



Transit Executive Committee Agenda

Lower Level Boardroom (LL-C)
Regional Headquarters Building
605 Rossland Road East, Whitby

Wednesday, January 9, 2019

1:30 PM

1. Declarations of Interest

2. Election of Transit Executive Committee Vice-Chair

3. Adoption of Minutes

- A) Durham Region Transit Executive Committee meeting
–[September 20, 2018](#)

Pages 3-9

4. Delegations

- 4.1 Teri Norrie, Oshawa Resident, regarding transportation deficit experienced by a population in Oshawa
- 4.2 Vincenza Ronaldi, regarding review of the Durham Region Transit Specialized Services No Show and Late Cancellation Policy

5. Presentations

- [5.1](#) Vincent Patterson, General Manager Update

Pages 10-32

6. Correspondence

- A) Memorandum from Regional Clerk-Director of Legislative Services, regarding: Transit Executive Committee Members for the 2018-2022 Term

Pages 33

Recommendation: Receive for Information

7. Reports

- A) Approval for Durham Region Transit to enter into an End-User Maintenance Agreement with INIT Innovations in Transportation, Inc. (INIT) ([2019-DRT-1](#))

Pages 34-38

- B) Preparing for Transit Innovations ([2019-DRT-2](#))

Pages 39-46

8. Advisory Committee

There are no advisory committee items to be considered

9. Confidential Matters

There are no confidential matters to be considered

10. Other Business

A) Transit Executive Committee meetings for 2019 will be held on Wednesday commencing at 1:30 PM on the following dates:

- January 9, 2019
- February 6, 2019
- March 6, 2019
- April 3, 2019
- May 8, 2019
- June 5, 2019
- September 4, 2019
- October 2, 2019
- November 6, 2019
- December 4, 2019

B) Transit Advisory Committee meetings for 2019 will be held on Tuesday commencing at 7:00 PM on the following dates:

- January 22, 2019
- March 19, 2019
- May 21, 2019
- September 17, 2019
- November 19, 2019

11. Date of Next Meeting

Wednesday, February 6, 2019 at 1:30 PM

12. Adjournment

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The Regional Municipality of Durham

MINUTES

DURHAM REGION TRANSIT EXECUTIVE COMMITTEE

Thursday, September 20, 2018

A regular meeting of the Durham Region Transit Executive Committee was held on Thursday, September 20, 2018 in Meeting Room LL-C, Lower Level, Regional Headquarters Building, 605 Rossland Road East, Whitby, Ontario at 9:30 AM.

Present: Regional Chair O'Connor, Chair
Commissioner Collier, Vice-Chair
Commissioner Henry left the meeting at 10:27 AM on municipal business
Commissioner Mitchell
Commissioner Molloy
Commissioner Pickles
Commissioner Smith
Commissioner Woo

Also

Present: Commissioner John Neal left the meeting at 10:00 AM

Absent: Commissioner Rowett

Staff

Present: V. Patterson, General Manager, Durham Region Transit
J. Austin, Deputy General Manager, Business Services, Durham Region Transit
J. Cermak, Director, Financial Services, Finance Department
L. Hatch, Marketing Assistant, Durham Region Transit
W. Holmes, Deputy General Manager, Operations, Durham Region Transit
A. McKinley, Deputy General Manager, Maintenance, Durham Region Transit
A. Naeem, Solicitor, Corporate Services – Legal
C. Norris, Manager, Customer Service, Planning, Durham Region Transit
R. Inacio, Systems Support Specialist, Corporate Services – IT
C. Tennisco, Committee Clerk, Corporate Services – Legislative Services

1. Adoption of Minutes

Moved by Commissioner Henry, Seconded by Commissioner Molloy,
(37) That the minutes of the May 24, 2018 Durham Region Transit
Executive Committee meeting be adopted.

CARRIED

2. Declarations of Interest

There were no declarations of interest.

3. Delegations

A) Dave Briggs, Oshawa resident, re: Speeding DRT buses in the Coldstream Drive Oshawa Corridor

D. Briggs appeared before the Committee on behalf of the residents on Coldstream Drive, in the City of Oshawa to ask for help to find a permanent solution to stop DRT buses speeding on Coldstream Drive. He provided a PowerPoint presentation titled, "Permanent Solution for Speeding on Coldstream Drive". A copy of his presentation and background data was provided as a handout.

D. Briggs stated that Coldstream Drive runs 3.4 km from Ritson Road to Townline Road. On this stretch of road there are 5 schools and 2 parks and playgrounds. There are 3 other schools and 2 more parks in the immediate vicinity and the current student population in this area is approximately 3,674.

D. Briggs stated that DRT buses continue to speed on Coldstream Drive despite the efforts of Durham Regional Police, DRT and City of Oshawa staff. Any periods of improvement have been temporary.

D. Briggs further stated that the speed limit on Coldstream Drive is 40 km/hr for a specific reason and questioned what can be done to permanently correct this issue; who is accountable for this issue; and when can a permanent resolution be expected.

D. Briggs responded to questions from the Committee.

V. Patterson stated that safety is paramount to DRT. He advised of the steady decrease in the rate of collisions over the past two years as detailed in Report #2018-DRT-16: The 2017 DRT Annual Performance Report.

V. Patterson and B. Holmes reviewed the smart technology system utilized by DRT to obtain the actual speed of a bus (the average velocity as distance over time, down to a 5 second interval); the audits conducted in August by the Durham Regional Police Services in this area, which found that 99% of the buses were within the tolerable speed limit; and, the DRT operators' feedback on the congestion and erratic driving behaviours around the schools in this area.

B. Holmes advised that DRT will continue to perform random checks, and as issues come forward, they will ensure DRT operators continue to adhere to the posted speed limits. He also advised they would continue to work with the

operators on preventable collisions and review their responsibility and accountability for following the rules of the road.

It was questioned whether DRT may be aware of any transit agencies making use of technology tools based on a Global Positioning System to cap the maximum speed of a vehicle. V. Patterson advised that, in moving forward, staff can report on the technology available.

It was also questioned whether DRT staff could determine whether a bus had been speeding; and whether the timing of the DRT route schedules allows for variables, such as congestion, so bus drivers don't have to speed to stay on schedule.

B. Holmes responded to further questions with respect to whether the DRT operators for the Coldstream Drive bus route have changed since 2012; if a DRT operator has had an accident or received a violation along this route; and the perception of a bus speeding. Discussion followed regarding similar situations where a bus is required to travel in a highly congested area; and DRT's initiatives to prioritize safety as the fabric of its organizational culture.

- B) Vincenza Ronaldi, Pickering resident, re: Specialized Services no show and late cancellation policy
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Vincenza Ronaldi withdrew her request to delegate prior to the meeting.

4. Presentations

- A) Vincent Patterson, General Manager, Durham Region Transit, Re: Durham Region Transit Update
-

Vincent Patterson, Durham Region Transit, provided a PowerPoint presentation update on Durham Region Transit (DRT). A copy of the presentation was provided in the Agenda.

Highlights of the presentation included:

- Conventional Year-to-Date Ridership is 3.4% Above Last Year's, 2.5% Above Budget Target
- Adult Ridership Remains DRT's Largest Market Segment, and is Growing, Even with Healthy U-PASS and Even More So When Considering Co-Fare
- "Bus Full" Occurrences: Seasonal Pattern; September Expected to See Continued Improvements
- Recent and On-Going DRT Activities
- As Per TEC's Direction, Modified Service Along Wentworth Corridor
- Specialized Transit Services Eligibility Appeals: Even More Improvements This Year
- Low-Income Travel Study – Update

- Working Toward U-PASS Agreement Renewal
- 2019 Service Priorities, As Part of DRT's Five-Year Service Strategy
 - High-Frequency Network Service Increase: Impressive Results
 - Preparing for 15-Minute GO Train Lakeshore East Service, and Other Metrolinx Changes
 - The Challenge of Growth
 - The Challenge of Sprawl
 - Can't Pave Your Way Out of Congestion
- DRT Objectives 2018 – 2020

Discussion ensued regarding DRT's plans to service the Seaton communities prior to the occupancy date, specifically south of Taunton Road and west of Brock Road. C. Norris advised that staff regularly communicate with the staff of the local area municipalities; and that DRT service into the Seaton area is planned to be part of the 2019 DRT budget.

Discussion also ensued with respect to DRT ridership growth incentive incentives for the youth and high school students.

Commissioner Collier questioned what 11% represents in actual ridership numbers, as detailed in the Ridership Distribution By Market Segment chart on page 16 of the Agenda. V. Patterson advised that he would look into that and follow-up with Commissioner Collier directly.

C. Norris responded to questions regarding the timeline for completion of the construction along Rossland Road and the impact of the detours on the Route 916 ridership. C. Norris advised that the anticipated completion date is December 2018.

V. Patterson responded to questions with respect to the possible Metrolinx GO Bus changes and whether Metrolinx might eliminate the Route 81 GO Bus services on Highway 12 to the northern municipalities, and if so, would this impact ridership costs; the DRT Route 950 service to the northern municipalities; the contemplated extension of DRT bus service along Highway 2 into Clarington; and enhancing intra-regional transit mobility.

Regional Chair O'Connor inquired on the status of the Low-Income Travel Study. She referred to an email she received from a resident regarding affordable transportation for the poor, and a conversation with MPP Jennifer French on the Low-Income Transit Study. J. Austin advised that the intent is to conduct an in-field survey next week at the Ontario Works and Ontario Disabilities Support Program offices which will engage up to 400 recipients in a pilot program to track their travel patterns during the month of October. Staff was requested to contact MPP Jennifer French and respond to the resident; and report back with an analysis of the in-field Study results.

Regional Chair O'Connor re-iterated the concerns raised by the residents in the northern municipalities regarding the average cost per household for transit and the portion of the tax bill allocated for transit in those municipalities. She asked that in going-forward, that TEC and staff look at this issue to see what adjustments can be made.

5. Correspondence

- A) (TC-04) Elizabeth Pierce, Executive Director, and Stan MacLellan, Board Chair, Catholic Family Services of Durham, writing to the Transit Executive Committee, regarding the Hope Centre bus route. On behalf of the boards, staff and clients of DRIVEN, Luke's Place, Rose of Durham and Catholic Family Services of Durham, they would like to thank the Committee for the decision to alter the bus route on Simcoe Street South. They are very grateful that the Transit Executive Committee recognizes the safety of the most marginalized and vulnerable in our Region. It sends a strong message to all clients seeking support for their victimization, about their value, worth and rights to safety.
-

Moved by Commissioner Smith, Seconded by Commissioner Woo,
(38) That Correspondence Item TC-04 from Elizabeth Pierce and Stan MacLellan, Catholic Family Services of Durham, be received for information.

CARRIED

6. General Manager's Reports

- A) Preparing for Transit Innovations (2018-DRT-19)
-

Report #2018-DRT-19 from V. Patterson, General Manager, Durham Region Transit, was received.

Commissioner Mitchell suggested that Report #2018-DRT-19 be provided to the newly appointed members of the TEC for the 2018-2022 term.

Moved by Commissioner Molloy, Seconded by Commissioner Collier,
(39) A) That Report #2018-DRT-19 of the General Manager, Durham Region Transit, be received for information; and

- B) That Report #2018-DRT-19 be provided to the 2018 – 2022 Transit Executive Committee for their information only.

CARRIED

- B) Procurement and Installation of On-Board Video Surveillance System (2018-DRT-20)
-

Report #2018-DRT-20 from V. Patterson, General Manager, Durham Region Transit, was received.

Moved by Commissioner Molloy, Seconded by Commissioner Pickles,
(40) That Report #2018-DRT-20 of the General Manager, Durham Region Transit, be received for information.

CARRIED

C) Durham Region Transit Budget Status Report to August 31, 2018 and Full Year Forecast (2018-DRT-21)

Report #2018-DRT-21 from V. Patterson, General Manager, Durham Region Transit, was received.

Moved by Commissioner Collier, Seconded by Commissioner Woo,
(41) That Report #2018-DRT-21 of the General Manager, of Durham Region Transit, be received for information.

CARRIED

7. Confidential Matters

There were no confidential matters to be considered.

8. Advisory Committees

A) Durham Region Transit Advisory Committee Minutes

There were no advisory minutes to be considered.

9. Outstanding Items

There were no outstanding items to be considered.

10. Other Business

Regional Chair O'Connor thanked Staff and the Commissioners for their support and contributions over the last four years.

11. Date of Next Meeting

The next regularly scheduled Durham Region Transit Executive Committee meeting will be held on Thursday, January 9, 2019 at 1:30 PM in Meeting Room LL-C, Lower Level, at Regional Headquarters, 605 Rossland Road East, Whitby.

12. Adjournment

Moved by Commissioner Molloy, Seconded by Commissioner Collier,
(42) That the meeting be adjourned.

CARRIED

The meeting adjourned at 11:04 AM.

G. O'Connor, Regional Chair and CEO

C. Tennisco, Committee Clerk

Update

Transit Executive Committee

January 9, 2019

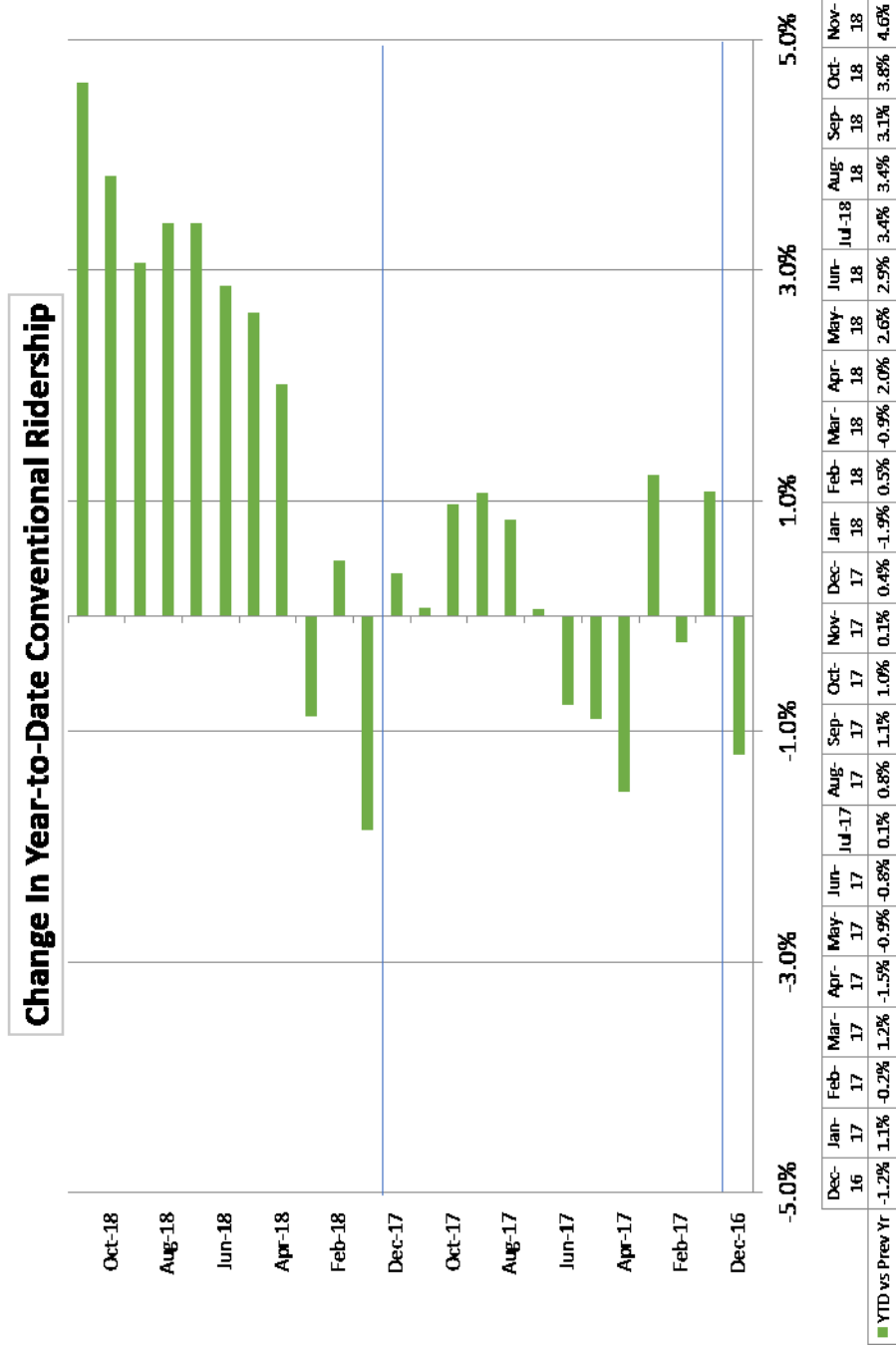
Who rides DRT ?

Fare category	Percentage of total passengers
Adults	45 (not all of whom do not have access to a car)
U-Pass holders	24
Youth (13-19)	11
Access Pass holders (ODSP)	9
Seniors, children, others	11

- Adults has been the fastest growing market segment over the past 6 years
- Youth has been a decreasing demographic segment over the past 3 years

Ridership is up

- Conventional ridership is up 4.6 percent over last year's, and 2.4 percent over forecast



About the fares our customers pay

- Revenue-cost ratio : fares cover 35 to 40 percent of DRT's operating costs (lower R-C ratio : increased pressure on tax rate)
- Setting fares vs creating value

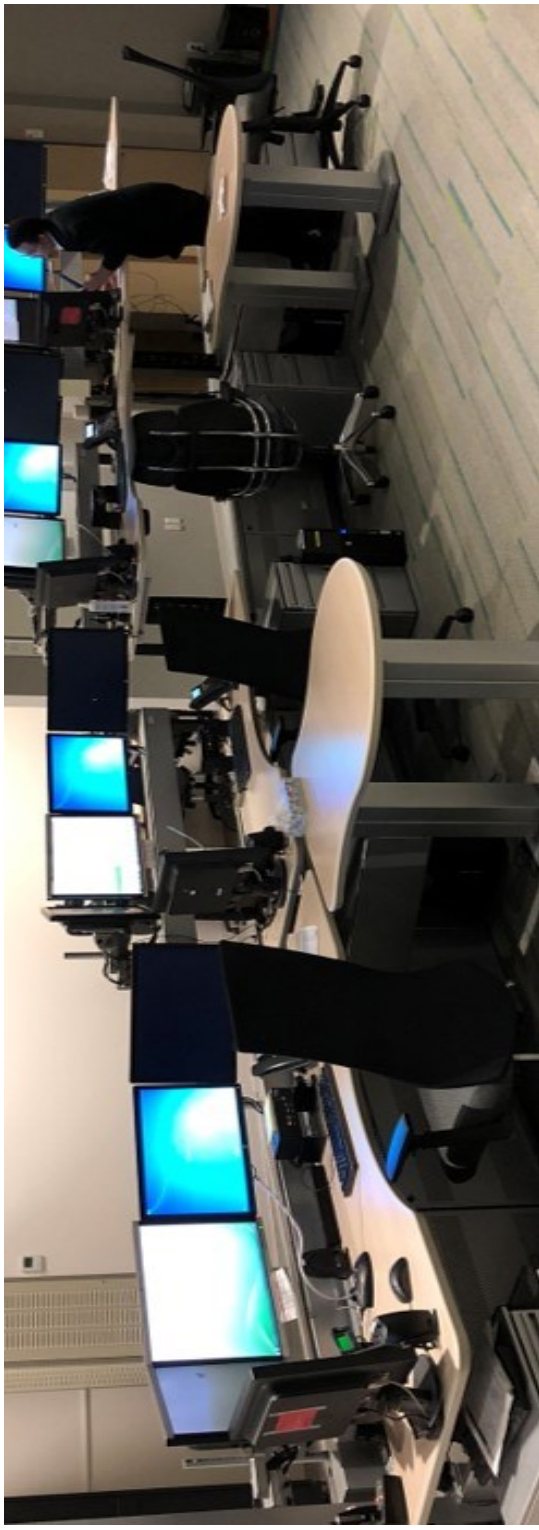
Sample fares	DRT	TTC	YRT	Brampton	Miway
Adult single trip	\$3.15	\$3.00	\$3.75	\$3.00	\$3.00
Adult cash	\$3.75	\$3.25	\$4.00	\$4.00	\$3.75
Adult monthly	\$117.00	\$146.25	\$150.00	\$124.00	\$130.00
Youth monthly	\$93.50	\$116.75	\$117.00	\$107.00	n/a
Percent discount	20	20	22	14	n/a

About fare pilots and incentives

- PRESTO functions
 - U-Pass : in-field portion of travel study recently completed; new agreement by Sep 2020
 - Low-income : in-field portion of travel study recently completed; recommendations for fare policy forthcoming
- Account-based PRESTO
- New PRESTO devices
- Building on rewarding loyalty
 - 2-4-1 Youth monthly pass summer pilot
 - developing proposals for lower Youth fare

About technology in today's transit

- Customer-facing :
 - PRESTO electronic fare payment card
 - Trip planning
 - Real-time information on next-bus arrivals at bus stop
- “Back store” :
 - INIT system for vehicle dispatching and monitoring, scheduling, operator sign-in/sign-off, vehicle defect reporting, on-board communications, passenger counting
 - Trapeze system for OnDemand/specialized transit reservations, dispatching and monitoring
 - Lagan for management of customer contacts



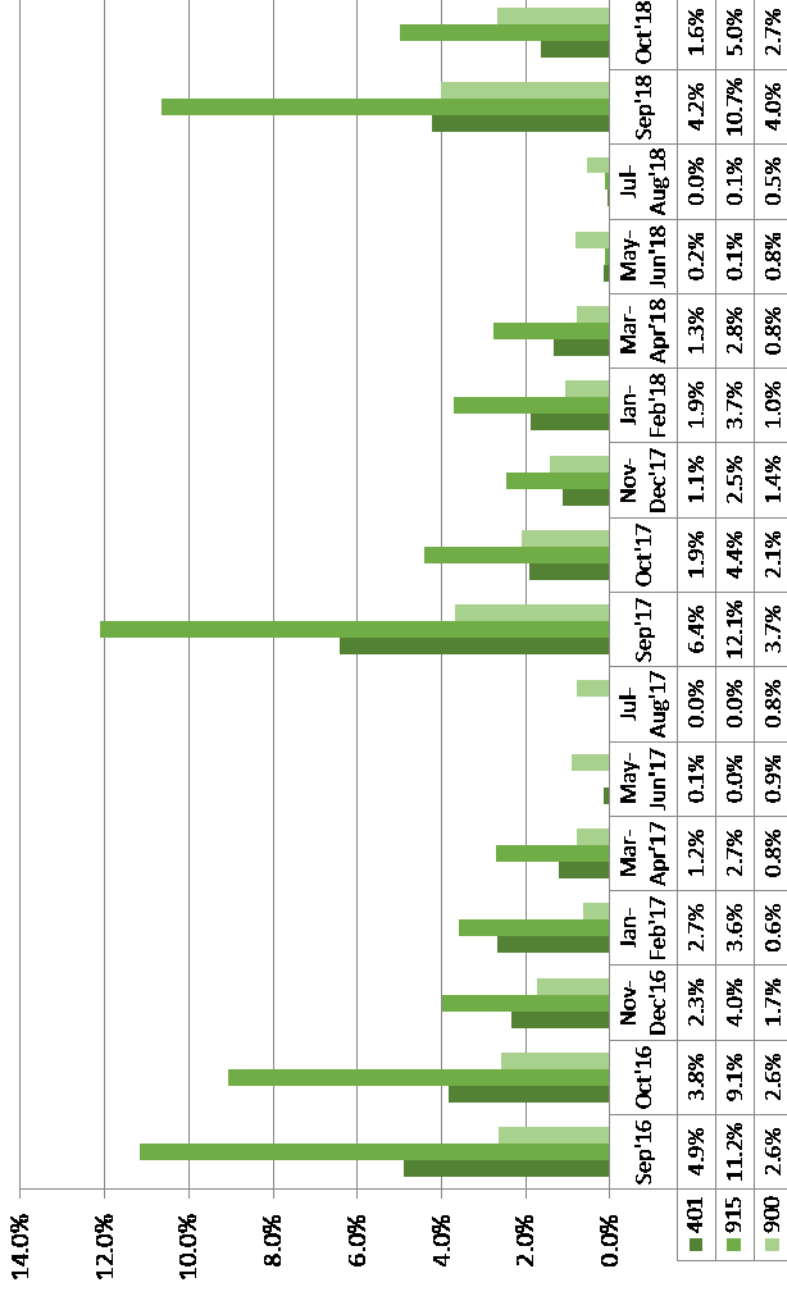
About contacts and feedback

- Customer service centre, Web site, social media, on system
- Information
- Comments about delivery :
 - stop too far / stop too close
 - bus too fast / bus too slow
 - bus waiting / bus not waiting
 - over 10 million trips a year with positive enough an experience not to warrant a contact
- Comments about service level :
 - more frequency
 - longer service span
 - into new communities
- Commendations

About passengers' comings and goings

- Service is planned based on demand, first and foremost
- Transit is data-rich, technology allowing us to count every boarding on every bus, monitoring bus travel times, etc.
- This serves to prioritize the need for:
 - service frequency changes – how often
 - schedule adjustments – when
 - service timing at hubs – transfers
 - installation of bus shelters – where
 - etc.

“Bus full” occurrences



- Seasonal pattern
- No information on net impact on customers
- Expectations? Should it ever happen?

“Empty buses”

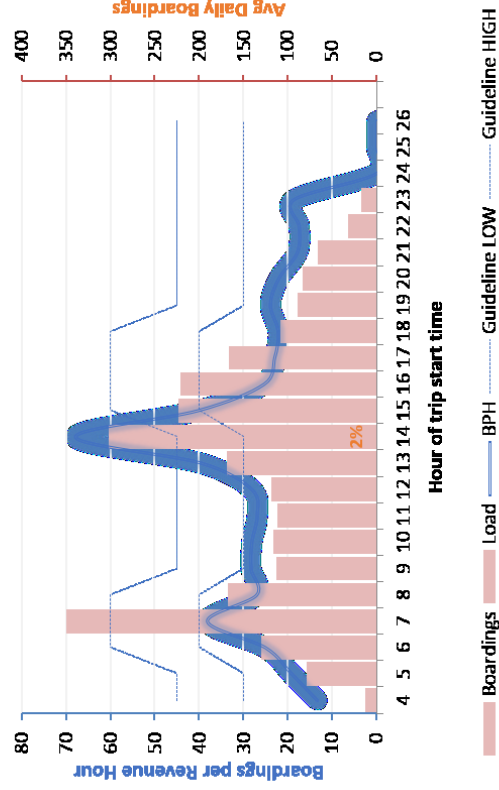
- May be bus trips returning in counter-peak direction
- May be “lost leader” bus trips – bringing passengers from feeder routes to high-frequency routes
- May be “open late” bus trips – leading passengers to opt for transit during the busier times of the day
- Role of a route as part of a network
 - high-frequency
 - other grid routes
 - feeders

Demand analysis informs service reallocation and investment

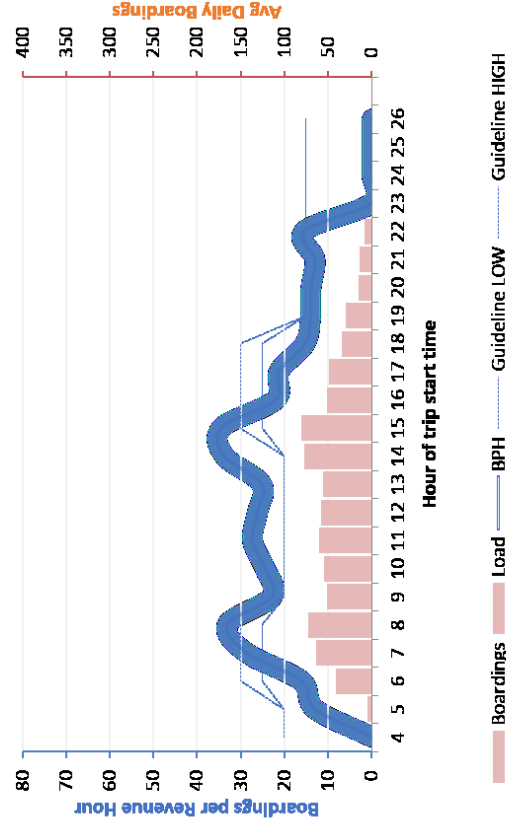
High-frequency: 916 Rossland

Feeder: 411 South Courtice

916

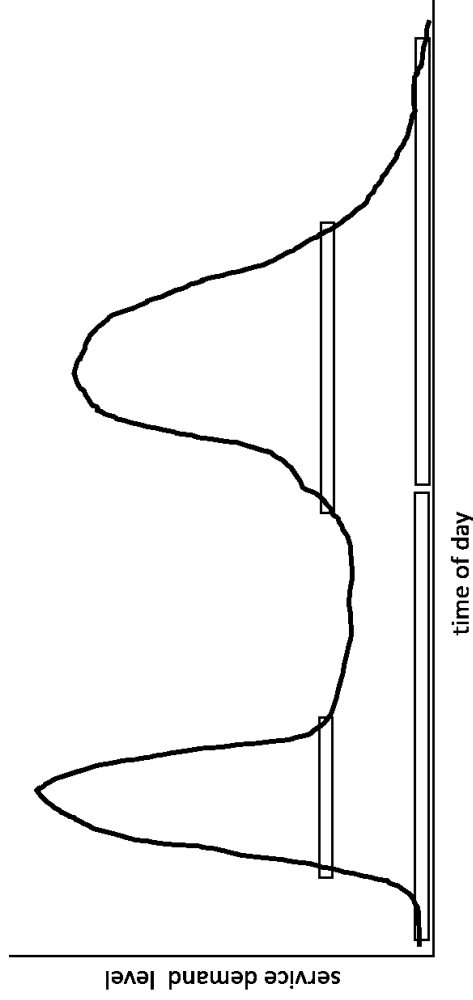


411



About cost drivers in service delivery

- Service improvement : need for additional bus? additional operator?
- Travel demand patterns : peak vs off-peak
- Balance between bus travel time, layover time : reliable service, efficiency
- 8-hr pay guarantee for full-time operators
- Spare board vs overtime
- Scheduled service is expected to go out



Examples of service reallocation and investment

Feeder 111 East Pickering

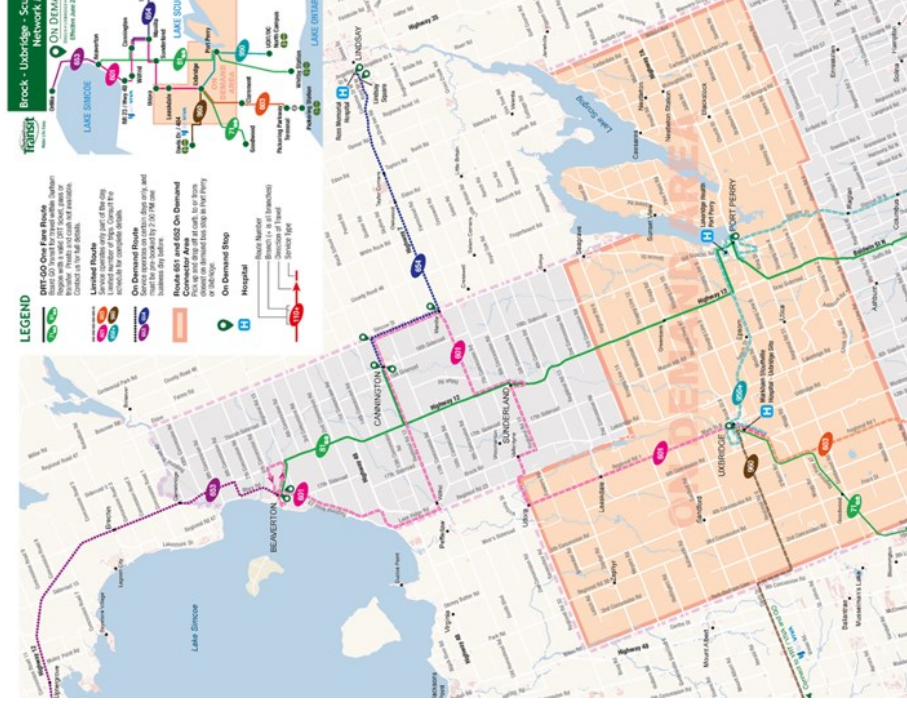
- Evening service eliminated after 20:00
- 3,100 annual revenue service hours removed
- Annual boardings decreased by 25,000
- 8 fewer boardings for each service hour removed

Frequent route 916 Rossland

- Evening service frequency increased until 22:00
- 3,700 annual revenue service hours added
- Annual boardings increased by 123,000
- 33 more boardings for each service hour added

About DRT's OnDemand service

- Either curb-to-curb or curb-to-stop
- A creative way of providing transit mobility to low-density areas :
 - Uxbridge (651), Port Perry (652)
 - Beaverton-Orillia (653), Cannington-Lindsay (654)
- From second half of 2017 to second half of 2018, total ridership has gone from 56 to 151
- During same period, average daily ridership on Route 950 Reach-Simcoe North has gone from 227 to 290



About DRT's North Service Strategy

- First adopted by TEC in January 2016
- Fixed routes restructured to provide better coverage, more frequency, better connections (including to Newmarket, Pickering, Orillia and Lindsay)
- Route 950 on Saturday; on Sunday in Sep 2019
- Route 603 extended between Port Perry and Pickering in Apr 2019; \$0.80 co-fare when transferring to GO train or bus
- DRT's OnDemand compared to Uber in Innisfil:
 - Lower customer fares, including discounts for seniors, youth and children
 - Lower operating cost per passenger
 - Higher ridership per resident
- DRT's OnDemand to be introduced in Brock in Sep 2019, 653/654 to be extended to Port Perry

About today's specialized transit services

- Specialized services focus on persons' abilities, not disabilities
- Integrated service model : specialized, conventional services and/or combinations thereof
- 1,000 new customers in each of the past 2 years; same fleet size
- Strategic toward more modern, agile fleet (for both specialized and OnDemand)
- Growing demand market
- Types of eligibility defined in AODA, established from information provided by customer through application, assessment, and updates



	2015	2016	2017	(Jan- Nov) 2018
Eligibility appeals heard	39	57	17	10
% change year to year		+ 46%	-70%	-41%
DRT decisions upheld at appeal	19	46	12	6

About today's buses

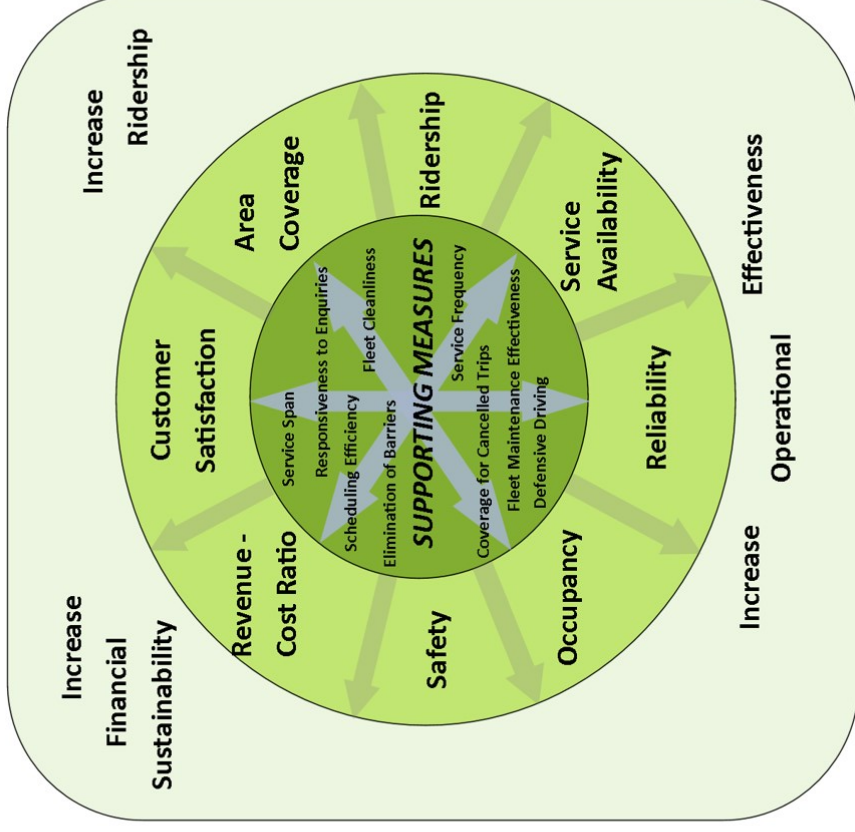
- Just like our cars, today's buses are more advanced, have more technology to be safer and pollute less, and require more maintenance
- Toward increased effectiveness, our buses work harder than ever – meaning that they log kilometrage faster than ever
- “Age of the fleet” is increasingly becoming a misnomer for asset management
- Significant cost pressures

DRT objectives for 2018-2020

- Create value for transit customers
 - new Web site ; easier to navigate network ; information and ridership incentives
 - PRESTO's functionalities
 - bus stop environment
 - on-time performance
 - refreshed service strategy
- Enhance effectiveness at delivering services
 - safety
 - cyclical training ; employee engagement
 - new garage and new division
 - accessibility
 - performance targets and standards
- Identify, pursue and achieve financial efficiencies
 - fares ; strategic investment in PRESTO and other fare collection equipment
 - asset plan for growth ; fleet replacement and composition
 - harmonized processes
 - external funding sources

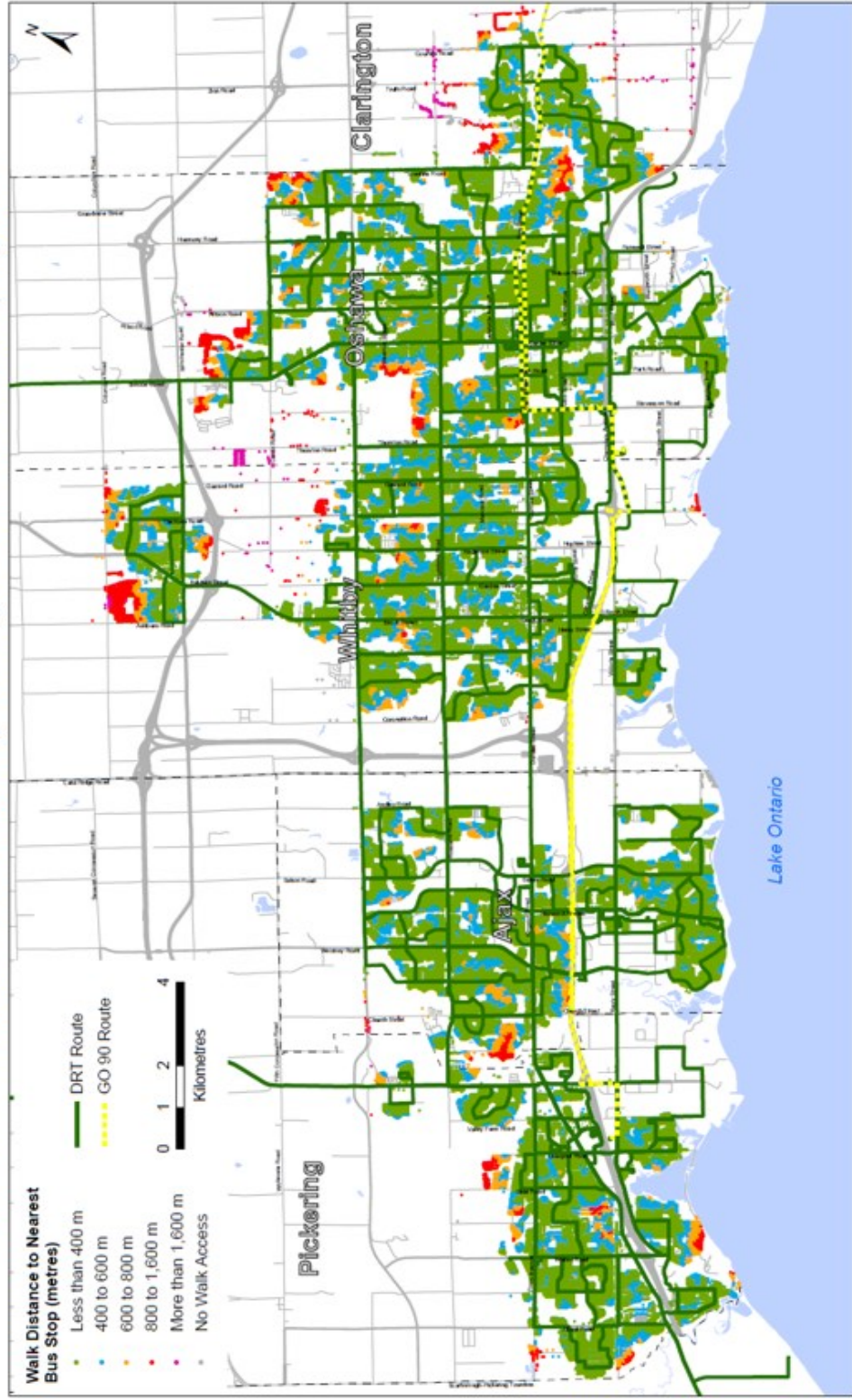
DRT's 8 key performance measures and standards

- Ridership up
- Customer satisfaction
- Area coverage up
- Safety up
- Revenue-cost ratio maintained within reasonable 35 to 40 percent range
- Working at measuring
 - service availability
 - on-time performance
 - occupancy



Region's growth a challenge for area coverage

Residential Transit Access for DRT Routes, Pickering to Courtice Urban Areas, May 2018



Infrastructure : it's about the future

- New maintenance facility opened in Oshawa in June 2017
- New indoor storage facility planned in Central Durham
- Extensions of Bus Rapid Transit along Highway 2 (east-west), Simcoe (north-south)
- Planning with GO rail extension to Clarington



Advancing transportation innovations

- Being responsive to customer expectations; creating value
- Prioritize safety and security
- Complementing transit rather than competing with it
- Address gaps in mobility network
- “Microtransit”, “ride sourcing” and “transportation network companies”
- Electric propulsion
- Connected and autonomous vehicles
- Data analytics

Questions ?



The Regional
Municipality of
Durham

Corporate Services
Department
Legislative Services
Division

Interoffice Memorandum

Date: December 18, 2018

To: V. Patterson, General Manager, Durham Region Transit

From: Ralph Walton, Regional Clerk/Director of Legislative Services

Subject: Transit Executive Committee Members for the 2018 – 2022 Term

On April 18, 2007, Regional Council passed By-law #27-2007, a new Durham Region Transit Commission By-law, for the purpose of operating the regional transit system known as Durham Region Transit (DRT). Section 5 of the By-law provides for a nine member Executive Committee consisting of the eight Mayors, or their duly appointed Regional designates, of the lower tier municipalities in Durham Region and the Regional Chair.

For your reference, the composition of the Transit Executive Committee for the 2018-2022 term is as follows:

Commissioner Henry (Regional Chair and CEO)

Commissioner Collier (Ajax) (Mayor)

Commissioner Bath-Hadden (Brock) (Mayor)

Commissioner Anderson (Clarington) (designate)

Commissioner Carter (Oshawa) (Mayor)

Commissioner Ryan (Pickering) (Mayor)

Commissioner Drew (Scugog) (Mayor)

Commissioner Barton (Uxbridge) (Mayor)

Commissioner Mulcahy (Whitby) (designate)

Original Signed By

Ralph Walton,
Regional Clerk/Director of Legislative Services



Durham Region Transit Report

To: Durham Region Transit Executive Committee
From: General Manager, Durham Region Transit
Report: [#2019-DRT-1](#)
Date: January 9, 2019

Subject:

Proposed End-User Maintenance Agreement with INIT Innovations in Transportation, Inc. (INIT)

Recommendation:

That the Durham Region Transit Executive Committee (TEC) approve the following:

That the negotiation of an End-User Maintenance Agreement with INIT Innovations in Transportation, Inc., by Regional staff for DRT, to minimize risks associated with critical system failures at a total cost not to exceed \$1,458,970 over five years (July 1, 2018 to June 30, 2023) before applicable taxes, increasing the current contract value from \$5,792,731 (before taxes) to \$7,251,700, with the estimated 2019 cost of \$ 265,571 to be included in DRT's 2019 Business Plan and Budget.

Report:

1. Purpose

- 1.1 The purpose of this report is to seek approval to negotiate an End-User Maintenance Agreement with INIT for a period of five years, with an upside limit of \$1,458,970.
- 1.2 A similar report will be presented to the Finance and Administration Committee and Council.

2. Background

- 2.1 On February 13, 2013, Regional Council approved a recommendation to award Request for Proposals (RFP) 676-2012 to INIT Innovations in Transportation, Inc. (INIT) for the supply and implementation of a Smart Technology System for Durham Region Transit (DRT). This included:

- Core functionalities for 26 Bus Rapid Transit (BRT) buses, including a central Computer Aided Dispatch / Automatic Vehicle Location system, advanced traveler information capabilities, transit signal priority along Highway 2 and on-board automatic passenger counters.
- Core functionalities on all DRT conventional buses, including installation of bus stop annunciators, advanced traveler information capabilities, and on-board automatic passenger counters.
- Supply and implementation of MOBILE-PLAN, to serve as the fixed route scheduling software for all conventional DRT services (including BRT).
- Advanced traveler information system including real-time information website, mobile website, and Interactive Voice Response (IVR) system.

2.2 As per INIT, the expected useful life for vehicle hardware is 10-15 years. DRT's hardware has been in service for 3.5 years.

2.3 The End-User Maintenance Agreement with INIT will provide Hardware and Software Maintenance services, assisting in the access, delivery and management of this Intelligent Transportation System. This agreement allows staff to report any failures in the INIT software and hardware components, and in return, be provided a Problem Classification and a defined expectation of categorization, prioritization and response to ensure consistent delivery and availability of INIT Services.

2.4 The proposed agreement would have a retroactive start date of July 1, 2018 and would represent the first time maintenance has been initiated on the INIT system.

3. Business Rationale

3.1 Under the original service agreement, the existing warranty for software and hardware expired on June 30, 2018. Over the past six months DRT has been in discussions with INIT on the terms of Maintenance Agreement extension coverage and cost, including modification of agreement scope and key clauses. Specifically, DRT has removed extended coverage for vehicle hardware components (for example, data terminal, traffic signal priority, destination/interior sign, passenger counting system, audio system) from the agreement. It is believed that the cost for these components was not warranted at this time and that any repairs will be handled on an as needed basis. INIT has confirmed that DRT continues to have the option to purchase extended maintenance coverage for these components at a later date.

3.2 In the interim, INIT has been providing support maintenance in good faith, but is

now pressing for a commitment on the agreement given the duration of support provided.

- 3.3 Not entering into an extended maintenance agreement will result in the loss of access to software support services. It will also present DRT with critical immediate risk to the operational system including the inability to track bus locations, monitor system and schedule performance, support automated on-board announcements and display panels, collect essential operational and financial data, as well as ensure the safety and security of our operators and passengers.
- 3.4 As the INIT system is critical to DRT's daily operation, it is essential that the End-User Maintenance Agreement be in place as soon as possible to ensure a mitigation plan is present in the event of a critical failure to minimize downtime. As noted above, INIT has been providing this support in good faith, however further delays in finalizing the agreement risks INIT withdrawing the support and placing significant risk on the system.
- 3.5 INIT owns the systems, and is the only vendor with the in-depth, proprietary knowledge of the system engineering and architecture to service/repair the technology.
- 3.6 The proposed maintenance extension provided under the End-User Maintenance Agreement not only covers Software Support, but also Central Hardware, including Servers/WLAN Servers, Backup Tape Device, and Wireless Access Points. Failure of these components will require DRT to fix/replace these components and provide resources to the work effort at additional unknown cost and risk. The INIT system is not supported by Corporate Services IT.

4. Financial Implications

- 4.1 INIT, the designer, developer and supplier of the system, is the only vendor with the in-depth knowledge of the proprietary engineering and architecture of the implemented system, able to service/repair the technology. Under the Region's Purchasing By-Law, purchases may be conducted through negotiations where there is only one known source of supply.

4.2 The five-year breakdown of the extended maintenance agreement is:

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Maintenance Category	01-Jul-18 -30-Jun-19	01-Jul-19 30-Jun-20	01-Jul-20 -30-Jun-21	01-Jul-21 -30-Jun-22	01-Jul-22 -30-Jun-23	01-Jul-18 -30-Jun-23
Software	217,341.64	249,018.27	264,162.04	275,711.35	283,306.97	1,289,540.27
Fixed End Hardware (Servers, WLAN Workstations)	31,912.12	32,869.48	33,855.57	34,871.24	35,917.37	169,425.78
Total (CDN\$)	249,253.76	281,887.75	298,017.61	310,582.59	319,224.34	1,458,966.05

NOTES:

- 1) Includes 200,000 SMS messages per month. Overages will be charged at \$0.02 / message.
- 2) All amounts are before taxes.

4.3 INIT is unable to provide time and materials quotes for ad hoc support maintenance, as it is not in their business model. This could mean any system outages, major operational issues or hardware failures, could have major impacts on DRT's system operations and customers, and could bring the system down with either no means to remedy the situation or require repairs at an unknown cost.

4.4 The 2018 costs have been factored into DRT's Hardware-Software Maintenance costs for 2018. The 2019 costs have been included in DRT's 2019 budget submission and costs beyond 2019 are to be considered through the annual Business Planning and Budget process.

5. Conclusion

5.1 This report seeks approval for staff to negotiate an End-User Maintenance Agreement with INIT for a period of five years, with an upside limit of \$1,458,970.

5.2 A similar report will be presented to the Finance and Administration Committee on January 15, 2019 and Council on January 30, 2019, seeking authorization to execute the End-User Maintenance Agreement.

5.3 This report has been reviewed by the Treasurer of Durham Region Transit.

Respectfully submitted,

Original Signed by

Vincent Patterson, MCIP, RPP, MEng
General Manager, DRT

Recommended for Presentation to Committee

Original Signed by

Elaine C. Baxter-Trahair
Chief Administrative Officer



Durham Region Transit Report

To: Durham Region Transit Executive Committee
From: General Manager, Durham Region Transit
Report: [#2019-DRT-2](#)
Date: January 9, 2019

Subject:

Preparing for Transit Innovations

Recommendation:

That Report #2019-DRT-2 be received for information. This report was originally tabled at the September 20, 2018 meeting of the Transit Executive Committee. The Committee approved a motion to have the report considered at a future meeting of the Transit Executive Committee in 2019.

Report:

1. Purpose

- 1.1 This report outlines the steps that Durham Region Transit (DRT) is taking to better assess and prepare for the arrival of transportation innovations and whether they can be leveraged to create value for DRT customers by benefiting the transit experience and/or producing financial efficiencies.

2. Background

- 2.1 As a modern and forward-looking transportation organization, DRT strives to embrace emerging technologies in pursuit of the goal of positioning “our transit system as the preferred mode of transport for Durham Region residents”, as stated in DRT’s Council-approved Five-Year Service Strategy.
- 2.2 Transit and transportation innovations are also instrumental to advancing other strategic priorities of Durham Region, including the Regional Strategic Plan, Official Plan and Transportation Master Plan, in addition to the Economic Development Strategy and Action Plan, Multi-year Accessibility Plan, Age-Friendly Strategy and Action Plan, Community Climate Change Local Action Plan, and the forthcoming

Community Energy Plan.

- 2.3 Over the past five years, DRT has modernized transit in Durham through a number of innovations, including the introduction of on-demand transit and the adoption of smart technology such as automated vehicle locators, automated passenger counters and automated next-stop announcements on board our vehicles. Drawing on this technology, DRT has also introduced customer-facing travel information tools to provide real-time information on next-bus arrivals by phone or text. Behind each of these advancements is a commitment to create value for customers through improved choice, information, experience and service integration.
- 2.4 Governments and the transportation industry are attempting to understand and navigate the potential benefits and disruptive impact of several other advancements, including:
- a. The electrification of transportation in personal, passenger and commercial sectors supporting the shift to zero-emission vehicles and alternative fuels.
 - b. The adoption of microtransit solutions that target specific geographic areas or mobility barriers (e.g. first/last mile employer connections) with smaller vehicles and flexible routes.
 - c. The arrival of Transportation Network Companies, such as Uber and Lyft, that enable on-demand ride hailing or sourcing through a smart phone app.
 - d. The advancement of automated and connected vehicle technologies promising safer roads through automated operation and navigation.
 - e. The development of analytical and visualization tools identifying meaningful trends in transit data to better inform the public, passengers and planners.
- 2.5 In many parts of the world the electrification and automation of transportation is going ahead in anticipation of the operational, financial and customer service benefits they promise. Jurisdictions not preparing for how these emerging technologies are integrated within their local transit and transportation system risk forfeiting the advantages they offer, and instead could see direct competition with transit services.
- 2.6 In Canada, demonstrations of innovative technology are underway or coming soon in several jurisdictions with the goal of assessing the merits of long term or permanent application. Examples include:
- Electric bus trials taking place or coming soon in Montreal, Winnipeg, Edmonton and St. Albert, Alberta. The City of Edmonton is aiming to electrify its transit fleet of 850 buses within 18 years. In 2020, Edmonton

will stop purchasing diesel buses and instead start acquiring 40-50 electric buses annually.

- In Toronto, the TTC, which is purchasing 60 new electric buses through 2019 towards a zero emission fleet by 2040, has also announced plans to launch an autonomous vehicle pilot beginning in 2020.
- During the fall of 2018, Pacific Western Transportation has been conducting trials of autonomous shuttle technology in Alberta. In September, the City of Calgary, in partnership with Pacific Western Transportation, launched a month-long pilot of a driverless autonomous shuttle linking the Calgary Zoo and Telus Spark Centre. For October and November, the demonstration moved to the City of Edmonton for additional trials.
- In Quebec, an autonomous shuttle is being tested in the Town of Candiac along a two kilometre loop carrying up to 15 passengers at 25 km/hr to destinations including City Hall, a bus terminal and several businesses along the route. The Town of Innisfil recently announced a renewal of its agreement with Uber on an expanded, subsidized ride-hailing service. On April 26, 2018 TEC Report 2018-DRT-13 compared Innisfil's experience with DRT's own on-demand approach to offer similar mobility options.

3. Advancing Innovation at DRT

- 3.1 Durham Region's rich history of automotive excellence and its emergence as Ontario's energy capital make it well-positioned to be a leader in preparing for and initiating the transition to new transportation innovations. Such efforts support the marketing of Durham as being at the leading edge of mobility and energy advancement to attract new investment, employers and skilled labour. It also positions Durham to benefit from the customer service and financial benefits that these innovations offer.
- 3.2 For public transit, understanding how new technologies and mobility options integrate with current services is essential to maintaining a modern transit service responsive to customer expectations. Not doing so risks direct competition with new service providers. The result could be fewer transit passengers, increased congestion, and more urban sprawl at great economic, social and environmental cost to municipalities. An October 2017 study from the University of California, Davis concludes that ride-hailing services such as Uber and Lyft are "currently likely

to contribute to growth in vehicle miles traveled (VMT) in the major [US] cities represented in this study.” The study also found that ride hailing led to a six per cent decrease in transit use in major urban centres. [[Link: Sustainable Transportation Energy Pathway - New research on how ride-hailing impact travel behavior](#)].

3.3 DRT and Durham Region are actively engaging with industry, government and academic partners to monitor, inform and, where applicable, test emerging technologies. The following key principles will guide DRT’s efforts to demonstrate and understand the potential of transportation innovations:

- a. Prioritize safety and security as primary considerations with respect to the deployment of emerging technologies and mobility models.
- b. Harness emerging technologies to complement and strengthen the transit system rather than compete with it.
- c. Leverage technologies to create value for customers by enhancing choice and mobility, and to optimize service levels and integration.
- d. Focus on addressing gaps and low demand segments of the transit and broader transportation network.
- e. Build partnerships with industry, academia and other governments to initiate demonstration projects to learn from and understand the benefits, impacts and considerations of transportation innovations for transit in Durham.
- f. Base final adoption and deployment decisions on thorough assessment of operational and financial implications of new technologies, including customer satisfaction, life cycle costs, operating impacts and associated financial and performance risks.

3.4 DRT is focussing its efforts on four key areas of transit innovation, including:



- a. Electric vehicles – Electric transit buses in operation today offer multiple benefits including cost savings on fuel and maintenance, smooth and quiet operations, and reduced emissions when compared to conventional diesel buses. The examples below represent estimated benefits and reported results for electric buses:
- Nova Bus, which has had three electric buses in operation in Montreal for a one-year period reported a 99 per cent satisfaction level among the 422 electric bus passengers surveyed (70 per cent considered them an improvement over diesel buses). Of 64 drivers surveyed, 100 per cent were satisfied with the electric buses (72 per cent considered them an improvement) based on smooth driving, ease of control and quiet operation.
 - New Flyer industries has estimated net life cycle savings of a minimum of \$75K for their current electric bus compared to diesel. This is based on an estimated \$300K in fuel savings and \$125K in reduced maintenance costs offsetting the higher capital cost of an electric bus.
 - The TTC, through its electric bus trials, is forecasting expected benefits of \$56K per bus in net annual fuel cost savings and an annual reduction of 149 tons of greenhouse gas emissions per bus.

Recognizing that the full cost-benefit of electric buses, including infrastructure, grid upgrades and staffing expertise, is specific to each

location, DRT is exploring testing opportunities for electric buses to better inform the business case in a Durham specific context. This includes possible participation in CUTRIC's Pan-Canadian Electric Bus Demonstration and Integration Trial, a multi-phased initiative to demonstrate and evaluate the integration of battery electric buses with high-powered overhead charging systems. CUTRIC's goal is to have a dozen Canadian transit agencies participating by 2022. Phase 1 of the initiative launched in April 2018 with the participation of York Region Transit, Brampton Transit and Translink in Vancouver, British Columbia. DRT is currently engaged with CUTRIC on potential participation in Phase II of the project, including funding arrangements for the acquisition and deployment of electric buses and associated charging infrastructure. Key learning objectives of participating in the trial include understanding:

- Life cycle capital and operating costs for electric versus diesel buses (including fuel and maintenance savings).
 - Operational performance (e.g. charging times, frequency, reliability and range in different weather, traffic and route conditions).
 - Infrastructure requirements and costs.
 - Passenger, community and operator satisfaction.
 - Environmental benefits.
- b. Ride sourcing / microtransit – DRT has recently introduced on-demand service in north Durham, providing a travel option to residents of low density/rural communities where conventional, fixed-route service may not best suit the ridership levels and travel needs. DRT is also exploring the application of ride sourcing and microtransit partnerships, which could:
- Add to the range of choices Durham residents have available to reduce the number of single occupant vehicle trips in the Region.
 - Better connect residents in lower demand areas to the broader transit network.
 - Reduce parking pressures at key destinations such as GO train stations or large-scale employers.

Key learnings would focus on the level of public interest and satisfaction with such service options, changes in single vehicle travel and kilometres traveled, impacts on existing conventional transit services, private transportation service providers and other active travel modes (e.g. walking, cycling), and overall environmental benefits.

- c. Connected and autonomous vehicles – In 2017, the Ontario government partnered with the Ontario Centres of Excellence to launch the Autonomous Vehicle Innovation Network (AVIN). AVIN was established to “capitalize on the economic development potential of connected and automated vehicles” and “to help the province’s transportation systems and infrastructure plan for and adapt to this emerging technology.” Through AVIN, the province is providing \$30 million in funding to Ontario-based companies for research and development into connected and automated vehicle technologies. It is also investing another \$30 million in six Regional Technology Development Sites (RTDS) in Ontario, including \$5 million into the Durham Region RTDS headed by the University of Ontario Institute of Technology, Durham College and the Spark Centre. The other five sites (receiving \$5 million apiece) are located in Toronto, Ottawa, Hamilton, Waterloo and London-Windsor. An additional \$5 million is being directed towards the development of a connected and autonomous vehicle demonstration zone in Stratford.

DRT and Durham Region are engaging with representatives of the Durham Region RTDS and AVIN-funded research and development companies to discuss partnership and testing opportunities in areas of mutual interest (for example, traffic signal priority technologies). DRT is also liaising with other industry, transit and government partners on potential technology demonstrations and trials to further understand the benefits and challenges associated with the planning and application of these technologies. Key insights include technology performance (for example, reliability) in a range of weather and traffic conditions, ridership impacts, customer satisfaction, public acceptance and behaviour, infrastructure requirements, and financial and environmental implications.

4. Next Steps

- 4.1 DRT continues to assess the operational feasibility, risks and financial commitments necessary to advance these and related innovation initiatives. Costs associated with participating in these initiatives are anticipated to be covered in large part through funding contributions from industry and government partners.
- 4.2 While DRT’s contributions are expected to be primarily in-kind through the provision of assets such as buses or data for testing purposes, DRT is seeking modest funding through the 2019 budget process to support research and innovation initiatives as they become clearer.
- 4.3 DRT will continue to engage with industry, government and academic partners to

collect information on opportunities, costs, risks and mitigations associated with emerging technology development and deployment. DRT will also seek necessary TEC approvals to advance technology testing opportunities in Durham. As demonstration projects progress, results, including key insights related to service impacts, customer satisfaction and costing, will be reported to TEC.

- 4.4 DRT and Durham Region will also continue to monitor advancements in transportation innovations locally and abroad to understand and assess the potential benefits for the residents of Durham.
- 4.5 The Chief Administrative Officer's Office has contributed to this report, which has also been reviewed by the Treasurer of Durham Region Transit.

Respectfully submitted,

Original Signed by

Vincent Patterson, MCIP, RPP, MEng
General Manager, DRT