Upper York Sewage Solutions
Environmental Assessment
Frequently Asked Questions
June 6, 2012

Why was the Water Reclamation Centre identified as the Preferred Alternative?

The Water Reclamation Centre was identified as the preferred "Alternative To the Undertaking" based on its comparison to other alternatives set out in the Terms of Reference for the Upper York Sewage Solutions Individual Environmental Assessment. The Terms of Reference were approved by the Minister of the Environment March 2010 and must be followed so that the requirements of the *Environmental Assessment Act* are met. The comparison was based on the application of 15 screening criteria to the listed alternatives in accordance with the requirements of the Terms of Reference. The screening criteria are condensed and summarized as follows:

- Can the Alternative satisfy the study's problem/opportunity statement?
- Is the Alternative consistent with relevant Provincial growth, environmental policies and legislation?
- Is the Alternative consistent with applicable Regional Master Plans, Official Plan, Strategies and initiatives?
- Does the Alternative include proven technologies that are commercially available, demonstrate successful operations and are technically feasible?
- Can York Region implement the Alternative on its own or through an existing jurisdictional agreement and is it financially viable based on its conceptual cost estimate?

Although both the Discharge to Lake Ontario Alternative and the Water Reclamation Centre Alternative were considered viable alternatives, satisfying all 15 screening criteria, when compared to the Discharge to Lake Ontario Alternative, the Water Reclamation Centre (a sewage treatment facility followed by water treatment technologies) provided several additional benefits:

- Enhanced water efficiency and conservation through the production of reclaimed water (water that results from undergoing, at a minimum, secondary treatment processes) for a variety of water reuse opportunities including irrigation and industrial processes - reducing demand for potable/fresh water.
- A reliable water source, protecting against potential climate change impacts, including changes in rainfall intensity and frequency.
- Promotes a water balance within the Lake Simcoe watershed. Groundwater from existing municipal wells in the Lake Simcoe watershed and used locally by residents and businesses would be conveyed to and treated at the Water Reclamation Centre before being returned to a local watercourse within the Lake Simcoe watershed.
- Improve the quality and increase the quantity of the water flowing into Lake Simcoe. Many rivers and creeks in the Lake Simcoe watershed are currently experiencing seasonal low base flows. The highly treated, phosphorus-reduced water would be redirected to a local watercourse, beneficially augmenting surface water base flow. These benefits align with the policies of the Lake Simcoe Protection Plan through enhanced wastewater treatment.
- The Water Reclamation Centre can be built in stages to accommodate forecasted growth incrementally through 2031. This means the total capital cost could be allocated and spent as additional treatment capacity is required. Additionally, as new regulations and advances in technology become available, subsequent stages can include such advances in their design.

Where are you in the Environmental Assessment process? What are you doing now?

The project is currently at the "Alternative Methods of Carrying Out the Undertaking" (Alternative Methods) stage. This stage includes documenting existing conditions in the study area, generating, screening and assessing alternative potential Water Reclamation Centre sites and conveyance infrastructure. In parallel to the Alternative Methods stage, various treatment technologies will be assessed to identify the most suitable Water Reclamation Centre design for satisfying project-specific regulatory requirements, which will be considered as part of the impact assessment stage of the UYSS EA. Additionally during the Alternative Methods stage, modifications to the existing York Durham Sewage System (YDSS) in Newmarket are being evaluated. The modifications include an additional sewage forcemain for the Newmarket and Bogart Creek Pumping Stations. These modifications are needed to accommodate growth in most of Newmarket and Aurora, to provide additional system reliability during high flow conditions (e.g., storm events) and relief to the existing conveyance system during system maintenance operations.

The first part of Alternative Methods is to find a technically and environmentally appropriate site for the Water Reclamation Centre. To provide accuracy and objectivity, a sophisticated Geographical Information System database was developed for generating, screening, and assessing potential sites based on information loaded into the database considering technical requirements such as site size, elevation, distance to receiving watercourse, and a location in the Town of East Gwillimbury or the Town of Newmarket. Site suitability was also considered, including proximity to sensitive features and land uses such as Provincially Significant Wetlands, Environmentally Significant Areas, Areas of Natural and Scientific Interest, Significant Habitat of Endangered and Threatened Species, Significant Wooded Areas, the Greenbelt Natural Heritage System, the Oak Ridges Moraine, the regulated floodplain, Wellhead Protection Areas, site configuration and proximity to residences. A report, ***Generation of the Long List of Potential Alternative Water Reclamation Centre Sites,*** outlining the steps to reach a long list of potential sites, is posted on the project website www.uyssolutions.ca.

Through the completed screening assessment of the long list of potential sites, four alternative Water Reclamation Centre sites were selected to be carried forward for comparative evaluation because they all demonstrated advantages over the other potential alternative Water Reclamation Centre sites, thereby making them more suitable for accommodating the proposed Water Reclamation Centre while also minimizing potential adverse environmental effects. The report, ***Screening of the Long List of Potential Alternative Water Reclamation Centre Sites and Development of the York Durham Sewage System Modifications***, is posted on the project website.

How will the Water Reclamation Centre prevent overflows/spills during high flow conditions (e.g., storms)?

The Water Reclamation Centre will be designed in accordance with provincial legislation with respect to building codes that address requirements for safety for the structural, architectural, mechanical and electrical components of the facility. The facility will be designed to operate within design levels for area floodline conditions, area wind/weather conditions and area structural/ seismic conditions.

The Water Reclamation Centre will be designed to include standby power facilities to power essential components of the facility in the event of an area-wide power failure. This is also the case for the pumping stations that transfer the sewage to the Water Reclamation Centre. Typically these are diesel-driven generators with dedicated fuel storage tanks to keep the facilities running. Under

prolonged power outage periods, York Region has response programs to keep the fuel tanks filled in order to maintain the standby power supply until power is restored.

The Water Reclamation Centre will be designed to treat the peak flow that will be delivered to the facility from the pumping stations. This peak flow will be approximately three times the average day flow that the facility will see in year 2031. The unit processes will be designed to accommodate this peak flow with key process equipment out of service. In other words, all key processes will have back up systems in the event a unit needs to come out of service for routine maintenance. This back up security is a protection barrier to ensure the Water Reclamation Centre operates successfully, even under an unusual occurrence. The Water Reclamation Centre will be designed in accordance with the Ministry of the Environment's Design Guidelines for Sewage Works, 2008 which specifically requires proponents to accommodate peak flow and incorporate redundant services.

Finally, the Water Reclamation Centre will maintain a connection to the York Durham Sewage System through York Region's Newmarket pumping station for operational flexibility.

How will odour from the Water Reclamation Centre be handled?

The design of the proposed Water Reclamation Centre is intended to provide enhanced air handling technology. As such, air quality (odour) control is being taken very seriously and will be integral to the design of the Water Reclamation Centre. Based on past experience, unit operations which have the potential to generate air quality issues will be contained and the air treated to reduce the amount of odour-containing compounds prior to discharge to the atmosphere. These processes will be regulated and overseen by the Ministry of the Environment. The design of buffer zones around the plant will further reduce the potential for air quality issues occurring off-site. Plant design will include the application of operating procedures which promote practices to proactively control the potential for air quality issues.

The short list of potential Water Reclamation Centre sites will be assessed through a net effects analysis taking into consideration the type and scale of potential environmental effects (technical, natural, built, social, economic, cultural, and financial) from the Water Reclamation Centre site and their relative significance. As part of the net effects analysis, potential air quality effects (including air quality modeling) on sensitive receptors will be assessed with respect to the number of sensitive receptors affected and extent and duration of adverse effects. Appropriate avoidance, mitigation, and/or compensation measures will be applied. Following the net effects analysis, a recommended Water Reclamation Centre site will be identified based on a comparison of the relative advantages and disadvantages of each site.

How will sludge from the Water Reclamation Centre be handled? Will this affect truck traffic?

During this Alternative Methods stage of the project, the Upper York Sewage Solutions Environmental Assessment project team will be evaluating biosolids management alternatives which will include, among other options, on-site treatment or transfer to York Region's centralized treatment facility at the Duffin Creek Water Pollution Control Plant. The number of biosolids handling haulage trucks will depend on the biosolids management alternative ultimately selected. With respect to truck traffic in general, the intent is to direct traffic to and from the Water Reclamation Centre through road corridors that are adequate to accommodate these types of vehicles and volume of traffic.