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16 January 2018
Project: 170127

Pasquale Costanzo C.E.T
Technical Services Supervisor
County of Wellington
74 Woolwich Street
Guelph ON N1H 3T9

Dear Mr. Costanzo:

**RE: GRANWOOD SUBDIVISION
TIS FOLLOW-UP RESPONSES**

In July 2017, Paradigm Transportation Solutions Limited (Paradigm) prepared a Transportation Impact Study¹(TIS). Since submission of the study, County of Wellington requested Triton Engineering (Triton) peer review the report. The following summarizes our responses/clarification to the 30 November 2017 Triton memorandum. The Triton comments are included for clarity.

2.2.1 Traffic Data

Victoria Street was closed for construction when the traffic counts were taken, and traffic volumes at this intersection were estimated. This was acknowledged in the pre-consultation. While it does not significantly affect the results it does result in a data gap.

We note that Victoria Street south of York Street provides an alternate access to the Tim Horton's on CR 7, and could be contributing to existing traffic volumes, particularly in the am peak.

As the County's representative, Triton was consulted on behalf Edgehill Properties Limited prior to undertaking the study. It was agreed that traffic on York Street at Victoria could be derived from the count at York Street and Wellington Road 7 and volumes along Victoria Street be estimated. It is acknowledged that a data gap exists and further agreed that this does not significantly affect the results. No further action is required.

¹ 170127 – Granwood Subdivision - Elora, Transportation Impact Study, prepared for Edgehill Properties Limited, July 2017.

4.1.2 Background Development

York Street is planned to be connected through the proposed development, and extended to the east to Gilkison Street through the proposed Haylock/Youngblood residential development. Paradigm have used the Traffic Impact Study for that development prepared in 2015 (then referred to as Acorn Developments). That study did not include a connection of York Street between Haylock and Youngblood. That study is being updated (by Paradigm) as part of the current application and OMB hearing. As the results of the updated TIS may change traffic projected to York Street, the Granwood TIS should be revised once the updated Haylock/Youngblood TIS is available.

The Granwood TIS should also show specifically how the traffic from Haylock/Youngblood is added to the background traffic data.

Three diversion scenarios for the affected movements were analyzed in the Granwood TIS (10/90, 50/50 and 90/10) as a sensitivity analysis that included diverted traffic from the Haylock and Youngblood Subdivision, as well as existing neighbourhoods. Diverted traffic projections for the three diversion scenarios are provided in Appendix A.

Paradigm has recently completed a draft of the updated projections for the Haylock and Youngblood TIS as part of the current application (OMB hearing) that considers diverted traffic through the Granwood Subdivision. The diverted traffic within the updated Haylock and Youngblood TIS is noted to be similar to the projections modeled under the 50/50 scenario already contained within the Granwood TIS.

Based on updated projections in the Haylock and Youngblood TIS, the conclusions and recommendations provided in the Granwood TIS prepared by our firm in July 2017 remain valid and relevant.

4.1.3 Growth Summary

The study does not appear to have taken into account the residential expansion currently under construction in the area of Murray Drive and Cutting Drive, which would use York Street.

Figures 4.1 and 4.2 do not include a re-assignment of traffic from the existing residential areas east of the subject site, that would now use a completed York Street as a more convenient route (although this was later considered as a sensitivity analysis for traffic re-distribution).

As the County's representative, Triton was consulted on behalf of Edgehill Properties Limited prior to undertaking the study. It was agreed that general background growth for the study would be 2.4% per annum, consistent with Population and Employment Growth Forecasts derived from the **Wellington County's 2013 Official Plan**. Additionally, traffic growth from nearby developments would be based on projections developed in the South River Road Residential Development TIS, prepared by our firm in 2015.

Three diversion scenarios for the affected movements were analyzed in the Granwood TIS (10/90, 50/50 and 90/10) as a sensitivity analysis that included diverted traffic from existing neighborhoods and planned developments.



4.3 Trip Distribution

Table 4.3 seems a reasonable assumption, although the total distribution of 52% to the north may be high in terms of commuting distribution, and the 9% to the west on WR 21 (to Kitchener/Waterloo) may be low.

The 2011 Transportation Tomorrow Survey (TTS) provides origin-destination travel demand data for the Elora-Salem and Fergus community. The TTS data indicates that travel to/from Waterloo Region is 11% of the observed total demand while travel within the County of Wellington (Elora-Salem and Fergus) is observed to be 51%. The distribution used in the study is based on these objective, observed commuting trends.

5.3 Traffic Diversion

This analysis was done to consider traffic diversion from other routes once the York Street connection is made. The diversion locations are not clearly documented, but appear to be taken from McNabb Street.

A Figure should be provided that shows the total future traffic on the road system including the assumptions for diversion. This would clearly show the expected future traffic on the various roads, particularly York Street.

The construction of the York Street extension is anticipated to alter traffic patterns at several locations. The Granwood TIS depicted the affected movements as illustrated in Figure 5.1 of the report. To provide further clarity, diverted traffic projections for the three diversion scenarios is illustrated in Appendix A (attached).

6.1 Left Turn Lane Warrants

The report identifies that a southbound left turn lane is warranted in 2025, based on the MTO Geometric Design Standards nomographs. The nomograph was incorrectly applied for the PM Peak (should have used the 5% table), but the conclusions are similar.

Acknowledged.

6.3 Fair Share Contribution

The report calculates the cost of a 30-metre left turn lane on WR 7 at York Street at \$62,400. Back up calculations were not provided, but in our opinion, this is underestimated.

The report calculates the development share at 10.1%. Back up calculations were not provided, but the proposed development and extension of York Street are generating the need for the left turn lane, so the share should be higher.



The fair share contribution values contained were prepared according to the MTO Parametric Estimating Guide². A storage length of 30 metres and deceleration lane of 130 metres, totalling 160 metres has been assumed for the southbound left-turn lane. Using the provincial cost of \$390,000 per lane-kilometre, it would cost approximately \$62,400 to construct the left-turn lane. Given the limited availability of as-built drawings and the limited design criteria, the costs of the proposed **improvements have been developed using preliminary estimates and are to be considered “order of magnitude”**. It is not intended to replace a detailed cost estimate that would arise from a functional engineering design.

The fair share contribution is calculated by comparing the relative amount of traffic increase between the Development Traffic and the Total Traffic conditions. This represents the **project’s fair share** contribution to future traffic demands. Overall, 149 vehicles during the weekday peak hours are forecasts to make a southbound left-turn movement at the intersection of Wellington Road 7 and York Street with the York Street extension completed. Of these 149 vehicles, 15 vehicles (3 vehicles during the weekday AM peak hour and 12 vehicles during the weekday PM Peak hour) are noted to be generated by the proposed Granwood Subdivision. Therefore, Granwood traffic contributes to 10.1% of the overall volume and is responsible for 10.1% of the total cost. The peer reviewer indicates that **the share “should be higher” yet does not offer any supporting analysis, or objective data to support that position.**

The roadway extension is consistent with the County of Wellington Official Plan and ultimate servicing plan as illustrated in Appendix B. The connection will provide an efficient road network that will accommodate anticipated traffic volumes at a reasonable level of service while balancing the needs of all road users and vehicles. The peer review recognizes this on page 2 of their memorandum.

We respectfully disagree with the comment identifying that development is generating the need for the left-turn lane. It is important to note that a left-turn lane warrant for the 2025 Background scenario was provided in the July 2017 TIS. The Background scenario does not include any development traffic from the Granwood Subdivision and assumes the York Street extension is not constructed. Therefore, the forecast Background conditions represents existing traffic factored by general growth projected for the area, independent of the Granwood Subdivision. The warrant criteria under the 2025 Background scenario identifies a 25-metre southbound left-turn lane is warranted.

This provides further support that the Granwood Subdivision and the proposed York Street extension are minor contributing factors to the need for the left-turn lane, rather than the sole responsible party. It remains our opinion that evaluating the fair share contribution based on the volume of traffic contributing to the critical movement is a fair and equitable method of assigning responsibility.

² Parametric Estimating Guide, MTO, 2011



Additional Comments

York Street is designated a Collector Road in the Official Plan, and completing this connection will aid overall traffic movements in this area. There are a number of grid street connections meaning that traffic will tend to balance without an undue concentration on a particular intersection. York Street will not require additional traffic controls and will operate satisfactorily under sidestreet stop conditions. If delays are encountered, exiting traffic will adjust to the adjacent signalized intersection at WR 21.

A Southbound left turn lane will be required on WR 7 at York Street, but construction does not need to be timed with the development. The possible development of the commercial property on the west side of WR 7 may trigger more substantial improvements, such as a NB left turn lane and traffic signals. That would be the appropriate time to carry out intersection improvements.

The developer should be required to make a contribution towards the future construction of the left turn lane. Determining the amount is complicated by them being the "last ones in" for the connection of York Street from Bridge Street to WR 7. The connection of York Street through Haylock/Youngblood will also contribute some traffic. The revised TIS for that development has not been submitted yet.

We agree that the York Street extension is consistent with the Official Plan and is designated as a Collector. We further agree that implementation of the southbound left-turn lane along Wellington Road 7 and York Street does not need to coincide with build-out of the Granwood Subdivision.

We acknowledge, as summarized in this letter as well as the July 2017 TIS, that the applicant make a financial contribution towards the future construction of the southbound left-turn lane along Wellington Road 7 and York Street. It is our opinion that an equitable method of determining the "fair share" contribution is based on the volume of traffic contributing to the critical movement. This results in the applicant contributing no more than 10.1% towards such improvement.

We trust that this provides sufficient information to address the outstanding comments.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED



Jim Mallett
M.A.Sc., P.Eng., PTOE
President

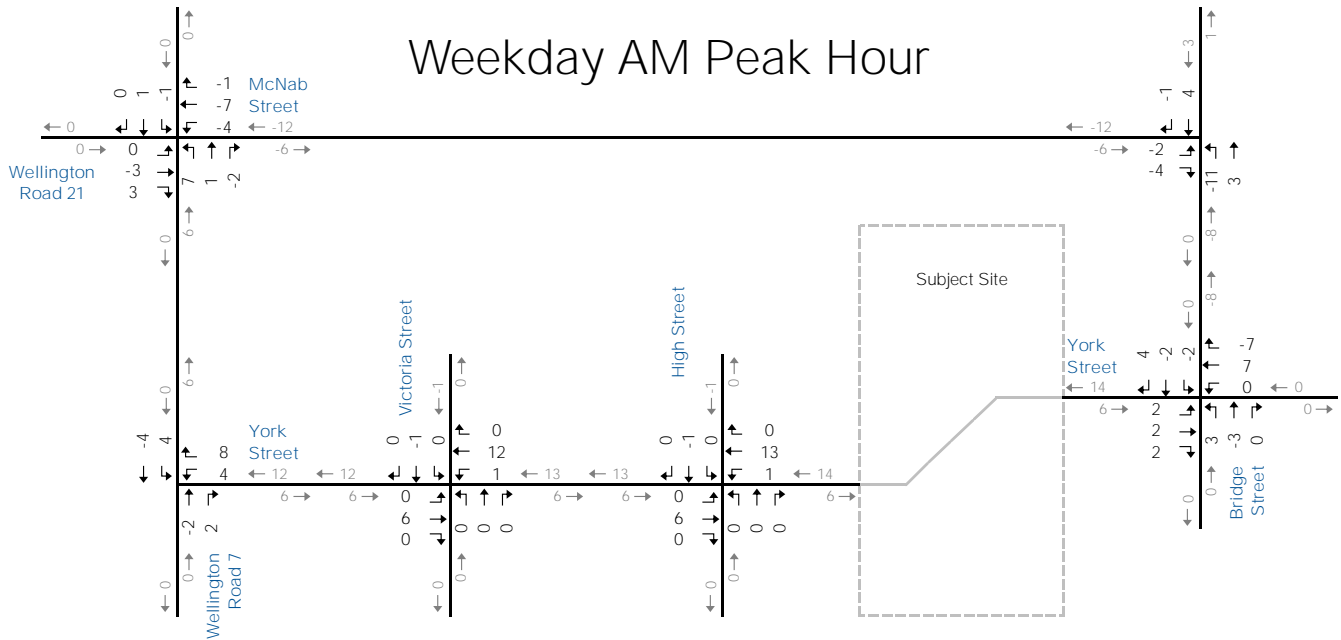


APPENDIX A
PROJECTED DIVERTED TRAFFIC

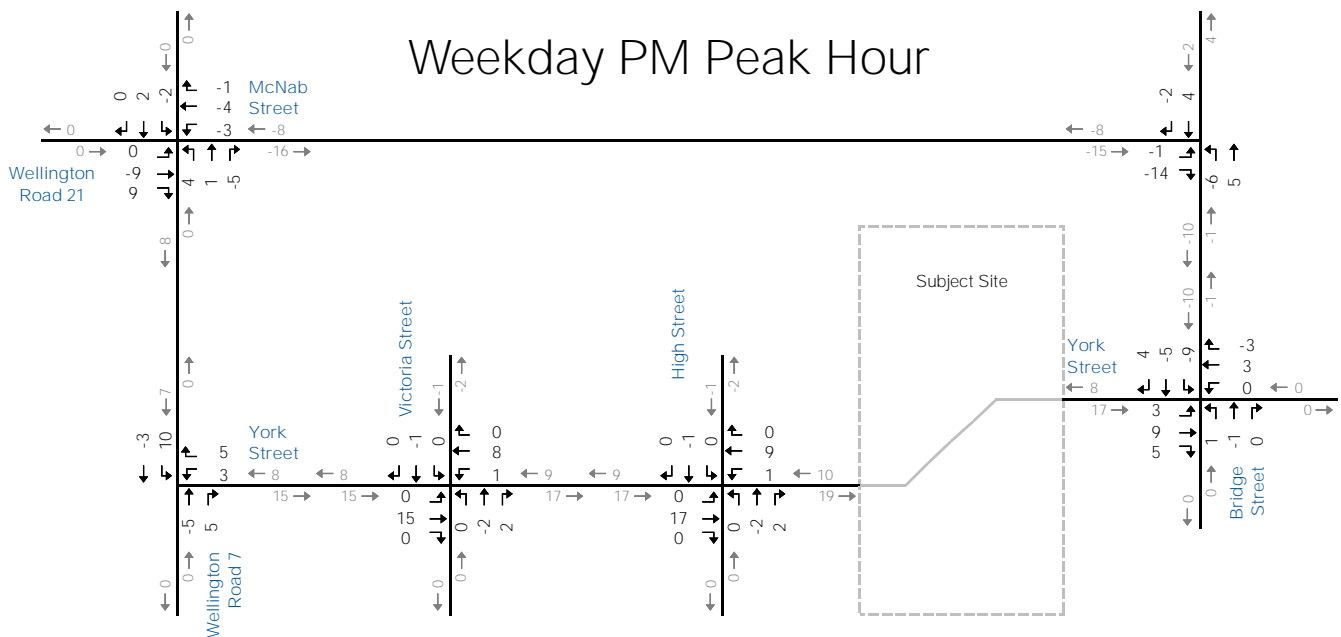




Weekday AM Peak Hour



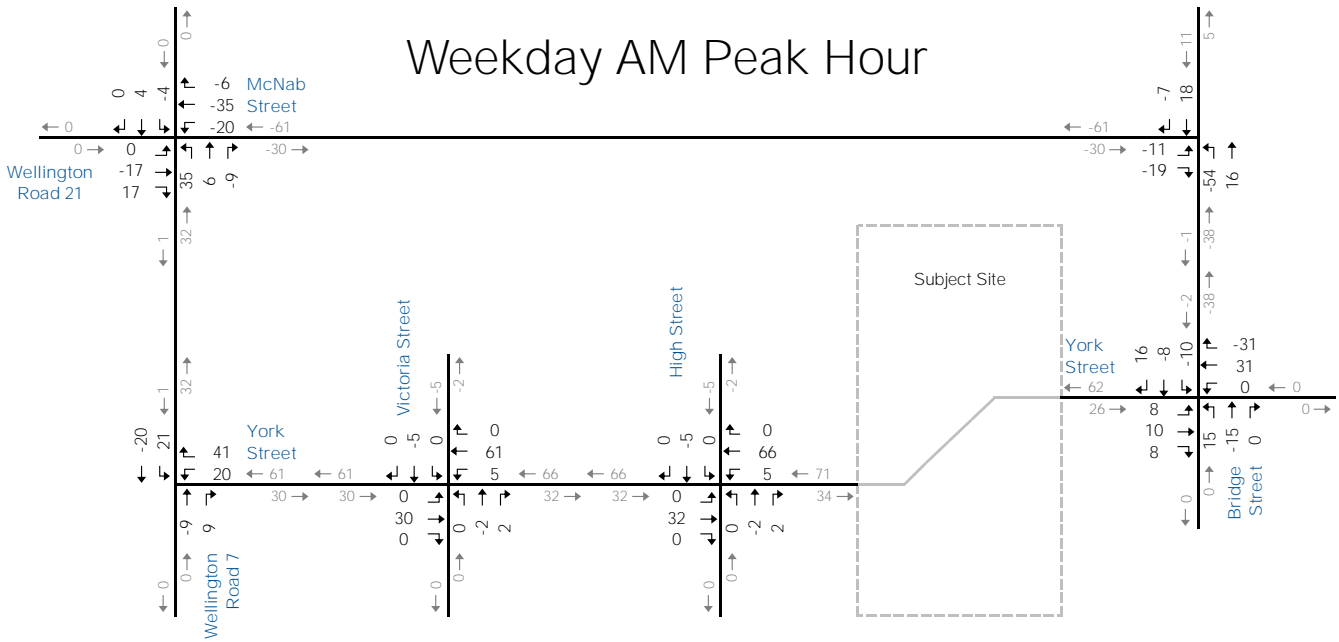
Weekday PM Peak Hour



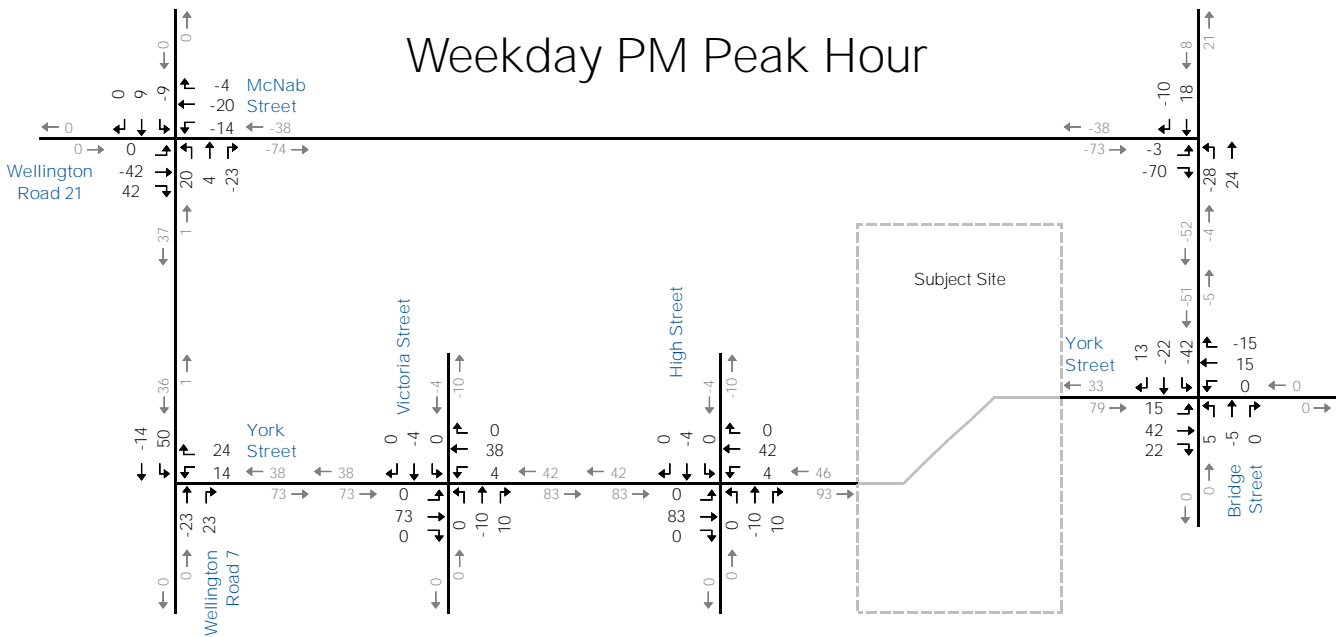
Diverted Traffic 10/90



Weekday AM Peak Hour



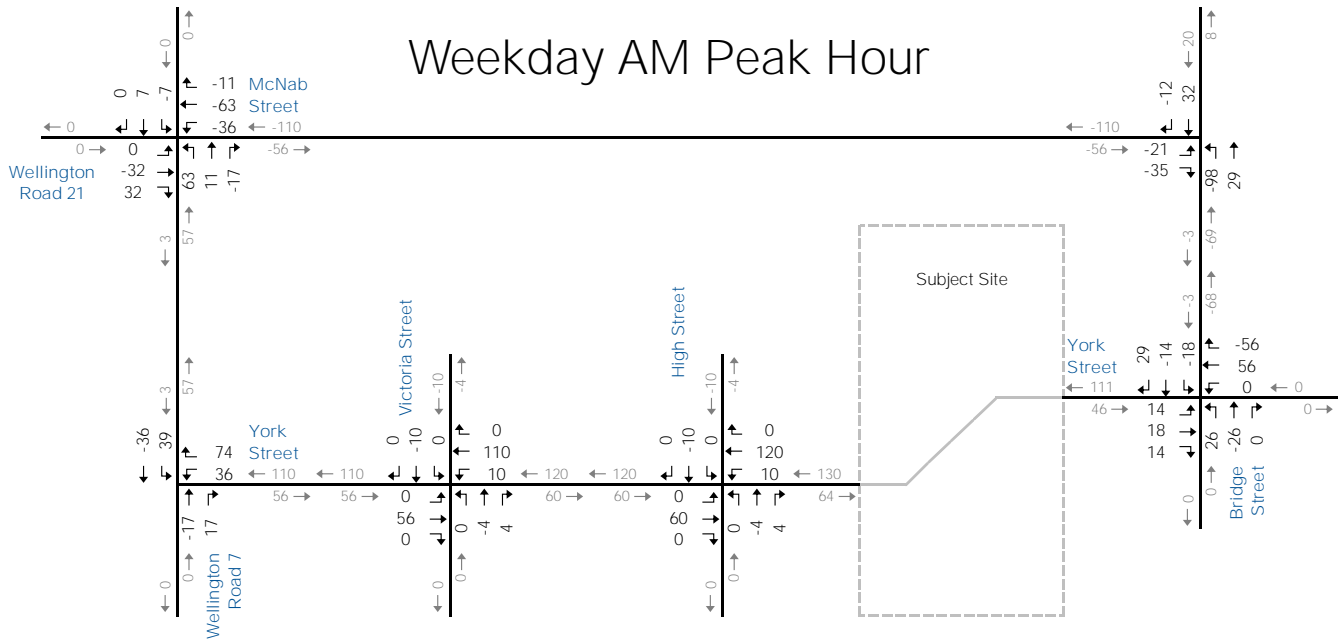
Weekday PM Peak Hour



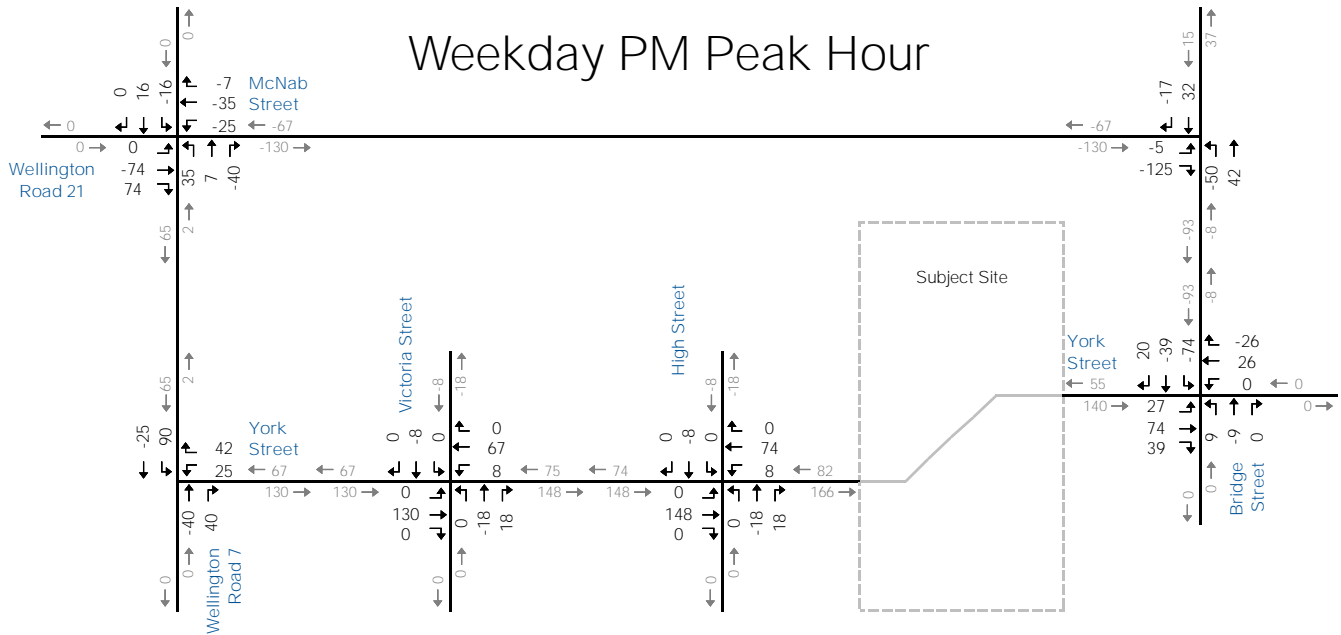
Diverted Traffic 50/50



Weekday AM Peak Hour



Weekday PM Peak Hour



Diverted Traffic 90/10

APPENDIX B
COUNTY OF WELLINGTON OFFICIAL PLAN – SCHEDULE B



**MUNICIPAL SERVICING PLAN
FERGUS - ELORA - SALEM
TOWNSHIP OF CENTRE WELLINGTON
SCHEDULE B**

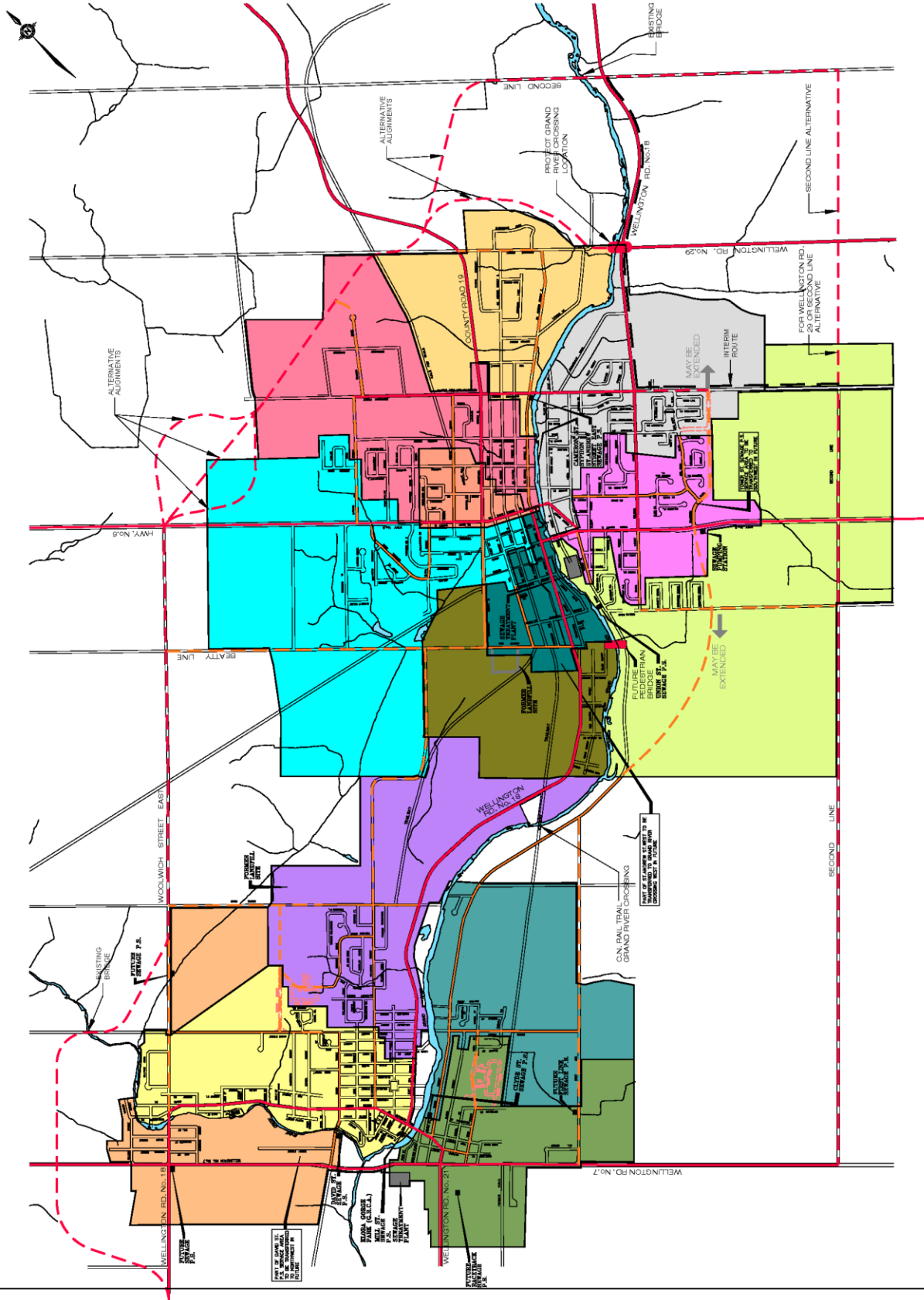
**LEGEND:
ELORA/SALEM MUNICIPAL
SERVICE AREAS**

- NORTHEAST
- NORTHWEST
- SOUTHEAST
- SOUTHWEST
- NORTH CENTRAL

**FERGUS MUNICIPAL
SERVICE AREAS**

- NORTHEAST
- NORTHWEST
- SOUTHEAST
- SOUTHWEST
- TOWER STREET
- ST. ANDREW ST. EAST
- ST. ANDREW ST. WEST
- ST. DAVID ST. NORTH
- GRAND RIVER CROSSING WEST

- FUTURE ROADS
- ARTERIAL ROAD
- FUTURE ARTERIAL ROAD
- COLLECTOR ROAD
- FUTURE COLLECTOR ROAD



JUNE 2004
SCALE



SOURCE DATA:
COUNTY OF WELLINGTON