

Mid Halton Wastewater Treatment Plant Expansion– Online PIC #2 Script

Slide 1 (Welcome Slide)

Hello and welcome to the second Public Information Centre, or PIC, for the Mid-Halton Wastewater Treatment Plant (WWTP) Expansion Municipal Class Environmental Assessment Study for Halton Region, which we will refer to as “the Study” in this video.

This study considers a range of alternatives to expand the Mid-Halton Wastewater Treatment Plant to support growth in Halton Region.

A PDF version of this slideshow is available online on the project page on halton.ca. The Public Information Centre will be available for public comment until December 5, 2025.

Thank you for taking the time to watch this presentation and to learn more about the study. We encourage you to watch the video and share your input with the project team. Your feedback is valuable to us!

Slide 2 (Purpose of Public Information Centre #2)

The purpose of this PIC is to:

- Share considerations for capacity expansion at the Mid-Halton WWTP;
- Share information on the evaluation process and recommended design concept for expansion; and
- Gather input and share the next steps in this study.

We value your input. Your feedback will help to shape the decision-making process for this project

Visit the Municipal Class Environmental Assessment (MCEA) Studies webpage on halton.ca to submit your comments.

Slide 3 (Background)

As part of the Region’s overall strategy for meeting existing and future wastewater servicing needs for a growing population, the Mid-Halton WWTP must be expanded by 2031.

The original strategy included a plan to increase the plant capacity from 125 million litres per day average daily flow to 175 million litres per day average daily flow by 2031.

Based on optimization opportunities identified in the early stages of the study, it was determined that 195 million litres per day could be achieved within a similar footprint to a 175 million litres per day expansion. This increased capacity will better support local municipal growth priorities within the Region and will provide cost and operational efficiencies.

Therefore, the purpose of this Municipal Class Environmental Assessment is to develop a solution for increasing the capacity of the plant to 195 million litres per day.

Slide 4 (Key Considerations)

There are several considerations that are taken into account when developing alternatives for plant expansion. The key considerations for plant expansion include:

- Increasing capacity to 195 million litres per day to meet existing and future treatment needs
- Maintaining flexibility on-site to allow for future expansions
- Optimizing operation and plant performance
- Protecting the environment and community
- Minimizing Greenhouse Gas Emissions, and
- Controlling Odour and Noise

Slide 5 (Study Area)

The figure on this slide shows a map of the study area for the project, which is within the Mid-Halton WWTP site, located at 2195 North Service Road West in Oakville. The study area also includes the Third Line Pumping Station located northeast of the wastewater treatment plant. However, no expansion work is anticipated at the Third Line Pumping Station for this project.

The wastewater treatment plant expansion work will occur within the Mid-Halton WWTP study area; however, impacts and mitigation measures will be considered for both the plant and the surrounding community.

Slide 6 (Study Process and Schedule)

This study follows the planning and approval process for municipal infrastructure that follows Ontario's *Environmental Assessment Act*.

Social, cultural, natural environment, technical and economic aspects are considered during the study process. We will also consider community interests, technical requirements and project-specific issues.

This study has been identified as a Schedule "C" project and follows Phases 1 to 4 of the Municipal Class Environmental Assessment, or MCEA process.

Consultation is ongoing throughout the four phases of the MCEA process, and we welcome your comments and feedback at any time during the study. The four boxes at the bottom of this slide represent key consultation milestones that are planned. This study was initiated in Winter 2025, and we are currently at Phase 3, where we are seeking feedback on the recommended expansion concept.

At the end of the study, an Environmental Study Report, or “ESR,” will be prepared to document the planning and decision-making process. The ESR will be made available for public review for a minimum of 30 days. A Notice of Completion will be issued to commence the review period. Study completion is targeted for Winter 2026.

Slide 7 (Key Themes from PIC #1 Feedback)

We would like to thank the community for providing input during the first Public Information Centre in June 2025. The key themes that were raised by the community were:

- **Air, odour and noise:** Determining and mitigating potential odour and noise impacts resulting from the wastewater treatment plant expansion is a key concern. The project team included mitigation of odour and noise during construction and operation as integral parts of the evaluation of expansion alternatives. Air, odour and noise studies are currently underway that will identify measures to control emissions, odour and noise. These control measures will be included in the detailed design.
- **Natural environment:** Protecting the natural environment in proximity to the wastewater treatment plant from potential impacts of the expansion is a key concern. The project team included protection of the environment as an integral part of the evaluation of expansion alternatives. A natural heritage assessment and field survey were completed to identify natural habitats and species on and around the WWTP and mitigation measures that will be implemented during construction to protect these habitats and species.

Slide 8 (Supporting Studies – Key Findings)

To define existing conditions, assess expansion alternatives and establish appropriate mitigation measures for potential expansion impacts, several supporting studies were initiated.

- **Air, Odour and Noise Assessments:** Assessments are ongoing and will be completed during the design process to ensure the expansion meets regulatory requirements and minimizes impacts on neighbouring communities.
- **Climate Change and greenhouse gas, or GHG, Emissions:** GHG emission calculations were developed for all process alternatives, as reducing GHG emissions is an important goal for Halton Region. Process alternatives with low

GHG emissions were considered in developing the recommended expansion alternative.

- Natural Environment Features: Natural Features and Species at Risk did not occur within the study area but were identified in the surrounding area. Mitigation measures will be included in the detailed design to minimize impacts on these areas.

Slide 9 (Supporting Studies – Key Findings)

- Archaeological Assessment: The land within the Mid-Halton WWTP site does not retain archaeological potential. No further investigations are required based on the proposed scope of work.
- Cultural Heritage Features: The Merton-Mount Pleasant cemetery, located across the road from the Mid-Halton WWTP, was identified as a recognized heritage property. The plant expansion will not impact the Merton-Mount Pleasant Cemetery.
- Receiving Water Impact Assessment: The results showed that increasing the flow at the Mid-Halton WWTP from 125 ML/d to 195 ML/d will not result in any adverse impacts on drinking water intakes and key recreational locations near shore.

Slide 10 (Existing Liquids Treatment Processes)

The figure on this slide provides a schematic diagram of the liquids treatment processes at the Mid-Halton wastewater treatment plant Facility.

Wastewater is conveyed to the Mid-Halton WWTP through the North Pumping Station and the Third Line Pumping Station, where it enters the plant at the headworks building to have any large solids removed. Wastewater flows are then conveyed to primary treatment, where primary clarifiers remove suspended solids. The secondary treatment includes two process units: aeration tanks to promote biological treatment and secondary clarifiers to remove the remaining solids. The final effluent receives seasonal disinfection between May 1 and October 31 through ultraviolet lights for pathogen removal. Treated effluent is then discharged through a dedicated outfall into Lake Ontario.

Slide 11 (Existing Solids Treatment Processes)

The figure on this slide provides a schematic diagram of the solids treatment processes at the Mid-Halton WWTP.

Sludge from the secondary clarifiers is thickened in the biosolids building by means of rotary drum thickeners to concentrate the sludge and remove a portion of the water. The

thickened sludge is then mixed with sludge from the primary clarifiers and conveyed to the anaerobic digesters for stabilization. Sludge that has been through a stabilization process can be called biosolids. Biosolids dewatering is done by a centrifuge to further concentrate solids and remove water. The water removed from biosolids dewatering goes to an equalization tank for sidestream management.

Slide 12 (Mid-Halton WWTP Upgrades and Expansion Areas)

An analysis of the existing facility identified that some processes at the plant could be upgraded to handle additional flow within their current footprint. Other processes require expansion to meet the future demands.

The figure on this slide shows the areas reserved for new construction in blue. They are the headworks vortex grit removal, primary and secondary treatment in the eastern portion of the site, anaerobic digesters solids treatment in the west, and a small area reserved for sidestream management expansion east of the existing biosolids building.

Space has provisionally been reserved west of the existing North Pumping Station in case it is needed for expansion. It is likely that the required additional capacity can be accommodated within the existing building. However, this will be confirmed during detailed design.

Other processes that will have capacity expansions implemented by adding new equipment to existing buildings are headworks screening, UV disinfection, and thickening and dewatering in the biosolids building.

Four key expansion areas were identified as requiring further analysis through the Environmental Assessment process to determine the recommended alternative. They include:

- Primary and Secondary Treatment, constituting the liquids treatment
- Solids Treatment, and
- Sidestream Management

A detailed evaluation process was completed for each of these areas.

Slide 13 (Evaluation Methodology)

The evaluation methodology used to narrow down technologies and select a preferred design concept consisted of three main steps:

- Step 1 entails screening technologies from the long list using pass/fail criteria to establish a short list of technologies. The five questions used to screen technologies were:
 1. Is it a proven technology at similar facilities?

2. Is it able to provide opportunities for future expansion?
 3. Does it present opportunities to reduce greenhouse gas emissions?
 4. Can it be constructed and operational by 2031?
 5. Is it compatible with existing infrastructure and processes at the plant, and can it reliably maintain or improve performance requirements? This last criterion was included because of stakeholders' feedback received after Public Information Centre #1.
- Step 2 consists of assessing the short-listed alternatives based on detailed criteria to identify alternative design concepts. Detailed criteria will be provided in the next slide and are divided into the Natural Environment, Social and Cultural, Technical and Economic categories.
 - Finally, Step 3 presents the recommended design concept for public input through Public Information Centre # 2 and the Environmental Study Report, which will be available for a 30-day public review in Winter 2026.

Slide 14 (Detailed Evaluation Criteria)

Shortlisted technologies were evaluated using a set of detailed evaluation criteria broken into four categories. These categories include:

1. Natural Environment
2. Social and Cultural
3. Technical Considerations, and
4. Economic

The criteria considered in each category are shown on this slide.

In the next slides, we are going to present the detailed evaluation results for Primary Treatment, Secondary Treatment, Solids Treatment and Sidestream Management based on these criteria.

Slide 15 (Evaluation Results – Primary Treatment)

The Mid-Halton WWTP currently uses Conventional Sedimentation for primary treatment which involves removing large particles through gravity settling. Chemically Enhanced Primary Treatment, or CEPT, was examined as an alternative technology. CEPT involves adding additional chemicals to speed up the removal process.

The Natural Environment and Technical scores were similar for both technologies, but scores for the Social and Cultural and Economic categories were better for conventional sedimentation, which was the recommended technology.

Both technologies require similarly sized tanks; however, CEPT would require an additional chemical building to be constructed.

Therefore, conventional sedimentation, which is consistent with the existing process, is recommended to be implemented in a new treatment train for primary treatment.

Slide 16 (Evaluation Results – Secondary Treatment)

The secondary treatment process currently uses Conventional Activated Sludge with Chemical Phosphorus Removal, or Chem P for short. Chemicals are added to reduce the concentration of phosphorus in the final effluent. Enhanced Biological Phosphorus Removal or EBPR is an alternative technology that was considered that removes phosphorous biologically but requires more equipment for process intensification.

The evaluation scores for the two options are currently very similar, with technical scores being slightly better for Conventional Activated Sludge with Chem P and Economic scores being slightly better for the Process intensification with EBPR alternative. The footprints for both technologies are also similar.

There is potential for chemical costs to continue rising in the future, increasing the costs of Conventional Activated Sludge with Chem P treatment. Before making a final recommendation, Halton Region will undertake a more detailed financial analysis during the design stage, which will consider the impact of rising chemical costs and potential supply chain disruption. Process intensification with EBPR is being carried as a provisional option.

For now, the evaluation outcomes and technical justification determine that Conventional Activated Sludge with chemical phosphorous removal, similar to the existing process, is the recommended technology.

Slide 17 (Evaluation Results – Solids Treatment)

Conventional anaerobic digesters are currently used at the Mid-Halton WWTP for sludge stabilization. Primary sludge thickening was considered as an alternative technology, which would add an additional process step to sludge treatment but optimize anaerobic digestion.

Scores are comparable for the Natural Environment, Social and Cultural, and Technical categories, but better for conventional digester expansion in the Economic category.

Therefore, conventional digester expansion is the selected technology, similar to the existing process. It maintains current operational practices and has lower costs. Two new anaerobic digesters would need to be constructed west of the existing digester complex for solids treatment capacity expansion.

Slide 18 (Evaluation Results – Sidestream Management)

Sidestream management is required to handle the liquid produced during the solids dewatering process and to manage ammonia levels. Currently, the Mid-Halton WWTP

uses equalization tanks to manage sidestream flows. This study considered additional sidestream treatment to further manage ammonia levels.

The Natural Environment and Social and Cultural scores were similar for both technologies, but scores for the Technical and Economic categories were better for equalization.

Sidestream treatment is not currently required to meet ammonia targets for the expansion. Sidestream treatment is provisional and will be triggered if ammonia management requirements change.

The preferred alternative is expanding equalization capacity. Implementing equalization now does not preclude the Region from implementing sidestream treatment in the future, as the equalization tank expansion is required for both alternatives. Space has been reserved if sidestream treatment is needed in the future.

Slide 19 (Recommended Design Concept)

The recommended design concept for the Mid-Halton WWTP includes new construction and upgrades to existing infrastructure. Capacity expansion would be provided by:

- Upgrading existing pumps in the North Pumping Station;
- Adding a third screen in the existing spare channel and building the third vortex grit tank at the Headworks Building;
- Building a new treatment train with conventional primary clarifiers, conventional activated sludge with Chem P removal aeration tanks and secondary clarifiers, similar to the existing process;
- Adding UV equipment in the existing fifth channel at the UV Disinfection Building
- For solids treatment, building two new anaerobic digesters and adding a rotary drum thickener and a centrifuge in the existing Biosolids Building; and
- Adding an underground centrate tank for sidestream management.

The figure on this slide depicts the expansion infrastructure required to reach a capacity of 195 ML/d in blue and the upgrades to existing buildings in grey.

Slide 20 (Recommended Design Concept Layout)

The figure on the left side of this slide shows the existing layout of the Mid-Halton Wastewater Treatment Plant. The figure on the right side of this slide shows how the plant will look with the implementation of the recommended design concept. New infrastructure, including provisional solutions, is highlighted in yellow.

As seen, there will be minimal changes to the plant site, with expanded processes and facilities being similar to the existing. The site will be restored and landscaped following construction.

Slide 21 (Anticipated Project Implementation Schedule)

The implementation schedule is a very important component of this project, since the upgraded capacity will be needed by 2031. The Municipal Class Environmental Assessment is ongoing and is planned to be completed in early 2026. The Enhanced Conceptual Design will define high-level design elements and will be developed by the project team throughout 2026. Preliminary and Detailed Design Phases are planned to start at the end of 2026 and be completed in the first portion of 2028, when construction would commence.

Slide 22 (Next Steps in the MCEA Study)

This concludes the video for PIC #2 of the Mid-Halton WWTP Expansion Municipal Class Environmental Assessment Study. Following this Public Information Centre, the Project Team will:

- Review and consider feedback from agencies, stakeholders, Indigenous Communities, and the public on the recommended design concept, and;
- Develop an Environmental Study Report and make it publicly available for review and input in Winter 2026

We would like to invite you to provide your comments on the material we have presented and on the study in general. There are two ways to provide your comments:

- You can complete the online survey by December 5, 2025, on the Municipal Class Environmental Assessment Webpage on halton.ca.
- Or you can provide your comments directly to the project team at Halton Region by emailing MidHaltonUpgrades@Halton.ca

Project information will continue to be updated on the Mid-Halton Wastewater Treatment Plant Expansion Study page on halton.ca. We would also like to invite you to join our mailing list for the project to receive updates on the project's progress. You can join the project mailing list to receive updates by sending your name and your email address to MidHaltonUpgrades@Halton.ca

Thank you, and we look forward to receiving your feedback.