



MEMO

TO: File

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COPIES: Jack Thompson

OUR FILE: W:\7k\7359 City Center BRT Functional Planning\7359.500 Transport\7359.505 Technical Memos\Memo- Volume Comparisons\7359-ks-memo-emme volume comparison.doc

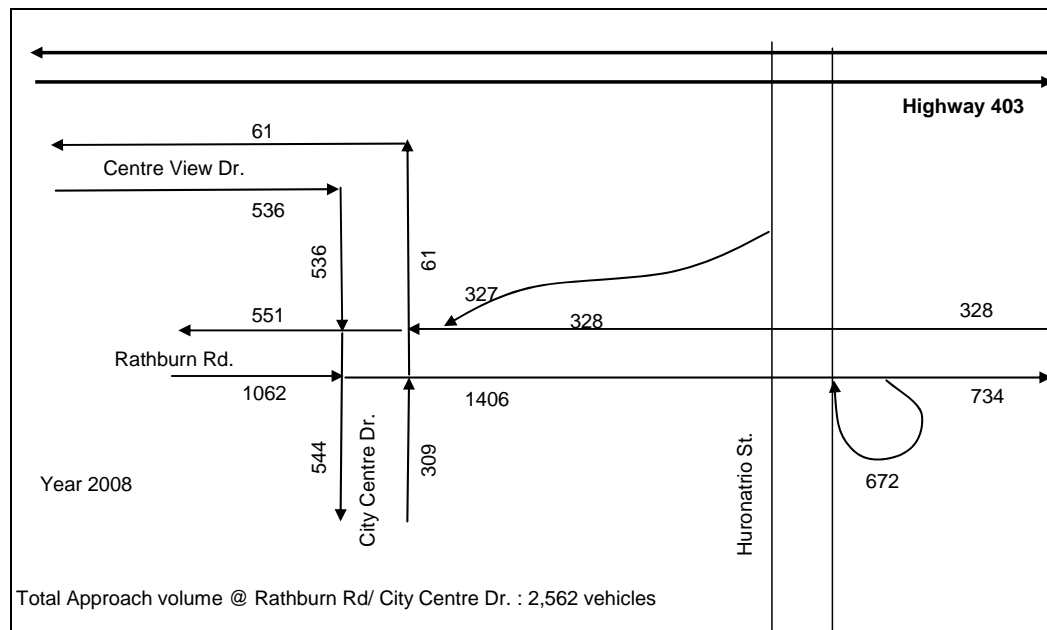
SUBJECT: Comparison of 2023 BRT Traffic Analysis for BRT vs. 2031 City's EMME 2 model assignment

This memorandum presents the comparisons between McCormick Rankin Corporation (MRC) traffic volume projected for the BRT operational analysis and City EMME2 model traffic assignment. The City has only morning peak hour model, therefore this memo presents the comparison only for the morning peak hour traffic volume at City Centre, Mississauga.

1. Existing Traffic:

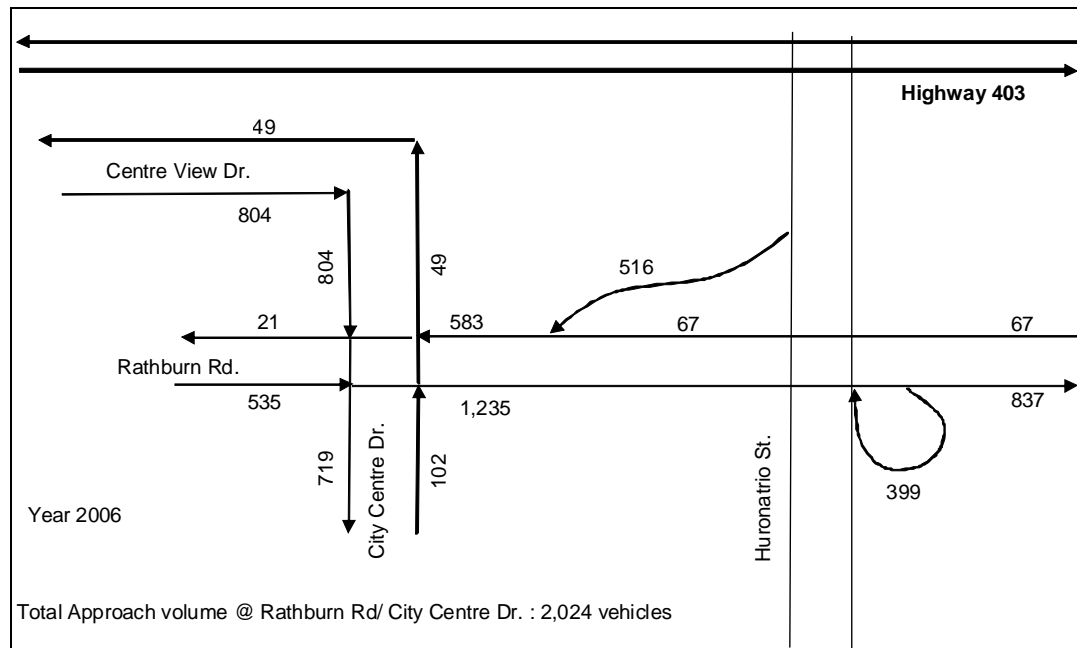
- a. **Existing Traffic Volume – MRC:** MRC have received the traffic counts from City of Mississauga, which was conducted during 2007 to 2008. MRC used that counts for the existing traffic analysis presented in Figure 1.

Figure 1: Existing Traffic Volume – MRC (Based on 2007-08 Turning Movement Counts):



- b. **EMME2 Model Traffic Projection for Existing Year (2006):** The assignment results from the City of Mississauga’s EMME 2 model for year 2006 presents the existing traffic volume at City Centre in Figure 2.

Figure 2: Existing Traffic Volume – City (2006 EMME 2 model):



Key Findings:

- The network configuration (# of lanes) was similar between MRC traffic operational analysis and City EMME2 model.
- The total approach volumes used by the MRC are higher for the existing year. Furthermore, the traffic on Rathburn Road used for BRT operational analysis was much higher than EMME2 model assignment (1,062 compared to 535 assigned by 2006 EMME 2 model).

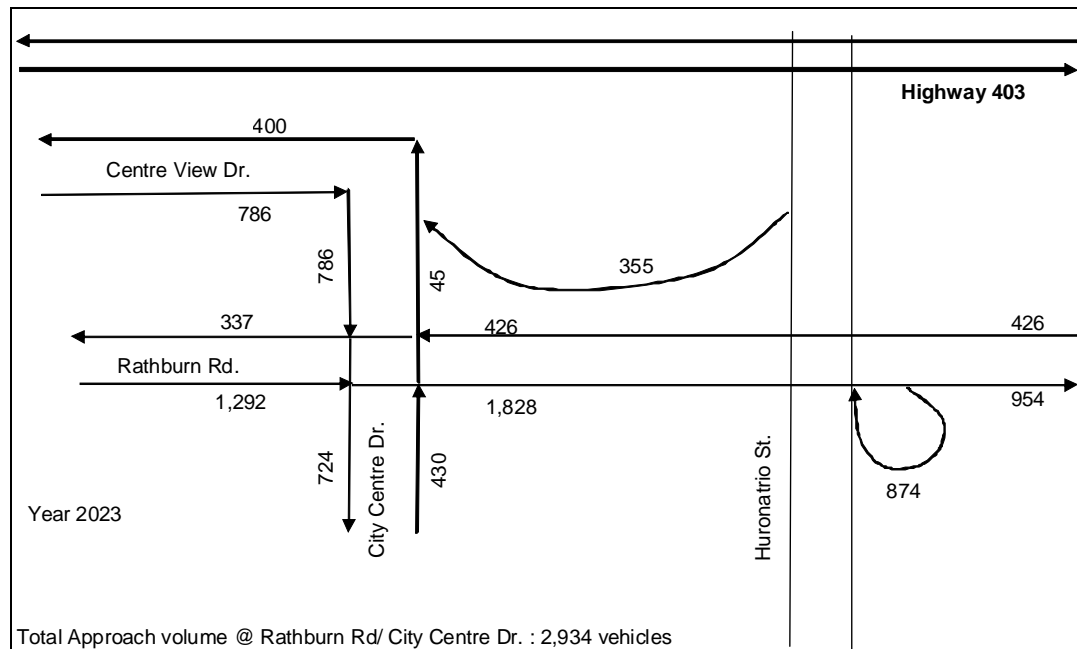
2. Future Traffic Projection:

a. **MRC Projected Traffic Volume for BRT Network:** To assess the impact of BRT network, the existing traffic at the City Centre was redistributed considering BRT proposed design. For the BRT operations following network modifications were considered:

- The 4-lanes on Rathburn Road (2 lanes on each direction) approach at Rathburn Road / City Centre Drive intersection was reduced to 2 lanes for auto.
- Ramp from the Hurontario Street to Rathburn Road was proposed to divert at Centre View Drive, with only right turn allowed at Centre View Drive.

The future traffic volume was projected using 30 percent growth (2 percent for next 15 years). The future projected traffic volume used for the traffic operational analysis by MRC was presented in Figure 3.

Figure 3: Future Traffic Volume– MRC (Projected for year 2023):



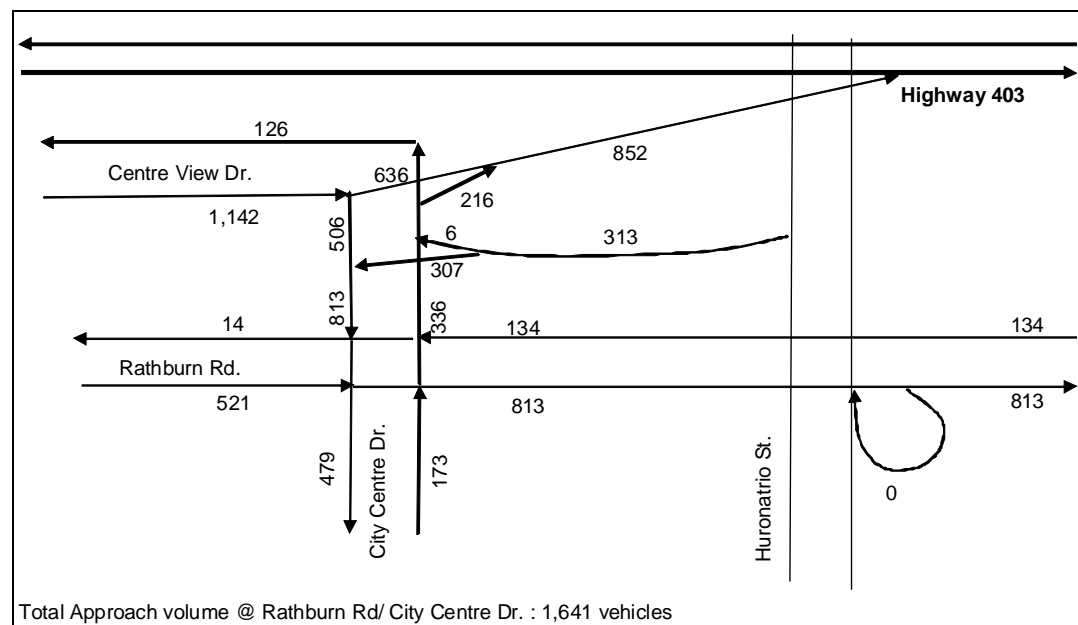
b. **2031 EMME2 Model Traffic Projection:** The assignment results and proposed network configuration and from the City of Mississauga EMME 2 model for year 2031 is presented in Figure 4.

As seen in Figure 4, the EMME2 model presents following network modifications from existing network:

- The 4-lanes on Rathburn Road (2 lanes on each direction) approach at Rathburn Road / City Centre Drive intersection was reduced to 2 lanes.

- The off-ramp from Hurontario Street to Rathburn Road was proposed to divert at Centre View Drive, with full intersection at Centre View Drive. This was assumed to have only right turn in BRT operational analysis.
- The new on-ramp from Centre View Drive to Highway 403 was proposed with full intersection at Centre View Drive. The proposed BRT design does not consider this facility.
- The numbers of lanes for the other roads were assumed similar between MRC future BRT network and City's 2031 EMME2 network.

Figure 4: Future Traffic Volume – City (2031 EMME 2 model):

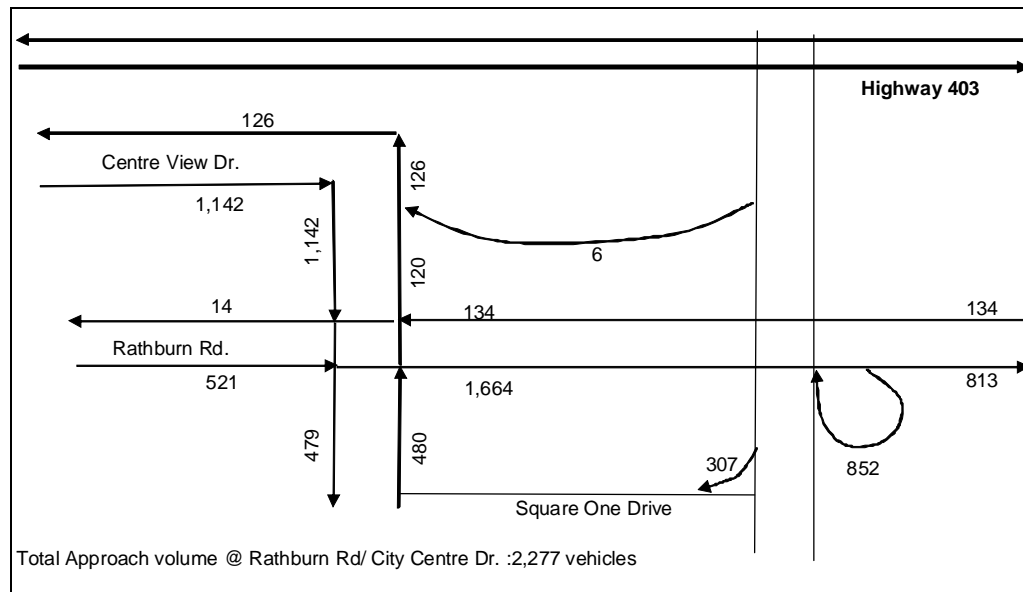


c. **Modified 2031 EMME2 Traffic Volume:** As EMME2 model assume different network configuration, the MRC projected traffic volume for BRT operational analysis and 2031 EMME2 model is not comparable. Therefore, the 2031 EMME2 model assigned traffic volume was required to redistribute. The following assumptions were made for traffic redistribution:

- In the absence of the on-ramp to Highway 403, the traffic reaching to Highway 403 from Centre View Drive will travel via Rathburn Road using on-ramp loop at Rathburn Road and Hurontario Street.
- Traffic on off-ramp from Hurontario Street to Centre View Drive will not allowed for turning left, therefore that traffic will reach Rathburn Road / Centre View Drive intersection using the Square One Drive as shown in Figure 5.

The 2031 EMME2 modified traffic volume with similar BRT network configuration is presented in Figure 5.

Figure 5: 2031 EMME2 Modified Traffic Volume:



Key Findings:

- Comparison between MRC Future Traffic projection for year 2023 (Figure 3) and EMME2 modified traffic projection (Figure 5) presents that the overall approach volume at Rathburn Road/Centre View Dr. intersection is high in MRC traffic projections.
- The EMME2 model has projected higher volume on Centre View Drive, as that traffic was leading to Highway 403 via on-ramp from Centre View Drive. In the absence of this facility, the traffic may travel on Rathburn Road which almost sums up to about 1,300 vehicles in both traffic projections.
- In summary, the traffic volumes projected by MRC are within the same range of EMME2 model projection.

Details from EMME 2 Model