Welcome

I am pleased to contribute to this annual report on behalf of the Planning and Works Committee of Regional Council. The various Divisions in the Transportation and Environmental Services Department have a profound effect on all our daily lives. From curbside waste and recycling collection to Regional roads to conventional transit and ION bus and LRT to water and wastewater services this Department provides many important services. The women and men who drive the transit vehicles or the winter maintenance equipment or who operate our water supply system or wastewater treatment facilities or who manage our solid waste services or who perform many other duties contribute to the great quality of life that we enjoy.

Council works hard to maintain and improve these services at a reasonable cost for the benefit of all its citizens.

Councillor Tom Galloway

Every day Transportation and Environmental Services (TES) touches some aspect of every citizen’s life in Waterloo Region. Whether it is the shower in the morning, taking out the recyclables, riding a bicycle to the ice cream shop or jumping on the bus, TES is there providing the services. Most of this work is done quietly in the background and usually done so well that many people don’t even realize it is being done.

This Annual Report shows just a small part of the work TES does and it is intended to demonstrate and recognize the work being done to maintain and improve the quality of life for all citizens of Waterloo Region.

Thomas Schmidt
Commissioner
Transportation and Environmental Services
Region of Waterloo
Waterloo Region

Waterloo Region includes the cities of Cambridge, Kitchener and Waterloo, as well as the townships of North Dumfries, Wellesley, Wilmot and Woolwich. The Region covers roughly 1,300 square kilometres and has a population of about 590,000 people.

The Region of Waterloo is the regional municipal government responsible for providing important services that affect the daily lives of its residents — such as waste collection, water treatment, road maintenance and public transit services — to roughly 200,000 households. The Region of Waterloo’s programs and services are divided into six departments: Community Services; Corporate Services; Human Resources and Citizen Services; Planning, Development and Legislative Services; Public Health and Emergency Services and Transportation and Environmental Services.

The Region of Waterloo’s Strategic Plan for 2015–2018 outlines five focus areas for the organization:

- Thriving economy
- Sustainable transportation
- Environment and sustainable growth
- Healthy, safe and inclusive communities
- Responsive and engaging government and services

In this 2018 annual report for Transportation and Environmental Services (TES), we will outline how the work TES does supports these critical focus areas.

Transportation and Environmental Services

Transportation and Environmental Services (TES) provides the physical services and infrastructure necessary to support Waterloo Region’s economic prosperity and quality of life. This includes maintaining and replacing aging infrastructure; ensuring adequate infrastructure is available to support growth; and ongoing expansion of the transit system.

TES is comprised of groups that plan and provide transportation networks, operate the bus and rapid transit (ION) systems, complete design and construction, collect and manage waste and provide clean, safe drinking water to the community. Together, TES helps shape and transform Waterloo Region into a sustainable future with a strong economy.

The Region of Waterloo’s corporate values of service, integrity, respect, innovation and collaboration are all present in the work TES undertakes.
Thriving economy

The Region of Waterloo as an organization recognizes that a strong, thriving economy is critical to maintain the community’s status as a technology and environmental leader in Canada. TES provides services and initiatives that ensure the local economy continues to grow and support the community’s goals.

2018 was a pretty typical year for construction in TES with over 40 major construction projects underway. These included roads, bridges, water and wastewater treatment plants and waste management projects. Many of these projects take several years to complete and the total value of these major projects was about $300 million. Several smaller projects were also completed in 2018 to repair and maintain our infrastructure. While this construction can be noisy and disruptive at times, it is also the sign of a healthy economy with investment in its key infrastructure.

The new ION light rail transit system is encouraging better land use by intensifying development in our existing urban areas. This type of development helps limit urban sprawl, protect the region’s precious agricultural lands and groundwater sources. In 2003, only 15 per cent of all new development was in our urban cores. By 2017 that number had climbed to 51 per cent. Since Council’s 2011 decision to build the ION light rail, we have seen more than $2.3 billion invested in development in the ION corridor, with more than $700 million in the area around Central Station in Kitchener.

37% of all people working in Waterloo Region work within 800 metres of an ION light rail station or ION bus stop
The Region is also active in seeking funding to support our long-term plans to improve all transportation and environmental services, and was fortunate to receive $70 million in funding from the Provincial Transit Infrastructure Fund (PTIF). Access to this money meant Grand River Transit (GRT) could install a driver simulator to enhance the effectiveness of the operator training program as well as outfit remaining vehicles with traffic signal priority equipment to improve travel time. Design costs were covered for a new transit operating centre on Northfield Drive to accommodate GRT’s increasing fleet. The Region also received over $2 million of provincial funding to support the building of new urban cycling facilities.

A number of active transportation improvements were made including new multi-use trails connecting local neighbourhoods to Mill Station and Laurier-Waterloo Park Station, a new covered bike parking area at Cambridge Centre Station and improvements to a central portion of the Iron Horse Trail to connect to the future Central Station Transit Hub.

TES understands that a thriving economy is dependent on people being able to move freely around the community in a timely fashion through whatever mode of transportation they choose. Work continues on building up these transportation networks to make sure the economy continues to thrive and people want to live in Waterloo Region.

Collaboration

“In the past few years we’ve worked on the ION light rail construction and Waterloo streetscape projects as a Municipal Infrastructure Inspectors. As an inspector we work with partners throughout the Region as well as external contractors while providing on-site inspection and supervision of construction projects. Collaborating and being able to work effectively with people across different teams, municipalities and organizations is essential to the success of every project we work on.”

—Frank Stolch and Alex Rojas, Municipal Infrastructure Inspectors
Sustainable transportation

When creating a sustainable transportation network, it takes years of planning, innovation, consultation and a focus on accommodating various modes of transportation that reflect a diverse community.

The Region’s Transportation Master Plan was updated in 2018 and recommends extensive new investments to be carried out in public transit, walking, cycling, and strategic road improvements. The plan reviewed the impacts of “new mobility” trends such as driverless cars, alternative fuels, protected automated vehicle or shuttle corridors, ridesharing, and ride hailing on congestion, safety, efficiency, land use and public transit. It also outlines strategies for moving forward in sustainable ways.

Every five years, GRT updates its business plan and the current 2017 plan guides significant planned improvements to support the addition of ION light rail service and to achieve the Transportation Master Plan ridership target of 28 million annual riders by 2021. An ambitious action plan is underway to provide riders with a faster, more efficient transit network that integrates with ION. GRT’s local bus, express and specialized transit service will soon include ION light rail which has meant significant changes to the entire transit network.

GRT created new bus stops and improved passenger facilities specifically around ION stations, making future passenger connections easy and convenient. As we began to see services integrate in 2018, we witnessed the successful launch of ION bus service, which is the first step to LRT in Cambridge. The network saw the addition of the 205 iXpress and several alternative service pilots beginning with service in areas not served by conventional bus service or a fixed-route.

GRT plans for 28 million riders per year by 2021
Another exciting change is the EasyGO fare card that makes it easy and convenient to pay for a transit ride in Waterloo Region. GRT completed the installation of platform card readers and fare vending machines at all ION stations after the fleet of buses had received their new fare boxes. Today, more than 50 per cent of riders are tapping the card to ride. Once ION is running, the EasyGO fare card will mean “one system, one fare” where riders pay one fare and can transfer between the bus and train within 90 minutes.

With ION construction substantially completed in summer 2017, the landscape in our urban centres is changing. Before ION, freight and passenger trains crossed King Street and Weber Street, halting traffic as they passed. As part of planned infrastructure improvements, King Street and Weber Street have moved below the railway allowing traffic, transit, cyclists and pedestrians to travel along those streets without being impacted by the freight and passenger trains above.

The Region’s new “ARIA” advanced traffic signal management system is a state-of-the-art centralized control system. ARIA recently won the 2018 Intelligent Transportation Systems (ITS) Canada Award in the category of “New Canadian ITS Technology Research and Development/Innovation.” The Region of Waterloo collaborated with the Region of Durham in developing the Aria system.

On the road side of 2018, residents were quite happy to see the new Fountain Street Bridge over the Grand River re-opened in August 2018 after nearly two years of careful dismantling and reconstruction over the river. The 60-year-old bridge needed to be replaced because it could no longer be repaired to a safe condition. The new bridge and road includes multi-use trails for pedestrians and cyclists that extend from Blair Road to Preston Parkway. Although the bridge had to be closed to vehicle traffic, pedestrian and cycling access across the bridge was maintained throughout construction.

Whether it’s light rail, buses, roads, trails, cycling lanes or pedestrian initiatives, TES is constantly planning and working on ways to build a sustainable transportation network that supports living, working and playing in Waterloo Region. That network took major steps forward in 2018.

**Integrity**

“Over the years the Traffic Systems Management Team has built up a great deal of public trust by demonstrating a deep commitment to public safety and quality of service. No request is considered too small and every request receives a personal response. When we find an issue in one location, we review signals in other locations to confirm optimal performance across the entire network of signals.”

—Mark Liddell, Traffic Systems Management Analyst
Environment and sustainable growth

Waterloo Region is known globally for its attention to the natural environment and TES plays a large role in complementing the key infrastructure investments with sound environmental programs and planning.

Water conservation has always been a key focus for our community because we rely on limited groundwater resources as our primary source of drinking water. Once again, the community demonstrated its ability to conserve water by saving the equivalent of 4,000 homes’ worth of water. This was achieved largely through the Region’s forward-thinking programs for water efficiency. These include the rain barrel distribution program, the summer Water Conservation Bylaw, and the cutting-edge WET (Water Efficient Technology) program, which provides direct in-home water saving tips and advice to high water users and businesses looking to reduce their footprint. Through constant education, residents have become ‘smarter’ about their water use.

Water isn’t the only environmental concern that residents have addressed through their participation in Region programs. Residents embraced the change to every second week garbage collection in 2017, and their enthusiastic participation in the green bin, blue box and yard waste programs and respect for the new bag limits meant that our residential diversion rate increased from 52 to 65 per cent in only two years. The change to collecting garbage every second week, the new bag limits, and the change to a standard level of service across Waterloo Region saves the community $3 million annually and extends the life of our Erb Street landfill.

The 2013 Waste Management Master Plan included a recommendation to consider treating waste to recover energy (known as Energy from Waste or EfW) as an option for when the landfill is full. With about 20 years of capacity left in our landfill, there’s no immediate need for EfW planning, but we continue to monitor developments in technology and Ontario’s waste legislation to stay informed about options.

Another issue of concern is that organics breaking down in the landfill contribute to greenhouse gas production. The successful diversion of organics through the green bin program to turn them into compost, has resulted in a reduction of 28,000 tonnes of greenhouse gas emissions over the last eight years. We harness our
landfill methane and either use it to power a Cambridge steel recycling plant or turn it into electricity at our Waterloo site – enough to power between 4,000 and 6,000 homes.

On the theme of energy reduction, TES was also active on the lighting front. In 2017 the Region of Waterloo and all area Municipalities were involved in a shared street-lighting conversion project called the LED Conversion Project which resulted in significant savings. The Region alone converted 8,650 High Pressure Sodium (HPS) and Mercury Vapour (MV) Cobra Head Luminaires to LED Luminaires in the street lights, resulting in a massive reduction in electricity consumption. This also saves 15,600 tonnes of CO₂ equivalent per year and $2.4 million in savings – of which the Region saved $600,000.

2018 was also a major turning point for the Grand River Watershed. After a decade in the works, a key phase of the Kitchener Wastewater Treatment Plant upgrades was completed in 2017. The benefits were nearly instant, as documented by University of Waterloo professor Dr. Mark Servos, whose research team extensively monitors and studies the health of the Grand River. Their research showed that the health of the fish in the Grand River vastly improved after the upgrade, which is indicative that the overall ecosystem is improving.

Perhaps the biggest challenge for the Region’s water sources in the past 15 years has been rising chloride levels. The Region has implemented many strategies to reduce the salt levels in our groundwater including a massive awareness campaign in 2018. This included collaborating with over 20 community partners to cordon off some sections of properties in winter to reduce salt application. These local partnerships are seen as vital to sustaining our water sources into the future.

As the community continues to grow and attract new businesses and residents, TES will continue to play a vital role in protecting our natural environment through various programs and initiatives. Any successful community finds a key balance between growth and sustainability and the Region of Waterloo is constantly seeking innovative approaches to find that balance.

Innovation

“By capturing biogas in our wastewater treatment process, we can harness the energy to heat the buildings on site which reduces our electricity needs and reduces harmful greenhouse gases.”

—Pam Law, Senior Project Engineer, Water Services
Responsive and engaging government services

In following the Region’s corporate values, including integrity, TES aims to consult with the public, listen to their input, respond in a thoughtful way and continue to engage them as projects and plans develop. On a number of occasions in 2018, that engagement with the community led to some pretty impressive results.

For Stage 2 ION, light rail will replace the ION bus service to the City of Cambridge, creating a continuous light rail system across the region’s three urban centres. Planning for Stage 2 has been ongoing since 2015. Four rounds of public consultations were held between 2015 and 2018. More than 1,200 people have attended the public consultation meetings and staff received more than 600 responses online through email and engagement surveys on the proposed light rail route. With input from the public, new route refinements were identified and incorporated as part of the preferred route, endorsed by Regional Council in June 2018. Public engagement will be ongoing as staff work toward preliminary design in 2019.

The Waste Management group are also constantly engaging the public in numerous ways to enhance their programming. They work with residents every day to make sure everyone knows how to get the most out of our programs and services. Over 2,000 students participated in their educational centre program; 5,900 residents visited the exhibits and displays; and 770 attended our public tour days. Online, over 3,000 residents subscribe to Waste’s eNewsletter and nearly 54,000 mobile and online users accessed the “My Waste” app for information. With more than 196,000 impressions each month through the Waste Facebook and Twitter accounts, the group takes pride in excellent customer service. Whether dealing with the 50,000 annual calls we receive through the Service First Call Centre, the 390,000 transactions handled at our transfer stations each year, or the one million curbside collection stops we make each month, needless to say the Waste group is constantly engaged with the community.

The Region also continues to implement novel ideas that focus on wastewater as a resource rather than waste and consulting the public to help plan a future that makes sense for the community. For these efforts, the Region was recognized as a Utility of the Future by the Water Environment Foundation in 2018. Additionally,
the International Association for Public Participation awarded the Region a Core Value Award for its Biosolids Strategy study relating to the innovative efforts taken to engage the public with visual concepts. The end result was the community-assisted creation of a biosolids management strategy for the future.

GRT is also heavily consulting the public as it starts to implement the network changes which may require a significant change in habits for many riders and the community overall. As bus service is integrated with the ION, communicating these changes and reaching out to individual residents and business is vital. GRT maintains a series of EasyGO customer information tools to make taking transit and planning to take transit easy. Over 50 per cent of our riders use these tools to access next bus information or planning a trip.

Regular two-way communication takes place through channels such as Public Consultation Centres, Public Information Centres, over 116 Transit Talks and travel training sessions as well as involvement in a number of community events and college and university open houses. GRT’s online presence plays an important role as well with a combined following of more than 10,000 on Facebook, Twitter and Instagram and more than 800 Rider Alert subscriptions.

But not all of TES’s projects focus on travel for the future. In some cases, paying attention to the public’s wishes and restoring travel routes from “a long ago” past are equally important. In 2018, a bridge engineering specialist assisted in the development of a major rehabilitation plan for the West Montrose Bridge.

This represents a significant step in the ongoing efforts of the Transportation team, to preserve and protect this important heritage structure and tourist attraction. Also known as the “Kissing Bridge” and built in the 1800’s, it is the last wooden covered bridge in Ontario. In 2014, the Region created a long term preservation plan to improve signage, add new guide rails and upgrade lighting and structural strength.

When we continue to engage the public, everyone gains an understanding of what is important to the community and what is necessary to plan a future that works for Waterloo Region. TES is committed to responding to the public and making community engagement a key building block in all future planning.

Service

“With waste collection contractors making over a million stops a month, there are bound to be some hiccups. I work with residents to help solve problems at the curb so they can get the most from our services.”

—Eileen Knowles, Inspector, Waste Management
Healthy, safe and inclusive communities

The last but certainly not least important focus area for TES in 2018 was ensuring that all plans consider the need to protect the health and safety of residents. Whether promoting and designing infrastructure for active transportation or protecting our water sources and natural environment, there are a variety of considerations when attempting to build a safe and healthy community.

In 2018, the updated Transportation Master Plan called for increased funding to improve our active transportation network by the year 2031. This will support expansions to the current network and upgrading and building more separated facilities. Currently, there are 720 km of cycling facilities in the Region. Multi-use trails and separated bike lanes account for about 12 per cent and the rest consist of on-road bike lines and paved shoulders. An estimated total of 795 km of cycling facilities are planned to be built. By 2031, separate cycling facilities and multi-use trails will account for about 18 per cent while the rest will consist of on-road bike lanes and paved shoulders.

A number of other active transportation improvements were also made in 2018, including new multi-use trails connecting local neighbourhoods to the ION’s Mill Station and Laurier-Waterloo Park Station, as well as a new covered bike parking area at Cambridge Centre station. Residents will also notice the improvements to a central portion of the Iron Horse Trail that connects travellers to the future Central Station Transit Hub.

A more subtle strategy to maintain a healthy, safe community is seen in the efforts to shift development from the suburban edges to redeveloping existing urban cores. This helps to protect our valuable groundwater resources and agricultural and environmentally sensitive lands. With water being top of mind to a growing community, TES invests heavily in protecting our water supply and meeting water treatment standards. The Region received a score of 100 per cent compliance from the Province of Ontario on its water treatment facilities. This means that at each of its 43 groundwater treatment systems and the one surface treatment plant, all provincially regulated water quality standards were met. The public can have confidence in the drinking water provided by the Region to the local municipalities.
Residents have also expressed concern for their safety when travelling around the region on foot or on bikes, which has led to some unique design features being implemented on local roadways. Beginning in May, 2017, the Region initiated a pilot project to implement a Leading Pedestrian Interval (LPI) at signalized intersections in close proximity to elementary schools. The LPI gives three to five seconds of walk indication signal at these intersections before the green light is given to cars to proceed through the intersection. There are currently 36 signalized intersections running LPI at certain times of day with 12 intersections about to be added in 2019. This project increases pedestrian safety and general awareness of all modes of transportation.

Also on the topic of planning roads and keeping safety top of mind, two new multi-lane roundabouts were opened in 2017 on Ottawa Street at Homer Watson Boulevard and at Alpine Road in the City of Kitchener. The new roundabouts were constructed to improve traffic flow and reduce injuries from collisions at these intersections. TES is happy to report these projects were finished ahead of schedule and on budget and include new multi-use trails for pedestrians and cyclists. The project won a Consulting Engineers of Ontario Award in 2017. In 2019, new separated cycling lanes are planned for Ottawa Street to connect the new multi-use trails to Mill Street. A new multi-use trail is also planned in 2019 on Homer Watson Boulevard to connect Ottawa Street to the Conestoga College Doon campus.

As we travel around Waterloo Region we notice the subtle changes to the landscape and the design of our community that increase safety for everyone. When residents can have confidence in clean, safe drinking water and well-designed travel routes for all modes of transportation, it lends peace of mind to the community and promotes active, healthy lifestyles.

2018 was an important year for TES in continuing to enhance the health and safety of the community.

Respect

“Respect is foundational to all other Regional values. For example, I collaborate regularly on projects with fellow staff, municipal counterparts, riders, and businesses. To collaborate effectively and honestly, we must respect and appreciate one another’s ideas, values and uniqueness. At GRT, we strive to not only be open and transparent, but to listen. We invite open discussion on the decisions we make to help us best shape and improve our services day-by-day.”

—Kevan Marshall, Principal Planner, Transit Services
2018 by the numbers

Transit

14 light rail vehicles were delivered by Bombardier
ION has over 36 kilometres of track
18% of all residents in Waterloo Region live within 800 metres of an ION light rail station or ION bus stop
EasyGO online trip planner provided over 3 million individualized trip plans
GRT ridership increased 6.7 percent from just over 19.5 million to 21.1 million
Route 7 GRT’s busiest route had over 3.5 million riders in the year

GRT has a fleet of 273 buses – 11 are Hybrid Electric-Diesel buses
GRT operates 40 MobilityPLUS vehicles

Waste

All waste management services cost taxpayers about the same as a cup of coffee a week ($148 average annual cost per household)
11% increase in Blue Box material collected*
15% increase in yard waste collected*
31% decrease in garbage collected*
Over 390,000 transactions handled at all waste management sites
10,340 tonnes of woodchips and compost given away
50,000 customer calls to Service First Call Centre
1 million curbside collection stops per month
Engineering teams monitor 500 groundwater wells and 200 landfill gas wells to help reduce possible impacts of the landfill on local air and water
Over 2,000 students participated in the Educational Center Program

139% increase in Green Bin material collected*

*change since new curbside policy implemented (2018 over 2016)
Water

- **219** home water use audits
- **55,000** rain barrels distributed to date (**2400** in 2018)
- **34** risk management plans completed and **120** in progress for source protection
- **23** Commercial, Industrial and Institutional (CII) sector water use reviews
- **6** large audits
- **26** funded water saving projects
- **159 m³** of water saved per day through CII program

Over **1000** fixture/flapper replacements, saving **382 m³** of water per day

750 million litres of water saved the through Water Conservation Bylaw (3000 Olympic-sized swimming pools)

### Heroism Award

GRT Operator Vimal Jegatheswaran – recipient of CUTA’s Heroism Award for saving the life of a person who attempted to jump off a bridge in the City of Cambridge in June 2018. Vimal secured the GRT vehicle he was operating and grabbed the man from behind, while at the same time urging him to not jump. He was able to talk this person down and contact authorities to find him help. Vimal has worked at GRT since 2011. He came to Canada as a refugee from Sri Lanka in 1999. GRT is proud to have operators like Vimal on our team.
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