Report: TES-RTS-15-12

Region of Waterloo

Transportation and Environmental Services

Rapid Transit

To: Chair Tom Galloway and Members of the Planning and Works Committee

Date: November 17, 2015 **File Code:** A02-30/PW

Subject: **ION Update to October 31, 2015**

Recommendation:

For information.

Summary:

This report provides a brief summary to October 31, 2015 of the ION rapid transit project and the steps that have been taken to get to the current stage of the project.

Report:

The Region's rapid transit project website www.regionofwaterloo.ca/rapidtransit contains detailed information on what has occurred to date. This includes all public display materials, council reports, consultant reports, the Request for Proposals, the Project Agreement and more.

In 2014, prior to the start of ION light rail transit (LRT) construction, www.rideION.ca was launched. This website contains the latest information on all aspects of ION LRT construction, including on-going construction updates, an interactive route map, an opportunity for residents and visitors to sign-up for on-going construction updates as well as daily intersection closures.

1. How we got here: a brief history of rapid transit in Waterloo Region

1.1 Planning for ION

The 2011 decision by Regional Council to implement LRT in two stages in Waterloo Region was made following six years of technical studies and an extensive, unprecedented public consultation process.

In 2011, with financial support from the Province of Ontario and the Government of Canada, and following the completion of an extensive public consultation process, Regional Council approved LRT as the preferred rapid transit alternative and approved implementing LRT in two stages:

- Stage 1 includes a 19-kilometre LRT route from the Conestoga Mall transit terminal in Waterloo to the Fairview Park Mall transit terminal in Kitchener, with stops at 16 destinations including the University of Waterloo, Wilfrid Laurier, UpTown Waterloo, Grand River Hospital, King/Victoria transit hub and Downtown Kitchener.
- Stage 1 also features a 17-kilometre route of adapted bus rapid transit (aBRT) from the Ainslie Street transit terminal in Cambridge to the Fairview Park Mall transit terminal in Kitchener, with four stops along Hespeler Road.
- Stage 2 ION will see the Region convert the aBRT line to LRT, creating a seamless 37- kilometre ION route with 23 stops between Cambridge and Waterloo.
- The ION aBRT service will begin operating in September 2015, while ION LRT service is expected to start in late-2017.

In March 2014, the Region approved entering into a contract with GrandLinq GP for the construction of Stage 1 LRT, together with financing, operations, maintenance and lifecycle rehabilitation for a term of up to 30 years (Report E-14-032/F-14-019).

In June 2014, the Region approved entering into a contract with Steed and Evans for the construction of Stage 1 aBRT (Report F-14-084).

1.2 Community benefits

ION will provide benefits for all Waterloo Region residents.

In rural areas, ION will protect the countryside. By encouraging development in existing urban areas, ION will also help protect the region's farmland, and rural lifestyle. In addition, ION will help protect environmentally sensitive areas and help protect groundwater.

In suburban areas, development along the ION corridor will help limit traffic congestion and cut-through traffic in existing neighbourhoods – now, and into the future. Without ION, 500 new lane kilometres of roadway (the equivalent of approximately 25 Hespeler Roads) would be needed to accommodate growth. This would come at a cost of roughly $1.4 billion.

In the Region's core areas, ION will offer a new transportation choice. New business, residential and commercial developments along the ION corridor will create prosperous and connected communities. New employment opportunities will be created for residents and traffic congestion in core areas will be reduced as a result of ION.

2. Where we are: ION LRT construction

2.1 How ION is built

ION LRT construction is currently underway and is progressing in stages. The first stage is temporary works, which includes, but is not limited to, clearing and grubbing of the

construction site. This work is completed in preparation for underground utilities construction (i.e. relocation/replacement of water, sanitary and storm utilities). ION LRT construction is occurring in some of the oldest sections of the Region and some of the underground utilities are 100 years old and many are at their service life and require replacement. Some of the infrastructure is also very deep (approximately 10 metres) which results in relatively difficult construction. The majority of this infrastructure is City of Kitchener and City of Waterloo which would have had to be replaced when road works were done regardless of whether ION was constructed or not. The majority of the construction done in 2015 and that is visible is related to either relocation/replacement of underground utilities or typical roadworks.

Following utilities construction, roads are restored to a semi-final condition and work on the LRT trackway begins, along with the rest of the ION infrastructure (i.e. stops, electrical and communication systems, poles and the overhead wires that power the train). The vehicle is then tested in advance of service operation.

It should be noted that construction activities are expected to overlap and the sequencing of work has and will continue to change depending on the specific needs of the construction areas, progress and weather conditions.

2.2 Communicating during construction

Before construction begins, communicating with residents and businesses impacted directly by the work takes place. This remains a key priority for the Region and for GrandLinq.

- At least 60 days prior to construction, a general notice is mailed to residents and businesses within 100 metres of construction. These notices contain broad information on what to expect during construction. This initial notification is followed by a second, more detailed notice at least 14 days before construction begins.
- Between the notices, one-on-one meetings with GrandLinq and businesses as well as some residents take place to discuss specific questions and concerns.
- Staff from the Region and GrandLinq also continue to work with the UpTown Waterloo and Downtown Kitchener Business Improvement Areas (BIAs) to prepare for construction and to keep businesses informed of what to expect during construction.
- To keep the wider community informed of potential construction impacts, regular updates are provided to local media.
- Advertising also takes place prior to construction to keep the wider community informed of all construction activities and detours.
- Detour and way-finding signage is placed in advance of construction for drivers, pedestrians and cyclists.
- Construction updates are issued bi-weekly to online subscribers and are also available through ION's social media channels.
- Intersection closures are updated daily on the www.rideION.ca website and circulated via email to the UpTown Waterloo and Downtown Kitchener BIAs as well as key stakeholders impacted by the work.

2.3 During construction

Access for fire, ambulance and police is maintained at all times. Local access to residences and businesses is also maintained at all times.

In general, construction takes place between 7 a.m. and 7 p.m. Monday to Friday. Weekend work is sometimes necessary, as is some weekday work outside of these hours. In all cases of extended work hours, noise exemptions are in place.
During construction, GRT bus stops are temporarily relocated, with required notification provided. Temporary sidewalk closures near active work areas may also be required and in these instances, signs will redirect pedestrians to alternative routes.

As construction advances, updates are provided directly to stakeholders in the affected area.

A GrandLinq Construction Liaison Officer is also on-site prior to and during construction to address any issues that may arise.

2.4 Easing construction concerns

GrandLinq and the Region continue to work with stakeholders, including both residents and businesses to understand concerns and minimize disruption.

GrandLinq work crews are on-site to facilitate the movement of local traffic, including customers, deliveries and construction vehicles.

Way-finding signage is in place to direct customers, deliveries and guests in and around the construction areas. Signage directing pedestrians and cyclists safely around active work zones is also provided.

A 24-hour toll free construction hotline (1-844-625-1010) is available to the community, and construction concerns can also be addressed to connect@rideion.ca

The Region and GrandLinq continue to partner with the UpTown Waterloo and Downtown Kitchener BIAs as well as the Greater Kitchener-Waterloo Chamber of Commerce to identify effective strategies and activities to support businesses and attract customers throughout construction.

Additionally, a brief overview of some of the ways the Region and GrandLinq are helping businesses during ION construction include:

- **Meetings, discussions and general updates**
  - One-on-one meetings prior to, and during construction, to review specific information related to access for customers, employees and deliveries
  - Daily/weekly discussions (as needed) to address construction concerns
  - Key stakeholder meetings with tenants and employees
  - ION updates at BIA General Membership, Town Halls and construction information meetings as well as networking events

- **Communications**
  - General ION construction information postcard for customers
  - UpTown Waterloo and Downtown Kitchener postcards featuring map with access/parking information or event listings
  - Bi-weekly email construction updates (752 recipients)
  - Monthly ION Update via email (2,112 recipients)
  - ION updates in the BIA monthly newsletters
  - Coordination of information and notices related to third-party utility work (i.e. Hydro, Bell, Rogers, Gas, Hydro One)
  - Coordination of information related to non-ION road construction
  - Intersection closure updates on www.rideION.ca

- **Social media**
  - Twitter campaign highlighting local businesses and encouraging community support through actual sales: #IONbiz and #tweetyourreceipt
  - ION community relations staff available to assist businesses with getting started on social media (i.e. Twitter, Facebook or Instagram) as well as support to learn how to best use these tools to connect with new and existing customers
  - Weekly Instagram feature profiling a business along the ION corridor

- **Events and partnerships**
  - Downtown Kitchener #IDIGDTK campaign
    - Unique signage to highlight key businesses/areas
  - GrandLinq's sponsorship of the UpTown Waterloo Jazz Festival
    - Check out the video:
      - https://www.youtube.com/watch?v=6OrXlEy4WmA
  - IABC Constructive Communications Workshop Series
    - Education sessions for local businesses on communicating through change, employee communications, marketing, public relations, etc.
  - Advertising in the UpTown Waterloo's business directory, Greater Kitchener-Waterloo business directory, Waterloo Region Tourism guide, K-W Fire Safety map
  - Talking ION video series featured online and at the Apollo and Princess theatres
    - Featuring business owners along the ION corridor and how the new service will impact them. To see some videos:
      - https://www.youtube.com/watch?v=9OFLv6wADpI
      - https://www.youtube.com/watch?v=FqN0paZnguI
  - ION/UpTown Challenge
    - Promote local businesses during the Christmas Holiday season. Supported through weekly print advertisements, a social media campaign and weekly prizes

2.5 On-going ION LRT construction

- **In Waterloo**
  - **Operations, Maintenance and Storage Facility (OMSF) at 518 Dutton Drive**
    - Work began in August 2014 and is expected to be completed in 2016.
  - **Northfield at Highway 85**
    - Work began in June 2015 and is expected to continue through 2016.

- **CN Railway tracks, from Northfield to King**
  - Work began in October 2014 and will continue through 2016.
- **Caroline, from Erb to Allen**
  - Underground utility work (i.e. water, sanitary, storm) began in September 2014 and was completed in September 2015. Installation of the remaining ION infrastructure (i.e. LRT trackway, ION stops, systems and overhead wires that power the train), will continue through 2016.
- **King, Union to Allen**
  - Underground utility work (i.e. water, sanitary, storm) began in July 2015 and is expected to last throughout 2015. Installation of the remaining ION infrastructure (i.e. LRT trackway, ION stops, systems and overhead wires that power the train) will begin in 2016.
- **King, Allen to William**
  - Underground utility work (i.e. water, sanitary, storm) began in September 2015 and is expected to continue through 2016. Installation of the remaining ION infrastructure (i.e. LRT trackway, ION stops, systems and overhead wires that power the train) will begin shortly thereafter.

- **In Kitchener**
  - **Borden, from Charles to the CN Railway tracks**
    - Underground utility work (i.e. water, sanitary, storm) began in November 2014 and is expected to be completed this fall. Installation of the remaining ION infrastructure (i.e. LRT trackway, ION stops, systems and overhead wires that power the train), will begin shortly thereafter.
  - **Charles, Borden to Ottawa**
    - Underground utility work (i.e. water, sewer, storm) began this fall and work continues through 2016.
  - **Hayward, CN Railway tracks to Courtland**
    - Underground utility work (i.e. water, sewer, storm) began this fall and work continues through 2016.
  - **Courtland, Hayward to Hydro One Corridor**
    - Underground utility work (i.e. water, sewer, storm) began this fall and work continues through 2016.
  - **CN Railway tracks, from Borden to Hayward**
    - Work began in October 2014 and will continue into 2016.
  - **King, Wellington to Union**
    - Underground utility work (i.e. water, sanitary, storm) began in March 2015 and is expected to continue into 2016. Installation of the remaining ION infrastructure (i.e. LRT trackway, ION stops, systems and overhead wires that power the train), will begin shortly thereafter.
  - **King Street Grade Separation (King, Victoria to Moore)**
    - Work began in June 2015 and is expected to last throughout 2016.
  - **Charles, Victoria to Benton**
    - Underground utility work (i.e. water, sanitary, storm) began in April 2015 and is expected to continue into 2016. Installation of the remaining ION infrastructure (i.e. LRT trackway, ION stops, systems and overhead wires that power the train), will begin shortly thereafter.

- **Charles, Borden to Benton**
  - Underground utility work (i.e. water, sanitary, storm) began in March 2015 and is expected to continue throughout 2015. Installation of the remaining ION infrastructure (i.e. LRT trackway, ION stops, systems and overhead wires that power the train), will begin shortly thereafter.

2.6 Upcoming 2016 ION LRT construction

It is anticipated that the majority of the underground utility, road works and ION Infrastructure (trackway and stops, systems and overhead wires that power the trains) will be complete by the end of 2016 but there will still be considerable construction in 2017. There will also be considerable integration and testing of systems in 2017.

- **In Waterloo:**
  - **Allen, Caroline to King**
    - Underground utility work (i.e. water, sanitary, storm) will begin in 2016. Installation of the remaining ION infrastructure (i.e. ION trackway, ION stops, systems and overhead wires that power the train), will begin thereafter.
  - **King, William to Waterloo Square**
    - Underground utility work is expected to begin in 2016
  - **King, Conestoga LRT stop**
    - Work is expected to begin in 2015 and continue through 2016

- **In Kitchener**
  - **Victoria, Charles to King**
    - Underground utility work (i.e. water, sewer, storm) is expected to begin in 2016.
  - **King, Francis to Victoria**
    - Underground utility work (i.e. water, sewer, storm) is expected to begin in 2016.
  - **Francis, King to Duke**
    - Underground utility work (i.e. water, sewer, storm) is expected to begin in 2016
  - **Duke, Francis to Water**
    - Underground utility work (i.e. water, sewer, storm) is expected to begin this fall and continues through 2016.
  - **Duke, Water to Frederick**
    - Underground utility work (i.e. water, sewer, storm) is expected to begin in 2016 with work now ongoing at the Queen/Duke intersection.
  - **Ottawa, Charles to Mill**
    - Underground utility work (i.e. water, sewer, storm) is expected to begin in 2016.
  - **Hydro One Corridor, Courtland to Wilson**
    - LRT systems work is expected to begin in 2016.
    - LRT track installation is expected to begin in 2016.
  - **Wilson, at Hydro One Corridor**
    - Underground utility work is expected to begin in 2016.
  - **Fairway LRT Stop**
    - Work is expected to begin in 2016.

2.7 ION LRT construction schedule

Some sections of the LRT alignment (e.g. Caroline Street and Borden Avenue) have encountered delays in completing the underground utility works. The delays occurred for a number of reasons including completion of design, permit lags, coordination required with third party utilities, available resources and weather conditions. Although, meeting timelines continues to be a challenge in some areas, the Region and GrandLinq's goal continues to be starting revenue service in late 2017. Staff continue to monitor the project schedule and work with GrandLinq to meet the projected revenue service start. GrandLinq is exploring new construction methods and ways to apply additional resources to close any schedule gaps and to start revenue service in late 2017. For example GrandLinq will be making use of a dome at the King/Victoria grade separation to allow winter construction and accelerate this section of the project to remain on schedule.

2.8 Third party work

Moving utilities out of the way in advance of ION construction is ongoing and forms an important component of the project. A major example of utility relocation is Hydro One's work to bury existing overhead transmission infrastructure along the Hydro One right-of-way between Wilson and Courtland in Kitchener. The construction work was completed earlier this summer on time and within the approved budget.

Third party early utility work also includes work by Bell, Union Gas, Kitchener Utilities and Kitchener-Wilmot Hydro, which continues to progress in coordination with GrandLinq's construction. Some of the utility relocation work will be continuing through the winter to allow GrandLinq to proceed with construction as soon as possible in the spring.

In early 2015, the Conestoga (Highway 7/8) overpass was also completed on time and within approved budget through an existing MTO contract. This completed structure will now allow two LRT tracks to be constructed by GrandLinq along the Huron Park Spur.

2.9 Bombardier Vehicles

The Region is purchasing fourteen light rail vehicles from Bombardier trough an arrangement that "piggyback's" on a Metrolinx contract for approximately 170 vehicles.

Similar to other Third party works, light rail vehicle design/production by Bombardier is progressing under careful review by Metrolinx and Regional staff. There have been many recent reports concerning quality issues related to the Bombardier built Toronto Transit Commission (TTC) street car replacement vehicles. The TTC street cars are very different than the vehicles that Bombardier is building for the Region and Metrolinx but there have also been schedule and quality issues related to the Region's vehicles. Bombardier continues to take steps towards resolving the quality control issues that have impacted the TTC streetcar project and have posed concerns for our project. The overall schedule to deliver Regional vehicles is constantly being monitored in coordination with Metrolinx. Delivery of vehicles is scheduled to be delayed by two months to October 2016 for the first vehicle and by four months to May 2017 for the

fourteenth vehicle from the schedule in the project agreement with GrandLinq. This delay can be accommodated with in the overall project schedule which anticipated start of revenue service in late 2017. At the time of writing, Bombardier started production of long lead items for the Regional fleet in Sahagun, Mexico and will commence building other critical parts over the next few months. Bombardier maintains that they will be in a position to ramp up production to a rate required to deliver vehicles to the Region in order to allow the start of LRT revenue service in late 2017. Staff will continue to track Bombardier's progress to ensure adherence to schedule and quality.

2.10 ION aBRT

ION aBRT began service this September and is the first step towards bringing LRT to Cambridge. aBRT will help build transit ridership along the city's busiest corridor. ION aBRT is an efficient and reliable transit option, as the service will take advantage of special features such as limited stops, transit signal priority, queue jumps (a right turn and bus only lane that will allow buses to bypass traffic queued at busy intersections) and bus bypass shoulders along Highway 8 and the 401 (to be completed by MTO).

In preparing the stop designs, staff worked with the City of Cambridge to determine the products and treatments used for the anchor walls, benches, bike racks, garbage receptacles, and landscaping.

3. ION connections

3.1 The Region's Transportation Master Plan

ION is a key part of the Region's Transportation Master Plan (RTMP). This is a coordinated, long-term strategy for investment in all types of travel, including roads, public transit, walking and cycling.

Grand River Transit (GRT): To maximize the benefits of ION, GRT will undergo a major network redesign with the goal of creating an easy-to-use, integrated public transit system. This change is already happening with the introduction of new iXpress routes. Region and GrandLinq have been and continue to meet regularly to coordinate and ensure good connections between ION trains and GRT buses. GRT is also in the process of implementing the electronic fare system (including the appropriate policies and practices) that will be used on both ION and GRT.

Community Building Strategy (CBS): The CBS is an important tool that will help the Region focus new development within existing urban areas, especially in downtown cores and at ION stops. A separate update on the CBS is being presented to Planning and Works Committee today (November 17, 2015).

King/Victoria Transit Hub: The Transit Hub will provide connections to ION, GRT, inter-city services such as GO Transit and VIA rail. It will also link to taxi services and multi-use trails. A Regional Councillor and staff team continue to work on the Transit Hub.

Walking, cycling and trails: Most ION stops are located within close proximity to the region's vast network of multi-use trails. Region staff together with local municipal staff are continuing to work on integrating ION stops into the transportation network.

Roads: Investment in roads continues. Over the next decade, several major road expansions and improvements are planned for a total investment of more than $937 million

More information on the RTMP is available through Report P-14-011 (January 28, 2014).

Corporate Strategic Plan:

This report supports Focus Area 3 Sustainable Transportation of the Region's Corporate Strategic Plan to implement a light rail transit system in the central transit corridor, fully integrated with an expanded conventional transit system.

Financial Implications:

Table 1 (below) outlines the costs incurred and/or accrued (that is, incurred but not yet paid) for the project to the end of October 31, 2015. It also includes the costs committed to by the Region, through contractual arrangements for work underway. The costs for the DBFOM contract with GrandLinq presented include both accrued expenses to date for construction as well as actual expenditures. As described in previous reports no payments were made to GrandLinq GP until the first $130.7 million of project costs were incurred, which is the amount that GrandLinq GP has financed, with repayment by the Region over the next 30 years.

At October 31, 2015, approximately 45% of the total budget has been incurred or accrued, and over 90% of the project budget has been committed. The project remains on budget.

As of October 31, the Region has received $11.2 million in funding from Canada. The Region has been notified that payments totalling $58.3 million for claims 2 and 3 have been approved for payment. Claims 4 and 5 totalling $8.5 million are currently in the draft submission stage. The Region has received $33.7 million in funding from the Province and has filed claims 2 and 3 requesting funding of an additional $15.0 million. The submitted claims are currently going through the review process.

Actual expenditures to October 31, 2015 total $366.7 million while actual plus committed expenditures total $768 million.

Table 1: Rapid Transit Expenditure Details as of October 31, 2015

	Restated Budget	Actual Expenditure as at October 31, 2015 *	Commitments as at October 31, 2015 **	Total Actual Expenditure and Commitments as at October 31, 2015
Project Office/ Consultants	$51.2 m	$34.6 m	$9.1 m	$43.7 m
Property Acquisition	$42.3 m	$23.3 m	$0.1 m	$23.4 m
Early Works and Other infrastructure	$42.2 m	$14.1 m	$17.0 m	$31.1 m
Hydro One-Transmission line relocation	$23.3 m	$21.2 m	$2.1 m	$23.3 m
MTO Underpass Construction	$11.2 m	$9.3 m	$1.9 m	$11.2 m
Vehicles	$95.5 m	$28.7 m	$63.6 m	$92.3 m
LRT Construction	$536.8 m	$226.5 m	$305.7 m	$532.2 m
aBRT Vehicles and Construction	$15.5 m	$9.0 m	$1.8 m	$10.8 m
Total	**$818.0 m**	**$366.7 m**	**$401.3 m**	**$768.0 m**

* This column totals actual dollars that have been spent and dollars where work has been completed but the Region has not been billed or paid for it.

** This column totals the amount for which there are firm commitments (i.e. signed contracts).

Other Department Consultations/Concurrence:

Staff from Corporate Services and Planning and Development and Legislative Services were consulted for the preparation of this report.

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