



**CITY OF HAMILTON**  
**PUBLIC WORKS DEPARTMENT**  
**Hamilton Water Division**

<b>TO:</b>	Chair and Members Public Works Committee
<b>COMMITTEE DATE:</b>	September 6, 2019
<b>SUBJECT/REPORT NO:</b>	Municipal Class Environmental Assessment and Conceptual Design of Elevated Water Storage Facility and Pumping Station for Pressure District 7 (PW19078) (Wards 9 & Ward 11)
<b>WARD(S) AFFECTED:</b>	Wards 9 and 11
<b>PREPARED BY:</b>	Winston Wang (905) 546-2424 Ext. 4092 Bert Posedowski (905) 546-2424 Ext. 3199
<b>SUBMITTED BY:</b>	Mark Bainbridge Director, Water and Wastewater Planning and Capital Public Works Department
<b>SIGNATURE:</b>	

**RECOMMENDATION(S)**

That the General Manager, Public Works Department be authorized and directed to file the Notice of Completion and issue the Project File Report for the Municipal Class Environmental Assessment and Conceptual Design of Elevated Water Storage Facility and Pumping Station for Pressure District 7 for the Mandatory 30-day Public Review period.

**EXECUTIVE SUMMARY**

The City of Hamilton (City) retained Cole Engineering Group Limited to complete a Schedule 'B' Class Environmental Assessment (Class EA) for construction of the Pressure District 7 Elevated Water Storage Facility (EWSF) and Pumping Station (PS) based on recommendations of the City of Hamilton Water and Wastewater Master Plan (WWMP) Class EA Report (KMK Consultants, 2006). The PS and EWSF are required to provide water supply for future growth in Pressure District 7 (PD7) in the Stoney Creek mountain area as well as Pressure District 23 (PD23) in Binbrook. The new EWSF planned at the preferred location of 420 Trinity Church Road is projected to be in service

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OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

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by 2022, and the new PS in-service date is projected to be 2027 at the preferred location on the northeast corner of Upper Centennial Parkway and Regional Highway 20.

Public, Agency, First Nations, and stakeholder consultation was completed in accordance with the requirements of the Municipal Environmental Association Class EA document and City protocol through Public Information Centres, mail-outs, and a project website. As well the Councillors of the affected Wards were consulted.

The recommendation of this staff report will permit the completion of the mandatory 30-day public review period. Following the 30-day reviewed period, provided that no Part 2 Orders (complete a higher level of environmental assessment) from the Minister of the Environment, Conservation and Parks are received, the detailed design and implementation of the preferred infrastructure will proceed.

**Alternatives for Consideration – See Page 10**

**FINANCIAL – STAFFING – LEGAL IMPLICATIONS**

**Financial:** The preferred design concept and budget estimates outlined in the EA Report is for the design and construction of an EWSF and a new PS, which includes: water reservoir, building, re-chlorination and recirculation system, other process and electrical equipment and appurtenances, site works, watermain extension, allowances, engineering, internal resources, and contingency. The 2020 budget will need to include a financial increase for this project to reflect the more detailed scope of work that was refined through the Class EA Study. Budgets are estimated until a tendering process provides a more accurate construction cost. Capital project ID # 5141495551 for the storage facility was included in the 2020 Rates Budget at a total cost of \$13.6M and capital project ID # 5142695552 for PS HD07A is included in the 2020 Rates Budget at a total cost of \$20.5M.

**Staffing:** Once the PS is commissioned, an additional 0.7 FTE is expected to be required to operate and maintain this new infrastructure. The FTE will be recommended in the Operating Budget in the year they are required.

**Legal:** A zoning variance application will be required to facilitate the implementation of the EWSF and for the PS.

## **HISTORICAL BACKGROUND**

The City's 2006 Water and Wastewater Master Plan (WWMP) recommended a water and wastewater servicing strategy in support of the preferred growth option identified in the City's Growth Related Integrated Development Strategy (GRIDS), amongst which Pressure District 7 (PD7) and Pressure District 23 (PD23) infrastructure needs in Hamilton's Southeast Mountain areas are necessary.

In the Stantec (2013) report "Hamilton Southeast Mountain Water Servicing Strategy", it describes the infrastructure projects and details the recommendations for each project based on PD7 and PD23 pumping and storage needs assessment. The preferred alternative was reconfirmed as a new elevated storage facility and a PS (HD07A) to service PD7 to meet servicing requirements for growth.

As such, a project team, including City staff and consulting engineers, was developed to undertake this Class EA Study. Other key staff and sub-consultants, including Environmental Scientists, Heritage Planners and Archaeologists, were engaged as required to provide support for various components of the Study.

The Class EA study (conducted by Cole Engineering) was completed as a Schedule "B" of the Municipal Class Environmental Assessment process. The Class EA for this project included Public and Review Agency consultation, evaluation of alternatives, assessment of impacts of the proposed works, and identification of measures to mitigate any adverse impacts. Upon completion of the study, a Project File Report documenting the planning and decision-making process and preferred location alternative was prepared. This Project File is ready for public review. Pending approval of the recommendation of this staff report, a separate advertisement will be issued to advise the public and stakeholders of the Notice of Completion of the Class EA and start of the mandatory 30-day review period.

## **POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS**

These recommendations are consistent with the Urban Official Plan. Other policies affecting or impacting this Report include:

- *Ontario Environmental Assessment Act*
- *Ontario Environmental Protection Act*
- *Safe Drinking Water Act, 2002*
- *Ontario Water Resources Act, R.S.O. 1990, c. O.40*

## **RELEVANT CONSULTATION**

Ward Councillors within the study area have been consulted and advised about the completion of the study. The recommendations of the report include a visual barrier on the east boundary for the portion of the property needed to build the EWSF. This will be carried forward into implementation.

Public and Review Agency (Appendix “B” attached to Report PW19078) consultation is an integral and legislated component of any Municipal Class Environmental Assessment study. Stakeholders are initially notified of the study with a formal Notice of Commencement advertised in the local newspaper. Review Agencies are notified directly by mail or email.

Project Stakeholder and Review Agencies lists are developed at the onset of the study and maintained throughout, thus ensuring all interested parties are kept informed. All Stakeholders are invited and encouraged to comment on the project at any time during the study.

The Agency and Stakeholder Contact Lists includes but is not limited to the following groups:

- Federal Agencies
- Provincial Ministries and Agencies
- First Nations
- Property owners/businesses adjacent to the preferred sites area
- Others (e.g. utilities, school boards, etc.)

Two (2) Public Information Centres (PIC’s) were held in the PD7 community at the Valley Park Recreation Centre and Arena on December 6, 2017, and on June 12, 2018, at 970 Paramount Drive, Stoney Creek.

Key feedback from review agencies to date is summarized as follows:

- From: Ministry of the Environment, Conservation and Parks (MECP) – For the construction of a new EWSF and a new PS, MECP acknowledges that a Schedule ‘B’ Municipal Class Environmental Assessment (EA) process is undertaken under the MEA Class EA Document in order to identify, evaluate and determine the preferred alternative for addressing water servicing issues in Pressure District 7. MECP noted that this project is subject to the *Safe Drinking Water Act*; therefore, MECP requires that a Schedule C Application to the DWS’s Drinking Water Works Permit be required. In addition, MECP also requires that a draft copy of the Project File to be reviewed by MECP in a 30-day period before the City of Hamilton issues

its notice of completion of the final report. Also, the MECP requires adequate consultation with affected First Nations communities in the project area, including Six Nations of the Grand River Territory, Haudeosaunee Confederacy Council, Mississaugas of the New Credit First Nation (MNCFN) and Metis Nation of Ontario.

- Response: The Schedule C Application for a Drinking Water Works Permit will be submitted in the Detailed Design Phase of the implementation. The Notice of Completion and the complete Project File are to be forwarded to the MECP Office for review, filing and potential comments. Consultation with First Nations communities has also taken place and has been documented in the Project File for this Class EA.
- From: Ministry of Tourism, Culture and Sport (MTCS) – Their concerns focused on three (3) areas: archaeological resources including land-based and marine; built heritage resources including bridges and monuments; and cultural heritage landscapes. In terms of the environmental assessment reporting, they require that all technical heritage studies and their recommendations are to be addressed and incorporated into EA projects. If the screening has identified no known or potential cultural heritage resources, or no impacts to these resources, the EA report or file is required to include the completed checklists and supporting documentation.
  - Response: Technical heritage studies and their recommendations have been incorporated into the Project File for this Class EA.
- From: Hamilton International Airport Ltd (HIAL) – Due to the proximity of the proposed sites to the HIAL, a review of the sites has been completed to determine potential impact on airport zoning regulations. HIAL has no issues; however, HIAL recommended that the proposed sites be submitted to NAV Canada using the Land Use Submission Form and the Transport Canada submission using the Aeronautic Assessment for Obstruction Evaluation Form.
  - Response: the above two forms have been submitted to NAV Canada and Transport Canada. Comments from NAV Canada and Transport Canada indicate they have no issues.
- From: Niagara Peninsula Conservation Authority (NPCA) – Most of the subject lands are in the Niagara Peninsula Natural Area. However, NPCA is not interested in the specific information about the preferred sites.
  - Response: No concerns from NPCA regarding the preferred EWSF Site 3 and PS Site 1.

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- From: Hamilton Conservation Authority (HCA) – For this project, HCA is also concerned with wetlands, flood plains, water courses and valley lands. However, most of the sites including the preferred sites are within the watershed of NPCA.
  - Response: No concerns from HCA for the preferred sites EWSF Site 3 and PS Site 1; however, if PS Site 2 remains under consideration for a PS, then HCA should be consulted in order to select the best location relative to the headwater streams and regulated area.

The recommendation of this staff report is part of the final stage of consultation which is an inherent part of the Class EA process. If necessary, the project team will receive and attempt to mitigate any stakeholder concerns or request for a Part II Order that is initiated within the mandatory 30-day review period.

**ANALYSIS AND RATIONALE FOR RECOMMENDATION(S)**

By applying the Municipal Class EA process, the project followed the legislated multi-phased analysis rationale. Specifically, the narrative of this study is summarized as follows in the text below with detailed documentation in the Project File Report under a separate cover.

The Problem/Opportunity Statement established at the onset of this Class EA project has been defined as: “A solution is required in PD7 to provide additional storage and pumping capacity to support the future growth in PD7 and PD23 systems, as well as to improve water system security and reliability and to improve the efficiency and reduce operation and maintenance costs”. The Study Area (Appendix “A” attached to Report PW19078) is generally bounded by Stone Church Road East/Mud Street West, Golf Club Road and Dickenson Road East, Nebo Road, and Hendershot Road/Second Road East.

The objectives of the Schedule B, Class EA project will be to review and compare alternative solutions to address the Problem/Opportunity Statement (and relevant construction impact), in order to address the above-noted concerns and to identify the preferred solution.

Overall, a total of eight (8) alternative sites have been evaluated according to their natural environment, social and cultural environment, economic, and technical impacts/merits. A comparative assessment of the alternative sites was conducted to determine which sites are most preferred. EWSF Site 3 and PS Site 1 are preferred as they result in the least overall impact to natural and technical environments and low to moderate impact on the social and cultural environment.

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The following are the lists of the potential sites for the EWSF and the new PS. Appendix “A” attached to Report PW19078 includes a map of the Alternate Sites.

Alternative Sites for Elevated Water Storage Facility (EWSF)	Description
EWSF Site 1 – Lot 7, Con. 1, Block 5, Binbrook Township	<ul style="list-style-type: none"> <li>• Moderately preferred location</li> <li>• Close to Eramosa Karst Earth Science ANSI</li> <li>• Contains archaeological potential and a Stage 2 archaeological assessment is required</li> <li>• Potential negative to Cultural Heritage Landscapes and a heritage impact assessment is required</li> <li>• Taller tank is required due to lower ground elevation</li> <li>• Most preferred hydraulically</li> <li>• Privately owned, medium impact during construction</li> </ul>
EWSF Site 2 – Lot 5, Con. 1, Block 4, Binbrook Township	<ul style="list-style-type: none"> <li>• Moderately preferred location</li> <li>• Close to Eramosa Karst Earth Science ANSI</li> <li>• Potential archaeological resources and a Stage 2 archaeological assessment is required</li> <li>• No negative impacts to cultural heritage resources</li> <li>• Taller tank due to low ground elevation</li> <li>• Privately owned, medium impact during construction</li> </ul>
EWSF Site 3 – Northeast corner of 420 Trinity Church Road, Hannon ON	<ul style="list-style-type: none"> <li>• The Most Preferred Location</li> <li>• Not near any environmentally sensitive areas</li> <li>• No archaeological potential</li> <li>• Potential negative impact to cultural heritage resources</li> <li>• City owned, low construction impact</li> <li>• Reduced tank height and cost</li> <li>• Most preferred hydraulically due to high elevation and close to existing watermain</li> </ul>
EWSF Site 4 – 399 Glover Road, Glanbrook ON	<ul style="list-style-type: none"> <li>• Moderately preferred location</li> <li>• Unnamed tributary runs through site</li> <li>• No archaeological concern and no negative impacts to cultural heritage resources</li> <li>• Privately owned</li> <li>• High impact during construction</li> <li>• Greater tank height due to lower ground elevation</li> <li>• Less preferred hydraulically due to distance to the demand centre results in greater pressure losses</li> </ul>
EWSF Site 5 – Lot 14, Con. 2, Glanford Township	<ul style="list-style-type: none"> <li>• Overall, the least preferred location</li> <li>• No surface water features present within site</li> <li>• No negative impacts to cultural heritage resources</li> </ul>

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	<ul style="list-style-type: none"> <li>• Potential archaeological resources and a Stage 2 archaeological assessment is required</li> <li>• Near boundary of Airport Zoning Regulation areas</li> <li>• Privately owned</li> <li>• Least preferred hydraulically due to distance to demand centre resulting in great pressure losses</li> </ul>
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Alternative Sites for Pumping Station (PS)	Description
PS Site 1 – Lot 24, Con. 8, Saltfleet Township (Northeast corner of Centennial Parkway and Reginal Road 20 in Stoney Creek)	<ul style="list-style-type: none"> <li>• The Most Preferred Location</li> <li>• Unnamed tributary runs through site and in proximity to a woodland</li> <li>• No negative impacts to cultural heritage resources</li> <li>• Potential archaeological resources and a Stage 2 assessment is required</li> <li>• Potential presence of species at risk and field investigation is required</li> <li>• Medium construction impact due to near residential area</li> <li>• Most preferred hydraulically and highest pressures in PD7</li> <li>• City owned, with ability to coordinate with planned infrastructure improvements</li> </ul>
PS Site 2 – Lot 24, Con. 8, Saltfleet Township	<ul style="list-style-type: none"> <li>• Moderately preferred location</li> <li>• Unnamed tributary runs through site</li> <li>• No negative impacts to cultural heritage resources</li> <li>• Potential presence of species at risk and field investigation is required</li> <li>• Potential archaeological resources and a Stage 2 assessment is required</li> <li>• Medium impact during construction due to close to a major residential area</li> <li>• Most preferred hydraulically and highest pressures in PD7</li> <li>• Privately owned, with ability to coordinate with planned infrastructure improvements</li> </ul>
PS Site 3 – 1645 Rymal Road East, Hamilton ON	<ul style="list-style-type: none"> <li>• Moderately preferred location</li> <li>• Not near any environmentally sensitive areas</li> <li>• No archaeological potential and negative impact to cultural heritage resources</li> <li>• No potential of species at risk</li> <li>• High construction impact due to close to major residential areas</li> <li>• Less preferred hydraulically due to distance to demand centre resulting in great pressure losses</li> </ul>



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	<ul style="list-style-type: none"><li>Privately owned, with less ability to coordinate with planned infrastructure improvements</li></ul>
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Evaluation Criteria reflect the Multiple Bottom Line evaluation methodology. The evaluation criteria established by the project team are summarized below. A detailed breakdown of each category is included in the Project File:

- Natural environment
- Economic considerations
- Social and cultural environment
- Technical and operational considerations

The evaluation process focused on identifying three levels of comparison between the evaluation criteria for each of the alternatives relative to each other. The three levels are:

- Most preferred
- Moderately preferred
- Least preferred

For the alternatives where the evaluation criterion is relatively the best, “most preferred” will be assigned. If the alternative has a disadvantage for that evaluation criterion, then it will be assigned “least preferred”. The “moderately preferred” level is assigned when there is no real preference between the alternatives. The intent of this method of evaluation is to identify, for each evaluation criterion, which alternative or alternatives have an advantage or are preferred. Once this evaluation process is completed for all criteria, it can then be determined which alternative(s) has the overall preference.

Each alternative was screened against the evaluation criteria. The “most preferred” alternative was deemed to be the preferred alternative. The preferred location for the EWSF is the area of EWSF Site 3 at 420 Trinity Church Road. This site is preferred as it will provide the following benefits:

- Water supply is uninterrupted by power outages and other emergencies for a longer duration;
- Minimal reliance on mechanical equipment;
- Increased fire flow capability;
- Provides superior equalization of daily flows and system pressures;
- Significantly lower operational costs;
- Permits power-saving time-of-day filling strategies;
- Lower life-cycle cost;
- Reduced green house gases (GHG); and

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- Ease of implementation due to the location being City owned property.

The preferred location for the PS is in the area of PS Site 1 at the northeast corner of Centennial Parkway and Regional Road 20. This site is preferred as it will provide the following benefits:

- Increased pumping capacity in the distribution system to maintain sufficient flow and pressures to support future growth;
- Increased water supply system reliability, security and operational flexibility;
- Lower life-cycle cost; and,
- Ease of implementation due to the location being City owned property.

Mitigation measures for any negative environmental impact of the preferred alternative have been identified and become conditions of the Implementation Phase of the Class EA. Detailed mitigation measures are included in the Project File Report under a separate cover.

The final step in the analysis rationale before proceeding to implementation of the preferred alternative is to undertake the Mandatory 30-day Review. A Notice of Completion of the Class EA as recommended herein will be issued in the immediate month(s) following the approval of the recommendations of this staff report. Notices will be issued via newspaper advertising and direct mail out to all members of the Stakeholder and Agency Contact lists. The Project File will be placed on public record along with contact information to receive concerns. All attempts will be made to mitigate all expressed concerns. Should resolution of a concern be unattainable the conflict may be escalated by the opponent to the Minister of the Environment, Conservation and Parks (MECP) for a decision via the Request for Part II Order protocol.

The above analysis rationale is a prescribed process under the Municipal Class Environmental Assessment (MCEA). The project was completed and considered to be in full compliance with the MCEA process.

## **ALTERNATIVES FOR CONSIDERATION**

The recommended alternative solutions have been identified using an evaluation and screening process that fulfils the requirements under the Municipal Engineers Association (MEA) Municipal Class EA document for Schedule B projects.

Should Council not wish to approve the filing of the Municipal Class Environmental Assessment and Conceptual Design of an EWSF and PS for Pressure District 7, the Municipal Class EA process would be considered incomplete by the provincial government. As such, the City will not have approval under provincial environmental

legislation to have the option to construct the preferred solution for a Pressure District 7 EWSF and PS as a Schedule “B” project. The outcome would be equivalent to the “Do Nothing” alternative. This would result in the City not being able to adequately provide drinking water services in the planned growth areas or that growth would not be permitted in this area.

## **ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN**

### **Community Engagement and Participation**

Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

### **Healthy and Safe Communities**

Hamilton is a safe and supportive City where people are active, healthy, and have a high quality of life.

### **Clean and Green**

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

### **Built Environment and Infrastructure**

Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

### **Our People and Performance**

Hamiltonians have a high level of trust and confidence in their City government.

## **APPENDICES AND SCHEDULES ATTACHED**

Appendix “A” – Study Area and Map of Alternate Sites

Appendix “B” – Agency Mailing List