level of Environmental Assessment

Under the terms of the Class EA, the requirement to prepare an individual environmental assessment for approval is waived. However, if it is found that a project going through the Class EA process has significant associated environmental impacts, a person/party may request that the Municipality of Bluewater voluntarily elevate the project to a higher level of environmental assessment. If the Municipality declines, or if it is believed that the concerns are not properly dealt with, any individual or organization has the right to request that the Minister of the Environment, Conservation and Parks (MECP) make an order for the project to comply with Part II of the Environmental Assessment Act which addresses individual environmental assessments. A Part II Order Request Form, found on the MECP website, must be submitted to the Minister within 30 days of the publication of the Notice of Completion of the Class EA process.

2.0 BACKGROUND

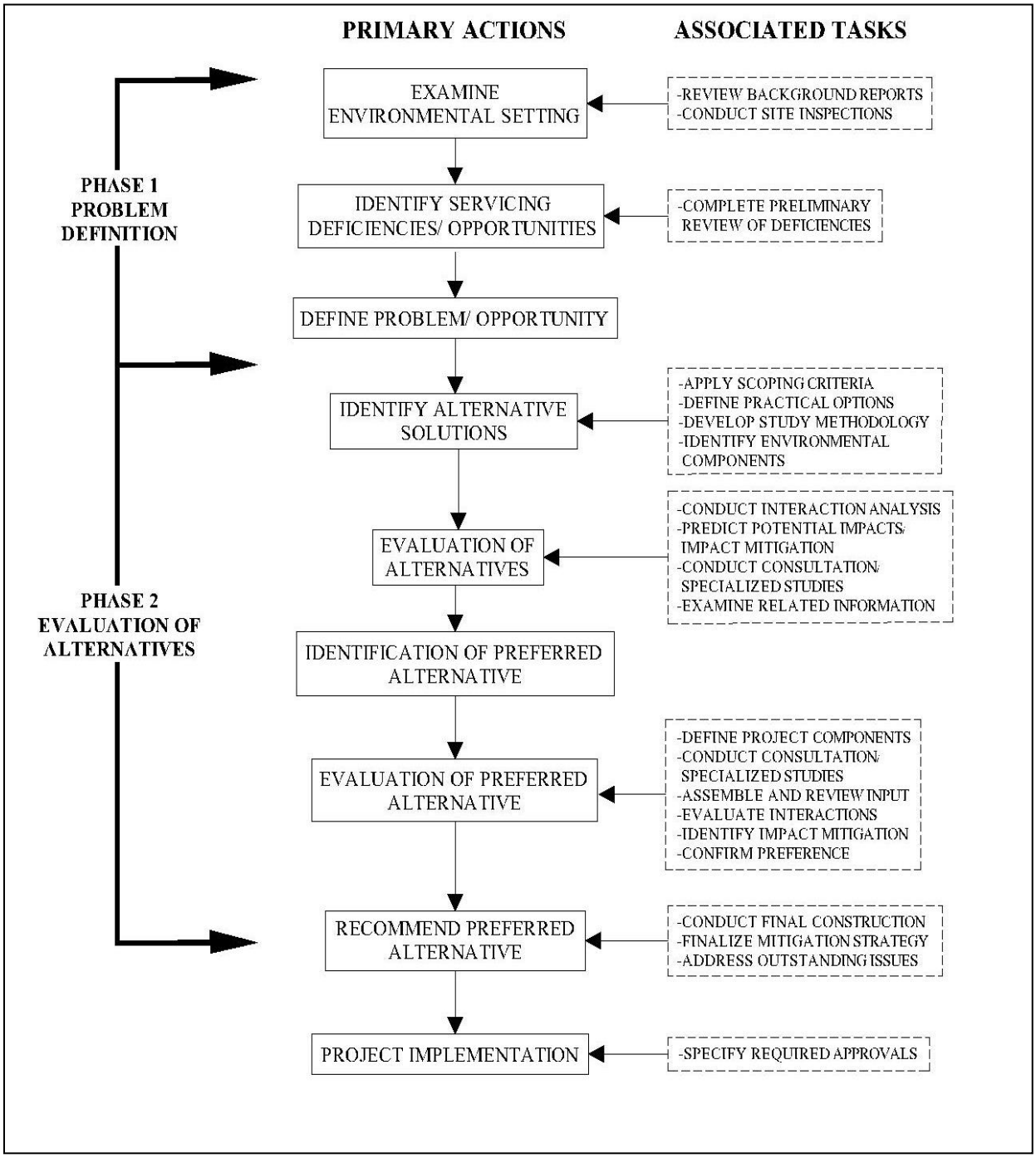
2.1 Class EA Approach

The Municipality of Bluewater initiated a formal Class EA process in October 2017 to address deficiencies with the existing water storage facilities serving the community of Hensall. The associated investigations followed the environmental screening process prescribed for Schedule B projects under the Class EA document. In general, the screening process required to conduct a Class EA incorporates these primary components:

i. Background Review and Problem Definition.
ii. Identification of Practical Solutions.
iii. Evaluation of Alternatives.
iv. Project Recommendations and Implementation.

The following sections of this report document the findings for each stage of the Class EA. Figure 2.1 illustrates the general tasks associated with the Schedule B screening process.

Figure 2.1
Class EA Schedule B Screening Process and Related Tasks



2.2 Background Review

A background review was carried out to characterize the project study area and to identify those factors that could influence the selection of alternative solutions to the defined problems. The background review for this Class EA process incorporated these activities:

- A general description of the study area and the Municipality of Bluewater.
- Assembly of information on the environmental setting and the existing infrastructure.
- Review of previous studies and reports pertaining to the project study area.

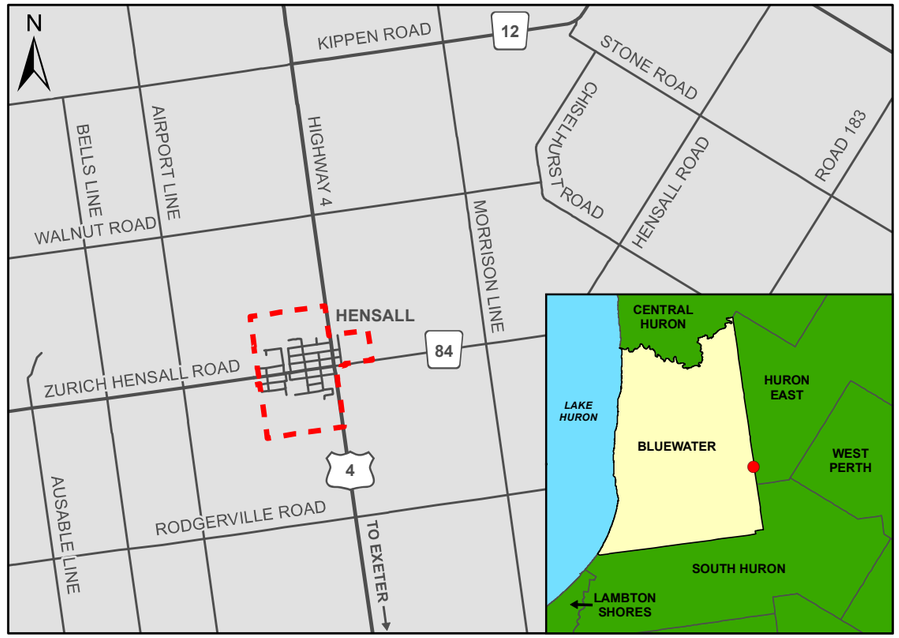
A desktop analysis of the project setting was completed as part of the background review. The following represent the key sources of information for this analysis:

- B. M. Ross and Associates' files and related studies.
- Ministry of Natural Resources and Forestry (MNRF). Natural Heritage Information Centre (website).
- Municipality of Bluewater. Files and discussions with staff.
- Environment Canada Species at Risk Public Registry.
- Ausable Bayfield Conservation Authority (ABCA), website.

2.3 General Description of Study Area

In January 2001, the former townships of Hay and Stanley along with the villages of Bayfield, Hensall and Zurich amalgamated to form the Municipality of Bluewater. The Municipality is comprised of a number of small, dispersed urban centres, a considerable amount of seasonal development located along the Lake Huron shoreline, and a large rural area extending approximately 15 km inland from the lakeshore.

The community of Hensall represents one of the larger urban settlements in Bluewater, with a permanent population of approximately 1,200 persons. The community is situated along the route of Provincial Highway No. 4; approximately 8 km north of the community of Exeter and 55 km northwest of the City of London. Hensall is predominately a low-density residential community with an extensive agriculturally-related industrial sector, a well-developed commercial core and a variety of public amenities. Hensall is also recognized as a centre of the white bean industry in Canada. In this respect three large mill complexes, situated in Hensall, annually process, package and ship hundreds of thousands of tonnes of beans worldwide. Figure 2.2 illustrates the location of the community of Hensall.



KEY PLAN
NOT TO SCALE

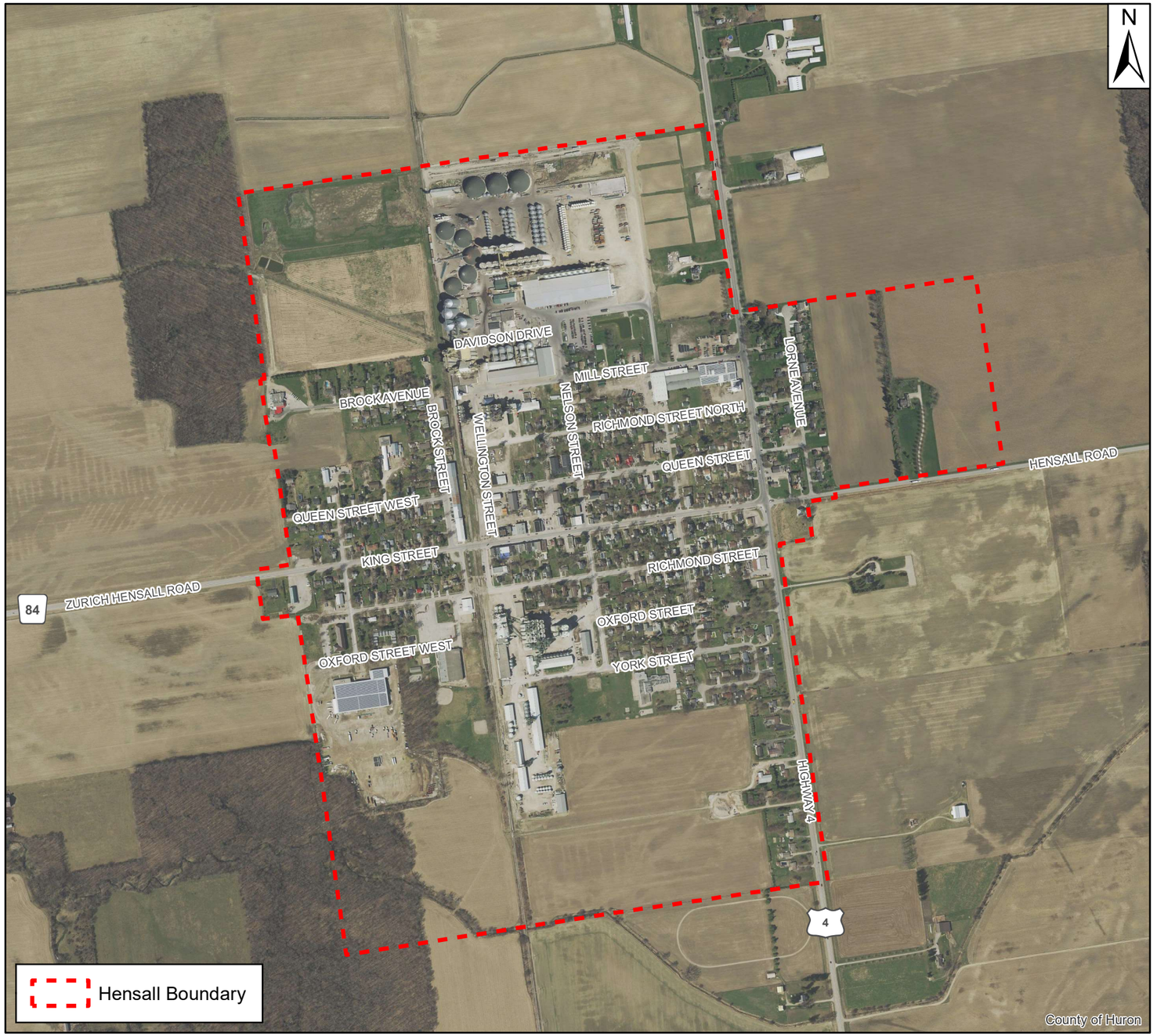
HENSALL DISTRICT CO-OP
SITE FACING NORTH

HENSALL ROAD POTENTIAL SITE
NORTH SIDE FACING WEST

YORK STREET POTENTIAL
SITE FACING SOUTHWEST

EXISTING WATER TOWER FROM CORNER
OF QUEEN STREET AND HIGHWAY 4

SITE PHOTOS TAKEN ON OCTOBER 18, 2017



AERIAL PHOTOGRAPHY OF PROJECT AREA
SCALE 1 : 10,000

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CLASS ENVIRONMENTAL ASSESSMENT
FOR A NEW WATER STORAGE FACILITY

GENERAL LOCATION PLAN

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SCALE	FIGURE No.
AS SHOWN	2.2

2.4 Natural Features

2.4.1 General Physiography

The village of Hensall is located within the Horseshoe Moraines physiographic region as defined by Chapman and Putnam (1984). The Horseshoe Moraines are a series of moraines that parallel the eastern shore of Lake Huron to the base of the Bruce Peninsula and then run southeast along the Niagara Escarpment, finally turning southwest toward Lake Erie. In the southwestern limb of the horseshoe-shaped region in southern Huron County, the typical landscape is that of two or three moraine ridges composed of fine textured till with a moderate degree of stoniness. Along the eastern flank, the area is marked by an old spillway, which contains flat sand and gravel terraces. To the southwest of Hensall is a broad sand plain that represent a delta where the spillway opened into glacial Lake Whittlesey (Chapman and Putnam, 1984). The study area lands are located on the undrumlinized till plains, to the north and west of the deltaic spillway and to the east of the Wyoming Moraine.

The soils found within the project lands include Brookston Clay Loam, Perth Clay Loam, in addition to bottom lands. Brookston and Perth Clay Loam are both heavy textured till soils. Perth clay loam is imperfectly drained, while Brookston Clay Loam is poorly drained, and both require improvement in natural drainage and soil management to produce good crop yields (Hoffman and Richards, 1952). The bottom lands are associated with Black Creek, which runs within the woodlot south of the project study area draining the immediate vicinity.

2.4.2 Significant Natural Heritage Features

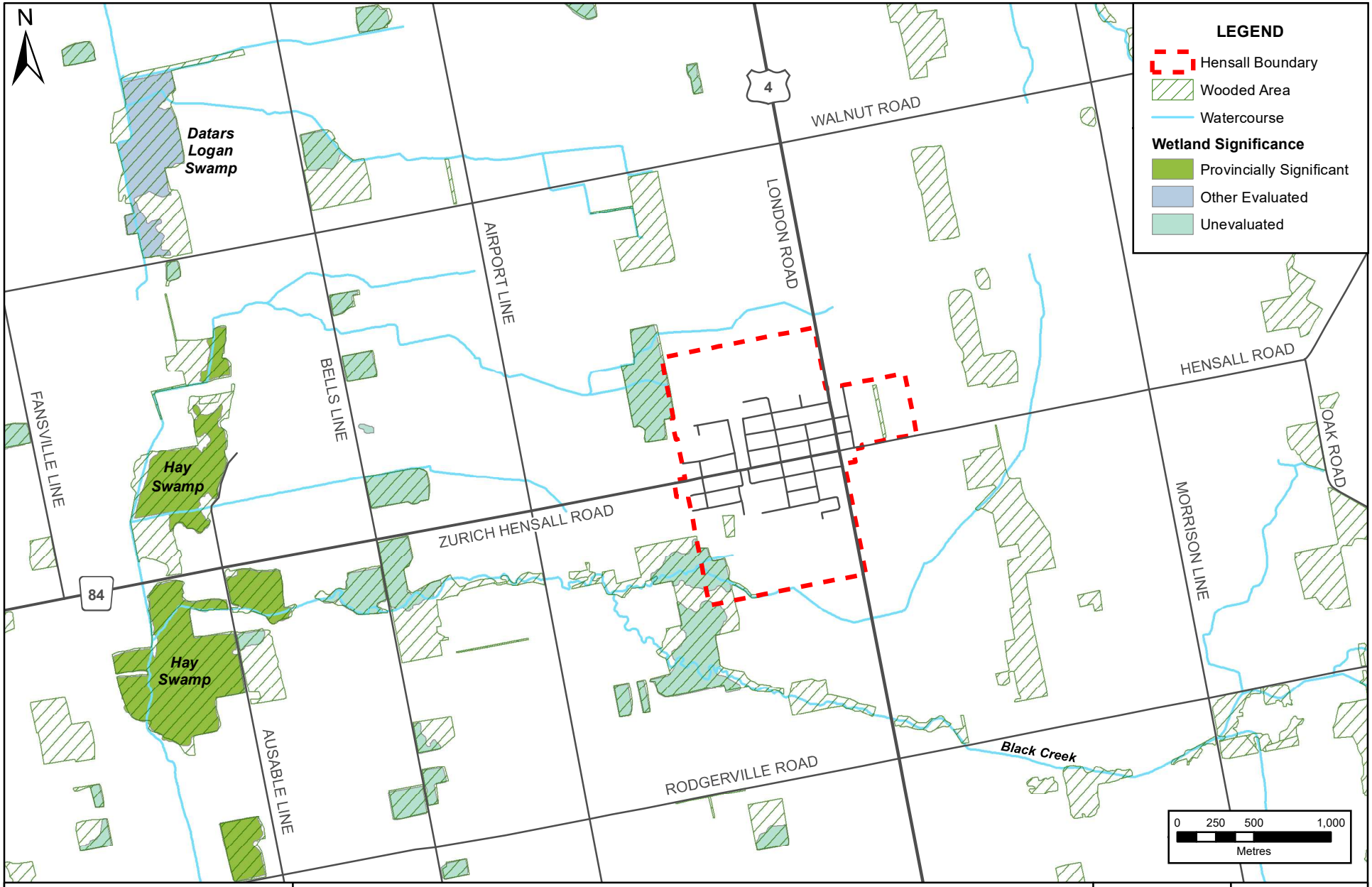
The project study area is located within the Black Creek watershed, which is managed by the ABCA. The study area is situated within a predominantly rural landscape and is generally surrounded by actively farmed agricultural lands. There are few natural habitat features located within the community or in the surrounding countryside. A review of the Natural Heritage Area mapping provided by the MNRF indicates that there are no Areas of Natural and Scientific Interest (ANSI) within 5 km of the study area (MNRF, 2017a). However, several locally significant natural features can be found within the 5 km study area.

- The Datars-Logan Swamp, located 2.8 km northwest of Hensall, is a non-provincially significant wetland, composed of one wetland type (100% swamp). The swamp is made up of 91% deciduous trees and 9% coniferous.

- The Hay Swamp Wetland Complex, a provincially significant wetland complex, is located 5 km west and southwest of the village boundary. The marsh is comprised of fifteen individual wetlands composed of two wetland types: 98% swamp and 2 % marsh.

- The Black Creek riparian corridor, located southwest of Hensall, is the only significant natural feature located immediately adjacent to the community.

Figure 2.3 shows the extent of natural heritage features in the vicinity of the project study area.



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FOR A NEW WATER STORAGE FACILITY

NATURAL HERITAGE FEATURES

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SCALE	FIGURE No.
1 : 35,000	2.3

2.4.3 Aquatic Species at Risk

Black Creek is a tributary of the Ausable River watershed and is one of the few cold water systems located within the jurisdiction of the ABCA. Black Creek is situated south of the Hensall urban area, approximately 1km to the south. Black creek has been identified as one of only two cold water tributaries that flow into the Ausable River. The headwater areas of Black Creek are a known cold-water tributary that supports resident and migratory trout populations. The ABCA has confirmed populations of Brook Trout in the upper reaches of the system. Brook Trout are a cold/cool water species that requires well oxygenated habitat with stream temperatures averaging below 20^{o}C. Natural stream features such as gravel upwellings and groundwater discharge points are important spawning habitat for the species. Figure 2.3 illustrates the location of Black Creek in relation to the village of Hensall.

2.4.4 Species at Risk

An evaluation for the presence of significant species and their associated habitats within the study area has been incorporated into the project planning process. A review of available information on species and habitat occurrences determined that the study area may contain species and/or associated habitats that are legally protected under Provincial and Federal species at risk legislation.

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 not federally owned, only aquatic species, and bird species included in the Migratory Bird Convention Act (1994), are legally protected; and

- The Provincial *Endangered Species Act, 2007* (ESA) provides legal protection of endangered and threatened species and their associated habitat in Ontario. Under the legislation, measures to support their recovery are also defined.

A summary of federally and provincially recognized species with the potential to be present within Huron County are listed in Table 2.1. This is based on the information available for the occurrence of species at risk and their associated habitats from the following sources:

- Ministry of Natural Resources and Forestry, *Species at Risk by Area* (MNRF, 2017b).
- Natural Heritage Information Centre, *Make a Natural Heritage Map* (MNRF, 2017a).
    - No square data within study area. Agricultural fields to the east are within NHIC 1km grids: 17MJ6009 and 17MJ6109.
- Environment Canada, *Species at Risk Public Registry. SARA Schedule 1 Species List* (Environment Canada, 2017).

Table 2.1 : Potential Species at Risk within Huron County

	Species		*Status Designation*		*Suitable Habitat in the Study Area*
	Common Name	*Scientific Name*	*SARA*[*] Schedule 1 *(Federal)*	*ESA*[**] *(Provincial)*	
	Barn Owl	*Tyto alba*	Endangered	Endangered	No
	Barn Swallow	*Hirundo rustica*	Threatened	Threatened	No
	Black Tern	*Chlidonias niger*	-	Special Concern	No
	Bobolink	*Dolichonyx oryzivorus*	-	Threatened	No
	Cerulean Warbler	*Dendroica cerulea*	Endangered	Threatened	No
	Chimney Swift	*Chaetura pelagica*	Threatened	Threatened	No
	Eastern Meadowlark	*Sturnella magna*	-	Threatened	No
	Henslow's Sparrow	*Ammodramus henslowii*	Endangered	Endangered	No
	Least Bittern	*Lxobrychus exilis*	Threatened	Threatened	No
	Loggerhead Shrike	*Lanius ludovicianus*	Endangered	Endangered	No
	Louisiana Warbler	*Seiurus motacilla*	Special Concern	Special Concern	No
	Short-eared Owl	*Asio flammeus*	Special Concern	Special Concern	No
Fish and Mussels	Black Redhorse	*Moxostoma duquesnei*	-	Threatened	No
	Northern Brook Lamprey	*Ichthyomyzon fossor*	Special Concern	Special Concern	No
	Reside Dace	*Clinostomus elongatus*	Endangered	Endangered	No
	Wavy-rayed Lampmussel	*Lampsilis fasciola*	Special Concern	Threatened	No
Mammals	American Badger	*Taxidea taxus*	Endangered	Endangered	No
Plants	Tuberous Indian-plantain	*Arnoglossum plantagineum*	Special Concern	Special Concern	No
Turtles and Snakes	Blanding`s Turtle	*Emydoidea blandingii*	Threatened	Threatened	No
	Eastern Ribbonsnake	*Thamnophis sauritus*	Special Concern	Special Concern	No
	Queensnake	*Regina septemvittata*	Endangered	Endangered	No
	Snapping Turtle	*Chelydra serpentina*	Special Concern	Special Concern	No

Species in **bold** are those identified as potentially occurring within 1km of the study area based on historical observation records

Notes:

[*] As determined by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) under the Species at Risk Act (SARA), 2002 legislation. Species listed are designated as 'Schedule 1' species and are legally protected under the act.

[**] As determined by the Committee on the Status of Species at Risk in Ontario (COSSARO) under the Endangered Species Act (ESA), 2007 legislation.

The study area is located within the County of Huron and the above information is based upon a county-specific species list, provided by the MNRF. The County incorporates a large area and a wide variety of environs that include terrestrial and aquatic habitat. Species listed in Table 2.1 were generated based on their occurrence within the entire county, and may not necessarily occur within the study area. Based on review of the MNRF Natural Heritage Information Centre data, one (1) historical observation of Bobolink (*Dolixhonyx oryzivorus)* from 2005 occurs east of the limits of Hensall, within existing agricultural fields.

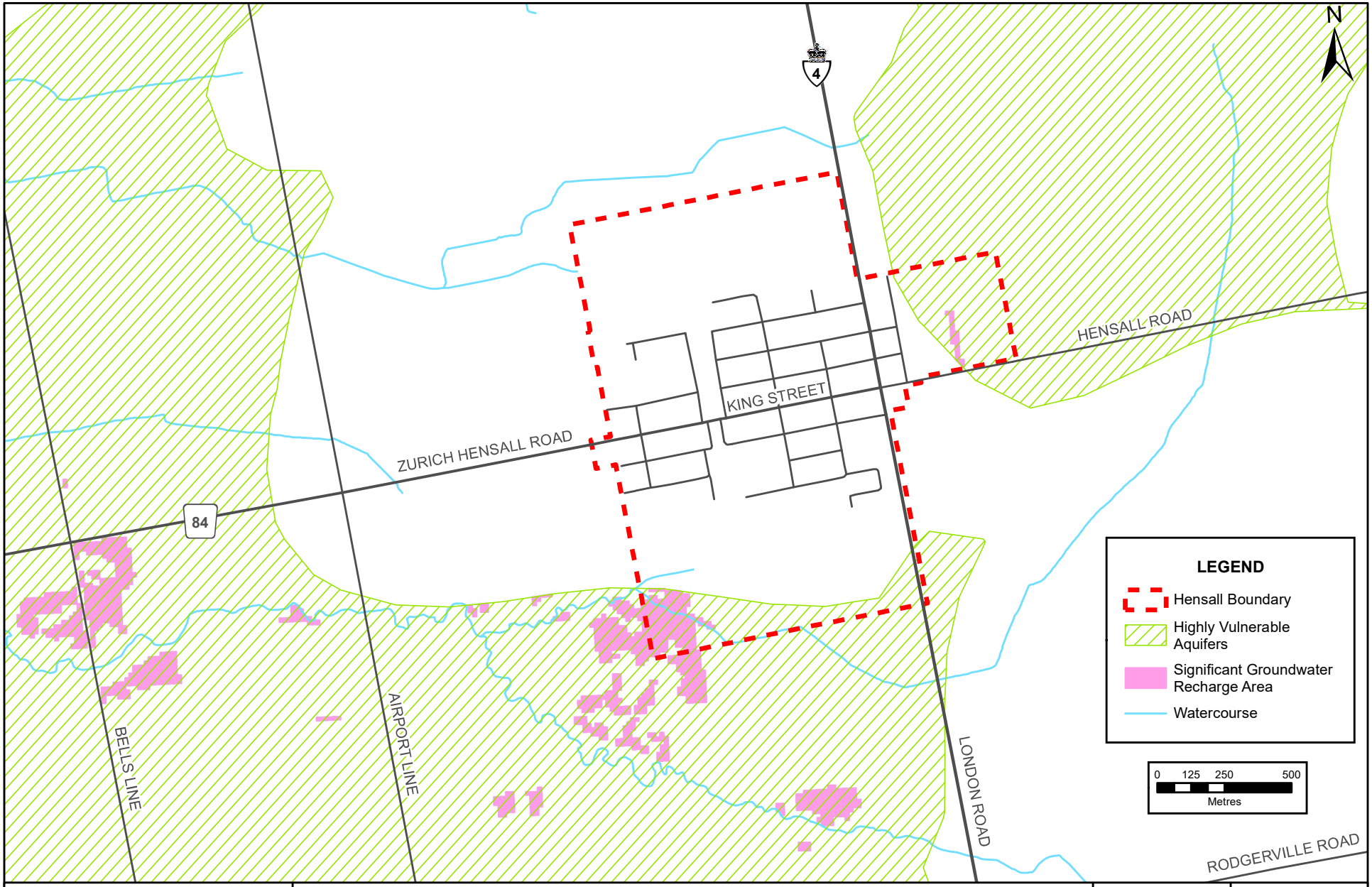
2.4.5 Breeding Birds

The Atlas of Breeding Birds of Ontario was used to identify the bird species with confirmed, probable and possible breeding habitat in proximity to the study area (Bird Studies Canada, 2018). The survey area includes key habitat for the identified species, such as forests (in all stages of growth), riverine areas, agricultural areas and wetlands. The community of Hensall lies within of the 100 km^2 area identified by the Atlas as Square 17MJ50, in Region 6: Huron-Perth. A total of 36 birds, have confirmed breeding status in the survey region, including Eastern Meadowlark and Barn Swallow, which have been identified as species at risk in Ontario. An additional 20 species were categorized as having probable breeding status and 30 are considered to have possible breeding status in the area. The project area forms a relatively small portion of this region and habitat opportunities are limited within the developed lands. An additional assessment for habitat potential will be conducted once alternative tower locations are identified.

2.5 Clean Water Act

The intent of the Clean Water Act (CWA), 2006, is to "*protect existing and future drinking water*" sources in Ontario. Under the Act, source protection areas and regions were established, giving Conservation Authorities the duties and powers of a drinking water source protection authority (Government of Ontario, 2006). The study area is located within the Ausable Bayfield Maitland Valley Source Protection Region, which includes watersheds managed by the ABCA and the Maitland Valley Conservation Authority.

Hensall is located within the jurisdiction of the ABCA, which manages the watershed covering an area of approximately 2,440 km^2 (Ausable Bayfield Maitland Valley Source Protection Region, 2014). Hensall is currently serviced by a pipeline from the Lake Huron Primary Water Supply System (LHPWSS) which serves a population of 350,000, 4,000 of which are in Bluewater. (Ausable Bayfield Source Protection Area Assessment Report). The community of Hensall is located directly above an underground aquifer, within the overburden area. Municipal wells drawing from this aquifer were previously the primary source of drinking water; however due its vulnerability to contamination by surface water, the Municipality decommissioned the existing wells and extended the Lake Huron system to service the village (Ausable Bayfield Maitland Valley Source Protection Region, 2014). Due to the location of the aquifer, the village is encompassed by Highly Vulnerable Aquifers (HVA's) and scattered areas of Significant Groundwater Recharge Areas (SGRA's). These areas present potential pathways for contaminants to access the aquifer beneath Hensall, however they do not present a potential threat to the Hensall Drinking Water system, which no longer utilizes the aquifer. Figure 2.4 illustrates the location of vulnerable areas in relation to the study area limits.



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CLASS ENVIRONMENTAL ASSESSMENT
FOR A NEW WATER STORAGE FACILITY

SOURCE WATER PROTECTION

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1 : 20,000	2.4

Consultation with Source Water Protection staff at the ABCA was undertaken as part of the Class EA process. It was determined that the preferred alternative identified through the Class EA process will have no negative impacts on Source Water Protection Policies.

2.6 Heritage and Cultural Landscapes

The current elevated water storage tank was constructed in approximately 1935 and moved to Hensall perhaps as early as 1946. The tank was owned by a local business, General Coach, which used a portion of the facility for their own fire protection requirements. The top half of the tank, approximately 180 m^3 of capacity, was used by the Hensall water system. In 1997, the tower was purchased outright by the Village and is now used exclusively for the Hensall distribution system.

Using the Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes form, provided by the Ministry of Heritage, Sport, Tourism and Culture Industries, the project was screened for potential cultural heritage resources. The screening form is included in Appendix A. As the project will affect a structure that is over 40 years old, an evaluation of the cultural heritage value was required.

The Bluewater Heritage Committee was consulted to determine if the tank has cultural heritage value. Following a review by the committee, it was determined that the tank does not retain any cultural value as the existing structure is not considered to be rare, unique or representative of a style, type or construction method, and therefore the cultural heritage value is considered low. A copy of the presentation to the Bluewater Heritage Committee is included within Appendix A.

2.7 Climate Change

As part of the Class EA 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.

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

1) Reducing a project's impact on climate change (climate change mitigation).
    a. Impact of greenhouse gas emissions related to the project.
    b. Are there alternative methods to completing the project that would reduce any adverse contributions to climate change?

2) Increasing the project's and local ecosystem's resilience to climate change (climate change adaptation).
    a. How vulnerable is the project to climate-related severe events.
    b. Are there alternative methods of carrying out the project that would reduce the negative impacts of climate change on the project?

Through the evaluation of alternatives phase of the Class EA, consideration of each of these approaches were completed and included in the final determination of the preferred solution.

2.8 Historical Growth and Development

2.8.1 Official Plan Policies

The lands within the urban boundary of Hensall are subject to planning policies set out in the Huron County Official Plan and the Municipality of Bluewater Official Plan. Within the Huron County Official Plan, Hensall is identified as a primary settlement area (PII), although not one of the five major primary settlement areas (PI). As such, the community accommodates a limited range of economic, social and residential services for urban residents and the surrounding rural population. County policy directs a limited amount of future population growth to PII settlement areas and further stipulates that these areas will be fully serviced with a municipal water supply and distribution and sewage collection and disposal systems.

Section 8.0 Settlement Areas, of the Bluewater Official Plan, contains policies associated with the existing hamlets and villages that serve as residential settlement areas within the municipality. Hensall is one of three villages within the municipality and is described as a focal point for residential, commercial and service functions with a thriving industrial base. The plan notes that there is an adequate supply of land designated for residential growth and that new development should occur through either infilling or registered plans of subdivision on full municipal services. An expansion to the Hensall urban boundary is being considered by the Municipality as part of a five year review of the Bluewater Official Plan. The proposed expansion would extend the urban boundary to the north and be designated for industrial development. The expanded area is located adjacent to an existing industrial operation, the Hensall District Co-op, which is one of three large industrial operations currently located within the village limits. Figure 2.5 shows the proposed urban expansion and existing official plan designations within the community. Appendix B contains copies of the relevant planning documents.

2.8.2 Historic Growth

Table 2.2 illustrates the total increase in population for Hensall during the period 1976-2016 as reported by Statistics Canada (Ref. 3). In review, the community increased in population from 993 to 1,078 over the period, which represents a net change in population of 8.6 % and an average annual population growth of approximately 0.25%.

Table 2.2
Community of Hensall
Population Data and Growth Rates (1976 to 2016)[1]

Year	Hensall	Growth	% Change	AAGR[2]
1976	993	-	-	-
1981	992	-1	-0.1%	-0.02%
1986	1089	+97	9.7%	1.94%
1991	1,238	+149	13.7%	2.74%
1996	1,187	-51	-4.1%	-0.82%
2001	1,194	+7	0.6%	0.12%
2006	1,128	-66	-5.5%	-1.1%
2011	1,173	+45	4%	0.8%
2016	1,078	-95	-8.1%	-1.62%
Population Change	+85			
Percent Change	8.6%			
Average Annual Growth Rate 1976-2016 (35 years)	0.25%			
Average Annual Growth Rate 2001-2016 (15 years)	-1.8%			

Note: [1] Population derived from (2016 Census) data.
[2] AAGR: 5 Year Average Annual Growth Rate.

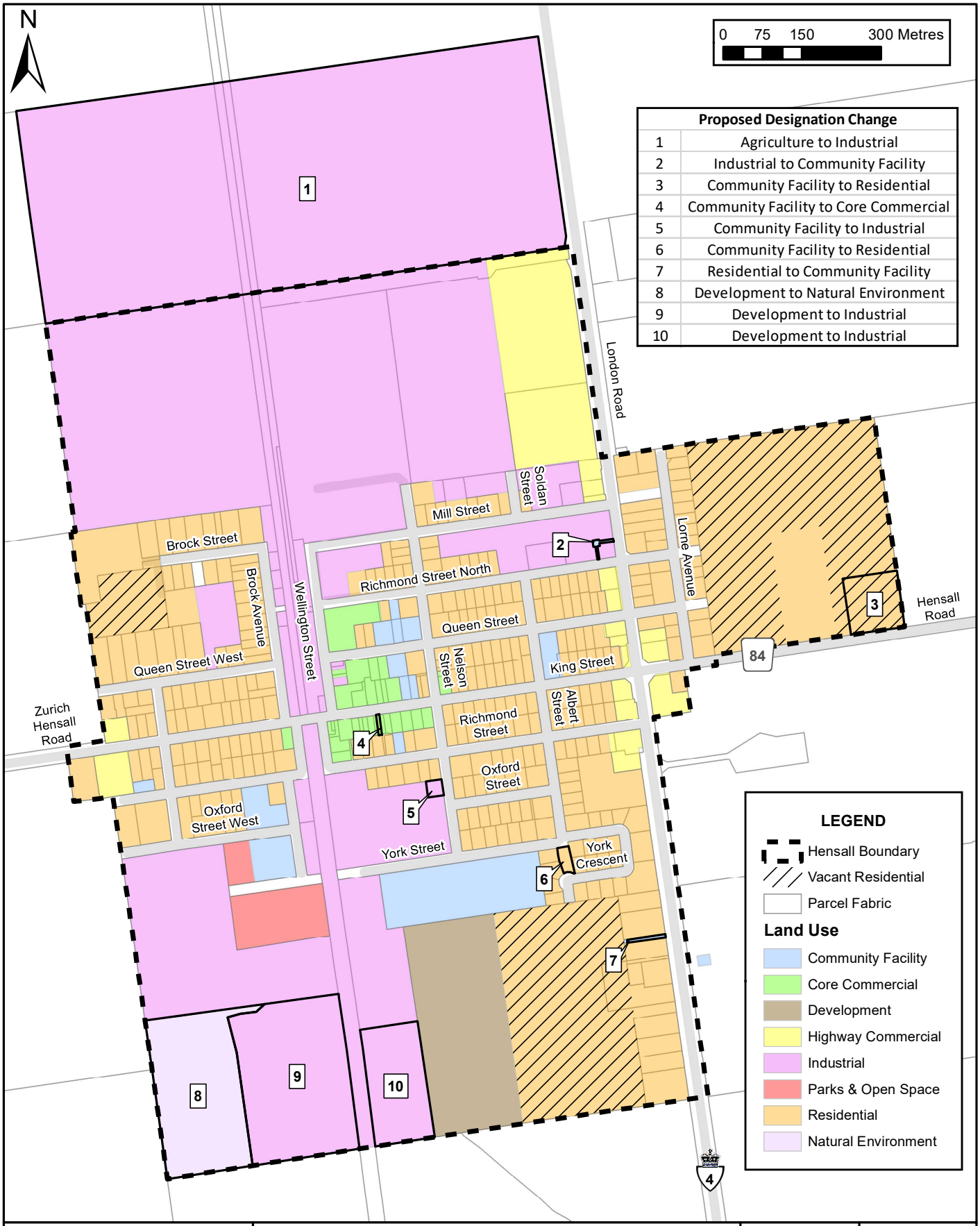
Table 2.2 demonstrates that the short-term growth levels in the community fluctuated considerably over the study period. Five-year average annual growth rates varied from a low of – 1.62 % for the period 2011-2016 to a high of 2.74% for the period 1986-1991. In general, the fluctuations evident in Hensall can be attributed to changes in local economic and demographic conditions and the available supply of building lots.

2.8.3 Growth and Development Review

A review of population growth factors and available population projections was carried out for this study. The evaluation included a review of local growth predictors having significance to the community of Hensall, including recent residential developments, potential commercial opportunities and possible industrial expansions. The following represent the key findings of the review:

- The historical growth rate over the period 1976-2016 is consistent with the growth rate typically experienced by similar-sized communities throughout Southwestern Ontario (i.e. <1%).

- There are very few available developed and serviced parcels. Relatively large tracts of vacant developable land exists to the south and east of the existing urban area.



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CLASS ENVIRONMENTAL ASSESSMENT
FOR A NEW WATER STORAGE FACILITY

OFFICIAL PLAN DESIGNATIONS & PROPOSED CHANGES

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1 : 10,000	2.5

- Discussions with the major employers in the community provided an indication that there is a possibility of operational expansions. These expansions could have an impact on future water demands.

- A recent upgrade to the Hensall Wastewater Treatment Facility has removed historic constraints on available sewage capacity within the community which previously limited growth potential. It is anticipated that new residential development could occur within the next 5-10 years on future development lands located south and east of the current urban area.

2.8.4 Population Forecast

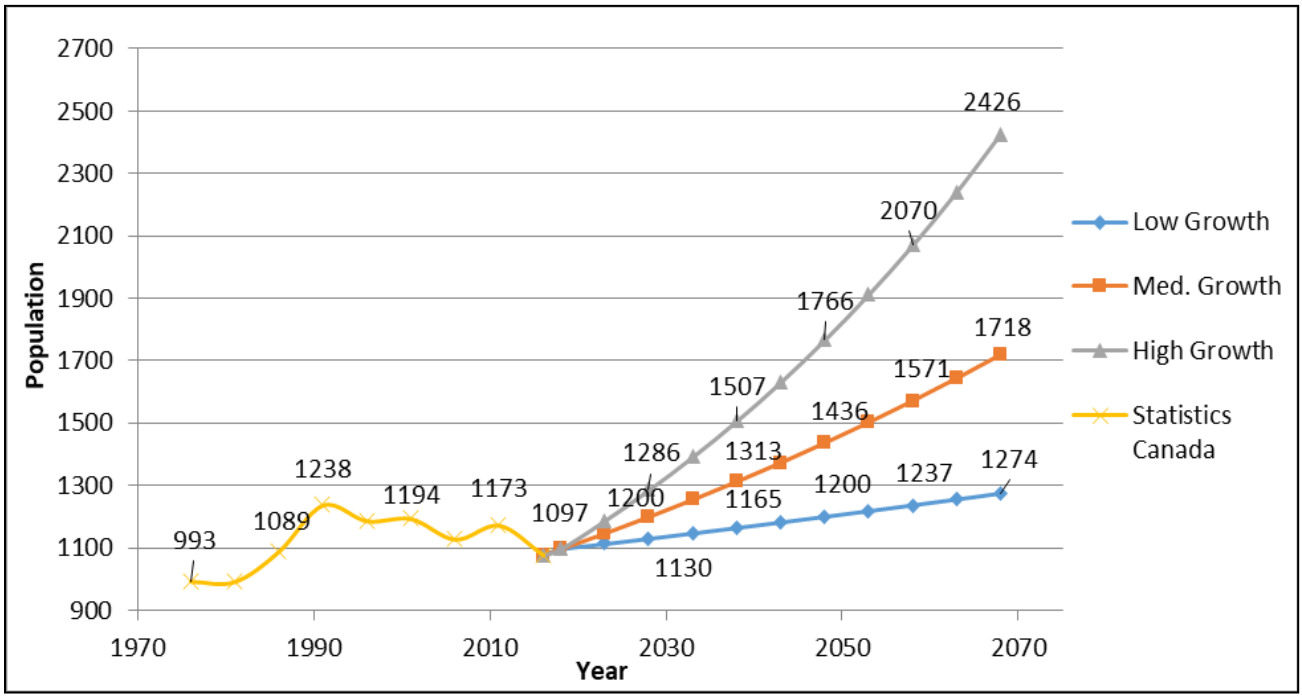
For the purposes of this study, the 2016-2066 population forecast developed for the community of Hensall was extrapolated based on the average rates of growth in population experienced historically in the community. High, medium and low population forecasts were developed based on the following criteria: a low growth rate was based upon the average annual growth rate (AAGR) of 0.25% experienced over the past 35 years, a high growth projection was based upon the highest 10 year growth period occurring during the past 40 years (1981-1991) equating to an AAGR of 1.55%, and a medium growth rate was developed based upon the median AAGR of 0.9% between the high and low growth values. This approach is seen to be a reasonable strategy for estimating potential long-term growth within the community.

Table 2.3 illustrates the 50 year population growth projected for the community on this basis. Figure 2.6 presents the results of the population forecasts developed using the methodology described above. Using the medium growth projection, which is based upon the median AAGR between the low and high growth periods, the Hensall population is expected to increase by approximately 621 residents over the 50-year forecast period.

Table 2.3
Hensall Population Projections (2018-2068)

Year	Low (0.25%)	Medium (0.9%)	High (1.55%)
2018	1,097	1,097	1,097
2023	1,114	1,148	1,188
2028	1,130	1,200	1,286
2033	1,147	1,255	1,392
2038	1,165	1,313	1,507
2043	1,182	1,373	1,631
2048	1,200	1,436	1,766
2053	1,218	1,502	1,912
2058	1,237	1,571	2,070
2063	1,255	1,642	2,241
2068	1,274	1,718	2,426
Total Increase	**177**	**621**	**1,329**

Figure 2.6: Population Growth Projections



2.8.5 Proposed Ethanol Facility

In 2006, Commercial Alcohols Inc. approached the Municipality of Bluewater as part of a site selection process to establish a new ethanol production facility in the north part of Hensall. Based on agreements with Greenfield Ethanol, upgrades to the water supply and distribution system serving the community were implemented in order to service the facility. A cost sharing agreement was also struck with Greenfield to recover a portion of the pipeline installation costs, including installation of larger capacity watermains in the vicinity of the proposed facility. To date the facility has yet to be constructed, however the potential future needs of the facility need to be considered in determining long term water demand and storage for the community.

2.9 Existing Water Supply and Storage Facilities

A pipeline was constructed along Airport Line to connect Hensall to the Hensall Airport Line Transmission Main of the LHPWSS in 2007. The pipeline was constructed to address well water supply deficiencies arising from water security concerns including high nitrate concentrations. The Hensall Distribution System consists of one pumping station/reservoir, one elevated storage tank, and approximately 11.1 kilometers of distribution watermains. The most common diameter of the distribution watermain system is 150 mm and the largest watermain diameter is 400 mm. The 400 mm diameter Hensall Airport Line (HAL) transmission main extends approximately 11 kilometers south to a pumping station and reservoir near Exeter. The Exeter pumping station and reservoir is supplied by a water treatment plant on Lake Huron, located approximately 20 kilometers to the west. The pipeline water supply is treated prior to distribution to the HAL transmission main.

Water storage deficiencies have been a concern in Hensall for over two decades. Hensall currently has a 300 m^3 in-ground storage reservoir and a 455 m^3 elevated storage tank for a total of 755 m^3. The diameter of the elevated tank is 9.7 m, the distance from grade to the bottom is 25.6 m and the distance to the top is 33.5 m. The ground elevation of the elevated water tank is 278 m ASL. The elevated tank can only provide pressures of 275 kPa to the proposed development land east of the community when the tank is full, so any water level below full will result in pressures below 275 kPa. The tank has inadequate height to provide all of the developed area of Hensall with normal operating pressures of at least 350 kPa. MECP Design Guidelines for Drinking Water Systems – 2008 (MECP 2008 Guidelines, Ref. 13) suggest minimum operating pressure of 275 kPa, and recommend normal operating pressures of 350 to 480 kPa.

The in-ground reservoir was upgraded in 2008. A high lift submersible pump rated at 18.9 L/s at 55 m TDH is located in a pumphouse and provides flow from the reservoir. The floor elevation of the pumphouse is 276.5 m ASL.

2.10 Review of Existing Water Demands and Commitments

2.10.1 Available Data

The following background information was available to assess existing water demands:

- HAL transmission main total monthly demand from 2011 to September 2017.

2.10.2 Summary of Existing Demands

In order to calculate the maximum day flows using monthly flows, the following equation was utilized:

Theoretical Max. Day Demand = Average Annual Flow x Max. Day Factor

Typically the maximum day factor is determined by using Table 8-2 from the MECP 2008 Guidelines. The table was interpolated in order to have a more conservative maximum day factor. Table 2.4 provides the adjusted maximum day factors used for interpolation.

Table 2.4
Maximum Day Factors from MECP Guidelines

Population	Maximum Day Factor
1000	2.75
2000	2.5
3000	2.25

A maximum day factor of approximately 2.73 for the 2016 population of 1,078 was applied to historical average annual demands to estimate the existing theoretical maximum day demand. Table 2.5 provides a summary of historical water supply values.

Table 2.5
HAL Transmission Main Water Supply (2013 to 2017)

Year	Avg. Day (m^3)	Max. Month (m^3/day)	Estimated Max. Day (m^3)[4.]
2013	351	446	958
2014	290	341	792
2015	301	348	822
2016	309	358	844
2017[1.]	291	369	794
3 Year[2.]	300	358	844[5.]
5 Year[3.]	308	446	958

1. *2017 data only available from January to September*
2. *Three year analysis considers 2015 to 2017 data*
3. *Five year analysis considers 2013 to 2017 data*
4. *Based on 2.73 x Average Day*
5. *Based on highest value in 3 year period*

Leaks in the Hensall water system were addressed from 2011 to 2013 which significantly reduced maximum monthly demands to under 400 m^3/day since 2014. Additionally, average annual demands have consistently been approximately 300 m^3/day since the leaks were repaired. Since the maximum day factor typically decreases with population increase, an average annual demand was established as a baseline rather than the maximum day demand. Therefore, the most recent three year period was used and the 2016 average day demand of 309 m^3/day, which corresponds to a three year estimated maximum day of 844 m^3/day, was established as the baseline.

The 2016 baseline per capita average day and theoretical maximum day demands are 0.29 and 0.78 m^3, respectively. These values are within the range of normally expected per capita demands and were calculated using the 2016 population of 1,078.

2.10.3 Commitment to Ethanol Plant

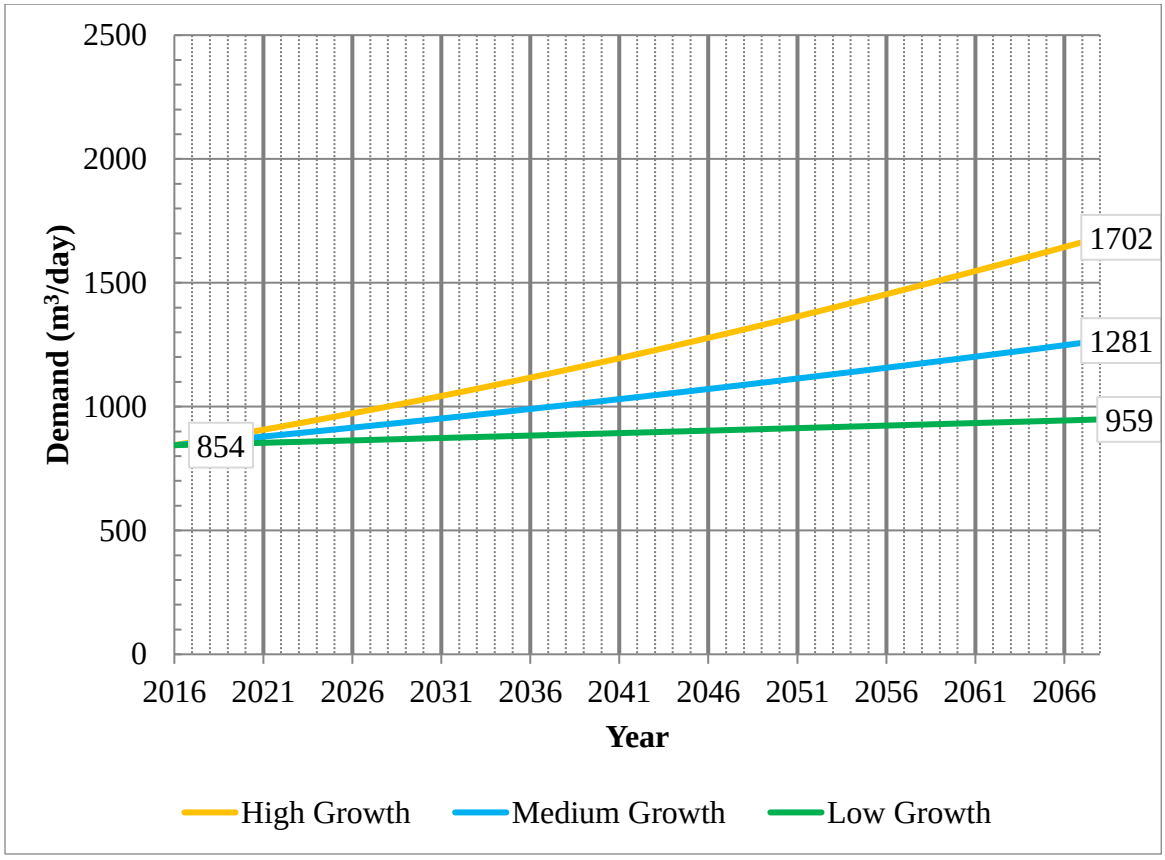
In 2006, Greenfield Ethanol announced their intention to construct an ethanol plant in Hensall. The projected ethanol plant maximum day flow was 2,600 m^3/day or 108 m^3 per hour. 3,040 m^3/day of the HAL transmission main capacity is reserved for the plant. This value was considered to be the peak demand of the plant. The ethanol plant has not been constructed.

2.11 Projected Demands

Water demand was projected to 2068 using the low, medium, and high population growth scenarios (See Section 2.8). The 2016 baseline average annual demand was established as 309 m^3/day. Demand was projected on the assumption that the baseline average annual per capita demand of 0.29 m^3 would remain constant. Maximum day demands were estimated by applying interpolated factors from Table 2.4 to corresponding projected average annual demands (See Section 2.10.2). The maximum day factor will decrease as the projected population grows.

Using the medium growth scenario, a maximum day demand of 1,281 m^3/day was projected for the year 2068. Figure 2.7 shows the projected maximum day demands.

Figure 2.7: Hensall Projected Maximum Day Demands



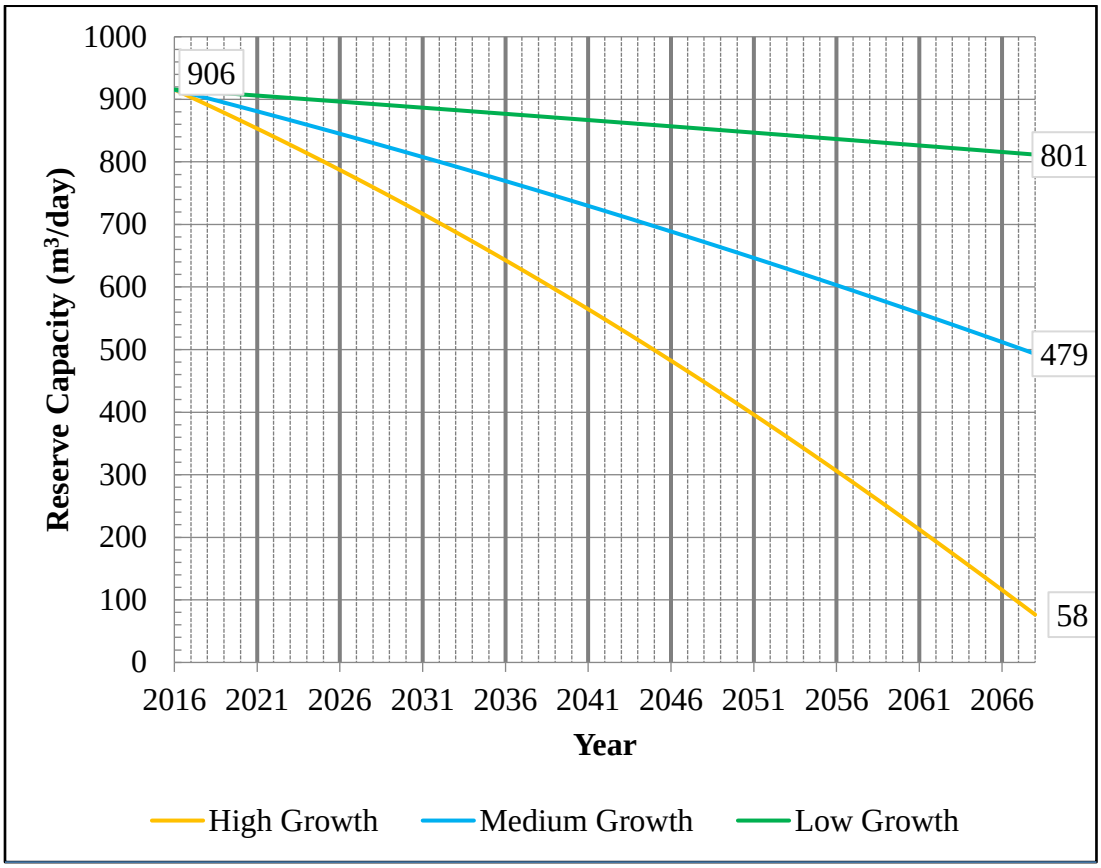
2.12 Reserve Capacity

The design capacity of the HAL transmission main is 4,800 m^3/day and the Municipality is committed to providing up to 3,040 m^3/day to Greenfield Ethanol. Therefore, 1,760 m^3/day of capacity is available for Hensall. The transmission main is supplied from the Exeter pumping station and reservoir. The Exeter pumping station responds to increased demand from Hensall, and thus the HAL reserve capacity can be used for equalization. The reserve capacity in 2016, using the three year theoretical maximum day, was calculated as follows:

Total Reserve = HAL design capacity – Ethanol Plant Reserved Flow – Maximum Day Demand
2016 Reserve = 4,800 m^3/day – 3,040 m^3/day - 854 m^3/day = 906 m^3/day

Therefore the 2016 reserve capacity was 906 m^3/day. Future reserve capacities were calculated and are presented in Figure 2.8. Based on the low, medium, and high growth projections the HAL transmission main will still have uncommitted reserve in 2068.

Figure 2.8: Hensall 2068 Uncommitted Reserve (Surplus) Capacities



2.13 Water Storage Requirements

2.13.1 Purpose of Storage

Municipal water storage facilities are typically used for fire, equalization and emergency storage. Equalization storage allows for maintenance of adequate flows and pressures in the distribution system during peak hour demand. Fire storage ensures that there is sufficient storage to meet the needs of a fire, and emergency storage acts as a safety factor as follows:

Total Treated Water Storage Requirement = A + B + C – D

Where: A = Fire Flow x Duration (Table 2.6)
B = Equalization Storage (25% of max. day demand)
C = Emergency Storage (25% of A + B)
D = Uncommitted Reserve Credit for HAL Pipeline

As mentioned in Section 2.12, the HAL transmission main currently has reserve capacity. The reserve capacity can be used as a credit for the fire storage requirement. The reserve capacity, expressed in L/s is subtracted from the fire flow demand. Fire storage requirements are determined by interpolating the values in Table 2.6.

Table 2.6
Excerpts from MECP 2008 Guidelines Table 8-1

Population	Fire Flow Rate (L/s)	Duration (hrs.)
500	38	2
1,000	64	2
1,500	79	2
2,000	95	2
3,000	110	2

2.13.2 Existing Storage Required

The established 2016 maximum day demand of 854 m^3/day corresponds to an uncommitted reserve of 916 m^3/day (10.6 L/s). Using these values, the suggested water storage volume was calculated using the method set out in Section 2.13.1:

- Equalization = 25% x 854 m^3 = 214 m^3
- Fire Storage = 66.3 L/s x 2 hours = 478 m^3
- Credit to Fire = 10.6 L/s x 2 hours = -76 m^3
- Emergency = 25% x (214 + 478 - 76) = 154 m^3

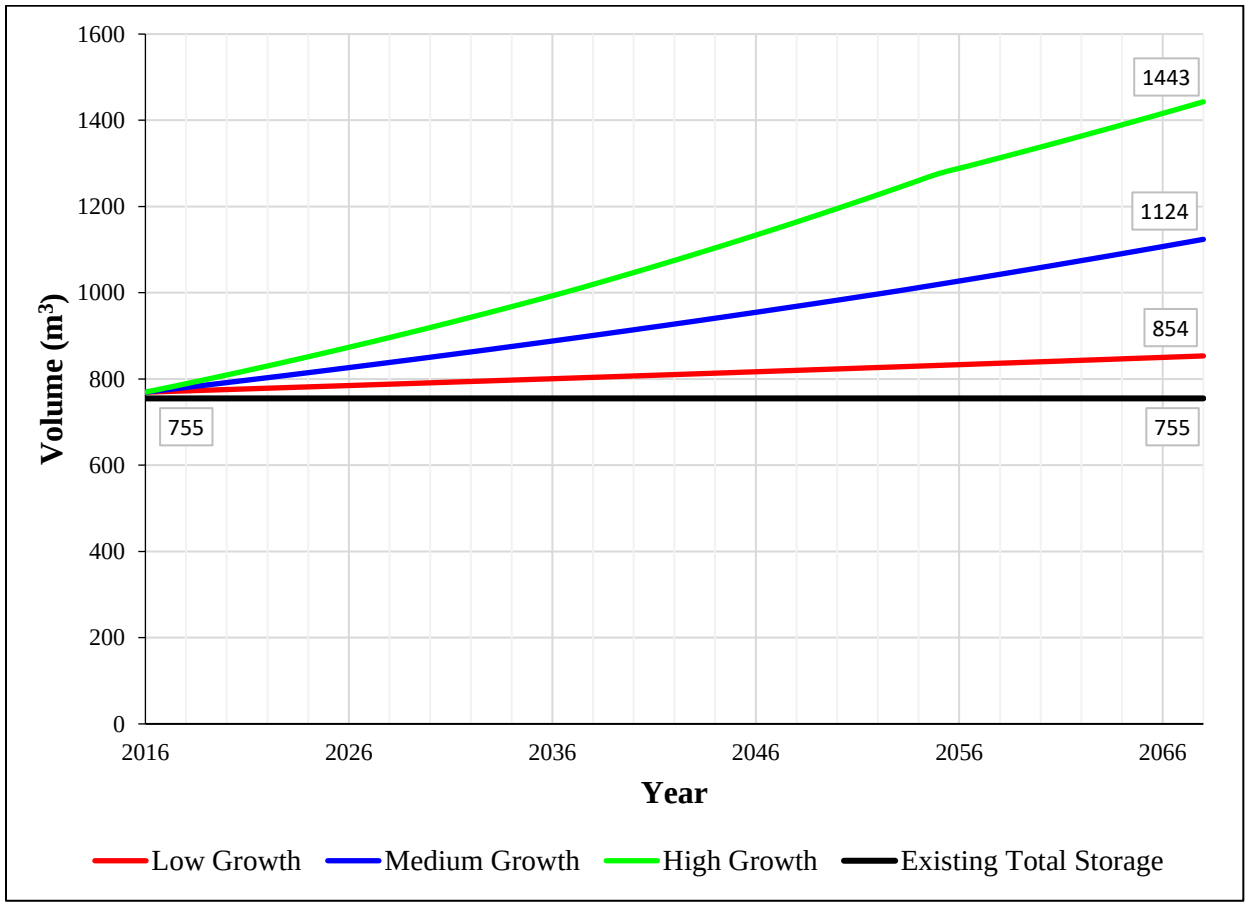
Required 2018 Storage = 770 m^3
Existing Total Storage = 755 m^3
Existing Storage Deficit = -15 m^3

As identified above, there is an existing (2016) 2% deficit in the recommended storage volume. Further, the effective storage may be less than the total storage and low pressure occurs in some locations.

2.13.3 Future Storage Requirements

The Hensall water storage requirement, as recommended by the MECP, was projected to 2068. Water demands were projected using the per capita average daily demand baseline of 0.29 m^3/day and the appropriate theoretical maximum day factors (See Section 2.11). The projected storage requirements, as shown in Figure 2.9, were calculated for the low, medium, and high growth scenarios using the methodology outlined in Section 2.13.1.

Figure 2.9: Hensall Projected Storage Requirement



As shown in Figure 2.9 the projected storage requirements in 2068 are as follows:

- Low Growth (0.25%): 854 m^3
- Medium Growth (0.9%): 1,124 m^3
- High Growth (1.6%): 1,443 m^3

2.13.4 Impact of Ethanol Plant

As mentioned in Section 2.10.3, the projected maximum day demand of the proposed ethanol plant is 2,600 m^3/day. Peak use was forecasted to be 35.2 L/s (3,040 m^3/d). In case of an extended service interruption, water supply to the ethanol plant would have to be discontinued. A somewhat arbitrary 324 m^3 of emergency water storage for the ethanol plant is recommended to provide three hours of flow at the projected maximum day demand. Three hours of storage takes into consideration the time elapsed between service interruption and isolation of the ethanol plant using a manual valve. The sizing calculation provided in Section 2.13.2, based on the medium growth scenario, would result in a design emergency component of 255 m^3. The additional to accommodate the Ethanol Plant shut-down is therefore 69 m^3.

2.13.5 Two Day Emergency Approach

As previously mentioned, the Hensall water system supply consists of a single connection to the HAL pipeline. The pipeline connection, as the only water supply source, makes Hensall vulnerable to temporary or prolonged interruptions to the pipeline flow. As an alternative to the traditional design approach (Equalization + Fire + Emergency), storage could be provided to last for 24 hours at the maximum day demand in case of prolonged failure of the pipeline connection.

The medium growth scenario maximum day demand in 2068 was projected to be 1,281 m^3/day.

Providing an additional 324 m^3 of storage for the proposed ethanol plant would increase the 2068 medium growth storage requirement by 25% to 1,605 m^3. The high growth scenario results in a 2068 storage requirement of 2,026 m^3 which is 26% greater than the medium growth requirement.

2.13.6 Summary for Storage

The three year (2015 to 2017) maximum average annual demand of 309 m^3 for a population of 1,078 was established as the baseline (0.29 m^3/day·capita). Maximum day demands were estimated from projected average annual demands using theoretical maximum day factors (See Section 2.10.2). Future demands were projected using low, medium and high growth scenarios based on the assumption that the per capita average daily demand would remain constant at approximately 0.29 m^3 (See Section 2.11).

The existing total storage is 755 m^3. Fire, equalization and emergency storage requirements were considered, using MECP guidelines. A credit was applied for surplus capacity in the supply pipeline. The existing (2016) storage requirement according to MECP guidelines is 770 m^3 (See Section 2.13.2). A 24 hour emergency storage requirement was considered as an alternative since the only water source is from one pipeline.

The projected 2068 storage requirements for the aforementioned scenarios are summarized in Table 2.7. These storage requirements include a 69 m^3 allowance for the ethanol plant shut-down (See Section 2.13.4).

Table 2.7
Hensall 2068 Storage Requirements

Growth Scenario	Fire, Equalization and Emergency (m^3)	24 Hour Emergency (m^3)
Low (0.25%)	923	1,028
Medium (0.9%)	1,193	1,350
High (1.6%)	1,512	1,771

2.13.7 Recommendation for Storage

Given the uncertainty regarding both growth and the eventual development of the ethanol facility we recommend that the 24 hour storage requirement for the medium growth scenario be used as the storage requirement. This will result in providing a structure with an operating volume of 1,350 m^3.

2.14 Climate Change Considerations

Climate change is predicted to result in more intense storms and potentially, periods of prolonged drought that might result in increased water demands within the community. Improving the storage capacity of the system with a new elevated facility will make the supply more robust. The Hensall water supply comes from an intake at Lake Huron north of the community of Grand Bend that should be reasonably protected from periodic drought conditions.

3.0 CLASS EA PROCESS

3.1 Historical Background

In 2004 a Class EA process was initiated by the Municipality of Bluewater to extend a piped municipal water supply to the community of Hensall. The existing municipal well supply was subject to nitrate contamination and did not meet MECP regulatory requirements of the day. The system was also known to have deficient storage to address the then-current needs of the community. A new elevated storage facility had been recommended through a previous Environmental Assessment process completed in 1998, but had never been implemented. The pipeline assessment was completed in 2006 and the pipeline was constructed in 2007. Although the new water source provided an improved level of supply to the community, storage for fire protection, maintenance of system pressures, and provisions for emergencies, was still not addressed.

In 2015 Landmark Municipal Services completed an inspection of the Hensall Water Tank. The inspection was completed using a remotely operated (ROV) underwater camera, which was used to inspect the interior of the tank and identify the extent of corrosion that was present. Although the exterior of the tank was in reasonably good condition, the interior was determined to be in poor condition and repairs were recommended within 2 to 3 years to address the corrosion. A number of safety issues were also identified with the exterior of the facility that needed to be addressed. The estimated cost of anticipated repairs was approximately $300,000. Due to the extent of corrosion and the age of the facility, replacement of the elevated tank was recommended within the next 10 years. The inspection report is included within Appendix B.

Based on the above noted studies and inspections, the Municipality of Bluewater initiated a Municipal Class EA in November 2017 to investigate construction of a new water storage facility. The investigations followed the planning and design process set out for Schedule B activities under the current Class EA document, dated October 2000, as amended in 2007, 2011 and 2015.

3.2 Identification of Problem/Opportunity

The first phase of the Class EA process involves the identification of the problem or opportunity to be addressed. Based on the deficiencies discussed above, the following problem was identified:

> *The existing water storage facility, servicing the community of Hensall, is not adequate. Investigations have established that the structure is both too small and too low to provide adequate pressures throughout the community and to maintain efficient operation of the water system. Furthermore, the facility is over 80 years old and requires significant repairs to maintain system functions and to remain safe.*

In order to resolve these issues, the Municipality initiated a Class EA investigation following the design process established for Schedule B activities.

3.3 Class EA Schedule

The establishment or the expansion/replacement of a water storage facility is considered a Schedule B activity in the Municipal Class EA document. From the Class EA perspective, Schedule B projects are approved subject to the completion of Phases 1 and 2 of the Class EA process (i.e., Problem Identification, Evaluation of Alternative Solutions). This involves screening the project for environmental impacts and developing mitigation strategies. Public, government agency, and Aboriginal consultation is a component of the screening process.

3.4 Identification of Practical Alternatives

The first phase of the Class EA process is to establish the problem or opportunity to be addressed. The second phase involves identification and evaluation of alternative solutions to address the issues. The alternatives, stated below, build on the findings of a preliminary engineering assessment.

Alternative 1 – Construct a new water storage facility in the community of Hensall.
This option involves the construction of a new water storage facility, which must first include the identification of an appropriate location. This includes consideration of the impacts resulting from the construction and connection of the facility, decommissioning the existing elevated tank, and the impact of the new facility on the existing supply and distribution system.

Alternative 2 – Limit community development.
This alternative would require the Municipality to implement land use planning policies restricting new development within the study area. This option would result in water demand being maintained at existing values.

Alternative 3 – Do nothing.
This option proposes that no improvements or changes be made to address the identified problems. The Do Nothing alternative may be implemented at any time in the design process prior to construction. This decision is typically made when the costs of all alternatives, both financial and environmental, significantly outweigh the benefits.

3.5 Preliminary Review of Alternatives

3.5.1 Alternative 1: Construct a New Water Storage Facility in the Community of Hensall

Implementation of Alternative 1 would involve the construction of a new water storage facility within the community of Hensall. Any new water storage facility would be designed in accordance with MECP guidelines to address the existing system pressure and storage issues. This alternative will also require the construction of watermains to connect the storage facility to the existing distribution system. The site and type of storage facility, as further discussed in Section 3.6, will influence whether additional facilities such as booster pumping stations, are required. The construction of a new water storage facility would resolve the outstanding issues related to inadequate system pressures and storage capacity. Additionally, this alternative would provide Hensall with a modern facility capable of accommodating the community's forecasted water storage needs for up to the next 50 years.

3.5.2 Alternative 2: Limit Community Growth

The implementation of this strategy would require the Municipality to amend its Official Plan and Zoning By-law to restrict new development in and adjacent to the community of Hensall. Such a policy, however, would be contradictory to the intent of the Official Plan, as reflected in Section 8.4.4(1.) of the Plan:

> *"Development will be directed to designated areas. The designated villages and hamlets contain ample area to accommodate growth."*

Additionally, this alternative does not address the existing deficiencies in the system, such as the maintenance of adequate system pressures and capacity for fire flows and emergencies. As such, limiting community growth is not considered to be a viable approach to resolving the defined problems and was rejected as an alternative and not considered further.

3.5.3 Alternative 3: Do Nothing

The Do Nothing alternative represents the least expensive alternative. It does not, however, resolve the problem of the existing tank's deterioration or inadequate system pressures and storage capacity. The implementation of this option would therefore not address these deficiencies or provide the opportunity for additional growth within the community. This option would only be considered if the negative impacts of implementation were considerable and could not be mitigated to an acceptable degree.

3.6 Review of Alternative Storage Types

3.6.1 General

Alternative 1 involves the construction of a new water storage facility in the community of Hensall, and as such, consideration must be given to the alternative types of water storage facilities. Water storage facilities are designed to maintain adequate flows and pressures during peak hour demand. Additionally, storage facilities must be designed to meet critical water

demands during periods of fire flow and to address emergency loss of supply (pipeline break). To meet current and future needs, the design capacity of water storage facilities is typically based on 25 to 50-year population projections. The three types of water storage facility most frequently used in Ontario are listed below and further examined in the following section:

- Elevated Tanks
- Reservoirs
- Standpipes

3.6.2 Types of Storage

Elevated Tanks provide water storage in a steel vessel mounted on a support system, typically a concrete pedestal. Earlier versions had steel leg systems or other forms of steel support, such as the current elevated tank in Hensall. This type of facility has the significant advantage of being able to store the entire contents of the structure at an elevation where it is available by gravity. Ideally, elevated tanks are located at a highpoint in the community to shorten the support system and reduce costs. If located in a prominent location, elevated tanks can be a focal point for the community. The main advantages are gravity supply and energy efficiency. The key disadvantages are; they are not expandable, and in some cases, create shadows for adjacent properties.

Reservoirs store water at or near grade. They may be fully exposed, sitting on a concrete pad, or fully or partially buried. Unless a significant topographic highpoint is available, reservoirs require pumps to maintain pressures in the system. When there is no elevated storage these pumps, generally referred to as “booster pumps”, must operate continuously. Reservoirs are typically constructed with a minimum of two cells. Multiple pumps, some with variable capacity, are usually provided in an adjacent pumphouse. The key advantages for reservoirs are expandability (by adding more cells) and minimal visual impacts. Key disadvantages are the operating (energy) and maintenance costs associated with pumping equipment and the need for a larger area to construct the structure. Reservoirs require pumphouses. If a new well is required at the same time as the reservoir, there can be an economic advantage to using the same pumphouse for the pump and piping system for both the well and booster systems. The Hensall water system currently has a small reservoir at York Street. The facility and its existing storage capacity are expected to be replaced by the new facility.

A **Standpipe** is a type of water storage facility that looks similar to a grain silo. Standpipes are cylindrical and usually contain water from the base to the top. Typically, only the water in the top few metres of the structure is available by gravity. Pumping stations are frequently provided at the base of standpipes to maximize the volume useable during emergency conditions. Subject to the need and cost of pumping systems, a standpipe can sometimes be a less costly alternative to an elevated tank, while providing energy saving opportunities and advantages over a reservoir. The disadvantages of standpipes are similar to those for elevated tanks; no expandability and potential shading. Due to smaller volumes in the highest part of the structure, they are not as energy efficient as elevated tanks. Since the advent of concrete pedestals for elevated tanks, few standpipes have been determined to be cost efficient. The community of Hensall has few topographic high points that are suitable for construction of a standpipe.

3.6.3 Preferred Type

Unless there is a requirement for pumping facilities (e.g. a new well), an elevated tank is the preferred type of storage facility. Accordingly, initial investigations of possible sites have focused on the requirements and impacts of an elevated tank.

3.7 Site Selection Evaluation

3.7.1 Alternative Sites

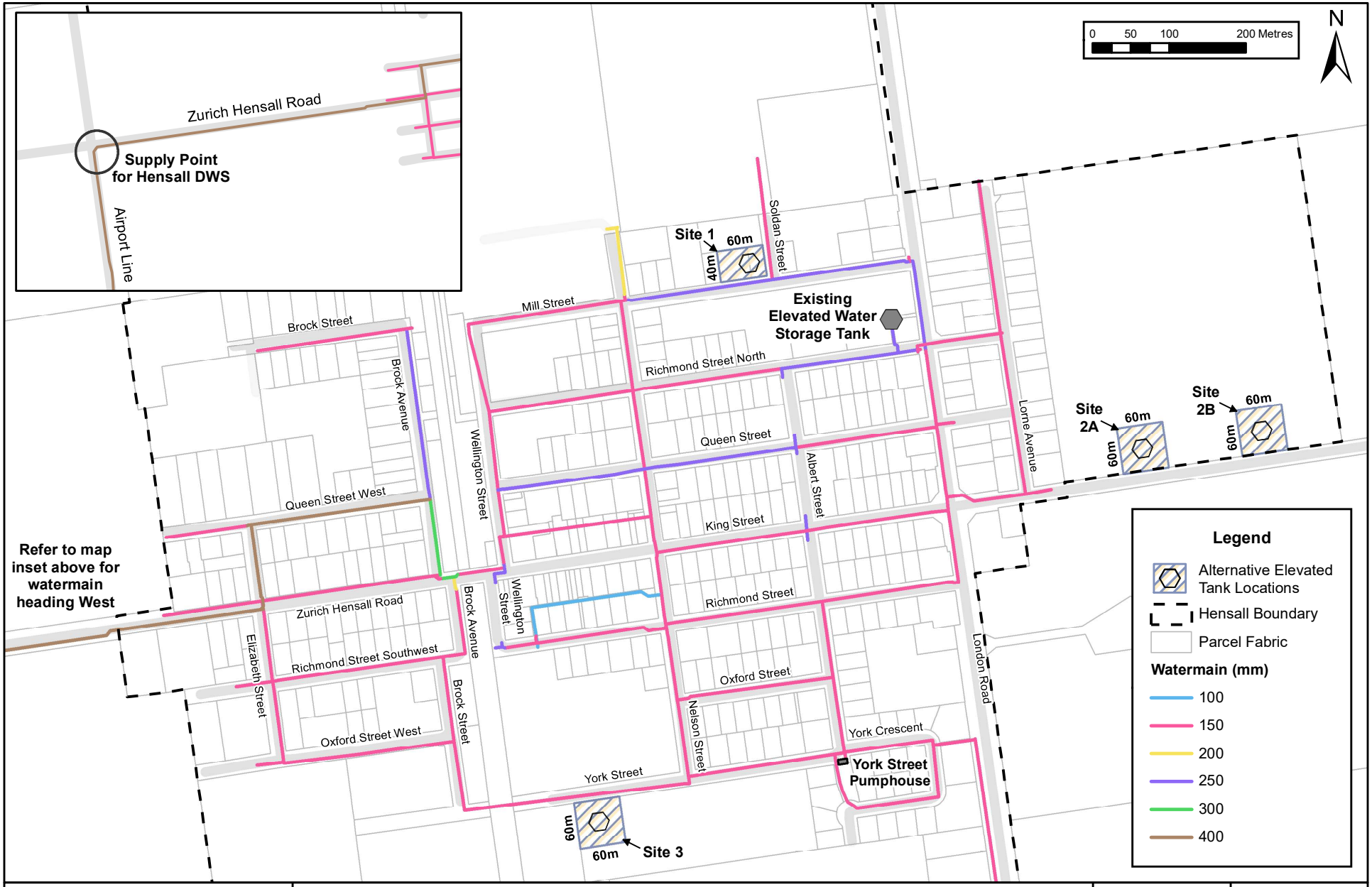
When considering locations for a water storage facility, several factors must be considered. These factors include: security and safety considerations, site access, future expansion potential, pumping and transmission costs, and the location in relation to distribution system hydraulics. Additionally, the availability of municipally-owned property and the impacts to adjacent properties were considered. The current tower location was determined not to be suitable due to its proximity to existing private manufacturing facilities (General Coach) and the limited size of the current parcel.

An evaluation of possible locations within, or immediately adjacent to the community, was undertaken in conjunction with municipal public works staff. Three sites were eventually identified that met the general parameters noted above and were evaluated as potential locations for the new water storage facility. The sites are illustrated on Figure 3.1.

- Site 1 – Northwest corner of Mill Street at Soldan Street (Soldan Street Site).
- Site 2 – North of Hensall Road, east of Lorne Avenue (Hensall Road East Site).
- Site 3 – South side of York Street, west of Nelson Street (School Site).

3.7.2 Detailed Site Descriptions

A detailed description of the three possible water tank locations is included below, including a description of site details which may have bearing on the site selection process completed to select the most suitable location.



BMROSS engineering better communities

MUNICIPALITY OF BLUEWATER

CLASS ENVIRONMENTAL ASSESSMENT
FOR A NEW WATER STORAGE FACILITY

POSSIBLE TOWER LOCATIONS AND WATER SYSTEM

DATE	PROJECT No.
JULY 18, 2018	17277
SCALE	FIGURE No.
1 : 7,000	3.1

Site #1 – Soldan Street

Site #1 is located at the northwest corner of Soldan and Mill Streets and is currently used as a parking lot by the owner, General Coach. The site is zoned Residential-Low Density (R1) within the Bluewater Zoning By-Law. Several large deciduous trees and a hedge are located along the perimeter of the site while the remainder is gravel surfaced with no other vegetation present.

Existing industrial developments are located to the north and south and a stormwater management facility is located immediately north, which is part of the Hensall District Co-op (HDC) site. Lands to the east and west were formerly residential building lots, but have been purchased by HDC for industrial uses and rezoned to a special M1-7 zoning (See Appendix B). All residential structures have been removed and the properties are currently vacant. Due to its proximity to the existing tower location, capital costs associated with connection to the existing system are less than those for Site #2 and Site #3. A photo of this location is below.

View of Proposed Tower Site looking Northeast from Mill Street

Site #2 – Hensall Road

Site #2 is located on the north side of Hensall Road East, east of Lorne Avenue, east of Highway No. 4. Several possible locations would be available within lands zoned for Future Development in this area. The site is actively cultivated at present and is currently zoned Future Development (FD-2) within the Bluewater Zoning By-Law. Existing residential properties fronting on Lorne Avenue are located to the west, while actively farmed agricultural lands are located to the north, south and east. The site forms part of a large 12.6 ha site identified for future residential development within the Official Plan and Zoning By-Law. Due to its distance from existing watermains, capital costs associated with connection to the existing distribution system are more than those for Site #1. Tables 3.1 and 3.2 summarize major capital costs associated with each site. A photo of the possible location is below.

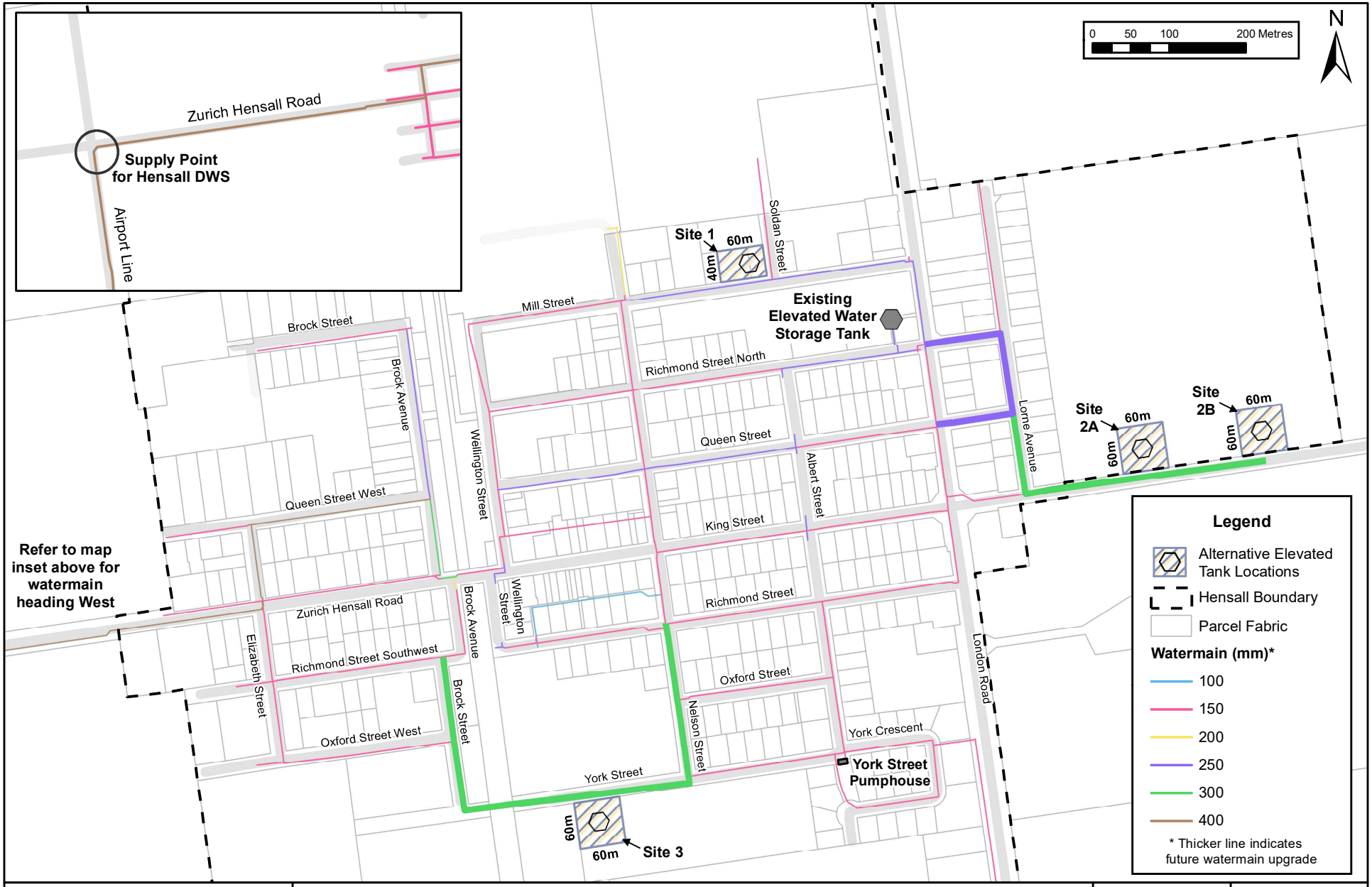
View of Property Fronting on Hensall Road East, looking West toward Hensall.

Site #3 – School Site

Site #3 is located on the south side of York Street approximately 100 metres west of the intersection with Nelson Street. The site is planted in mature hardwood trees and is currently zoned Community Facility (CF) in the Bluewater Zoning By-Law and is located at the westerly extent of the Bluewater Coast Elementary School property. Existing industrial developments are located to the north and west, while the school playground is located to the east. Lands situated immediately south of the site have been designated for future residential development. Due to its distance from larger watermains, capital costs associated with connection to the existing system are more than those for Sites 1 and 2. A photo of the site is below.

View looking Westerly toward Proposed Storage Facility Location

Watermain improvements will be required for two of the alternative sites (Site #2 and Site #3). The necessary improvements to the distribution system consist primarily of increasing the size of the watermains connecting the storage facility to the distribution system. Larger watermains will allow water from the storage facility to reach critical locations throughout the community, with acceptable pressure loss. The necessary watermain upgrades for each alternative site are shown on Figure 3.2. Preliminary opinions of the anticipated watermain construction costs are summarized in Table 3.1.



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MUNICIPALITY OF BLUEWATER

CLASS ENVIRONMENTAL ASSESSMENT
FOR A NEW WATER STORAGE FACILITY

WATERMAIN UPGRADES FOR STORAGE OPTIONS

DATE	PROJECT No.
JULY 18, 2018	17277
SCALE	FIGURE No.
1 : 7,000	3.2

Table 3.1
Watermain Improvements Capital Cost Summary

Site Alternative	Watermain Capital Cost[1]
Site #1 – Soldan Site	$0
Site #2 – Hensall Road Site	$600,000
Site #3 – School Site	$700,000

Notes: 1. Includes 20% for engineering and contingencies.

3.7.3 Elevated Tank Capital Cost

The incremental costs associated with constructing an elevated tank varies for each site due to the pedestal height required to maintain system pressures. A comparison of capital costs for constructing a 1,350 m^3 elevated tank (50 year design population) at each of the sites is provided in Table 3.2.

Table 3.2
Elevated Tank Incremental Capital Cost Comparison

Site Alternative	Elevated Tank Capital Cost[1,2]
Site #1 – Soldan Site	+ $40,000
Site #2 – Hensall Road Site	$ 0
Site #3 – School Site	+ $120,000

Notes: 1. Includes 15% for contingencies and 10% for engineering.
2. Assumes construction in 2019.
3. Costs are for variations in tank pedestal height only.

3.7.4 Site Evaluation Criteria

Evaluation criteria were developed in order to determine the relative advantages and disadvantages of each of the sites. The criteria considered social, economic, technical, cultural and natural environment impacts. A rating system was used to rate each of the criterion for all of the sites. The rating system is described in Table 3.3.

Table 3.3
Rating System for Evaluation Criteria

Rating	Description
3	Option is superior relative to the other options
2	Option is the same as the other options
1	Option is poor relative to the other options

3.8 Comparative Analysis

3.8.1 Scoring System

To evaluate the three potential sites for a water storage facility, a scored evaluation system was developed and used. Each site was evaluated on a number of factors and given a score based on potential impacts related to the criteria under consideration. The scores for each location were tallied for a final score out of a possible 45 points. Sites with higher scores are considered to have fewer potential impacts (or impacts that can be lessened with mitigating measures) and will be a better alternative location for a new water storage facility. The comparative analysis and scores for each site are summarized in Table 3.5.

Based on the results of the site comparison analysis and associated scoring results, the sites were ranked from 1 to 3 as shown on Table 3.4.

Table 3.4
Site Alternative Ranking

Site Alternative	Score	Rank
Site #1 – Soldan Site	34	1
Site #2 – Hensall Road Site	27	2
Site #3 – School Site	26	3

3.8.2 Summary of Analysis

Site #1 (Soldan Site) – This site has no watermain construction costs (least expensive alternative), is in close proximity to existing industrial users and few anticipated impacts to adjacent properties following construction. However land must be purchased.

Site #2 (Hensall Road) – The site located east of Highway No. 4 scored similarly to Site #3 as it has moderate watermain construction costs, no larger diameter watermains present (along Hensall Road east of Lorne Ave) and proximity to future development lands. However, the watermain construction cannot be staged, the site is located in close proximity to existing residential uses and is visible for promotion of economic development.

Site #3 (School Site) – This site scored moderate to low due to the high cost of watermain construction (2nd most expensive alternative), the disruption of natural features due to the need to cut down trees, the need to purchase land and the close proximity to the existing elementary school.

3.8.3 Preferred Site Selection

The Soldan Street location was determined to be the preferred location for a proposed storage facility based upon the results of the evaluation exercise.

Table 3.5 Site Comparative Analysis of Potential Water Storage Facility Sites[1]

	Site 1		Site 2A & 2 B		Site 3	
	Parking Lot Site	Score	Hensall Road Site	Score	School Site	Score
WATERMAIN						
Capital Costs for new watermain	$0	3	$600,000 (Average of 2A & 2B)	1.5	$700,000	1
Ability to stage watermain construction	Yes	2	No	1	Yes	2
Connections to water distribution grid (the more the better)	Site has large watermains in the vicinity. Water can flow in 2 directions.	3	Site has no large watermains in the vicinity. Tank will be on a dead end.	1	Existing watermain is smaller capacity. Water can flow in 2 directions.	2
New watermain replaces inadequate watermain	No	1	Watermains would be needed to facilitate future development	2	Nelson and York watermains are a high priority for infrastructure renewal.	3
Provides adequate fire flows at suitable pressures for areas of concern identified by Fire Department	Improves conditions for HDC and General Coach.	2	Maintains existing conditions and provides flows for future development lands.	1	Improves conditions for School, Thompsons and Future Development Lands to the south.	2
Presence of significant cultural features	None anticipated.	2	None anticipated.	2	None anticipated.	2
Disruption of natural features	None anticipated.	2	No disruption anticipated.	2	None anticipated.	2
Sub-Total Watermain		**15**		**10.5**		**14**
ELEVATED TANK						
Capital Costs to elevate tank (1600 m^3)	$40,000	2	$0	3	$120,000	1
Approximate geodetic elevation (Affects cost – not scaled otherwise)	278 m		280 m		274 m	
Need to purchase property	Property must be purchased. Owners are willing.	2.5	Property must be purchased.	2	Property must be purchased.	2
Impact to adjacent properties during construction	Limited impact to intersection of Soldan and Mill Street.	2	Depends on final location but possible impact to future residential.	2.5	Might impact use of school property.	2
Visibility for economic development	Visible from north and east.	2.5	Visible from south and west	2	Located on the edge of the community far from main roads. Low visibility.	1
Impact to adjacent sensitive land uses – shading, view	None anticipated.	3	Possible shading for properties fronting on Lorne Avenue.	2	Possibly, after development.	2
Impact on future development – loss of development site	No Impacts	3	Possibly, after development. Development is proposed. Adds new watermain which is positive for site.	2	Provides improved watermain connection for future development lands to the south.	2
Presence of significant cultural features	None anticipated. Site previously disturbed.	3	Stage 1 &2 Archaeological Assessment would be required.	2	Stage 1 &2 Archaeological Assessment would be required.	2
Disruption of natural features	Minimal – limited tree removal would be required.	2	Minimal – field is in agricultural production.	3	Stand of trees would need to be removed.	1
Sub-Total Tank		**20**		**18.5**		**13**
Total Score (out of 45)		**35**		**29**		**27**

Notes: 1. Sites with higher scores are considered to have fewer potential impacts (or impacts that can be lessened with mitigating measures.

3.9 Evaluation of Class EA Alternatives

The third phase of the investigation involved the evaluation of the identified alternatives. The purpose of this stage was to examine the potential environmental impacts associated with the proposed works and to examine potential mitigation for any identified impacts. The evaluation stage generally involved the following activities:

- Preliminary technical review of alternatives.
- Preliminary selection of a preferred option.
- Consultation with the general public and review agencies.
- Final selection of a preferred option.

3.9.1 Environmental Considerations

Section 3.4 of this report listed the alternative solutions that were identified to resolve the deficiencies associated with the existing water storage facility in Hensall. As part of the evaluation process, it is necessary to determine what effect or impact each alternative will have on the environment and what measures can be taken to mitigate the impact. The two main purposes of this exercise are to:

- Minimize or avoid adverse environmental effects associated with a 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.

The identified environmental elements can be further subdivided into specific components which have the potential to be affected by the implementation of the alternative solutions. Table 3.6 provides an overview of the specific environmental components considered of relevance to this investigation. These components and sub-components were identified following the initial round of public and agency input, and a preliminary review of each alternative with respect to technical considerations and the existing environmental setting of the project area.

Table 3.6
Evaluation of Alternatives: Identification of Environmental Components

Element	Component	Sub-Component
Natural	Aquatic	• Aquatic Resources
	Atmosphere	• Air Quality, Noise
	Surface Water	• Water Quality/ Quantity • Drainage Characteristics
	Terrestrial	• Birds, Mammals • Vegetation
	Geologic	• Physiographic Features
Social	Neighbourhood	• Disruption
	Community	• Health and Safety • Recreational Activities
Cultural	Heritage	• Historical/ Cultural Resources
Economic	Project Area	• Capital and Operational Costs
	Community	• Property Taxes
Technical	Transportation	• Traffic Patterns/ Volumes • Pedestrian/ Vehicular Safety
	Infrastructure	• Condition/ Age • Servicing Capacity • Utilities

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

- 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 applicable regulations and public policy objectives.

Using the above criteria, the potential impacts of each alternative solution were systematically evaluated. The significance of the potential impacts posed by each alternative was 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 a project.

For the purposes of this Class EA, impact determination criteria developed by Natural Resources Canada have been applied to predict the magnitude of environmental effects resulting from the implementation of a project. Table 3.7 summarizes the impact criteria.

Table 3.7
Criteria for Impact Determination

Level of Effect	General Criteria
High	Implementation of the project could threaten sustainability of 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/ Nil	Implementation of the project could impact upon the resource during the construction phase of the project but would have a negligible impact on the resource during the operational phase.

Given the criteria defined in Table 3.7, the significance of adverse effects is predicated on these considerations:

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

3.10 Environmental Effects Analysis

The potential interactions between the two remaining alternatives and environmental features were examined as part of the evaluation of alternatives phase. The purpose of this analysis was to determine, in relative terms, the environmental effects of the identified, practical alternatives on each of the environmental components and factors, using the impact criteria described in Table 3.7. Table 3.8 summarizes the outcome of the environmental effects analysis. This analysis forms the basis for identification of significant impacts which will be discussed in further detail, later in this report.

Table 3.8
Summary of Environmental Effects Analysis

Alternative	Environmental Component	Factors Under Consideration	Level of Effect	Potential Impacts
Alternative 1 – Construct a new water storage facility	Natural Environment	Soils and Vegetation	Low	• Construction-related activities may result in temporary removal of vegetation. • Only site 3 contains natural features that would be negatively impacted by construction. Site 1 is a gravel parking lot and site 2 is an agricultural field.
		Fish and Wildlife Habitat	Minimal/Nil	• There are no watercourses in the immediate vicinity of any of the sites under consideration. • Deleterious materials could be released to drainage systems during the construction phase. • Construction-related activities may result in removal of wildlife habitat on site.
		Water Quality and Quantity	Minimal/Nil	• There are no watercourses in the immediate vicinity of any of the sites under consideration. • Sediment and erosion control measures will be implemented during construction to minimize impacts to local drainage systems.
		Drainage Characteristics	Minimal/Nil	• Construction-related activities may result in deleterious materials being released to drainage systems. • Sediment and erosion control measures will be implemented during construction to minimize impacts to local drainage systems.
	Social Environment	Quality of Life	Low	• Traffic generated from the operation of a new facility will be minimal. • Adjacent properties may be impacted by shading. • New facility will provide additional storage capacity and improve system pressures throughout entire distribution system.
		Visual Impacts/Aesthetics	Moderate	• A new water storage facility may represent a visual intrusion for adjacent property owners and the larger community. • Facility may also be used for economic promotion.

Alternative	Environmental Component	Factors Under Consideration	Level of Effect	Potential Impacts
		Disruption During Construction	Moderate	• Construction-related activities will generate minor increases in air pollution and noise levels in the vicinity of the site. • Construction-related activities may result in minor traffic disruptions in the vicinity of the site.
	Cultural Environment	Heritage Resources	Minimal/Nil	• No heritage resources were identified at any of the potential sites. The Bluewater Heritage Committee has been consulted.
		Archaeological Resources	Minimal/Nil	• Construction of a new storage facility will occur outside of existing road allowances, which increases the potential impacts to cultural environments. • Watermain improvements will occur within existing road allowances.
	Economic Environment	Capital and Operation Costs	Moderate	• High capital costs.
		Land Purchasing Costs	Low	• May require the purchase of privately owned lands.
		Property Value and Taxes	Minimal/Nil	• Not expected to impact property values.
	Technical Environment	Siting	Moderate to High	• May impact adjacent properties with respect to visual impacts • Site impacts further discussed in Section 6.0.
		Utilities	Low	• May have impacts to underground utilities.
		Hydraulic Capacity	Low	• Will result in increase in storage capacity in the water distribution system. • Will address issues related to inadequate system pressures. • Will provide capacity for design population for up to the next 50 years. • Will increase system resiliency for increased water use associated with climate change related drought conditions
Alternative 2 – Limit Community Growth	Natural Environment	Soils and Vegetation	Low	• No Impacts expected
		Fish and Wildlife Habitat	Minimal/Nil	• No Impacts expected

Alternative	Environmental Component	Factors Under Consideration	Level of Effect	Potential Impacts
		Water Quality and Quantity	Minimal/Nil	• No Impacts expected
		Drainage Characteristics	Minimal/Nil	• No impacts expected
	Social Environment	Quality of Life	Moderate to High	• Lack of growth potential could impact economic prosperity of the community.
		Visual Impacts/Aesthetics	Low	• No Impacts expected beyond current
		Disruption During Construction	Low	• No impacts expected
	Cultural Environment	Archaeological Resources	Minimal/Nil	• No Impacts anticipated
		Heritage Resources	Minimal/Nil	• No heritage resources were identified at any of the potential sites. The Bluewater Heritage Committee has been consulted.
	Economic Environment	Land Purchasing Costs	Low	• No impacts anticipated
		Property Value and Taxes	Moderate to High	• Lack of community growth could impact the economic prosperity of the community and devalue housing stocks. • Anticipated industrial growth may be impacted.
		Capital and Operation Costs	Moderate	• Increased maintenance costs for the existing elevated tank due to ongoing corrosion issues and advanced deterioration.
	Technical Environment	Utilities	Low	• No impacts anticipated.
		Hydraulic Capacity	High	• No increase in storage capacity for existing users. • Does not address issues related to inadequate system pressures and insufficient storage for fire protection and emergencies.
		Siting	Low	• No impacts anticipated
Alternative 3 – Do Nothing	Natural Environment	Soils and Vegetation	Minimal/Nil	• No expected impacts
		Fish and Wildlife Habitat	Minimal/Nil	• No expected impacts
		Landscape Features	Minimal/Nil	• No expected impacts

Alternative	Environmental Component	Factors Under Consideration	Level of Effect	Potential Impacts
		Water Quality and Quantity	High	• No expected impacts
		Drainage Characteristics	Minimal/Nil	• No expected impacts
	Social Environment	Quality of Life	High	• May experience impacts related to poor pressure, emergency supply and inadequate fire protection.
		Visual Impacts/Aesthetics	Minimal/Nil	• No change to current impacts
		Disruption During Construction	Minimal/Nil	• No expected impacts
	Cultural Environment	Heritage Resources	Minimal/Nil	• No expected impacts
		Archaeological Resources	Minimal/Nil	• No expected impacts
	Economic Environment	Capital and Operation Costs	Minimal/Nil	• No expected impacts
		Land Purchasing Costs	Minimal/Nil	• No expected impacts
		Property Value and Taxes	Minimal/Nil	• No expected impacts
	Technical Environment	Siting Requirements	Minimal/Nil	• No expected impacts
		Utilities	Minimal/Nil	• No expected impacts
		Hydraulic Capacity	High	• No increase in storage capacity for existing users and future development • Does not address issues related to inadequate system pressures and insufficient storage for fire protection and emergencies.

3.11 Evaluation Summary

Three alternative solutions were presented and evaluated. These were:

- Alternative 1 – Construct a new water storage facility.
- Alternative 2 – Limit community growth.
- Alternative 3 – Do nothing.

The second alternative, limit community growth, was considered not to be not a viable alternative, as it does not address the existing deficiencies of the water system and is contrary to the Official Plan. Alternatives 1 and 3 were further evaluated to determine the potential environmental impacts of each option.

Environmental impacts, which include impacts to the natural, social, cultural, economic and technical environments, were determined for Alternatives 1 and 3. The first alternative, constructing a new water storage facility, will have impacts to the natural environment from construction activities. Also, a new facility is expected to result in some impacts to adjacent properties with respect to shading and a visual intrusion. The economic impacts of Alternative 1 include high capital costs. A new water storage facility will positively impact water supply in the community by increasing storage capacity and improving system pressures. Alternative 3, the do nothing alternative, has very few impacts; however it does not address the existing deficiencies of the water system.

Related to Alternative 1, three types of water storage facilities were also considered. The advantages of an elevated tank include gravity storage, energy efficiency and a smaller footprint. Disadvantages include visual intrusion and shading impacts, as well as an inability to expand the storage in the future. Reservoirs, unlike elevated tanks, require booster pumps to maintain pressure and tend to have higher operating and maintenance costs as a result. This type of facility also requires more space, but can be expanded. Lastly, standpipes also require booster pumps to access the majority of water stored, making the facility less energy and cost efficient. Additionally, a standpipe is not expandable and impacts adjacent properties by shading. Given the advantages and disadvantages of each type of facility, an elevated tank is considered the preferred type of storage facility for Hensall.

A number of sites were evaluated as potential locations for an elevated tank in the community. Each site was given a score based on a number of criteria, including technical requirements or factors, potential environmental impacts and cost. The cumulative scores were then used to rank the sites, with the highest scores for sites best suited for an elevated storage facility. The sites, ranked according to their scores are:

- Site #1 – Parking Lot on north side of Mill Street – Score 35 – Ranked 1st.
- Site #2 – Hensall Road East Site – Score 29 – Ranked 2nd.
- Site #3 – School Site on the south side of York Street – Score 27 – Ranked 3rd.

3.12 Identification of Preferred Storage Solution

Based on the results of the assessments undertaken above and a review of the technical components associated with the project, the Municipality has indicated a preference for Alternative 1 which is to construct a new water storage facility in the community of Hensall. Furthermore, the preferred type and location of the new storage facility is an elevated tank to be constructed on the north side of Mill Street, west of Soldan Street. There are a number of attributes associated with Alternative 1 which justify its consideration as the preferred option for addressing the deficiencies with system pressure, maintenance of fire flows and emergency storage capacity:

- It provides Hensall with adequate storage and pressure to service the existing population, as well as the projected 50-year design population.
- The life cycle cost of elevated tanks tends to be lower than reservoirs and standpipes, due to the use of gravity to achieve system pressures rather than booster pumps.
- Elevated water storage facilities are generally less complex to operate and maintain than reservoirs or standpipe systems.

The northwest corner of Mill and Soldan Streets is the preferred location for an elevated tank because it provides reduced economic impacts, is located adjacent to existing industrial operations in need of improved fire protection water pressure, has no sensitive land uses in close proximity and is highly visible for community promotion purposes.

As part of the solution, the existing elevated tank and the ground level reservoir and pumping station at York Street will be decommissioned.

3.13 Probable Cost

The probable cost of a new 1,350 m^3 elevated water storage facility at Site #1 and the decommissioning of the existing facilities, as described above, is as follows:

	Probable Cost[1]
• Elevated Tank Capital Costs	$ 2,645,000
• Decommission Existing Tank	$ 80,000
• Decommission York St. Reservoir	$ 53,000
Sub-Total	$ 2,778,000
• Contingency (15%)	$ 416,700
• Engineering (10%)	$ 277,800
• HST Provision	$ 61,100
Total	$ 3,553,600

1. Based on construction in 2021

4.0 PUBLIC CONSULTATION PROGRAM

4.1 General

Public consultation is an integral component of the Class EA process. Public 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, stakeholders, and review agencies that might have an interest in the project.

The components of the public consultation program employed during the initial Class EA study are summarized in this Section of the Screening Report and documented in Appendix C. Comments received from the program and related correspondence are discussed below and also documented in Appendix C.

4.2 Initial Notice

Contents:	General study description, summary of proposed work
Issued:	October 25, 2017 and November 1, 2017
Placed In:	Exeter Times Advocate
Circulated To:	12 review agencies, Aboriginal Communities, Project Stakeholders
Input Period:	Concluded November 24th, 2017

Comments received as a result of the Notice are included within Table 4.1.

Table 4.1
Public Comments: Project Initiation Phase

Stakeholder	Summary of Comments	Action Taken
Project Stakeholder October 27, 2017 (via phone)	- Owns property adjacent to the existing tower. - Would like existing tower to be removed. Concerned with safety issues presented by the tower. - Needs improved water pressures for his business.	- Comments noted and filed.

4.3 Government Review Agencies

Input into the Class EA process was solicited from government review agencies by way of direct mail correspondence. Agencies that might have an interest in the project were initially sent a letter describing the nature of the project and a general location plan showing the location of Hensall and the existing elevated tank. Appendix C 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 4.2.

Table 4.2
Summary of Review Agency Comments

Stakeholder	Summary of Comments	Action Taken
Huron County Planning Dept. Craig Metzger, October 31, 2017 (via email)	- Received our correspondence indicating that the Class EA had been initiated. - No comments initially, however they do want to remain involved in the project as the study moves forward.	- Comments noted and filed.
Ministry of the Environment and Climate Change Craig Newton, Regional Planner November 3, 2017 (via email)	- Project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's Constitution Act 1982. - MOECC is delegating the procedural aspects of rights-based consultation to the Municipality of Bluewater. - Required to consult with the Saugeen First Nation, Chippewas of Nawash First Nation, Historic Saugeen Métis, and Great Lakes Métis Council, who have been identified as potentially affected by the proposed project. - It may be necessary to contact the Director of Environment Approvals Branch to discuss with the communities identified by MOECC. - Must identify early in the process if a project is within a Source Water Protection vulnerable area. - Report should include Source Water Protection info.	- Comments noted and filed.
Ministry of Tourism, Culture and Sport Brooke Herczeg November 20, 2017 (via email)	- Class EA process must have consideration of potential impacts to Archaeological resources, built heritage resources, and cultural heritage landscapes. - Advised using screening checklists to identify potential resources and documenting them in the Class EA.	- Information noted and filed.
Mary Lynn McDonald ABCA Source Water Protection November 23, 2018 (via email)	- Sent an email to Mary Lynn to advise of the project and confirm location of the preferred location for construction of a new elevated tank. - Noted that the Screening Report would include information on Source Water Protection policies, including mapping showing vulnerable areas. - Asked if there were any concerns regarding the project that ABCA would like included in the report.	- Sent by email
Mary Lynn McDonald ABCA Source Water Protection November 23, 2018 (via email)	- Advised that because the Hensall water supply is provided via a pipeline from Lake Huron, there are no Wellhead Protection Areas identified for the community and no restricted land use policies. - There are vulnerable areas adjacent to the community, but the proposed tank is not located in one of these areas.	- Information noted and filed.

4.4 Stakeholder Meetings

During the initial round of public consultation undertaken in conjunction with the Class EA process, a number of local stakeholders were identified as having very specific concerns related to the proposed tank location. Two large industrial operations are located in the vicinity of the existing tank which would directly benefit from improved water pressures anticipated in conjunction with a new tank. Each business also owned a number of vacant parcels in the area that might be suitable for a new storage facility. Accordingly, a series of meetings were arranged to review individual concerns and to evaluate potential tower locations. The meetings included a review of the Class EA process, proposed site location requirements for an elevated storage facility, other requirements such as proximity to the existing tank, proximity to major industrial users, and proximity to future growth areas in the community. As a result of the meetings, a proposed tank site was identified on the north side of Mill Street, immediately west of Soldan Street. A copy of the meeting notes from the stakeholder meetings is included within Appendix C.

4.5 Aboriginal Consultation

4.5.1 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 Class EA process, therefore the project proponent has a responsibility to conduct adequate and thorough consultation with Aboriginal communities as part of the Class EA consultation process.

The project study area is located in the traditional territories of the Chippewas of the Thames First Nation and also contains a number of sensitive natural features which may be of concern to First Nation and Métis communities in the area. These features include Black Creek and the Hay Swamp located south and east of the community.

4.5.2 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, nine aboriginal communities/organizations were identified in conjunction with this project including: Aamjiwnaang First Nation, Kettle and Stony Point First Nation, Chippewas of Saugeen First Nation, Chippewas of Nawash Unceded First Nation, Chippewas of the Thames First Nation, Oneida Nation of the Thames, Historic Saugeen Métis, Metis Nation of Ontario, and Great Lakes Métis Council. Correspondence was subsequently forwarded to each community/organization detailing the proposed project and asking for input.

4.5.3 Initial Consultation Phase

Responses were received from the Chippewas of the Thames First Nation (COTTFN) and the Historic Saugeen Métis (HSM). The HSM indicated that they had no concerns with the project and did not want to be contacted further. The COTTFN indicated that they had no concerns with the project but did want to review the Class EA Screening Report upon completion of the EA process. A summary of comments received are included below in Table 4.3.

Table 4.3
Summary of Aboriginal Comments

Review Agency	Comments/Concerns	Actions Taken
Historic Saugeen Métis November 1, 2017 (via email)	- No concerns with the project - Does not want to receive any additional information related to this project.	- Information noted and filed
Chippewas of the Thames First Nation November 28, 2017 (via email)	- Project is located within the Huron Tract Treaty (1827), within the Big Bear Creek Additions to Reserve land selection area, and within their traditional territory. - Currently have no concerns with the project but want to review the Class EA Screening Report. - Want to stay involved in project based on their own Consultation Protocols.	- Information noted and filed.

4.6 Public Information Meeting

A Public Information Centre (PIC) was held on Wednesday July 25, 2018 at the Hensall Community Centre from 6:00 p.m. to 8:00 p.m. with a formal presentation beginning at 6:30 p.m. The meeting included an open house component before the formal presentation with display boards explaining the study process and other project components. Representatives from the Municipality of Bluewater and BMROSS were available to answer questions from those in attendance. The meeting was arranged to serve several purposes:

- Provide local residents and other stakeholders with additional details on the Class EA process and a forum to express their views.
- Provide area residents with an overview of the recommendations identified in conjunction with the Class EA investigations.
- Provide residents with an opportunity to ask questions and review mapping and other display material prepared in support of the Environmental Assessment.
- Identify the preliminary preferred alternative and preferred tank site location identified through the Class EA process.

Approximately 14 residents and stakeholders attended the meeting. A copy of the presentation material is included within Appendix C. Table 4.4 includes a summary of comments received from agencies and residents as a result of the meeting.

Table 4.4
Summary of Comments: Public Information Meeting

Stakeholder	Summary of Comments	Action Taken
Historic Saugeen Métis July 19, 2018 (via email)	- Have reviewed the documents and have no objections or opposition to the proposed development.	- Information noted and filed
Brooke Herczeg Ministry of Tourism, Culture and Sport July 25th & 26th, 2018 (via email)	- Asked if we could forward the presentation material from the public meeting to Karla Barboza from the Ministry. - Asked if we had completed the check lists for built and cultural heritage resources and if any significant features had been identified.	- Presentation material forwarded. - Advised that checklists were documented in the report
Local Resident July 25, 2018 Public Meeting	- How much will the project cost local residents? - There have been two other large infrastructure projects – upgrades to the STP and installation of the pipeline water supply. - Concerned that another project will be too much for some residents.	- A decision has not yet been made on how to finance the project - Grant funding options will be explored.
Local Resident July 25, 2018 Public Meeting	- When will the new tower be constructed?	- 2020 is the earliest that a new tower could be built.
Local Resident July 25, 2018 Public Meeting	- Would a new tower require significant energy demands?	- An elevated tank is filled using water pressure from the distribution system, so there are no significant energy demands.
Local Resident July 25, 2018 Public Meeting	- If a ground level reservoir were constructed, could the area above it be used for anything?	- The area above the reservoir could only be used for passive recreational uses.
Local Resident July 25, 2018 Public Meeting	- Do the anticipated construction costs include decommissioning of the existing tank?	- The costs presented at the public meeting did not include removal of the old tank.
Local Resident July 25, 2018 Public Meeting	- How long will it take to construct the new tower?	- It typically takes a year to complete a new elevated tank.

4.7 Consultation Summary

The consultation program developed for this project was directed towards the general public, adjacent property owners, federal and provincial review agencies, and the local Aboriginal community. No significant concerns with the project were identified as a result of the feedback received. Feedback was received from two Aboriginal Communities, the Historic Saugeen Métis, who had no concerns with the project, and the Chippewas of the Thames First Nation, who asked to review a copy of the draft Screening Report.

Consultation with local industrial operations, two of which are located immediately adjacent to the proposed elevated tank site, were essential to the successful completion of the Class EA process. A possible tower location was identified as a result of the consultation and additional information related to the water needs of larger industrial users, was also identified.

Residents of Hensall who attended the public meeting questioned how the Municipality would pay for implementation of the project and expressed concerns about additional capital costs to residents who were already paying for other capital projects in the community.

5.0 IDENTIFICATION OF POTENTIAL IMPACTS AND MITIGATION

5.1 Framework of the Analysis

Following the selection of Alternative 1 as the preliminary preferred alternative, a framework was developed to further evaluate the potential impacts of implementing the project. For reference, a preliminary site plan has been included (Figure 6.1). The purpose of this review was to assess the environmental interactions resulting from the construction and operation of the project, and to determine if the identified interactions would generate potential environmental impacts. The assessment of the preferred alternative incorporated these activities:

- Assessment of the construction and operational requirements of the proposed works.
- Consultation with the public, stakeholder groups and government agencies.
- Review of engineering methodologies associated with construction of an elevated water storage facility.
- 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.

Based upon the findings of the preliminary evaluation of alternatives (Section 3.5) and the environmental effects analysis (Table 3.8), the project has the potential to result in impacts to several environmental components, which are discussed in more detail below:

- Technical Environment
- Social Environment
- Economic Environment

The potential impacts to each identified environmental component are described in detail within this Section of the report. The determination of appropriate mitigation measures incorporated an assessment of previous studies and investigations, site specific requirements and an evaluation of a broad range of alternatives. This assessment was based on consideration of three broad approaches to impact mitigation; avoidance, minimization of adverse effects and compensation.

5.2 Construction and Operation

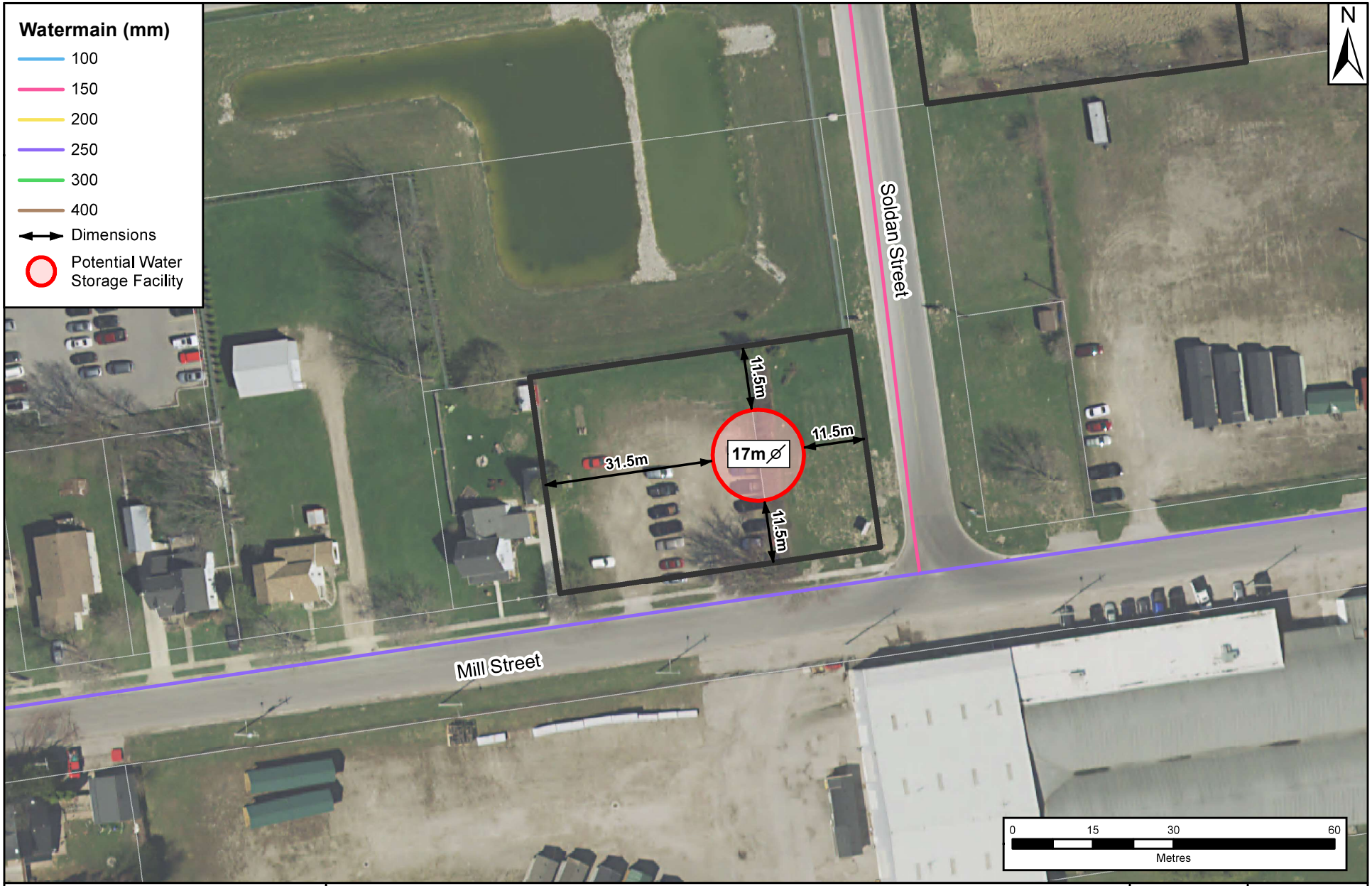
5.2.1 Construction Phase

Coordination with the adjacent property owners (General Coach and Hensall District Co-op), who own the lands located immediately adjacent to the proposed tower location, will be undertaken to ensure that all safety measures are incorporated into the construction plan and that ingress/egress to their facilities is not impacted during construction of the tank. General impacts related to construction of a new elevated water storage facility on the identified environmental components are summarized in Table 5.1.

Table 5.1
Construction Related Environmental Effects

	Environmental Components / Key Project Works and Activities	Natural Environment	Cultural Heritage Resources	Social Environment	Economic Environment	Technical Environment
1	**Construction Component**					
	Contractor Mobilization to the site	○	○	□	○	○
	Site Clearing	□	○	○	○	○
	Excavation for foundations	○	○	○	○	□
	Dewatering	□	○	○	○	○
	Construction of Elevated Storage Tank	○	○	○	●	●
	Construction Traffic	○	○	□	○	○
	Connection to existing distribution system	○	○	□	○	□
	Grading	○	○	○	○	○
	Commissioning of the new tower	○	○	○	○	○
	Site Restoration (seeding/topsoil)	○	○	○	○	○
	Decommissioning Existing Tower	○	○	□	○	●
2	**Operational Component**					
	Tank Maintenance	○	○	○	○	○
	Daily Operations/Monitoring	○	○	○	○	○

Legend: ● Potential for significant adverse effect, □ Potential for limited adverse effects
○ No adverse effect expected



BMROSS engineering better communities

MUNICIPALITY OF BLUEWATER

CLASS EA FOR A NEW WATER STORAGE FACILITY

PROPOSED SITE PLAN

DATE	PROJECT No.
SEPT. 27, 2018	17277
SCALE	FIGURE No.
1 : 1,000	5.1

5.2.2 Construction Impact Mitigation

Construction related activities associated with project implementation have the potential to impact existing environmental features, the general public and construction workers. The Contractor will be responsible for carrying out these activities in accordance with industry 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 5.2 outlines a series of mitigation measures that are typically incorporated into construction specifications. For this project, contract specifications may need to be modified depending upon the nature of the construction activity and any additional requirements of regulatory agencies.

Table 5.2
Summary of Proposed Mitigation Measures (General Construction Impacts)

Construction Activity	Planned Mitigation
Refueling and Maintenance	-Identify suitable locations for designated refueling and maintenance areas -Restrict refueling or maintenance of 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)
Traffic Control	-The Contractor shall prepare and submit a traffic plan to the Project Engineer for review and acceptance. -Traffic flow for private access should be maintained at all times during construction. If it is necessary to detour traffic, the Contractor will co-ordinate the routing and provide adequate signage and barricades. -At the end of each working day, a minimum of one lane of traffic, controlled by barricades, delineators, etc. shall be maintained for emergency vehicles.
Disposal	-Dispose of all construction debris in approved locations. -Avoid emptying fuel, lubricants or pesticides into sewers or watercourses
Work in Sensitive Areas	-All work will occur in dry conditions -Slopes disturbed by construction will be stabilized upon completion of work.
Drainage and Water Control	-All portions of the work site should be properly and efficiently drained during construction. -Provide temporary drainage and pumping to keep excavation free from water. -Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with approval agency requirements

Construction Activity	Planned Mitigation
Dust Control	-Cover or wet down dry materials and rubbish to prevent blowing dust or debris
Site Clearing	-Protective measures shall be taken to safeguard trees from construction. -Equipment or vehicles shall not be parked, repaired or refueled near the dripline area of any tree not designated for removal. Construction and earth materials shall not be stockpiled within the defined dripline areas. -Restrict tree removal to areas designated by the Contract Administrator.
Sediment and Erosion Control	-Minimize the removal of vegetation from slopes -Complete restoration works following construction
Noise Control	-Site procedures should be established to minimize noise levels in accordance with local bylaws. -Provide and use devices that will minimize noise levels in the construction area. -Night time or Sunday work shall not be permitted, except in emergencies.

5.2.3 Decommissioning of Existing Elevated Tank and Ground-Level Reservoir

Following the construction of a new water storage facility, the existing elevated tank and ground-level reservoir will be retired and decommissioned. Under recent revisions to the Class EA, the retirement of a water storage facility, which would have been either a Schedule B or C project under the Class EA process, has changed to a Schedule A+ activity. The decommissioning of the facilities will be done in accordance with current construction and disposal standards and any impacts will be short-term and minimal.

Consultation with adjacent property owners will be undertaken in advance of the removal efforts to ensure that local residents are advised of the impending construction activity and that all appropriate safety measures are incorporated into the work plan.

5.2.4 Operational Phase

All waterworks facilities will be operated and maintained by the Municipality of Bluewater, or their agent, in accordance with MECP guidelines and current provincial water system regulations.

5.3 Technical Environment

The construction of a 1,350 m^3 elevated storage facility near the intersection of Mill Street and Soldan Street will alleviate pressure and storage deficiencies in the community. The new facility will be designed to provide sufficient storage capacity for a design period of 50 years, which includes an emergency 24 hour supply should the HAL transmission main servicing the community be out of service.

A WaterCAD model was developed as part of the Class EA investigations to evaluate current water pressures within the Hensall distribution system and to recommend watermain upgrades that may be required to incorporate the new storage facility location into the distribution system. The Mill Street location is currently serviced by a 250 mm diameter watermain which extends along Mill Street from Nelson to London Road. It was determined that upgrades to this watermain are not required for the new elevated storage facility.

A geotechnical investigation will be completed at the proposed storage site location to examine subsurface conditions at the site and to assist with the design of the storage facilities foundations. An elevated storage facility is constructed with a large subsurface foundation to support the elevated tank. The geotechnical report will also determine groundwater conditions at the site so that de-watering requirements associated with construction of the foundations are fully understood.

5.4 Social Environment

5.4.1 Disruption Caused by Construction

Existing land uses located adjacent to the preferred site include industrial and commercial uses. The properties most likely to be impacted by the decommissioning of the existing tank and construction of a new elevated tank are the industrial properties located adjacent to the site. Construction of an elevated tank and associated watermain connection work will require excavation and construction on municipally owned lands and in municipal road allowances. Construction activities associated with the project may inconvenience local residents through traffic restrictions and disturbance of private property access. As such, the project would incorporate certain measures to minimize impacts to traffic and all lands disturbed by the construction process will be fully restored.

5.4.2 Aesthetics/Visual Impacts

The construction of an elevated storage tank can represent a visual and physical intrusion to neighbouring property owners and the larger community. However, the construction of an elevated storage tank also demonstrates community progress and economic opportunity. For these reasons, a site selection process was conducted during the Class EA study to evaluate the relative merits of the identified storage sites. Factors include impacts to adjacent land uses, environmental impacts, visual intrusion, economics and technical feasibility were taken into consideration during the review. The preferred site was ultimately selected because the location is adjacent to primarily industrial activities with few sensitive land uses. Proximity to the Highway No. 4 corridor was also noted, making the new tower location visible from this corridor.

Aesthetically, an elevated tank can be designed to reflect a community’s unique character. Bluewater Council will consider appearance, colour and logo selection as part of the final design process.

5.5 Economic Environment

5.5.1 Financial Impacts to Residents

Construction of an elevated storage facility will represent a significant capital cost to the municipality. Capital costs, associated with the construction of major facilities, should be collected from those properties directly benefitting from the works, either immediately or through a deferred benefit. As well, a cost structure should be developed that is fair and equitable to the benefiting area. To mitigate the potential economic impacts of the proposed work, the project will be financed through a combination of contributions from reserves, development charges and possible grant funding programs. The costs of this project associated with future growth will be charged to development, as stipulated in the Municipality of Bluewater Development Charges By-law. Additionally, the Municipality will actively pursue funding through grant programs offered by senior levels of government.

6.0 PROJECT IMPLEMENTATION

6.1 Selection of a Preferred Alternative

Given the foregoing, **Alternative 1 – Construct a new elevated water storage facility** was selected as the preferred solution to the identified problem. A study recommendation to this effect was presented to, and supported by, the council of the Municipality of Bluewater.

6.2 Final Public Consultation

A Notice of Completion was circulated to local residents, stakeholders and government review agencies. The notice identified the preferred alternative and provided the process for appeal of the selected alternative (i.e., a Part II Order request to the Minister of Environment prior to the conclusion of the review period) if there are unresolved environmental issues. The following summarizes the distribution of the notice.

Contents:	Identification of the preferred solution, key project components, key plan
Issued:	July 8, 2020
Placed In:	Exeter Times Advocate July 8 and 15, 2020
Distributed to:	12 Agencies and Project Stakeholders
Review Period:	Concludes August 7, 2020

6.3 Class EA Schedule

The recommended solution is considered a Schedule B project under the terms of the Class EA document, as the project involves the replacement of an existing water storage facility. The project is approved following the completion of an environmental screening process.

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

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

6.4 Approvals

6.4.1 Safe Drinking Water Act

The works associated with the preferred alternative are subject to the Safe Drinking Water Act. Accordingly, the project cannot proceed until the Municipality has received the necessary amendment to its Drinking Water Works Permit (DWWP) from the Ministry of the Environment, Conservation and Parks. The existing Municipal Drinking Water License defines how these works must be designed, constructed, operated and maintained in order to ensure compliance with accepted engineering standards. The DWWP will be amended to provide a description of the works.

6.5 Project Schedule

Following the completion of the Class EA investigation, the Municipality intends to proceed with the final design and construction of the works associated with this project. Timing of the construction will be dependent on the ability to fund the project. The project will be completed by a qualified contractor following a competitive selection process. Following construction and commissioning of the facilities, the Municipality will operate and maintain the physical condition of the built works and perform all necessary work in accordance with the requirements of applicable regulatory agencies.

7.0 SUMMARY

This report documents the Municipal Class Environmental Assessment (EA) process conducted to address deficiencies with the existing water storage facility in the community of Hensall. The existing facility, as identified in the problem definition of the first phase of the Class EA process, is too small and too low to provide adequate flow and pressures through the community to maintain efficient operation of the water system. Additionally, it was noted that the facility is over 80 years old and, based on a recent inspection report, is in need of significant repairs. Replacement of the facility was recommended.

To address the problems with the existing water storage facility, three alternative solutions were identified:

- Alternative 1: Construct a new water storage facility in the community of Hensall
- Alternative 2: Limit community development
- Alternative 3: Do Nothing

Alternative 2 was not considered a viable approach to resolving the problem and was not evaluated further. The environmental impacts of the remaining alternatives were examined. Alternative 1 was found to have impacts relating to construction activities, as well as potential shading and visual intrusion impacts on adjacent property owners. However, a new water storage facility would increase the storage capacity and system pressures. Alternative 3, the do nothing alternative, has very few impacts, but does not address the existing deficiencies of the water system.

Related to Alternative 1, alternative types of water storage facilities and potential facility sites were also evaluated. The alternative sites were given a score related to a number of technical and environmental factors, and then ranked by their cumulative scores. Based on the assessments undertaken and a review of the technical components associated with the project, Alternative 1 was identified as the preferred solution. A 1,350 m^3 elevated storage facility located in the vicinity of the existing elevated tank was identified as the preferred type and site of a new facility.

Consultation with adjacent property owners, government review agencies, Aboriginal communities and the general public, was undertaken as part of the process. A public meeting was held following the selection of a preferred location for a new elevated tower facility. No concerns related to the proposed location were identified by members of the community and adjacent property owners, who attended the meeting.

The proposed project is a Schedule B activity under the terms of the Class EA and is approved subject to the completion of a screening process. The Municipality of Bluewater intends to proceed with the implementation of this project upon completion of the Class EA investigation and after the receipt of all necessary approvals.

All of which is respectfully submitted.

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Andrew Garland, P. Eng.

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

:hv

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APPENDIX A

CULTURAL HERITAGE

Ontario

Ministry of Tourism, Culture and Sport

Programs & Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes

A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area:
  - is a recognized heritage property
  - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Cultural Heritage Evaluation Report (CHER)

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – separate checklist
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

Project or Property Name
Hensall Water Tower Class EA

Project or Property Location (upper and lower or single tier municipality)
County of Huron, Municipality of Bluewater, Community of Hensall

Proponent Name
Municipality of Bluewater

Proponent Contact Information
Andrew Bicknell, P. Eng., Public Works Manager

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	☐	☑

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

Part A: Screening for known (or recognized) Cultural Heritage Value

	Yes	No
2. Has the property (or project area) been evaluated before and found **not** to be of cultural heritage value?	☐	☑

If Yes, do **not** complete the rest of the checklist.

The proponent, property owner and/or approval authority will:

- summarize the previous evaluation and
- add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken

The summary and appropriate documentation may be:

- submitted as part of a report requirement
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Is the property (or project area):		
a. identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value?	☐	☑
b. a National Historic Site (or part of)?	☐	☑
c. designated under the *Heritage Railway Stations Protection Act*?	☐	☑
d. designated under the *Heritage Lighthouse Protection Act*?	☐	☑
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	☐	☑
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	☐	☑

If Yes to any of the above questions, you need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No, continue to Question 4.

Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	☐	☑
b. has or is adjacent to a known burial site and/or cemetery?	☐	☑
c. is in a Canadian Heritage River watershed?	☐	☑
d. contains buildings or structures that are 40 or more years old?	☑	☐

Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	☐	☑
b. has a special association with a community, person or historical event?	☐	☑
c. contains or is part of a cultural heritage landscape?	☐	☑

If Yes to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

You need to hire a qualified person(s) to undertake:

- **a Cultural Heritage Evaluation Report (CHER)**

If the property is determined to be of cultural heritage value and alterations or development is proposed, you need to hire a qualified person(s) to undertake:

- **a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts**

If No to all of the above questions, there is low potential for built heritage or cultural heritage landscape on the property.

The proponent, property owner and/or approval authority will:

- **summarize the conclusion**
- **add this checklist with the appropriate documentation to the project file**

The summary and appropriate documentation may be:

- **submitted as part of a report requirement e.g. under the *Environmental Assessment Act, Planning Act* processes**
- **maintained by the property owner, proponent or approval authority**

Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's Ontario Heritage Toolkit or Standards and Guidelines for Conservation of Provincial Heritage Properties.

In this context, the following definitions apply:

- **qualified person(s)** means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's Standards & Guidelines for Conservation of Provincial Heritage Properties [s.B.2.]

Part A: Screening for known (or recognized) Cultural Heritage Value

2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

Note: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

i. designated under the *Ontario Heritage Act*

- individual designation (Part IV)
- part of a heritage conservation district (Part V)

Individual Designation – Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the *Ontario Heritage Act*]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note**: To date, no properties have been designated by the Minister.

Heritage Conservation District – Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- Ontario Heritage Trust
- local land registry office (for a title search)

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ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act*

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

For more information, contact:

- Ontario Heritage Trust - for an agreement, covenant or easement [clause 10 (1) (c) of the *Ontario Heritage Act*]
- municipal clerk – for a property that is the subject of an easement or a covenant [s.37 of the *Ontario Heritage Act*]
- local land registry office (for a title search)

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iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

Registers include:

- all properties that are designated under the *Ontario Heritage Act* (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

For more information, contact:

- municipal clerk
- municipal heritage planning staff
- municipal heritage committee

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iv. subject to a notice of:

- intention to designate (under Part IV of the *Ontario Heritage Act*)
- a Heritage Conservation District study area bylaw (under Part V of the *Ontario Heritage Act*)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the *Ontario Heritage Act*
- section 34.6 of the *Ontario Heritage Act.* **Note**: To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

For more information, contact:

- municipal clerk – for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- Ontario Heritage Trust

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v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at registrar@ontario.ca.

3b. Is the property (or project area) a National Historic Site (or part of)?

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the National Historic Sites website.

3c. Is the property (or project area) designated under the *Heritage Railway Stations Protection Act*?

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the Directory of Designated Heritage Railway Stations.

3d. Is the property (or project area) designated under the *Heritage Lighthouse Protection Act*?

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the Heritage Lighthouses of Canada website.

3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the Federal Heritage Buildings Review Office.

See a directory of all federal heritage designations.

3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – World Heritage Site website.

Part B: Screening for potential Cultural Heritage Value

4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations

Municipal Class EA for Hensall Water Tower

Bluewater Heritage Committee Meeting

April 10, 2018

Municipality of Bluewater

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Agenda

- Background
- Class EA Process/Requirements
- Ministry of Tourism, Culture and Sport
- Input from Specialists
- Other Facilities
- Questions

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Hensall Water Tower Class EA

- Hensall Tower Inspection (June 17, 2015)
- Class EA Initiated (October 2017)
- Initial Consultation Phase (October-December)
  - Feedback from Agencies
  - Feedback from Industries
- Review of three possible Tower Locations
- Memo to Bluewater Recommending a Location

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Possible Tower Locations

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Class EA Process

- When completing a Class EA we are required to inventory all aspects of the Environment, including:
  - Natural Environment/Natural Heritage Features
    - Vegetation, Significant Species, Significant Natural Areas
  - Social Environment
    - Existing Communities, Aesthetics
  - Cultural Environment
    - Archaeological Resources
    - Built Heritage Resources
  - Economic Environment
    - Preliminary Cost Estimates
    - Operating Costs/Property Costs

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Class EA Process - Consultation

- Consultation must be undertaken with:
  - General Public
    - Adjacent Property Owners/Stakeholders/ Community
  - Review Agencies
    - Select List based on Project Scope
  - Aboriginal Communities
    - First Nation Communities
    - Metis Communities

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Feedback Received from MTCS

- Ministry of Tourism Culture and Sport:

Archaeological Resources
Your EA project may impact archaeological resources and you should screen the project with the MTCS *Criteria for Evaluating Archaeological Potential* to determine if an archaeological assessment is needed. MTCS archaeological sites data are available at archaeology@ontario.ca. If your EA project area exhibits archaeological potential, then an archaeological assessment (AA) should be undertaken by an archaeologist licenced under the *OHA*, who is responsible for submitting the report directly to MTCS for review.

Built Heritage and Cultural Heritage Landscapes
The MTCS *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* should be completed to help determine whether your EA project may impact cultural heritage resources. The Clerk/s for the municipality of Bluewater can provide information on property registered or designated under the *Ontario Heritage Act*. Municipal Heritage Planners can also provide information that will assist you in completing the checklist.

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Feedback Received from MTCS

- Built Heritage Checklist

Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	☐	☑
b. has or is adjacent to a known burial site and/or cemetery?	☐	☑
c. is in a Canadian Heritage River watershed?	☐	☑
d. contains buildings or structures that are 40 or more years old?	☑	☐

Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	☐	☑
b. has a special association with a community, person or historical event?	☐	☑
c. contains or is part of a cultural heritage landscape?	☐	☑

If Yes to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

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Feedback Received from MTCS

- Built Heritage Checklist

Part A: Screening for known (or recognized) Cultural Heritage Value

2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

Note: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

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Hensall Tower

- Constructed in 1935
- Moved to Hensall in the 1946
- Inspection in 2015 identified deficiencies that would cost approximately $277,000 to repair
- Existing tower is too low and too small to supply sufficient pressures for the community
- Property owner has safety concerns with tower and wants it removed.

Does it have Heritage Value ?

- Landmark Structures – John Miller
  - Standard Multi-Leg Structure
  - Not aware of Anything Unusual or Different about the Hensall Tower
  - Aware of Hundreds of Similar structures

Next Steps

- Need a letter from the Bluewater Heritage Committee that can be referenced in the Class EA Report
- Report going to Council soon regarding recommendations on a preferred site for new Tower
- Decommissioning of Existing Tower would occur after new tower constructed

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Questions?

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APPENDIX B

BACKGROUND INFORMATION

Zone Map 6B

Municipality of Bluewater Zoning By-Law

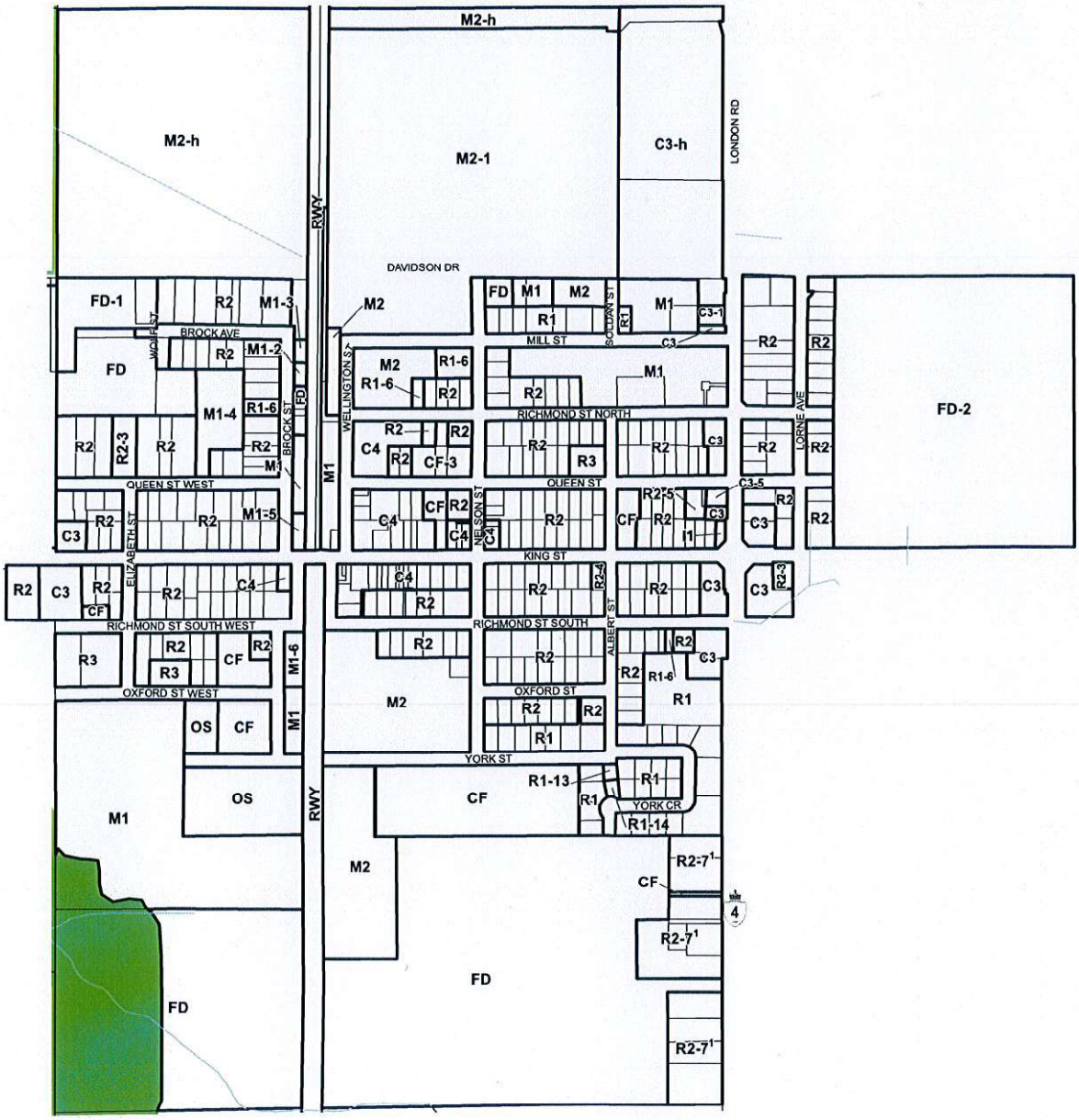
Zone Map 6B Hensall

Amendments
1 Amended by By-law 63-2016

Revision Date: July 20, 2016

Zone Map 6B

See Zone Map 6



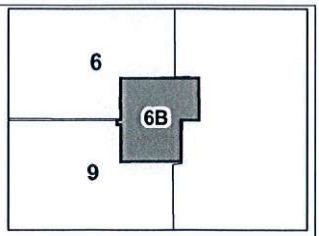
See Zone Map 9

AG1 (Unless otherwise noted)
NE2
Flood Fringe
NE3

Top Of Bank
Watercourses
Waterbodies
Parcel Fabric

N
W E
S

0 112.5 225
Meters
1:6,500



THE CORPORATION OF THE
MUNICIPALITY OF BLUEWATER
BY-LAW NUMBER 58 - 2017

WHEREAS the Municipal Council of the Corporation of the Municipality of Bluewater considers it advisable to amend ZONING BY-LAW 43-2015, as amended, of the Corporation of the Municipality of Bluewater.

NOW THEREFORE the Council of the Corporation of the Municipality of Bluewater ENACTS as follows:

1. This by-law shall apply to Lots 5-6, 9-12, & 15-16, of Plan 270; Part Lot 22 of Concession 1, Hensall Ward, in the Municipality of Bluewater and is comprised of Schedules 1-4.

2. Section 8.5 of By-law 43-2015, as amended, is hereby amended by the addition of the following:

   8.5.7. C3-7
   In addition to the uses permitted in the C3 Zone, the area zoned C3-7 may also be used for a 'fuel storage and supply yard'. As well, in the C3-7 zone the front property line shall be the property line abutting London Road.

3. Section 18.5 of By-law 43-2015, as amended, is hereby amended by the addition of the following:

   18.5.7 M1-7
   Notwithstanding the list of Permitted Uses in the M1 zone to the contrary, the only permitted uses in the M1-7 zone shall be:
   - parking lot
   - office; and
   - accessory uses to these permitted uses

4. Zone Map 6B of By-law 43-2015, as amended, is hereby amended by changing from C3-h (Highway Commercial – Holding Zone) to C3-7 (Highway Commercial – Special Zone) and from FD (Future Development) and R1 (Residential Low Density) to M1-7 (Light Industrial - Special Zone), the zone symbol on the lands designated 'zone change to C3-7' and 'zone change to M1-7' on the attached Schedule 4.

5. All other applicable provisions of By-law 43-2015, as amended, shall apply.

6. This by-law shall come into force pursuant to Section 34(21) of the Planning Act, 1990, as amended.

READ A FIRST TIME ON THE 23rd DAY OF MAY, 2017.
READ A SECOND TIME ON THE 23rd DAY OF MAY, 2017.
READ A THIRD TIME AND PASSED THIS 23rd DAY OF MAY, 2017.

Tyler Hessel, Mayor

Kyle Pratt, CAO/Deputy Clerk

SCHEDULE 1
THE CORPORATION OF THE
MUNICIPALITY OF BLUEWATER
BY-LAW NUMBER 58 - 2017

By-law Number 58 - 2017 has the following purpose and effect:

1. This by-law shall apply to Lots 5-6, 9-12, & 15-16, of Plan 270; Part Lot 22 of Concession 1, Hensall Ward, in the Municipality of Bluewater.

   The rezoning removes the holding zone from the highway commercial lands of the subject property abutting London Road and applies the provisions of a new Highway Commercial special zone (C3-7). The special zone permits a fuel storage and supply yard use in addition to the other highway commercial uses and establishes the front property line as being the property line abutting London Road.

   The rezoning also creates a new light industrial special zone (M1-7) limiting the list of permitted uses to a parking lot, office, and their accessory uses. This new special zone is applied to the subject lands, noted on Schedule 4 of this By-law, by rezoning them from FD (Future Development) and R1 (Residential) to M1-7 (Light Industrial - Special Zone).

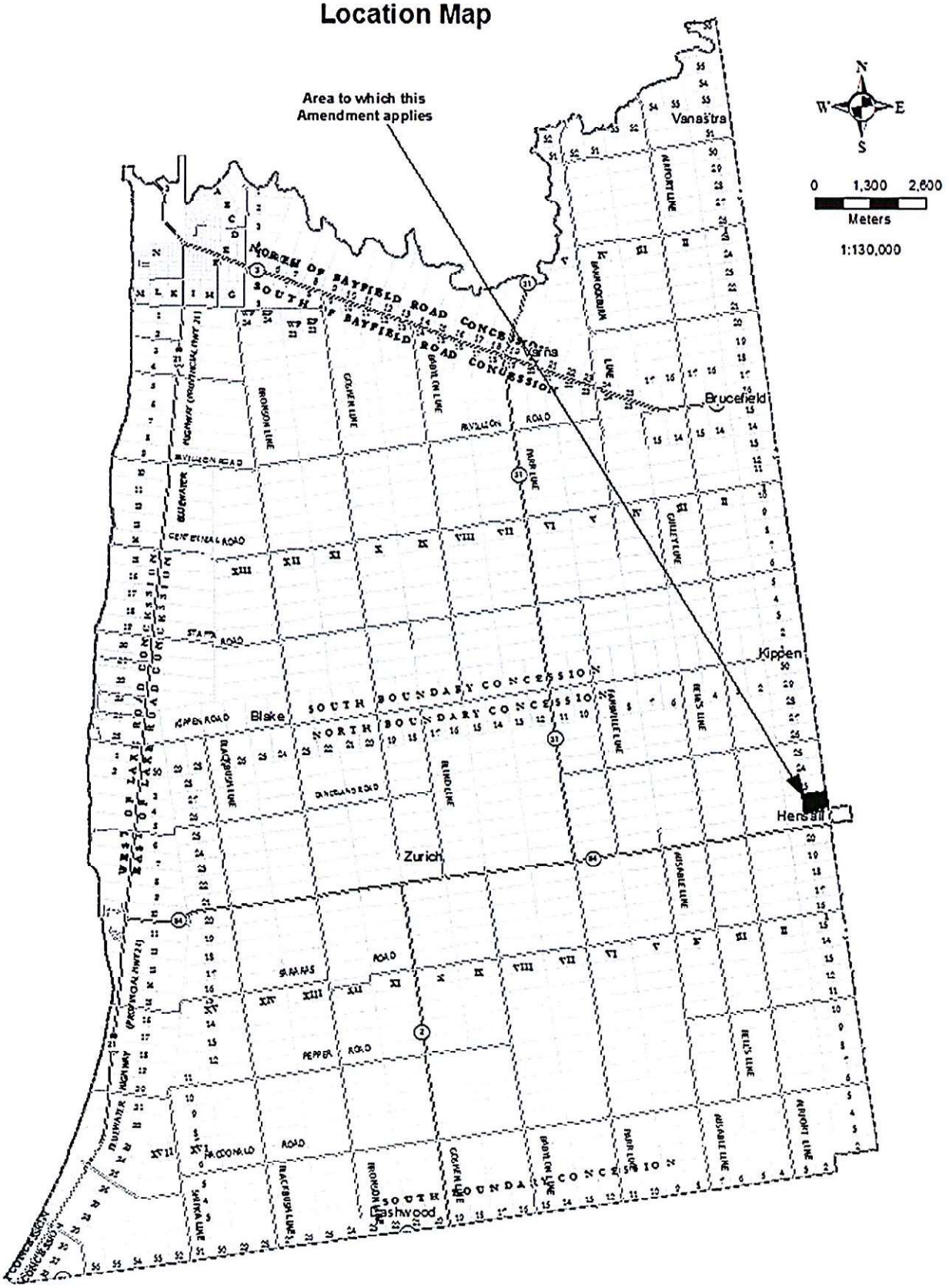
2. This amendment applies to the lands being rezoned from C3-h to C3-7 and from FD and R1 to M1-7 on Zone Map 6B of the Zoning By-law.

3. This by-law amends Zoning By-law 43-2015, as amended.

4. The location map and zone map showing the location to which this by-law applies are found on the following pages and are entitled Schedule 2 and Schedule 3.

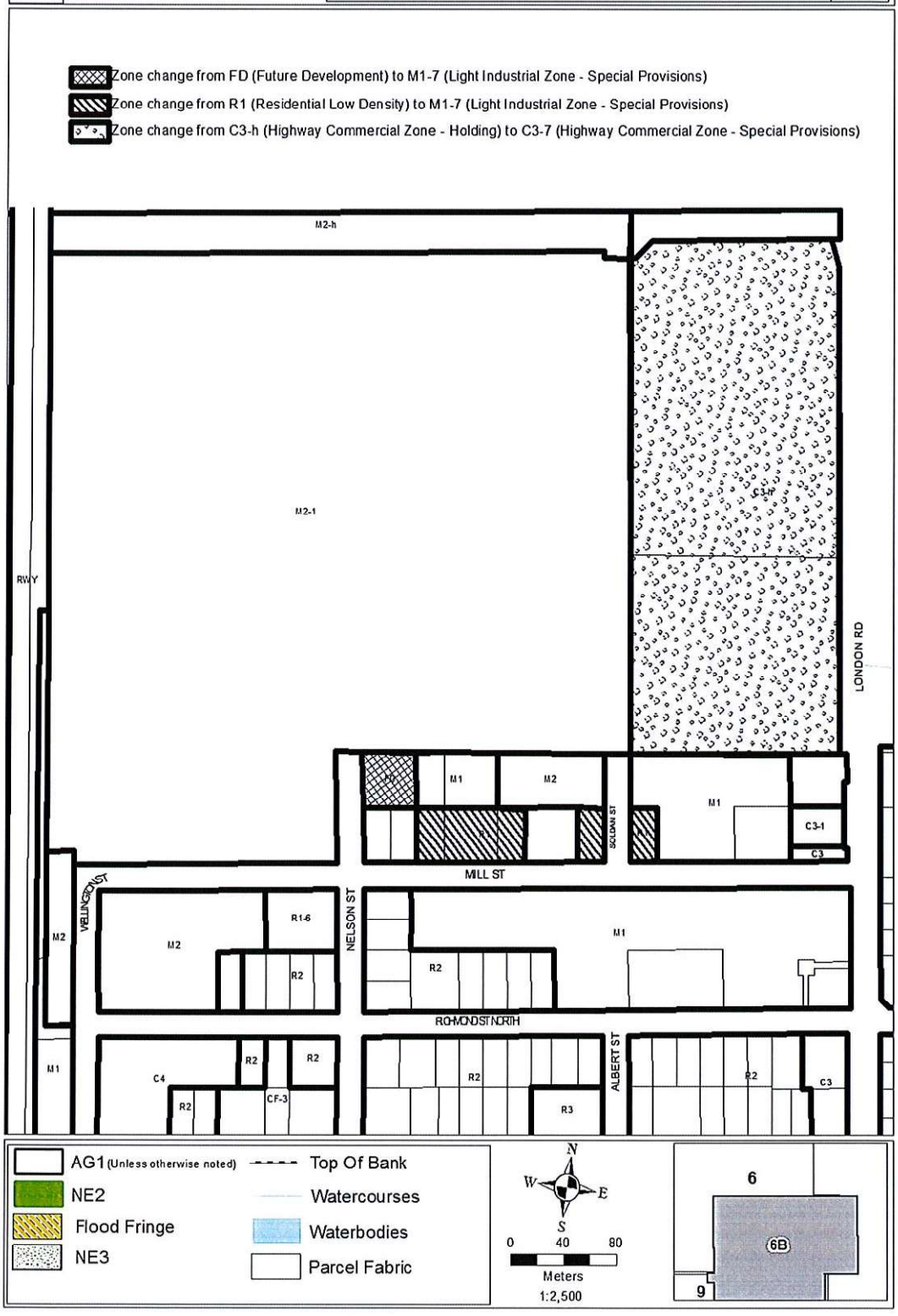
SCHEDULE 2
THE CORPORATION OF THE
MUNICIPALITY OF BLUEWATER
BY-LAW NUMBER 58 - 2017

Location Map



SCHEDULE 3
THE CORPORATION OF THE
MUNICIPALITY OF BLUEWATER
BY-LAW NUMBER - 2017

Zone Map 6B	Municipality of Bluewater Zoning By-Law 6B Detail Hensall	Amendments 1 Amended by By-law 63-2016 Revision Date: April 03, 2017	Zone Map 6B



Section 14 Future Development Zone (FD)

Within this Zone, no *person* shall establish any *use* of land or *building*, or *erect* or *alter* any *building* or *structure* for any purpose except in accordance with the following provisions:

14.1. PERMITTED USES

- *uses existing on the date of the passing of this By-law*
- *uses accessory to the permitted uses*

14.2. PERMITTED STRUCTURES

- *buildings and structures existing on the date of passage of this By-law*
- *buildings and structures accessory to the permitted uses, not including the establishment of new livestock buildings*

14.3. ZONE PROVISIONS

FRONT YARD (minimum)	10 metres
REAR YARD (minimum)	7.5 metres
INTERIOR SIDE YARD (minimum)	7.5 metres
EXTERIOR SIDE YARD (minimum)	10 metres

14.4. SPECIAL PROVISIONS

Final approval of subdivision of land in a Future Development zone will not be permitted prior to a rezoning to the applicable zone.

Existing residences will be allowed to expand, enlarge or re-establish provided that the provisions of the R2 Zone are complied with and the number of dwelling units is not increased.

14.5. SPECIAL ZONES

14.5.1. FD-1

Notwithstanding the provisions to the contrary, in the area zoned FD-1 the existing abattoir operation and accessory structures are permitted in accordance with the C3 zone provisions.

14.5.2. FD-2

Notwithstanding the provisions to the contrary, in the area zoned FD-2 one single detached dwelling is permitted.

LANDMARK
Elevating Expectations

Hensall Multi-Legged Tank
Remote, Inspection and Report (ROV)
June 17, 2015

Landmark Municipal Services

3091 Harrison Court
Burlington, ON CAN L7M 0W4
905.319.7700 Phone
905.319.7706 Fax

www.teamlandmark.com

August 5, 2015

Ontario Clean Water Agency
O&M Team Lead
50 Main Street
Zurich, ON

Attn: **Mr. Devon Webb**
dwebb@ocwa.com

Tel: 519.441.0441

LMS Job # LM5073: Tank, Inspection & Report
Hensall Multi-Legged Tank

Dear Devon;

An ROV underwater camera inspection was performed at the above mentioned potable water storage facility on June 17, 2015. The ROV unit and tether cable were disinfected in accordance with AWWA-C652-11 Method #2 guidelines (200ppm solution) prior to entry into the tank interior. Landmark's ROV equipment is designated for potable water use only.

Please find a comprehensive report enclosed as follows;

1) Multi-Legged Tank Inspection Report — Pages 1 – 5
2) Photographic Record of Report — Pages 6 – 23
   - Photographs are numbered in accordance with corresponding numbers throughout the report.
3) Coatings & Linings Condition Assessment
4) Quote #15099 for all recommended repairs & upgrades.

Should you have any questions or comments regarding the content of this report, please contact us at 905 319 7700.

Yours sincerely,
LANDMARK MUNICIPAL SERVICES

Brent Marini

3091 Harrison Court, Burlington ON L7M 0W4
Tel: (905) 319-7700 Fax: (905) 319-1373
www.teamlandmark.com

MULTI - LEGGED INSPECTION REPORT

Landmark Contract No.	Inspection Date	Last Inspection Date
LM5073	17-Jun-15	Unknown
Inspector	**Report Date**	**Inspected By**
P. Furtado	23-Jul-15	Unknown

OWNER / CONTACT

Owner	**Municipality of Bluewater**	**Contact**	**Mr. Devon Webb (OCWA)**
Project Location	Hensall Multi-Legged Tank	**Title**	Team Lead
		Phone	519.271.9071
Address	60 Richmond St. N Hensall, ON	**Fax**	519.441.0441
		Email	dwebb@ocwa.com

TANK DESCRIPTION

Constructor	Unknown	**Tank Capacity**	455 m^3 / 100,000 imp gallons	
Engineer	B.M. Ross & Associates Ltd.	**Roof Type**	Steel Domed Rivitted	
Year Built	Unknown	**Tank Diameter**	30'	
Tank Type	Multi-Legged Riveted Tank	**Riser Diameter**	6'	**See Photo # for Documentation**
Dwg's Available	Yes	**Grade to Bottom of Tank**	84'	
Dwg's Reviewed	Yes	**HWL**	108'	
Coating System	Epoxy / Urethane overcoat	**No. of Columns**	4	
Lining System	Epoxy	**Column Size**	12" 'C' Channel Lattice	

Note

The attached report has been prepared in order to provide the tower owner with a detailed description of the following: The present condition of interior and exterior coatings, any pitting and/or corrosion on the interior of the water retaining vessel, the apparent condition of exposed foundations and the status of and recommendations for upgrades on safety equipment and other appurtenances.

Landmark Municipal Services has not performed a design review, an ultrasonic x-ray, or destructive and/or non-destructive testing. Comments and recommendations are based on visual inspection only.

REPORT SUMMARY

Legend:	URGENT! Immediate attention required	Separate report Available
	Repairs strongly recommended	Repairs Completed During Inspection

Repairs Made During Inspection	Photo No.		Photo No.
	--		--
	--		--

Recommended Repairs

Siteworks		Accessories	
Screen required at end of overflow pipe (beneath catwalk)	34	Remove and replace vertical ladder to balcony	50, 52
Extend overflow pipe to grade level c/w spillway	34	Remove and replace vertical ladder from balcony to tank roof	81, 84
	--	Remove and replace 'rolling' ladder on tank roof	87, 88
Security		S&I 1pc Aluminum rest seat on vertical ladder to balcony	51
	--	S&I new 36" x 36" Aluminum hatch and curb on tank roof	97, 98
	--	Upgrade vent system to 16" S.S. Frost proof vent / vacuum relief unit	90
	--	Roof Handrail system required	88
Foundations		30" dia Shell manway recommended at catwalk location	73
	--	S&I ladder rungs from proposed shell manway to tank floor	73
	--	Aluminum cable tray support system required	48
	--		--
Valve Chamber		**Fall Arrest System**	
Sump pit and pump required	9-20	Please refer to MOL FRL Alert issued May 20, 2014. A Copy of this alert has been included with the report.	--
Surface prep & paint pipe & valves as required	11-20		
	--	Fall arrest system required on all ladders	--
Support Structure / Balcony		Entry / exit gates required at top of each ladder	--
Increase height of Balcony handrail to 42" (Currently 36")	68	D' Ring required at top of ladder to catwalk	66
	--	D' Ring required at top of ladder to roof	90
	--	D' Ring required at hatch to tank interior	97
Anchorage		**Confined Space & Rescue System**	
	--	Rescue port base required at top of ladder (at catwalk)	67
	--	Rescue port base required at roof hatch to tank interior	97
	--	Rescue port base required at center of tank roof	90
Coating & Lining Condition			--
Separate Report available	--		--
	--		
	--		

Existing Maintenance Contract?	No

Thank you for allowing Landmark Municipal Services to assist you in the maintenance of your elevated water storage facility.
To maintain the integrity of your facility we recommend that you schedule your next:

Safety inspection and report	**2016**	
Remote Inspection & Report (RIR)	**2019**	*** 3 yrs after CIR***
Clean, inspect and report (CIR)	**2016**	

		Photo No.
Siteworks		
EXTERIOR VALVE CHAMBER	Below Grade Valve Pit	7-20
DRIVEWAY / WALKWAY	Good	1-3
OVERFLOW SPILLWAY	None - Extend Overflow Pipe to grade level c/w spillway	33-34, 72-73
REPAIRS OR MAINTENANCE REQUIRED		
Screen required at end of overflow pipe (beneath catwalk)		
Extend overflow pipe to grade level c/w spillway		
SECURITY		
FENCE & GATES	Good	1-3
VERTICAL LADDER	Good	49
HATCH LOCKS	Good	47, 97
REPAIRS OR MAINTENANCE REQUIRED		

VALVE CHAMBER		
CONDITION OF VALVE CHAMBER	Wet; Sump Pump required	9-20
CONDITION OF PIPING	Poor - Heavily corroded	11-20
CONDITION OF VALVES	Poor - Heavily corroded	11-20
ARE THERE ANY INDICATIONS OF SETTLEMENT (Exterior)?	No	11-20
IS THERE ANY INDICATION OF PIPE MOVEMENT?	No	11-20
REPAIRS OR MAINTENANCE REQUIRED		
Surface prep & paint pipe & valves as required		
Sump pit and pump required		
FOUNDATIONS		
HOW FAR DOES THE FOUNDATION EXTEND OUT OF THE GROUND? (Support Legs)	8" - 12"	35-45
ARE THERE ANY INDICATIONS OF FOUNDATION SETTLEMENT?	No	35-45
IS CONCRETE OR GROUT CHIPPED OR CRACKED	No	35-45
IS THE SOIL AT THE BASE SATURATED OR IS THERE PONDED WATER?	No	35-45
IS THERE ANY INDICATION OF UNDERGROUND PIPE LEAKAGE?	No	35-45
IS THE SOIL AT THE BASE SATURATED OR ERODED?	No	35-45
IS THE FOUNDATION UNDERMINED OR EXPOSED?	No	35-45
REPAIRS OR MAINTENANCE REQUIRED		

SUPPORT STRUCTURE		
WET RISER CYLINDER STRAIGHT?	Yes; No verticality test required	24-33
GUY RODS IN GOOD ADJUSTMENT & TUNED?	Yes	24-33
SIGNS OF CORROSION OR REDUCTION TO GUY RODS?	Minor	24-33
CONDITION OF ROD & STRUT PINS AND BOLTS?	Fair - Surface corrosion. No structural concerns	53-58
CONDITION OF STRUTS AND COLUMNS?	Fair - Surface corrosion. No structural concerns	27-32
REPAIRS OR MAINTENANCE REQUIRED		

BALCONY (CATWALK)		
CONDITION OF FLOOR?	Fair	69-71, 73-76
CONDITION OF BALCONY HANDRAIL?	Upgrade required	68
CONDITION OF SPLICES, SUPPORTS AND SHAFT CONNECTIONS?	Good	69-71, 73-76
DOES THE BALCONY FLOOR DRAIN?	Yes	64, 75
REPAIRS OR MAINTENANCE REQUIRED		
Increase height of Balcony handrail to 42" (Currently 36")		

Anchorage

ARE BASE PLATE DETERIORATED OR IN POOR CONDITION?	No	35-42
ARE ANCHORS, NUTS & BOLTS DETERIORATED OR IN POOR CONDITION?	Fair	35-42
ARE ANCHOR BOLT CHAIRS DETERIORATED OR IN POOR CONDITION?	Fair	35-42
ARE ANCHOR BOLTS TIGHT?	Yes	35-42

REPAIRS OR MAINTENANCE REQUIRED

Accessories

LADDERS	* To Valve Pit	Fair - Cast-in-place ladder rungs	9-10
	* To Catwalk	Remove and replace non-compliant ladders with 16" wide, galvanized ladders and support brackets	50-66
	* To Roof		81-88
	* On Roof		
REST SEATS		None - 1pc required	51
ROOF HATCHES	* Size	30" x 22" steel cover	97-98
	* Condition	Poor - Mounting curb must extend 4" from tank roof. Remove and replace	97-98
VENT	* Type	Unknown	60
	* Condition	Upgrade to 16" S.S. Frost proof combination vent / vacuum relief unit	90
PAINT RAIL / ROOF COUPLINGS		Good - Must be inspected by P. Eng prior to each use	90 - 96
ROOF HANDRAIL		None - Handrail system required	88
TANK ACCESS FROM GROUND		Fair - 24" Riser Manway - Prep and paint cover plate	43-44
TANK ACCESS FROM SHELL		None	75
TANK ACCESS FROM ROOF		None - Rope ladder required	98
OVERFLOW PIPING		Poor - Extend to grade level	33-34, 72-73
CATHODIC PROTECTION		None	--
AIRCRAFT WARNING LIGHTS		None	--
ANTENNAE	* Anchorage / Mounting	Fair	78
	* Cable Routing	Poor - Mounted to siderails. Design, supply and install an alumnium cable tray support system	48, 61, 66
	* Surveys / Warning Signage as per Safety Code 6: Health Canada	None	--
LIGHTNING PROTECTION & TANK GROUNDING		None	--
MIXING SYSTEM		Recommended - Refer to enclosed brochure for additional information	--

REPAIRS OR MAINTENANCE REQUIRED

Remove and replace vertical ladder to balcony
Remove and replace vertical ladder from balcony to tank roof
Remove and replace 'rolling' ladder on tank roof
S&I 1pc Aluminum rest seat on vertical ladder to balcony
S&I new 36" x 36" Aluminum hatch and curb on tank roof
Upgrade vent system to 16" S.S. Frost proof vent / vacuum relief unit
Roof Handrail system required
30" dia Shell manway recommended at catwalk location
S&I ladder rungs from proposed shell manway to tank floor
Aluminum cable tray support system required

FALL ARREST & RESCUE SYSTEM

Photo No.

SAFETY RAIL

LADDER LOCATION	YES / NO	TYPE	YELLOW MARKING AT END OF RAIL?	SECONDARY ARRESTING FEATURE?	RAIL SUPPORT (6FT MAX)	OVERALL CONDITION		
* To Catwalk	No	--	--	--	--	--	--	51
* To Roof	No	--	--	--	--	--	--	81-88
* On Roof	No	--	--	--	--	--	--	88

REPAIRS / UPGRADES OR MAINTENANCE REQUIRED

Fall arrest system required on all ladders

ENTRY / EXIT GATES

LOCATION	YES / NO	MIN. 6" FROM END OF RAIL?	PROPER ORIENTATION ?	CONDITION OF PIVOT PIN, SPRING, ETC	
* To Catwalk	No	--	--	--	51
* To Roof	No	--	--	--	81, 88
* On Roof	No	--	--	--	88

REPAIRS OR MAINTENANCE REQUIRED

Entry / exit gates required at top of each ladder

TRANSFER STATION 'D' RINGS

LOCATION	YES / NO	CONDITION	
* To Catwalk	No	--	66
* To Roof	No	--	88
* On Roof	No	--	90
* To Tank (at roof hatch)	No	--	97

REPAIRS OR MAINTENANCE REQUIRED

D' Ring required at top of ladder to catwalk

D' Ring required at top of ladder to roof

D' Ring required at hatch to tank interior

CONFINED SPACE & RESCUE

RESCUE PORT BASE

LOCATION	YES / NO	CONDITION	
* At Valve Pit Hatch	No - Use Tri-Pod	--	--
* At Top of Ladder (at catwalk)	No	--	67
* At Shell Manway	N/A	--	--
* At Roof Hatch	No	--	97
* At Center of tank roof	No	--	90

REPAIRS OR MAINTENANCE REQUIRED

Rescue port base required at top of ladder (at catwalk)

Rescue port base required at roof hatch to tank interior

Rescue port base required at center of tank roof


1


2

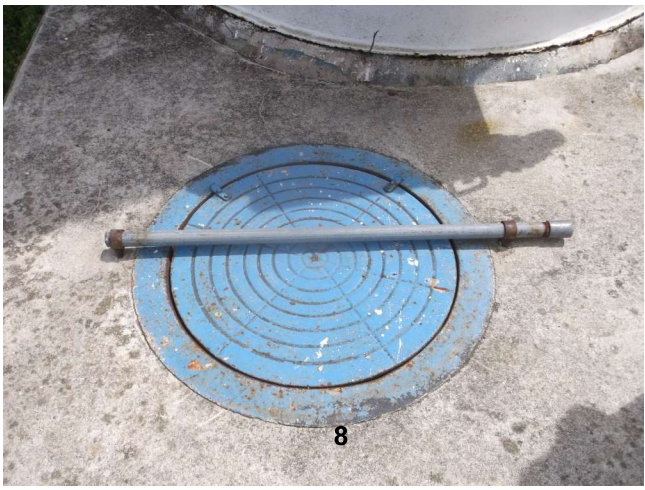

3


4


5


6


7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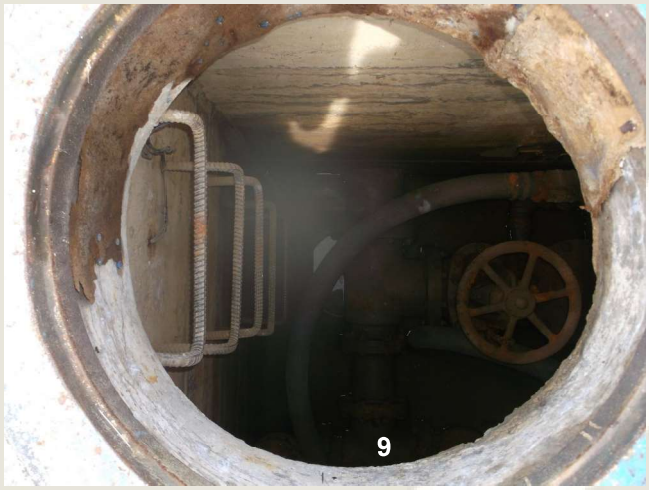
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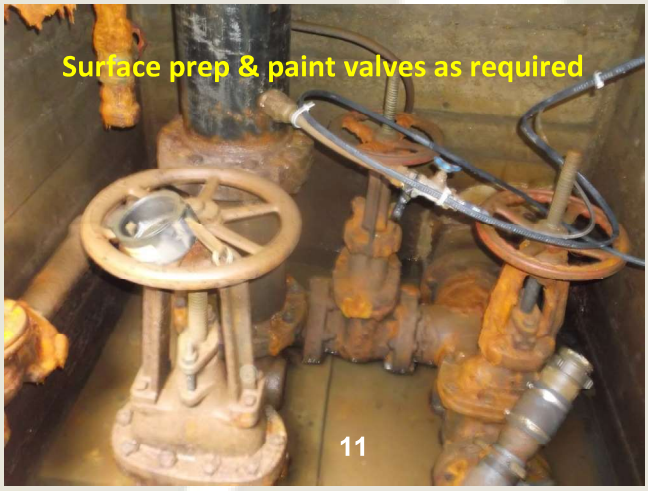
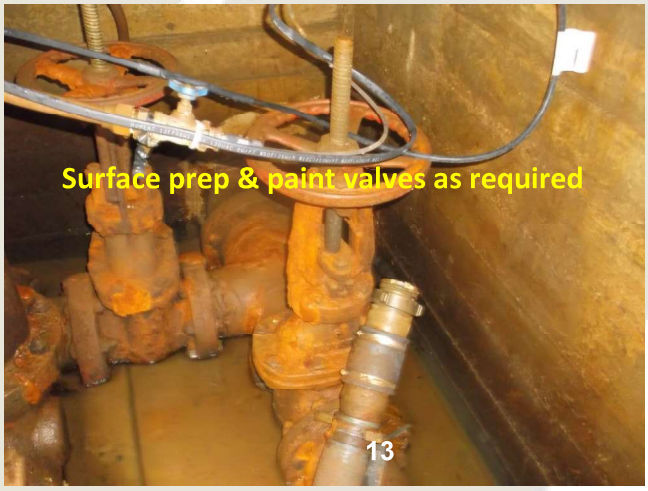

Surface prep & paint valves as required
11


12


Surface prep & paint valves as required
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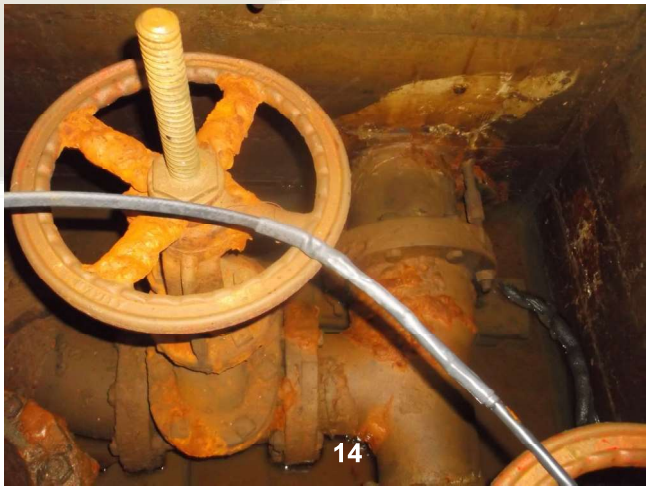
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Surface prep & paint valves as required
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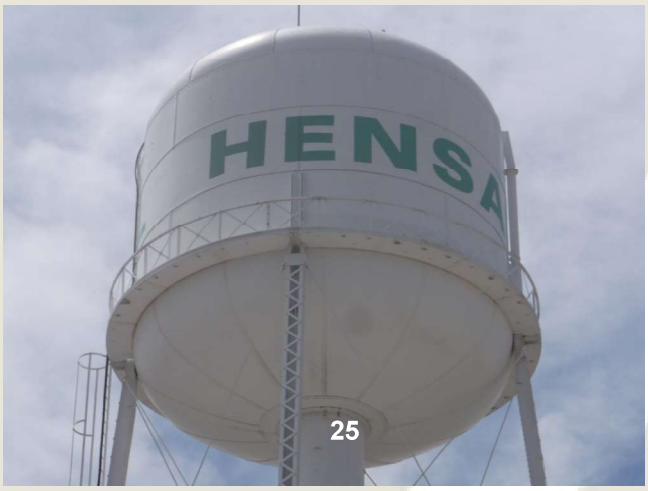

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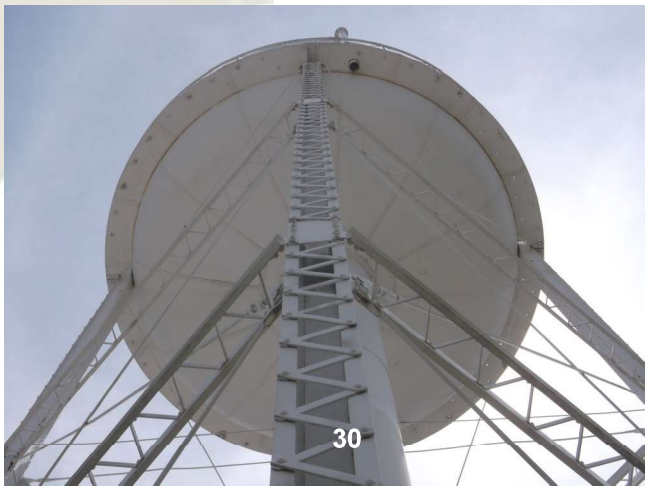
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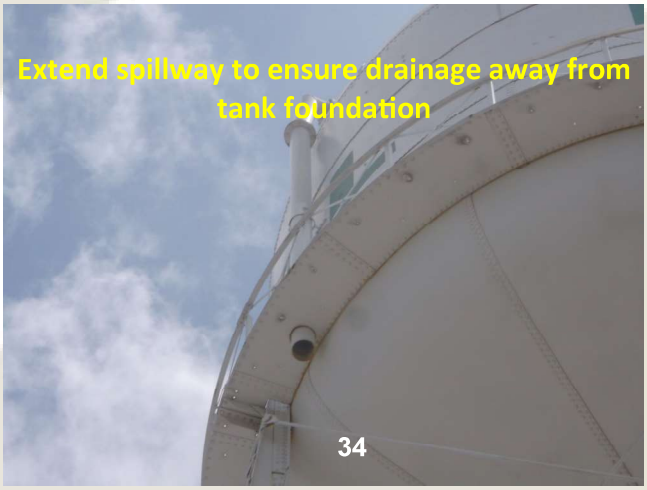

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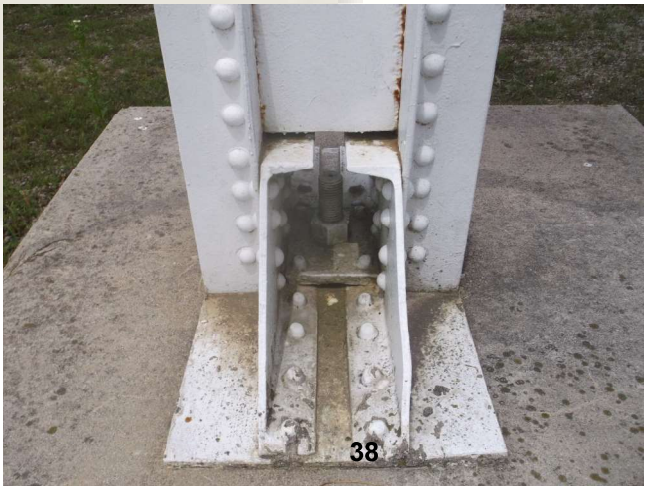
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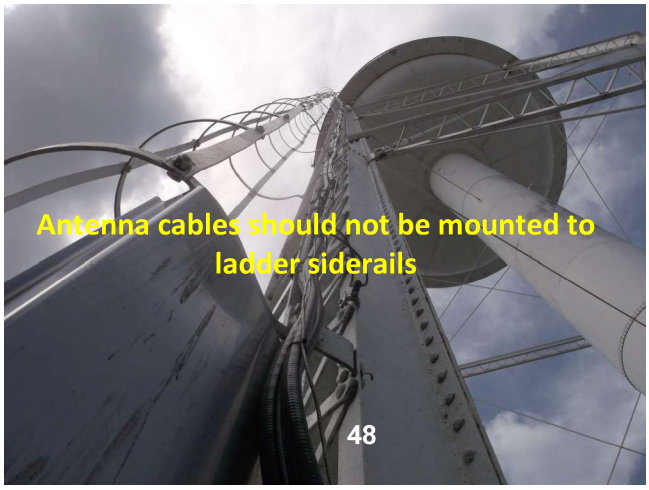

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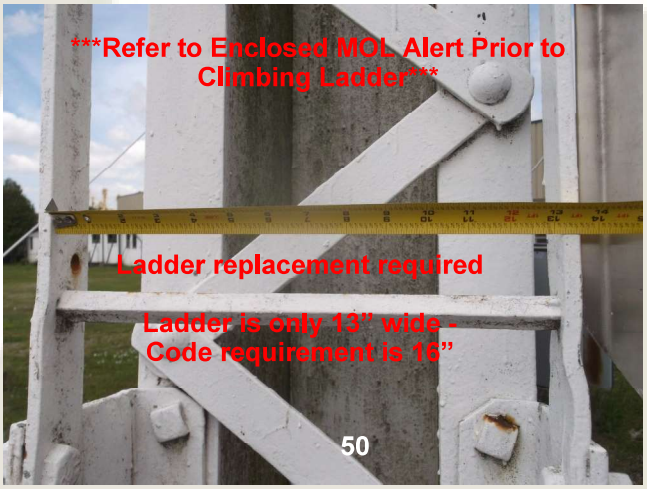
Refer to Enclosed MOL Alert Prior to Climbing Ladder
Ladder replacement required
Ladder is only 13" wide - Code requirement is 16"
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Fall arrest system required c/w entry / exit gates and D' Rings
1pc—Aluminum rest seat required
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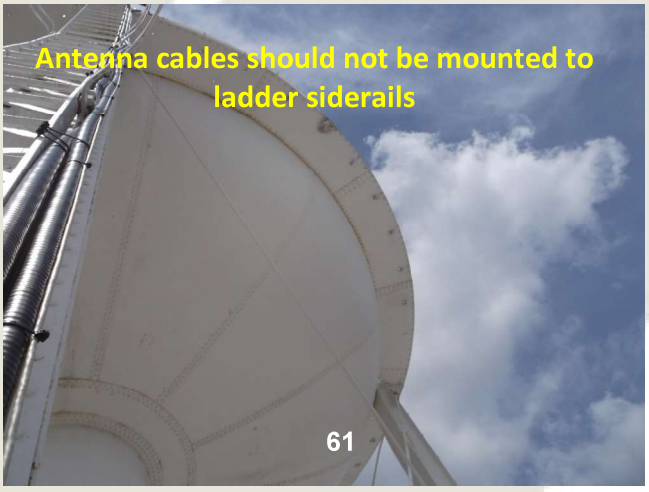

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Ladder replacement required
Ladder is only 13" wide -
Code requirement is 16"
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Antenna cables should not be mounted to ladder siderails
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Rescue port base required
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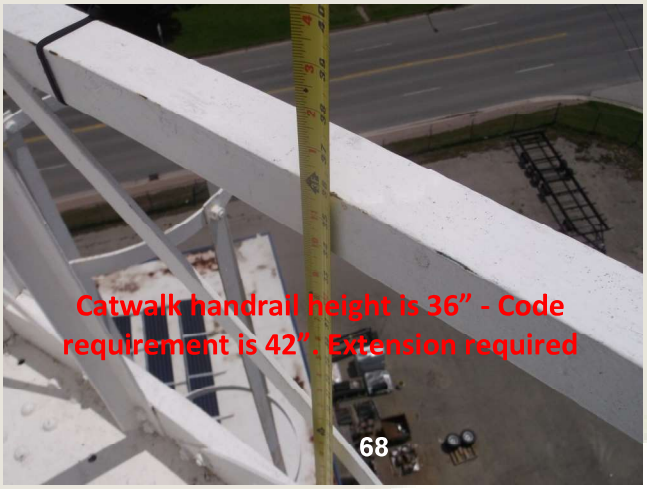
Catwalk handrail height is 36" - Code requirement is 42". Extension required
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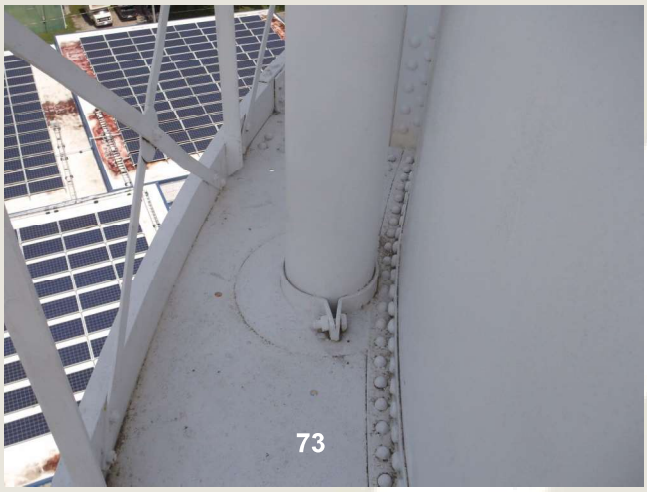
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30” diameter shell manway recommended c/ w ladder rungs to tank floor
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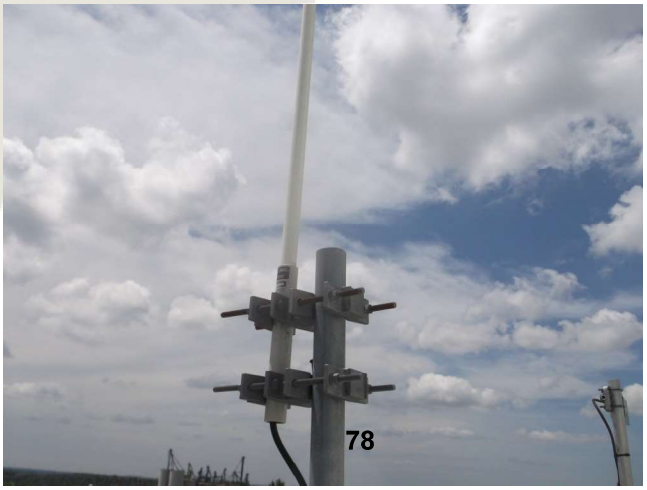
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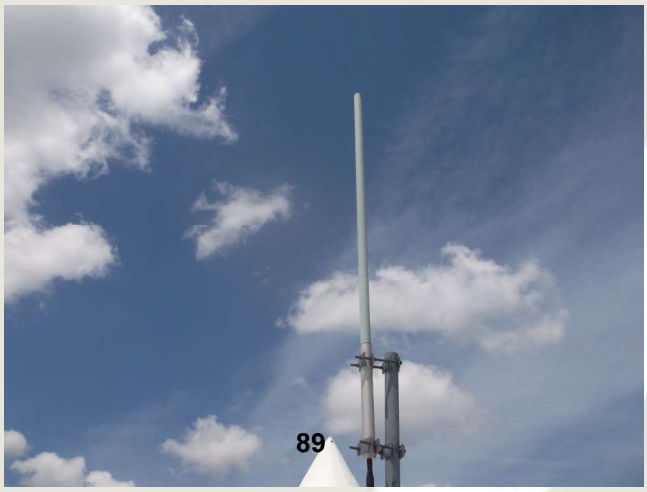
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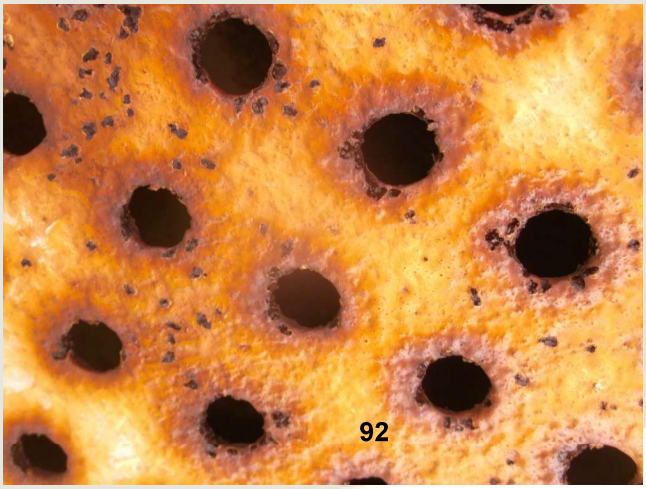
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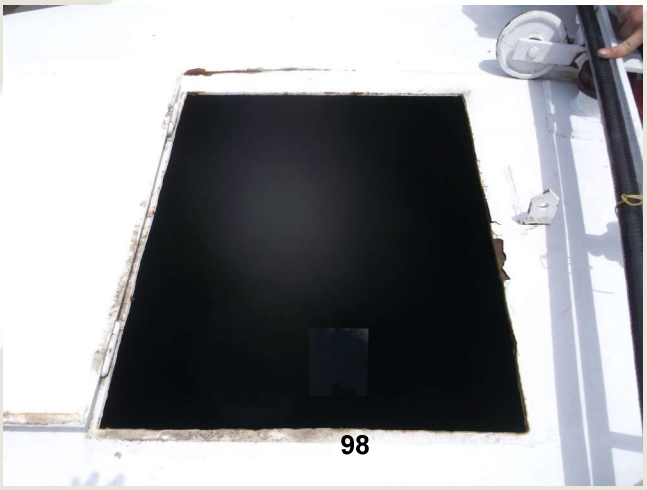
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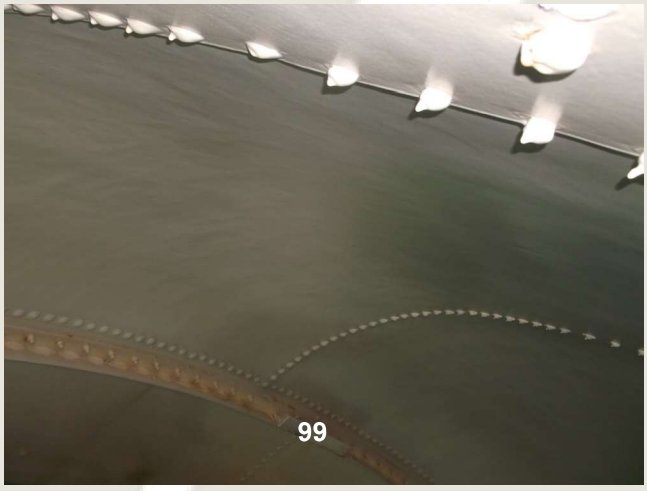
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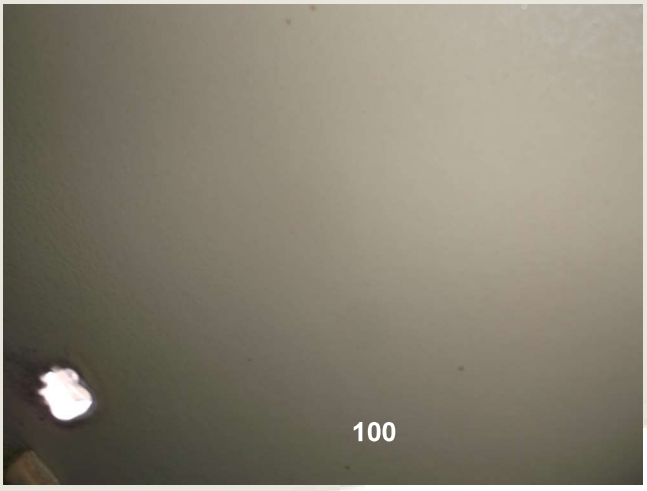
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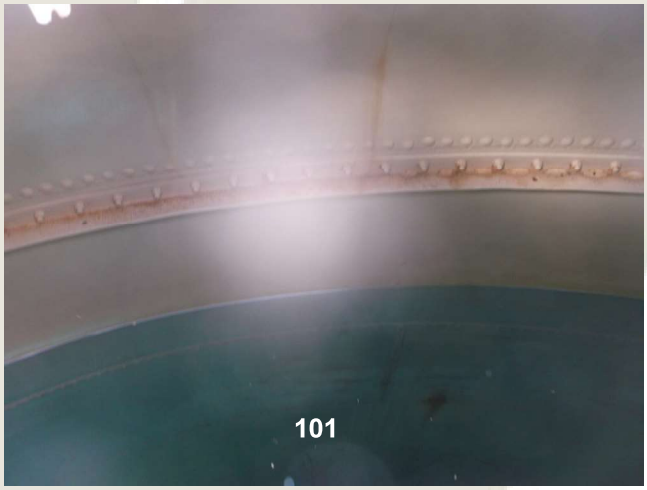
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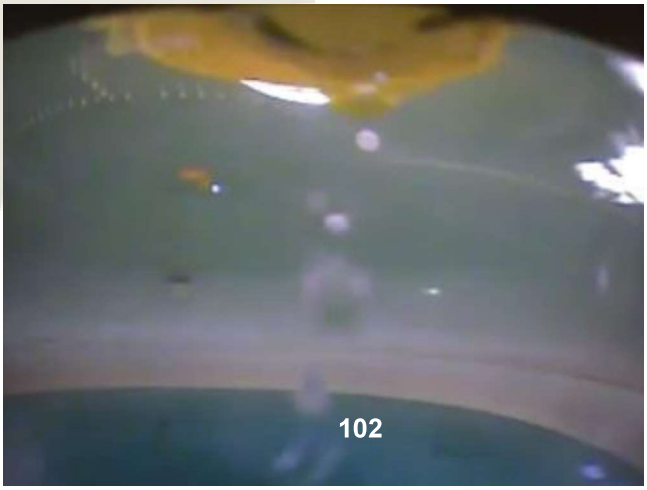
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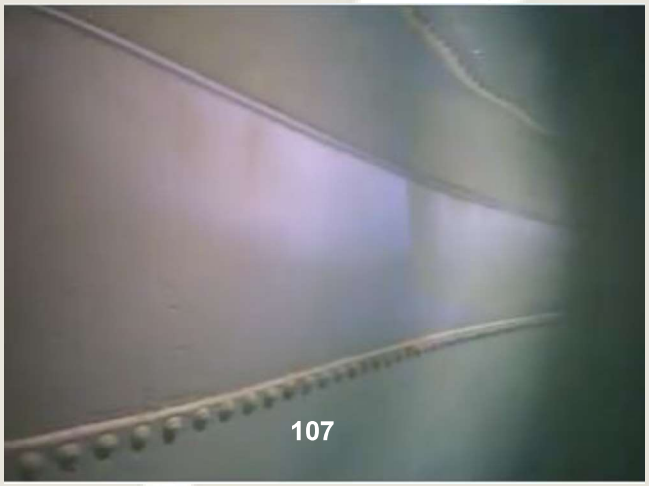
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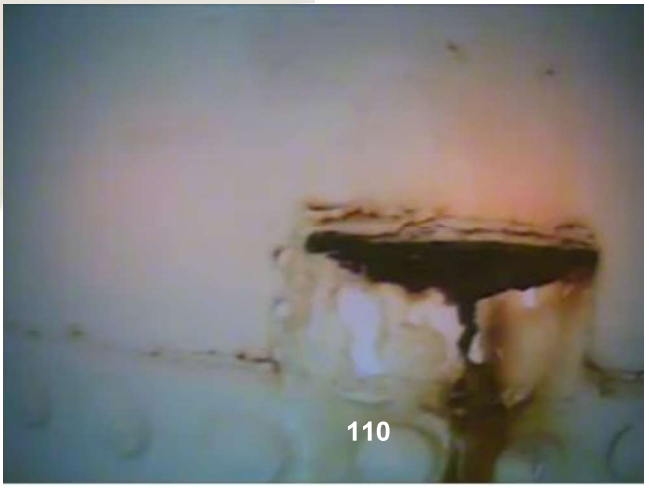
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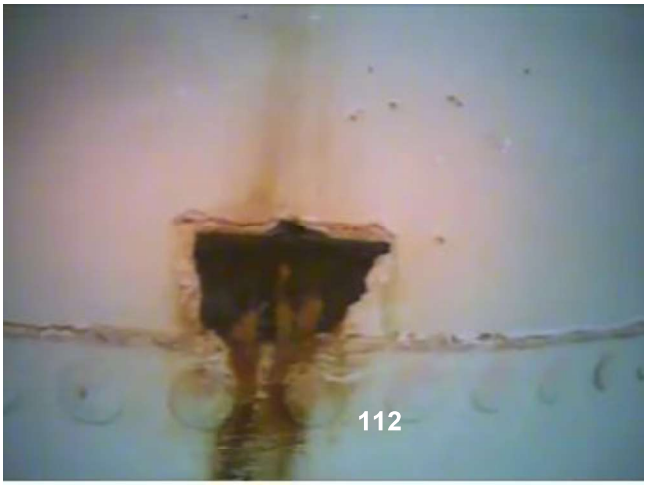
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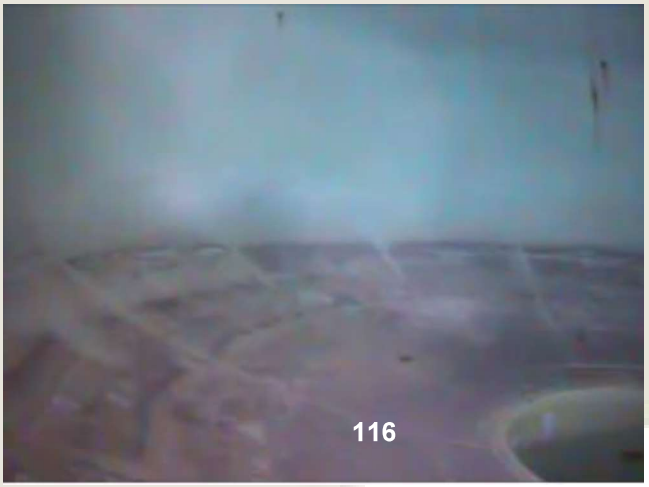
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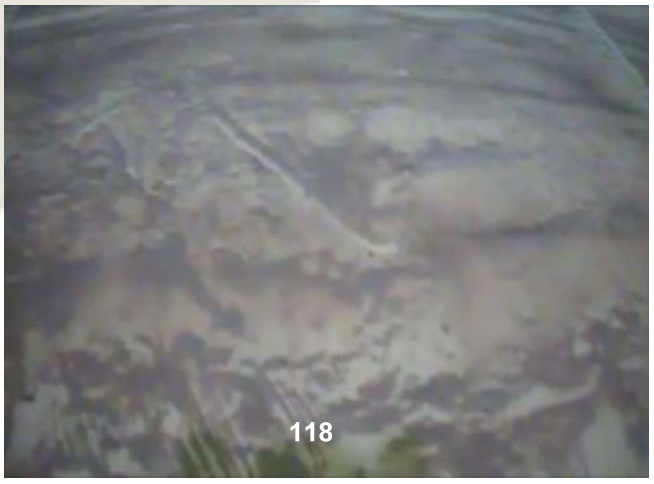
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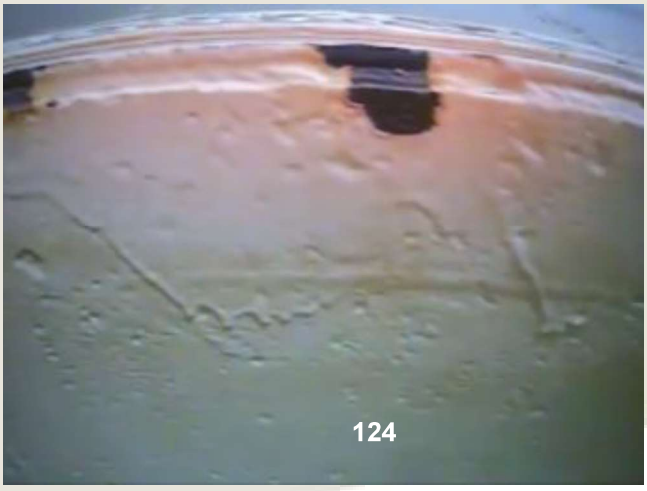
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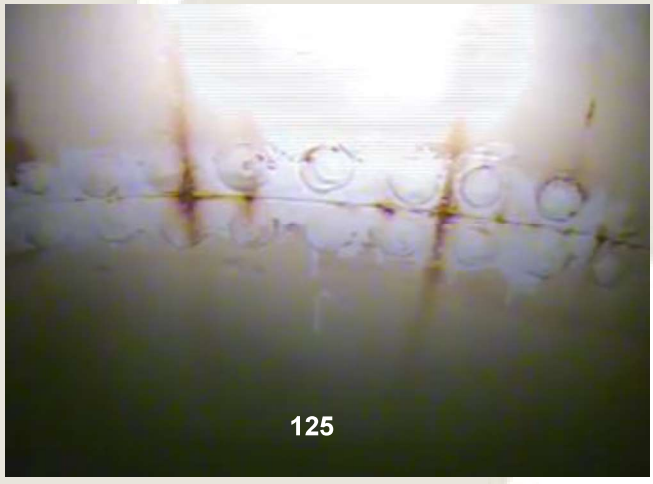
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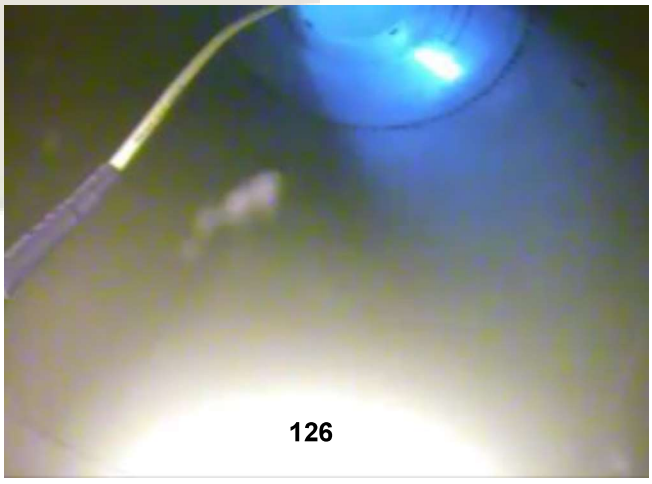
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Landmark Municipal Services

3091 Harrison Court
Burlington, ON CAN L7M 0W4
800.388.1757 Phone
05.319.7706 Fax

www.teamlandmark.com

August 5, 2015

Ontario Clean Water Agency
O&M Team Lead
50 Main Street
Zurich, ON

Attn: **Mr. Devon Webb**
dwebb@ocwa.com

Tel: 519.441.0441

LMS Job # LM5073: Tank Remote, Inspection & Report:
Hensall Multi-legged Tank
Coatings and Linings Report

Dear Devon;

An ROV underwater camera inspection was performed at the above mentioned potable water storage facility on June 17, 2015. The ROV unit and tether cable were disinfected in accordance with AWWA-C652-11 Method #2 guidelines (200ppm solution) prior to entry into the tank interior. Landmark's ROV equipment is designated for potable water use only.

Exterior

The exterior of this tank has been over-coated with an epoxy / aliphatic urethane system which is in fair condition. There are a few corrosion areas, around seams and rivets and other appurtenances.

This tank is a bolted plate design, and the seams between the plates are prone to crevice corrosion. There are numerous areas on the trellis style legs that are impossible to properly blast clean in preparation for painting, and these areas are exhibiting corrosion, especially near the bottom where ground moisture has exacerbated this condition. The sheen level is somewhat dulled by ultraviolet and atmospheric degradation,

Interior

The interior of this tank is lined with an epoxy type of system which is in poor condition. There are numerous areas where the plate seams have corrosion cells well established, as well as at rivet heads. The problem with this design of tank is that the area between the plates cannot be blasted or painted, and when there is a small break in the film the corrosion continues unabated.

There have been touch-ups in the past, likely during the exterior over coat application. Many previous brackets that were used for supporting spider rods that have since been removed are corroded badly. Some evidence of pitting corrosion was observed where localized corrosion has been concentrated.

Sedimentation in the tank bowl was negligible.

Recommendations

The exterior is not in need of any maintenance at this time, but should be re-evaluated during the next inspection. It is unlikely that this tank would be a candidate for an over-coat system, as the paint film is very high. Renewal would necessitate complete removal of the coating, and would most likely involve lead paint removal and complete enclosure. Because of the riveted design of this tank and its inherent faults, I would not recommend this avenue. The tank is 80 years old now, and replacement would be the logical next step, likely within 10 years.

The interior should be blasted and painted within the next 2 to 3 years, before corrosion cells cause irreparable damage to the plate junctions. After blasting to SSPC-SP 10 Near-White Metal, an AWWA D102 ICS-4 or ICS-5 system should be applied. Budget pricing including contingencies for metal & seam repairs = **$150,000 + hst**

Yours Sincerely,
Landmark Municipal Services

David Baker,
NACE Certified Coating Inspector –Level 2, CIP #329173

Landmark Municipal Services

3091 Harrison Court
Burlington, ON CAN L7M 0W4
905.319.7700 Phone
905.319.7706 Fax

www.teamlandmark.com

August 5, 2015

Ontario Clean Water Agency
O&M Team Lead
50 Main Street
Zurich, ON

Attn: **Mr. Devon Webb**
dwebb@ocwa.com

Tel: 519.441.0441

Quote #15099: Hensall Multi-Legged Tank Upgrades

Landmark Municipal Services is pleased to provide budgetary pricing for the following repairs & upgrades at the above mentioned potable water storage facility:

Siteworks

1)	S&I screen at end of overflow pipe OR	**$ 1,500**
2)	Extend Overflow pipe to grade level	**$ 16,000**

Valve Chamber

3)	Sump pump required in valve pit	**$ 3,500**
4)	Surface prep and paint valve and pipes in below grade pit	**$ 5,000**

Support Structure / Balcony

5)	Increase height of balcony handrail to 42" (currently 36")	**$ 7,000**

Anchorage

6)	Surface prep & paint wet riser anchors	**$ 400**

Accessories

7) Ladder Upgrades: **$ 45,000**
- Remove existing 13" wide ladders and replace with 16" wide code compliant galvanized ladders.
- S&I new certified FRL fall arrest system.
- S&I new entry / exit gates and 'D' rings
- S&I ladder rest seat assembly
- Re-install ladder security gate

8) Remove and replace hatch on tank roof with new 36" x 36" Aluminum hatch cover & steel mounting curb **$ 4,500**

9) Upgrade vent system to new 16" Stainless Steel Frost proof / tamper proof combination vent / vacuum relief unit. **$ 5,500**

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3091 Harrison Court
Burlington, ON CAN L7M 0W4
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905.319.7706 Fax

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10) Supply and install roof handrail system: **$ 18,000**
    - 15 ft diameter at centre of tank roof
    - 2 sided handrail extending from above to roof knuckle
    - Provide transfer station 'D' rings at each vertical post
    - Sandblast all steel in accordance with SSPC-SP10 and prime
    - Apply zinc primer to welds followed by one full coat epoxy and One full coat aliphatic urethane in the field

11) Design, supply and install 30" diameter shell manway – accessible from Catwalk – c/w ladder rungs to the tank floor **$ 17,000**

12) Design, supply and install aluminum cable tray support system (**Cable relocation by others)** **$ 12,000**

Fall Arrest

13) Included in Item #7

Confined Space & Rescue

14) Rescue Port Bases required at the following locations: **$ 8,000**

- Top of Vertical Ladder
- *Proposed* Shell Manway
- At roof hatch
- At Centre of Tank roof
- Supply detailed rescue procedures **$ 300**

**H.S.T. not included*

Ontario
MINISTRY OF LABOUR

Print This Page

Fixed Rail Ladder (FRL) Fall Protection System

Issued: May 20, 2014

Content last reviewed: May 2014

Disclaimer: This resource has been prepared to help the workplace parties understand some of their obligations under the Occupational Health and Safety Act (OHSA) and regulations. It is not legal advice. It is not intended to replace the OHSA or the regulations. FOR FURTHER INFORMATION PLEASE SEE FULL DISCLAIMER

Hazard summary

A worker descending a vertical ladder on a water tower in 2014 was critically injured after falling five metres while properly using a Class Frontal-Fixed Rail Ladder (Class FRL) Fall Protection System. A Class FRL Fall Protection System is a type of vertical fall protection using a permanently installed metal rail anchoring system with an automatic fall arresting device called the "trolley" or "carriage".

The investigation revealed a weakness in the design of some Class FRL Fall Protection Systems, which may not adequately protect workers who fall backward or who squat and roll backwards into a fall while connected by a body harness to the trolley which slides along the vertical rail. If a worker leans back, the trolley's internal braking system can be pulled off the rail, allowing the trolley to slide down the rail. If a worker falls backwards or squats and rolls backward into a fall (as opposed to falling straight down or inwards towards the ladder) the trolley may not lock, allowing a worker to fall freely. In the 2014 incident, the worker fell from a water tower ladder as shown in Figure 1.

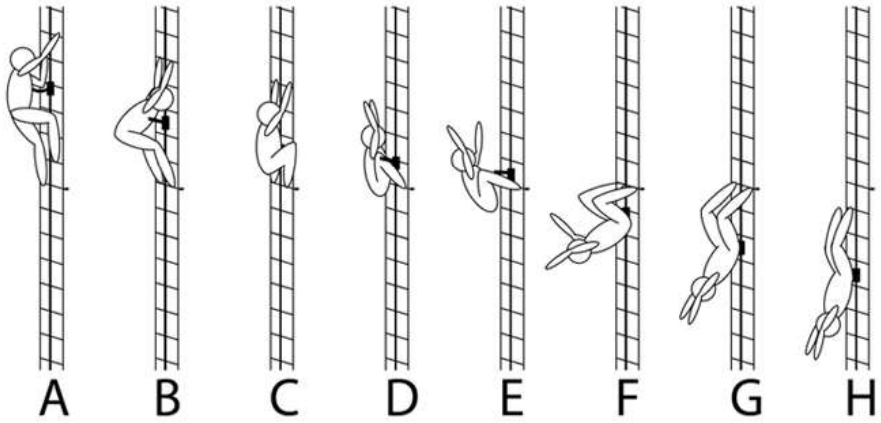


Figure 1: How the water tower worker fell

A. The worker is descending properly using the fall protection system.
B. The worker bends at the waist.
C. The worker's legs fold into a squat position while the worker's hands catch the next rung. The squat position allows the trolley to travel below the height of the worker's knees.
D. As the worker begins to roll backward their hands release from rung, and the tension in the trolley connection increases enough to remove all the slack out of the full body harness and slide the chest D-ring towards the waist.
E. This tension in the connection to the trolley forces the worker into a tight squatting position while rotating around the rung that the worker's feet are on.
F. The trolley connection remains in tension as the trolley travels below the rung that the worker's feet are on.
G. The connection to the trolley, now in tension between the worker's legs prevents the engagement of the braking mechanism that would stop the workers motion.
H. The worker, with back to the ladder, continues to fall head first while still attached to the fall protection system.

In 2010, the Ministry of Labour published a similar Alert, Class Frontal Fixed Rail Ladder (FRL) Fall Protection System, Alert #26/0510, after a worker was injured after falling back, then down 20 metres from a ladder attached to a tower while using a Class FRL Fall Protection System. In 2010, the investigation determined that the Class FRL Fall Protection System might not adequately protect workers who fall backward in a standing position.

Locations and sectors

Class FRL Fall Protection Systems are used on vertical access ladders which normally do not have a cage, such as the ladders on communication towers, chimneys and water tanks (towers).

Precautions

Even though a Class FRL Fall Protection System may be currently certified to CSA standards and/or have a CSA standards stamp on the side of the trolley unit, this should not be interpreted to guarantee worker safety and employers should not rely on such a stamp. Further investigations into the system are needed to ensure the system protects against a squatting position/rollback fall or a fall backwards.

Class FRL Fall Protection Systems whose design characteristics require the connection between the worker and the trolley to be in tension and where the trolley remains disengaged regardless of the tension force applied should not be used. Employers must take reasonable precautions to protect workers in these circumstances. This may include using alternative fall protection or access systems, as appropriate, for the adequate protection of the health and safety of workers using vertical access ladders.

Employers who own or rent structures which have a Class FRL Fall Protection System installed must ensure that the Class FRL Fall Protection System is capable of protecting a worker in the case of a squatting position/rollback fall or a fall backwards. The Ministry recommends that employers contact the manufacturer to ensure that the particular Class FRL Fall Protection System is capable of protecting a worker from any type of fall (including a backward fall and falling from a squatting position) before it is used.

Note: This Alert replaces the Class FRL Fall Protection System, Alert #26/0510 published in 2010 by the Ministry of Labour.

Resources

For more information contact:

Infrastructure Health and Safety Association
www.ihsa.ca

Or contact the Ministry of Labour Health & Safety Contact Centre toll-free at 1-877-202-0008.

For further reference see also:

Ministry of Labour
Ontario.ca/labour

ServiceOntario e-laws
www.e-laws.gov.on.ca

Remember that while complying with occupational health and safety laws, you are also required to comply with applicable environmental laws.

Please photocopy Ministry of Labour Alerts, distribute them widely and post them where people will see them.

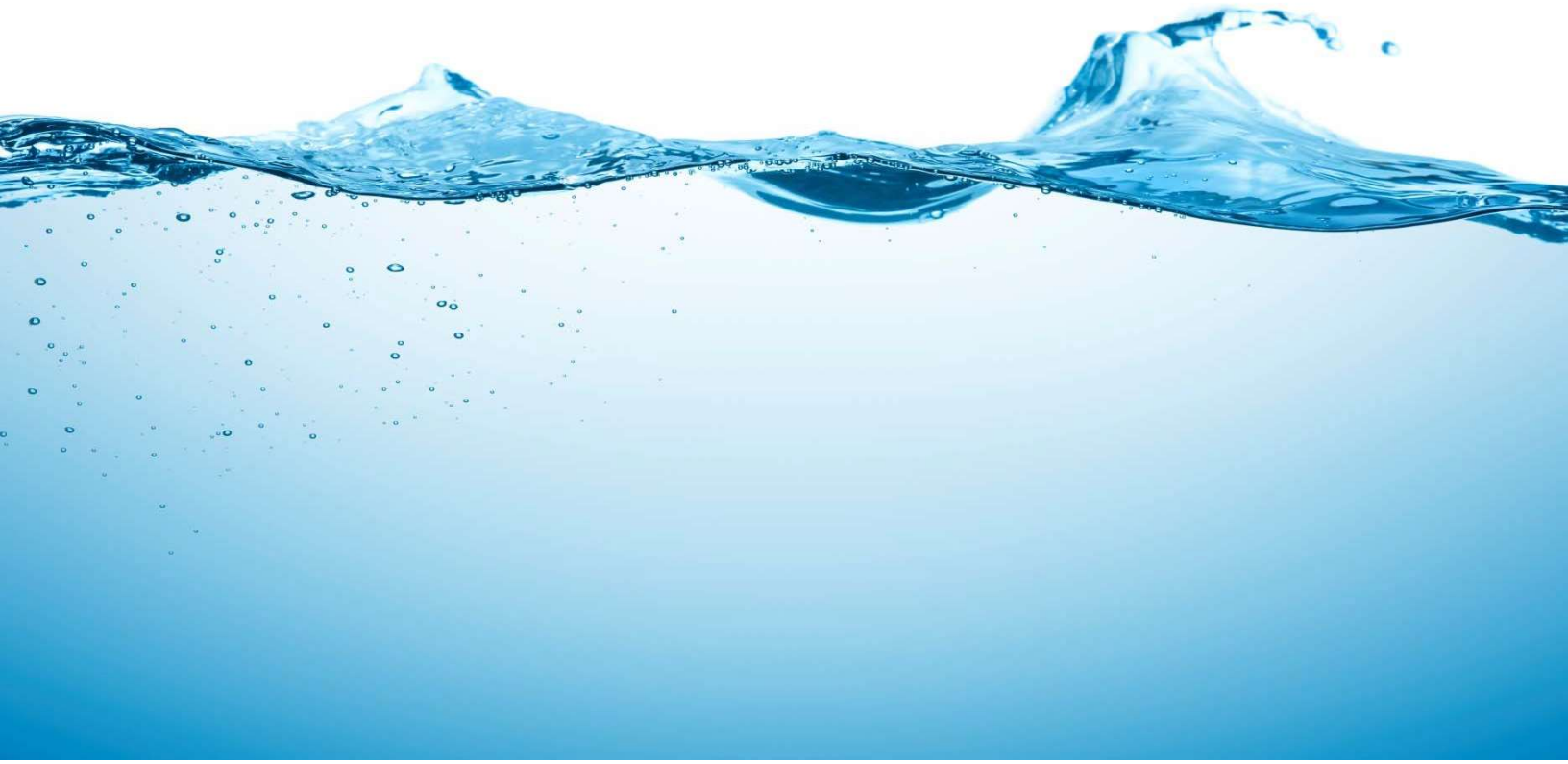
ISSN: 1195-5228

LANDMARK™
Elevating Expectations

Municipal Asset Management Services

Tank Asset Management Program

Reliability-Centered Maintenance
Designed Programs for Sustainable
Services Delivery of Asset Management



The real Total Lifecycle Costs alternative for Asset Management

Full service delivery maintenance warranties for 10, 15 and 20 year renewable terms on new and existing tanks

- Maximize Steel tank useful life to 100 years+ with preventative maintenance
- Programs cost an average 25% *less* compared to traditional procurement
- Value for Money Analysis provided with our Public Sector Comparator model
- PS 3150 and GASB 34 compliant value-added services
- All maintenance requirements including Condition Assessments and Engineering Services to extend tank / tank portfolio's useful life
- Comprehensive risk transfer - guaranteed 'Good Condition'

LANDMARK TANK ASSET MANEGEMENT PROGRAM

At Landmark we have taken our 40+ years of experience in designing, building and maintaining water tank elevated structures and bundled these unique capabilities into a program for long term maintenance and Total Lifecycle Cost Management, allowing municipalities to easily capture all the benefits of asset management.

Separating the tank component and its unique needs from other water distribution system assets simplifies the asset management task, allows for optimization across the tank portfolio, and gives tanks the essential attention it deserves, guaranteed, on schedule, online. It also transfers risk to those that can best manage it, your trusted partner - Landmark.

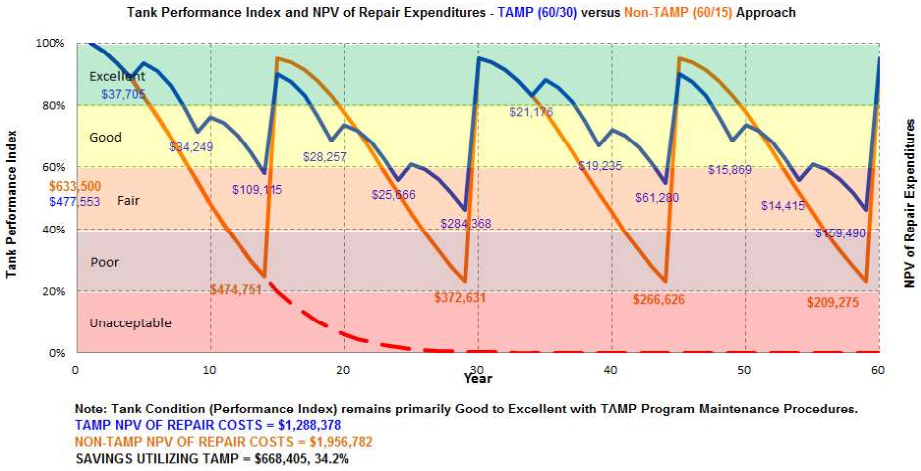
Receive the benefits of moving to a Design / Build / Maintain model anywhere in your tanks' lifecycle.

PRINCIPLES AND STANDARDS BASED DESIGN

Landmark has developed a Tank Asset Management Program (TAMP) based on (1) Asset Management principles from The International Infrastructure Management Manual, BSI PAS 55 and ISO55000:2014. (2) Public-Private Partnership alternative service delivery principles, concepts and tools (P3); the Ontario Ministry of Infrastructure's 'Building Together: Municipal Infrastructure Strategy' associated guidebooks; and (3) Reliability-centered maintenance principles (RCM) of using deep experience in performing failure repair, maintenance and condition assessments for tanks and creating custom maintenance programs.

P3 – Landmark uses tools from Public Private Partnership model such as discounted cash flow modelling in Value for Money Analysis (VFM) and the Public Sector Comparator Analytical model to create fair comparisons of total lifecycle costs of alternative service delivery.

Figure 1 - TAMP versus NON-TAMP Deterioration Curve Comparison



This data is key for informing decisions for new tank acquisitions and refurbishments - when true total lifecycle costs are required by decision makers.

Reliability-Centered Maintenance (RCM) – Landmark's unique self-perform capabilities provides an economic competitive advantage especially in the design – maintenance relationship: Landmark designs custom maintenance programs for each tank based on our knowledge of structural engineering and coating system failure characteristics and optimizes scheduled service based on this intelligence.

Attention to original design specifications, years of water industry builder experience and experience as the leading service provider including condition assessments differentiates Landmark's TAMP. This schedule design practice is also used by aircraft manufactures, the United States National Aeronautics and Space Administration (NASA) and the United States Department of Defense.

Figure 2 - Scheduled Maintenance Design

TAMP	Non TAMP	Service Description	60 Year Lifecycle
		Engineering and Design	
		Landmark TAMP	
x		Recondition – design and specification – Landmark	0 / 30 / 60
		Traditional	
	x	Recondition – design and specification – 3rd party	0 / 15 / 30 / 45 / 60
		Condition Assessment - Structural	
		Landmark TAMP	
x		Steel Inspection – corrosion	0 / 30 / 60
x		Steel Inspection – welding	0 / 30 / 60
x		Structural Adequacy Review	30 / 60
		Traditional	
	x	Steel Inspection – corrosion	0 / 15 / 30 / 45 / 60
	x	Steel Inspection – welding	0 / 15 / 30 / 45 / 60
	x	Structural Adequacy Review	30 / 60
		Condition Assessment - Coatings	
		Landmark TAMP	
x		Coating System (Visual) – Exterior	1 / 2 / 3 / 4 / 6 / 7 / 8 / 9 / 11 / 12 / 13 / 1
x		Coating System (Visual) – Interior	1 / 2 / 4 / 6 / 7 / 9 / 11 / 12 / 14...
x		Coating System (Visual) – Interior (ROV)	3 / 8 / 13...
x		Coating System (Test / Report) – Exterior	5 / 10 / 20 / 25 / 35 / 40 / 50 / 55
x		Coating System (Test / Report) – Interior	5 / 10 / 20 / 25 / 35 / 40 / 50 / 55
x		Heavy Metals (Test / Report) – Exterior	
x		Heavy Metals (Test / Report) – Interior	
		Traditional	
	x	Coatings Survey and Condition Assessment	0 / 15 / 30 / 45 / 60
		Condition Assessment - Legislated Requirements	
		Landmark TAMP	
x		Report – Replacement Value / Remaining Useful Life	1 / 2 / 3 / 4 / 5...
x		Report – update required schedule of services	1 / 2 / 3 / 4 / 5...
		Quality Assurance / Quality Control	

Asset Management integrates both of the above tools into a programmatic approach that is becoming essential for governments in addressing the Infrastructure gap (building new tangible capital infrastructure to handle growth and maintaining existing tangible capital infrastructure simultaneously).

Asset management is defined as "The systematic and coordinated activities and practices of an organization to optimally and sustainably deliver on its objectives through the cost-effective life cycle management of assets" (International Infrastructure Management Manual 2011). At the center of asset management is planned lifecycle preventative maintenance. Most North American governments have established accrual accounting principles to bring all tangible capital infrastructure asset s onto municipal balance sheets (PS 3150 in Canada and GASB 34 in the USA).

Landmark Tank Asset Management provides municipalities and other operators of water distribution systems a complete and comprehensive program that transfers 'good order' risk:

- Annual inspections reports on sanitation, structure, safety and coatings
- Timely Condition Assessments, inspection based adjustments to short and long term maintenance schedules, and future coatings and refurbishment with costing. Engineering reports on Condition assessment grade, replacement value, remaining useful life.
- Timely cleaning, repairs and refurbishments based on preventative actions to yield extended useful life at minimum cost.

Program design based on the Asset management fundamentals of

Value, Alignment, Leadership and Assurance as defined by ISO 55000:2014

FEATURES AND BENEFITS

- **Lowest Total Lifecycle Cost** – Landmark self-performs the complete schedule of required services (engineering, procurement, construction, contract management, inspection and maintenance) with guaranteed costs. There is a large cost advantage and convenience resulting from developing and managing water storage tank assets in one long term contract. The direct and indirect savings are passed on to the municipality.

- **Public-Private-Partnership Motivated** – As a long term partner, Landmark takes ownership of service delivery, our work, and we own a large stake of the risks associated with the long term results. We are highly motivated to do the right thing, at the right time, at the lowest cost.

- **Domain Expertise** – Within this specialized industry of water storage, Landmark knows what to do, how to do it and when to do it. With the Asset Management Program, there is no "needs versus wants" risk. Landmark is uniquely qualified and capable to perform all design, build, repair, refurbish, quality assurance and reporting work. A sole source of responsibility partner.

- **Optimal Span of Control –** Traditional models often result in numerous contractors, consultants and vendors working on the same project. This can become a communication, motivation and control challenge that often results in less than optimal project experiences. These problems are eliminated with Landmark owning the entire project over the long term.

- **Regulatory Compliance Partners** - A value-added service providing essential and engineering qualified data for regulatory reporting in Financial Plans, Operational Plans and Asset Management Plans. The Landmark Tank Asset Management Program and municipality together form a prudent stewardship partnership with the mutual goal - to maximize the high performing actual and accounting useful life of the water tank asset, at the lowest cost.

Protect, preserve and maintain water tanks with highly efficient, cost effective condition assessment based monitoring and optimized scheduled service delivery designed for each tank.

Program Terms

- Extended contract motivates best behavior / best practice / best quality / best cost.
- Payments spread over life of warranty period, at time of service or hybrid model.
- Available and totally scalable for a new tank, a refurbishment, or to an entire portfolio of tanks.

Landmark Accountability

- Partner with Municipality - Landmark owns the asset good condition requirement – over the long term.
- Scheduling, inspections, condition monitoring, reporting and engineering evaluations.
- System design and specification development.
- Clean, repair, install, construct, maintain. Quality Assurance.
- Asset Management Reporting and Regulatory Compliance.

LANDMARK
Elevating Expectations

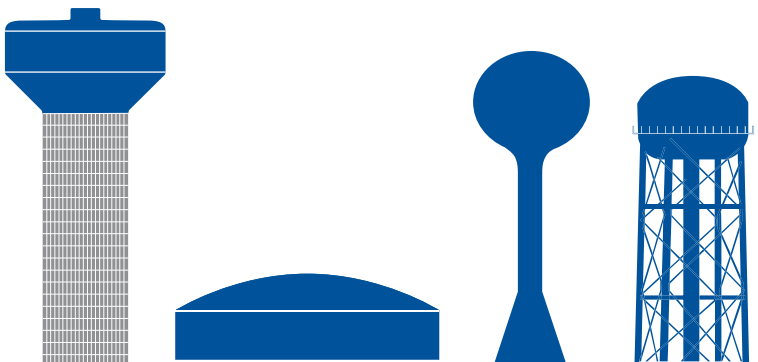
Municipal Services

Storage Tank Maintenance

Extend Service Life

Single Source Responsibility

Expert Inspection, Maintenance And Repairs
For All Types Of Water Storage Tanks



Expert inspection, maintenance, and repairs for all types of water storage tanks

- Safe, efficient, issue-free operation of your water storage infrastructure
- Full compliance with all applicable regulations across Canada

Landmark Municipal Services (LMS) brings more than 30 years of insight and innovation in water storage to owners and operators of tanks and systems of all types. Our complete range of services and packages provide predictability, continuity and flexibility for this essential function of municipal governments.

Inspections

Regular, scheduled inspections are critical for long-term efficiency. LMS conducts various types of inspections, all with comprehensive reports detailing repairs performed or recommended and upgrade requirements, with photo documentation and related cost estimates.

CIR: **Clean, Inspect & Report:** AWWA (American Water Works Association) recommends that water storage tanks be washed out and inspected on a minimum three-year cycle.

SIR: **Safety Inspection & Report:** A thorough interior and exterior review of structure and operations for compliance with applicable government regulations.

ROV: **Remotely Operated Vehicle:** ROV inspections eliminate the inconvenience and expense of taking your tank out of service. LMS provides real-time, in-water evaluations with a remotely operated vehicle.

LMS inspections provide a complete review of all critical factors:

- Site works
- Foundations
- Support structure
- Ladders/landings
- Accessories
- Valves and piping
- Metal conditions
- Exterior coatings
- Interior linings
- Antenna and communications equipment
- Safety and rescue equipment

Safety Upgrades and Training

LMS can provide safe access and rescue systems that meet or exceed the requirements of the Occupational Health & Safety Act for "vessel entry and rescue" as well as "fall arrest."



Tank Modifications

Skilled LMS professionals provide practical, proven and fully engineered modifications for all types of storage tanks, leveraging experience as one of the leading tank builders in North America. Our vertical integration adds design, fabrication and coatings expertise when needed, with single source management and responsibility.



Coatings and Linings

LMS services include all surface preparation and recoating of all interior and exterior areas. Options range from spot preparation to total blast cleaning with full containment for environmental protection. All lining materials applied to interior surfaces are ANSI and NSF 61 approved.



Safety is the Key




Inspections:

- Clean, Inspect & Report (CIR)
- Safety Inspection & Report (SIR)
- Remotely Operated Vehicle (ROV)

Safety:

- Confined space
- Fall arrest
- Training

Maintenance:

- Tank Asset Management Program (TAMP)
- Annual programs
- Coatings/linings

Lightning Protection:

- Design
- Installation
- Inspection

Antenna and Communications Systems

- Design
- Structural fabrication & installation
- Inspection

Demolition

- Partial
- Total

Modifications

- Engineering
- Tank hydrodynamic mixing systems
- Site works
- Balconies/handrails
- Manholes
- Hatches
- Venting and vacuum relief
- Welding and fabrication
- Electrical/instrumentation
- Heat trace
- Insulation and cladding
- Security systems

Landmark delivers consistent, high quality results.

Contact us today to discuss the best solution for your next project.

LANDMARK
Elevating Expectations

Landmark Municipal Services • 3091 Harrison Court
Burlington, ON L7M 0W4 • 905.319.7700 Phone
www.teamlandmark.com • info@teamlandmark.com

Landmark Coatings

Specialty Mobile Operations

Uncompromising commitment to safety. World class technical skill. Go-anywhere mobility. Landmark delivers factory applied quality to your site.

LANDMARK
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Developed and refined throughout 25 years of storage tank coatings and lining work, Landmark's specialty crews work wherever you need them…on projects that we design, fabricate and build, or on existing infrastructure requiring repair and recoating. The Society for Protective Coatings (SSPC) has recognized our technical skills and processes with their prestigious QP-1 certification, so you can rely on thoroughly tested multi-craft services on the most demanding jobs, with the added benefits of uncompromising safety and nationwide mobility.

We work in a wide range of applications for the private sector, the military and municipal authorities:

- Industrial facilities
- Terminals
- Petrochemical plants
- Water and wastewater
- Oil and gas exploration and production
- Aircraft fueling facilities
- Lead abatement

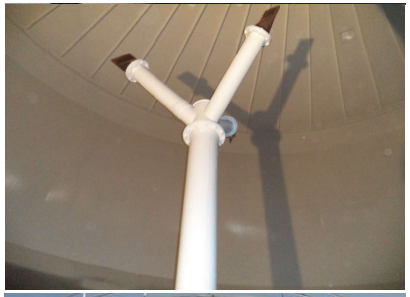
Safety

Safety is the Key

Landmark's uncompromising commitment to safety protects people, property and the environment. We apply equally rigorous standards for all locations, require ongoing training and testing for all crews, and utilize site evaluations, Hazard Identification and Risk Assessments (HIRA) and root cause analysis to continually drive performance improvement. Landmark employs the best available safeguards for the job, such as advanced, self-contained respiratory equipment on many applications. And we stay at the forefront of best practices and efficient reporting with our membership in ISNetworld. Core values and comprehensive safety and health programs, along with SSPC C-3 accredidation for de-leading steel structures, safeguards against environmental impact.

Skill

Landmark's technical capabilities start with specification assistance, based on in-depth knowledge of industry suppliers and their latest products, and insights from our own operations. Our crews are fully equipped to perform surface preparation and coatings work on virtually any type of steel structure, utilizing a broad array of coatings including polyurethanes, 100% solids and fiberglass reinforced systems. Our crews perform all coatings work in accordance with the Landmark Quality Assurance Manual for Surface Preparation and Coating. They are trained to implement all of the required process controls and conduct workmanship inspections to meet or exceed all applicable standards and client expectations.



Routine quality evaluations include but are not limited to:

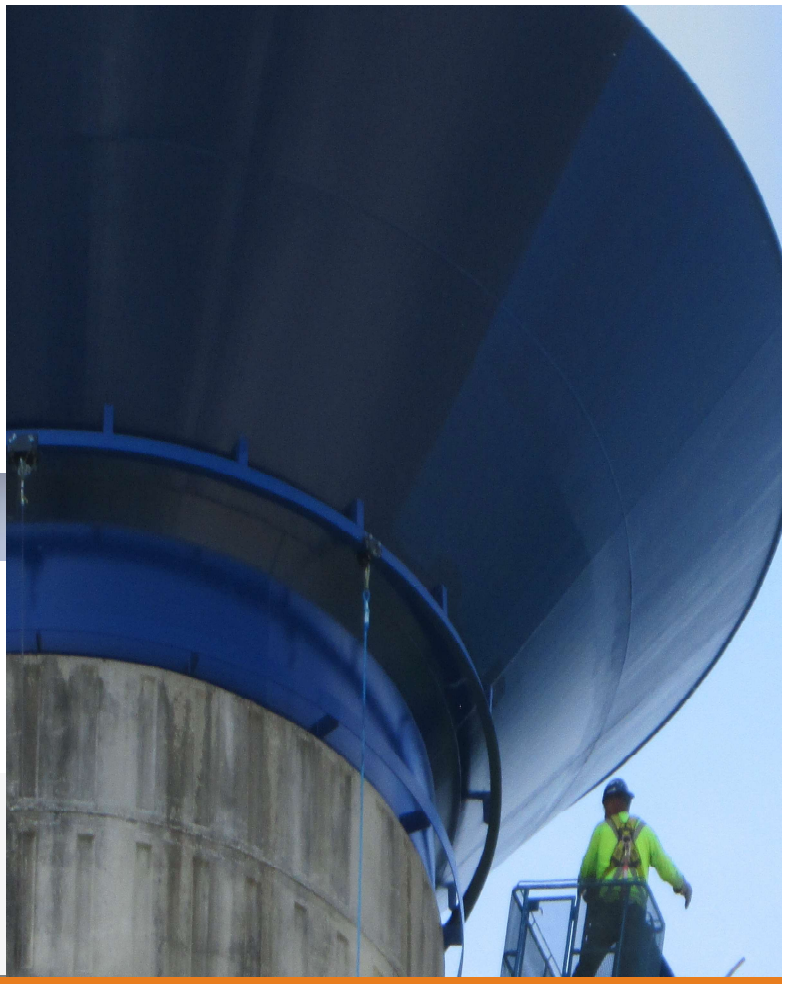
- Measurement of environmental conditions
- Verification of surface cleanliness prior to coating or lining
- Wet and dry film thickness measurement
- Holiday testing (low or high voltage, depending on lining thickness)

Daily logs track all inspection activity, and are available upon request.

Specialized equipment enables Landmark to manage dehumidification on work in enclosed spaces such as tank lining and recoating, and to protect the environment with blast media recycling and a full or partial containment on exterior surface preparation and coating. In addition, site specific plans for environmental monitoring, hazardous material management, and disposal of wastes are developed for all tank rehabilitations where existng coatings contain toxic metals. And for high-profile projects with community impact, Landmark has perfected the art of translating even the most intricate graphics to the public stage with precise reproduction. The utilization of dust collection systems ensures complete extraction of dusts for not only a cleaner surface prior to paint application, but as well as containment of dusts generated. This provides necessary air exchanges for confined space work.

Mobility

Landmark capabilities are completely mobile for deployment nationwide or beyond, without limitations. Specially outfitted trailers move containerized equipment to the project site, and then serve as mobile command centers for the crews. All required assets are at hand, coordinated with local supply lines as appropriate.

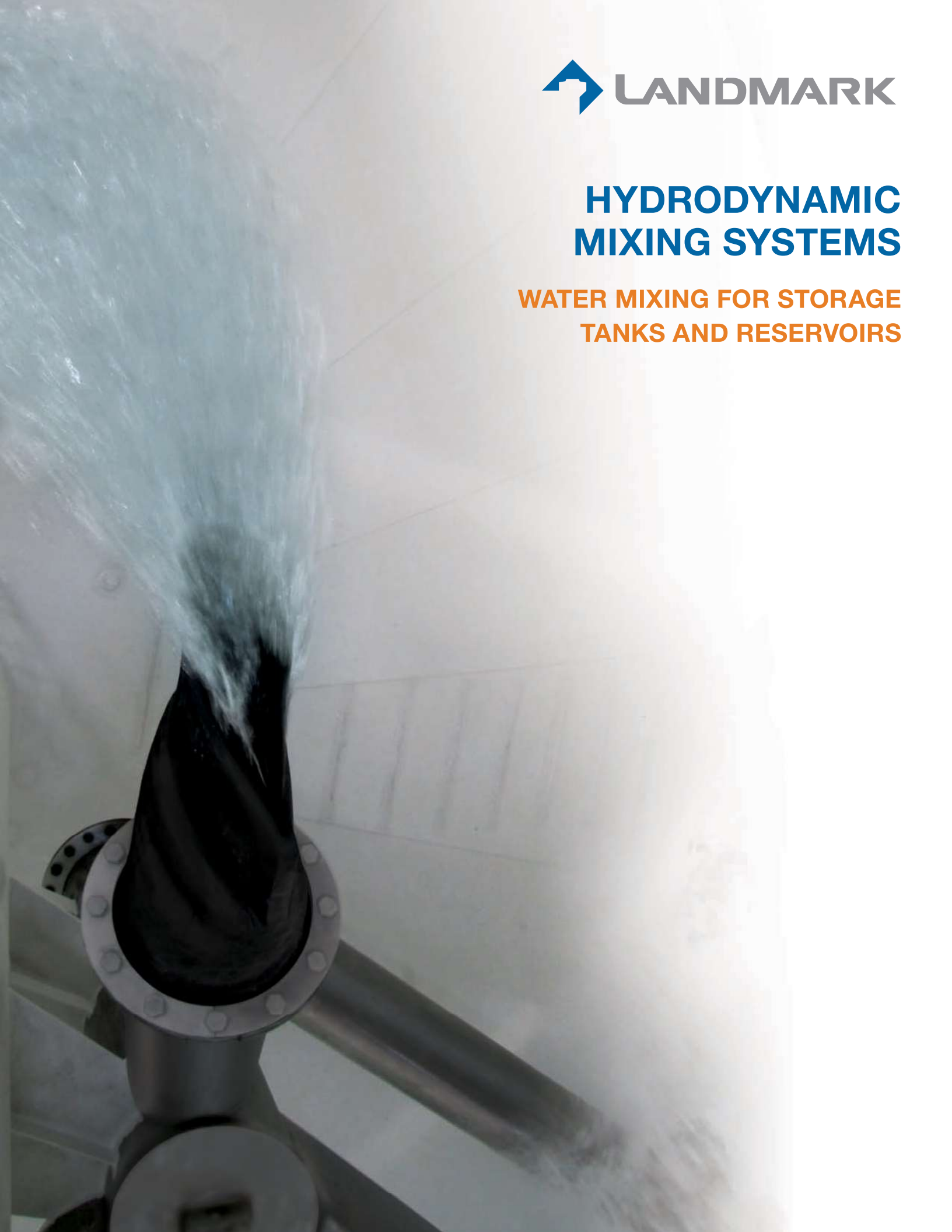


You can count on Landmark Mobile Specialty Coatings to reliably protect your investment and extend the life of critical infrastructure. Contact us today to discuss the best solution and a quote on your next project.

LANDMARK
Elevating Expectations

Landmark Industrial Coatings
3091 Harrison Court
Burlington, Ontario L7M 0W4
Phone 905.319.7700 Fax 905.319.1373

www.teamlandmark.com



LANDMARK

HYDRODYNAMIC MIXING SYSTEMS

WATER MIXING FOR STORAGE TANKS AND RESERVOIRS

LANDMARK HYDRODYNAMIC MIXING SYSTEM

PROTECT WATER QUALITY WITH AN EFFICIENT, COST EFFECTIVE, TANK SPECIFIC SOLUTION.

The Quality Challenge

System operators manage the integrity of drinking water resources by protecting water from aging and contamination. A properly designed mixing system provides a solution that will automatically mitigate common factors leading to taste and odor issues, bacterial growth, and nitrification:

Low inlet velocity: Inlet pipes designed for maximum flow and low head loss result in low inlet velocity, low dispersion and poor circulation. *High velocity mixing system nozzles equalize and reduce depletion of disinfectant residuals, and preclude ice cap formation and damage.*

Short-circuiting: Common or close inlet and outlet pipes can result in a LIFO (last-in, first out) condition. New water entering the tank during fill is the first removed, leaving the balance to stagnate and age. *Mixing eliminates short-circuiting.*

Thermal Stratification: Stored water may stratify or layer due to differences in temperature and density. Lack of mixing causes cooler, denser water to collect at the bottom, while warmer, less dense water migrates to the top and ages. *Mixing eliminates stratification and "dead zones."*

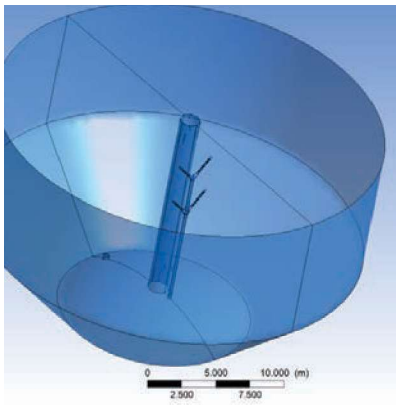
Low cycling: High demand periods require full tanks, however water ages if retained and not cycled adequately. *Hydrodynamic Mixing System design provides for adequate cycling and exchange of water to prevent excessive aging.*

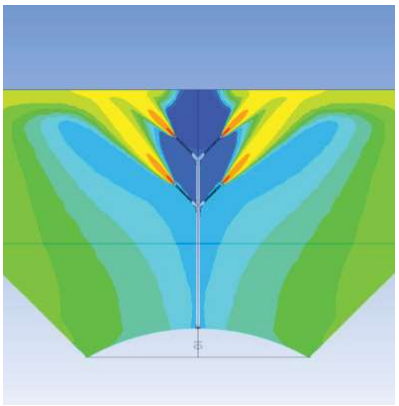
The Integrated Solution: Landmark HMS

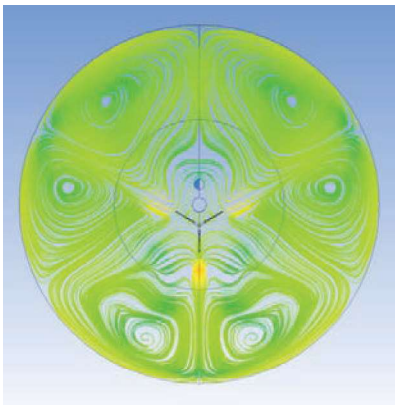
Landmark delivers optimized mixing for all types of new and existing tanks and reservoirs.

Mixing System Function

- Manifold piping, inlet nozzle and outlet port combination utilizes energy of system operation to achieve complete mixing—no external power source required
- Inlet nozzles with variable orifice elastomeric check valves provide turbulent flow and increased momentum flux—harnessing more mixing power
- Outlet ports with wafer check valves are separated from inlet nozzles to maintain circulation







Tank Specific Analysis and Engineering

- Every Landmark mixing system is based on a Computational Fluid Dynamics (CFD) analysis modeled to address specific tank and system operating conditions
- Design considerations include tank geometry, operation cycle and flow magnitude, as well as seasonal, emergency and future demand
- Design submittals include HMS drawings and specifications, hydraulic analysis, mixing analysis, installation instructions, certifications and operation manuals
- Inlet and outlet valves are NSF 61 certified for highest standards of quality and safety
- Materials of construction are selected to meet customer specific needs and provide maintenance–free performance
- Services includes consultation, monitoring and best practice recommendations for maximizing system benefits in everyday operation

Landmark Leadership in Water Quality

- Industry leader in Hydrodynamic Mixing System development, with first systems designed and installed in the 1990s
- Invented the two leading mixer styles: “2-Tier 2-Y” and “Trillium”
- Extensive research, analysis and testing of tank mixing efficiency
- Four mixing system patents —in U.S. and Canada
- Unparalleled warranty and customer support

Landmark is a full service provider of water storage system services which include consultation, design, construction, monitoring, communications, rehabilitation and maintenance. Contact us for complete details.

Dallas/Fort Worth | Toronto | Chicago

Website: landmarkwatermixing.com

Email: watermixing@teamlandmark.com

Phone: 817.439.8888 (U.S.) | 905.319.7700 (Canada)

LANDMARK
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HENSALL MULTI-LEGGED TANK REMOTE INSPECTION AND REPORT JUNE 17, 2015

LANDMARK
Elevating Expectations

APPENDIX C

CONSULTATION PROGRAM

MUNICIPALITY OF BLUEWATER

CLASS ENVIRONMENTAL ASSESSMENT FOR A NEW WATER STORAGE FACILITY (COMMUNITY OF HENSALL)

NOTICE OF STUDY COMMENCEMENT

THE PROJECT:

The Municipality of Bluewater is planning to upgrade water storage facilities in the community of Hensall. Recent investigations established that the existing elevated tank is nearing the end of its service life and also does not provide adequate pressures throughout the community to maintain efficient operation of the water system. As a result, the construction of a new, elevated water storage facility is being considered.

THE ENVIRONMENTAL SCREENING PROCESS:

The planning for this project is following the planning process established for Schedule B activities under the Municipal Class Environmental Assessment (Class EA) document. Schedule B projects are approved subject to the completion of a screening process. The purpose of the screening process is to identify any potential environmental impacts associated with the proposal and to plan for appropriate mitigation of any impacts. The process includes consultation with the public, Aboriginal communities, stakeholders and review agencies. This notice is being issued to advise of the start of study investigations. There will be additional opportunities for public input and involvement as the study progresses.

PUBLIC INVOLVEMENT:

Public input and comments are invited for incorporation into the planning and design of this project. For the initial phase of the project, public input will be received until November 24, 2017. As part of the consultation component of this project, a public information meeting will be held during the course of the study. Details regarding the public meeting will be provided in a future notice. Any comments collected in conjunction with the Class EA process, will be maintained on file for use during the project and may be included in project documentation. With the exception of personal information, all comments will become part of the public record.

For further information on this project, or to review the Class Environmental Assessment process, please contact the project engineers: B. M. Ross and Associates, 62 North Street, Goderich, Ontario, N7A 2T4. Telephone (519) 524-2641. Fax (519) 524-4403. Attention: Kelly Vader, Environmental Planner. E-mail: kvader@bmross.net.

This Notice Issued October 25th, 2017

Andrew Bicknell, P. Eng.
Manager of Public Works

Municipality of Bluewater

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street, Goderich, ON N7A 2T4
p. (519) 524-2641 • f. (519) 524-4403
www.bmross.net

File No. 17277

October 17, 2017

'Agency'

RE: Municipality of Bluewater
Class EA for a New Water Storage Facility
Community of Hensall

The Municipality of Bluewater is planning to upgrade water storage facilities in the community of Hensall. Recent investigations established that the existing elevated tank is nearing the end of its service life and also does not provide adequate pressures throughout the community to maintain efficient operation of the water system. As a result, the construction of a new, elevated water storage facility is being considered.

The planning for this project is following the planning process established for Schedule B activities under the Municipal Class Environmental Assessment (Class EA) document. Schedule B projects are approved subject to the completion of a screening process. The purpose of the screening process is to identify any potential environmental impacts associated with the proposal and to plan for appropriate mitigation of any impacts. The process includes consultation with the public, Aboriginal communities, stakeholders and review agencies. This notice is being issued to advise of the start of study investigations. There will be additional opportunities for public input and involvement as the study progresses.

Your organization has been identified as possibly having an interest in the project and we are soliciting your input. Please forward your response to our office by November 24, 2017. If you have any questions or require further information, please contact the undersigned at kvader@bmross.net or by phone at 1-888-524-2641.

Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:hv
Encl.
c.c. Andrew Bicknell, Municipality of Bluewater

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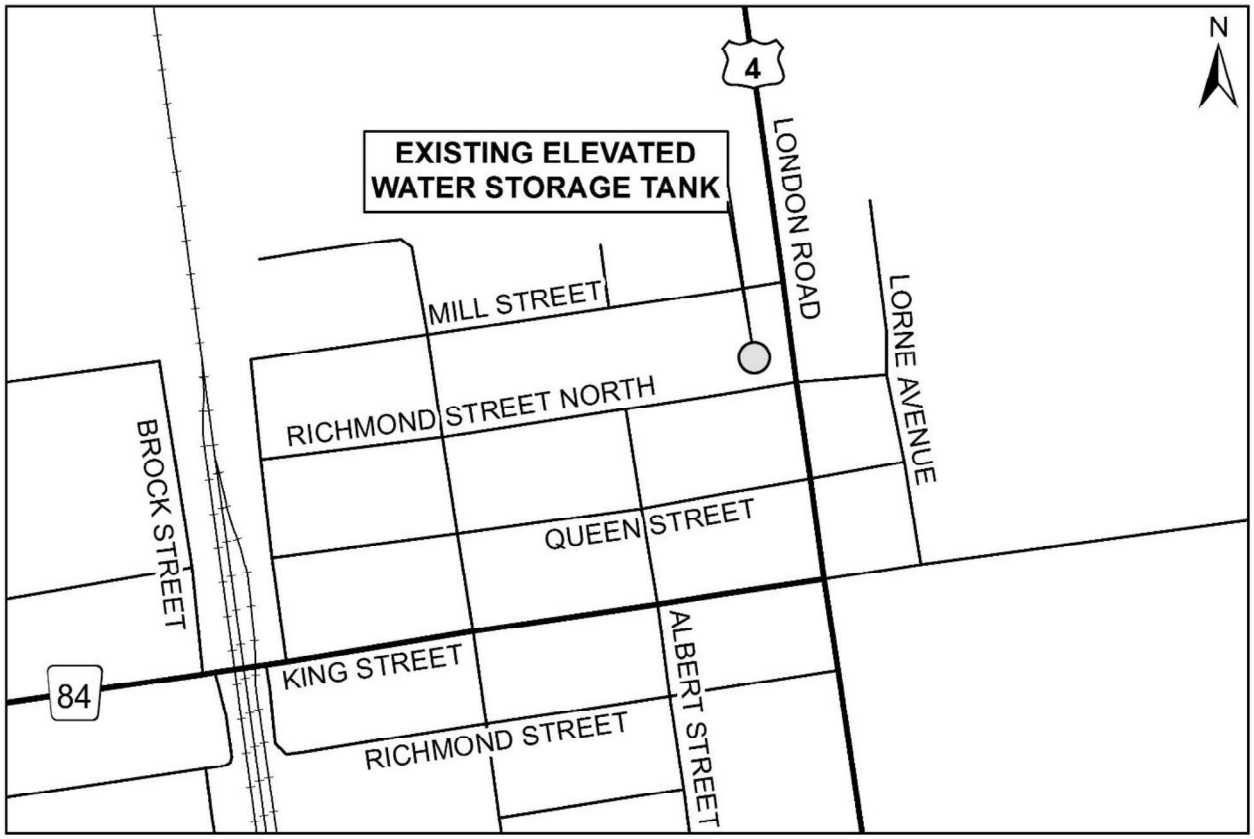
N
4
EXISTING ELEVATED
WATER STORAGE TANK
LONDON ROAD
LORNE AVENUE
MILL STREET
RICHMOND STREET NORTH
BROCK STREET
QUEEN STREET
KING STREET
ALBERT STREET
84
RICHMOND STREET

MUNICIPALITY OF BLUEWATER

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT FOR DEVELOPMENT OF STORMWATER MASTER PLANS (COMMUNITIES OF ZURICH AND HENSALL)

REVIEW AGENCY CIRCULATION LIST

REVIEW AGENCY	INVOLVEMENT
Ministry of the Environment and Climate Change (MOECC) - EA Coordinator	Mandatory Contact
Ministry of Natural Resources and Forestry (Guelph)	Potential Impact on Natural Features
Ministry of Tourism, Culture and Sport (Toronto)	Potential Impact to Heritage Features
Hensall District Co-op 1 Davidson Drive, P.O. Box 219, Hensall ON N0M 1X0	General Information
Thompsons Limited 96 Nelson St, Hensall, ON N0M 1X0	General Information
General Coach 73 Mill St, Hensall, ON N0M 1X0	General Information
County of Huron - Administration Department - Planning & Development Department - Huron County Health Unit	General Information
Ausable Bayfield Conservation Authority	Potential Impact on Natural Features
Hensall Fire Department David Long, Hensall District Chief c/o Municipality of Bluewater 14 Mill Ave, PO Box 250 Zurich, ON N0M 2T0	General Information Water Pressures
Bluewater & Area Chamber of Commerce 75778 Bluewater Hwy Bluewater, ON N0M 1G0	General Information

Kelly Vader

From: Craig Metzger <cmetzger@huroncounty.ca>
Sent: October 31, 2017 4:53 PM
To: Kelly Vader
Subject: Class EA for a New Water Storage Facility in Hensall

Good afternoon, Kelly.
Thank-you for providing notice of the Municipal Class EA for the new water storage facility in Hensall and the request for input from Huron County's Planning & Development Department. While we have no comments at this time, we are interested in being kept informed of the process as it moves forward.
Sincerely,
Craig

Craig Metzger, Senior Planner
Huron County Planning & Development Department
57 Napier Street, Goderich, ON N7A 1W2
519-524-8394, ext. 3235 (Goderich)
519-335-3208 (Howick)
519-236-4351 (Bluewater)
519-524-5677 (fax)

Ministry of the Environment and Climate Change

733 Exeter Road
London ON N6E 1L3
Tel': 519 873-5000
Fax: 519 873-5020

Ministère de l'Environnement et de l'Action en matière de changement climatique

733, rue Exeter
London ON N6E 1L3
Tél.: 519 873-5000
Fax: 519 873-5020

Ontario

November 3rd, 2017

Municipality of Bluewater
P.O. Box 250
14 Mill Avenue
Zurich, Ontario
N0M 2T0

Attention: Mr. Andrew Bicknell, Manager of Public Works

Re: Municipality of Bluewater Class EA for a New Water Storage Facility
Community of Hensall,

Dear Mr. Bicknell:

This letter acknowledges this ministry's receipt of the Notice of Commencement for the above noted project.

It is this ministry's understanding that the Municipality of Bluewater is planning to upgrade water storage facilities in the community of Hensall. Recent investigations reportedly established that the existing elevated tank is nearing the end of its service life and also reportedly does not provide adequate pressures throughout the community to maintain efficient operation of the water system. As a result, the construction of a new, elevated water storage facility is being considered.

As you know, the Class Environmental Assessment (Class EA) planning process includes consultation with interested stakeholders, evaluation of alternatives, assessment of the effects of the proposed works and identification of measures to mitigate any adverse impacts. In addition to consultation with public agencies and the general public, consultation with Aboriginal communities is required.

Aboriginal Consultation

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

Your proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to your proposed project, **the MOECC is delegating the procedural aspects of rights-based consultation to you through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on information you have provided to date and the Crown`s preliminary assessment you are required to consult with the following communities who have been identified as potentially affected by your proposed project:

<table>
<tr><th>Nation</th><th colspan="2">Contact Information</th></tr>
<tr><td>Saugeen First Nation</td><td rowspan="2">Saugeen Ojibway Nation
Environment Office
25 Maadookii Road
Neyaashiinigmiing, ON
N0H 2T0
519-534-5507
Doran Ritchie
Land Use Planning Coordinator
d.ritchie@saugeenojibwaynation.ca
(Please send hard copy to Doran Ritchie)</td><td>Saugeen First Nation
6493 Highway 21 R.R.#1
Southampton, ON N0H 2L0
519-797-2781
Chief Lester Anoquot
lanoquot@saugeenfirstnation.ca
(Email copy to Chief Anoquot)</td></tr>
<tr><td>Chippewas of Nawash Unceded First Nation</td><td>Chippewas of Nawash Unceded First Nation
R.R.#5 Wiarton, ON N0H 2T0
519-534-1689
Chief Gregory Nadjiwon
chiefsdesk@nawash.ca
(Email copy to Chief Nadjiwon)</td></tr>
<tr><td>Historic Saugeen Metis</td><td colspan="2">Historic Saugeen Metis
204 High Street, Box 1492 Southampton, ON N0H 2L0
President, Archie Indoe Other Contact: George Govier Consultation Coordinator
519-483-4000 saugeenmetisadmin@bmts.com</td></tr>
<tr><td>Great Lakes Metis Council</td><td colspan="2">Great Lakes Metis Council
380 9th Street East Owen Sound, ON N4K 1P1 519-370-0435
Other Contact: James Wagar, Consultation Assessment Coordinator
jamesw@metisnation.org and consultations@metisnation.org
(Please send email copies to email addresses listed above)</td></tr>
</table>

Steps that you may need to take in relation to Aboriginal consultation for your proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process" which can be found at the following link:

https://www.ontario.ca/document/consultation-ontarios-environmental-assessment-process

Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments.

You must contact the Director of Environmental Approvals Branch under the following circumstances subsequent to initial discussions with the communities identified by MOECC:

- aboriginal or treaty rights impacts are identified to you by the communities;
- you have reason to believe that your proposed project may adversely affect an aboriginal or treaty right;
- consultation has reached an impasse;
- a Part II Order request or elevation request is expected.

The Director of the Environmental Approvals Branch can be notified either by email with the subject line "Potential Duty to Consult" to EAASIBgen@ontario.ca or by mail or fax at the address provided below:

Email:	EAASIBGen@ontario.ca Subject: Potential Duty to Consult
Fax:	416-314-8452
Address:	Environmental Approvals Branch 135 St. Clair Avenue West, 1st Floor Toronto, ON, M4V 1P5

The MOECC will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play in them.

Source Water Protection

As per the recent amendments to the Municipal Engineers Association (MEA) Class Environmental Assessment parent document approved October 2015, proponents undertaking a Municipal Class EA project must identify early in the process whether a project is occurring within a source water protection vulnerable area. This must be clearly documented in a Project File report or ESR. If the project is occurring in a vulnerable area, then there may be policies in the local Source Protection Plan (SPP) that need to be addressed (requirements under the Clean Water Act). The proponent should contact and consult with the appropriate Conservation Authority/Source Protection Authority (CA/SPA) to discuss potential considerations and policies in the SPP that apply to the project.

Please include a section in the report on Source Water Protection. Specifically, it should discuss whether or not the project is located in a vulnerable area or changes or creates new vulnerable areas, and provide applicable details about the area. If located in a vulnerable area, proponents should document whether any project activities are a prescribed drinking water threat and thus pose a risk to drinking water (this should be consulted on with the appropriate CA/SPA). Where an activity poses a risk to drinking water, the proponent must document and discuss in the Project File Report/ESR how the project adheres to or has regard to applicable policies in the local SPP. If creating or changing a vulnerable area, proponents should document whether any existing uses or activities may potentially be affected by the implementation of source protection policies. This section should then be used to inform and should be reflected in other sections of the report, such as the identification of net positive/ negative effects of alternatives, mitigation measures, evaluation of alternatives etc. As a note, even if the project activities in a vulnerable area are deemed not to be a drinking water risk, there may be other policies that apply and so consultation with the local CA/SPA is important.

Conclusion

Thank you for the opportunity to comment on this project. Please keep this office fully informed of the status of this project as it proceeds through the Class EA process.

Please send all future correspondence with respect to this project to my attention, as I am this ministry's one window contact for this project: Craig Newton, Regional Environmental Planner / Regional EA Coordinator at the address below; email address:craig.newton@ontario.ca; telephone number: 519-873-5014.

A draft copy of the Environmental Study Report should be forwarded to my attention prior to the filing of the final report, allowing a minimum of 30 days for the ministry's technical reviewers to provide comments. Please also forward the Notice of Completion and final ESR to me when completed. Thank you in advance.

Yours truly,

Craig Newton
Regional Environmental Planner / Regional EA Coordinator
Ministry of Environment and Climate Change
733 Exeter Road
London ON, N6E 1L3
519 873-5014

Copy: Ms. Kelly Vader, Environmental Planner, B.M. Ross and Associates Limited, Goderich
Mr. Rick Chappell, District Manager, MOECC Owen Sound District
Mr. Scott Abernethy, Group Leader Surface Water, Water Resources Unit, MOECC SWR
Mr. John Ritchie, Supervisor, MOECC Safe Drinking Water, MOECC Owen Sound

Ministry of Tourism, Culture and Sport

Heritage Program Unit
Programs and Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7
Tel: 416 731 7133
Fax: 416 212 1802

Ministère du Tourisme, de la Culture et du Sport

Unité des programmes patrimoine
Direction des programmes et des services
401, rue Bay, Bureau 1700
Toronto ON M7A 0A7
Tél: 416 314 7133
Téléc: 416 212 1802

Ontario

November 20. 2017 (EMAIL ONLY)

Kelly Vader
Environmental Planner
B.M Ross and Associates Limited
62 North Street,
Goderich, ON N7A2T4
E: kvader@bmross.net

RE: MTCS file #: 0007876
Proponent: Community of Hensall
Subject: Notice of Commencement
New Water Storage Facility
Location: Municipality of Bluewater, Ontario

Dear Ms. Vader:

Thank you for providing the Ministry of Tourism, Culture and Sport (MTCS) with the Notice of Commencement for your project. MTCS's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- Archaeological resources, including land-based and marine;
- Built heritage resources, including bridges and monuments; and,
- Cultural heritage landscapes.

Under the EA process, the proponent is required to determine a project's potential impact on cultural heritage resources.

While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation. Aboriginal communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Aboriginal communities includes a discussion about known or potential cultural heritage resources that are of value to these communities. Municipal Heritage Committees, historical societies and other local heritage organizations may also have knowledge that contributes to the identification of cultural heritage resources.

Archaeological Resources
Your EA project may impact archaeological resources and you should screen the project with the MTCS *Criteria for Evaluating Archaeological Potential* to determine if an archaeological assessment is needed. MTCS archaeological sites data are available at *archaeology@ontario.ca*. If your EA project area exhibits archaeological potential, then an archaeological assessment (AA) should be undertaken by an archaeologist licenced under the *OHA*, who is responsible for submitting the report directly to MTCS for review.

Built Heritage and Cultural Heritage Landscapes
The MTCS *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* should be completed to help determine whether your EA project may impact cultural heritage resources. The Clerk/s for the municipality of Bluewater can provide information on property registered or designated under the *Ontario Heritage Act*. Municipal Heritage Planners can also provide information that will assist you in completing the checklist.

If potential or known heritage resources exist, MTCS recommends that a Heritage Impact Assessment (HIA), prepared by a qualified consultant, should be completed to assess potential project impacts. Our Ministry's *Info Sheet #5: Heritage Impact Assessments and Conservation Plans* outlines the scope of HIAs. Please send the HIA to MTCS and the Municipality of Bluewater for review, and make it available to local organizations or individuals who have expressed interest in review.

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

Thank-you for consulting MTCS on this project: please continue to do so through the EA process, and contact me for any questions or clarification.

Sincerely,

Brooke Herczeg
Heritage Planner
Brooke.Herczeg@Ontario.ca

Copied to: Andrew Bicknell
Municipality of Bluewater

Ontario

Ministry of Tourism, Culture and Sport

Programs & Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Criteria for Evaluating Archaeological Potential

A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area may contain archaeological resources i.e., have archaeological potential
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Archaeological assessment

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a licensed consultant archaeologist (see page 4 for definitions) to undertake an archaeological assessment.

The assessment will help you:

- identify, evaluate and protect archaeological resources on your property or project area
- reduce potential delays and risks to your project

Note: By law, archaeological assessments **must** be done by a licensed consultant archaeologist. Only a licensed archaeologist can assess – or alter – an archaeological site.

What to do if you:

- **find an archaeological resource**

  If you find something you think may be of archaeological value during project work, you must – by law – stop all activities immediately and contact a licensed consultant archaeologist

  The archaeologist will carry out the fieldwork in compliance with the *Ontario Heritage Act* [s.48(1)].

- **unearth a burial site**

  If you find a burial site containing human remains, you must immediately notify the appropriate authorities (i.e., police, coroner's office, and/or Registrar of Cemeteries) and comply with the *Funeral, Burial and Cremation Services Act.*

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – separate checklist
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages when completing this form.

Project or Property Name

Hensall Water Tower Class EA

Project or Property Location (upper and lower or single tier municipality)

County of Huron, Municipality of Bluewater

Proponent Name

Municipality of Bluewater

Proponent Contact Information

Mr. Andrew Bicknell, P. Eng., Public Works Manager

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	☐	☑

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

	Yes	No
2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS?	☐	☑

If Yes, do **not** complete the rest of the checklist. You are expected to follow the recommendations in the archaeological assessment report(s).

The proponent, property owner and/or approval authority will:

- summarize the previous assessment
- add this checklist to the project file, with the appropriate documents that demonstrate an archaeological assessment was undertaken e.g., MTCS letter stating acceptance of archaeological assessment report

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., environmental assessment document
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Are there known archaeological sites on or within 300 metres of the property (or the project area)?	☐	☑
4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property (or project area)?	☐	☑
5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or project area)?	☐	☑
6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)?	☐	☑
7. Has the property (or project area) been recognized for its cultural heritage value?	☐	☑

If Yes to any of the above questions (3 to 7), do **not** complete the checklist. Instead, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment of your property or project area.

If No, continue to question 8.

	Yes	No
8. Has the entire property (or project area) been subjected to recent, extensive and intensive disturbance?	☐	☑

If Yes to the preceding question, do **not** complete the checklist. Instead, please keep and maintain a summary of documentation that provides evidence of the recent disturbance.

An archaeological assessment is not required.

If No, continue to question 9.

	Yes	No
9. Are there present or past water sources within 300 metres of the property (or project area)?	☐	☑

If Yes, an archaeological assessment is required.

If No, continue to question 10.

	Yes	No
10. Is there evidence of two or more of the following on the property (or project area)?	☐	☑

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

If Yes, an archaeological assessment is required.

If No, there is low potential for archaeological resources at the property (or project area).

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., under the *Environmental Assessment Act, Planning Act* processes
- maintained by the property owner, proponent or approval authority

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62 North Street, Goderich, ON N7A 2T4
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www.bmross.net

File No. 17277

October 24, 2017

'FN Community'

RE: Municipality of Bluewater
Class EA for a New Water Storage Facility
Community of Hensall

The Municipality of Bluewater is planning to upgrade water storage facilities in the community of Hensall. Recent investigations established that the existing elevated tank is nearing the end of its service life and also does not provide adequate pressures throughout the community to maintain efficient operation of the water system. As a result, the construction of a new, elevated water storage facility is being considered.

The planning for this project is following the planning process established for Schedule B activities under the Municipal Class Environmental Assessment (Class EA) document. Schedule B projects are approved subject to the completion of a screening process. The purpose of the screening process is to identify any potential environmental impacts associated with the proposal and to plan for appropriate mitigation of any impacts. The process includes consultation with the public, Aboriginal communities, stakeholders and review agencies. This notice is being issued to advise of the start of study investigations. There will be additional opportunities for public input and involvement as the study progresses.

Your community has been identified as possibly having an interest in this project. For your convenience, a response form is enclosed along with a self-addressed stamped envelope. If you have any questions on this matter or require further information, please contact the undersigned at 519-524-2641 or by e-mail at kvader@bmross.net.

Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:hv
Encl.
c.c. Andrew Bicknell, Municipality of Bluewater

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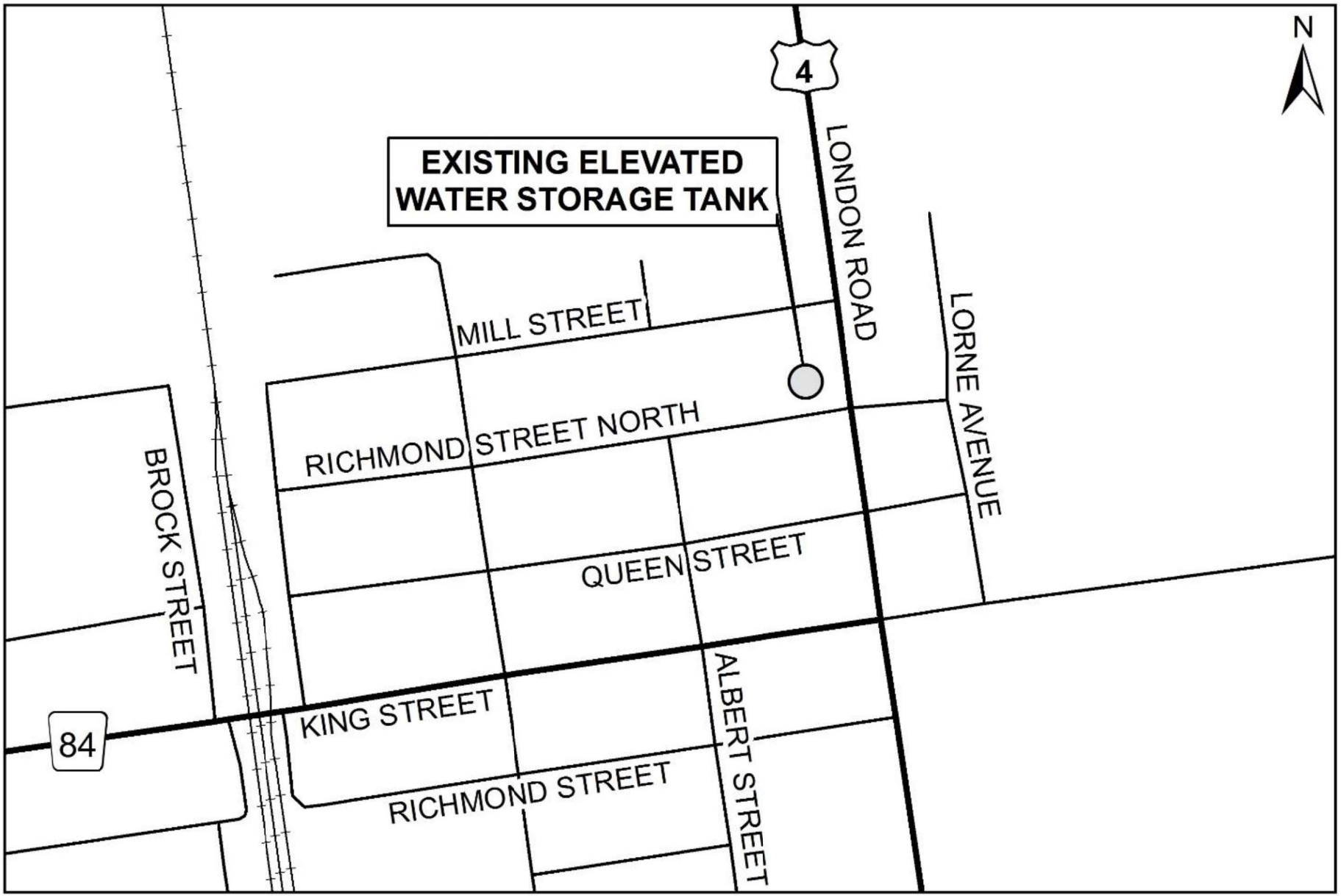
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4
EXISTING ELEVATED
WATER STORAGE TANK
LONDON ROAD
LORNE AVENUE
MILL STREET
RICHMOND STREET NORTH
BROCK STREET
QUEEN STREET
KING STREET
ALBERT STREET
84
RICHMOND STREET

MUNICIPALITY OF BLUEWATER
(COMMUNITY OF HENSALL)

CLASS ENVIRONMENTAL ASSESSMENT
FOR A NEW WATER STORAGE FACILITY
PROJECT 17277

ABORIGINAL CIRCULATION LIST

Chippewas of Kettle and Stony Point First Nation
Chief Thomas Bressette
6247 Indian Lane
RR #2 Forest, Ontario N0N 1J0
Ph: 519-786-2125

Aamjiwnaang First Nation
Chief Joanne Rogers
Aamjiwnaang Administration Office
978 Tashmoo Ave.
Sarnia, ON N7T 7H5
Ph: 519-336-8410

Chippewas of the Thames First Nation
Chief Myeengun Henry
320 Chippewa Road, Muncey, ON
N0L 1Y0
519-289-5555

Oneida Nation of the Thames
Chief Randall Phillips
2212 Elm Ave
Southwold, Ontario
N0L 2G0
Ph: 519-652-3244

Historic Saugeen Métis
George Govier, Consultation Coordinator
204 High Street, Box 1492
Southampton, Ontario
N0H 2L0

Métis Nation of Ontario
500 Old St. Patrick St., Unit 3
Ottawa, ON K1N 9G4

Response Form

Project Name: Class EA for new Hensall Water Tower

Project Description: The Municipality of Bluewater is planning to replace the existing water tower in Hensall that is at the end of its service life and undersized for the community's current needs.

Project Location: Community of Hensall, Municipality of Bluewater, County of Huron

(Key Plan of Project Location attached)

Please Detach and Return in Envelope Provided

Name of Aboriginal Community: _____

Please check appropriate box

☐ **Please send additional information on this project.**

☐ **We would like to meet with representatives of this project.**

☐ **We have no concerns with this project and do not wish to be consulted further.**

Kelly Vader

From: Lands and Resources Consultation Coordinator <saugeenmetisadmin@bmts.com>
Sent: November 1, 2017 10:10 AM
To: Kelly Vader
Subject: Request for Comments - Bluewater (Hensall) Class EA for New Water Storage Facility

Your File: 17277
Our File: Bluewater Municipality (Projects)

Good Morning Kelly,

The Historic Saugeen Metis (HSM) Lands, Resources, and Consultation Department has reviewed the relevant documents and have no objection or opposition to the proposed development, land re-designation, rezoning, land severance, Official plan and/or Zoning By-law Amendments.

We do not require any further information.

I trust this may be helpful.

Regards,

George Govier

Co-ordinator Lands, Resources, and Consultation

Historic Saugeen Metis
204 High Street
Southampton, Ontario
N0H 2L0
Direct Line (519) 483-4001
Fax (519) 483-4002
Email saugeenmetisadmin@bmts.com

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Job No. 17277

MUNICIPALITY OF BLUEWATER
CLASS EA FOR NEW WATER TOWER
(COMMUNITY OF HENSALL)

Stakeholder Meeting Notes
November 20, 2018

Group: Hensall District Co-op (HDC)
Location: HDC Office Building
Time Started: 10:00 a.m. **Time Ended:** 10:45 a.m.

In Attendance: Andrew Bicknell (Bluewater)

George Keller (HDC)
Joey Groot (HDC)
Brad Chandler (HDC)

Bruce Potter (BMROSS)
Kelly Vader (BMROSS)

Meeting Details:

Bruce Potter began the meeting by thanking Mr. Keller for meeting with us and then briefly discussed the purpose of the meeting; to review possible water tower locations on or adjacent to the HDC site. He then noted that Kelly Vader would explain the Class EA process that is being undertaken.

Kelly Vader explained the Class EA process and what steps have been completed to date and how the proposed tower site fits into the process. She also explained that a water model was being developed to be used to compare the different tower locations from a technical perspective.

Kelly noted that a Class EA was previously completed in Hensall for a new water tower which identified the site on HDC property. The EA was completed a number of years ago, before municipal amalgamations, when Hensall was still serviced by a well supply. Kelly showed a map that illustrated several possible tower locations, including the former site identified through the previous EA.

Bruce added that the site was identified before HDC purchased the Caldwell Farm, where the site is located, and that he understood it might not be the best location now for the tower, given HDC's plans for the area. He explained that it was preferred to locate the new tower as close as possible to the old tower location in order to minimize the amount of large diameter watermain that would need to be constructed to connect to the new location.

George Keller indicated that the proposed tower site on HDC property is part of a site expansion plan and will be used for a stormwater management facility, based on the most recent site plan.

George also noted that HDC was experiencing water pressure problems in their office building and that OCWA had been on site recently to look into the problem.

Bruce asked if HDC had experienced water pressure problems previously and were the current pressures in the distribution system sufficient for their needs. George indicated that the system pressures were not sufficient and that they had installed a booster pumping station several years ago in order to provide the pressures that were needed for their operations.

The group reviewed the map of possible tower locations to see if other sites might be available.

Andrew Bicknell asked if the tower could be located at the easterly extent of Richmond Street North, on future development lands. Bruce indicated that the location was a possibility and was located close to the existing tower.

Kelly noted that it would be preferred to locate the tower in an industrial or commercial area, rather than a residential area, to minimize concerns from adjacent property owners.

Bruce asked who owned the properties east and west of Soldan Street on the north side of Mill Street.

George indicated that HDC owned most of the properties west of Soldan, except for a parking lot owned by General Coach. HDC also owned the parcel on the northeast corner of Soldan, as they have plans to possibly widen the street in the future to make it easier for large trucks accessing their facility. General Coach owns the property immediately norther and east of the corner. He also explained that the area at the west end of these properties might be used for a new office building at some point in the future.

The group reviewed several of the locations near the intersection of Soldan and Mill but none of the HDC sites were large enough to accommodate the tower without using some land owned by General Coach.

Bruce indicated that BMROSS would confirm the minimum size needed for a new storage tower.

HDC indicated that they would consider whether there were other possible locations on their site that might work for a tower.

The meeting concluded at 10:45 a.m.

Meeting Notes Prepared by:

Kelly Vader, Environmental Planner
B. M. ROSS AND ASSOCIATES LIMITED

KV:

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www.bmross.net

Job No. 17277

MUNICIPALITY OF BLUEWATER
CLASS EA FOR NEW WATER TOWER
(COMMUNITY OF HENSALL)

Stakeholder Meeting Notes
December 6, 2017

Group: General Coach
Location: General Coach Office Building
Time Started: 10:00 a.m. **Time Ended:** 10:45 a.m.

In Attendance: Andrew Bicknell (Bluewater)

Roger Faulkner (General Coach)

Bruce Potter (BMROSS)
Kelly Vader (BMROSS)

Meeting Details:

Bruce Potter began the meeting by thanking Mr. Faulkner for meeting with us and then briefly discussed the purpose of the meeting; to review possible water tower locations on or adjacent to the existing tower site at General Coach. He then noted that Kelly Vader would explain the Class EA process that is being undertaken.

Kelly Vader explained the Class EA process and what steps have been completed to date and how the proposed tower site fits into the process. She also explained that BMROSS & Bluewater had met previously with staff from HDC to consider possible tower sites on their properties.

Kelly noted that a Class EA was previously completed in Hensall for a new water tower which identified a site on HDC property. The EA was completed a number of years ago, before municipal amalgamations, when Hensall was still serviced by a well supply. Kelly showed a map that had identified several possible tower locations, including the former site identified through the previous EA.

Bruce added that the site was identified before HDC purchased the Caldwell Farm, where the possible site is located, and that it is no longer suitable due to new plans for the area by HDC. An adjacent site, owned by General Coach, would also be a good location, if it were available for purchase. He explained that it was preferred to locate the new tower as close as possible to the old tower location in order to minimize the amount of large diameter watermain that would need to be constructed to connect to the new site.

Roger indicated that the property located immediately south of the former tower site is not available. He has plans to construct a new building on the site to expand his facilities. He added that the property located west of Soldan Street, which is currently used as a parking lot, would be a better location.

Roger suggested that a joint meeting be arranged with himself, HDC, Bluewater and BMROSS to look at possible sites on the north side of Mill Street, west of Soldan Street.

Bruce said that BMROSS could prepare a site plan for the area to confirm the size and dimensions needed for the site.

Roger indicated the dates that he would be available to meet and Kelly agreed to make the arrangements with HDC.

The meeting concluded at 10:30 a.m.

Meeting Notes Prepared by:

Kelly Vader, Environmental Planner
B. M. ROSS AND ASSOCIATES LIMITED

KV:

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Job No. 17277

MUNICIPALITY OF BLUEWATER
CLASS EA FOR NEW WATER TOWER
(COMMUNITY OF HENSALL)

Stakeholder Meeting Notes
January 2, 2018

Group: Hensall District Co-op (HDC) and General Coach
Location: General Coach Office Building
Time Started: 1:00 p.m. **Time Ended:** 1:40 p.m.

In Attendance: Andrew Bicknell (Bluewater)

Joey Groot (HDC)

Roger Faulkner (General Coach)

Steve Burns (BMROSS)
Kelly Vader (BMROSS)

Meeting Details:

Steve Burns began the meeting by thanking everyone for attending and introducing himself to everyone in attendance.

Kelly Vader then provided a brief background regarding the previous meetings held with HDC and General Coach to look for possible Water Tower sites in the vicinity of the existing tower. She explained that following the meeting held on December 6th with General Coach a possible location had been identified west of Soldan Street on the north side of Mill Street.

Kelly indicated that a proposed site plan had been prepared for the possible site that showed the width and depth needed to construct a new tower at that location. A minimum depth of 30 metres is needed on one side for construction staging and so that a crane could be set up to raise the tower.

Roger Faulkner explained that the parking lot is currently extraneous to his needs and that he is proposing a property exchange with HDC to help facilitate his plans to construct a new building on lands owned by General Coach on the east side of Soldan Street. He would like to exchange the property located at the northeast corner of Soldan and Mill Street, currently owned by HDC, with the west half of the parking lot site. After the tower is constructed, this area could be utilized by HDC as long as it is available in the long-term should repairs be needed to the tower.

Joey Groot indicated that the arrangement might be possible however he would need to investigate it further and consider how it might impact future HDC operations.

Andrew Bicknell asked how the timing for the Class EA will affect the site selection process.

Kelly explained that the next step in the Class EA process is to hold a public meeting in late February or March to review possible tower locations. It would be helpful to indicate at the public meeting the sites that had been considered as well as indicating a preferred location. She said it would be better to have some confidence that the parking lot site will work for all parties before taking it to the public as the preferred site.

Steve suggested that a Memorandum of Understanding (MOU) regarding the various property transfers and related costs, could be signed between the three parties – HDC, General Coach and Bluewater, before going to the public with the proposed tower site.

Kelly added that identifying a site through the Class EA process does not commit Bluewater to move forward with that location, however it would be preferred to have some level of confidence in the location before identifying it formally for public review and input.

Roger suggested that he and Joey meet soon to discuss details further. Joey agreed to this approach.

Kelly asked Joey if HDC still had plans to possibly widen Soldan Street at some point in the future to better facilitate truck traffic in and out of their site? Joey confirmed that widening of Soldan was a possibility and that he would want to ensure that the proposed tower would not prevent a future widening.

Kelly suggested that BMROSS could determine how much land would be needed to accommodate the widening and daylighting at the corner and whether the existing road allowance was wide enough.

Andrew Bicknell indicated that he would need to discuss the possible location with Bluewater staff and review with Council before confirming that the site was suitable.

Roger asked how quickly a new tower could be built once the Class EA process was completed.

Steve Burns indicated that it could be several years before the project is implemented, however he would recommend that Bluewater acquire the preferred tower location in the short term so that the site is available when funding is obtained.

Andrew indicated that timing was dependent on funding and that Council would likely want to seek grant funding assistance to help with the costs. He added that, following recent engineering evaluations of the existing tower, a report was taken to Council in the Fall of 2017 and Council was advised of significant needs with the aging tower. Council will see recommendations from Staff of then need to continue to move forward toward replacing the water tower.

Roger added that he had safety concerns with the existing tower and wanted Bluewater to address these concerns as soon as possible to prevent future incidents with youth climbing onto the structure.

Andrew agreed that Bluewater planned to address these concerns.

Steve asked HDC and General Coach to provide BMROSS with fire pressure and flow requirements for each of their sites, if that information is available.

The meeting concluded at 1:40 p.m.

Meeting Notes Prepared by:

Kelly Vader, Environmental Planner

B. M. ROSS AND ASSOCIATES LIMITED

Municipal Class EA for Hensall Water Tower

Bluewater Heritage Committee Meeting

April 10, 2018

Municipality of Bluewater

BMROSS engineering better communities

Agenda

- Background
- Class EA Process/Requirements
- Ministry of Tourism, Culture and Sport
- Input from Specialists
- Other Facilities
- Questions

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engineering better communities

Hensall Water Tower Class EA

- Hensall Tower Inspection (June 17, 2015)
- Class EA Initiated (October 2017)
- Initial Consultation Phase (October-December)
  - Feedback from Agencies
  - Feedback from Industries
- Review of three possible Tower Locations
- Memo to Bluewater Recommending a Location

BMROSS
engineering better communities

Possible Tower Locations

engineering better communities

Class EA Process

- When completing a Class EA we are required to inventory all aspects of the Environment, including:
  - Natural Environment/Natural Heritage Features
    - Vegetation, Significant Species, Significant Natural Areas
  - Social Environment
    - Existing Communities, Aesthetics
  - Cultural Environment
    - Archaeological Resources
    - Built Heritage Resources
  - Economic Environment
    - Preliminary Cost Estimates
    - Operating Costs/Property Costs

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engineering better communities

Class EA Process - Consultation

- Consultation must be undertaken with:
  - General Public
    - Adjacent Property Owners/Stakeholders/ Community
  - Review Agencies
    - Select List based on Project Scope
  - Aboriginal Communities
    - First Nation Communities
    - Metis Communities

BMROSS
engineering better communities

Feedback Received from MTCS

- Ministry of Tourism Culture and Sport:

Archaeological Resources
Your EA project may impact archaeological resources and you should screen the project with the MTCS *Criteria for Evaluating Archaeological Potential* to determine if an archaeological assessment is needed. MTCS archaeological sites data are available at archaeology@ontario.ca. If your EA project area exhibits archaeological potential, then an archaeological assessment (AA) should be undertaken by an archaeologist licenced under the *OHA*, who is responsible for submitting the report directly to MTCS for review.

Built Heritage and Cultural Heritage Landscapes
The MTCS *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* should be completed to help determine whether your EA project may impact cultural heritage resources. The Clerk/s for the municipality of Bluewater can provide information on property registered or designated under the *Ontario Heritage Act*. Municipal Heritage Planners can also provide information that will assist you in completing the checklist.

BMROSS
engineering better communities

Feedback Received from MTCS

- Built Heritage Checklist

Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	☐	☑
b. has or is adjacent to a known burial site and/or cemetery?	☐	☑
c. is in a Canadian Heritage River watershed?	☐	☑
d. contains buildings or structures that are 40 or more years old?	☑	☐

Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	☐	☑
b. has a special association with a community, person or historical event?	☐	☑
c. contains or is part of a cultural heritage landscape?	☐	☑

If Yes to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

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Feedback Received from MTCS

- Built Heritage Checklist

Part A: Screening for known (or recognized) Cultural Heritage Value

2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

Note: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

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Hensall Tower

- Constructed in 1935
- Moved to Hensall in the 1946
- Inspection in 2015 identified deficiencies that would cost approximately $277,000 to repair
- Existing tower is too low and too small to supply sufficient pressures for the community
- Property owner has safety concerns with tower and wants it removed.

Does it have Heritage Value ?

- Landmark Structures – John Miller
  - Standard Multi-Leg Structure
  - Not aware of Anything Unusual or Different about the Hensall Tower
  - Aware of Hundreds of Similar structures

Next Steps

- Need a letter from the Bluewater Heritage Committee that can be referenced in the Class EA Report
- Report going to Council soon regarding recommendations on a preferred site for new Tower
- Decommissioning of Existing Tower would occur after new tower constructed

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Questions?

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MUNICIPALITY OF BLUEWATER

NOTICE OF PUBLIC INFORMATION CENTRE

CLASS ENVIRONMENTAL ASSESSMENT FOR A NEW WATER STORAGE FACILITY (COMMUNITY OF HENSALL)

PUBLIC INFORMATION CENTRE

The Municipality of Bluewater is planning to upgrade water storage facilities in the community of Hensall. Recent investigations established that the existing elevated tank is nearing the end of its service life and also does not provide adequate pressures throughout the community to maintain efficient operation of the water system. As a result, the construction of a new, elevated water storage facility is being considered.

A Public information session has been scheduled to present details of the Class EA investigations to local residents in order to obtain their feedback. A preferred location for a new elevated tank has been identified in the vicinity of the existing water tower; public input is being sought before the finalizing the plans. Representatives of the Municipality and the Project Engineers will be in attendance.

Public Meeting

DATE:	**Wednesday July 25, 2018**
LOCATION:	**Hensall Arena Hall (157 Oxford St. W.)**
TIME:	**6:00 pm – 8:00 pm**
PRESENTATION:	**6:30 pm**

Municipality of Bluewater

BMROSS engineering better communities

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street, Goderich, ON N7A 2T4
p. (519) 524-2641 • f. (519) 524-4403
www.bmross.net

File No. 17277

July 10, 2018

'Agency'

RE: Municipality of Bluewater
Class EA for a New Water Storage Facility
Community of Hensall

The Municipality of Bluewater initiated a Class Environmental Assessment process in October 2017 to upgrade water storage facilities in the community of Hensall. Recent investigations established that the existing elevated tank is nearing the end of its service life and also does not provide adequate pressures throughout the community to maintain efficient operation of the water system. As a result, the construction of a new, elevated water storage facility is being considered.

As a result of investigations completed to date, including a detailed site review process and WaterCAD modelling of the existing watermain distribution system, a preferred location for a new elevated storage facility has been identified. A Public Information meeting has been scheduled to present details of the Class EA investigations to the general public, project stakeholders, Aboriginal communities and review agencies in order to obtain their feedback before the details are finalized. Representatives of the Municipality and the Project Engineers will be in attendance. Details of the meeting are included below.

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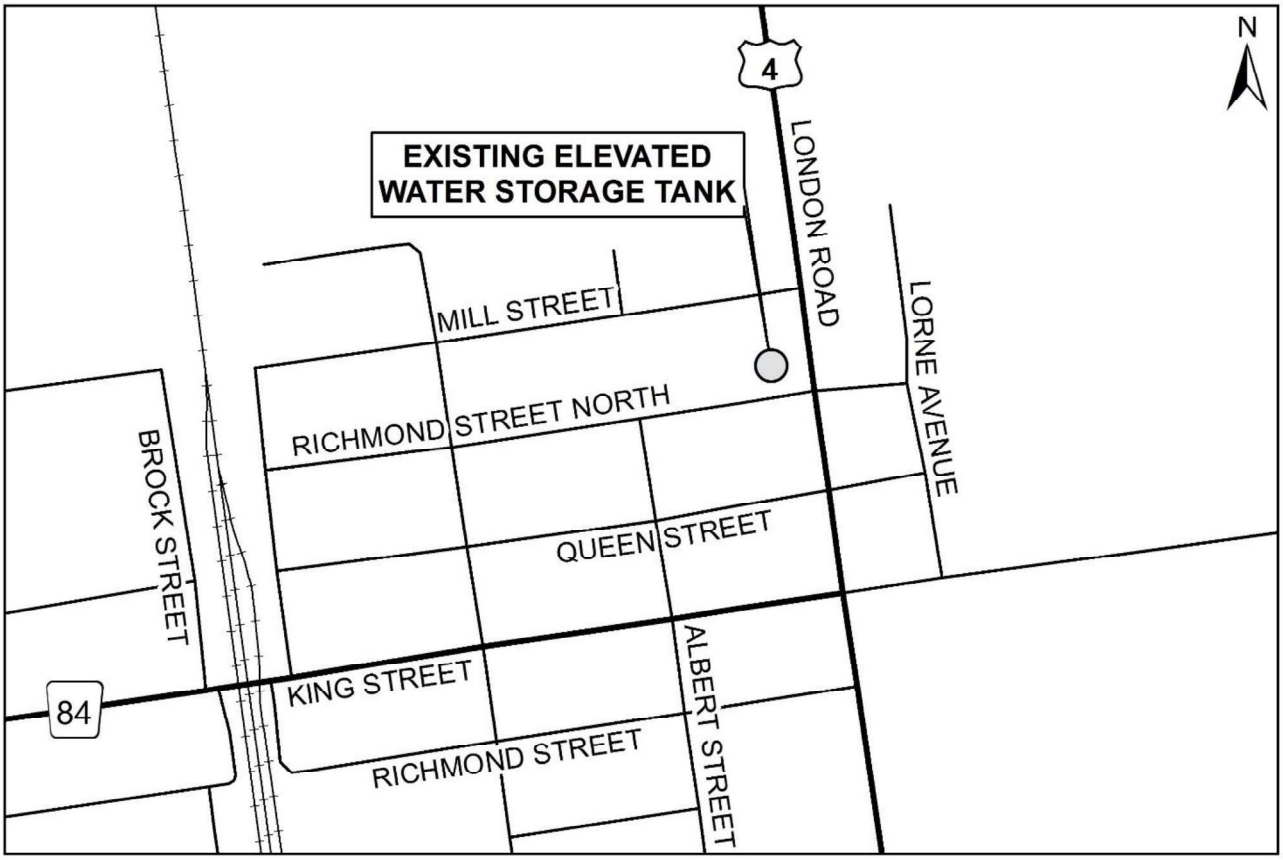
Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:hv
Encl.
c.c. Andrew Bicknell, Municipality of Bluewater

Key Plan: Community of Hensall, Municipality of Bluewater



MUNICIPALITY OF BLUEWATER

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT FOR DEVELOPMENT OF STORMWATER MASTER PLANS (COMMUNITIES OF ZURICH AND HENSALL)

REVIEW AGENCY CIRCULATION LIST: Project Update Letter

REVIEW AGENCY	INVOLVEMENT
Ministry of the Environment and Climate Change (MOECC) - EA Coordinator	Mandatory Contact
Ministry of Natural Resources and Forestry (Guelph)	Potential Impact on Natural Features
Ministry of Tourism, Culture and Sport (Toronto)	Potential Impact to Heritage Features
Hensall District Co-op 1 Davidson Drive, P.O. Box 219, Hensall ON N0M 1X0	General Information
Thompsons Limited 96 Nelson St, Hensall, ON N0M 1X0	General Information
General Coach 73 Mill St, Hensall, ON N0M 1X0	General Information
County of Huron - Administration Department - Planning & Development Department - Huron County Health Unit	General Information
Ausable Bayfield Conservation Authority	Potential Impact on Natural Features
Hensall Fire Department David Long, Hensall District Chief c/o Municipality of Bluewater 14 Mill Ave, PO Box 250 Zurich, ON N0M 2T0	General Information Water Pressures
Bluewater & Area Chamber of Commerce 75778 Bluewater Hwy Bluewater, ON N0M 1G0	General Information

MUNICIPALITY OF BLUEWATER
(COMMUNITY OF HENSALL)

CLASS ENVIRONMENTAL ASSESSMENT
FOR A NEW WATER STORAGE FACILITY
PROJECT 17277

ABORIGINAL CIRCULATION LIST: Project Update Letter

Chippewas of Kettle and Stony Point First Nation
Chief Thomas Bressette
6247 Indian Lane
RR #2 Forest, Ontario N0N 1J0
Ph: 519-786-2125

Aamjiwnaang First Nation
Chief Joanne Rogers
Aamjiwnaang Administration Office
978 Tashmoo Ave.
Sarnia, ON N7T 7H5
Ph: 519-336-8410

Chippewas of the Thames First Nation
Chief Myeengun Henry
320 Chippewa Road, Muncey, ON
N0L 1Y0
519-289-5555

Oneida Nation of the Thames
Chief Randall Phillips
2212 Elm Ave
Southwold, Ontario
N0L 2G0
Ph: 519-652-3244

Historic Saugeen Métis
George Govier, Consultation Coordinator
204 High Street, Box 1492
Southampton, Ontario
N0H 2L0

Métis Nation of Ontario
Suite 1100 – 66 Slater Street
Ottawa, ON K1P 5H1

Chief Gregory Nadjiwon
Chippewas of Nawash, Unceded First Nation
RR #5
Wiarton, ON N0H 2T0

Chief Lester Anoquo
Chippewas of Saugeen First Nation
Hwy. 21, R.R. #1
Southampton, ON N0H 2L0

Peter Coture, President
Great Lakes Metis Council
380 9th Street East
Owen Sound, ON N4K 1P1

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File No. 17277

July 11, 2018

'First Nation'

RE: Municipality of Bluewater
Class EA for a New Water Storage Facility
Community of Hensall

The Municipality of Bluewater initiated a Class Environmental Assessment process in October 2017 to upgrade water storage facilities in the community of Hensall. Recent investigations established that the existing elevated tank is nearing the end of its service life and also does not provide adequate pressures throughout the community to maintain efficient operation of the water system. As a result, the construction of a new, elevated water storage facility is being considered.

As a result of investigations completed to date, including a detailed site review process and WaterCAD modelling of the existing watermain distribution system, a preferred location for a new elevated storage facility has been identified. A Public Information meeting has been scheduled to present details of the Class EA investigations to the general public, project stakeholders, Aboriginal communities and review agencies in order to obtain their feedback before the details are finalized. Representatives of the Municipality and the Project Engineers will be in attendance. Details of the meeting are included below.

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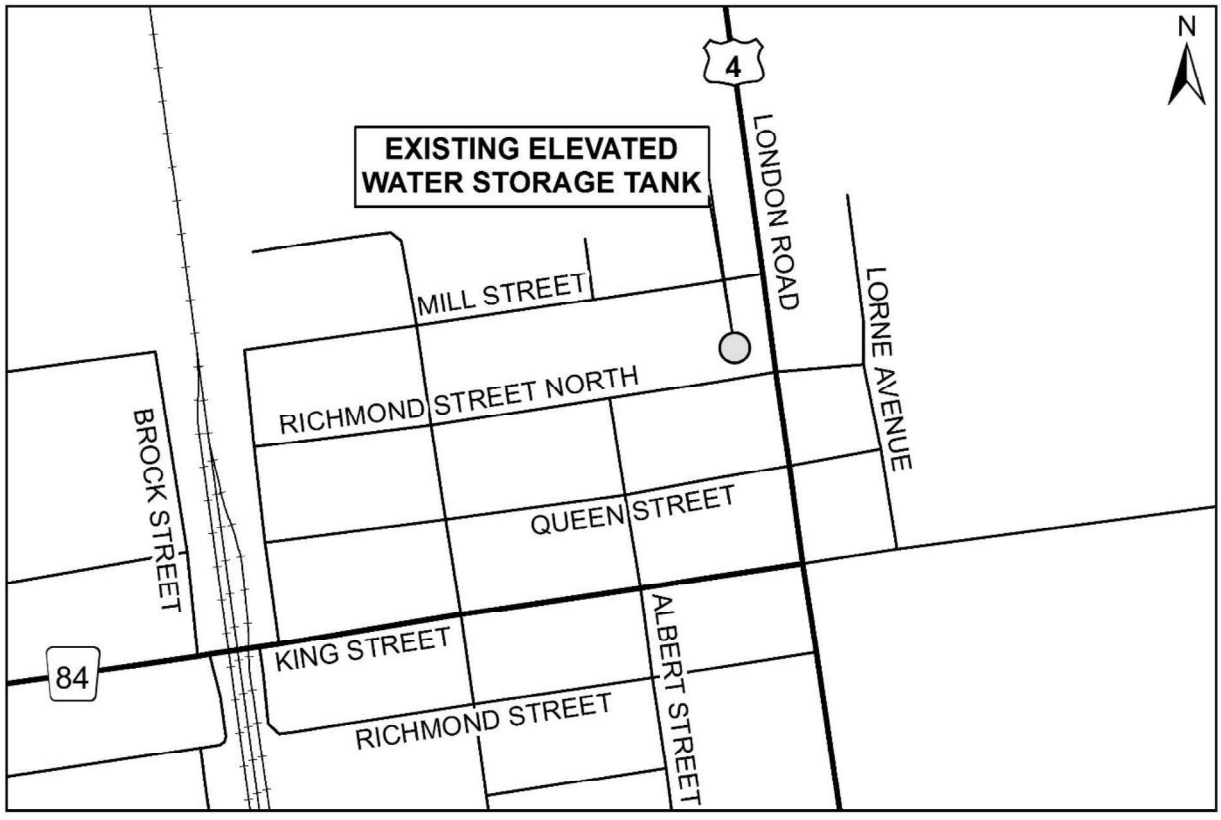
Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:hv
Encl.
c.c. Andrew Bicknell, Municipality of Bluewater

Key Map: Community of Hensall, Municipality of Bluewater



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62 North Street, Goderich, ON N7A 2T4
p. (519) 524-2641 • f. (519) 524-4403
www.bmross.net

File No. 17277

July 12, 2018

Hensall District Co-op
1 Davidson Drive
P.O. Box 219
Hensall ON N0M 1X0

RE: Municipality of Bluewater
Class EA for a New Water Storage Facility
Community of Hensall

The Municipality of Bluewater initiated a Class Environmental Assessment process in October 2017 to upgrade water storage facilities in the community of Hensall. Recent investigations established that the existing elevated tank is nearing the end of its service life and also does not provide adequate pressures throughout the community to maintain efficient operation of the water system. As a result, the construction of a new, elevated water storage facility is being considered.

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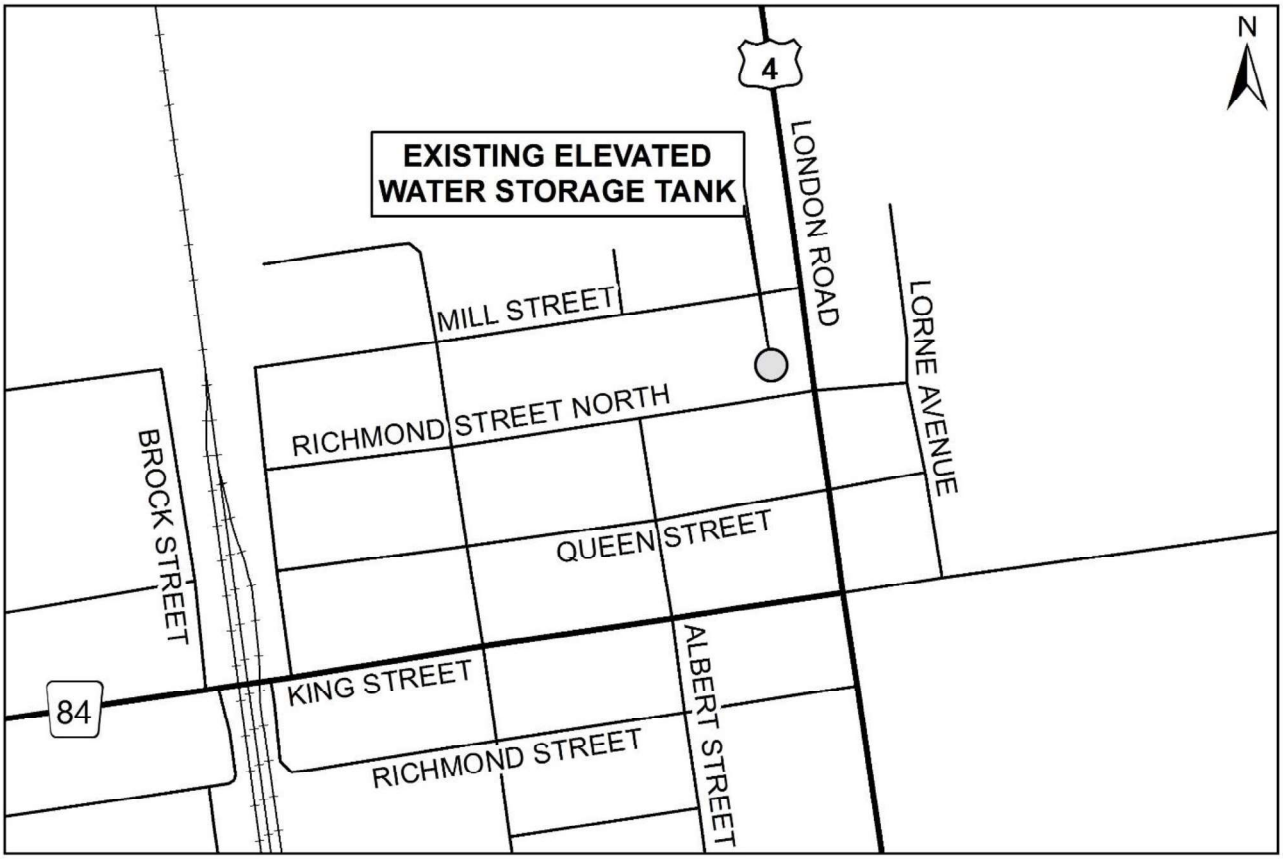
Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:es
c.c. Andrew Bicknell, Municipality of Bluewater

Key Plan: Community of Hensall, Municipality of Bluewater



CLASS EA FOR HENSALL WATER STORAGE

Public Information Meeting

July 25, 2018

Municipality of Bluewater

BMROSS engineering better communities

Agenda

- Project Background
- Class EA Process
- The Problem
- Alternative Solutions
  - Facilities
  - Sites
- Scoring System
- Scoring Outcome
- Next Steps

Project Background

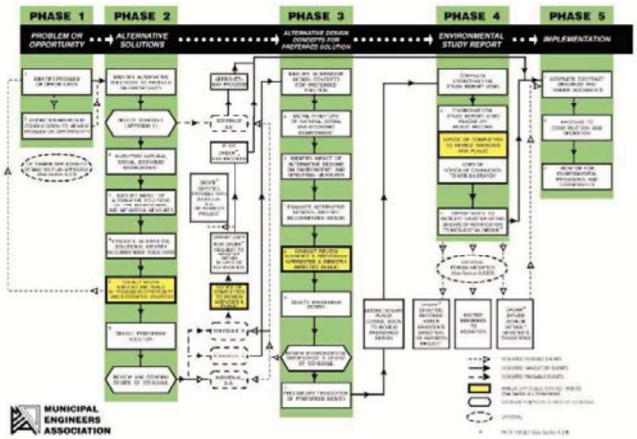
- EA initiated in October 2017 to investigate solutions to problems with current water storage facilities
- Current water storage is an elevated tank located at General Coach and in-ground reservoir on York St.
- Elevated tank constructed in 1935 – moved to Hensall in 1965. Total volume for storage is 455m^3
- 2015 tank inspection by Landmark Municipal Services raised issues concerning corrosion with the interior and safety issues with the tank exterior. Previous studies had confirmed that the tank was too low and too small to be effective.

Hensall water system

Municipal Class Environmental Assessment (Class EA)

- Planning and Design Process for Municipal Water, Wastewater and Road Projects
- Conducted to Evaluate the Potential Impacts of Municipal Projects and Impact Mitigation
- Involves Consultation with the Public, Aboriginal Communities, Regulatory Agencies, Adjacent Property Owners
- Requires Consideration of Natural, Social, Cultural, Economic and Built Environments

Class EA Study Phases



The Problem

- *The existing water storage facility, servicing the community of Hensall, is not adequate. Investigations have established that the structure is both too small and too low to provide adequate pressures throughout the community and to maintain efficient operation of the water system. Furthermore, the facility is over 80 years old and requires significant repairs to maintain system functions.*

Alternative Solutions

- Alternative 1 – Construct a new water storage facility in Hensall
  - Requires selection of storage facility type and location
- Alternative 2 – Limit community development
- Alternative 3 - Do Nothing

Alternative Storage Solutions

- Alternative Facility Types
  - Reservoirs
  - Elevated Tanks
  - Standpipes

Evaluation of Alternative Facility Types

Type of Facility	Reservoir	Elevated Tank*	Standpipe
Advantages	• can be expanded • minimal visual impact	• gravity storage • energy efficient • can be a focal point in the community • small footprint	• energy efficient • small footprint
Disadvantages	• energy and maintenance costs • require pumps to maintain pressure • larger footprint	• not expandable • shadowing and visual impacts	• not expandable • shadowing and visual impacts • not as cost efficient • mechanically more complex

*** Preferred Storage Type**

Alternative Sites

- Site 1: NW corner of Mill & Soldan Street
- Site 2A & 2B: Hensall Road East
- Site 3: York Street west of Oxford
- Existing elevated tank site

Site 1 – Soldan Street

Looking northeast toward existing parking lot

Site 2A & 2B – Hensall Road

Looking west – sites are on the right

Site 3 – School Site

Looking west toward site

Required Watermain Upgrades

Scoring System

- Ranked sites by scoring a number of social, economic, technical and environmental impacts or factors.
- Each factor or impact for each site, was scored from 1 (very poor in meeting criterion) to 3 (superior in meeting criterion)
- Sites with higher scores were considered to have fewer potential impacts (or impacts that can be mitigated) or were judged to perform better

Factors Examined

- Need to purchase property
- Impact to adjacent properties
- Significant natural and/or cultural features present
- Disruption of natural features
- Impact on future development
- Visibility for economic development
- Connections to water distribution grid (more is better)
- Provide fire flow for areas of concern
- Capital costs for watermain and an elevated tank
- Ability to stage watermain construction
- Will new watermain replace inadequate watermain

Cost Summary

Site Alternative	Watermain Capital Cost[1]	Elevated Tank Capital Cost[2]	Total
Site #1 – Soldan Street	$0	$3,165,000	$3,165,000
Site #2 – Hensall Road	$600,000	$3,125,000	$3,725,000
Site #3 – School Site	$700,000	$3,245,000	$3,945,000

Notes: 1. Includes 20% for engineering and contingencies.
2. Includes 12% for engineering and contingencies.
3. Does not include costs for 250mm dia watermain built previously on Mill Street
4. Does not include demolition costs for existing tank estimated at $100,000
5. Costs are based on 2018 construction.

Scoring

Site Alternative	Score*	Rank
Site #1 – Soldan Site	34	1
Site #2 – Hensall Road Site	27	2
Site #3 – School Site	26	3

*Score is out of a possible 45

Conceptual Site Plan

Next Steps

- Additional input being sought on the preferred storage type and location
  - Input from Residents, Aboriginal Communities & Review Agencies
- Council reviews input and selects preferred alternative
- Finalize purchase of site
- Finalize Class EA Screening Report & Publish Notice of Study Completion
- Apply for Approvals
- Complete Facility Final Design
  - Confirm Size
  - Select Appearance (colour, logo)

Questions?

MUNICIPALITY OF BLUEWATER

CLASS EA FOR UPGRADES TO HENSALL WATER STORAGE

WELCOME

PUBLIC INFORMATION MEETING

JULY 25th, 2018

Municipality of Bluewater

BMROSS engineering better communities

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

SUMMARY OF CLASS EA PROCESS:

- PLANNING AND DESIGN PROCESS FOR MUNICIPAL WATER, WASTEWATER, AND ROAD PROJECTS
- CONDUCTED TO EVALUATE THE POTENTIAL IMPACTS OF THE PROJECT ON THE NATURAL, CULTURAL, SOCIAL, ECONOMIC, AND BUILT ENVIRONMENTS

STUDY PHASES:

SCOPE OF THIS STUDY:

- ESTABLISH NEW OR EXPAND/REPLACE EXISTING WATER STORAGE FACILITIES.
  - SCHEDULE B PROJECTS APPROVED SUBJECT TO COMPLETION OF PHASES 1 AND 2 OF THE CLASS EA PROCESS
- GENERAL STUDY COMPONENTS:
  - DEFINE PROBLEM / OPPORTUNITY;
  - IDENTIFICATION OF ALTERNATIVE SOLUTIONS;
  - CONSULTATION WITH THE PUBLIC / REVIEW AGENCIES;
  - SELECTION OF A PREFERRED ALTERNATIVE;
  - EVALUATION OF ALTERNATIVES / IMPACT MITIGATION;
  - PREPARATION OF ENVIRONMENTAL SCREENING REPORT ; AND
  - FINAL PUBLIC NOTIFICATION.

CLASS EA ALTERNATIVES

DEFINITION OF PROBLEM/OPPORTUNITY:

The existing water storage facility, servicing the community of Hensall, is not adequate. Investigations have established that the structure is both too small and too low to provide adequate pressures throughout the community and to maintain efficient operation of the water system. Furthermore, the facility is over 80 years old and requires significant repairs to maintain system functions.

ALTERNATIVE 1: CONSTRUCT NEW WATER STORAGE FACILITY IN HENSALL

- WOULD RESOLVE ISSUES WITH CURRENT FACILITY RELATED TO DETERIORATION, LOW PRESSURE, HEIGHT
- WOULD PROVIDE MODERN FACILITY CAPABLE OF ACCOMMODATING COMMUNITY FOR NEXT 25-50 YEARS

ALTERNATIVE 2: LIMIT COMMUNITY GROWTH

- DOES NOT ADDRESS CURRENT DETERIORATION AND DEFICIENCIES WITH EXISTING ELEVATED TANK
- WOULD NOT CONFORM TO CURRENT OFFICIAL PLAN AND ZONING POLICIES THAT IDENTIFY HENSALL FOR GROWTH

ALTERNATIVE 3: DO NOTHING

- DOES NOT ADDRESS CURRENT DETERIORATION AND DEFICIENCIES WITH EXISTING ELEVATED TANK
- EXISTING FACILITY NEEDS TO REPAIRED OR REPLACED WITHIN NEXT 5-10 YEARS

Municipality of Bluewater

BMROSS engineering better communities

EVALUATION OF STORAGE ALTERNATIVES

PURPOSE:

- The three types of water storage facilities most frequently used in Ontario are listed below:

Elevated Tanks

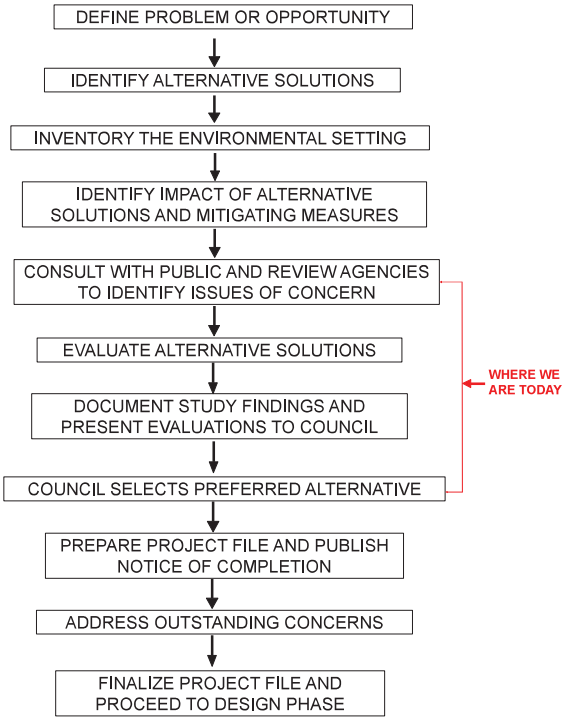
Reservoirs

Standpipes

KEY CONSIDERATIONS:

- Elevated tanks are typically the most cost effective type of facility (over a 50-year period).
- Elevated tanks, while not expandable, have small footprints, and fewer environmental impacts.
- Reservoirs may be expanded; however, the construction and operation costs are greater, they are technically more complex, and require a larger footprint.
- Standpipes are less cost efficient and more technically complex than elevated tanks.
- For these reasons, an elevated tank was identified as the preferred type of storage facility.

SUMMARY OF THE CLASS EA SCHEDULE B PROCESS



PROJECT TIMELINES

OCTOBER 2017 - PROJECT INITIATED

OCTOBER 2017 – INITIAL CONSULTATION EFFORTS

- CORRESPONDENCE SENT TO:
  - ADJACENT PROPERTY OWNERS
  - ABORIGINAL COMMUNITIES
  - PROVINCIAL AND FEDERAL REVIEW AGENCIES

OCTOBER 2017 - NOTICE OF STUDY COMMENCEMENT

- NOTICE PLACED IN LOCAL PAPERS FOR TWO CONSECUTIVE WEEKS

NOV. 2017 – JAN. 2018 – STAKEHOLDER MEETINGS

- MET WITH LOCAL INDUSTRIES TO DISCUSS WATER REQUIREMENTS
- REVIEWED POSSIBLE TOWER LOCATIONS IN THE VICINITY

APRIL 2018 – BLUEWATER HERITAGE COMMITTEE

- PRESENTATION MADE TO BLUEWATER HERITAGE COMMITTEE
- REVIEWED CULTURAL HERITAGE REQUIREMENTS ASSOCIATED WITH EA

SPRING 2018 - ENGINEERING REVIEWS

- RUN WATERCAD MODEL FOR HENSALL DISTRIBUTION SYSTEMS
- COMPLETE SITE EVALUATION REVIEW OF POSSIBLE TOWER LOCATIONS

FALL 2018 - FINALIZE CLASS EA

- NOTICE OF COMPLETION PUBLISHED IN LOCAL PAPER
- SCREENING REPORT AVAILABLE FOR PUBLIC REVIEW

Municipality of Bluewater

BMROSS engineering better communities

Tower Site Evaluation

POSSIBLE WATER TOWER LOCATIONS

REQUIRED WATERMAIN UPGRADES

Population & Growth

HISTORIC HENSALL POPULATION 1976-2016

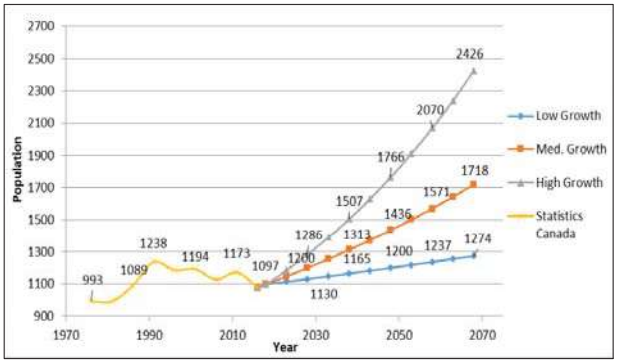
Year	Population[1]	Growth	% Change	AAGR[2]
1976	993	-	-	-
1981	992	-1	-0.1%	-0.02%
1986	1089	+97	9.7%	1.94%
1991	1,238	+149	13.7%	2.74%
1996	1,187	-51	-4.1%	-0.82%
2001	1,194	+7	0.6%	0.12%
2006	1,128	-66	-5.5%	-1.1%
2011	1,173	+45	4%	0.8%
2016	1,078	-95	-8.1%	-1.62%
Population Change	+85			
Percent Change	8.6%			
Average Annual Growth Rate 1976-2016 (35 years)	0.25%			
Average Annual Growth Rate 2001-2016 (15 years)	-1.8%			

Note: [1] Population derived from (2016 Census) data
[2] AAGR: 5 Year Average Annual Growth Rate

PROJECTED 50 YEAR POPULATION GROWTH

Year	Low (0.25%)	Medium (0.9%)	High (1.55%)
2018	1097	1097	1097
2023	1114	1148	1188
2028	1130	1200	1286
2033	1147	1255	1392
2038	1165	1313	1507
2043	1182	1373	1631
2048	1200	1436	1766
2053	1218	1502	1912
2058	1237	1571	2070
2063	1255	1642	2241
2068	1274	1718	2426
Total Increase	177	621	1,329

PROJECTED 50 YEAR POPULATION GROWTH



Alternative Site Evaluation

	Site 1		Site 2A & 2 B		Site 3	
	Parking Lot Site	**Score**	**Hensall Road Site**	**Score**	**School Site**	**Score**
WATERMAIN						
Capital Costs for new watermain	$0	3	$600,000 (Average of 2A & 2B)	1.5	$700,000	1
Ability to stage watermain construction	Yes	2	No	1	Yes	2
Connections to water distribution grid (the more the better)	Site has large watermains in the vicinity. Water can flow in 2 directions.	3	Site has no large watermains in the vicinity. Tank will be on a dead end.	1	Existing watermain is smaller capacity. Water can flow in 2 directions.	2
New watermain replaces inadequate watermain	No	1	Watermains would be needed to facilitate future development	2	Nelson and York watermains are a high priority for infrastructure renewal.	3
Provides adequate fire flows at suitable pressures for areas of concern identified by Fire Department	Improves conditions for HDC and General Coach.	2	Maintains existing conditions and provides flows for future development lands.	1	Improves conditions for School, Thompsons and Future Development Lands to the south.	2
Presence of significant cultural features	None anticipated.	2	None anticipated.	2	None anticipated.	2
Disruption of natural features	None anticipated.	2	No disruption anticipated.	2	None anticipated.	2
Sub-Total Watermain		15		10.5		14
ELEVATED TANK						
Capital Costs to elevate tank (1600 m^3)	$40,000	2	$0	3	$120,000	1
Approximate geodetic elevation (Affects cost – not scaled otherwise)	278 m		280 m		274 m	
Need to purchase property	Property must be purchased. Owners are willing.	2.5	Property must be purchased.	2	Property must be purchased.	2
Impact to adjacent properties during construction	Limited impact to intersection of Soldan and Mill Street.	2	Depends on final location but possible impact to future residential.	2.5	Might impact use of school property.	2
Visibility for economic development	Visible from north and east.	2.5	Visible from south and west	2	Located on the edge of the community far from main roads. Low visibility.	1
Impact to adjacent sensitive land uses – shading, view	None anticipated.	3	Possible shading for properties fronting on Lorne Avenue.	2	Possibly, after development.	2
Impact on future development – loss of development site	No Impacts	3	Possibly, after development. Development is proposed. Adds new watermain which is positive for site.	2	Provides improved watermain connection for future development lands to the south.	2
Presence of significant cultural features	None anticipated. Site previously disturbed.	3	Stage 1 &2 Archaeological Assessment would be required.	2	Stage 1 &2 Archaeological Assessment would be required.	2
Disruption of natural features	Minimal – limited tree removal would be required.	2	Minimal – field is in agricultural production.	3	Stand of trees would need to be removed.	1
Sub-Total Tank		20		18.5		13
Total Score (out of 45)		**35**		**29**		**27**

Alternative Site Evaluation

	Site 1		Site 2A & 2 B		Site 3	
	Parking Lot Site	**Score**	**Hensall Road Site**	**Score**	**School Site**	**Score**
WATERMAIN						
Capital Costs for new watermain	$0	3	$600,000 (Average of 2A & 2B)	1.5	$700,000	1
Ability to stage watermain construction	Yes	2	No	1	Yes	2
Connections to water distribution grid (the more the better)	Site has large watermains in the vicinity. Water can flow in 2 directions.	3	Site has no large watermains in the vicinity. Tank will be on a dead end.	1	Existing watermain is smaller capacity. Water can flow in 2 directions.	2
New watermain replaces inadequate watermain	No	1	Watermains would be needed to facilitate future development	2	Nelson and York watermains are a high priority for infrastructure renewal.	3
Provides adequate fire flows at suitable pressures for areas of concern identified by Fire Department	Improves conditions for HDC and General Coach.	2	Maintains existing conditions and provides flows for future development lands.	1	Improves conditions for School, Thompsons and Future Development Lands to the south.	2
Presence of significant cultural features	None anticipated.	2	None anticipated.	2	None anticipated.	2
Disruption of natural features	None anticipated.	2	No disruption anticipated.	2	None anticipated.	2
Sub-Total Watermain		15		10.5		14
ELEVATED TANK						
Capital Costs to elevate tank (1600 m^3)	$40,000	2	$0	3	$120,000	1
Approximate geodetic elevation (Affects cost – not scaled otherwise)	278 m		280 m		274 m	
Need to purchase property	Property must be purchased. Owners are willing.	2.5	Property must be purchased.	2	Property must be purchased.	2
Impact to adjacent properties during construction	Limited impact to intersection of Soldan and Mill Street.	2	Depends on final location but possible impact to future residential.	2.5	Might impact use of school property.	2
Visibility for economic development	Visible from north and east.	2.5	Visible from south and west	2	Located on the edge of the community far from main roads. Low visibility.	1
Impact to adjacent sensitive land uses – shading, view	None anticipated.	3	Possible shading for properties fronting on Lorne Avenue.	2	Possibly, after development.	2
Impact on future development – loss of development site	No Impacts	3	Possibly, after development. Development is proposed. Adds new watermain which is positive for site.	2	Provides improved watermain connection for future development lands to the south.	2
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Sub-Total Tank		20		18.5		13
Total Score (out of 45)		**35**		**29**		**27**

Kelly Vader

From: Kelly Vader <kvader@bmross.net>
Sent: November 23, 2018 10:42 AM
To: mmacdonald@abca.ca
Subject: Hensall Class EA for new water storage
Attachments: 17277-Fig2.4-Source Water Protection.pdf

Hi Mary Lynn:

We are working on a Class Environmental Assessment for the Community of Hensall to complete upgrades to their water storage facilities. The preferred alternative selected through the process, will be to construct a new elevated tower at the northwest corner of Mill Street and Soldan Street in the north part of Hensall.

We have included a discussion about Source Water Protection policies in the report, including the attached map that shows vulnerable areas adjacent to the community.

Do you have any specific concerns related to the project that I can include in the report? We don't know for sure when the project will be implemented, however we anticipate that the new tower would be constructed in the next 3-5 years.

Kelly Vader, MCIP, RPP
B. M. Ross and Associates Limited
Engineers and Planners
62 North Street
Goderich, ON N7A 2T4

Ph: (519) 524-2641
Fax: (519) 524-4403
kvader@bmross.net
www.bmross.net

Kelly Vader

From: Mary Lynn MacDonald <mmacdonald@abca.ca>
Sent: November 26, 2018 2:00 PM
To: Kelly Vader
Cc: Donna Clarkson
Subject: RE: Hensall Class EA for new water storage

Hi Kelly,

Thank you for your e-mail regarding the Class Environmental Assessment for the community of Hensall to complete upgrades to their water storage facilities.

The community of Hensall is on the Lake Huron Primary Water Supply pipeline so there is no Wellhead Protection Area delineation and therefore no significant threat policies or Restricted Land Use requirements. While there are highly vulnerable aquifers in the vicinity, the new storage facilities will not be built in those areas.

Thanks for your consideration of Source Water Protection.

Mary Lynn

Mary Lynn MacDonald
Co-DWSP Program Supervisor/Risk Management Official
Ausable Bayfield Maitland Valley Source Protection Region
71108 Morrison Line, RR 3 Exeter, ON N0M 1S5
(t)519-235-2610 (f)519-235-1963 www.sourcewaterinfo.on.ca

Please note my normal office days are Monday, Tuesday and Thursday. In my absence contact Donna Clarkson at 519-335-3557 ext. 224 or at dclarkson@mvca.on.ca.

From: Kelly Vader [mailto:kvader@bmross.net]
Sent: Friday, November 23, 2018 10:42 AM
To: Mary Lynn MacDonald
Subject: Hensall Class EA for new water storage

Hi Mary Lynn:

We are working on a Class Environmental Assessment for the Community of Hensall to complete upgrades to their water storage facilities. The preferred alternative selected through the process, will be to construct a new elevated tower at the northwest corner of Mill Street and Soldan Street in the north part of Hensall.

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MUNICIPALITY OF BLUEWATER

CLASS ENVIRONMENTAL ASSESSMENT FOR A NEW WATER STORAGE FACILITY (COMMUNITY OF HENSALL)

NOTICE OF STUDY COMPLETION

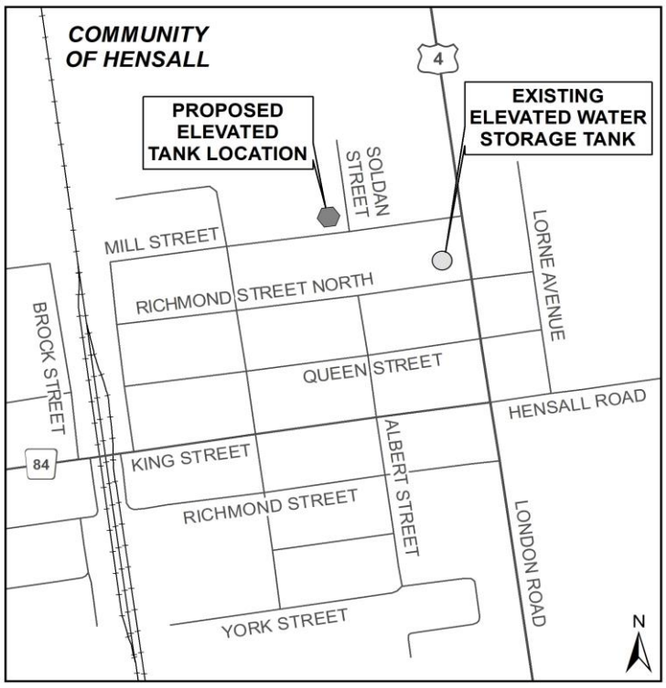
THE PROJECT:

The Municipality of Bluewater initiated a Class Environmental Assessment process in October 2017 to evaluate alternatives associated with upgrades to existing water storage facilities in the community of Hensall. Recent investigations established that the current elevated tank is nearing the end of its service life and also does not provide adequate pressures throughout the community to maintain efficient operation of the water system. As a result, the construction of a new, water storage facility is being considered.

The Class EA process included an assessment of alternative solutions, including potential locations and types of storage facilities (elevated or in-ground). As a result of the investigations, a preferred alternative has been selected; the construction of an elevated water storage facility located adjacent to the intersection of Mill Street and Soldan Street (as shown on the key plan)

THE ENVIRONMENTAL SCREENING PROCESS:

The planning for this project is following the planning process established for Schedule B activities under the Municipal Class Environmental Assessment (Class EA) document. Schedule B projects are approved subject to the completion of a screening process. The purpose of the screening process is to identify any potential environmental impacts associated with the proposal and to plan for appropriate mitigation of any impacts. The environmental assessment process has now been completed. There were no negative impacts identified with the project that could not be mitigated.



PUBLIC INVOLVEMENT:

For further information on this project, please contact the project engineers: B.M. Ross and Associates Ltd., 62 North Street, Goderich, ON, N7A 2T4. Phone: 1(519) 524-2641. Fax: (519) 524-4403. Attention: Kelly Vader, Environmental Planner (e-mail: kvader@bmross.net). An Environmental Screening Report, documenting the environmental assessment process conducted for this project, will be available for public review on the Bluewater website at www.municipalityofbluewater.ca as of **July 8, 2020**.

If concerns regarding the project cannot be resolved through discussions with the Municipality of Bluewater, a person may request a Part II Order under the EA Act. To make such a request, a Part II Order Request form must be submitted within 30 calendar days of this notice and sent to 1) the Municipality; 2) Minister, Ministry of the Environment, Conservation and Parks, Floor 11, 77 Wellesley St. W, Toronto ON M7A 2T5 Fax: (416) 314-8452; Minister.MECP@ontario.ca, and 3) Director, Environmental Assessment and Permissions Branch, Ministry of Environment, Conservation and Parks, 135 St. Clair Ave West, 1st Floor, Toronto ON M4V 1P5; enviropermissions@ontario.ca. The mandatory form can be found at http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/GetFileAttach/012-2206E~1/$File/2206E.pdf or copies can be obtained by contacting the project contact person as listed above. If no such request is received by **August 8, 2020,** the project will proceed to implementation as planned.

This Notice Issued July 7, 2020
Dave Kester, Manager of Public Works

Municipality of Bluewater