

Appendix D: Plains Road Case Study

Contents

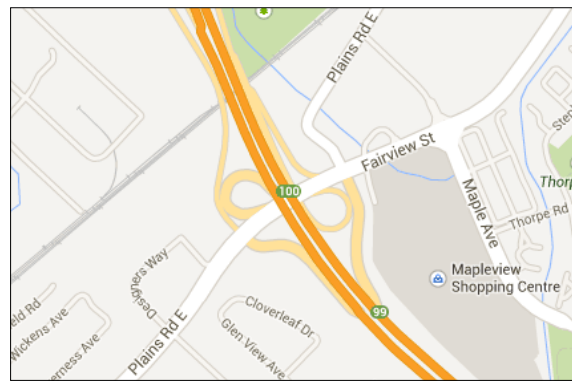
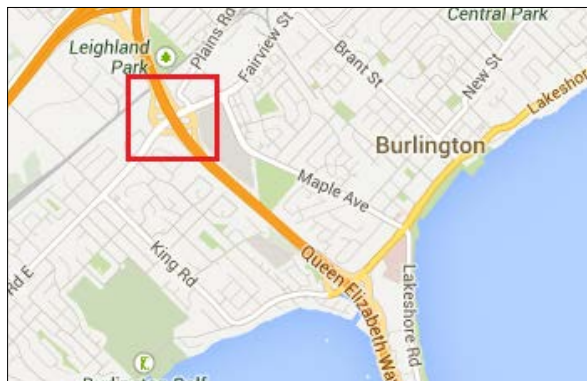
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Introduction

In 2010 the City of Burlington worked with the Ministry of Transportation of Ontario (MTO) to build a new interchange on-ramp and install pilot project bicycle lanes along the Fairview-Plains Road corridor under the Queen Elizabeth Way (QEW). The inclusion of bicycle lanes under an overpass and alongside narrowed traffic lanes was previously untried in Ontario, making this project noteworthy. This project in Burlington allowed the design to be evaluated before similar designs were permitted elsewhere.

Study Area

The interchange of Fairview Street and Plains Road occurs at the overpass of the QEW in Burlington Ontario, and has long been an identified barrier in the city’s cycling network. Burlington is divided by three highways: the QEW, the 403, and 407. These highways pose impermeable barriers for much of their length to cyclists, restricting their mobility and increasing travel times required to access crossing points. For instance, there are two crossings under the QEW in Burlington at Fairview Street



Figures 1 (a) and (b)- Study Area

and North Shore Blvd, both of which are four-lane arterials with long direct-taper lanes for access ramps to the highway. Crossings of the 403 and 407 are similarly designed, with only 3 of the 13 crossing points of the two highways lacking access ramp. The study area for this case study is one point where the QEW is crossed by Fairview Street/Plains Road East, a major arterial road shown in Figure 1 (a) and (b).

Indicated below in Figure 2 in blue, the study area was indicated in the Cycling Master Plan (CMP) as a *Highway Interchange Crossing* cycling facility. In a subsequent map, the crossing is indicated as being slated for long-term implementation (post-2021).



Figure 2- Study Area in Cycling Master Plan

Process

The interchange where Plains Road East/Fairview Street crosses under the QEW has long been identified by the City of Burlington as a hazardous point for cyclists. Additionally, on-street bicycle lanes existed on Plains Road east and Fairview Street to the east, but the interchange served as a higher-risk barrier in the street network.

Previous efforts had been undertaken to improve the interchange. In 1997, the interchange was redesigned to feature access to on-ramps through 90-degree simple curve dedicated turning lanes instead of a wider curve that would permit higher speeds. The new design causes motor vehicles to decrease speeds during the turning motion. The need for this change was championed by Burlington's mayor, cycling advocacy groups, and the local MPP following a number of injuries and a fatality in accidents involving pedestrians and cyclists crossing the exit ramps at the interchange. In 2001 an onramp loop from Fairview Street to the QEW southbound was removed to allow for a ramp to the 407 to the north. This is noteworthy, as it was the reinstatement of this loop that was the impetus for the installation of the bicycle lane at the interchange.

In the early 2000's the 407 Express Toll Route (ETR) Concession Company Ltd, in conjunction with the Ministry of Transportation of Ontario (MTO) identified the need for widening the southbound connection between the 407 and the QEW, a project that was in close proximity to the Fairview interchange. The MTO and the 407 ETR undertook a detailed design process for the project, during which time Burlington completed its CMP in 2009. The City, having highlighted this interchange as a location in need of bicycle lanes, engaged in a number of meetings with the MTO regarding the potential installation of bicycle lanes in order to take advantage of the proposed interchange work and perform any necessary changes simultaneously. This engagement took place at an advanced stage of the process, during the detailed analysis of options. The MTO was not in favour of adding bicycle lanes, citing its design standards for maintaining the current 3.75 m lane width. The City demonstrated its design standards that permitted minimum lane widths of 3.1 m on surrounding arterial roads, and proposed 3.3 m wide lane through the interchange. With minor reconstruction on the east side of the intersection to allow for a new landscaped median island, sufficient width for on-street bicycle lanesⁱⁱ would be provided.

The City of Burlington and the MTO held discussions on potential design scenarios for the installation of bicycle lanes through the interchange, as well as the potential layouts of the on-ramps. The City favored an exclusive right-turn lane for access to the on-ramp in order to provide shorter crossing distances through a 'jug-handle' crossing (see Figure 3).

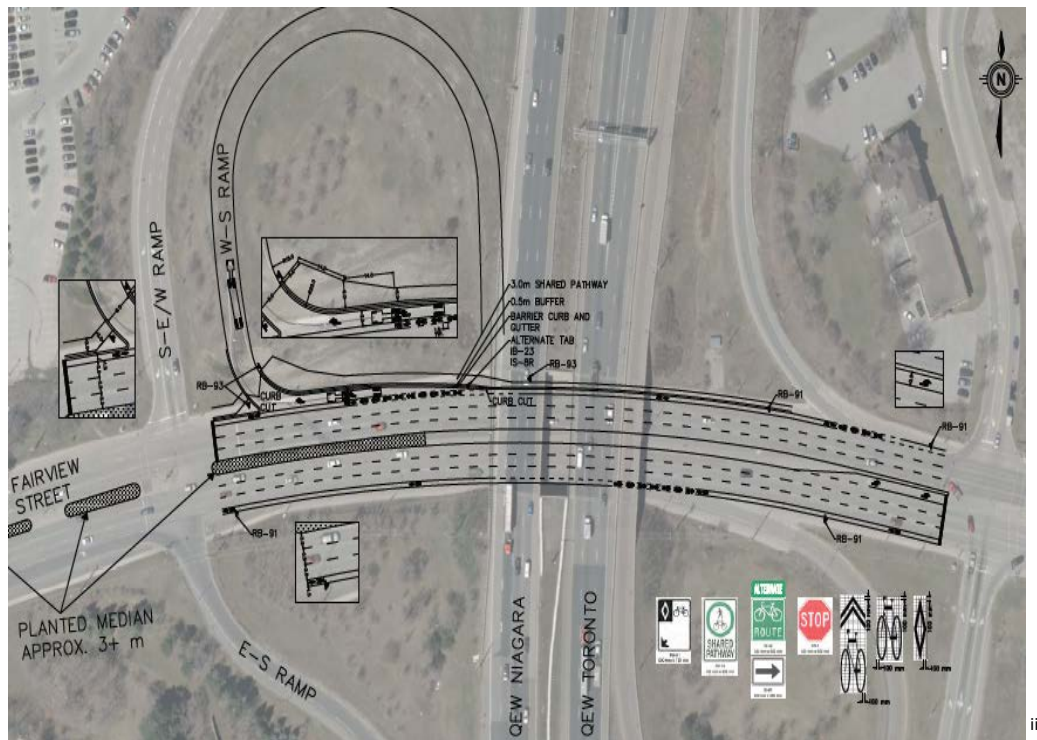


Figure 3- City of Burlington's Preferred Design

The MTO's preferred design, which was ultimately implemented, included a direct taper (see Figure 4), which is a direct connection from the driving lanes to the exit ramp with a

diagonal line (i.e. taper) and no storage lane space. In both evaluated design scenarios, on-street bicycle lanes were proposed through the interchange and both designs featured the lanes continuing directly across the ramp access. The MTO's design included narrowed lanes through the interchange and a reduction of the speed limit from 60 km/h to 50 km/h. The City did not feel the speed reduction was merited, based on its Speed Limits Policy that sets out major arterial roads such as Plains Road will have a speed limit of 60 km/h.^{iv} However, the MTO was insistent that the speed reduction was an absolute requirement, and the final result was the implementation of the MTO's full design recommendations. At the time that these functional designs were submitted to Council in March of 2010, no cost-sharing agreement had yet been determined by the parties.

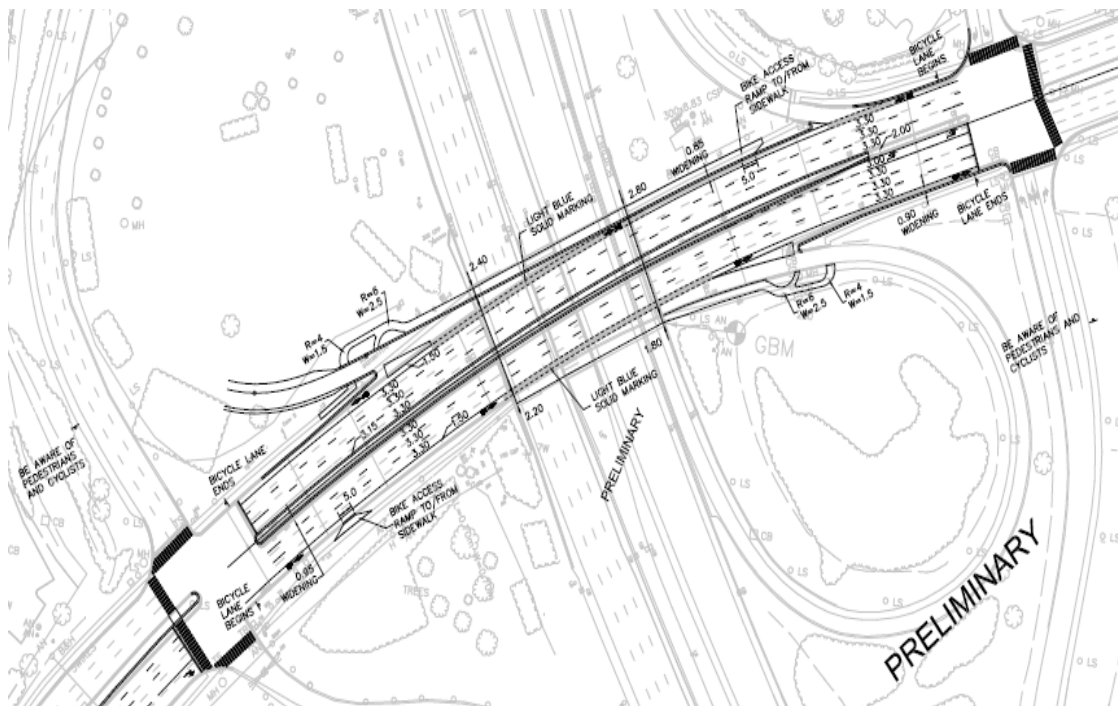


Figure 4- MTO Preferred Design

407 ETR, as the partner completing the ramp works in coordination with the MTO, requested that all works at the site be completed by one contractor. This required the City to accelerate their plans and the cost-sharing agreement, and to locate funds in the existing 2010 Capital Budget that had not been allocated for this project.^{vi} Surplus asset funds were located from existing reconstruction tenders and reallocated to the Fairview interchange project. The work was approved and carried out from late 2010 until the completion in September 2011 when blue surface treatment was added to the bike lanes (see Figure 5 and 6).

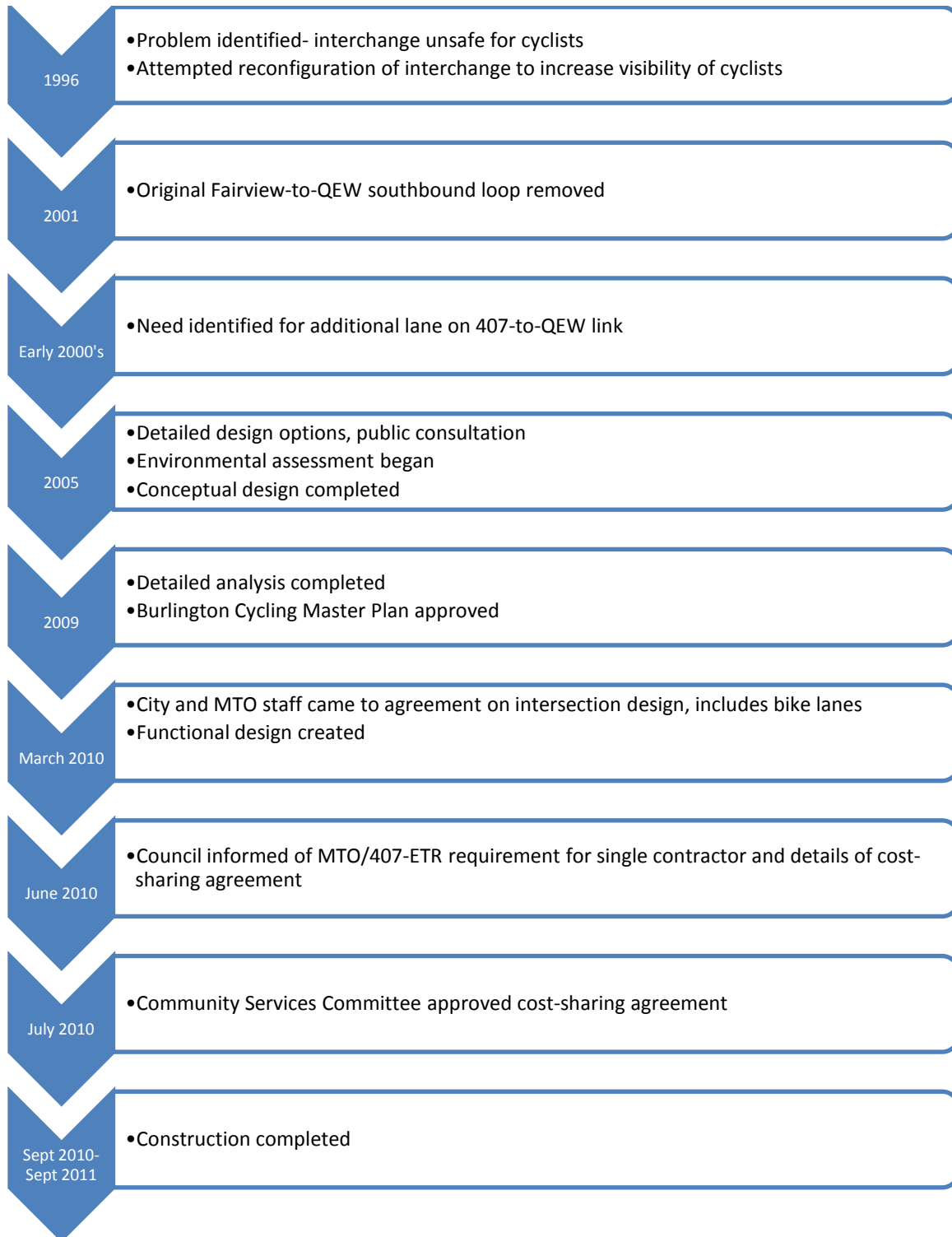


Figure 5- Completed Fairview Interchange



Figure 6 - Completed Fairview Interchange

Timeline



Lessons

Active transportation projects that involve multiple jurisdictions pose unique challenges. Design standards that vary between jurisdictions (for example, the difference in preferred speed limit in this project) will require flexibility and discretion in order to apply them as suitable for the local context.

Coordinating between partners on a shared project requires not only a cost-sharing agreement but an understanding of individual timelines, budgetary processes, and approval processes. The City of Burlington had initially planned to allocate funding for its portion of the project in its 2011 Capital Budget, but had to act quickly to find funding in its 2010 Capital Budget due to shortened timelines caused by the 407 ETR's preference to use a single contractor. This late change of expectations could have precluded Burlington's ability to approve the necessary funds, causing increased costs by performing works outside the scope of the larger project.

This example demonstrates one level of government adopting another level of government's standards, which could be used as a precedent for similar future cases. Adhering to MTO's 3.75m lane width standards would not have provided sufficient space for bicycle lanes in the interchange. By using surrounding arterial streets with 3.1 m to 3.3 m lane widths and comparable traffic volumes as a precedent, MTO accepted the reduced lane widths and permitted a pilot project at this location.

Launching an active transportation project as a pilot project can allow for greater flexibility in standards and deviation from established norms. Generally accepted guidelines are used by municipalities because they are functional, but they can be treated as the default without consideration of alternatives specific to the local context. Municipalities may be averse to deviating from established standards due to concerns of liability. By implementing active transportation projects as pilot projects, it allows for alternative designs and standards to be demonstrated in a real-world application to prove their efficacy. Similarly, pilot projects provide a review period after which the design is evaluated through interactions with the public, and consequent concerns can be addressed.

Contact

Dan Ozimkovic, C.E.T
Transportation Engineering Technologist
Transportation Services
Development and Infrastructure Division
City of Burlington
 [\(905\) 335-7600 ext. 7485](tel:9053357600)
danijel.ozimkovic@burlington.ca

ⁱ *Cycling master plan (2009)*. Burlington, ON: City of Burlington.

ⁱⁱ Ozkimovic, D., C.E.T., City of Burlington (2013, August 15). Interview by Horton, Ted.

ⁱⁱⁱ Engineering Department, (2010). *Fairview street - plains road/qew ramp reinstatement report* (E-25-10). Burlington, ON: City of Burlington

^{iv} Transportation – Speed Limits Policy, (2012). TS-12/12. Burlington, ON: City of Burlington.

^v Engineering Department, (2010). *Fairview street - plains road/qew ramp reinstatement report* (E-25-10). Burlington, ON: City of Burlington

^{vi} Ibid.

^{vii} Photos provided by Dan Ozimkovic, C.E.T., City of Burlington