YDSS Servicing

YORK DURHAM SEWAGE SYSTEM

Municipal Partners Protecting the Environment Since1971

December 2005

Media Backgrounder

Note to Media:
Technical tours are available by contacting York Region's Corporate Communications
A CD of a working tunnelling machine is available on request

"Earth Pressure Balance" Tunnelling Machine

The preferred route for a key York Durham Sewage System interceptor sewer that outscored nine alternative routes will employ the most recent advances in tunnelling technology. An Earth Pressure Balance Tunnelling Machine (EPBTM) will be used on the interceptor sewer – planned to go along 19th Avenue and a portion of Leslie Street in Richmond Hill.

The EPBTM excavation mode acts as an auger encased in a long tube; it provides continuous support to the tunnel face by balancing the inside earth and water pressure against the thrust pressure of the machine. As the tunnel is being mined by the EPBTM, the sewer liner is continuously installed within the tail shield of the machine and then as it moves forward, the rings are grouted in place. This eliminates the need to re-visit the site for secondary construction.

What makes the EPBTM technology significant to York Region's Interceptor project is its ability to work through almost all soil conditions, most notably water-bearing soil. Conventional tunnelling techniques require dry soil conditions and therefore dewatering is necessary in order to complete construction. A key feature of the EPBTM is that planned dewatering is not required; localized dewatering is required only at access shafts or in the rare event that a boulder, which cannot be cut by the machine, is encountered. Dewatering would take place while the obstruction is being removed.

Sewer construction in-tunnel has the advantage of reduced impacts on surface features (i.e. roads, trees, sidewalks), traffic access to businesses and properties and, where applicable, on wildlife, aquatic habitat and vegetation. Tunnel construction also permits crossing underneath underground utilities and structures without disturbing them.

Application:

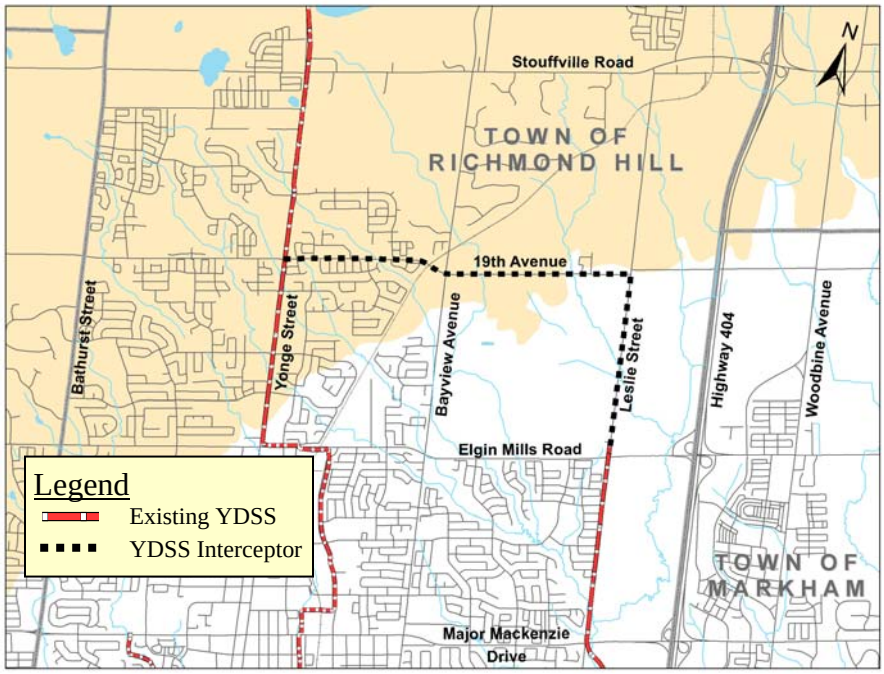
- Tunnelling operation averages 1.7 metres per hour
- EPBTM will be used to install 4.1 km of sewer along 19th Avenue
- EPBTM is capable of excavating through almost all ground conditions without the need to dewater or lower the water table

Benefits of Earth Pressure Balance Tunnelling Machines:

- Capable of excavating through almost all ground conditions, including non-cohesive soils, with water pressures above the EPBTM and mixed faced ground conditions
- Dewatering or lowering of the water table is generally not required to facilitate the construction of a tunnel with an EPBTM
- Reduced construction nuisance to traffic
- Reduced environmental impact
- Reduced damage to property
- The use of EPBTM eliminates the potential for direct impact to the environment as the construction of the sewer is located well below the surface features

Project Description:

The interceptor project is comprised of 4.1 km of sewer constructed using an Earth Pressure Balance Tunnelling Machine and 1.6 km of sewer being constructed using conventional open cut construction.



Overall Cost:

The project has an estimated capital cost of $57 million.

Project Status:

- Peer Review complete
- Alternatives Assessment and Peer Review filed on public record
- Permit to Take Water (PTTW) application and supporting documentation to be submitted to the Peer Review team
- Public Information Session on the PTTW application and supporting documentation held on December 8, 2005
- Submission of the PTTW application and supporting documentation to Ministry of Environment expected in early January 2006

For more information, the media should visit the York Region Web site: www.york.ca or contact:
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