



The Corporation of the TOWN OF MILTON

Report To: Committee of the Whole

From: M. Paul Cripps, P. Eng., Director, Engineering Services

Date: February 23, 2015

Report No: ENG-004-15

Subject: Dynamic Transit Pilot Project – GO Connect Service

Recommendation: THAT ENG-004-15 be received;

AND THAT the Town undertake the Dynamic Transit Pilot Project with Metrolinx, entitled “GO Connect Service”, for a period of 12 months effective April 13, 2015, as outlined in Schedule I – Metrolinx Commitment Letter of Support;

AND THAT the budget for the current GO Connect Drop-Off service be reallocated to operate the proposed GO Connect Pilot service, with all incremental net costs funded by Metrolinx;

AND THAT the Director, Engineering Services be authorized to approve minor amendments to agreement(s); the Manager, Purchasing and Risk Services, the Mayor and Clerk be authorized to sign any and all required paperwork for participation in the Pilot with Metrolinx and RideCo, subject to legal review and amendments;

AND THAT the dynamic fare structure concept summarized in ENG-004-15 be approved for the GO Connect Service, for the duration of the Pilot Project;

AND THAT staff report back to identify progress upon six months of implementation and at the end of the Pilot to recommend further action regarding the Town’s future involvement.

EXECUTIVE SUMMARY

This report proposes a supplementary service delivery concept as a pilot to provide an efficient, cost-effective and sustainable transportation option for passengers when connecting with GO Transit service not presently served by the Milton Transit conventional system. As evidenced by a variety of current Milton Transit initiatives,



alternative service delivery approaches have been well received by customers, such as the GO Connect Drop-Off service operated during the evening peak period.

With financial and administrative support from Metrolinx, and the availability of new software applications, the viability of an electronic, pre-booking transit service can be tested to attract new GO customers to Milton Transit services. Discussions between Town staff, Metrolinx staff and RideCo, a Waterloo-based application developer have culminated to propose a 12-month pilot project, referred to in this report as the Dynamic Transit Pilot Project – a technology-enabled, door-to-door / hub-to-hub dynamic shuttle service connecting to/from GO Transit services at the Milton GO Station. Funded by Metrolinx and operated by Milton Transit and a local taxi provider, the Pilot Project is an opportunity to encourage the adoption of sustainable transportation modes using available technology to enhance / streamline current operations. The Pilot Project would commence on Monday, April 13, 2015. Staff view this initiative as advantageous in response to recent and future GO Train enhancements / schedule adjustments as well as having long-term alternative service delivery application.

REPORT

Background

The 2013-2017 Transit Master Plan – *Moving Milton Forward* recommended the continued coordination of services to the GO Transit market through the use of bus peak period scheduling customization and GO shuttling. While the GO Transit market currently represents approximately one third of all Milton Transit system revenue trips, GO passengers remain attractive for growth potential. Demand for additional, frequent service during peak periods has risen relative to more available GO Transit service in Milton¹. Additionally, parking availability at the Milton GO Station has been at a premium.

GO Transit operates irregular GO Train departure and arrival schedules (due to Canadian Pacific rail availability), making it difficult for Milton Transit to engage all connections with a current 30 minute service route frequency. It also remains cost prohibitive to systematically increase conventional services for the purpose of connecting to all GO Trains without a full understanding of customer load potential along present routing catchment areas. Therefore, as a response to increased demand,

¹ Effective January 5, 2015, nine GO Trains depart eastbound to Union Station in the morning and nine (9) GO Trains arrive to Milton in the evening. Milton Transit conventional routes meet 5-6 GO Trains in the morning and six in the evening.



staff have proposed a lower-cost, alternative service delivery concept.

Current GO Connect Drop-Off Service

The GO Connect Drop-Off service was first introduced in the fall of 2010 as a low cost supplementary alternative to connect to the last arriving GO Train of the evening without increasing service to all system routes. With continued growth of the GO Train system, Council approved additional Drop-Off service in 2013 to connect to other evening peak GO Trains. The service is operated by Milton Transit every weekday evening using three (3) shuttles that meet GO Train arrivals unmet by the conventional system due to scheduling conflicts. The service operates by delineating the Town into three (3) zones whereby passengers disembarking the GO Train board the appropriate shuttle that serves their particular neighbourhood. The operator then proceeds to manually design a route within the zone based on all customer drop-off location requests.

On average, the GO Connect Drop-Off service has been successful, and carries more than 110 customers home every weekday.

Ridership on the GO Connect Drop-Off service as of Q4, 2014 was as follows:

- Route 30 - West Zone: 50 boardings per day; 18.1 boardings per service hour
- Route 31 - Central Zone: 29 boardings per day; 10.1 boardings per service hour
- Route 32 - East Zone: 35 boardings per day; 12.5 boardings per service hour
- 30, 31, 32 Combined: 114 boardings per day; 13.5 boardings per service hour
- Milton Transit system average: 14.2 boardings per service hour

Opportunity

Given the current service level on the conventional system, demand for enhanced GO Train connectivity with Milton Transit remains strong. Manually driven, the existing GO Connect Drop-Off service is effective in the evening, as all customers are originating at one location. However, it is undetermined if the service is maximizing resources efficiently. Additionally, the GO Connect service cannot be applied in the morning as Milton Transit does not have an efficient method to accept various customer pick-up locations and associated routings.

Town staff have solicited support and funding from Metrolinx to pilot an alternative service delivery concept to address GO Transit / Milton Transit connectivity challenges,



using the GO Connect concept. Metrolinx staff have been very receptive to the proposal as it aligns well with several Big Move (2008) objectives related to regional service integration and first mile / last mile initiatives in the Greater Toronto and Hamilton Area (GTHA), while encouraging a shift in how customers access GO Stations.

The Dynamic Transit Pilot Project proposed in this report aims to:

- Address limitations of the Milton Transit-operated GO Connect service
- Leverage Metrolinx resources to deliver a customer-focused solution
- Seek further application to other transit service delivery initiatives (i.e. servicing isolated newly developed areas in Boyne, low density industrial / employment areas, options for paratransit service delivery, identification / prioritization of conventional service level route enhancements, etc.)

Discussion

The Dynamic Transit Pilot Project is a technology-enabled, demand-responsive, dial-a-ride service that utilizes a web and mobile application to allow customers to reserve their preferred transit service. Service would be an extension of the GO Connect Drop-Off service, providing service during the weekday morning in addition to evening peak periods, connecting customers to/from their preferred GO Trains. Shuttles operate on optimized routes, based on reservation requests and pick-up / drop-off locations. The vehicle routing is created and optimized by the software algorithm, which dynamically adjusts routes and pick-up / drop-off locations to maximize operational efficiency and minimize real-time travel delays (i.e. traffic). The result is a premium, convenient transit service that allocates resources based on demand, rather than the current arbitrary / geographical delineation of GO Connect Drop-Off service zones. Given the similar brand concept to existing GO Connect Drop-Off service, this service would simply be named “GO Connect”, eliminating the “Drop-Off” suffix.

GO Connect customers are able to set up an online profile and reserve morning / evening return trips to / from the Milton GO Station. They will be presented with a number of trip options and prices (see section **Fare Testing** for more information about pricing). Upon selecting an option, customers will be presented with a pick-up time and estimated trip duration. Trip reminders will be automatically sent to customers via text notifications. For customers without a smartphone, the application includes SMS text messaging support. In order to monitor customer service, a “rate-my-ride” style survey will be sent to each customer upon completion of their trip.

Customers using mobility devices and/or requiring accessibility are accommodated by



the application when establishing their profile, identifying their accessibility requirements. All associated reserved trips will be adjusted to accommodate additional boarding and alighting time and other support needed, if necessary (i.e. wheelchair tie downs, mobility device storage, etc.).

Fare Testing

In contrast to conventional transit service, which is “pay-on-boarding” and a flat fare, the proposed GO Connect service would be “pay-on-reserving,” with dynamic fares based on supply and demand metrics, similar to booking airline tickets online. The pay-on-reserving concept is recommended to manage the risk of no-shows and short notice cancellations.

GO Connect fares are to be paid through the website and mobile app via multiple electronic payment methods, including credit card. The maximum fare is proposed to be \$1.95 per trip based on the current Metrolinx / GO Transit Fare Integration² subsidy amount, but it could be reduced depending on the trip options selected by the customer and the number of similar trip requests in the system. For example, customers will have the option of being picked up at their door for a higher fare, or walking to a nearby micro-hub location (i.e. community mail box) for a reduced fare. If a customer chooses to walk to a micro-hub and depart at a time of lower demand, the system efficiency would increase and the customer could be quoted a reduced fare. If more customers walk to micro-hub locations, the route efficiency would be greater, and consequently fares would also be reduced.

It is important to note that given the nature of the pay-on-reserving concept, current Milton Transit fare structure categories and fare media would not be available for the GO Connect service for the duration of the pilot.

Market Research

Prior to development, market research and outreach efforts were conducted by Metrolinx staff to gauge program interest from customers who currently drive to the Milton GO Station. It was found that a majority of GO riders accessing the GO Station

² Metrolinx / GO Transit Fare Integration Program includes a subsidy paid to the Town at 75% of the cost of the per unit adult ticket price per passenger trip for those connecting to/from GO Transit at the Milton GO Station using Milton Transit services. The current adult ticket per unit price is \$2.60, and thus Metrolinx subsidizes the Town \$1.95 per trip, invoiced monthly.



by means other than Milton Transit live within the Dempsey, Clarke and Beaty neighbourhoods (areas bounded by Steeles Avenue, Thompson Road, Louis St. Laurent Avenue and James Snow Parkway). The annual GO Ridership Survey indicates that there are approximately 250 regular GO Train riders who live within the associated area, in close geographical proximity to the Milton GO Station.

Regular customers of the existing GO Connect Drop-Off service were also studied to identify typology and usage patterns. Customer surveys administered by Metrolinx staff on July 2014 revealed:

- 74 percent of GO Connect Drop-Off customers transfer both to and from GO Transit
- 69 percent took Milton Transit to GO in the morning (21 percent ride-share in car)
- 71 percent have a smartphone

Given these preliminary results, staff believe that operating a technology-enabled, customer driven shuttle solution could cater to a complimentary audience base, especially with a strong catchment within close proximity to the Milton GO Station.

Launch, Marketing and Communications

The pilot is proposed to begin on Monday, April 13, 2015, at 6:00 a.m. The pilot will operate for 12 consecutive months.

In order to manage the program, marketing will be focused to the study area of Dempsey, Clarke and Beaty neighbourhoods to capture the interest of customers who currently drive to the Milton GO Station. While the service will be available to all urban area residents, extending targeted marketing efforts to the entire Town could result in overwhelming reservation requests.

Messaging will be focused on promoting the service as a sustainable, convenient, and connected option to get to GO (an easy way to leave the car at home), as well as notifying customers of the existing GO Connect Drop-Off service of the associated changes. Efforts will consist of flyer mailings to addresses in the target marketing area, notices and leaflets on board the GO Connect Drop-Off routes, updates to the Milton Transit website and in-person contact at the Milton GO station. All marketing efforts will be coordinated by Metrolinx.



Monitoring

Capacity is built into the application for administration purposes to generate reports on key performance indicators, such as:

- On-time performance
- Trips completed
- Average trip times
- Customer service
- Financial information, including monthly costs, vehicle hours, passenger trips, and fares collected

Staff will report back to Committee of the Whole after six (6) months implementation of the GO Connect service, and upon completion of the pilot.

Agreements and Responsibilities

A Non-disclosure Agreement and binding Letter of Intent have been executed by Metrolinx and RideCo, a Waterloo-based application developer, to control disclosure of information during the development phase of the Pilot. Metrolinx has provided the Town a Commitment Letter of Support, indicating project financial support and responsibilities (Schedule I). The binding Letter of Intent / Agreement between the Town and RideCo is currently being drafted. A summary of participant responsibilities is listed below:

Metrolinx	Town of Milton	RideCo
<ul style="list-style-type: none"> • Project Management Services • Application development / testing • Marketing / Communication costs • Additional service costs and Fare Integration 	<ul style="list-style-type: none"> • Available 8 metre buses (2) • Call centre management (current), PWTransit operations • Ancillary administrative support • Branding • Project support 	<ul style="list-style-type: none"> • Web development • Cell development • Payment engine • Reporting modules • Dynamic route engine • Technology support



A key consideration for proposing the Pilot Project was to maintain a net-zero operating cost impact to the Town, with minimal ancillary administrative support (i.e. Town website updating, social media updating and limited, non-technical customer support). The Pilot will respond to demand through the use of active Milton Transit 8 metre buses (used for current GO Connect Drop-Off service) and a local taxi operator. Service via buses will be provided by PWTransit, the current service provider of conventional transit services.

All fares will be collected by RideCo, with revenue transferred to the Town. Metrolinx will provide costs for additional service and GO Transit Integration subsidies for all GO Connect trips made. Payment and transaction reports will be made available to the Town and Metrolinx for auditing purposes.

Performance Expectations

It is anticipated that ridership will start modestly and increase throughout the Pilot Project period as word-of-mouth and targeted marketing efforts take their effect. By the end of the pilot, it is projected that the GO Connect service could see as many as 250 trips per day, with 125 customers regularly booking round trips. At this level of demand, the service is expected to meet an operating cost recovery ratio of greater than 50 percent, with net costs per ride averaging \$2.77 by the end of the Pilot Project, reducing the current net cost per ride on the GO Connect Drop-Off service by 31% (please see Financial Impact section for more details).

Risk and Mitigation

As with any new service endeavor, a number of Pilot Project risks and associated mitigation have been identified.

1. High Demand

If the demand on the GO Connect service is too high, the dynamic schedules may be affected, impacting on time performance and reliability. There are two (2) strategies to be used as contingency if high demand occurs. First, the number of daily reservations will be capped to the upper limit capacity of the GO Connect system, given the number of pick-ups and distance travelled by customers. This number will be estimated initially, but adjustments will be made after system performance has been observed and monitored. Customers unable to reserve the GO Connect service due to demand will still have other travel options, including Milton Transit conventional service. Secondly, marketing tactics will be targeted to the Dempsey, Clarke and Beaty neighbourhoods, focusing on attracting known GO customers to avoid overwhelming the service.



2. Behaviour Change

Implementation of the Pilot Project will require significant behaviour change for both existing Milton Transit customers and frontline operational staff. RideCo has already deployed a similar pilot service with a taxi provider in Waterloo, Ontario with success. Taxi operators have adapted well to the application. There will be ongoing operational planning and training with PWTransit until launch, to ensure that GO Connect service operators are prepared.

3. Impact on Service Provider, PWTransit

Eight metre vehicles are operated by PWTransit to currently service the GO Connect Drop-Off service in the evening peak period. The Pilot Project will enhance existing operations, with the inclusion of additional shuttle service in the morning and evening peak periods reallocating available fleet.

4. Impact on Taxi Industry

The Pilot Project will require use of 2-6 taxis in the morning and evening peak periods, depending on the intensity of reservations. A local taxi operator that has been engaged for the Pilot has a sufficient supply of vehicles and operators remaining to meet anticipated weekday demand.

5. Impact on Conventional Service

Milton Transit currently operates eight (8) conventional fixed routes during weekdays, with a majority of routes operating at 30 minute peak frequency and 60 minute mid-day frequency. It is possible that the Pilot Project could attract riders from the conventional routes. This risk is being mitigated by target marketing to customers who currently drive to the Milton GO Station.

6. Comparison to “Ride-Sharing” Apps

The Dynamic Transit Pilot Project occupies a space between conventional transit and taxi operations, with a high-degree of demand responsiveness and interaction by the user. The difference between the Pilot Project service model and recently popular “ride-sharing” apps is that the Pilot Project operates in full compliance of municipal by-law and Provincial regulations, namely using licensed vehicles and operators. Furthermore, the Pilot Project is configured to only travel to/from the Milton GO Station – unlike ride-sharing, it does not offer travel to any point at any time. However, future application of the dynamic transit model may investigate alternative origin and destination points.



Next Steps

The long-term sustainability of continuing the GO Connect Service in the pilot format is untested, which underpins the nature of this project as a pilot initiative. The determination of whether the Dynamic Transit Milton pilot service should be maintained, expanded, or discontinued will depend on its performance and continuous monitoring / revision cycle throughout the pilot.

Additionally, staff will monitor the progress and success of the Pilot Project to identify application to other transit service needs, including, but not limited to:

- Servicing urban areas that are spatially distant from current service area
- Providing a web / app reservation option for current Trans-Cab service customers and Milton access+ (paratransit) registrants
- Assessing current conventional routing to determine if route design and / or frequencies should be changed / prioritized based on response patterns

Relationship to the Strategic Plan

This reports supports the following goals and directions in Destiny Milton 2:

Well Managed Growth, Well Planned Spaces

Encourage the establishment of an integrated transportation system that safely and efficiently accommodates all modes of transportation

A Responsible, Cost-Effective and Accountable Local Government

Ensure that the cost-effectiveness of service delivery is a priority when making decisions on how services are to be delivered and by whom

Financial Impact

The key consideration in planning the pilot was to keep the financial impact for the Town at a net-zero position in order to minimize operating budget impacts. The pilot service will respond to demand and use the local taxi operator to reduce operating costs. Budget modelling anticipates that the proposed dynamic service model is more cost effective than operating increased frequency on the conventional transit system, while simultaneously being able to operate additional service in the morning peak period.

The existing GO Connect Drop-Off service costs approximately \$15,100 per month to operate. It is proposed that this operating budget be reallocated to support the Dynamic Transit Pilot Project. If demand for service escalates beyond \$15,100 per month,



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Metrolinx will compensate the Town for the additional operational overrun.

The existing GO Connect Drop-Off service generates approximately \$5,100 per month in fare revenue (requiring a net operating subsidy of approximately \$10,000 per month). This is composed of the cash fare paid by customers (\$0.65 per trip) plus the GO Fare Integration subsidy (\$1.95 per trip), as per the co-fare agreement between Metrolinx and Milton. The GO co-fare agreement remains in effect and will be applied to the Dynamic Transit Pilot Project. Every customer making a trip on the new service triggers a subsidy from Metrolinx to the Town of \$1.95.

The following table represents performance expectations and incremental net operating costs estimated for the GO Connect Pilot Project, based on anticipated demand:

	Current GO Connect Drop-Off Service³	Proposed GO Connect Pilot Service (estimated)⁴	Net / Incremental⁵
Costs per month	\$15,100	\$34,214	\$19,114
Revenue per month	\$5,100	\$18,975	\$13,875
Net Cost per month	\$10,000	\$15,239	\$5,239
Trips per month	2,508	5,500	+ 2,992
Net Cost per Trip	\$2.77	\$3.99	(\$1.75)

Respectfully submitted,
Paul Cripps, P. Eng.
Director, Engineering Services

For questions, please contact:

Tony D'Alessandro, MCIP, RPP
Coordinator, Transit

Phone Number: 905-878-7252 ext. 2548

³ Based on current ridership levels (114 trips per day)

⁴ Based on projected ridership levels (250 trips per day)

⁵ Projected costs to be paid by Metrolinx



The Corporation of the TOWN OF MILTON

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Attachments
Appendix I: Metrolinx Commitment Letter of Support Appendix II: Dynamic Transit Pilot Project Presentation

CAO Approval
William Mann, MCIP, RPP, OALA, CSLA, MCIF, RPF
Chief Administrative Officer

February 12, 2015

M. Paul Cripps, P.Eng.
Director, Engineering Services
The Corporation of the Town of Milton
150 Mary Street
Milton, ON L9T 6Z5

Dear Mr. Cripps,

Subject: Support for Dynamic Transit Milton pilot project

I am writing to confirm our support for the GO Connect dynamic transit pilot service, wherein Metrolinx and the Town of Milton will, together, pilot a program that offers customers high quality and cost effective door-to-door service from their homes to the Milton GO station.

In recent years, we have seen a substantial increase in ridership on GO Transit services, including services to and from Milton. In January, we added morning and afternoon trains in order to meet the demand. Customers have been requesting improved transit connections to and from Milton GO, as well as a morning service for the popular GO Connect drop-off shuttles, which run in the afternoon only. Until now, it was not feasible to add a demand-responsive morning service. Developments in mobile technology, dynamic transit routing software, and an engagement with private sector entrepreneurs has allowed us to meet that challenge.

The product of this joint effort is a 12-month pilot door-to-door/hub-to-hub shuttle service that customers can order on the web or with their smartphone. The service dynamically responds to demand, increasing its efficiency and cost-effectiveness. The revised GO Connect shuttle will be more responsive to demand and more convenient for customers, namely through the addition of a morning service to Milton GO and the use of smartphone technology to customize routes.

Metrolinx is pleased to be contributing the following to this pilot project:

- Metrolinx will be responsible for the operational and capital costs associated with project management, application development, marketing, and communications. The Town of Milton has agreed to support the pilot by allocating the afternoon drop-off shuttle's service hours to the GO Connect pilot, by making available two 8-metre buses, and assisting with implementation and marketing/communications efforts. The GO Connect pilot shuttle will be branded as a Milton Transit service.
- Metrolinx will cover any potential increase in operational costs over and above the month-to-month average cost of the afternoon drop-off service prior to January 2015.

- All trips made on the dynamic GO Connect pilot will be eligible for the co-fare subsidy of \$1.95 per trip, as per the existing co-fare agreement between the Town of Milton and Metrolinx.
- Metrolinx will coordinate with the third-party application developer to ensure that the application interface and routing engine meets the requirements as agreed-upon by the development team.

This pilot will allow us to deliver an innovative, customer focused mobility option that has not been previously implemented in the GTHA. It is an example of the positive impact of collaborative efforts between Metrolinx, the regional municipalities, and the private sector. It also aligns directly with Milton's image as being an innovative municipality that is truly a 'connected community.'

We thank the Town of Milton for its continued involvement and support of this pilot project.

Sincerely,



Leslie Woo
Chief Planning Officer

cc: Tony D'Alessandro (Coordinator, Transit)

DYNAMIC TRANSIT MILTON PILOT PROJECT



Committee of the Whole
February 23, 2015

Appendix II



Introduction

Milton's Initiative

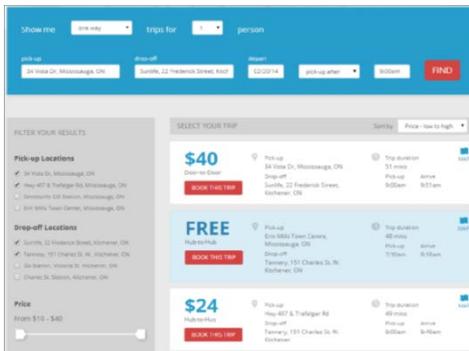
- Milton approached Metrolinx in summer 2014
- Expand the GO Connect Drop-Off service to the morning
- Interested in innovative opportunities to collaborate

Metrolinx – Rob MacIsaac Innovation Fellowship

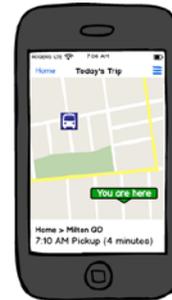
- Following up on shuttle study to support transit access to GO Stations
- University of Waterloo student developed a concept called Dynamic Transit

Metrolinx and Milton Transit saw Dynamic Transit as an option to expand the Milton GO Connect Drop-Off service but needed to pilot to better understand overall potential

Dynamic Transit - Customer



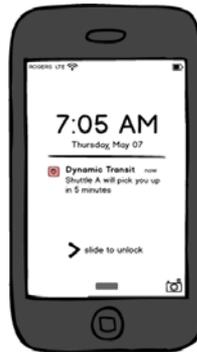
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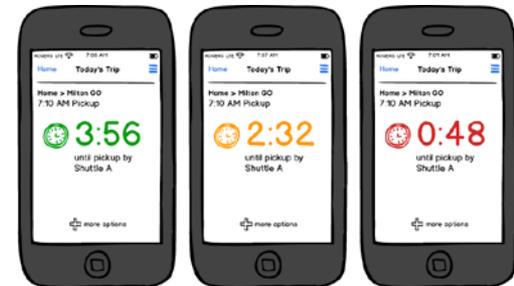
3. Notification



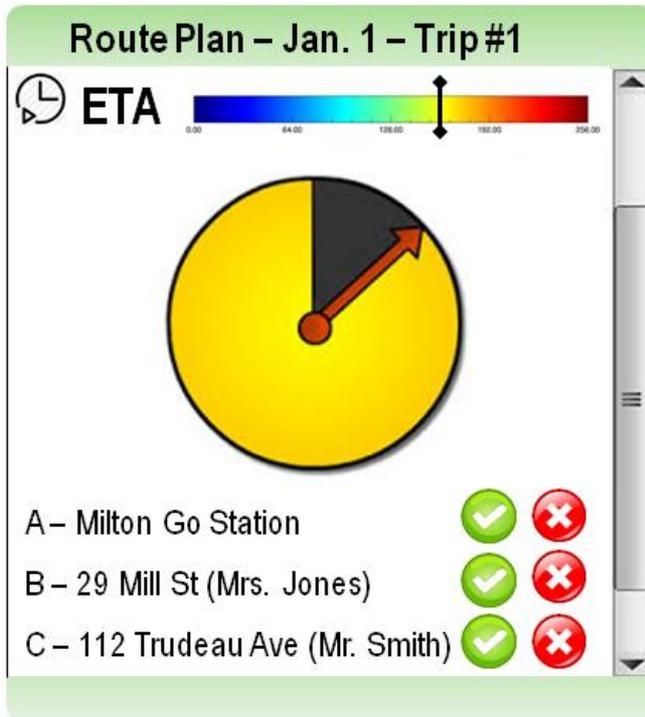
2. Confirmation



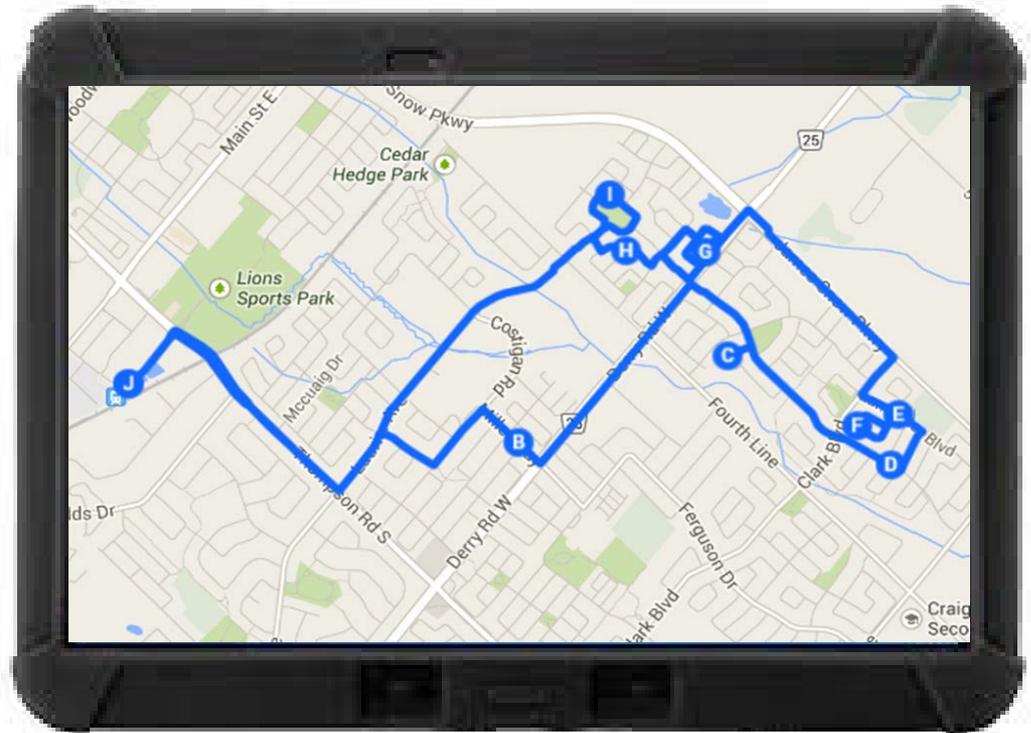
4. Countdown



Dynamic Transit - Operator



Driving Metrics & Log Interface



Driver route map with audio instructions

Benefits to Milton

Milton Opportunity

- Increased route efficiency
- Revenue growth through increase in fare subsidies
- To use real data to support future route design and transit planning



Fare Strategy

Fare Pricing

- Sold as a premium service, Milton to charge more than standard bus fare
- Dynamic transit service will have a customer price of \$1.95
- Metrolinx subsidizes fare with \$1.95 per trip (current co-fare integration)
- Revenue to Milton will be \$3.90 with co-fare/subsidy

Dynamic Fares

- Discount incentives offered to customers to increase customer choices and system efficiency

Fare Strategy

Fare collection

- Fare contract between Milton and the technology vendor directly, RideCo
- Technology vendor collects all fares charged, provides payment directly to Milton
- Revenue reporting will be provided to both Milton and Metrolinx (auditable)
- Metrolinx will provide subsidy payment based on technology vendor report

Fare Payment

- Fare payment will be in the form of credits to a personal account
- Fare amounts are deducted from the personal account at the time of booking
- There is no cash or fare media payment option

Responsibility Map



- Web development
- Cell development
- Payment engine
- Reporting modules
- Route engine
- Technology support



- Provide 8m buses
- Manage call centre
- Ancillary administrative support
- Branded as a Milton service
- Support project activities



- Project management services
- Development of application
- Testing of application
- Marketing costs
- GO co-fare payment

Key Success Factors

Measurement

- Weekly monitoring of the following metrics will gauge project success:

Metrics
Average ticket price
Daily ridership
Rides per hour
Cost per rider (bus)
Cost per rider (cab)
Customer satisfaction score

Independent peer review through Ryerson University;
Planning 3, 6, 9 and 12 month updates