
APPENDIX B

OPERATIONAL REVIEW OF MEDIAN ROUTE ALTERNATIVE



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MEMO

TO: Robert Hunton
FROM: Michel Bisson
DATE: October 15, 2009
COPIES: Tim Dickinson
OUR FILE: 7499-4025
SUBJECT: West Transitway Extension – Bayshore Station to Moodie Drive
Review of Potential Station Configurations for Queensway Route Alternative

The purpose of this memo is to review and present a number of technical and operational challenges associated with the Queensway Median route alternative. These include the inability to locate a station at Moodie Drive, the resulting impact on the MTO highway facility, and the ability to construct the interim project configuration.

Station at Moodie Drive

Integrating a bus Transitway station at Moodie Drive will not be possible without a major realignment of Highway 417, an extension of the Moodie Drive underpass, and partial relocation of ramps at the Moodie interchange. Figure 2 (appended to this memo) compares the existing cross-section on Highway 417 at the Moodie Drive underpass to a typical section at a Transitway station. Typical section elements at a transit station include two 6m-wide platforms (space for shelters, stairs and elevators to provide passenger movement between the upper Moodie Drive platforms and the lower Transitway platforms, passenger waiting area, and passenger movements), two 3.5m stopping lanes for loading and unloading of buses, two 4.0m passing lanes (for passing stopped buses at platforms), and a 2.8m wide median to control pedestrian movement, accommodate median lighting of the station area, and for collection of stormwater run-off. These elements with a total cross-section width of approximately 30m are essential to the operation of the transit system. The clear distance between the existing bridge piers at Moodie Drive is roughly 16.5m or 13.3m less than required to fit a Transitway station in the median.

A minimum 13.3m relocation of the Highway 417 westbound or eastbound lanes would be required to accommodate a station in the median at Moodie Drive. The mainline relocation of the highway may extend several kilometres east and west of Moodie Drive to tie-in the realigned lanes to the existing facility and maintain minimum highway geometric design standards (minimum horizontal curve radii). The resulting relocation of the highway would adversely affect the existing ramps at the Highway 416 / 417 interchange and at Holly Acres Road to the

east. Additional property (NCC Greenbelt lands) would be required, likely on the south side of the highway, to accommodate the relocated highway.

In addition to relocating Highway 417 in order to accommodate a station in the median, locating the Transitway in the median may preclude the MTO from carrying out future highway improvements such as improved drainage and storm water runoff treatment, modification to highway illumination, and lane or shoulder widening in the median.

Alternative station configurations that were considered included locating the station up and down stream of the Moodie structure and staggering the platforms east and west of the structure. These options are not compatible with the transfer of passengers from the Moodie structure in that they would require an unsafe at-grade pedestrian crossing of Moodie and would involve additional walking distance between the upper and lower platforms.

Ability to Construct the Interim Project Configuration

The interim study objective is to provide an exclusive Transitway facility between Holly Acres Road and Moodie Drive which includes a transfer point (at-grade stop) for passengers on local bus service at Moodie Drive. This interim condition will allow for more reliable transit service by reducing schedule variability in the near term, while deterring the cost of constructing grade separations at Moodie Drive and Holly Acres Road until Phase 5 of the West Transitway Extension (Moodie Drive to Eagleson Road) is in operation.

Locating the Transitway in the median would rule-out constructing an interim solution since grade separations would be required west of Holly Acres Road from the north side of Highway 417 to the median and west of Moodie Drive from the median to the north side of the highway.

Weaving to/from HOV Lanes

One potential interim solution would be to have buses access the Transitway in the median via the future HOV lanes on the highway (under construction). In addition to providing no station at Moodie Drive, this option would also require buses to travel between the existing shoulder bus lanes west of Moodie and the median.

If considering the removal of a station at Moodie Drive, buses may be able to access the Transitway in the median via the future HOV lanes on the highway (under construction). However, buses would still need to travel between the existing shoulder bus lanes west of Moodie and the median.

The resulting manoeuvre would involve weaving across four lanes of traffic (three general purpose lanes and one HOV lane) which may be problematic in heavy traffic during peak periods or prior to and following special events at Scotiabank Place. Figure 1 below illustrates the weaving manoeuvre between the Eagleson Road and Moodie Drive interchanges, a distance of approximately 1.1 kilometres.

This interim “solution” effectively shifts the problem of buses operating in mixed traffic further west and therefore does not address the overall problem that led to the initiation of this study.

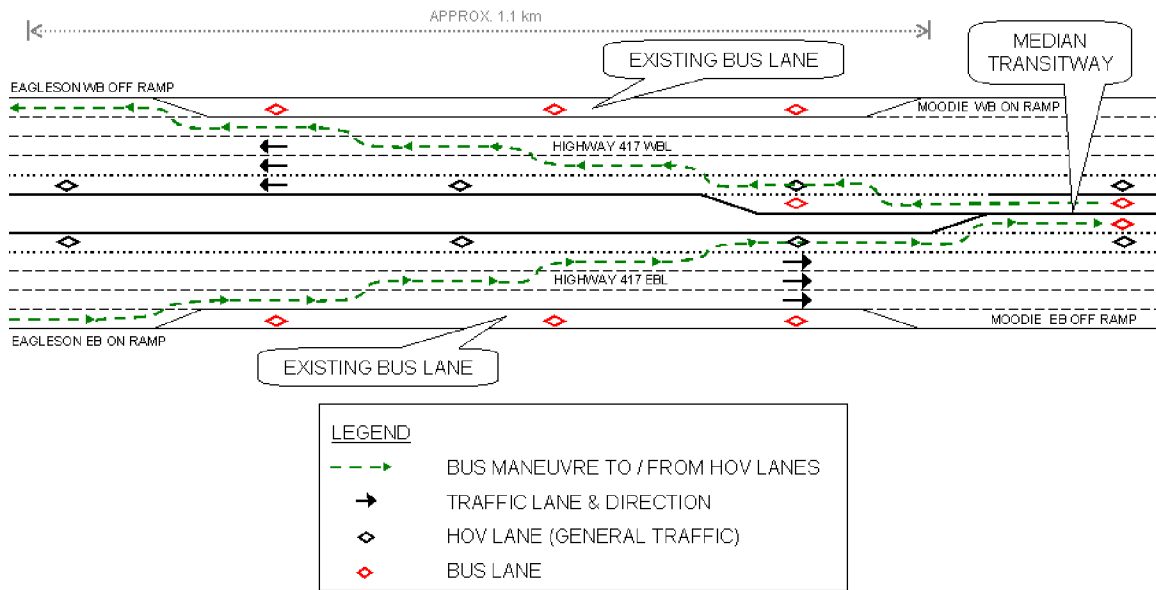


Figure 1 – Bus Weaving Manoeuvre on Highway 417

FIGURE 2: HIGHWAY 417 AT MOODIE DRIVE

