



**Report: P-14-073**

## **Region of Waterloo**

### **Planning, Housing and Community Services**

#### **Transportation Planning**

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**To:** Chair Jim Wideman and Members of the Planning and Works Committee

**Date:** June 17, 2014

**File Code:** D10-40/CMP RAIL

**Subject: Cambridge to Milton Passenger Rail Business Case and Implementation Strategy Interim Report**

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#### **Recommendation:**

That the Regional Municipality of Waterloo endorse the proposed action plan for future rail service to Cambridge, as described in Report P-14-073, dated June 17, 2014.

#### **Summary:**

Nil.

#### **Report:**

On June 26, 2013, Regional Council approved the 2013 Implementation Plan of the Transit Supportive Strategy to enhance transit ridership in the City of Cambridge. The approved implementation plan included an allocation for a study related to establishing GO Train service to Cambridge. This report provides an update, including discussions with Metrolinx, the Provincial authority that operates GO.

Regional Council previously endorsed the “Cambridge to Greater Toronto Area GO Transit Rail Passenger Feasibility Study” in October 2009. That study estimated a capital cost of \$110M to provide the necessary infrastructure improvements supporting an initial service along the Canadian Pacific (CP) mainline (Galt subdivision) via Milton of four morning GO trains to Union Station and four afternoon returning trains. Metrolinx has described this link as a “possible regional rail extension beyond the GTHA”, with no committed funding or schedule at this time.

The current work being jointly undertaken by the City of Cambridge and the Region of Waterloo is focused on evaluating lower cost alternatives for an initial passenger rail

service to Cambridge. The draft business case and implementation strategy report, summarized in Attachment 1, notes that a viable service between Cambridge and Union Station could be provided by conventional 12-car GO trains and/or alternatives involving Diesel Multiple Units (DMUs) from Cambridge that would require passengers to transfer to conventional GO trains at Milton Station. Daily ridership by 2021 for either service is estimated at between 600 and 1,200 people per day, and travel times would be about 90 minutes between Cambridge and Union Station.

The report evaluates the following scenarios:

1. Conventional 12-car GO trains: Two trains would travel from Cambridge to Union Station in the morning, and two trains would travel from Union Station to Cambridge in the afternoon.
2. DMUs: Four DMU trains from Cambridge to Milton in the morning, where passengers could transfer to conventional GO trains to continue to Union Station. In the afternoon, four DMU trains from Milton to Cambridge could pick up passengers transferring from conventional GO trains.
3. Hybrid service: A combination of the above scenarios. In the morning, four trains would leave Cambridge (two conventional GO trains and two DMU trains). Passengers would transfer from the DMU trains to conventional trains in Milton. In the afternoon, two DMU trains would pick up passengers transferring in Milton, while two conventional trains would travel from Union Station to Cambridge.

DMUs, which are self-propelled and can operate as a single unit or coupled together in multiple-unit trains, are an interesting alternative because they offer a number of potential advantages over conventional 12-car GO trains:

- Lower operating costs (reduced energy consumption and onboard staff)
- Faster trip times (improved acceleration/deceleration performance)
- Lower infrastructure costs (shorter platform requirements)
- Reduced impacts in an urban environment (shorter delays at level crossings)
- Greater ability to be integrated with local transit buses in multimodal stations
- Greater reliability in the Cambridge – Union corridor

Metrolinx is acquiring 18 DMUs to provide service between Pearson International Airport and Union Station as part of the UP Express. Since Metrolinx proposes to electrify that line, the DMUs may become available for other applications, such as a pilot service between Cambridge and Milton. The ongoing environmental assessment for electrification of the UP Express is expected to be complete by June 2014.

Based on the foregoing, the study is recommending that the DMU alternative is the most promising way of providing flexible passenger rail service that would meet short-term ridership demand while minimizing capital costs. If future discussions with

Metrolinx or CP revealed resistance to the concept of using DMUs on the line, conventional GO train service would be a feasible alternative.

The report provides cost estimates for the three scenarios ranging from \$20M to \$89M. These estimates include a variety of work, including potential track and station improvements and costs to purchase vehicles. These numbers are lower than the \$110M estimate from the previous 2009 study because the number of proposed stations has been reduced and improvements to the remaining stations have been minimized.

The wide ranges in cost estimates reflect current uncertainty in project elements, such as the need for track improvements and whether DMUs would need to be purchased. Cost estimates would be refined through negotiations with Metrolinx and Canadian Pacific and an environmental assessment conducted by Metrolinx to examine the extension of passenger rail service to Cambridge, similar to the study that was done for the current service to Kitchener.

### Proposed Action Plan

The current interim study report, the Executive Summary of which is appended as Attachment 1, is to be finalized through further discussions with Metrolinx, CP and other municipalities along the proposed transit corridor. The following action plan is being proposed:

Action Item	Timeline
1. Provide approved interim GO Transit Study report to Metrolinx, GO Transit, CP Rail, other municipalities along proposed transit corridor (i.e. Town of Milton, Halton Region, Puslinch, etc.), MPs and MPPs.	June 2014
2. Schedule staff-level meeting with Metrolinx to discuss interim report and receive formal response	August 2014
3. Meeting with Mayors/Regional Chairs, MPs and MPPs of Halton Region, the Town of Milton, the City of Cambridge and the Region of Waterloo	September 2014
4. GO Transit Study report is finalized	November 2014
5. Request and compile Council resolutions and/or letter of support from stakeholder communities and businesses	November 2014
6. Request meeting with Minister of Transportation and senior staff	March/April 2015
7. Final report to be presented to Regional and Cambridge Councils for consideration	Spring 2015

### Area Municipal Consultation/Coordination

Regional staff has worked with City of Cambridge staff throughout this project.

Cambridge staff is planning to bring a report before City Council on Monday, June 23, 2014. Outside the Region, staff from the Town of Milton, Halton Region, the Township of Puslinch and the County of Wellington were consulted.

**Corporate Strategic Plan:**

The current project will advance Strategic Objective 3.4 (Encourage improvements to intercity transportation services to and from Waterloo Region) through Action 3.4.3 (Advocate for improved rail service to Kitchener and Cambridge).

**Financial Implications:**

The 2013 Implementation Plan of the Transit Supportive Strategy to enhance transit ridership in the City of Cambridge included an allocation of \$50,000 for this study.

The Province of Ontario covers the operating subsidy for GO rail service, but generally expects municipalities to contribute one third of GO expansion capital costs. For example, Report P-12-116 (November 6, 2012) describes the Region's contribution of \$1.39 million towards the capital cost of the recently implemented GO train service to Kitchener. These capital costs are not currently budgeted. Pending progress on the Action Plan and future discussions with the Province, the Region will be required to include a contribution in a future Capital Budget and Forecast.

**Other Department Consultations/Concurrence:**

Nil.

**Attachments:**

Attachment 1 – Cambridge to Milton Passenger Rail Business Case and Implementation Strategy – Draft Report Executive Summary

**Prepared By: Geoffrey Keyworth**, Senior Transportation Planning Engineer

**Approved By: Rob Horne**, Commissioner, Planning, Housing and Community Services

**Attachment 1 – Cambridge to Milton Passenger Rail Business Case and Implementation Strategy – Draft Report Executive Summary**



May 30, 2014

**CAMBRIDGE TO MILTON  
PASSENGER RAIL BUSINESS  
CASE AND IMPLEMENTATION  
STRATEGY**

Draft Report



## EXECUTIVE SUMMARY

The City of Cambridge and Region of Waterloo are requesting the Province to initiate GO Train service on the CP line between Milton and Cambridge as quickly as possible.

A Feasibility Study for the extension of commuter rail service to Cambridge was completed in 2009 and determined that the preferred routing option was to extend the current GO Train service from Milton rather than connecting Cambridge to the GO Train service on the north mainline at Guelph. The 2009 Passenger Rail Feasibility Study (2009 Study) includes estimates for capital and operating costs and provides ridership and revenue forecasts for 2021 and 2031 horizon years. The study assumed that the service extension would follow GO Transit's traditional approach of starting with four peak period trains and increasing peak service in response to demand.

The team of Dillon Consulting Limited and Hatch Mott MacDonald was retained by the City of Cambridge to augment the 2009 Study by developing three additional scenarios that build on the previous work; explore the opportunity to start the train service quickly and with lower investment; test other important transit travel markets and promote a less auto-centric approach to station access and service design.

Scenario 1 starts service with two 12-car GO Trains, no storage yard in Cambridge and three (rather than four) new stations designed for minimal initial costs. While the start-up of service will require negotiation between CP and Metrolinx, this new scenario could be implemented very quickly and is expected to significantly reduce the initial infrastructure expansion requirement.

Metrolinx is acquiring Diesel Multiple Unit (DMU) trains to provide a passenger rail connection from Union Station to Pearson International Airport and these vehicles are designed to be suitable for operation on a freight rail line. This technology which can operate as a self-propelled single vehicle (or as two or three car trains) may provide new and significant commuter transit opportunities when applied more broadly on the GO Rail network. Scenario's 2 and 3 were designed to use the Cambridge rail service extension to test DMU flexibility, performance, operating cost, customer acceptance, infrastructure requirements and its applicability for specific commuter rail markets. Scenario 2 uses only DMU technology for the Cambridge to Milton rail service and tests a variety of transit travel markets. Scenario 3 uses a blend of DMU vehicles and 12-car trains for the service.

DMU's in the appropriate applications will have some significant advantages over the traditional 12-car trains, including: lower operating costs (reduced energy consumption and crewing); improved acceleration/deceleration performance giving faster trip times; lower infrastructure costs through shorter platform/siding requirements; reduced physical impacts in an urban environment (e.g. shorter delays at level crossings); greater ability to be integrated with local transit buses and LRT's in multimodal stations; and improved corridor reliability (e.g. iced switch may only impact DMU section of corridor).

Customer reaction to the DMU's (including AODA compliance), potential ridership impacts of a 'train-to-

train' transfer and a host of scheduling, operational and equipment compatibility issues are potential concerns and will also need to be tested and assessed.

Either through the traditional approach of implementing 12-car trains or by testing promising DMU technology for commuter transit service, residents and employers in Cambridge are seeking the earliest possible implementation of GO Train service. Other municipalities along the full service corridor will also benefit, through new stations, provision of an improved commuter transit service for their residents and employees, and the development of a transit option for regional travel markets.

The close proximity of the CP rail line to the heavily congested Highway 401, combined with the fast and reliable travel times that will be possible for rail commuters on this corridor, suggest a great opportunity for the Province to achieve positive economic and environmental results from the early implementation of GO Train service to Cambridge.

The Table below summarizes the results of the previous business case and the three new scenarios. The significant advantages of applying DMU technology on the GO Rail commuter network, including the opportunity to address more regional travel markets with a high quality transit service, suggest that Scenario 2 would be an excellent application for the Milton to Cambridge service extension.

**Summary of Ridership, Revenue and Costs for GO Train Expansion to Cambridge (2021 Horizon)**

Scenario	Annual Ridership		Annual Revenue		Annual Operating Cost	Capital Cost
	Low	High	Low	High		
<b>2009 Feasibility Study 4 peak trains*</b>	225,600	415,100	\$1.9M	\$3.6M	\$3.8M	\$110M
<b>Scenario 1 2 peak trains*</b>	142,835	285,559	\$1.6M	\$3.3M	\$2M	\$32M to \$85M
<b>Scenario 2 4 DMU trains</b>	134,843	293,144	\$1.6M	\$3.4M		\$20M to 73M
<b>Scenario 3 2 DMU, 2 GO Trains</b>	150,068	301,605	\$1.7M	\$3.5M		\$35M to 89M

Notes:

1. All Costs in \$2009
2. Revenue for new scenarios based on current GO Transit fare schedule
3. Ridership forecast for 2021