

Project overview

The 2nd Concession is a major north-south arterial corridor under the jurisdiction of The Regional Municipality of York (York Region). Located in the Town of East Gwillimbury, Ontario, the corridor crosses a popular conservation area and recreational trail, situated in the watershed of the East Holland River which is managed by the Lake Simcoe Region Conservation Authority (LSRCA).

York Region and the Town of East Gwillimbury are undergoing tremendous growth in population and employment. The 2nd Concession Project improves mobility and enhances the environment with sustainable, context sensitive infrastructure in response to growth.

The innovative, enhanced public outreach program included early and consistent stakeholder engagement with mandatory and non-mandatory public open house meetings, kitchen table discussions with residents, site visits, a “visioning” workshop and regular newsletters. This established a high degree of trust and resulted in early stakeholder buy-in which accelerated project timelines and saved tax dollars. The early identification of environmental enhancements resulted in a design that improves mobility for all corridor users including pedestrians and cyclists and promotes active transportation.

The project includes an elevated wooden boardwalk through wetlands and marshes connecting forests with growing residential communities. There are benches, bike racks and a flagstone meeting area. The wooden-clad pedestrian bridge in the Rogers Reservoir Conservation Area (Rogers Reservoir), allows an estimated 30,000 annual visitors to stand directly above the historic canal and lock system which the project protected.

Bridges spanning an active rail corridor and the Holland River lift the newly widened and reconstructed 2nd Concession out of the valley. The environmental footprint of the roadway is further minimized through curvilinear and terraced tree-patterned retaining walls. At road level, cyclists travel on dedicated cycle tracks (a first for York Region), and can stop at lookouts on the bridges for unobstructed views of the reservoir and wildlife.

The six-kilometre corridor, extending from Bristol Road in the Town of Newmarket to Queensville Sideroad in the Town of East Gwillimbury, was transformed between May 2014 and August 2017 when the two-lane local road was widened to a four-lane urban arterial. With a high degree of community engagement, the project included road widening, trail connections, three bridges, retaining walls, active transportation infrastructure, stormwater management, gravity and large forcemain sanitary sewers and a watermain.

The 2nd Concession was the largest project tendered to date by York Region’s Transportation Services Department. The 640 Working Day contract was tendered ahead of schedule in 2013



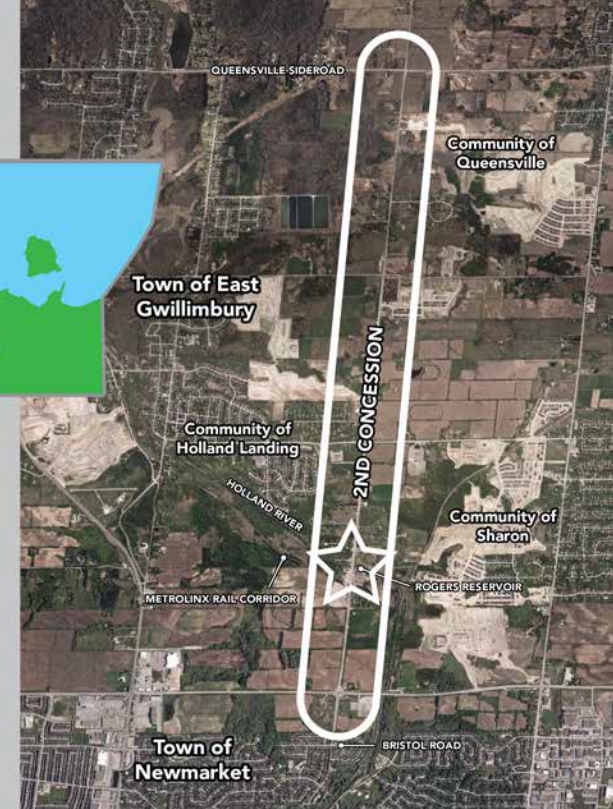
THE 2ND CONCESSION PROJECT

Sustainable, Context Sensitive Infrastructure for a Growing Region

Transportation Association of Canada
 2018 Environmental Achievement Award Submission
 The Regional Municipality of York
 Transportation Services



WHERE THE PROJECT IS LOCATED



WHAT THIS PROJECT ACCOMPLISHES

- New Paramedic Response Station
- New French Public School
- New Trail Connection to Sharon
- Rail Corridor
- Historic Canal and Locks
- Holland River Bridge
- Holland River
- Land Development
- New Pumping Station
- Pedestrian Bridge
- Rogers Reservoir
- Lookouts
- Cycle Tracks
- Elevated Boardwalk
- Rail Underpass Bridge
- Constructed Wetland

GREAT STREETS

Building Roads that Build Community
 2nd Concession Road Improvements
 Update #21: Fall 2017

The Regional Municipality of York has completed improvements to 2nd Concession for motorists, pedestrians and cyclists. This newsletter provides a final update on construction.

2nd Concession has been transformed!
 2nd Concession's most improvements are substantially complete and the road was opened to four lanes earlier this year.

New features include:

- Road widened to four lanes with curbs and storm sewers
- Rebuilt bridge over the Holland River and a new bridge over the GO Barrier rail corridor
- New pedestrian bridge over the Holland River, eliminating the need for pedestrians and cyclists to cross at street level
- New street lighting
- New cycling facilities
- Bicardwalk through the Rogers Reservoir
- Improved water and sewer infrastructure

The bridges and retaining walls were designed to blend in with the historical and natural features of Rogers Reservoir.



HOW - THROUGH ENHANCED ENGAGEMENT



2ND CONCESSION RE-OPENING
STREET Festival

YORK REGION AND THE TOWN OF EAST GWILLIMBURY
 INVITE YOU TO A CELEBRATION
 Saturday, September 16, 2017

OPENING CEREMONY AT 11 A.M.
 EVENTS FROM 11 A.M. TO 2 P.M.
 ON 2ND CONCESSION BRIDGE AT ROGERS RESERVOIR

- COMMUNITY BBQ
- CYCLING AND WALKING TOURS
- VEHICLE DISPLAYS
- LIVE MUSIC

Parking at East Gwillimbury GO Station with shuttle service

Project completed in partnership with

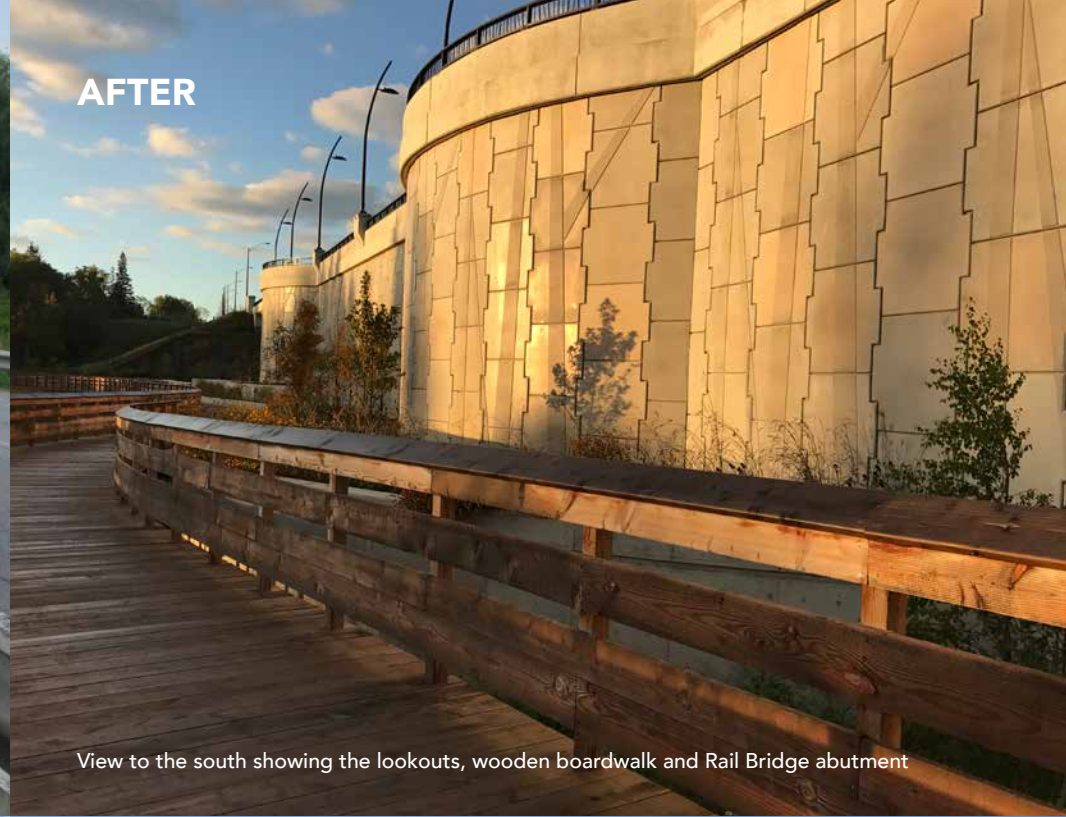


BEFORE



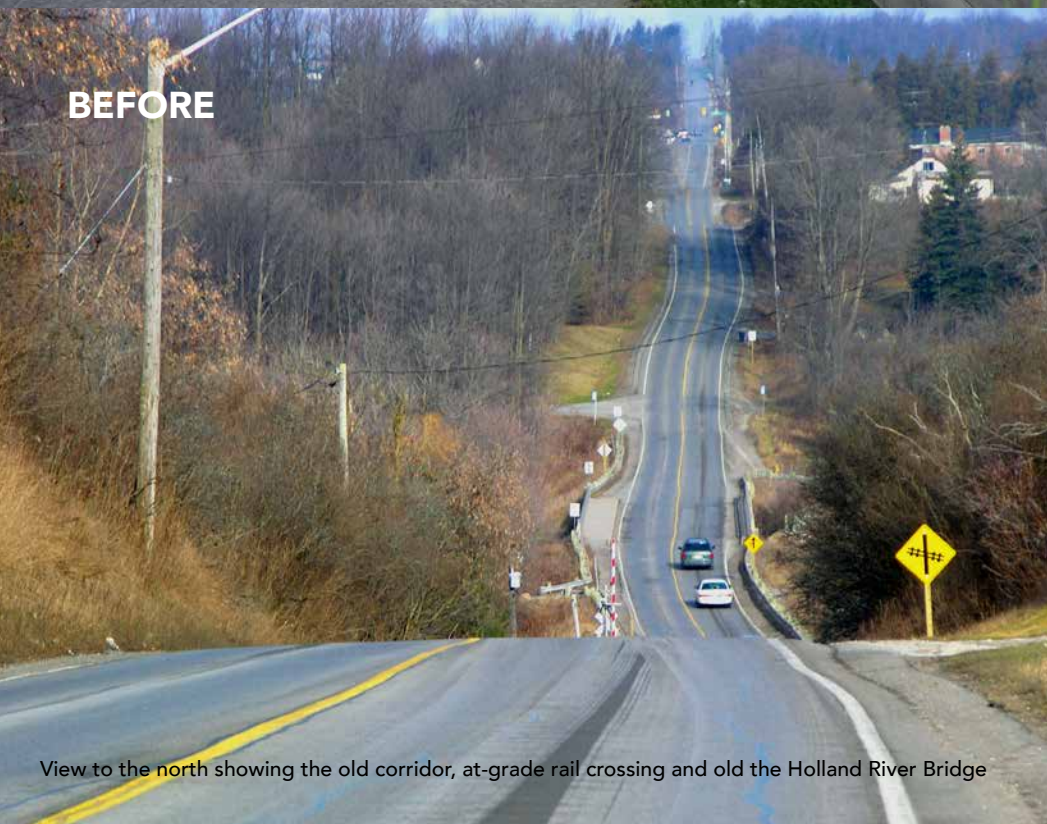
View to the south showing the old Nokiidaa Trail and the at-grade rail crossing

AFTER



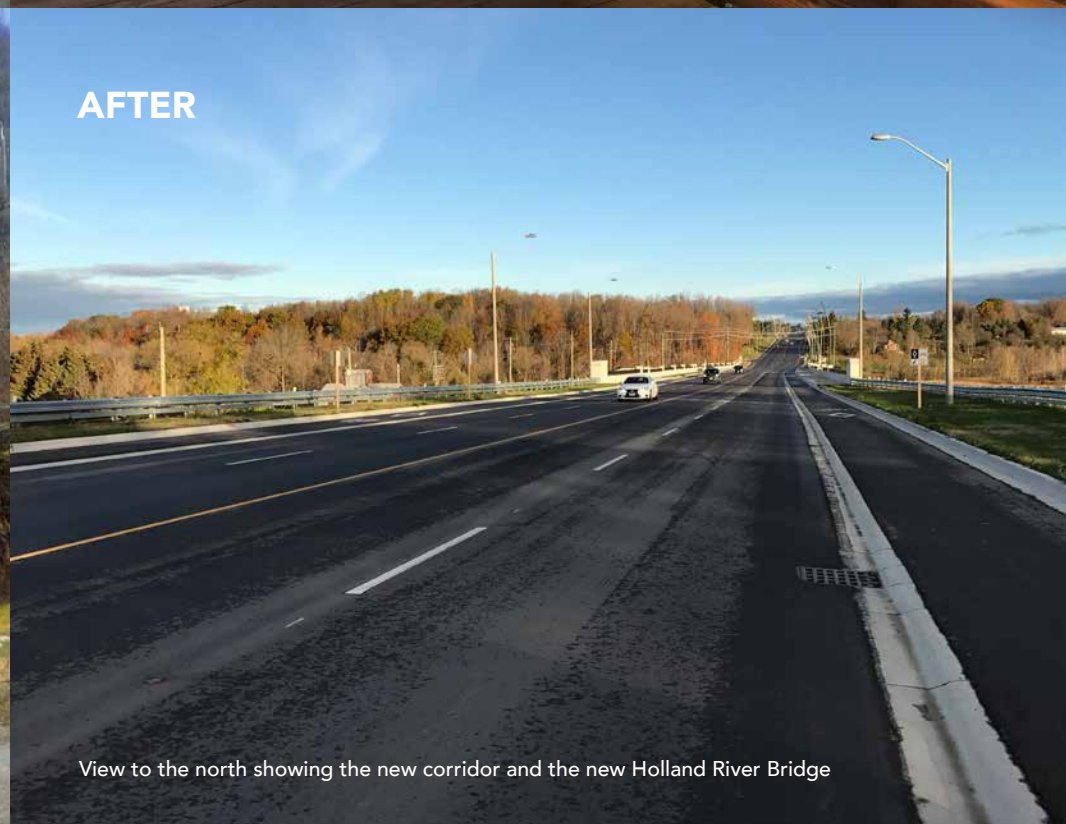
View to the south showing the lookouts, wooden boardwalk and Rail Bridge abutment

BEFORE



View to the north showing the old corridor, at-grade rail crossing and old the Holland River Bridge

AFTER



View to the north showing the new corridor and the new Holland River Bridge

**THIS PROJECT PROMOTES ACTIVE
TRANSPORTATION AND ENHANCES
THE ENVIRONMENT**



View to the west showing the original (built in 1911) and intermediate (built in 1980) bridges



View to the north showing the flagstone meeting area and Pedestrian Bridge



View to the east showing the wooden boardwalk and one of the constructed wetlands



View to the south showing constructed wetland (pyramid shapes are snake hibernaculums)



View to the east showing the Nokiidaa Trail under the Holland River Bridge



View to the west showing constructed wetlands and snake hibernaculum



View to the north showing the wooden boardwalk, retaining walls, Pedestrian Bridge and Rogers Reservoir



View to the west showing the boardwalk, Rail Bridge and retaining wall

A COMPLEX CONSTRUCTION PROJECT



View to the north showing retaining wall and Rail Bridge construction



View to the north showing Holland River Bridge construction



View to the south showing Holland River Bridge construction



View to the south showing Pedestrian, River and Rail Bridge construction with servicing infrastructure

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and working days began in May 2014. All milestones were met with no working-day extensions granted. The project was completed within budget. The construction schedule was controlled with Primavera P6 Project Management scheduling software. There were zero Lost Time Injuries. The Ministry of the Environment and Climate Change (MOECC) provided clearance to proceed without any conditions imposed. The successful completion of the project ensured adjacent land development could proceed on schedule. Nearly 1000 community residents attended the official ribbon-cutting ceremony to mark the completion of the project.

The corridor needed significant upgrades

Tremendous growth in population and employment required up-graded transportation and servicing infrastructure. The 2nd Concession was narrow with an undulating profile and steep grades of up to 12 percent. Additionally, the Metrolinx GO Barrie rail corridor (Metrolinx) and local recreational trails crossed 2nd Concession at grade. This setup created multiple conflict points between vehicles, cyclists, pedestrians and trains.

The Rogers Reservoir Conservation Area is a popular destination

The 2nd Concession runs directly through the Rogers Reservoir where it crosses the Holland River at the old canal and lock system, built at the turn of the century. The corridor also crosses the Nokiidaa Trail, a multi-use path within Rogers Reservoir that is part of the 121 kilometre “Lake to Lake Cycling Route and Walking Trail” connecting Lake Ontario to Lake Simcoe. Environmental constraints included impacts to plants and wildlife and timing restrictions on in-water, near-water and tree clearing activities.

Multiple projects in the area required a high degree of coordination

The primary project required extensive coordination between multiple and overlapping projects, including trunk sanitary sewers and a watermain which were included as part of the construction contract. Adjacent projects under separate contracts included two sanitary pumping stations with infrastructure connections to the 2nd Concession, a Paramedic Response Station, a public school, and land development including subdivision construction. Adjacent stakeholders included developers, other York Region departments, the local municipalities, the conservation authority, Metrolinx, and local residents.

These challenges provided the project team with opportunities:

- Engage all stakeholders to improve mobility for all corridor users including pedestrians and cyclists
- Support a growing region with cost effective transportation and servicing infrastructure
- Enhance the environment with a sustainable, context sensitive design

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Protecting and enhancing the environment

The project team was acutely aware of the need to protect all aspects of the environment during all phases of the project. The project was conducted in accordance with Schedule 'C' of the Municipal Class Environmental Assessment (2007) process, which is approved under the Ontario *Environmental Assessment Act*. All impacts to the natural environment (air, land, water, plant and animal life) and community environment (social, economic and cultural) were minimized to the greatest degree possible.

After assuming jurisdiction over the 2nd Concession from the Town of East Gwillimbury in 2006, York Region initiated the 2nd Concession Improvements Class Environmental Assessment Study (Class EA Study) in November 2008. The Class EA Study ended in 2011 and identified the need to widen 2nd Concession from two to four lanes in a context sensitive manner. Detailed design, including property acquisition, permitting and utility relocation, followed. Planning and design phases were completed in five years, which is remarkable for a project of this size. Construction began in May 2014 and Total Performance was achieved in August 2017.

The thoroughness of the Class EA Study was acknowledged by the MOECC in their June 2012 clearance letter to proceed without any conditions imposed.

Project activities to protect and enhance the natural environment

The natural environment was protected through stormwater Quality Control (treatment train approach with oil grit separators and Secondary Treatment including constructed wetlands to provide enhanced water quality treatment, and outlet pools to provide erosion control), and Quantity Control through Super Pipes (oversized storm sewer systems to control the post-development condition flowrates to pre-development condition flowrates for two-year to 100-year storms). The project replaced a small, 40 metre bank-to-bank crossing of the Holland River with a 400 metre crossing of the entire valley. The bridges and retaining walls minimize the project's footprint through Rogers Reservoir and the surrounding wetlands which are home to associated Species at Risk including Least Bittern and Black Turn and many other wetland dependent species. Environmental benefits also include the removal of the at-grade road/rail crossing that required trains to blow their whistles in advance of the crossing.

Adjacent lands were enhanced by creating wetlands and wildlife habitat, including turtle nesting areas and snake hibernaculums. Wetland monitoring for performance will occur over a three year period which began in 2017.

Ecologically sensitive erosion and sediment control measures to limit carbon footprint included biodegradable filter socks rather than the traditional methods of rock check dams and silt fence which require removal and off-site disposal. All construction activities were performed in accordance with environmental permits from the MOECC and LSRCA.

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Project activities to protect and enhance the community environment

Archaeological, Built Heritage and Cultural Heritage Landscape investigations were conducted with clearance provided by the Ontario Ministry of Tourism, Culture and Sport.

The social environment benefits from the project's active transportation infrastructure including cycling facilities, sidewalks, a wooden elevated boardwalk and hiking trails. Prior to construction, cyclists and pedestrians on the Nokiidaa Trail crossed the 2nd Concession at-grade. The new pedestrian and cyclist crossing passes under the Holland River Bridge and provides direct access to the Nokiidaa Trail. The wooden boardwalk through Rogers Reservoir prevents visitors from entering the rail corridor.

The historic canal and locks at Rogers Reservoir were protected. Their history dates back to the early 1900s when construction began on the Holland River Diversion, a proposed extension of the Trent Canal System from Lake Simcoe to the Town of Aurora. A lack of water supply for the proposed lock system required the project engineers to construct reservoirs, including Rogers Reservoir, to retain the water from the spring freshets. The construction of the canal was cancelled after six years of work, leaving a series of unused locks and swing bridges along the Holland River between the Town of Newmarket and the neighbouring community of Holland Landing. The design not only protected the existing lock system, but incorporated the locks into the project by creating viewing galleries. Walkways allow pedestrians to observe the heritage site from designated lookout areas beneath the new bridge.

The Nokiidaa Trail pedestrian bridge was constructed to enhance the existing lock system by utilizing the existing piers to provide support to the new structure. Care was taken when constructing the pier caps to avoid unnecessary modifications. Through careful design considerations and successful execution by the Contractor, the bridge looks natural in the environment and enhances the area, while preserving the natural beauty of the existing locks.

The bridge parapet walls have architectural insets and a distinctive railing inspired by the patterns of cattails in the reservoir. The light standards are curved framing the road and complementing the natural context. In the valley, a range of natural colours integrate the reservoir's spirit into the infrastructure, and branch relief patterns scale down the visual height of the retaining walls. The curvilinear boardwalk and terraced planter walls visually ground the bridge structure. The flagstone meeting area is ideal to catch the morning sunrise. The pedestrian bridge structure is human scaled with beautifully constructed wooden arches framing views to the reservoir. The end product is form marrying function in a unique context which is valued added.

The two metre wide cycle tracks on either side of the road are fully illuminated and separate cyclists from vehicles with a half metre mountable curb.

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All intersections were made accessible to comply with the *Accessibility for Ontarians with Disabilities Act (AODA)*.

Demonstrated sustainability through the Envision Rating System

The 2nd Concession Project was reviewed for sustainability using the Envision Rating System (Envision) for Sustainable Infrastructure. Envision reports on 60 sustainability credits, each with multiple sustainability criteria and metrics, organized into five categories. Points are awarded based upon the level of achievement within each credit. The review was conducted by an Envision Sustainability Professional. The score is currently under verification by a third party and is expected to achieve a “Bronze” score, which is the first of four possible award levels.

The 2nd Concession Project is expected to score well within Envision because project planning, design and construction were driven by York Region’s Sustainability Principles, namely providing quality communities, an enhanced environment, infrastructure for a growing community and engaged communities. The anticipated Envision score demonstrates a project that performs beyond the industry norm across a range of sustainability indicators. The 2nd Concession Project excelled in the following Envision sustainability categories:

Quality of Life: This is the highest achieving category, driven by an extensive and empowering consultation with a range of stakeholders through the planning, design and construction phases. The project significantly improves community attractiveness by eliminating train whistling and crossing signal noise, reducing traffic congestion, and improving access by bike or car to the GO Station and to the Nokiidaa Trail system. The project encourages the use of transit and active transportation. The project protects and enhances both natural and cultural resources through a context sensitive design, such as through incorporating the historic lock system into the experience of trail users.

Leadership: Sustainability is a core value of the Regional Municipality of York. Meaningful revisions were made to the project design as a result of stakeholder input. The project planning integrated a variety of systems, including land use planning, transportation projections, servicing, hydro, rail use, active transportation systems, GO Metrolinx stations, and natural heritage. The project was planned and designed to meet various existing community plans.

Resource Allocation: 60% of materials by volume were recycled content. The project team undertook a cut-fill balance to maximize the reuse of materials on site.

Natural World: A 0.09 hectare (0.22 acre) wetland was created in the location of a previous parking lot, enhancing floodplain infiltration, providing a net cut to increase floodplain storage, providing a new hydrologic connection to groundwater, and providing quality habitat especially for amphibians. Both watercourse crossings enhanced terrestrial connectivity. An extensive compensation planting plan was implemented.

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Climate and Risk: The project achieved a top score under the credit “prepare for short term hazards” by designing all crossings for at least the 100 year storm, expanding flood storage through a fill cut, and improving wetland habitat within the floodplain.

Cost implications associated with the initiative

The 2nd Concession Project demonstrates how costs can be minimized by combining a needed road widening project with sewer and watermain works into one contract, reducing overall construction cost, duration and impacts to the local and travelling public. Enhanced stakeholder engagement also shortened project timelines.

Project success was due to early and consistent stakeholder engagement and early buy-in from stakeholders and local residents. The same York Region team oversaw planning, design, property acquisition and construction, and many external team members were involved from start to finish. Projects that do not have early buy-in often extend over many years as stakeholders require additional time and effort to resolve issues. The early identification of enhancements and commitments undertaken during the Class EA Study significantly shortened the project timelines and resulted in saved tax dollars. This allowed York Region to build the infrastructure needed to support planned development, when it was needed.

York Region’s policy to have growth pay for growth ensured 90% of all project costs were funded through development charges. Final payment to the contractor was \$104.6 million, which was within budget. Active transportation costs, including dedicated cycling facilities, elevated wooden boardwalk, and wooden-clad pedestrian bridge totalled \$5.6 million.

Active transportation enhancements resulted in an additional project cost of approximately \$2.3 million and included separated cycle tracks versus on-street bike lanes, the elevated boardwalk versus a gravel path, and the wooden-clad pedestrian bridge versus plain bridge. However factoring development charge funding, the net cost to taxpayers for these enhancements was approximately \$230,000.

Overall applicability to transportation

The 2nd Concession Project improves mobility for all corridor users including pedestrians and cyclists, and promotes active transportation and an appreciation of the environment. The project provides roads, bridges, trails, sewers and water ahead of build-out, in an important corridor in York Region undergoing significant growth. By making community engagement a priority, the project team identified enhancements and achieved buy-in early in the planning phase resulting in shortened project timelines and less disruption to residents.

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The 2nd Concession Project connects growing communities and improves mobility

The Town of East Gwillimbury is expected to triple in size to 86,500 residents by 2031. Much of this growth is occurring in three surrounding communities of Queensville, Holland Landing and Sharon. Prior to construction, the 2nd Concession carried approximately 12,000 vehicles per day. With planned and approved growth, traffic is projected to increase to 25,000 vehicles per day. Mobility is improved with sidewalks and dedicated and illuminated cycling facilities separating vehicles from cyclists. The new grade separation eliminates vehicle/train conflicts. Improved mobility results in improved workforce productivity and improved quality of life. The widened 2nd Concession improves access within York Region, but also provides improved connections to the Provincial Highway 404 corridor and on to other Greater Toronto Area communities.

The 2nd Concession Project promotes active transportation

The project enhances the Nokiidaa Trail link of the “Lake to Lake Cycling and Walking Trail” connecting Lake Ontario to Lake Simcoe. Prior to construction, cyclists and pedestrians on the Nokiidaa Trail crossed the 2nd Concession at grade. The new pedestrian and cyclist crossing passes under the Holland River Bridge and provides direct access to the Nokiidaa Trail and onwards to the East Gwillimbury GO Station. The wooden boardwalk through Rogers Reservoir prevents visitors from entering the rail corridor. Beyond the 2nd Concession corridor, the cycle tracks integrate into cycling networks of the Town of East Gwillimbury and the Town of Newmarket.

The 2nd Concession Project fosters community pride

The size of this project could have resulted in significant opposition, but keeping residents informed and building trust between the project team and residents resulted in little to no opposition to the project. In the words of a long-time resident living the project corridor:

“First of all, congratulations on the pace and quality of work that we are seeing on the bridge, pedestrian walkways and reservoir features. We are thrilled with the potential for this conservation area to be enjoyed by many who will no doubt want to visit here to experience the remarkable transformation that your team is delivering. We are fortunate to be nearby residents to witness not only the roadways being improved but also the tremendous leap forward in enhancements to the Rogers Reservoir Conservation Area. Kind Regards, N.M.”