

## Sanitary Sewer, Watermain Replacement & Local Road Improvements – North Street from Wilmot Street to North of CPR and Watermain and Service Connection Replacement (to the property line) George Street West

### Project Background

Sanitary sewers and watermain services are being replaced on North Street from Wilmot Street to north of the CPR to accommodate draft plan approved lands and future development envisioned within the existing upstream urban area, referred to as the North Village Secondary Plan Area. The municipality is coordinating with the developers to include improvements to North Street between Wilmot Street and Grady Drive. These roadway improvements include addressing road drainage issues, adding a storm sewer and catchbasins, replacing driveway culverts that are in poor condition, constructing a sidewalk and improving street lighting. In addition, the Region of Durham has requested that the planned watermain and service connection replacement to the property line on George Street be coordinated with the reconstruction of North Street.

The Municipality of Clarington and the Region of Durham will be entering into cost sharing agreements as the improvements to North Street are being coordinated as part of the subdivision servicing contract. The projects are being coordinated to minimize disruption from future construction and to save costs that would arise from carrying out the necessary works at later dates. The proposed improvements to North Street were budgeted for in Clarington's 2018 and 2019 Capital Budgets.

Details of the projects are outlined on the following panels, project material will be available online at [www.Clarington.net/NorthStreet](http://www.Clarington.net/NorthStreet). Comments and questions are welcomed on-line or by phone from July 29 August 14, 2020. A summary of frequently asked questions and answers will be posted to the project website after August 14, 2020. Stakeholders wanting additional information are invited to call or e-mail the Project Coordinator.

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The Project Team is responsible for balancing the needs of various stakeholders with technical requirements and Municipal and Regional Design Standards and Guidelines, the team are available through this on-line engagement to provide information, gather feedback and answer questions; information you provide is valuable in informing the project.

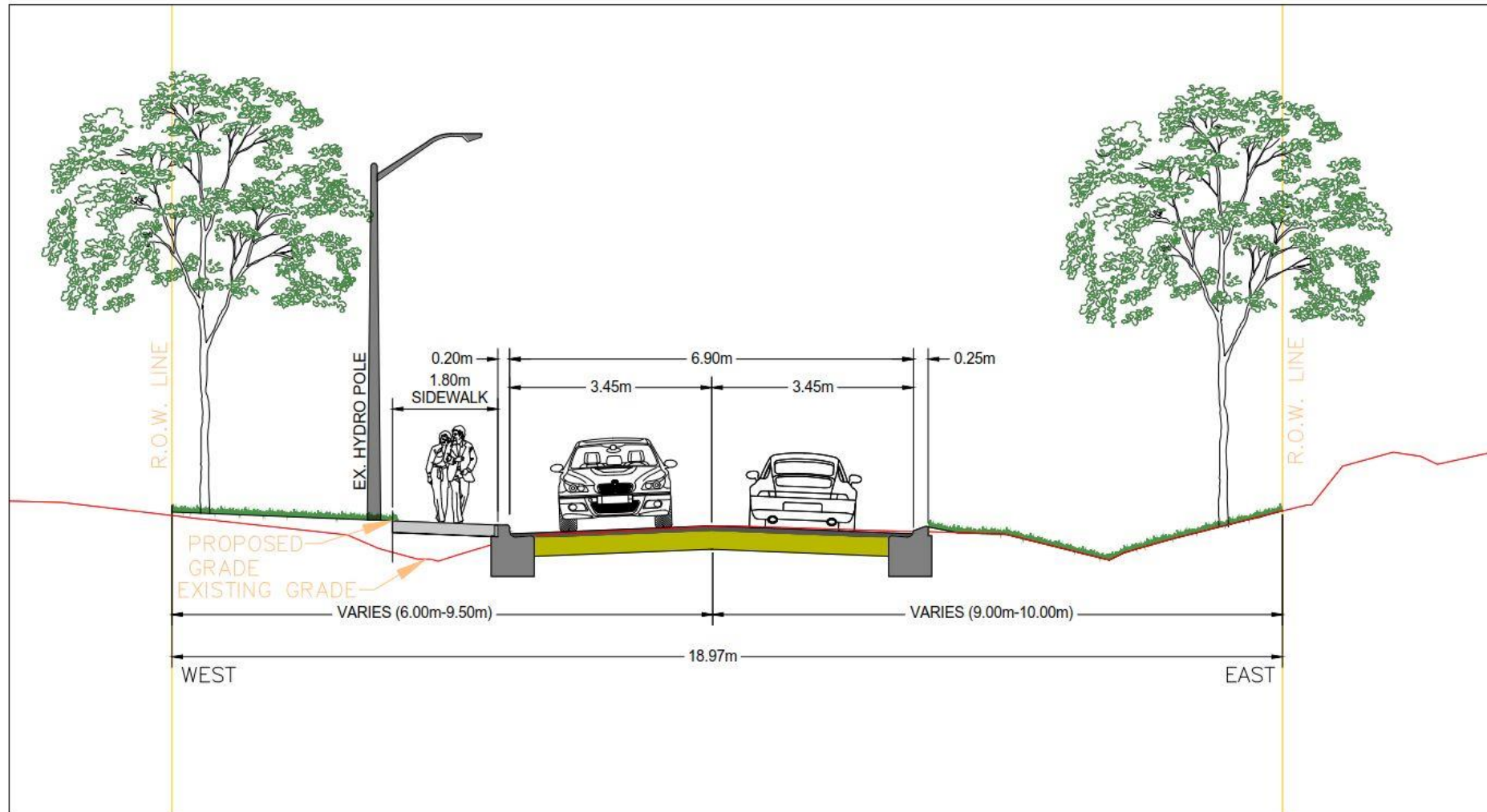
**Project website**  
[www.clarington.net/community](http://www.clarington.net/community)





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Typical cross-section



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### Project Description

North Street between Wilmot Street and George Street will be reinstated in its existing configuration. North Street between George Street and Grady Drive will be urbanized to provide a sidewalk and improve road drainage. The culverts conveying the two tributaries to Foster Creek are in poor condition and will be replaced within the roadway. Grady Drive and Regional Road 17 will be reinstated in the existing configuration. Project details include:

- **Reconstruction of road including addition of curbs and a sidewalk, while maintaining the existing road width,**
- **Replacement of watermain and sanitary sewer,**
- **Addition of storm sewers to improve road drainage,**
- **Driveway culvert replacements and or removal and box culvert replacements,**
- **Landscape and Street Light improvements, and**
- **Coordination of replacement of the watermain including service connections to the property line and road resurfacing on George Street.**



**View looking south along North Street**



**Tributary to Foster Creek along east side of North Street**



**Example of poor road drainage causing damage to the roadway and water ponding**

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## Existing Problems and Proposed Solutions

### Poor stormwater drainage is leading to deteriorating road conditions

One of the main causes for the poor road condition is poor stormwater drainage caused by lack of storm sewers and deteriorating culverts.

The proposed construction of curb and gutter and a local storm sewer system will capture road drainage directing stormwater flows away from the road and private property providing an overall improvement to road drainage.

### The roadway is in deteriorating condition

The main causes of the poor road condition are age and poor stormwater drainage. Issues identified by Municipal staff and landowners include plugged culverts and water backing up in the ditches and onto private property. Two culvert crossings for tributaries to Foster Creek were also noted to be in poor condition.

The replacement of damaged driveway culverts and box culverts will help address premature deterioration of the newly constructed road.

### There are no sidewalks, pedestrian safety is a concern

There is no sidewalk on North Street between George Street and Grady Drive, a sidewalk exists to the north on Grady Drive and south to Wilmot Street thus forcing pedestrians onto the road shoulder.

Stakeholders have raised concerns to the Municipality that this section of road is used as a by-pass for other adjacent roads at times. This is a cause for concern since pedestrians are forced onto the road within the Project Area.

To bring the road up to current municipal standards and address pedestrian safety, a sidewalk is proposed as part of the reconstruction project. Removal of the road side ditches will allow for construction of the sidewalk as well as improve pedestrian safety and connectivity to adjacent sidewalks.

### Maintenance of the Natural Tree Canopy

The maintenance and health of the existing tree canopy where appropriate and feasible is a priority for the Municipality. A Tree Preservation Plan is an integral component of the reconstruction project.



**Example of poor pavement condition and partially collapsed culvert**



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### Recommended Solutions

#### Improve Road Safety

The reconstructed road surface and upgraded safety barriers, including replacing the guide rail provide for safer travelling conditions. It also provides up to date safety measures adjacent to steep areas associated with the Foster Creek that runs parallel to the east side of North Street.

#### Improve Pedestrian Safety

Currently there is no sidewalk on North Street between George Street and Grady Drive. A sidewalk is proposed on the west side of North Street. Installing the sidewalk on the west side provides a connection to the existing sidewalks to the south and north of the project area.

#### Improve Stormwater Management and Road Drainage

One of the main causes of road degradation is poor drainage. Stormwater Management (SWM) practices help to reduce the amount of runoff and improve the water quality of runoff from impervious surfaces such as roadways. An integral component of the road reconstruction is the installation of a storm sewer to improve drainage. Runoff from the road will be captured by catchbasins with infiltration systems and conveyed by storm sewers located within the right-of-way towards Foster Creek. The catchbasins with infiltration systems are a form of Low Impact Development (LID) design with the catchbasins helping to mimic pre-development hydrology by infiltrating, filtering, storing and detaining runoff at or near its source.



View looking north along North Street

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### Sanitary Sewer and Watermain Replacement on North Street

The replacement of the sanitary sewer and watermain including laterals up to the property line are required to update the services and to provide capacity for existing draft plan approved lands and future development lands in the approved North Village Secondary Plan Area.

#### Sanitary Services

The existing sanitary service is to be connected to the new mainline alignment and the existing service relined internally from the sewer to 1.0m from the building face within private property.

#### Watermain Services

Existing water services within the road allowance are to be removed and replaced with a new service and water box at the property line, including connection to the existing private water service at the property line.

#### Temporary Water Service during construction

Properties adjacent to the project that are connected to the Municipal drinking water system will be provided with temporary water during construction



**Example of a typical temporary water connection**

### Coordination of North Street Reconstruction with adjacent Region of Durham Projects – George Street Watermain Replacement

The Region's policy is to coordinate construction with local Municipalities where feasible for cost efficiency, to minimize disruption to residents and avoid impact to newly constructed/reconstructed roads. During the preparation of the detailed design for the reconstruction of North Street the Region identified the need to replace the water service on George Street. Design of these works will be completed in coordination with the North Street reconstruction project. The replacement of the watermain including laterals up to the property line are required to update the services.

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### Schedule 'B' Municipal Class Environmental Assessment Grady Drive Extension, Foster Creek Crossing, Newcastle

Further to the issue of road and pedestrian safety, in 2016 Clarington undertook a Schedule 'B' Municipal Class Environmental Assessment (EA) to investigate alternatives for providing an improved transportation connection across Foster Creek. A key outcome of the EA was that options for traffic calming for the Grady Drive extension are to be considered in order to assess and identify traffic calming measures that would minimize cut through traffic on North Street.

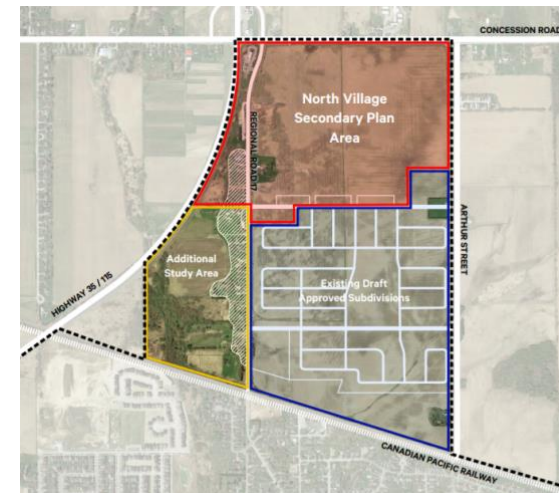
Based on the recommendations of the EA, the Municipality will be studying traffic calming measures during detailed design for the extension of Grady Drive.

### North Village Secondary Plan Area

The North Village Secondary Plan project is currently underway. The Terms of Reference for the project included the requirement of a Traffic Study that will analyze the intersection of Grady Drive and RR 17. The reconstruction project for North Street will not include changes to the configuration of the intersection of Grady Drive and RR 17, this intersection will be reviewed as part of the Grady Drive extension and the Traffic Study for the North Village Secondary Plan.



Plan Source: [www.clarington.net](http://www.clarington.net) Grady Drive Extension



Plan Source: [www.clarington.net](http://www.clarington.net) North Village Studies

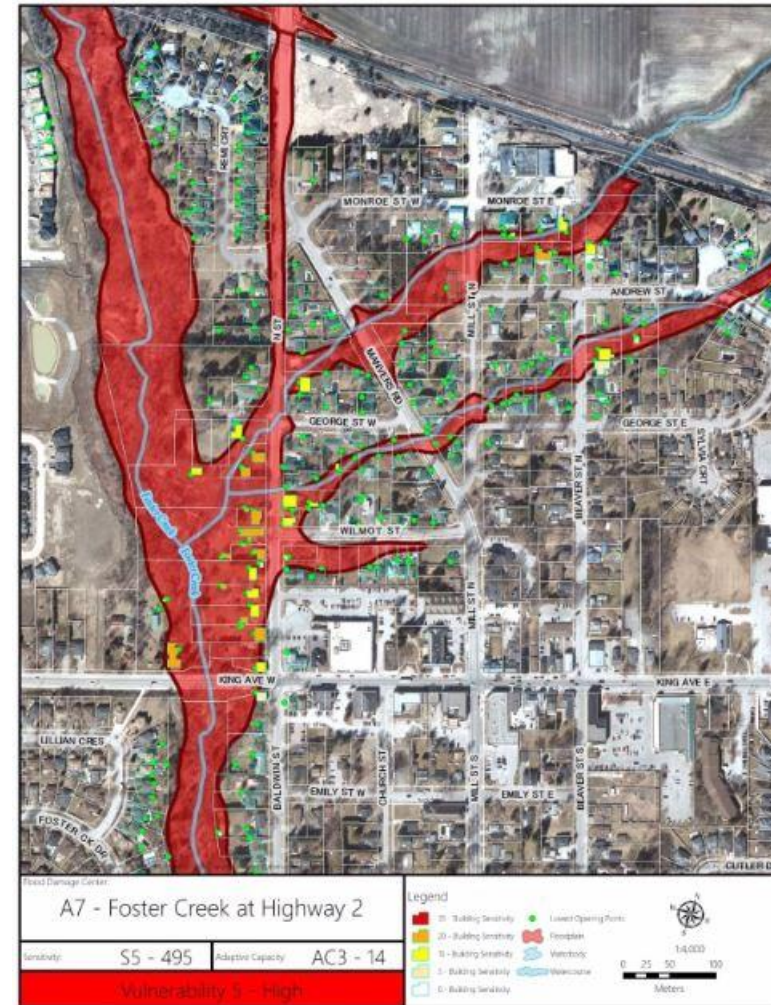


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## Ganaraska Region Conservation Authority (GRCA) Watershed Flood Risk Assessment

In January 2019, GRCA released their Watershed Flood Risk Assessment, this study included an assessment of flood vulnerability for Foster Creek through the project area. The project area is located within a larger Flood Damage Centre which was assessed to have a High Flood Vulnerability. This is due to the presence of multiple dwellings within the Regional floodplain of Foster Creek south of George Street.

As part of the detailed design for North Street, the two North Street culvert crossings of tributaries to Foster Creek were investigated to see if the flood vulnerability in the project area could be reduced by increasing the size of the culverts. It was found that increasing the size of the two culverts would not change the flood vulnerability and therefore will not be undertaken. The limits of the floodplain in the study area are the result of constraints downstream of the study area. The culverts will be replaced due to deteriorating conditions with the same size of culverts that exist there today.



Source: Ganaraska and Region Conservation Authority –  
2019 Watershed Flood Risk Assessment

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### Background Studies

#### Geotechnical Investigation

Soils in the Project Area are generally characterized as wet and loose to soft. Given the soil conditions a full-time experienced geotechnical technician is proposed to be on site during any excavation. All excavations are to be carried out in accordance with the *Ontario Health and Safety Act* and Regulations for Construction Projects.

#### Groundwater Investigation - Temporary Dewatering Plan

Temporary dewatering is required to facilitate construction of underground services. A trial will be undertaken to dewater in advance of any construction work to confirm water quantity and obtain representative groundwater samples for chemical analysis to confirm the water quality.

The project is proposed to proceed in sections and stages to control dewatering and minimize impacts. Pump rates and discharge volumes will be measured daily to ensure the dewatering rate/volume does not exceed approved or accepted limits.

#### Groundwater Discharge

During the field investigation exceedances of Ministry of Environment Conservation and Parks (MECP) guidelines were found in groundwater samples for Total Suspended Solids (TSS), phenols (4AAP), phosphorus, chromium, copper, aluminium, titanium, manganese, nickel and zinc.

Installation of an appropriate water filtration/treatment system will be necessary prior to any dewatering; this is expected to improve water quality. During construction groundwater samples will be obtained and submitted for analysis to determine the appropriate discharge point for the groundwater.

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### Recommendations resulting from Geotechnical and Groundwater Investigations

#### Building Monitoring Plan

Buildings and/or structures located within the 'zone of influence' as identified on the Project Area Plan may be susceptible to potential settlement or subsidence due to temporary dewatering. At minimum a pre-construction survey and vibration monitoring will be undertaken during construction. A qualified geotechnical engineer (QP) will form part of the project team, the QP will provide recommendations for adaption, as appropriate during construction.

#### Water Level and Baseflow Monitoring of Foster Creek

A baseline study of the watercourses (Foster Creek) within the zone of influence will be conducted to establish water levels, baseflow and water quality conditions prior to dewatering as per requirements of the Ganaraska Region Conservation Authority (GRCA) and MECP.

#### Water Quality Monitoring

Pumped water from temporary dewatering will not be discharged to the natural environment unless it meets Provincial Water Quality Objective (PWQO) criteria. Water quality testing will be undertaken daily prior to discharge to the watercourse, if that is the chosen discharge point.

Sedimentation is not anticipated to be an issue as treatment including filtration or decanting is planned to be used. There is potential however, that dewatering discharge may result in erosion on land or within the creek depending on selected discharge points. An Erosion and Sedimentation Control Plan will be prepared for the road reconstruction and dewatering operation which is to be monitored throughout construction and adjusted if appropriate in consultation with Clarington and GRCA.



**Surface flow of Foster Creek in areas where it runs adjacent to the roadway will be monitored during all phases of construction**

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### Tree Inventory and Preservation Plan

The Municipality is making every effort to minimize impacts to mature trees. The Project Team's arborist identified eight (8) trees within the road allowance and adjacent properties that could be impacted by construction activities. Design measures were adopted to minimize impacts including:

- Minimizing alterations to the road profile,
- Shifting the sidewalk within the boulevard, and
- Designing the proposed curbs to minimize grading impacts on trees and root systems.

A Project Consulting Arborist (PCA) is to form part of the Project Team during construction to perform regular site inspections and ensure tree protection by-laws are being followed.

#### Proposed Tree Preservation Measures include:

- Installing tree protection fencing,
- Removing dead and hazardous trees,
- Pruning storm damaged trees to reduce fall hazards, and
- Trimming roots and branches cleanly by a certified arborist.

#### During Construction:

- Root systems will be professionally pruned to promote regeneration and prevent disease,
- Soil compaction will be minimized within tree protection zones,
- Irrigation will be provided to protected trees, and
- A one-year slow release low nitrogen fertilizer will be applied when appropriate to promote root regeneration and plant vigor.

#### Species at Risk (SAR) – Butternut Trees

Butternut trees are considered an Endangered Species and are protected under the *Endangered Species Act 2007*. Three (3) Butternut trees were identified within 50 metres of the project area. When Butternut trees are encountered, a Butternut Health Assessment is required to identify whether the trees are native or cultivars, classify their health and identify appropriate mitigation measures. The Butternut Health Assessment determined the trees are cultivars, meaning the ESA does not apply to these trees and no specific mitigation measures are recommended for these specific trees.

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### Construction Management Plan

#### Access during Construction

- Access to driveways may be limited at times during construction. Notification will be issued 24hrs in advance of any access restrictions.
- Should short term road closures be required, notifications to residents will be issued 24hrs in advance.
- The roadway will be closed to through traffic during construction. Only local access will be made available.

#### Addressing Construction Related Noise and Vibration

Clarington's Noise by-law (2007-071) permits operation of construction equipment **only** from Monday to Saturday 7:00 a.m. to 9:00 p.m., and no construction noise from Saturday at 5:00 p.m. to Monday at 7:00 a.m.



### Next Steps

A comment and questionnaire form are provided on this project website. Comments will be received by e-mail or phone until August 14, 2020. The Project Team will consider comments made while finalizing design. On-Line engagement information will remain posted on the Municipality's project website: [www.Clarington.net/northstreet.ca](http://www.Clarington.net/northstreet.ca)

**Mid Summer 2020** - Issue the project tender once the Municipality has finalized the design. Commencement of construction is linked to the developers timing for constructing trunk services.

**Late Summer 2020** - Initiate monitoring programs and preparation for and commencement of reconstruction which is anticipated to be 14-15 weeks.

**Thank you for taking the time to review the project material! We look forward to receiving your comments and answering any questions.**