

Project Information Package

Greenwich Sewage Pumping Station Upgrade Municipal Class Environmental Assessment




Greenwich Sewage Pumping Station Upgrade
Municipal Class Environmental Assessment



Please review this package and provide comments or questions to one of the contacts provided below:

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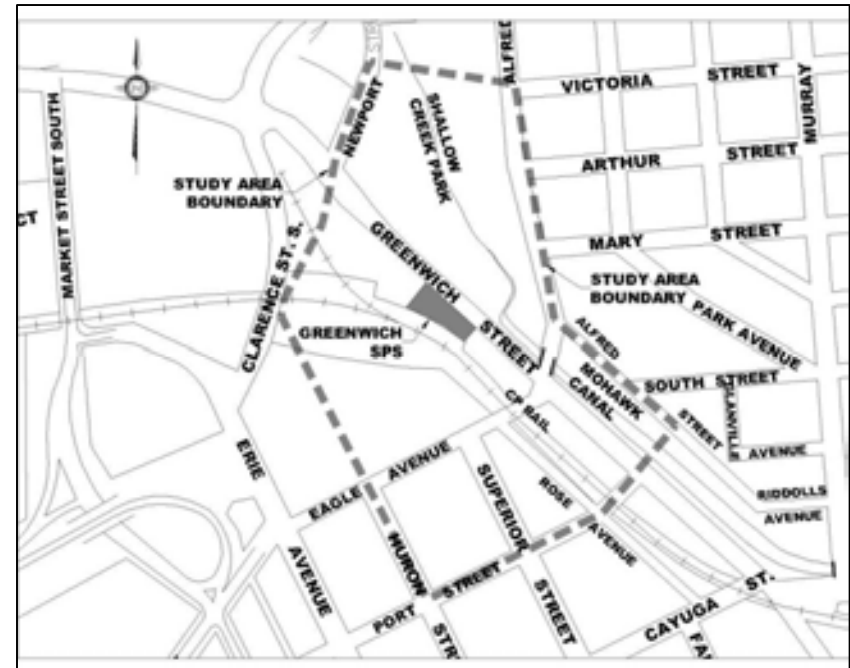


Project Information
available at
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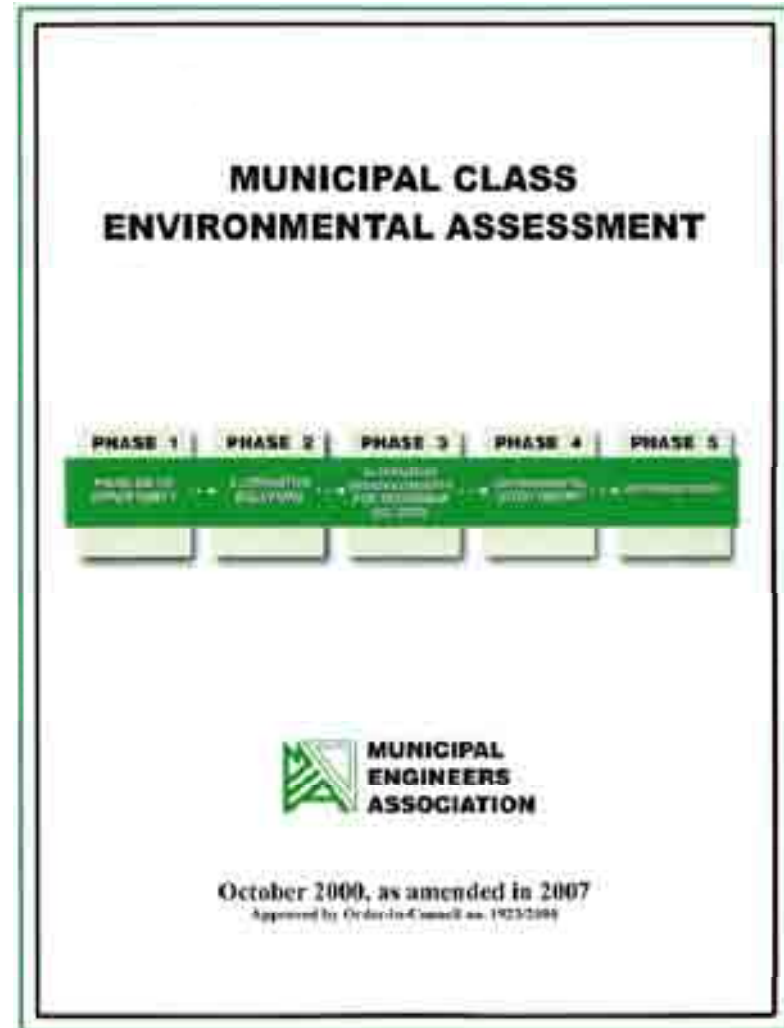
Please provide comments by
Friday, February 12, 2010.



- The Greenwich Sewage Pumping Station (SPS) is over 100 years old.
- Recent inspections noted several structural and mechanical deficiencies that cause concern for station operation and maintenance.
- The existing diesel generator needs to be replaced due to its age and condition to ensure adequate stand-by power for the station.
- The existing equipment is outdated and aged, making it difficult to maintain and locate necessary parts for common repairs.



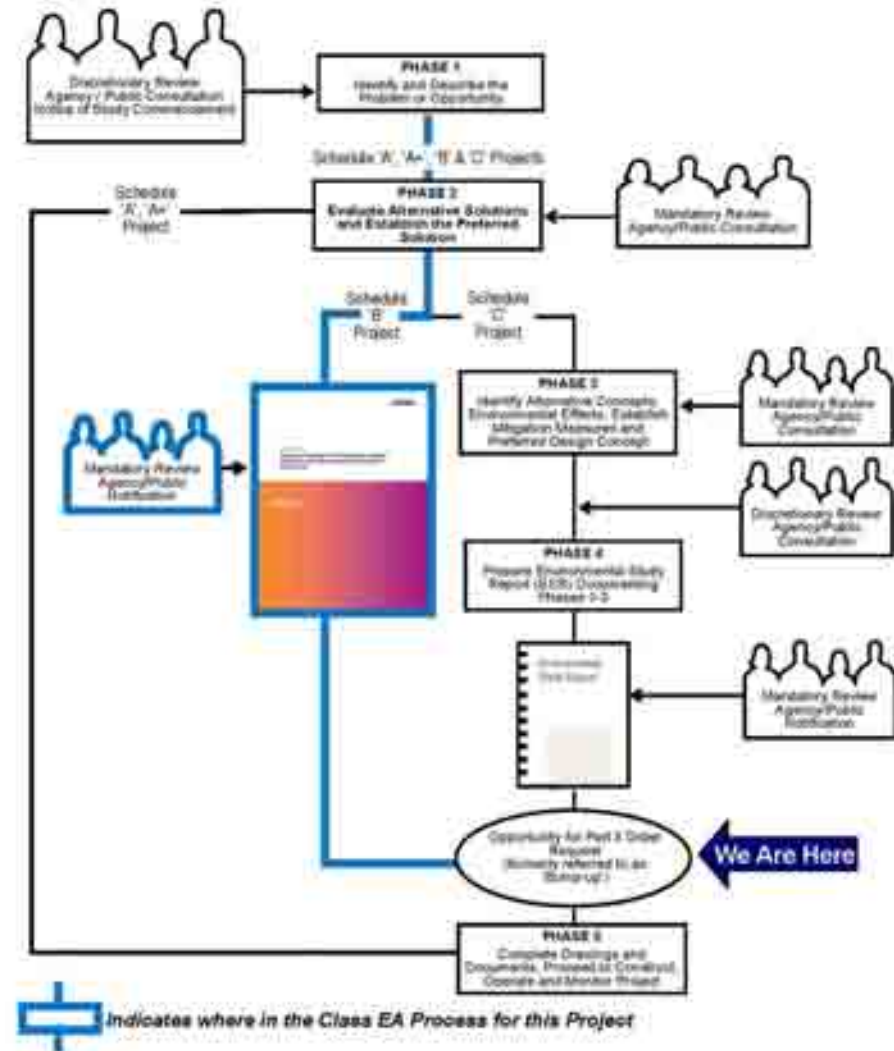
- Based on the *Municipal Engineers Association* Municipal Class Environmental Assessment (EA) document, a Schedule 'B' Class EA is required to identify the preferred alternative for upgrading the existing Greenwich SPS to address existing structural and mechanical deficiencies while incorporating new standby power.
- Upon review of the required upgrades to the SPS, it was determined that a new standby power unit is needed. Relocation outside the existing building requires completion of a Schedule B Class EA Study.



4

Overview of Class EA Process

- This project is being undertaken in accordance with the Municipal Class EA document for a Schedule 'B' undertaking.
- By completing the process EAA approval will be obtained for the upgrading of the Greenwich SPS through the EA planning and documentation process.
- The Municipal Class EA is approved under the Environmental Assessment Act and enables the planning of municipal infrastructure projects in accordance with a proven process for protecting the environment.
- There is an opportunity for public input at selected points in the study (see diagram).
- Upon completion of the Class EA process, a Project File will be prepared and made available for public review and comment (minimum 30 days).



- *The existing Greenwich Sewage Pumping Station (SPS) was built in 1907 and is currently in poor structural condition with numerous equipment deficiencies. The standby power generator requires replacement due to its age and difficulties related to maintenance. The current station configuration also leads to surcharging in the sanitary sewers entering the station which can result in odour issues. Upgrades to the SPS and its standby power generator are required to address these deficiencies, and to increase the reliability of the station and improve staff safety and ease of operation.*



- The general study area (see Figure 1-1) is located in the central area of the City of Brantford and is bound by Alfred Street to the west, Huron Street to the east, Port Street to the south and Newport Street to the north.
- The Greenwich SPS is located on the west side of Greenwich Street.
- This area is located within the flood plain of the Grand River and Brantford Special Policy Area for flood plain planning.
- Mohawk Canal is located southeast of the SPS.



Social/Cultural Environment

- The Official Plan designates the study area as Core Commercial;
- Existing land uses include the Canadian National Railway (CNR) and commercial/ industrial uses along Greenwich Street and Newport Street;
- A residential area is located to the southwest of the SPS; and
- Lands northeast of the SPS include a residential area and Shallow Creek community park with multi-use trails and several commercial and institutional uses, including a police/fire station.

- Aquatic Assessment:
 - Mohawk Canal is located approximately 250 m to the southeast of the Greenwich SPS;
 - The SPS is located within the regulatory flood plain of the Grand River; and
 - The SPS within the Brantford Special Policy Area for flood plain planning.
- Terrestrial Assessment:
 - The Study Area includes various street trees.
 - There is a wooded area north of Eagle Avenue south of the CNR; and
 - Trees located on the SPS site along the rear property line consist of Norway and Manitoba Maples.
- Assessment of Significance:
 - No ESAs, ANSIs or sensitive species habitat were observed identified.

Alternative Solutions	Description
1) Do Nothing <ul style="list-style-type: none"> • No improvements 	<ul style="list-style-type: none"> • The "Do Nothing" alternative represents what would likely occur if none of the alternative solutions were implemented. • Continued use of current system. • Provides a baseline for evaluating alternatives.
2) Upgrade Existing SPS and Generator	<ul style="list-style-type: none"> • Existing wet well requires extensive repairs which would include lowering the invert to resolve surcharging which is not technically viable from a constructability perspective. • Various pieces of electrical, mechanical and pumping equipment require replacement, including the standby power generator. • Upgrades would consist only of extensive structural rehabilitation and modifications, and mechanical upgrades, adding approximately 15 years of service life. This would not address deficiencies and operational issues related to the existing wet well invert and would not allow for deepening the incoming sewer in the long term.
3) Construct Separate Wet Well with Upgrades to Existing Station and Generator	<ul style="list-style-type: none"> • Separate wet well construction allows for existing station to remain fully operational during construction. • Decommissioning of existing wet well required. • To allow for the existing building's continued use, electrical systems must be upgraded and structural deficiencies addressed; standby diesel generator requires replacement (requires new approvals including emission stack).
4) Construct New SPS with New Standby Power Generator	<ul style="list-style-type: none"> • Existing station may remain fully operational during the majority of construction. • Structural deficiencies of existing building become less significant as existing building will not be used for its original purpose once new building is commissioned; eventually decommissioning of existing building. • New building provides approximately 100 additional years of service life for the Greenwich SPS including all required equipment upgrades and 200% pump redundancy. • New diesel generator unit for new pump station installed outside with soundproof weather enclosure and separate exhaust stack.



Natural Environment

- Potential impacts to natural heritage features, including:
 - Aquatic environment (e.g., ground and surface water management); and
 - Terrestrial environment (e.g., tree removal).

Social/Cultural

- Temporary disruption during construction (e.g., dust, noise, vibration, traffic management);
- Potential siting impacts including archaeological and built heritage resources; and
- Compatibility with existing land uses

Economic/Financial



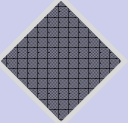

- Estimated capital cost
- Estimated life cycle cost considering remaining service life

Technical

- Constructability;
- Ability to maximize existing infrastructure; and
- Utilities and Infrastructure (conflicts with existing utilities and impact upon existing infrastructure).



Alternative Solutions	Natural Environment <i>Potential effects to the natural environment</i>	Social/Cultural <i>Short term construction related impacts</i>	Social/Cultural <i>Potential siting considerations</i>	Economical <i>Capital & Life Cycle Costs</i>	Technical	Evaluation Summary ◆ Least Preferred ◆ Most Preferred
Alternative 1 Do Nothing	<ul style="list-style-type: none"> • Potential for flooding and overflow at SPS. • Potential for continued sewer surcharging. • Standby power not meeting current air/noise regulations 	<ul style="list-style-type: none"> • No construction related impacts; existing land uses could be impacted by poor sanitary sewer and SPS operation. • Potential for health and safety related injury. 	<ul style="list-style-type: none"> • Potential for odour issues. 	<ul style="list-style-type: none"> • Low capital cost, does not address the problem statement. • Costs incurred due to operational, safety risks, maintenance • Cost to operate and maintain outdated standby power. 	<ul style="list-style-type: none"> • Unsafe to operate and maintain. • Does not address existing deficiencies. • Building will continue to structurally deteriorate. 	◆
Alternative 2 Upgrade Existing SPS and Generator	<ul style="list-style-type: none"> • Avoids tree and vegetation removal. • Standby power upgrade ensures regulations for noise and air are being met. 	<ul style="list-style-type: none"> • Highest construction impact: challenges with keeping existing SPS in full operation during upgrades. • Pedestrian access limited along front sidewalk due to excavation 	<ul style="list-style-type: none"> • Avoids impacts as work would be within a previously excavated area. • Continued potential odour issues from wetwell • Potential future conflict with BSAR alignment. 	<ul style="list-style-type: none"> • High costs due to constructability issues and very high life cycle costs due to remaining building service life. 	<ul style="list-style-type: none"> • Challenging structural retrofit. • Does not address existing deficiencies, specifically existing wetwell invert. • Temporary generator required. • Building Code separation requires extensive modification to building interior 	◆

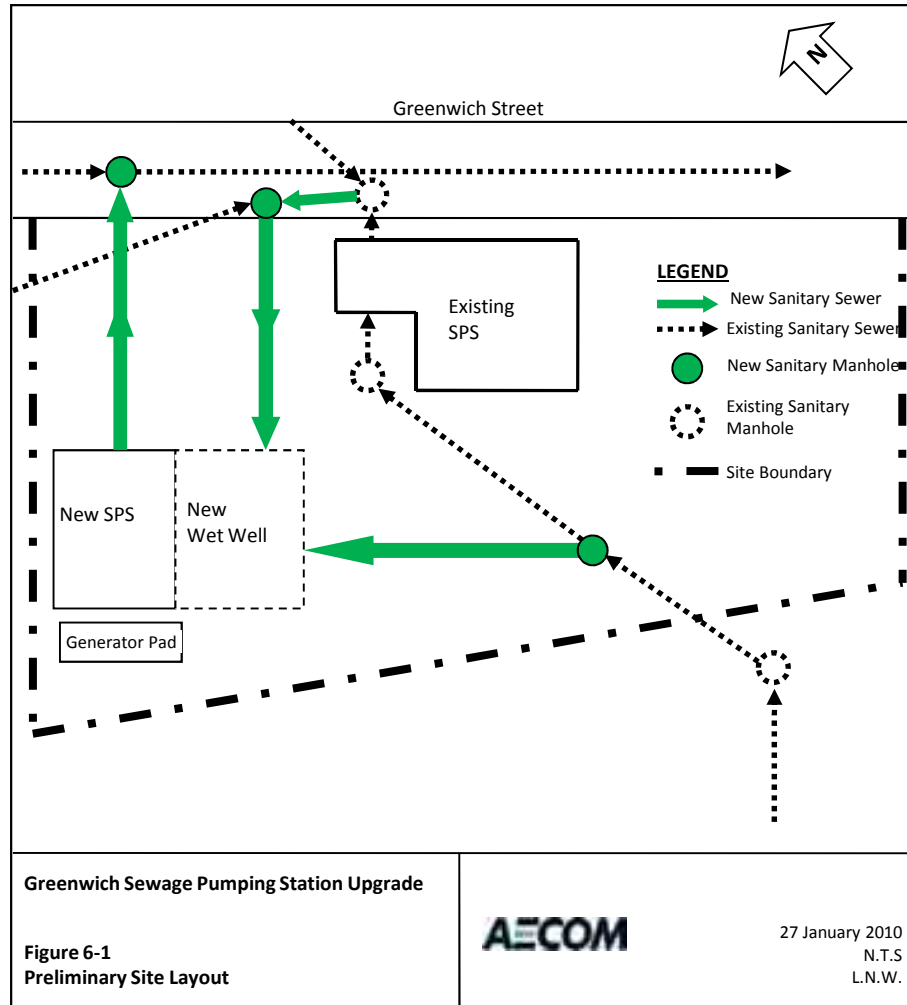
Alternative Solutions	Natural Environment <i>Potential effects to the natural environment</i>	Social/Cultural <i>Short term construction related impacts</i>	Social/Cultural <i>Potential siting considerations</i>	Economical <i>Capital & Life Cycle Costs</i>	Technical	Evaluation Summary  <i>Least Preferred</i>  <i>Most Preferred</i>
Alternative 3 Construct Separate Wet Well with Upgrades to Existing Station and Generator	<ul style="list-style-type: none"> • Potential for some tree and vegetation removal. • Potential to encounter contaminated soils and groundwater. • Standby power upgrade ensures regulations for noise and air are being met. 	<ul style="list-style-type: none"> • Some impacts to existing land uses, traveling public and access to property. • Construction impacts associated with new structures as well as upgrades to existing facility • Potential impact to adjacent building 	<ul style="list-style-type: none"> • Potential for archaeological resources minimal as all work to be conducted in previously disturbed area on existing site. • Potential future conflict with BSAR alignment. 	<ul style="list-style-type: none"> • High capital cost • High life cycle cost due to continued use of existing building with limited remaining service life. 	<ul style="list-style-type: none"> • New wet well, 100 year service life. • Facility rehabilitation and modification required. • Existing facility can remain operational during construction. • Temporary generator required • Building Code separation requires extensive modification to building interior 	
Alternative 4 Construct New SPS with New Standby Power Generator	<ul style="list-style-type: none"> • Potential for some tree and vegetation removal along excavation limits. • Potential to encounter contaminated soils and groundwater. • Standby power upgrade ensures regulations for noise and air are being met. 	<ul style="list-style-type: none"> • Some impacts to existing land uses, traveling public and access to property during utility tie-ins along Greenwich Ave. • Potential impact to adjacent building 	<ul style="list-style-type: none"> • Potential for archaeological resources minimal as all work to be conducted in previously disturbed area on existing site. • SPS location minimizes future impacts on BSAR 	<ul style="list-style-type: none"> • Highest capital cost • Lowest life cycle cost due to longer service life 	<ul style="list-style-type: none"> • Long term solution, 100 year service life • No Rehabilitation or modifications required. • Existing facility can remain operational during construction. • Generator can be commissioned in conjunction with new pump station. 	

Based on the evaluation of alternative solutions, the preferred SPS Upgrade solution is Alternative No. 4 (Construct New SPS with New Standby Power Generator). Rational for selecting Alternative No. 4 includes:

- Low environmental impacts;
- Least amount of social/cultural impacts;
- Fully addresses problem statement and existing station deficiencies;
- Lowest life cycle cost with longest service life; and
- Most preferred from constructability perspective providing a complete and long term solution.

The following Figure illustrates the preliminary site plan and location for the new Greenwich SPS.





Greenwich SPS Upgrades Include:

- New SPS building located west of existing building.
- Wet well elevation lower than existing station to relieve incoming sewers of surcharging conditions.
- 200% pump redundancy.
- New 500 mm diameter forcemain.
- Concrete pad designed for standby power generator with weather proof and noise attenuated enclosure.
- Diesel generator unit preferred by City, to remain consistent with other stations
- Meets all regulations and standards.

Potential Impact	Mitigation
Removal of Trees and Vegetation	<ul style="list-style-type: none"> • Preferred alternative minimizes tree removal to those on site consisting of Norway and Manitoba Maples. Where tree removal is unavoidable, a tree replacement program will be considered. • All trees to be retained shall be clearly marked by the City Arborist. • Restore disturbed areas/habitat to natural or better conditions.
Groundwater Resource Management	<ul style="list-style-type: none"> • Where significant water-taking is anticipated (i.e., > 50,000 L/day), a Permit to Take Water (PTTW) will be required from the MOE prior to construction. • The extent of water-taking required will be minimized through construction and shoring techniques. • Potential for encountering contaminated groundwater exists, groundwater will be pumped and filtered prior to discharge to existing sanitary sewers for treatment at the Wastewater Treatment Plant (WWTP).
Sediment Deposition	<ul style="list-style-type: none"> • As required, Contractor to prepare an erosion and sediment control plan to meet Ontario standards and to meet GRCA requirements. • Ensure proper onsite monitoring of erosion and sediment control, especially during/after wet weather events. • Any areas disturbed by construction will be restored and stabilized as soon as practically possible.
Waste Disposal	<ul style="list-style-type: none"> • Soils removed shall be tested for contamination. If contaminated, soil disposal shall be consistent with Part XV.1 of the <i>Environmental Protection Act</i> (EPA) and the Record of Site Condition Regulation (O. Reg 153/04). • All waste generated during construction activity will receive proper disposal as per MOE requirements.



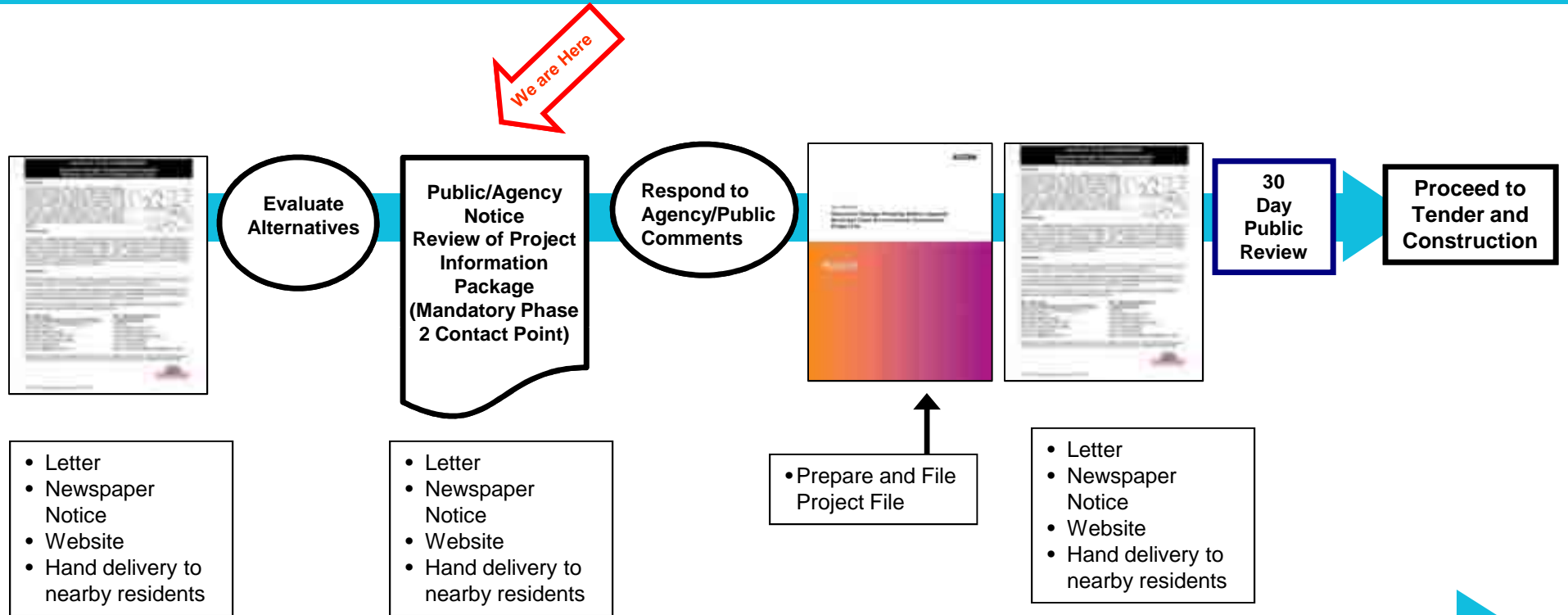
Potential Impact	Mitigation
Traffic and Access	<ul style="list-style-type: none"> • Traffic control including notification signage. • Minimize construction duration (e.g. working days) within roadways.
Temporary (construction) Social Impacts (e.g. noise, dust, vibration) to Adjacent Properties	<ul style="list-style-type: none"> • Construction operations adhere to local by-laws. • Dust control by spraying water/street sweeping. • Construction area to have fencing and signage for safety.
Visual Impact/ Noise/Vibration/Odour (SPS Operations)	<ul style="list-style-type: none"> • SPS building architectural design consistent with municipal buildings. • Noise and vibration requirements addressed through detailed design and MOE Certificate of Approval (sewage and air). • Odour issues addressed through proper design of the new SPS facility.
Structural Impact to Adjacent Properties	<ul style="list-style-type: none"> • Geotechnical investigation to identify any potential impacts of construction on adjacent properties and recommend appropriate mitigative measures. • Pre and post construction surveys will be completed. In the event of impacts, repairs or restoration will be required.
Archaeology	<ul style="list-style-type: none"> • All proposed construction to take place in a previously disturbed area. • If any archaeological and/or historical resources are discovered during the performance of construction work, the work in the area of the discovery is to halt. The Ministry of Culture (Archaeological Unit) will be notified for an assessment of the discovery. Work in the area of the discovery would not resume until cleared to do so by the Ministry.



- To implement the preferred solution, the following schedule is proposed:
 - February 2010 – Commence 30 Day Review Period
 - February & March 2010 – Detailed Design
 - March & April 2010 – Submit Applications for Approvals
 - April 2010 – Tender Advertisement
 - May 2010 – Begin Construction
 - May 2011 – Commission New SPS



January 2010 February 2010 Spring 2010



Additional Ongoing Consultation as Necessary



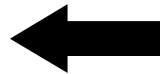
**Greenwich Sewage Pumping Station Upgrade
Municipal Class Environmental Assessment**



Comments from review agencies* and general public will be reviewed for consideration in the confirmation of the recommended solution which will be captured in a Class EA Project File.



Review agencies* and the public will be notified of the Project File and will be provided with the opportunity to comment during the 30-Day Review Period.



Upon completion of the mandatory public review period (30 calendar day duration) the Project File will be finalized and subject to comments, the project may proceed to detailed design and construction.

* Review agencies include Provincial Ministries (e.g. Environment, Natural Resources, Culture), Grand River Conservation Authority, local Municipal and Regional departments, utilities (e.g. hydro, gas, Bell etc.) and interested stakeholders (e.g. Affected Land Owners, etc.).