

REGIONAL MUNICIPALITY OF PEEL

To construct, reconstruct, erect or place a building or structure, site grade and temporarily or permanently place, dump or remove any material, originating on the site or elsewhere from approximately Dixie Road and Derry Road to just west of Highway 410 in the City of Mississauga, Etobicoke Creek Watershed, as located on property owned by the City of Mississauga from whom the Regional Municipality of Peel is securing temporary and permanent easements.

The purpose is to construct a 2,400 mm diameter trunk sanitary sewer from the northeast corner of Dixie Road and Bramalea Road westerly along Derry Road into Credit Valley Conservation's (CVC) jurisdiction. Work within TRCA's jurisdiction has been divided into 2 separate permit applications. As part of the Region of Peel's phased work plan for the ultimate construction of this new east-west diversion trunk sewer, this application (CFN 60046) includes the construction of the trunk sewer from the northeast corner of Dixie Road and Derry Road, westerly along Derry Road to just west of Highway 410. Work will also involve the construction of a temporary fill pad at the northeast corner of Dixie Road and Derry Road which will be used for construction purposes. Once construction has been completed a portion of the fill will be removed and the site converted to a permanent maintenance access site.

MAP LOCATION: East-West Diversion Sewer (Starting at Dixie Road and Derry Road)



The permit will be issued for the period of September 11, 2020 to September 10, 2025 in accordance with the following documents and plans which form part of this permit:

- **Plan 69789-D - East to West Diversion Sanitary Trunk Sewer, Contract 1, Abbreviations, Legend, and General Notes; prepared by Jacobs; dated January 2020; received July 13, 2020; Plan 69790-D - East to West Diversion Sanitary Trunk Sewer, Contract 1, General Notes and Structure Coordinates; prepared by Jacobs; dated January 2020; received July 13, 2020; red line revised August 21, 2020; Plan 69806-D - Derry Road From Mavis Road to Dixie Road, Prop. 2400mm Sanitary Sewer, STA 7+780 to STA 8+060; prepared by Jacobs; dated June 2020; received August 18, 2020; Plan 69807-D - Derry Road From Mavis Road to Dixie Road, Prop. 2400mm Sanitary Sewer,**

STA 8+060 to STA 8+300; prepared by Jacobs; dated January 2020; received July 13, 2020;
Plan 69809-D - Derry Road From Mavis Road to Dixie Road, Prop. 2400mm Sanitary Sewer,
STA 8+480 to STA 8+760; prepared by Jacobs; dated January 2020; received July 13, 2020;
Plan 69810-D - Derry Road From Mavis Road to Dixie Road, Prop. 2400mm Sanitary Sewer,
STA 8+760 to STA 9+040; prepared by Jacobs; dated January 2020; received July 13, 2020;
Plan 69811-D - Derry Road From Mavis Road to Dixie Road, Prop. 2400mm Sanitary Sewer,
STA 9+040 to STA 9+320; prepared by Jacobs; dated January 2020; received July 13, 2020;
Plan 69812-D - Derry Road From Mavis Road to Dixie Road, Prop. 2400mm Sanitary Sewer,
STA 9+320 to STA 9+600; prepared by Jacobs; dated January 2020; received July 13, 2020;
Plan 69815-D - Derry Road From Mavis Road to Dixie Road, Prop. 2400mm Sanitary Sewer,
STA 10+160 to STA 10+440; prepared by Jacobs; dated January 2020; received July 13, 2020;
Plan 69816-D - Derry Road From Mavis Road to Dixie Road, Prop. 2400mm Sanitary Sewer,
STA 10+440 to STA 10+660; prepared by Jacobs; dated January 2020; received July 13, 2020;
Plan 69820-D2 - East to West Diversion Sanitary Trunk Sewer, Contract 1, Site No. 2, Staging &
Work Sequence Plan; prepared by Jacobs; dated June 2020; received July 13, 2020;
Plan 69817-D - East to West Diversion Sanitary Trunk Sewer, Contract 1, Site No. 2, Existing
Site Plan and Tree Removals; prepared by Jacobs; dated June 2020; received July 13, 2020;
Plan 69818-D - East to West Diversion Sanitary Trunk Sewer, Contract 1, Site No. 2, Site
Preparation Plan; prepared by Jacobs; dated June 2020; received July 13, 2020;
Plan 69819-D - East to West Diversion Sanitary Trunk Sewer, Contract 1, Site No. 2, Reduced
Site Laydown Plan; prepared by Jacobs; dated January 2020; received July 13, 2020;
Plan 69820-D - East to West Diversion Sanitary Trunk Sewer, Contract 1, Site No. 2, Site
Restoration Plan; prepared by Jacobs; dated June 2020; received July 13, 2020;
Plan 69831-D - East to West Diversion Sanitary Trunk Sewer, Contract 1, Grading Sections,
Site 2 & Site 3; prepared by Jacobs; dated June 2020; received July 13, 2020;
Plan 69833-D - East to West Diversion Sanitary Trunk Sewer, Contract 1, Restoration Details;
prepared by Jacobs; dated January 2020; received July 13, 2020;
Plan 69834-D - East to West Diversion Sanitary Trunk Sewer, Contract 1, Miscellaneous
Details; prepared by Jacobs; dated January 2020; received July 13, 2020.

RATIONALE

The application was reviewed by staff on the basis of the following information:

Proposal:

The Region of Peel will be constructing a new 2,400 mm diameter gravity trunk sanitary sewer for approximately 11 km along Derry Road from Spring Creek (Derry Road and Bramalea Road), ending at the Credit River in Credit Valley Conservation's (CVC) jurisdiction. Wastewater is now generally conveyed by gravity from north to south through the Region's lake-based wastewater system which services the City of Mississauga, City of Brampton and parts of the Town of Caledon. The Peel wastewater system comprises two principal trunk systems: the west trunk system which conveys flow along and near the Credit Valley to the Clarkson Wastewater Treatment Plant (WWTP) and the east trunk which conveys flow along and near the Etobicoke Creek Valley to the G.E. Booth WWTP. Based on capacity needs to service flows to the year 2041 and beyond, and in order to optimize the infrastructure upgrades and timing of upgrades for the east and west trunk sewers, including the wastewater treatment facilities, this east to west diversion is required. This diversion will also leverage the upgraded capacity of the west system. The majority of the sewer will be constructed using a tunnel boring machine at depths ranging from approximately 5 m at the tie-in point (Spring Creek) to approximately 50 m within CVC's jurisdiction. These depths are based on the need for a gravity fed system and required upstream and downstream connection points for the wastewater system.

Work within TRCA's jurisdiction has been divided into two phases. This first phase will involve the construction of the trunk sewer from the northeast corner of Dixie Road and Derry Road to just west of Highway 410. Construction within this phase of work will involve one crossing of Etobicoke Creek and several other minor crossings through TRCA regulated areas located both east and west of Highway 410. Two shafts will be constructed as part of this work which will allow for the launch and retrieval of the tunnel boring machine, as well as for future access to the trunk sewer through maintenance holes. However, only one shaft (shaft 2) is located within a TRCA regulated area adjacent to Etobicoke Creek (Dixie Road and Derry Road). The receiving shaft located west of Highway 410 (shaft 3) is located in a non-regulated area on the north side of Derry Road. It is expected that the sanitary sewer will be tunneled at over 30 m in depth when crossing through the regulated areas closest to Highway 410, however, at Etobicoke Creek the sewer will be constructed approximately 10 m below the watercourse. The drilling length between shaft 2 and shaft 3 is approximately 2.8 km.

A sanitary sewer connection is required at Etobicoke Creek because the east to west diversion sewer will need to connect to the north-south twin 1,050 mm diameter trunk sewers that currently exist along the watercourse. As a result, a level working site (temporary asphalt surface) will be constructed on the east side of Etobicoke Creek, within the flood plain, to facilitate tunnel construction, construction of a drop chamber, access chamber and associated diversion chambers and sewers. Since the north-south trunk sewers at this location are separate, the proposed connection involves breaking into each pipe separately, constructing manholes at each pipe, connecting to a common manhole and installing a connection to the diversion sewer. The temporary site will be graded to above the 100-year storm flood line for added protection to the infrastructure.

A perimeter swale will treat surface runoff from the temporary work site and will direct runoff from the site to sediment traps. The existing ditch along Derry Road will be temporarily carried through a drain pipe. The ditch will be reinstated and restored once construction has been completed and the site re-graded to the proposed permanent elevation. Water from the shaft locations will be discharged to the existing sanitary sewer system.

The temporary asphalt surface will need to be in place for several years as shaft 2 will be required for the construction of the eastern portion of the sewer from Dixie Road to Bramalea Road (to be reviewed under a separate permit application). Upon completion of construction some of the fill established for the working area will be removed, however, the permanent chambers and access road will have a finished ground elevation to the 100-year storm event. Restoration of this site is expected to commence in the year 2024, once work has been completed and the temporary construction pad is no longer required. As such, this permit will be issued as a 5 year permit.

These works were reviewed through the Municipal Class Environmental Assessment process (Schedule C).

Control of Flooding:

Fill is required to facilitate the construction of the diversion sewer on the northeast corner of Derry Road and Dixie Road. The expected net volume of temporary fill at Derry Road and Dixie Road during construction is expected to be 5,735 cubic metres. Once construction has been completed, 3,517 cubic metres of fill will be removed from the site leaving 2,218 cubic metres which will be used to keep the site/infrastructure above the 100-year flood elevation and to accommodate access for future infrastructure maintenance. The temporary fill condition will raise the Regional Flood elevation by 0.05 m and the permanent fill will raise the Regional Flood

elevation by 0.04 m, both of which are within our error of model tolerance. As such, there will be no significant increase to flood elevations within the area as a result of this fill placement. Velocities at this site are also not expected to produce any adverse impacts to the adjacent Etobicoke Creek for the 2 to 5 year storm events. According to the modeling, under existing conditions the subject watercourse sections located upstream and downstream of the project site experience velocities of 2.28 m/s and 1.86 m/s under the 100-year storm flow, respectively. Under the proposed condition, the velocity of the flow within the subject watercourse near the project site increases to 1.35 m/s which is within the range of naturally occurring velocities immediately upstream and downstream of the project site. As a result, this increase in velocity is not expected to have a significant impact on the channel stability.

Pollution:

Standard erosion and sediment control measures including sediment traps, catchbasin covers and silt fencing will be implemented prior to construction and maintained for the duration of construction.

Dynamic Beaches:

Not applicable

Erosion:

No geotechnical/slope stability issues are anticipated for the proposal.

Conservation of Land:

To protect local fish populations during their spawning, nursery and migratory periods, the Region of Peel should ensure that in-water/near-water activities occur within the applicable timing window. The Region of Peel should confirm timing window application and dates directly with the appropriate Provincial and Federal agencies.

Plantings

Restoration of the site will include removal of the temporary asphalt surface and granular base, re-grading the site, topsoil and seeding. Six (6) trees will be removed for this work. Eight (8) coniferous trees, 13 deciduous trees and 69 shrubs will be planted on the site once construction has been completed.

Policy Guidelines:

This proposal complies with Section 8.9 Infrastructure Policies of The Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority.

CFN: 60046 - Application #: 0610/18/MISS

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