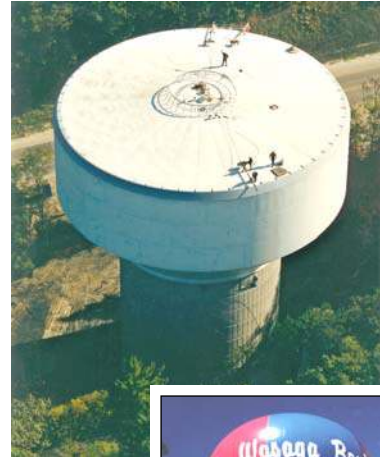


Powerline Road Watermain – Town of Wasaga Beach

Potable water is supplied to the Town of Wasaga Beach by two (2) elevated water storage reservoirs, one on Sunnidale Road and the other on River Road East. The Ontario Clean Water Agency (OCWA) reported problems filling the West end reservoir. The existing distribution system did not have sufficient capacity to fully recharge the tanks in an efficient manner. To alleviate the problem, it was proposed to extend a trunk watermain from Powerline Road to Sunnidale Road.

Sunnidale Road Reservoir



The Ainley Group met with The Town of Wasaga Beach and the Ministry of Natural Resources (MNR) at the site location to discuss construction options. In the past, the Town had requested approval from the MNR for the installation of a watermain through the Provincial Park area using open cut construction. The open cut method was discounted because the Ministry was concerned about possible damage to the natural environment. At a meeting held on a later date, horizontal directional drilling construction methods for pipe installation were discussed with and accepted by the MNR.



East End Reservoir

Environmental Assessment

The Ainley Group initiated an Environmental Assessment under Schedule 'B' of the Municipal Class Environmental Assessment Document as issued by the Municipal Engineer's Association.



Eastern Hognose Snake

Depending on the option chosen, the proposed watermain would likely run through the habitat of the Eastern Hognose snake, typically found in sandy soils close to wetlands and Hill's Thistle, a native thistle whose particular growing environment restricts it to the Great Lakes region. Both are Provincially protected species.

The Environmental Assessment developed two alternate solutions to the problem.

Option 1: Construction of New Watermain from Powerline Road to the Water Pollution Control Plant (WPCP) through Wasaga Beach Provincial Park by horizontal directional drilling methods and then from the WPCP along Knox Road East to Sunnidale Road.

Option 2: Construction of New Watermain along Powerline Road, Klondike Park Road and Freethy Road connecting to Sunnidale Road.



Hill's Thistle

Option Details

Option 1 - Construction of 1150 (Phase 1) + 1700 (Phase 2) metres of New Watermain through Wasaga Beach Provincial Park

This option would involve two phases of construction. The first phase would include the construction of a 500 mm diameter watermain through the Ministry of Natural Resources property for a length of 700 metres and would utilize horizontal directional drilling to minimize harm to the existing environment. Phase One would also include the construction of 150 meters of watermain from Fernbrook Drive intersecting the pipe to the Water Pollution Control Plant and approximately 300 metres of 400 mm diameter watermain along the north side of the Water Pollution Control Plant property. The final contract price of this phase was \$1,067,000.00.

The second phase would be the extension of the watermain from the WPCP property to Knox Road East using horizontal directional drilling to cross the Nottawasaga River and then continue along Knox Road East to Sunnidale Road for a total length 2,100 metres to supply the Sunnidale Road Tank at a cost of approximately \$ 2,600,000.00 (Phase 1 + Phase 2).

Option 2 - Construction of 12,500 metres of New Watermain along Klondike Park Road and Freethy Road

For this alternative, a new watermain would be constructed southerly along Klondike Park Road and westerly on Freethy Road to meet Sunnidale Road. The project would likely be a mix of open cut construction and horizontal directional drilling. There are three (3) stream crossings in the project area that would have to be traversed and approximately 500 m of watermain would run through an environmentally protected area surrounding the Nottawasaga River. The estimated cost of this option was approximately \$6,000,000.00.

Option 1 was selected as the preferred option as it was less expensive and would have a lesser impact on the environment.

Construction

The construction involved traversing a 700 metre length of property at a depth of up to 7 metres under the Wasaga Beach Provincial Park using horizontal directional drilling. Before construction, a hydraulic network analysis was completed to confirm the required internal pipe size diameter of 400-mm. The pipe used on this project was high-density polyethylene (HDPE) DR 11.



Directional Drilling rig in operation during winter conditions



The 500-mm diameter watermain stung through the Water Pollution Control Plant, ready to be pulled under the Wasaga Beach Provincial Park property.



Watermain strung along Woodland Drive.

Another 683 metre section of 550-mm diameter HDPE DR 9 watermain was installed from Powerline Road to the Water Pollution Control Plant (WPCP) by directional drilling. Another 150 metres of 400-mm diameter PVC DR 18 was laid from Fernbrook Drive running south on Powerline Road to intersect with the 500-mm diameter watermain. Approximately 300 metres of 400-mm diameter PVC DR 18 watermain was installed along the north side of the WPCP property. Directional drilling is also proposed to install the watermain under the Nottawasaga River, along Knox Road East to Sunnidale Road.



Pipe fusing rig joining two section of watermain.



Directional drill equipment.

The majority of construction was completed during the winter months. The weather provided some adverse conditions for the directional drilling crews and the installation of the pipeline. The project was completed within budget constraints with substantial completion being achieved in January 2009.