

Ministry of Transportation
Engineering Office
Planning and Design Section
West Region

659 Exeter Road
London, Ontario N6E 1L3
Telephone: (519) 873-4561
Facsimile: (519) 873-4600

Ministère des Transports
Bureau du génie
Section de planification et de conception
Région de l'Ouest

659, chemin Exeter
London (Ontario) N6E 1L3
Téléphone : (519) 873-4561
Télécopieur : (519) 873-4600



March 20, 2020

Norman Nussio, C.E.T., CRS
Manager of Operations & Drainage
Town of Essex
nnussio@essex.ca
519-776-7336 ext. 1405

Drainage Improvements to the Essex Outlet Drain
Highway 3
City of Essex

Dear Mr. Nussio:

Instruction

The Ministry proposes a drainage realignment, contained within the Highway 3 property limits, for the Essex Outlet Drain. Specifics regarding the realignment can be found in Appendix A, Essex Outlet Drain – Recommended Plan.

The Ministry-proposed work, as it affects the Essex Outlet Drain, will not adversely affect the hydraulic capacity of the system as shown in the Appendix B, Final Highway 3 Culvert Hydrology and Condition Report. All of the works recommended (see Appendix B) shall be at the cost of the Ministry (Road Authority) and the entirety of the proposed work is on lands solely under the jurisdiction of the Ministry.

We hereby recommend that the realignment, as described in this letter, may proceed as set out in our written opinion in accordance with Section 77(3) of the Drainage Act. As such, a formal report under the Drainage Act is not required.

Watershed Description

The existing Highway 3 crossing of the Essex Outlet Drain serves as an outlet for a large urban storm drainage system within the Town of Essex. The Essex Outlet Drain is a regulated municipal drain and lies within the Canard River Subwatershed.

The Essex Outlet Drain is under the jurisdiction of Essex River Conservation Authority (ERCA) with respect to hydraulic performance and floodplain management, and the Ministry of Natural Resources and Forestry (MNRF) with respect to species at risk (SAR). Watershed characteristics for the Essex Outlet Drain sub-watershed were

determined using information obtained from the previously completed Preliminary Design drainage study, official Municipal Drain mapping obtained from the local municipalities and County of Essex, and topographic mapping from MNR.

Existing Conditions

The Essex Outlet Drain, from its upstream limit to Highway 3, is an intermittent flowing, urbanized closed stormwater drainage system, and is not considered sensitive to fish habitat. The Drain is classified from its upstream limit to Essex Outlet Creek as a Class F drain, based on Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) mapping.

There is currently one crossing of the Essex Outlet Drain within Ministry property, approximately 30 m west of the intersection of Victoria Road and Highway 3. The Essex Outlet Drain, within Ministry property limits, has a linear trapezoidal conveyance feature with relatively uniform geometry.

Rationale and Design Considerations

The drain realignment is required to accommodate the future Victoria Avenue underpass structure and embankment.

Proposed drainage conditions have been reviewed and hydrodynamic modeling has determined that there are no adverse impacts on upstream properties in terms of water surface elevations. Additionally, the report demonstrates that there are no adverse impacts on downstream properties in terms of peak flows during the design events.

Recommendations

We recommend that the drainage realignment to the existing Essex Outlet Drain be constructed. The following provides a brief description of the realignment work on the Essex Outlet Drain (see Appendix B for full details):

- A new crossing culvert under Highway 3 at approximately Station 14+485 (300 m west of Victoria Avenue). To facilitate this crossing, a 4.26 m span, 2.44 m rise and a 97.84 m long concrete box culvert will be installed. The culvert length can be shortened by 27 m after the existing Highway 3 embankment is removed during construction.
- Realignment of the existing open channel drain with a 3.0 m flat bottom within Ministry property and tie into existing drain configuration both north and south of Highway 3.

All of the above works and costs recommended shall be entirely on lands solely under the jurisdiction of the Ministry. Therefore, a detailed summary of the items for construction and costs are not included as part of this letter.

The portions of the Essex Outlet Drain and associated structures within Ministry property limits will be maintained by the Ministry.

Sincerely

A handwritten signature in grey ink, appearing to read 'A. Naylor'.

Amanda Naylor, P.Eng.
Project Engineer
Planning and Design
Ministry of Transportation
Amanda.Naylor@ontario.ca
519-852-2975