



York Durham Sewage System Duffin Creek WPCP Stage 3 Expansion Project

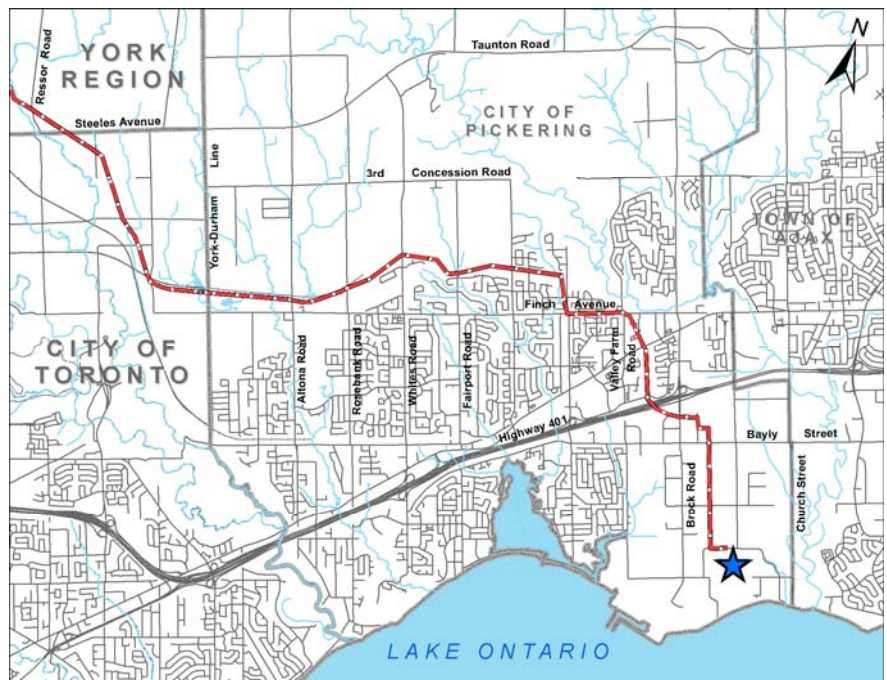
The Regional Municipalities of York and Durham jointly own the Duffin Creek Water Pollution Control Plant (WPCP), located in the City of Pickering. This facility receives and treats approximately 90 per cent of the wastewater generated by the citizens of York Region, as well as serving Durham Region residents in the City of Pickering and the Town of Ajax. The Duffin Creek WPCP operates within strict compliance requirements regulated by the Ministry of the Environment and only fully processed water is discharged into Lake Ontario – including during large storm events.

To accommodate the additional wastewater flows from projected growth in the two Regions as allowed for under the Regions' Official Plans, the WPCP needs to expand the liquids treatment process by the end of 2010 and the biosolids treatment process by spring of 2012.

The expansion will continue providing proper treatment for a total of 1.5 million people. The existing treatment plant provides a high degree of treatment, exceeding most large treatment plants discharging to Lake Ontario. After the Stage 3 expansion, there will be an even greater level of treatment. There are no bypass or emergency overflow capabilities in either the current operation or the design for the expansion of the Duffin Creek WPCP. Unlike the majority of all other treatment plants, it is not designed to permit raw sewage to flow into Lake Ontario.

The expanded WPCP will provide an enhanced level of treatment above the requirements on most if not all large treatment plants including:

- Nitrification/denitrification to remove ammonia (nitrogen) from effluent
- Chemical addition to enhance phosphorus removal from effluent
- Step feed to enhance process of biological treatment
- Environmentally advanced solids handling facilities



These enhancements will allow the plant to discharge effluent that is measurably superior to that discharged by any other treatment plant into Lake Ontario

York and Durham Regions have committed to reduce effluent limits beyond levels proposed in the ESR and establish a new limit for un-ionized ammonia as well as a 25 per cent reduction in the daily discharge limit for phosphorus. These are unprecedented initiatives.

Project Status:

The Stage 3 expansion underway represents good planning and implements an advanced sewage treatment solution to infrastructure needs identified under Regional Master Plans, completed under the Municipal Class Environmental Assessment process.

Project Description:

The Duffin Creek WPCP is an advanced wastewater treatment facility on the northern shore of Lake Ontario with a current rated capacity of 420,000 cubic metres per day. The Stage 3 expansion will ultimately expand this facility to 630,000 cubic metres per day.

Work included in the expansion is comprised of both liquid and biosolid facility processes. The wastewater process at Duffin Creek WPCP features primary clarification, activated sludge process using fine bubble aeration, secondary clarification and disinfection. The biosolids are processed and disposal is through on-site thermal oxidation (incineration), with recycling of the ash at a cement manufacturing facility. Additional details on this project can be viewed on the project website at (<http://www.durham.ca/duffincreek>).

Features will include energy efficient processes together with energy recovery and sophisticated emission controls within the solids handling processes. First LEED certified application for a biosolid treatment facility.

The expanded plant will allow for the servicing of new communities through the YDSS and will enhance the local natural environment by removing the discharge from septic systems and local treatment plants that discharge a lower quality of effluent to local streams. This will enhance the benefit to the local streams that was originally realized through the construction of the Duffin Creek WPCP and the York Durham Sewage System by the Province of Ontario in the 1970s.

Environmental:

York Region is working with Toronto and Region Conservation on a Greening/Biodiversity Plan that includes enhancing the neighbouring, environmentally sensitive area of the Duffins Marsh. Included in the plan is the creation of berms as a buffer zone and replace the sedimentation pond used during construction with a designed wetland

- The intention is to attract a large variety of wildlife as permanent habitants and create a wildlife corridor for migration
- The area features walking trails with lookout areas on the shore of Lake Ontario

Cost: The total overall project cost is \$585 million.