Clause 4 in Report No. 4 of Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on March 23, 2017.

4
Implementation of the Travel Smart Program

Committee of the Whole recommends:

1. Receipt of the presentation by Brian Titherington, Director, Infrastructure Management and Project Management Office.

2. Adoption of the following recommendations contained in the report dated February 17, 2017 from the Commissioner of Transportation Services:

    1. Council receive the Travel Smart Program (Attachment 1) as an action identified by the 2016 Transportation Master Plan.

    2. Council endorse the actions outlined in the Travel Smart Program report.

Report dated February 17, 2017 from the Commissioner of Transportation Services now follows:

1. Recommendations

It is recommended that:

1. Council receive the Travel Smart Program (Attachment 1) as an action identified by the 2016 Transportation Master Plan.

2. Council endorse the actions outlined in the Travel Smart Program report.

2. Purpose

This report presents the Travel Smart Program report and seeks Council endorsement of the Travel Smart recommendations.

3. Background

Traffic flow is impeded and travel times become unreliable when demand exceeds capacity of the roadway

The Region continues to experience population and job growth, resulting in increased traffic demand on the Region's road network. The rate of growth has exceeded the rate at which transportation infrastructure, such as roads, transit, and cycling, can be expanded. The resulting deficit between the demand for travel and the ability to provide sufficient capacity results in traffic delay, which is increasing on roads, particularly in southern York Region.

Delay to residents and commuters is high in the Greater Toronto and Hamilton Area

A travel time study conducted in 2014 by the Ontario Ministry of Transportation (MTO), in partnership with York Region, confirmed York Region residents travelling through Vaughan, Richmond Hill and Markham experience some of the highest travel delays in the Greater Toronto and Hamilton Area.

One of the 2014 study's key findings was that sections of Highway 404 are the slowest among 400-series highways in the Greater Toronto and Hamilton Area. Motorists travelling on sections of Highway 404 have travel times which are more than three times longer than when travelling during non-peak times.

The Canadian Automobile Association released a study in January 2017 that concludes the City of Toronto exhibits the highest levels of delay due to overall traffic volume with five of Canada's top ten bottleneck locations.

Concerns of residents, businesses and road users related to traffic delays were identified through consultation

As part of extensive surveys undertaken in support of the Region's Transportation Master Plan (TMP), managing traffic flow was identified as a high priority for residents, including the need to focus the Region's investment on improving traffic flow, particularly as the population of York Region continues to grow.

Building on the public consultation for the TMP, the Region held three forums in May and June of 2016 bringing together members of the public and traffic experts to discuss traffic concerns that impact quality of life. Titled "Traffic Beyond the 6ix", the forums explored themes such as the reasons for traffic delays in the 905 area, impacts to transit operations, options to manage delays and benefits of new technologies for managing delays.

The need for a Travel Smart Program was identified in the 2016 Transportation Master Plan

The recently-approved [Transportation Master Plan](#) builds on previous transportation master plans and is founded on progressive objectives and policies of existing Council-approved plans, such as Vision 2051 and the York Region Official Plan. A key objective of these plans, including the TMP, is to ensure growth is managed sustainably while the Region creates strong, caring and safe communities.

The TMP identified the need to develop a Congestion Management Plan. This has been organized as a suite of initiatives included within the Travel Smart Program and represents an evolution of the Region's efforts to manage traffic flow. The purpose of the Travel Smart Program is to document initiatives already underway and to develop and track a set of actions which respond to the Region's mobility needs with an emphasis on the short-term (i.e. within five years).

4. Analysis and Implications

The objectives of the Travel Smart Program are a continuation of existing programs to manage traffic flow

The Travel Smart Program is a five-year tactical program developed to identify, prioritize, plan and schedule initiatives to better manage the most significant areas of delay. It represents an evolution of ongoing programs and initiatives to improve traffic flow within York Region. The Travel Smart Program has four objectives:

- Inform travellers of mobility options and real-time traffic conditions

- Improve reliability of travel throughout the Region

- Optimize safe and efficient use of the transportation network

- Leverage technologies and practices that facilitate transit use and improve schedule adherence

The Travel Smart Program is a suite of initiatives targeted to provide informed travel options and improve travel reliability

The recommended Travel Smart Program initiatives are summarized into three categories:

Implementation of the Travel Smart Program

- Choose Smart – Providing commuters with information to better plan their travel before they leave. Choose Smart initiatives ensure the right information reaches the right people at the right time. These initiatives create a multi-way flow of meaningful information between the Region, travellers and other agencies.

- Move Smart – Once commuters are on the move, Move Smart initiatives help to ensure travel time reliability for all modes. Move Smart initiatives ensure travel times remain reasonably consistent despite challenges created by motor vehicle collisions, infrastructure failures, such as watermain breaks or weather events.

- Work Smart – Improving the management of all other activities that may cause delays on the transportation network. Work Smart initiatives focus on scheduling and coordinating maintenance, construction or other operational activities in a manner that reduces disruption to the transportation network and increases the efficiency of road work.

Attachment 1 identifies the actions that form the Travel Smart Program under the Choose Smart, Move Smart and Work Smart categories.

The Travel Smart Program builds on existing transportation programs

The Travel Smart Program builds on current successful programs such as the installation of traffic cameras by Transportation Services. These initiatives include:

- Choose Smart

  - Develop mobile YRT/Viva payment system

  - Enhance the Region's Traveller Information Systems Program

  - Expand the number of Road Weather Information System stations to provide more complete coverage across the Region

  - Expand the provision of Open Source Data - This data can be used to support popular third party applications such as Triplinx, Waze and Google Maps

- Move Smart

  - Expand CCTV camera coverage on Regional roads

  - Develop specialized signal timing plans for intersections near GO stations and for emergency detour routes

- o Expand the Traffic Management Centre facility and operate with extended hours of service

- o Install new traffic controllers to support the Viva Rapidway corridors, transit signal priority, and emergency vehicle pre-emption

- Work Smart

  - o Review parking and/or stopping restrictions on Regional roads

  - o Develop program for Smart Work Zones where technology is used to provide travel time information to better inform users in areas impacted by construction

  - o Implement an online lane occupancy permit system that better coordinates planned construction work between the Region, local municipalities and private stakeholders

The above represents a partial list of what will constitute the Travel Smart Program. These initiatives provide societal and traveller benefits through improving travel time reliability and quality of life by reducing traveller frustration. In addition, using technology to better identify the type and location of incidents can assist first responders in reducing travel time.

The Choose Smart initiatives such as third party data, open data as well as the Bluetooth implementation plan, all support use of data to advise the public of real-time conditions on the Regional road network. This information provides travellers with opportunities to make informed decisions about their commute and choice or mode of transportation.

Work Smart initiatives such as CCTV Camera Coverage, Lane Occupancy Rentals Program, and Smart Work Zone Program, all support close monitoring and management of the Regional road network to reduce the impact and interruption of traffic from planned and unplanned construction. This means more consistent travel times and a better traveller experience.

The Travel Smart Program has been developed as a foundation that allows for the establishment of further strategies and initiatives. Initiatives will evolve as technology advances and as the Region obtains additional information or input from residents and partners, including third-party data providers.

Travel Smart is aligned with the 2015-2019 Strategic Plan objectives and its performance measures will be reported to Council annually

Measuring the performance of the Travel Smart Program is a critical component to ensuring the initiatives contribute to meeting the Program objectives. In

alignment with the 2015-2019 Strategic Plan, the Key Performance Indicators will be used to monitor and evaluate the effectiveness of the Program throughout its five-year lifespan. Table 1 shows some examples of the indicators that will be used to measure the performance of each objective.

Table 1
Potential Key Performance Indicators

Objective	Key Performance Indicator	Data Source
Inform travellers of mobility options and real-time traffic conditions	Number of data types made available via open data	York Region data
Improve the reliability of travel throughout the Region	Consistency of Travel Time Index	Bluetooth data; MTO Travel Time Study
Optimize the safe and efficient use of the transportation network	Per cent of lanes available during peak periods	York Region data
Leverage technologies and practices that facilitate transit use and schedule adherence	Transit schedule adherence	Transit Computer Aided Dispatch/Automatic Vehicle Location

Staff will report annually on the performance of the Travel Smart Program in addition to reporting on the development of new technologies to help manage traffic flow, such as the Bluetooth detection systems pilot, the conversion of traffic signal controllers and preparing for connected and autonomous vehicles.

5. Financial Considerations

The initiatives included in the Travel Smart Program are already funded as part of the 2017 budget

The Travel Smart Program represents an estimated total cost of $20.2 million over a five-year period; however, this funding is already committed as part of existing initiatives, programs and resources.

As a suite of initiatives, the Travel Smart Program allows for Council direction to guide future investment as needed

Required funding for any new initiatives will be sought through the annual budget process. This process will allow Council to guide investment in different Travel Smart initiatives to best address identified issues on an annual basis.

6.   Local Municipal Impact

Following Council endorsement of the Travel Smart Program, staff will work with the local municipalities to share information and continue implementation of the Program. Some of the initiatives, which may be of interest to our local partners, include weather station information and better coordination of traffic signals.

7.   Conclusion

Traffic delays impose a significant cost on society in terms of lost productivity, travel time delays and environmental impacts. It has become an increasingly important issue for York Region residents. The Region has been addressing traffic flow through its existing traffic management program. The Travel Smart Program will help to better manage traffic flow, improve reliability of travel across York Region, allow travellers to make more informed choices and respond to the Region's mobility needs by supporting implementation of a suite of short- to medium-term initiatives. The Travel Smart Program and its initiatives will be adaptable to address new traffic flow issues as they arise.

For more information on this report, please contact Brian Titherington, Director of Infrastructure Management and Project Management Office at 1-877-464-9675 ext. 75901.

The Senior Management Group has reviewed this report.

February 17, 2017

Attachment (1)

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Accessible formats or communication supports are available upon request.

TRAVEL SMART
PROGRAM

Executive Summary

York Region's Travel Smart program principles are to "manage mobility to support a growing Region and improve consistency of travel time and safety for all users"

The Transportation Master Plan identified the need for development of a Congestion Management Program as a key near-term action. The Congestion Management Plan has been organized as a suite of initiatives included within the "Travel Smart" program. The purpose of Travel Smart is to consolidate a set of actions intended to provide travellers with information to make more informed travel choices, improve the reliability of their travel across York Region, leverage technology and innovation to help manage traffic flow and respond to the Region's mobility needs with an emphasis on short-term initiatives within five years.

Travel Smart aligns with broader Regional growth policies

The Transportation Master Plan is founded on progressive objectives and policies of existing Council-approved plans, such as Vision 2051 and the York Region Official Plan (2010), and builds on previous transportation master plans. The goal of these plans, including the 2016 Transportation Master Plan, is to ensure growth is managed sustainably while York Region creates strong, caring and safe communities.

Travel Smart program initiatives proactively manage traffic

In alignment with the two guiding principles of managing mobility and improving consistency of travel time and safety, Travel Smart is a five-year tactical program to identify, prioritize, plan and schedule operational strategies and

initiatives. This program can be implemented to address the most significant areas of traffic causing the greatest travel delays in York Region. Travel Smart will contribute towards achieving **four objectives**:

1. Inform travellers of mobility options and real-time traffic conditions

2. Improve reliability of travel throughout York Region

3. Optimize the safe and efficient use of the transportation network

4. Leverage technologies and practices facilitating transit use and schedule adherence

The Travel Smart Program is targeted to provide informed travel options and improve travel reliability

Travel Smart is a suite of initiatives allowing residents to choose the appropriate travel option to suit their needs and improve the travel time reliability of their travel option. Under Travel Smart, three components provide the framework for recommended actions:

1. **Choose Smart** – Providing commuters with information to better plan their travel before they leave. Choose Smart initiatives ensure the right information reaches the right people at the right time. These initiatives create a flow of meaningful information between the Region, travellers and other agencies.

2. **Move Smart** – Improving travel time reliability. Move Smart initiatives promote roads that keep drivers, transit, cyclists and pedestrians moving together with more reliable travel times. These strategies leverage technology to ensure that travel times, by whatever mode, are reasonably consistent from one day to the next.

3. **Work Smart** – Improving the management of other events that may cause delays on the transportation network. Work Smart measures centre on planning, scheduling and performing maintenance, construction or other operational activities in a manner that reduces disruption to the transportation network. These initiatives are focused on mitigating the impacts of such activities.

The Travel Smart Program builds on existing transportation programs

Travel Smart builds on existing transportation and traffic management strategies and initiatives. York Region, in partnership with other levels of government, has invested heavily in transit and rapid transit facilities. A number of tools exist to maximize the return

on these investments, including applications providing real-time information for bus arrivals, trip planning and timely social media updates to keep transit riders informed. Other third party applications include, for example, Triplinx, Waze and Google Maps. Other Regional investments include its Traffic Management Centre systems, computer aided dispatch and automatic vehicle location solutions.

Travel Smart includes a number of more recent strategies and initiatives to continue leveraging past investments while managing for anticipated increases in traffic volumes expected as York Region continues to grow. Planned initiatives include:

Choose Smart

- Develop mobile York Region Transit (YRT/Viva) payment system
- Enhance York Region's Traveller Information Systems Program
- Develop a data warehousing system and expand the provision of Open Source Data

Move Smart

- Continue to develop specialized signal timing plans for intersections

- Expand York Region's Traffic Management Centre facility and operate with extended hours of service while integrating with dispatch operations
- Continue to expand closed-circuit television camera coverage on Regional roads
- Continue to upgrade traffic controllers to support transit rapidway corridors, transit signal priority and emergency vehicle pre-emption

Work Smart

- Expand the number of Road Weather Information Systems (RWIS) stations
- Review parking and/or stopping restrictions on regional roads
- Develop program for Smart Work Zones where technology is used to provide travel time information to better inform users in areas impacted by construction
- Enhance emergency detour routes

The list above is a partial list of the strategies that form Travel Smart. Travel Smart is a consolidation of existing initiatives which creates a framework for the establishment of further actions. Plans will evolve as technology advances and the needs of York Region travellers change over time.

Travel Smart aligns with the 2015 to 2019 Strategic Plan objectives

Measuring the performance of Travel Smart is imperative to ensure key objectives are met. In alignment with the 2015 to 2019 Strategic Plan, key performance indicators will be used to monitor and evaluate the effectiveness of the program throughout its five-year lifespan.

Table 1 shows examples of the indicators used to measure the performance of each objective. Staff will report to Regional Council annually on the performance of Travel Smart, in addition to reporting on the development of new technologies to help manage traffic flow such as the Bluetooth detection systems pilot, the conversion of traffic signal controllers and preparing for connected and autonomous vehicles.

Table E-1 – Potential Key Performance Indicators

Objective	Key Performance Indicator	Data Source
Inform travellers of mobility options and real time traffic conditions	Number of data types made available via open data	York Region data
Improve the reliability of travel throughout York Region	Consistency of Travel Time Index	Bluetooth data; MTO Travel Time Study
Optimize the safe and efficient use of the transportation network	Percent of roads available during peak periods	York Region data
Leverage technologies and practices facilitating transit use and schedule adherence	Percent of Transit Schedule Adherence	Transit Computer Aided Dispatch/Automatic Vehicle Location

The majority of initiatives included in Travel Smart are already included in the approved 2017 budget and future outlook

Travel Smart represents an estimated cost of $20.2 million over a five-year period. Given various initiatives are already ongoing, the majority of the funding is committed in the form of existing initiatives, programs and

resources in either the 2017 10-Year Capital Plan or in the 2017 Operating Budget. Required funding for new initiatives will be sought through the annual budget process. This allows Regional Council to continue to guide investment in different Travel Smart initiatives that best address identified issues on an annual basis.

Contents

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1 Introduction

1.1 Background

York Region consists of nine cities and towns, is 1,776 square kilometres, provides a variety of programs and services to almost 1.2 million residents, 50,000 businesses and 580,000 employees and continues to grow rapidly in both population and employment. In 1971, York Region was home to 166,000 people and 55,000 jobs. By 2041, York Region is projected to have a population of 1.8 million residents with employment reaching over 900,000 jobs. This growth has and will continue to increase the number of cars, trucks, buses, pedestrians and cyclists using York Region's roads. As such, York Region's principal priorities are to manage mobility to support a growing Region and improve consistency of travel time and safety for all users.

Traffic flow is impeded and travel times become unreliable when demands exceed capacity of the roadway

Traffic delay may be expressed in terms of travel time and is described by slow moving or stopped traffic. York Region continues to experience growth in population and jobs, resulting in increasing demand on its road network. Growth in York Region has occurred at a rate which has exceeded the ability to expand the transportation infrastructure to maintain existing travel times for roads, transit and cycling. The resulting deficit between the demand for travel during peak periods and the ability to provide the equivalent capacity results in increased travel times, particularly in southern York Region.

Heavy traffic can be an indicator of a thriving economy and vibrant communities and some level of it can be expected in urban areas, particularly throughout the Greater Toronto and Hamilton Area (GTHA). However, from a financial or urban planning perspective, constructing more roads to accommodate increasing demand is not a sustainable solution to manage increasing traffic. Alternative traffic management approaches and initiatives are required to optimize the use of existing road infrastructure and promote more sustainable modes of transportation.

York Region addresses its growth-related challenges in a number of ways. A road expansion and improvement program forms part of the Region's capital budget as documented in the 10-Year Plan. Service expansion for transit is outlined in York Region Transit's 2016-2020 Strategic Plan and annual service plans. The Region also has a number of transportation demand management and active transportation initiatives underway. These programs are identified and coordinated through the Region's Transportation Master Plan.

The most recent update to the Transportation Master Plan, endorsed by Regional Council in June 2016, identifies the infrastructure and policy requirements to enable the Region to build and maintain an interconnected system of mobility to support growth to 2041. It includes five objectives:
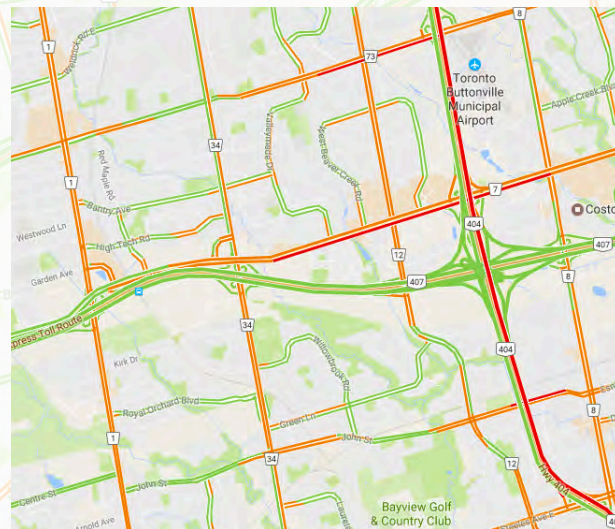
- Create a world class transit system
- Develop a road network fit for the future
- Integrate active transportation in urban areas
- Maximize the potential of employment areas
- Make the last mile work

Many of the policies and actions proposed in the Transportation Master Plan will have implications for traffic management. Since the Regional road network is the foundation upon which transit operates, improvements to capacity and travel time reliability enables the Region to maximize significant investments already made in infrastructure such as the Rapidways and in technology such as the new traffic signal controllers. As population and employment levels are projected to increase, traffic flow and other implications of a growing number of road users cannot be eliminated, only managed.

The Transportation Master Plan identifies the extent of travel delays occurring on York Region's roads today.

- Travel delay occurs in specific areas during certain times of the day and mostly occurs in built-up urban areas during peak periods
- Peak periods continue to spread as traffic volumes grow
- **Figure 1-1** demonstrates current levels of traffic volumes in York Region.

Figure 1-1: Typical Levels of Afternoon Rush Hour Traffic Volumes in York Region (Source: Google Maps)

Travel time studies conducted by the Ontario Ministry of Transportation (MTO) continue to show the City of Markham, City of Vaughan and the Town of Richmond Hill having some of the highest travel time indices (TTI) in the Greater Toronto Area. TTI is the comparison between peak period and free-flow speeds to indicate the additional travel time required during peak periods. For example, a TTI of 3.00 indicates a motorist's trip will take three times longer during peak periods than during non-congested (free-flow) travel conditions typically experienced during non-peak periods.

Some primary results of MTO's 2014 Travel Time Study found:

- The majority of the slower roadways were in the southern portion of York Region, near Highway 7
- Among surveyed corridors, nine per cent had TTI values above 2.00 during the morning peak period. This means on nine per cent of the corridors, the expected travel time was more than double the travel time at free-flow speed
- Among the surveyed corridors, 25 per cent had TTI values above 2.00 during the afternoon peak period

A number of areas within York Region already experience some of the highest travel times in the GTHA, particularly in the southern municipalities.

Direction	Time of Day	Route	TTI
Southbound	Morning Peak	Keele Street	2.97
		Highway 404 between 16th Avenue and Highway 401	3.40
Northbound	Afternoon Peak	Leslie Street	4.49
		Highway 404 between Highway 401 and 16th Avenue	3.00

The TTIs experienced by motorists on Highway 404 between 16th Avenue and Highway 401 are the slowest among the 400-series highways in the GTHA. This has spillover effects and implications for parallel/adjacent Regional roads often used by motorists as an alternative.

Impacts being imposed on commuters must also be considered alongside impacts being felt by businesses, for example through increased direct costs related to shipping (due to increased travel times) and vehicle operating costs, in addition to indirect costs resulting from decreased access to labor, customers and suppliers. Consequently, goods and services become more expensive, thereby hindering York Region's economic productivity and competitiveness. Therefore, although businesses tend to 'adapt' to increasing travel times, it is important to acknowledge such adaptation incurs costs. Thus, although heavy traffic volumes can be an indicator of a thriving economy and vibrant communities, excessive levels of delay can create areas that may be less attractive for residents and businesses to locate in.

The importance of alternative traffic management approaches and initiatives is recognized in the updated Transportation Master Plan which identified the need to develop a Congestion Management Plan for York Region. The Travel Smart Program outlines a set of actions to improve travel reliability across York Region and respond to the Region's mobility needs with an emphasis on short- to medium-term initiatives, within five years. It primarily focuses on transportation technology initiatives to maximize the people moving capacity of the existing Regional transportation network and includes key performance measures to track success.

During Emergency Road Closures
FOLLOW EDR 404
EDR = Emergency Detour Route

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2 Travel Smart Program

Travel Smart is York Region's first Congestion Management Plan. The Region operates many systems and undertakes successful initiatives and programs in an effort to manage the increase in traffic. Travel Smart documents these actions and provides a framework for new and future activities. The identification and coordination of a series of complementary traffic management initiatives – focused on roads and transit applications – is the purpose of this Program. More specifically, Travel Smart is intended to:

- Integrate and coordinate transportation initiatives related to roads and transit
- Improve the reliability of travel across York Region
- Recognize and support active transportation programs

2.1   Why we need Travel Smart

Initiatives outlined in Travel Smart will enable York Region to choose appropriate and effective measures to manage traffic flow and support transit, as well as enable travellers to choose their best travel options. As the population continues to grow and place further pressures on York Region's transportation system, these initiatives will become increasingly important and provide societal advantages:

- Economic – More businesses may choose to locate in York Region to take advantage of more reliable travel and minimize costs
- Quality of life – Mitigate additional time spent commuting so people can enjoy more personal or recreational time. Improved travel time reliability will also reduce traveller frustration
- Mobility – Improve travel reliability throughout York Region
- Environmental/Climate – Minimize vehicle greenhouse gas emissions
- Safety – Identify and respond to incidents in a more timely manner to reduce the associated delays on the transportation network

Economic
- Increase in productivity
- Reduction in operating costs

Quality of Life
- More personal time
- Less frustration

Mobility
- Less time spent on the roads
- Greater understanding of travel conditions

Environmental
- Reduce fuel consumption
- Reduce emissions
- More transit friendly environment

Safety
- More pedestrian/cycling friendly environments
- Potential reduction in collisions
- Faster emergency response times

2.2 What the Travel Smart Program will do

Travel Smart coordinates roads and transit programs with numerous other initiatives. These initiatives address the Region's near future traffic management needs using a proactive approach. Travel Smart includes performance measures specifically tailored to monitor its success and allows the Region to:

- Track and analyze how the Region is addressing and managing increasing traffic delays

- Foster partnerships among stakeholders to create broader and multi-modal traffic management tools, initiatives and solutions

- Gather and disseminate information about travel conditions, trip choices, planned events and incidents

- Leverage the Region's systems and integrate new technologies to improve the reliability of travel

- Identify actions to improve travel reliability for all York Region road users

- Identify programs to build public awareness, including:
  - Enabling travellers to determine how to best utilize the Region's transportation network
  - Empowering the public by providing tools to make better travel decisions

- Create and support development of traffic management initiatives to:
  - Proactively respond to incidents
  - Facilitate consistency in travel time and goods movement reliability
  - Provide relevant travel data

2.3   Objectives of Travel Smart

Travel Smart's four objectives (as illustrated in **Figure 1**) form the framework of its initiatives. These objectives capture York Region's significant traffic management needs which have been informed by feedback from stakeholders, Regional staff and the public.

Figure 1 – Travel Smart Objectives

To optimize the safe and efficient use of the transportation network

To improve the reliability of travel throughout York Region

To leverage technologies and practices that facilitate transit use and schedule adherence

To inform travellers of mobility options and real time traffic conditions

3 Organization of Travel Smart

Travel Smart is organized into three categories based on the nature of the initiatives.

Choose Smart – Providing commuters with information to better plan their travel prior to beginning a trip. Choose Smart initiatives ensure the right information reaches the right people at the right time. These initiatives create a flow of meaningful information between York Region, travellers and other agencies.

Move Smart – Improving travel time reliability. Once commuters are on the move, Move Smart initiatives help to ensure travel time reliability for all modes. These strategies leverage technology and infrastructure to create an environment to better accommodate all road users to keep travellers moving reliably. Initiatives will ensure travel times remain consistent despite challenges created by events such as motor vehicle collisions, infrastructure failures (such as watermain breaks) or severe weather.

Work Smart – Improving the management of other events that may cause delays. Work Smart measures focus on planning, scheduling and performing maintenance, construction or other operational activities in a manner that reduces disruption to the transportation network and increases the efficiency of road work. These initiatives are focused on mitigating the impacts of these activities.

Collectively, the Travel Smart actions aim to:

- Build on existing transportation and traffic management programs
- Provide or exchange relevant, meaningful information (e.g. transportation options, travel conditions) with those living and working in York Region, in an effort to promote travel reliability
- Leverage existing technology to proactively and efficiently manage traffic
- Identify the usefulness of innovative technologies, such as data and business intelligence analytics
- Promote improved readiness and resilience in response to disruptive events (e.g. severe weather, special events, new and emerging technologies)
- Continue to promote strong working relationships (e.g. by partnering with local municipal partners, private data providers) to share information and work smarter all to support a well-coordinated and efficient transportation network

4 Recommended Projects, Programs and Activities

A number of ongoing activities form the initial Travel Smart Program. This includes information services to leverage the significant Regional investments already made to support YRT/Viva services, most of which have been available for more than five years. Many Travel Smart initiatives could fall under multiple categories however have been listed in the area of best fit.

4.1 Choose Smart

The following strategies and initiatives provide commuters with information to better plan their travel before they start their trip. Choose Smart initiatives ensure the right information reaches the right people at the right time and create a flow of meaningful information between the Region, travellers and agencies.

Complete or Current Initiatives

Benefit: Provide travellers with seamless transportation alternatives	
YRT/Viva App	A mobile application providing customers with route identification, mapping of bus stops, schedule information, real-time information for selected routes and transit stops.
YRT/Viva TapRide App	In a pilot phase until the end of 2017, a low-demand scheduling and trip planning system supporting Dial-a-Ride services. Customers can request a transit trip using their mobile device.
YRT/Viva RouteMatch Web and Mobile App	A web-based and mobile app scheduling and planning system for Mobility Plus customers. Allows the convenience of scheduling, trip planning and cancelling trips from a mobile device.
YRT/Viva Internet trip planner	A website providing customers with route identification, mapping of bus stops, schedule information, real-time information for selected routes and transit stops.
Strong relationships with transportation counterparts	York Region is a stakeholder in the development of traffic management strategies for Metrolinx and neighbouring agencies. The Region will continue to foster working relationships with other agencies to better coordinate decision-making and jointly-sponsored traffic management programs. Strong, interjurisdictional working relationships will position the Region to offer better and timely information regarding special events, road construction or traffic conditions across jurisdictions.
Presto	An electronic fare payment system allowing customers to "tap" onto YRT/Viva services, eliminating the need for customers to carry conventional fare media.

Planned Initiatives

Benefit: Provide travellers with seamless transportation alternatives	
YRT/Viva Mobile Fare Payment system	A mobile fare payment system to allow customers the convenience of purchasing YRT/Viva fares anywhere, any time - to be launched early 2017.

Benefit: Provide publically available real-time information on traffic and road conditions	
Purchase traffic condition information	Purchasing travel data from private companies allows York Region to understand where and when heavy traffic forms on its roads and share this with the public. The Region can then: ▪ Identify incidents and unexpected events in a timely manner ▪ Provide travel information for the entire road network ▪ Adjust maintenance schedules and road occupancy times with other organizations to minimize disruptions and delays
Enhance York Region's Traveller Information System Program	This initiative will provide road users with access to public transit and road condition information. Social media and open data sources are used by York Region to disseminate information to travellers and private travel related applications. By providing updates to the Region's website, expanding the availability of electronic road signs, further enhancing social media messaging and posts and subscribing to available electronic services, travellers will have access to even more detailed and current travel information.

Benefit: Enhance the ability to use business intelligence and predictive strategies for traffic management	
Develop a Transportation Data Delivery Platform	The vast quantities of data generated in traffic operations can be used more effectively if stored, analyzed and reported through a central data warehousing system. Data warehousing systems can be used to predict the effects of road closures. This information can be communicated to the public and to YRT/Viva in advance of any closure to improve pre-trip planning and to make transit operations more reliable.
Expanding the provision of Open Source Data	Making data as accessible as possible will allow the private sector to develop new uses (including third-party travel applications or apps) and will result in a broader sharing of information with the public. Open Source Data will also assist neighbouring jurisdictions and Regional business partners (including engineering consultants) to access relevant information to improve the overall operations of the road network.

4.2   Move Smart

The following strategies and initiatives aim to provide travellers with improved travel time reliability. Move Smart programs promote roads that keep drivers, transit, cyclists and pedestrians moving together more reliably. These initiatives leverage technology, the existing road infrastructure and all modes of transportation to create road network that accommodates all users.

Complete or Current Initiatives

Benefit: Improve York Region's ability to manage traffic	
Advanced Traffic Management System	Advanced Traffic Management System displays the status of various traffic monitoring systems using layers over York Region's road network. Integrating many sources of information into one system (traffic conditions, electronic road signs, traffic signals, weather and camera images) allows the Region to manage traffic more efficiently, quickly respond to incidents and conduct assessments of traffic event data for improved future planning.
Traffic Signal Control System Upgrade	An upgrade to the Traffic Signal Control System will enable York Region to take advantage of new features and technologies and will allow the Region to continue to expand the number of roadside technologies that can be deployed and operated to better respond to current and future traffic demands.

Benefit: Promote the movement of transit riders	
Computer Aided Dispatch/Automatic Vehicle Location	Tracking software installed on all YRT/Viva fleet identifies the location of vehicles throughout the YRT/Viva system. This information is used to provide real-time information to YRT/Viva customers. The data can also track changes in traffic patterns/times.
Traffic Signal Priority	A traffic system which can detect a transit vehicle approaching an intersection and has the ability to hold green lights longer or to shorten red lights to improve transit on-time performance.

YRT/Viva Social Media	Provides customers with up-to-date YRT/Viva system information identifying delays in services. Customers can also provide YRT/Viva staff with updates on their commute using the social media channels as well as identify delays on their routes.
YRT/Viva Operations Control Centre	Provides oversight of all transit operations, monitors all in-service routes throughout the YRT/Viva system and identifies potential concerns. It works closely with Roads and Traffic Operations and York Regional Police to ensure information is shared when issues occur.

Planned Initiatives

Benefit: Provide the public with real-time traffic condition information while en route	
Deploy Travel Time (Bluetooth) Detection System	A travel time detection system will measure, in real- time, the amount of time needed to travel between two locations. When travel times are displayed on signs, travellers can make choices about their routes. Travel time detection systems can also be used to monitor delays regarding road construction and lane closures. This allows York Region to better plan closures to minimize traffic disruptions.
Expand the use of Portable Variable Message Signs	Portable Variable Message Sign units, or simply electronic road signs, are deployed to advise the public about schedules for planned events and emergencies (such as water main breaks, flooding or unexpected road repairs). In addition to these traditional uses, the units can be used for a number of new applications, including providing travel time information to motorists, weather and road condition alerts, information about transit updates, warnings of unexpected traffic queues and temporary commercial vehicle restrictions. Increasing York Region's inventory of signs will allow for a broader range of uses to inform travellers, enabling them to be better prepared and make decisions during their travel.

Benefit: Improve York Region's ability to manage traffic	
Develop Specialized Signal Timing Plans	Specialized signal timings optimize the operation of an intersection (or group of intersections) for a time of day or specific location. Specialized signal timing plans are to be developed for: ■ Intersections near GO train stations to accommodate traffic surges experienced upon arrival of a GO train ■ Major seasonal traffic generators, such as Canada's Wonderland or Vaughan Mills Mall ■ Emergency detour routes to more effectively manage traffic on Regional roads when incidents occur on 400-series highways
Expand the Traffic Management Centre facilities and operating hours	York Region is completing plans for an expanded Traffic Management Centre. The new centre will accommodate upgraded traffic control and management systems and provide room for the growing Closed Circuit Television system. The centre will increase the daily hours of operation from 5 a.m. to 11 p.m. It will eventually operate 24 hours a day, 7 days a week. Operation of the centre and the Region's dispatch office will be streamlined to promote complementary operations to quickly and efficiently respond to incidents and events occurring on the roads.
Expand operation of traffic signals to include local municipal signals	Expanding operational agreements for traffic signals into local municipalities would further optimize the overall road network and provide the potential for transit priority operations at all traffic signals.

Benefit: Promote the movement of transit riders	
Upgrade traffic signal priority/pre-emption system	Upgrading York Region's traffic signal priority/pre-emption system to a Global Positioning System (GPS) will assist transit vehicles to run on schedule by extending green lights and/or shortening side street greens. These systems also help fire and paramedics to travel safely and efficiently when responding to incidents and emergencies.

4.3   Work Smart

The following strategies and initiatives improve the management of other activities that may cause travel delays. Work Smart measures centre on planning, scheduling and performing maintenance, construction or other operational activities in a manner that reduces disruption to the transportation network. These initiatives are focused on mitigating the traffic impacts of such activities.

Complete or Current Initiatives

Benefit: Provide publically available real-time information on traffic and road conditions	
Expand the number of Road Weather Information System stations	By gathering more real-time atmospheric and road condition information, York Region can improve its ability to predict the impacts of weather and local weather events on travel. This will improve Regional snow clearing operations.

Benefit: Improve York Region's ability to manage traffic	
Expand Closed Circuit Television traffic camera coverage	York Region has approximately 15 per cent Closed Circuit Television coverage of its road network. Implementing additional cameras will enable the Region to monitor more roads, quickly identify or confirm events and incidents and view traffic conditions in real-time to respond to traffic issues efficiently. Expanded coverage would significantly reduce delays and secondary collisions.

Benefit: Minimize disruptions to traffic	
Online lane occupancy rentals program	Implementing an online lane occupancy permit system will better coordinate planned construction work between the Region, cities and towns and private stakeholders.

Planned Initiatives

	Benefit: Minimize disruptions to traffic
Integrate York Region's Traffic Management Centre with municipal neighbours	Integration of York Region's Traffic Management Centre operations with other neighbouring transportation partners enhances the efficiency of travel through a corridor and makes better use of available capacity, regardless of ownership of the corridor. This includes sharing information such as video feeds, knowledge of incidents, traffic data, weather information, planned events and traffic signal information. Travellers will be able to plan their routes using information sourced from York Region, Provincial highways and neighbouring cities and towns.
Review parking and stopping restrictions on Regional roads	This policy review will determine whether new or additional parking restrictions are required. The benefit of this initiative is to create a balance between traffic flow and the need for parking within the community. This initiative may be complemented by increased enforcement, for example, where ongoing parking violations contribute to traffic disruption.
Develop a program for Smart Work Zones	This initiative will use a number of technologies to monitor conditions and inform drivers. These technologies include Closed Circuit Television, speed sensors, electronic road signage and travel time recorders. Through these systems, York Region can: ■ Advise approaching drivers to reduce their speed or of imminent work zone queues ahead ■ Monitor traffic conditions in work zones and respond as necessary ■ Notify travellers of expected delays so they can consider alternative routes ■ Remotely confirm a contractor is adhering to permit and lane rental conditions
Enhance Emergency Detour Routes	Enhance Emergency Detour Routes can be improved by applying wider use of technology such as electronic road signs, Closed Circuit Television cameras or Bluetooth travel time recording systems. These technologies will allow York Region to better inform drivers while en route and detect and respond to events and incidents more effectively.

5 Implementing Travel Smart

Travel Smart is designed to leverage existing staffing and resources. The following sections outline the planning and budgeting details of the initiatives to ensure efficient and successful implementation.

5.1   Implementation Schedule

Travel Smart is operational in nature with initiatives targeted to continue or be implemented over the next five years (2017 to 2021). The positive impacts resulting from the identified initiatives are expected to benefit York Region well beyond this five year horizon.

5.2   Capital and Operating Costs

Travel Smart represents an estimated total cost of $20.2 million over a five year period. Most of this cost is already allocated to programs and projects. The proposed cash flow allows for adjustment in the scheduling of priorities over the five year timeline while staying within York Region's annual budgets.

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6 Monitoring and Evaluating Travel Smart

York Region tracks a number of performance measures relating to travel and traffic congestion in the Region as part of the 2015 to 2019 Strategic Plan. These are:

- Number of road lane kilometres
  - New
  - Rehabilitated
- Number of traffic signals reviewed and optimized annually
- Transit ridership per capita
- Number of rapidway lane kilometres

A set of potential key performance indicators has been developed to monitor and evaluate the effectiveness of the identified Travel Smart initiatives. These indicators will be used to identify the overall success of Travel Smart, while the use of specific indicators is expected to remain flexible throughout the plan.

The following key performance indicators align with the plan's objectives as presented in **Section 2.3** and are listed in **Table 6-1**.

Table 6-1 – Potential Key Performance Indicators

Objective	Key Performance Indicator	Data Source
Inform travellers of mobility options and real time traffic conditions	Number of data types made available via open data	York Region data
Improve the reliability of travel throughout York Region	Consistency of Travel Time Index	Bluetooth data; MTO Travel Time Study
Optimize the safe and efficient use of the transportation network	Percent of roads available during peak periods	York Region data
Leverage technologies and practices facilitating transit use and schedule adherence	Percent of Transit Schedule Adherence	Transit Computer Aided Dispatch/ Automatic Vehicle Location

7 Conclusion

Traffic delays impose a significant cost on society and productivity and is an increasingly important issue among York Region residents. York Region addresses the impact of travel delays through its existing traffic management program. The Travel Smart program provides a suite of short- to medium-term initiatives to address congestion issues as they arise and meet the following objectives:

- Inform travellers of mobility options and real-time traffic conditions
- Improve reliability of travel throughout York Region
- Optimize the safe and efficient use of the transportation network
- Leverage technologies and practices facilitating transit use and schedule adherence

York Region's Transportation Master Plan identified the need for a Congestion Management Plan to address the impacts of growth and increasing demands on the Region's transportation network. Travel Smart has been developed to recognize and coordinate many transit and roads initiatives the Region is already implementing. It also serves to identify new initiatives that sustain and support multi-modal transportation alternatives to help manage the impacts and delays associated with heavy traffic.

Travel Smart initiatives encompass an overall investment of approximately $20.2 million, much of which is already committed in the form of existing initiatives, programs and resources. Travel Smart recognizes traffic operations initiatives and is intended to be a fluid plan, capable of adjusting as required. Indicators and performance measures are provided for each objective allowing Travel Smart to be easily evaluated in terms of overall performance and benefits achieved.

York Region

Implementation of the
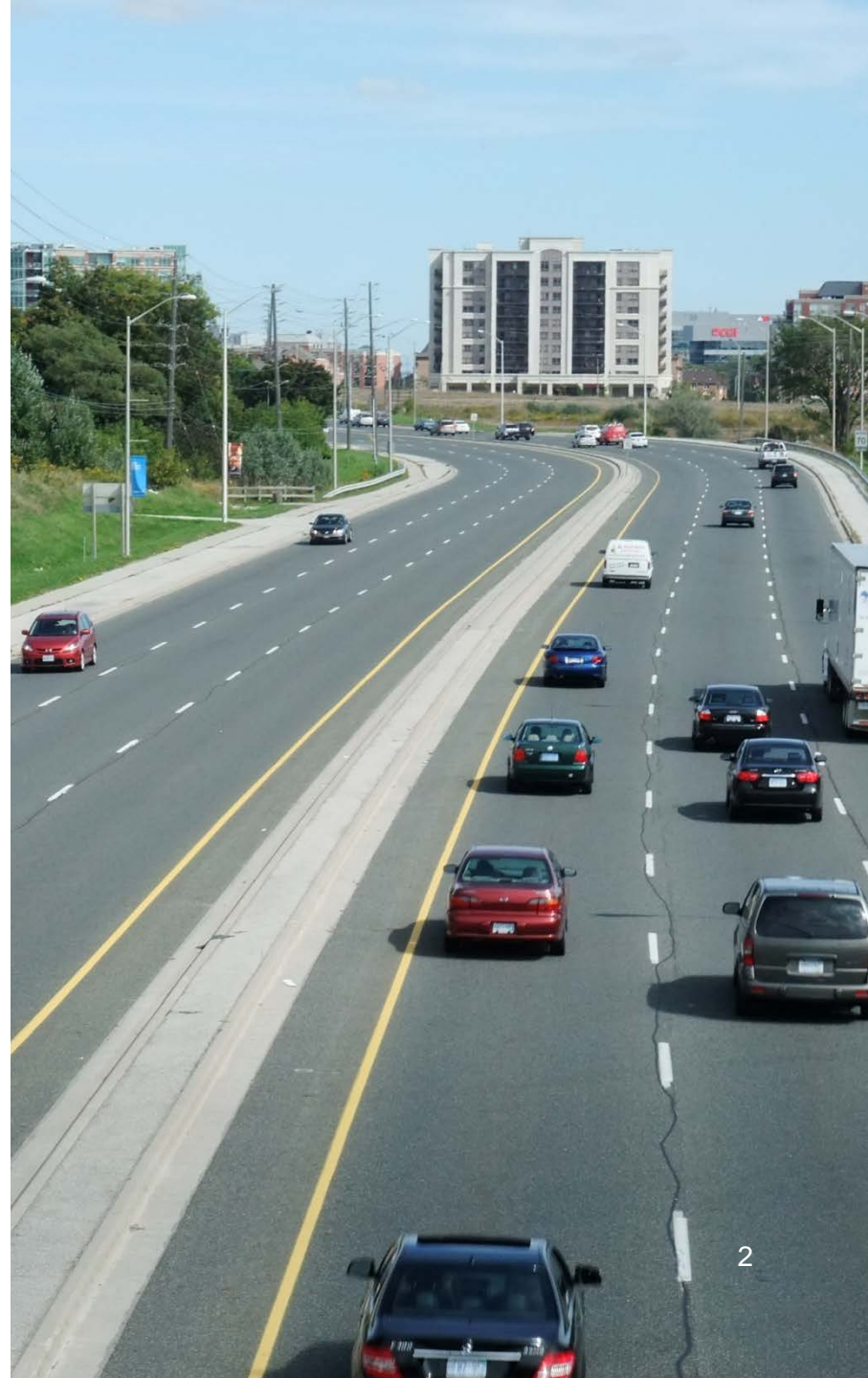# Travel Smart Program

Presentation to Committee of the Whole

Brian Titherington
March 2, 2017

York Region

Outline

- Why Travel Smart?

- Travel Smart Initiatives

- Recommendations

Why Travel Smart?

To optimize use of the existing transportation network

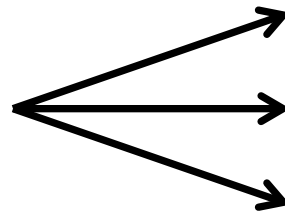To improve the reliability of travel within the Region

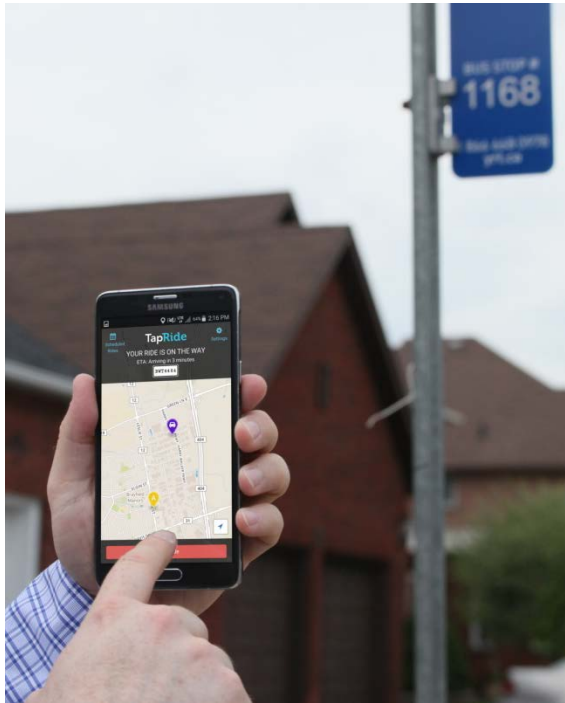To leverage technologies that facilitate transit use

To empower travellers to make informed travel choices
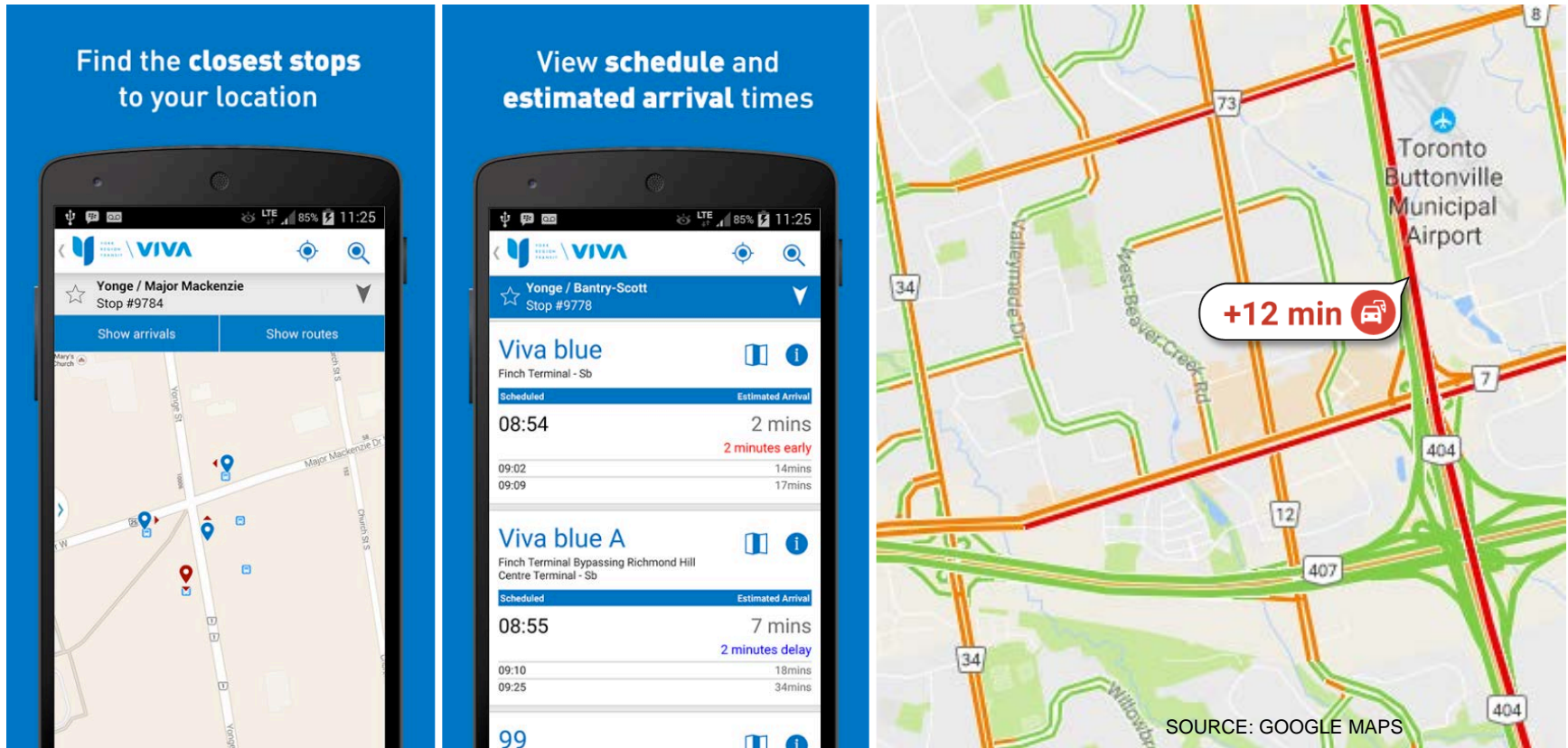
How Travel Smart is structured

Travel Smart

- Choose Smart
- Move Smart
- Work Smart

Choose Smart

Find the **closest stops** to your location

View **schedule** and **estimated arrival** times

SOURCE: GOOGLE MAPS

Providing real time information to empower travellers
to make informed decisions

Move Smart

Eliminating dead time on the transportation network

Work Smart

Reducing delays caused by other roadway activities

Recommendations

- That Council receive the Travel Smart Program as an action identified by the 2016 Transportation Master Plan

- That Council endorse the actions outlined in the Travel Smart Program report

Initiatives included in the Travel Smart Program
are funded as part of the 2017 budget

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York Region