ASURZA ENGINEERS

Memo

To: Arash Mirhoseini, M.Sc., P.Eng.

From: Martin Asurza, M.Eng., P. Eng.

Date: February 20, 2026

Ref: Response to Peer Review
Proposed Commercial and Residential Development, East of County Road 10
Proj. No: 2400-25

Our company has received comments from Stantec (October 27, 2025) regarding our Traffic Impact Study Report dated June 25, 2025, which was prepared for the proposed commercial and residential development adjacent to Fallis Line, east side of CR10 in Millbrook.

I provide the following answers to Stantec's comments:

Section 2.2 – The Subject Site (and Appendix A – Draft Site Plans)

Stantec Comment 1: The proposed five (5) direct access points to CR 10 appear excessive. We recommend reducing the number of access roads to CR 10 in accordance with County of Peterborough By-law 2012-26.

Our Response: The By-law 2012-26 indicates that sites with frontage greater than 15 metres are permitted two access points. Please note that the subject Commercial and Residential development consists of separate proposed sites combined in the same traffic analysis. With this context, there are two direct CR 10 access points for the site south of Highland Blvd, and two access points north of it, which is in accordance with the by-law. Highland Blvd itself is considered as a public road.

Additionally, within the Township letter (dated December 22, 2025) regarding comments on the SPA Application, staff have indicated that the number and location of access points to the development sites are subject to the ongoing Municipal Class Environmental Assessment (MCEA) for County Road 10. See the Township letter in Memo *Appendix A*.

Stantec Comment 2: Driveway D is proposed as a full-movement access. This configuration may negatively impact traffic operations and safety along CR 10. Since access from the north is available via Street D or Fallis Line, this access along CR 10 is not recommended.

Our Response: We ensured that the planned full-movement configuration at Driveway D was a closely-reviewed item within the traffic analysis. *Section 5.2 – Future Total Traffic Operations* includes a description of the results yielded by the Synchro SimTraffic simulation, which provides an example of how the configuration would actually perform in the real world. At the intersection of CR 10 & Municipal Access/Driveway D, levels of service are not expected to exceed LOS "D." The standard HCM calculation of delay that Synchro provides does not account for downstream signals adding significantly to the gaps in the traffic flow; therefore, no negative impact was determined.

Stantec Comment 3: Street I is labeled as a "Temporary Cul-de-sac." As residential units are planned for Phase 2, the purpose and final layout of this cul-de-sac are unclear. Please clarify whether it will remain a dead end or connect to the existing commercial area to the west.

Our Response: The intent is to allow for future road connectivity to the property immediately west of the proposed cul-de-sac. As per the latest Cavan-Monaghan Growth Management Strategy (GMS), that property is planned to include residential development. However, the future time at which the road is extended westward and lots are developed remains unknown.

Stantec Comment 4: Additional information is required regarding the entrances and exits for the fast-food drive-through and gas station. Given the expectation of regular fuel deliveries and commercial traffic, swept path analysis drawings should be provided at the site plan review stage.

Our Response: The required vehicle movement diagrams will be included in the Architectural Site Plan set.

Stantec Comment 5: Proposed Street A is extended through Blocks 192/193, which are marked as Natural Heritage and appear to be wetlands/green space. Please provide further information on any impact studies conducted for this area.

Our Response: The letters regarding EIS, Slope Stability Assessment, FSR, and Fluvial Geomorphology will all be included in the re-submission.

Section 2.4 – Traffic Data

Stantec Comments 6: The TIS states that traffic counts were performed at four intersections in 2025. However, Exhibits 5, 6, and 7 include turning volumes for the intersection of CR 10 and Centennial Line/School Entrance. Please document the data source for this intersection.

Our Response: Please refer to the TIS *Appendix B – Traffic Data and Volume Projections*, which includes the November 23, 2023 turning movement count for CR 10 & Centennial Ln/School Entrance. Note that CR 10 & Centennial Ln/School Entrance was only mentioned because its traffic data was needed to include for the southern link to the Vargas Residential development. This intersection is not to be listed as one of the study area intersections, please see Memo *Appendix B* for the correction made to Page 12 of the TIS.

Stantec Comment 7: Exhibit 4 shows the intersection of CR 10 and Centennial Line/School Entrance as a T-intersection. Please revise this exhibit to reflect its status as a four-way intersection.

Our Response: Please see Memo *Appendix C*, which includes a revision of Exhibit 4.

Section 2.5 – Existing Traffic Operations

Stantec Comment 8: Table 2 (and subsequent operational analysis tables) includes results for the intersection of CR 10 and Municipal Access, which is not mentioned in previous sections. Please provide the source of traffic data and lane configuration assumptions for this intersection in Section 2.4.

Our Response: This intersection is now referenced in Memo *Appendix B*. Additionally, please refer to the TIS *Appendix B – Traffic Data and Volume Projections*, which includes the May 27, 2025 counts for entering and exiting movements at CR 10 & Municipal Access. The through traffic volumes at the intersection were derived from the volume balancing method, based on the downstream flows at CR 10 & Fallis Ln. Also, please refer to TIS *Appendix A – Draft Site Plans* for the source of the lane configuration.

Stantec Comment 9: Table 2 omits results for the intersection of CR 10 and Centennial Line/School Entrance, which is listed as a study area intersection in Section 2.1. Please add this intersection to the table.

Our Response: Please see the response to comment 6.

Section 3.1 – Background Traffic Volumes

Stantec Comment 10: The TIS considers three future horizon years: Phase 1 completion (2027), full build-out (2030), and full build-out +5 years (2035). However, Figure 2

(Exhibit 2 of the TIS) indicates that major adjacent developments will be completed by 2036, which are not fully considered in the impact assessment. Specifically:

- Development C: 100% complete in 2036 (only 20% included in 2035 horizon)
- Development D: 100% complete in 2036 (only 50% included in 2035 horizon)
- Development E: 50% complete in 2036 (only 20% included in 2035 horizon)

We recommend including an additional scenario for full build-out +10 years (2040) to ensure the future needs of the transportation network are fully assessed.

Our Response: As a formal practice, traffic impact studies are not intended for application in long-term horizons. Projecting the impacts of development completion at that timeframe is useful for transportation planning, a domain which includes checks and balances guiding the appropriate scope and application of uncertain development timeframes. Specifically, in the publication *Transportation Impact Analyses for Site Development*, ITE states that, "detailed analyses (such as turning movements) should not be required for horizon dates beyond 10 year in the future. There are far too many variables that can change over time and preclude the development of accurate traffic forecasts."

Stantec Comment 11: Future background volumes for the intersection of CR 10 & Municipal Access are not shown in Exhibits 8 to 16.

Our Response: Please see Memo *Appendix C*, which includes the traffic volumes for CR 10 & Municipal Access depicted in the Exhibits.

Section 3.2 – Background Traffic Operations

Stantec Comment 12: At the intersection of CR 10 and Larmer Line, provision of eastbound and westbound left-turn lanes is recommended for the signalized intersection.

Our Response: The operational tables in *Section 3.2* indicate that the EB & WB movements at CR 10 & Larmer Line are expected to maintain acceptable operations under the proposed background configuration.

Stantec Comment 13: Operational analysis results for the intersection of CR 10 and Centennial Line/School Entrance are missing from Tables 4 to 6. Please include these results.

Our Response: Please see the response to comment 6.

Stantec Comment 14: The intersection of CR 10 & Larmer Line is reported as signalized in 2035, but is labeled as stop-controlled in Table 6. Please ensure consistency. to 16.

Our Response: This was corrected in the revised operational tables provided in Memo *Appendix D*.

Section 4.1 – Traffic Impact Study Methodology

Stantec Comment 15: The report references the Durham Region TIS Guidelines. Please clarify why these guidelines were used instead of the County of Peterborough Traffic Impact Assessment Guidelines.

Our Response: It should read "*… as well as the Traffic Impact Assessment Guidelines published by the County of Peterborough,…*" see Memo *Appendix E*.

Section 4.2 – Site Trip Generation

Stantec Comment 16: Phase 1 includes 20,888 Sqft of Quick Service Restaurant with Drive Through. The ITE trip generation land use code for Phase 1 should be revised to use ITE land use code 934 for fast food restaurant with drive through.

Our Response: We prefer not to manipulate the trip generation estimation as suggested. This would be necessary to implement only if the trip generation for shopping plazas did not encompass any amount of restaurants reflected in its trip rates/equations. However, the ITE study data for LUC 821 – Shopping Plaza (40k-150k) does state that restaurants (any type) were present among the variety of tenants found within the study sites, please refer to the study site descriptions in *Section 4.2*. As such, utilizing the LUC 934 for the proposed QSRs would amount to a "double counting" of those trips, deviating from a more representative traffic projection.

Stantec Comment 17: ITE LUC 960 reported for super convenience market/gas station. We were not able to find LUS 960 in ITE Trip Generation Manual and noted that ITE LUC 945 shall be used. The rates used in the TIS are also different from LUC 945 and should be revised.

Our Response: The data for LUC 960 is statistically sourced from the Trip Generation Manual, 10th Ed. In the context of the subject traffic analysis, we selected the use of Super Convenience Market/Gas Station; based on the study site descriptions provided by ITE, it provides a proper representation of the balance of convenience amenities to gas pumps than those found in the 11th Ed. for similar land uses.

Additionally, the data for LUC 960 represents a more conservative estimate of trips generated compared to LUC 945. The convenience market (2,500 sqft. GFA) shares its building with a quick service restaurant, thus the GFA 2-4k subcategory would be chosen for LUC 945. The difference in trip ends vs. vehicle fueling positions is as follows:

- AM Peak Hour: 28.08 (LUC 960) compared to 16.06 (LUC 945 – GFA 2-4k)
- PM Peak Hour: 22.96 (LUC 960) compared to 18.42 (LUC 945 – GFA 2-4k)
- SAT Peak Hour: 23.26 (LUC 960) compared to 17.01 (LUC 945 – GFA 2-4k)

For the excerpts depicting the trip rates for LUC 960 from the ITE Trip Generation Manual 10th Ed, see Memo *Appendix F*.

Stantec Comment 18: The TIS mentions that "Pass-by trips are another phenomenon, made as intermediate stops from an origin to a primary trip destination. These trips already exist on the link passing the site but are temporarily attracted by the new development."

The Pass-by trip impacts are not further included in the TIS. A pass-by trip is expected to be rerouted and impact the intersection capacity as a turning movement. As an example, a through movement pass-by trip will be converted to a turning inbound movement at an access intersection and if it's a short stay trip (like a pass-by trips to a coffee shop, fast food restaurant, or gas station), they will also be added as a turning outbound movement to the intersection. As there are hundreds of pass-by trips expected for this development, their impacts has to be accounted for in the study.

Our Response: The traffic analysis for the subject development does account for pass-by trips, as well as internal trips. Please refer to TIS Exhibits 7, 8, & 9, which include the tabulated calculation of the reductions applied due to these phenomena. Also, please refer to TIS *Appendix H – Trip Generation* for the calculations using ITE OTISS applied to each scenario, as well as TIS *Appendix I – Trip Distribution* for the exhibits depicting the interaction of the pass-by trips and internal trips with the road network.

Stantec Comment 19: Trip generation calculations and TIS analysis should be updated based on the above corrections.

Our Response: Please see the responses to Comments 16, 17, & 18.

Section 4.3 – Trip Distribution/Trip Assignment

Stantec Comment 20: Please provide exhibits showing pass-by trips at the study area intersections.

Our Response: Please refer to TIS *Appendix I – Trip Distribution* for the exhibits depicting the interaction of the pass-by trips and internal trips with the road network.

Section 5.1 – Future Total Traffic Volumes

Stantec Comment 21: Update future total traffic volumes based on revised trip generation and include pass-by trip impacts.

Our Response: Please see the responses to Comments 16, 17, & 18.

Section 5.2 – Future Total Traffic Operations

Stantec Comment 22: There is a discrepancy between Section 5.2 and Section 3.2 regarding the horizon year for signalization of the intersection of CR 10 & Larmer Line (2030 vs. 2035). Please clarify and ensure consistency in the report and result tables.

Our Response: For clarification, the background traffic signal warrant for CR 10 & Larmer Ln (*Section 3*.2) showed that signalization "might be" warranted for 2030, which reaches "undoubtedly" by 2035. However, the total traffic signal warrant (*Section 5.2*) result had reached "undoubtedly" already by 2030. The differences in the configurations proposed for the background traffic and total traffic projects are reflective of the trips included in each scenario. Also, please refer to TIS *Appendix Q* for the signal warrant results.

Stantec Comment 23: Operational analysis results for the intersection of CR 10 and Centennial Line/School Entrance are missing from Tables 10 to 12. Please include these results.

Our Response: Please see the response to comment 6.

Stantec Comment 24: Please provide a signal warrant analysis based on Justification 7 for future development.

Our Response: The future horizon years included in the traffic analysis are already based on Signal Justification 7 – Projected Volumes.

Stantec Comment 25: Include a table summarizing final proposed layouts, mitigation measures, and their implementation timelines. Recommendations such as the staged extension of the southbound left-turn lane at CR 10 & CR 21 (King Street) should be consolidated for practicality.

Our Response: We agree that a tabulated summary of the proposed elements would be helpful. Please refer to Memo *Appendix G* for an organized view of the recommendations.

Stantec Comment 26: The TIS recommends traffic monitoring at the intersection of CR 10 & Centennial Lane, but no operational analysis results are provided. Please address this gap.

Our Response: Please see the response to comment 6.

Section 6 – Conclusions/Recommendations

Stantec Comment 27: There are discrepancies between recommended mitigations in this section and Section 5.2 (e.g., timing of signalization at CR 10 & Larmer Line, and left-turn lane extensions). Please ensure consistency throughout the report.

Our Response: Please see the response to Comment 22. The different volumes included in the background traffic and future traffic projections results in earlier necessity for some recommendations; This part of *Section 6 – Conclusions/Recommendations* simply reiterates the proposed configurations for both scenarios within the same section.

General Comments

Stantec Comment 28: Include an exhibit in Section 5 illustrating the final lane configurations used in the study and recommended for site access and study intersections.

Our Response: Please refer to TIS *Appendix N – Proposed Intersection and Entrance Configurations* to see the provided illustrations.

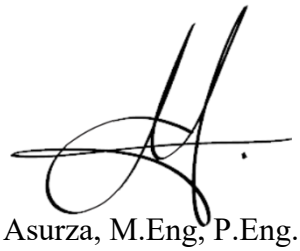
Stantec Comment 29: Provide left-turn and right-turn warrant analyses for all access drives. Appendix R only includes left-turn warrant analysis at CR 10 and Larmer Line for NBL and SBL movements.

Our Response: The left-turn warrant analyses for the higher-volume full-movement accesses are provided in Memo *Appendix H*. While it is not warranted, a left-turn lane at Fallis Ln & Dwy F is proposed due to the opportunity for optimal separation of movements. The application of auxiliary lanes regardless of the warrant is permitted and is a common practice for many developments of these types.

In terms of right-turn warrants, a few site access movements show more than 60 right-turns per hour. Of these, the only movement projected to impact the road network operations was the northbound-right at CR 10 & Dwy E. As such, it is the only access drive which passes the warrant for a right-turn lane.

The study elements requiring attention have been included within the appendices of this Memo. The proposed final geometry and signalizations still remain the same.

Respectfully,



Martin Asurza, M.Eng, P.Eng.
Senior Transportation/Traffic Engineer
martin@asurza.ca

Appendix A

Township Comments Letter Regarding

SPA Application (December 22, 2025)

TOWNSHIP OF
CAVAN MONAGHAN
Have it all. Right here.

Via Email Only: mtestaguzza@thebiglierigroup.com

December 22, 2025

The Biglieri Group
2472 Kingston Road
Toronto, ON M1N 1V3

Attention: Michael Testaguzza

Re: Vargas P INC.
Site Plan Approval Application (SPA-02-25)
963 County Road 10
Part of Lot 13, Concession 6 (Cavan)
Township of Cavan Monaghan

Dear Mr. Testaguzza:

Township Planning Staff deemed Application SPA-02-25 complete and circulated it for review and comment to internal staff, external agencies and First Nation partners on September 8, 2025. A summary of the received comments is included below for your review.

The subject property is partially located on lands subject to a Minister's Zoning Order (MZO) through O. Reg 250/22. The property is also subject to concurrent Applications to amend the Official Plan (OPA) and Township Zoning By-law (ZBA) and Plan of Subdivision. The OPA/ZBA Applications are required to be approved to permit the proposed site plan.

Hiawatha and Curve Lake First Nation
Comments have not been received from First Nation partners.

Otonabee Conservation (ORCA)
ORCA Staff have provided comments related to the water balance, the stormwater management plan, wetland compensation and the grading plan.

988 County Rd 10
Millbrook, Ontario L0A 1G0

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Phone: 705-932-9319
Fax: 705-932-3458

Please review the Technical Services memo from ORCA Staff attached as Attachment No. 1 to this memo.

County of Peterborough Engineering and Construction Department
The number and location of entrances directly accessing CR 10 will need to be discussed and finalized. The ongoing County Road 10 municipal class environmental assessment (MCEA) and any subsequent Stantec peer review will provide further information for these discussions.

The amount of the road widening along County Road 10 will be confirmed through the MCEA process.

The setback to the County Road will need to be discussed and finalized.

Economic Development
The Township Economic Development is supportive of the Application.

Township Fire Department
Please provide a fire service drawing which clearly identifies the locations of fire routes to all buildings and indicate the locations of the fire department connections at buildings and internal hydrants. The drawing must include "Fire Hydrant Servicing Radius" illustrating the servicing area for each hydrant to be reviewed by the Township Fire Chief.

Road Pattern, Parking Lot and Sidewalks
The developer must construct the extension of Fallis Line in conjunction with the Township through the approved Provincial Grant Funding Project. A complete engineering design for the Fallis Line extension is required.

The roads to the north and east of the commercial site plan are key components to the operation of the commercial site and should be included within the boundary of the site plan. As the Site Plan Agreement is intended to be approved ahead of clearing Draft Plan Conditions, the area of Highlands Blvd (Street D), a portion of Street B and a portion of Street G (to access stormwater management pond) will need to be conveyed to the Township through Registered Plans and built to municipal standards.

Please provide detailed engineering drawings for Street D and Street B.

If required, the developer may enter into a pre-servicing agreement with the Township to facilitate the development of the noted Streets.

The developer must make a financial contribution towards the sidewalk, streetlighting, pedestrian signalization across County Road 10 and boulevard landscaping along the frontage of County Road 10 and Fallis Line.

Building F – the location of the current entrance must be reconfigured to a new location to provide access to this building. The current entrance location has created a six-leg

intersection which will cause significant conflicts with vehicular traffic entering/ exiting the site.

Please ensure that all sidewalk and walkway ramps and depressions are OPS complaint.

Township Staff are not supportive of Stantec Comment – Section 2.2 No.1 – regarding the comment of number of direct access points to CR 10. The County Road 10 MCEA Study is being conducted and has included this proposed plan in their study.
The location of the entrances off of County Road 10 are subject to the on-going municipal class environmental study (EA). The EA will determine the allowable access points to the commercial site.

Not all the buildings on the site plan are shown with garbage enclosures. Please provide comment regarding how the garbage at all buildings is being managed.

The pedestrian access to Buildings I and J require crossing through drive through stacking lanes. Please consider additional safety measures for pedestrians in these areas.

Please consider providing pedestrian walkway through the parking area throughout the site.

Parking
Building K does not have barrier free parking provided. Please include barrier free parking spaces and entrance for Building K.

Please ensure there are barrier-free paths with OPS compliant curb depressions to all building entrances.

The calculated number of parking spaces appears to have been completed for the entire site, rather than per building. Please confirm and recalculate the required number of parking spaces per building.

Please update the required number of Barrier Free Parking Spaces and Barrier-Free Aisles to comply with O. Reg 191/11. Please consider that all Barrier-Free Parking Spaces be Type A.

Functional Servicing Report (FSR) Comments
The proposed phasing plan includes the Commercial Block, Street B and Street D being constructed at one time. The stormwater management pond must be constructed in the ultimate location during Phase One.

To convey the drainage to the pond from Phase 1, the permanent storm piping, or temporary swales must be constructed. Please provide engineering details of the permanent storm piping and temporary swales for review.

The developer must install and connect piped sanitary services from the commercial site along Highlands Boulevard, under County Road 10, and connect to the existing municipal services in the Towerhill North Subdivision.

The developer must install and connect piped municipal water services from the future municipal water reservoir to the commercial site.

The size and siting of the proposed Stormwater Pond is deemed adequate for the development of the Commercial Site. A sizing review of the Stormwater Pond will be done as part of the detail design of the residential portion of the subdivision. Adjustments to the pond may be required.

External flows from the Community Centre drain onto the site. Please ensure that the storm sewer network makes a connection to the cross-culvert under County Road 10.

How will the SWM pond outlet be installed prior to the box culvert water-crossing being installed? The SWM Pond outlet is on the east side of Street A. Is the outlet pipe required to be constructed under Street A? Can it be redesigned to outlet into the creek to avoid being under Street A?

Please provide a detailed Stormwater Management Plan that includes full sediment control plan and location of all sediment and erosion control fencing.

Please include erosion and sediment controls for the temporary swale construction.

Miscellaneous

Please include an illumination plan. The plan should include a note that all of the lights on site are dark sky compliant.

Please provide architectural elevation drawings of the proposed buildings.

A landscaping plan has been submitted. Please include the species list with plant sizing for review.

The submitted EIS states that the development of the commercial site plan requires the removal of identified wetlands. The submitted compensation plan only includes the wetland areas associated with the headwater drainage features and does not include a wetland area associated with the box culvert and water crossing. The tributary of Baxter Creek is proposed to be retained. However, the extent of the realignment is not provided in the EIS. Rather, the EIS only includes the conceptual design and does not include culvert or channel realignment footprints. Please update the constraint drawings and wetland compensation calculations.

GHD provided a conceptual location to host the wetland compensation on the property to the south. Please add the additional area of wetland being removed and provide justification that the proposed host site is suitable. Please include a comment regarding construction schedules and how the site can be accessed with heavy machinery.

Please identify an area for snow storage.

Loading spaces The By-law requires 1 Loading space measuring 3.5m x 9m for every building with a gross floor area of 250m2- 5000m2. Neither the Draft By-law nor O.Reg 250/22 speaks to loading spaces in the proposed C-5-XX Zone.

There are 12 buildings proposed on the site plan ranging in gross floor area from 326m2 to 2375m2. Buildings C, D, H and K do not have loading spaces shown on the site plan. The other 8 building do have loading spaces shown on the site plan of the correct size. Please correct the loading space table on the Site Plan drawing (A1.0 R9) and amend the site plan drawing.

Location of Loading spaces
The By-law requires that the required loading spaces must: a) be provided on the same lot occupied by the building or structure for which the said loading spaces are required; b) must abut the building for which the loading space is provided; and, c) must not form a part of any street or lane.
The Loading Spaces for Buildings F, I, and J are not abutting the building without crossing into the driving lane.

Yards where Loading Spaces are permitted
The loading spaces are in compliance with the By-law with the exception of Building G. The loading space of Building G is between the main wall closest to the exterior lot line and the exterior lot line (12.1.5 c)) and therefore not in compliance with the Zoning By-law.

The Loading Spaces all have access by way of a driveway greater than the minimum 6 metre width other than the loading spaces outside Building G. Please review.

Parking required
The table provided on the Site Plan shows there are 629 Parking spots on the entire commercial site. Using the information in Table 12C (non-residential parking space requirements) the 12 buildings will require a total of 589 parking spaces. However, S. 12.2.1 c) states that the parking requirements for more than one use on a lot or for a building containing more than one use, must be the sum total of the parking requirements for each of the component uses, unless otherwise specified in the By-law. Please amend the parking requirements to reflect the sum total of the parking requirements for all buildings on the site.

Parking areas that have 20 parking spaces or more must contain a minimum of five percent of their area as landscaping area. Landscaping areas must be calculated on the basis of the net parking facilities, which includes parking stalls, access drives, aisles, and walkways, but does not include required landscaping adjacent to streets. Please provide this calculation and highlight the required landscaped area.

The Site Plan provides 27 barrier free parking spaces. By calculating the requirement of the individual buildings, the required number of barrier free parking spaces is 37. TBG instead, calculated the number of barrier free parking spaces based on the total site using the ratio of 8 +2% of the total number of parking spaces on lot. Based on this calculation, the site would only need 20 barrier free parking spaces. However, as stated

earlier, the parking requirements must reflect the sum total of all buildings. Please amend.

Not all buildings have accessible parking spaces identified near them. Building K does not have any barrier-free spaces. The barrier-free spaces at buildings D and C are shared.

Bicycle Parking
TBG calculated the required number of bicycle parking spaces based on the entire site. Meaning that only 4 of the 12 buildings have bicycle parking spaces in front of them. Please include a minimum of 2 bicycle parking spaces per building.

Drive through Facilities
Stacking lanes have been provided on the site and are exclusive of any other parking space and loading space and aisle requirements.

a) Required ingress spaces must be located and calculated from the entrance of the stacking lane to the product pick-up window.
b) The required egress spaces must be located after the service product pick-up window or dispensing machine.
c) The vehicle space at the product pick-up window will count towards the minimum egress spaces.

All the noted drive through facilities meets the minimum number of ingress and egress spaces, apart from Building L which does not appear to have a pickup window noted on the site plan. Please clarify.

Setbacks from Residential Zone Boundary Stacking lanes and all order boxes using voice communication to order must be located no closer than 30.0 metres from any Residential Zone boundary or subject to the recommendations of a Noise Impact Assessment acceptable to the Township.

Please provide the measurement from the speaker box to the residential zone to the south.

No stacking lanes, order boxes, waste receptacles or wall openings associated with a drive-through service facility can be located in any minimum required yard, or in front of a wall facing the front or exterior side lot line unless all of the components of a drive-through service facility are located a minimum of 10 metres from the front and exterior lot lines.

Please provide the distance from the staking lanes, and order boxes to the lot and exterior lot lines.

Signage
A single monument sign is shown behind the daylighting triangle at Fallis Line and County Road 10. Please provide detail drawings and ensure that any requested signs meet the requirements of the Township and County Sign By-law.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Matt Wilkinson
Planner

Attachments:

Attachment No. 1: ORCA Technical Comments

Appendix B

Correction to Section 2.1 – Study Area

Included in the analysis are the following study area intersections:

- County Road 10 & Larmer Line
- County Road 10 & Fallis Line
- County Road 10 & Municipal Access
- County Road 10 & King Street
- Fallis Line & Tapley Quarter Line

2.2 The Subject Site

The subject site for the proposed development is a vacant parcel of land located east of County Road 10, between Fallis Line and Larmer Line. For an aerial view of the lands included, see ***Exhibit 3***.

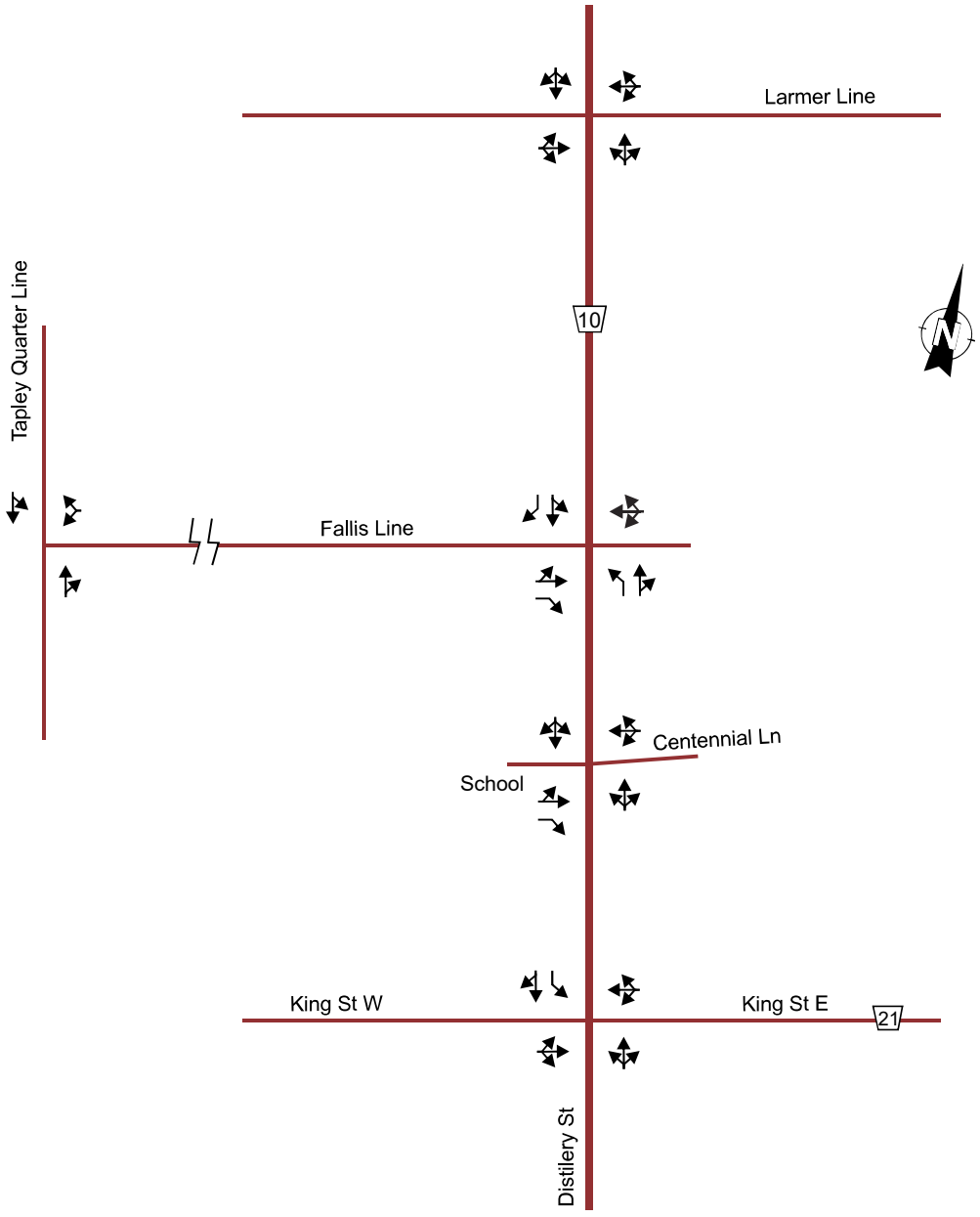
Exhibit 3: *The Site.*

Appendix C

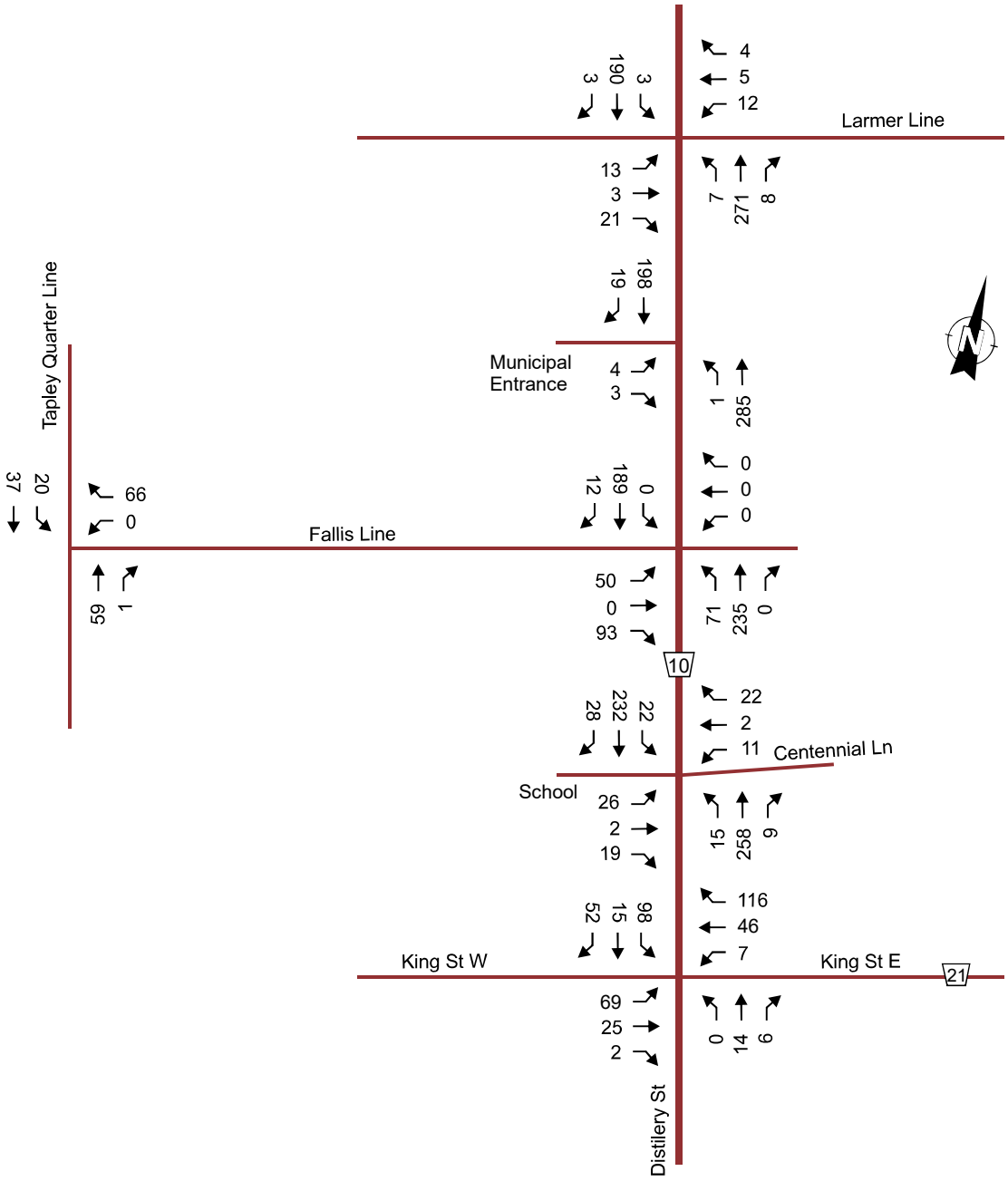
Correction to Existing and

Background Traffic Volumes Exhibits

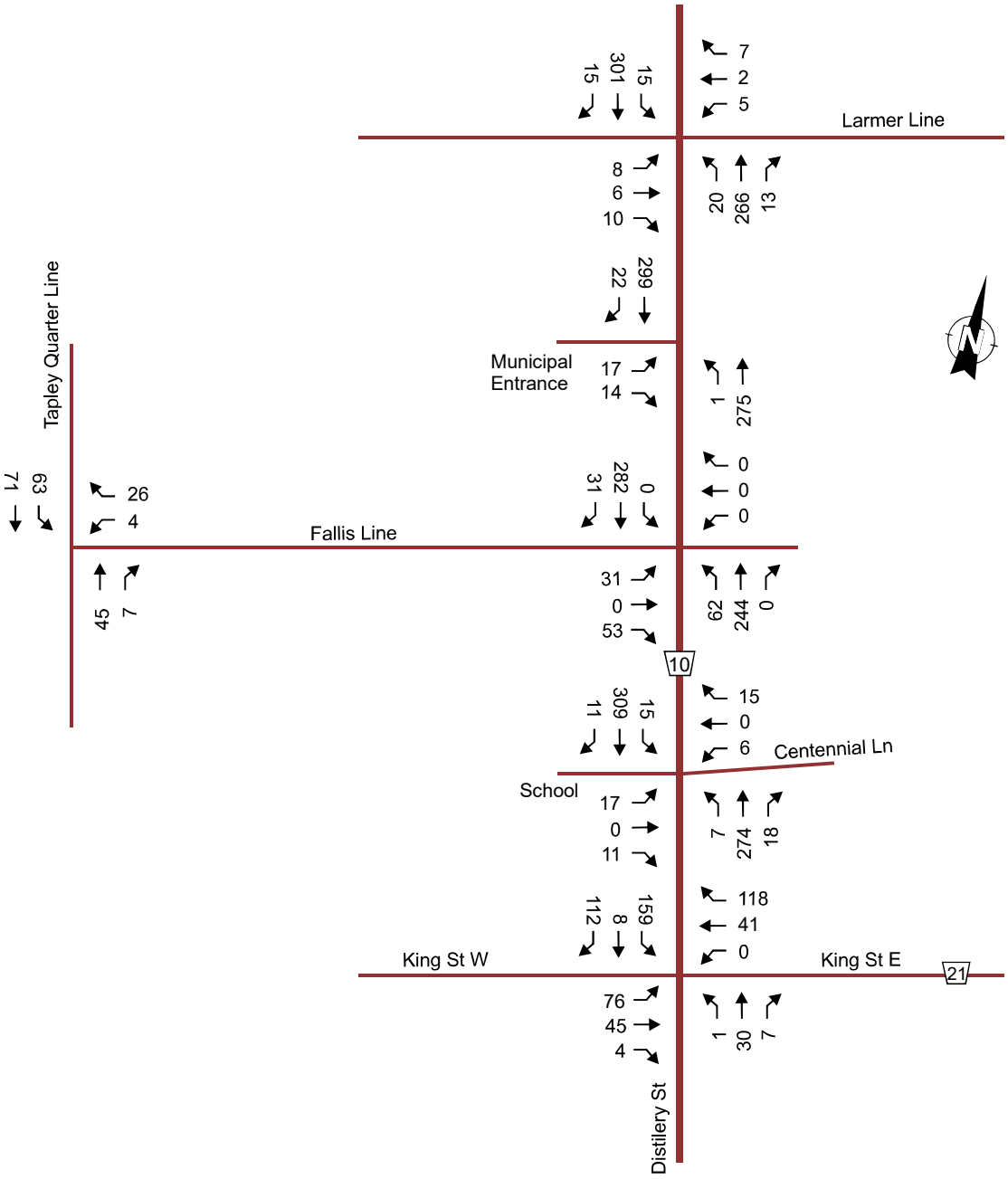
Existing Lane Configuration at Intersections



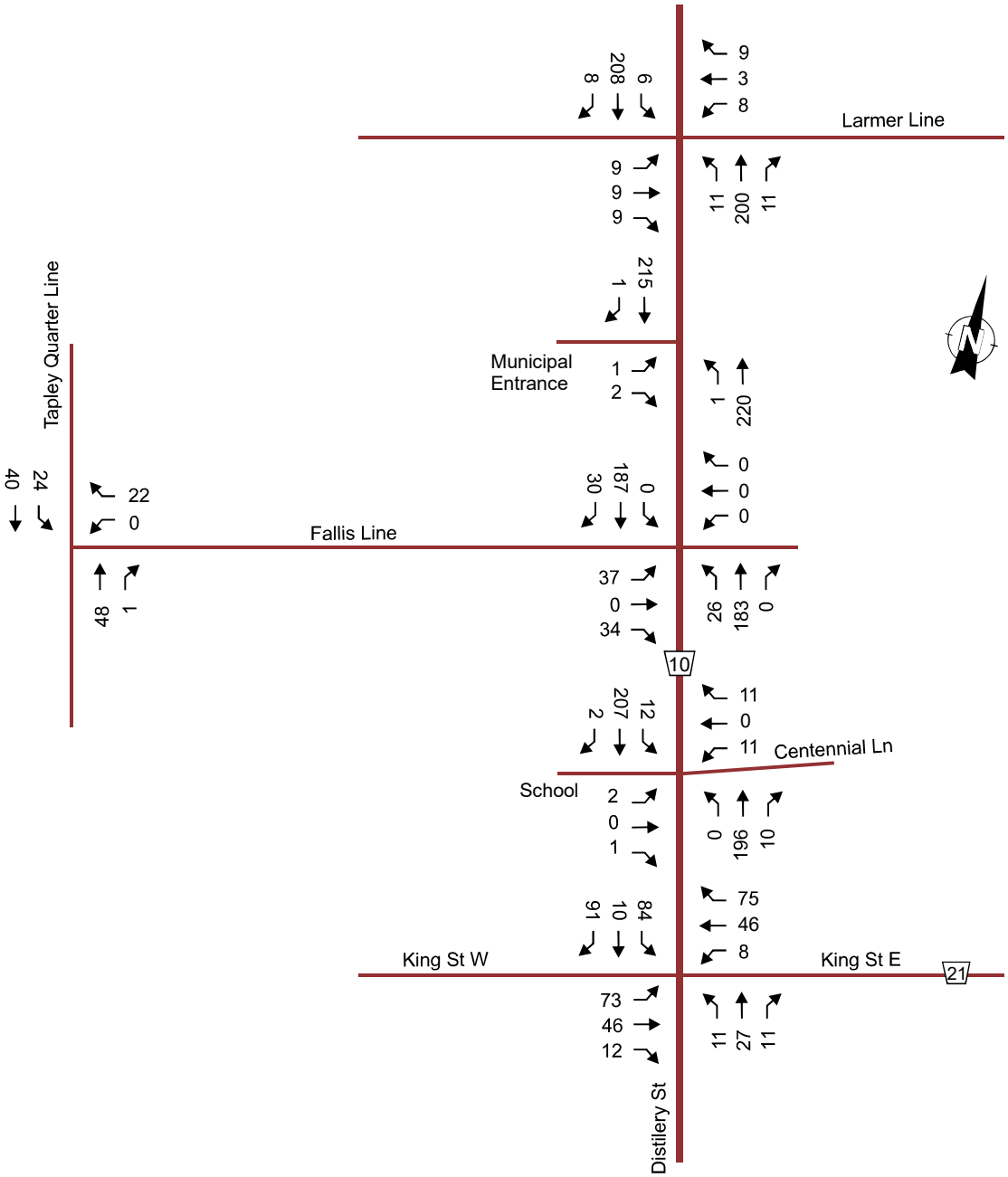
Existing Volumes, AM Peak Hour, 2025



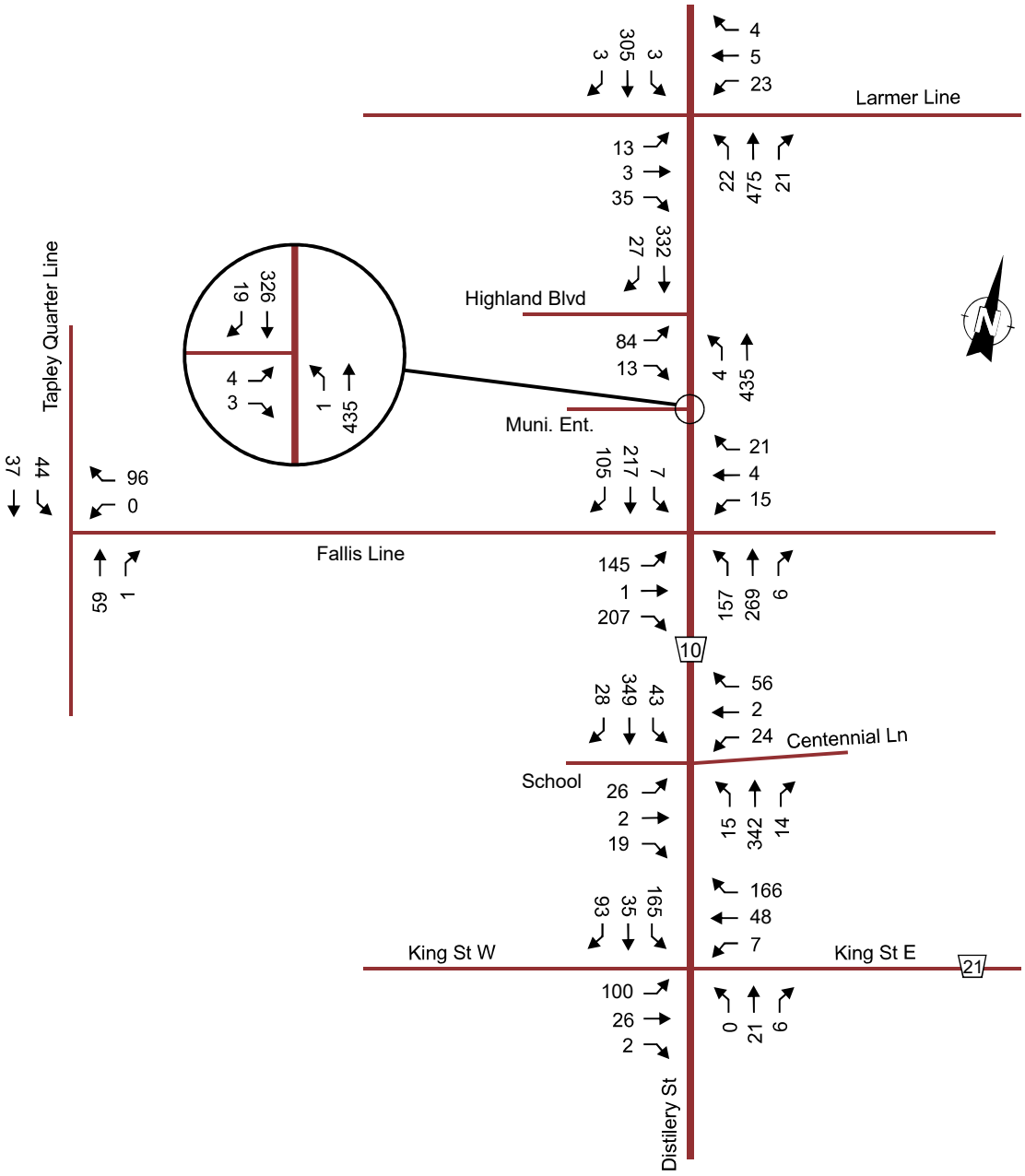
Existing Volumes, PM Peak Hour, 2025



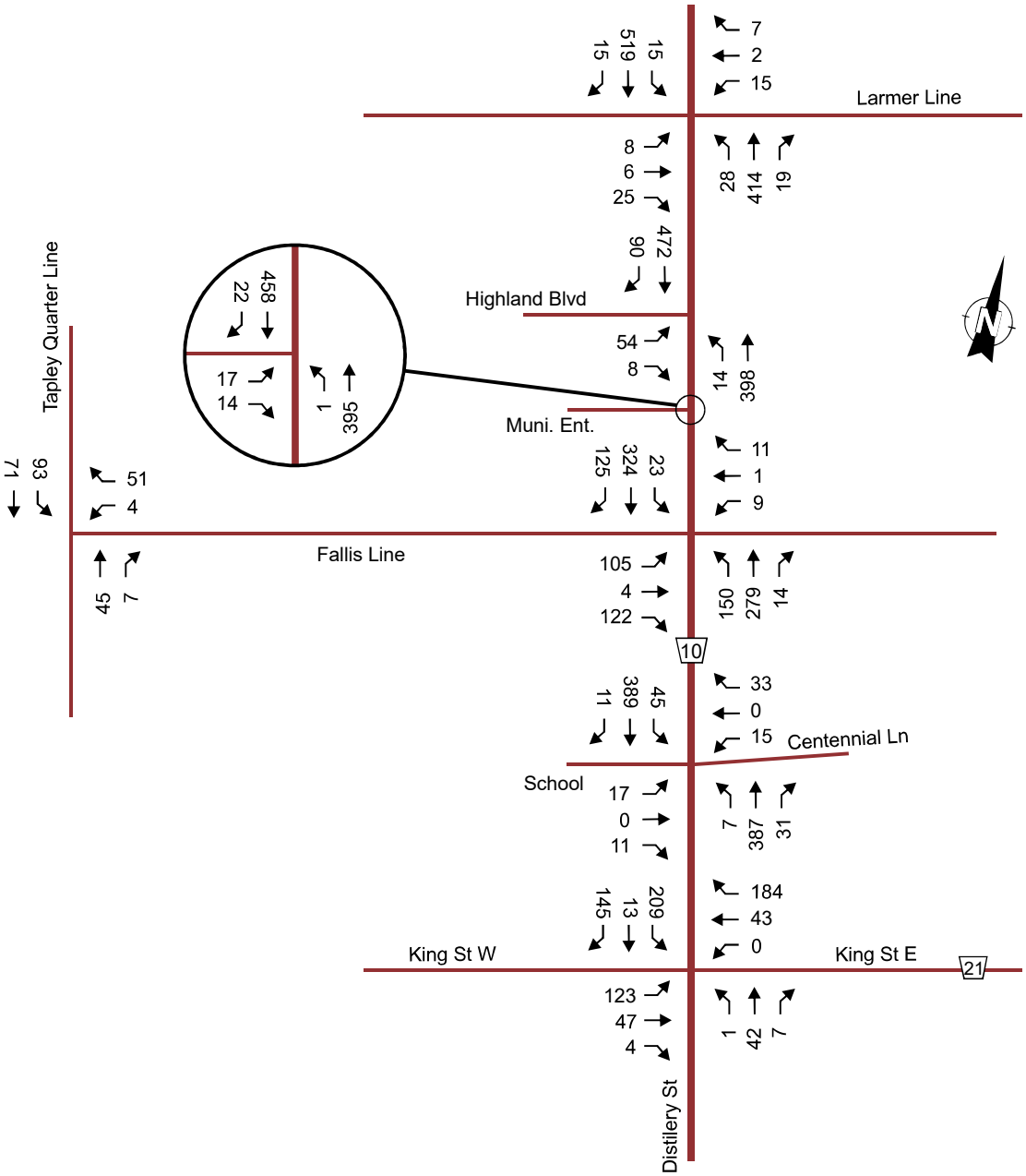
Existing Volumes, SAT Peak Hour, 2025



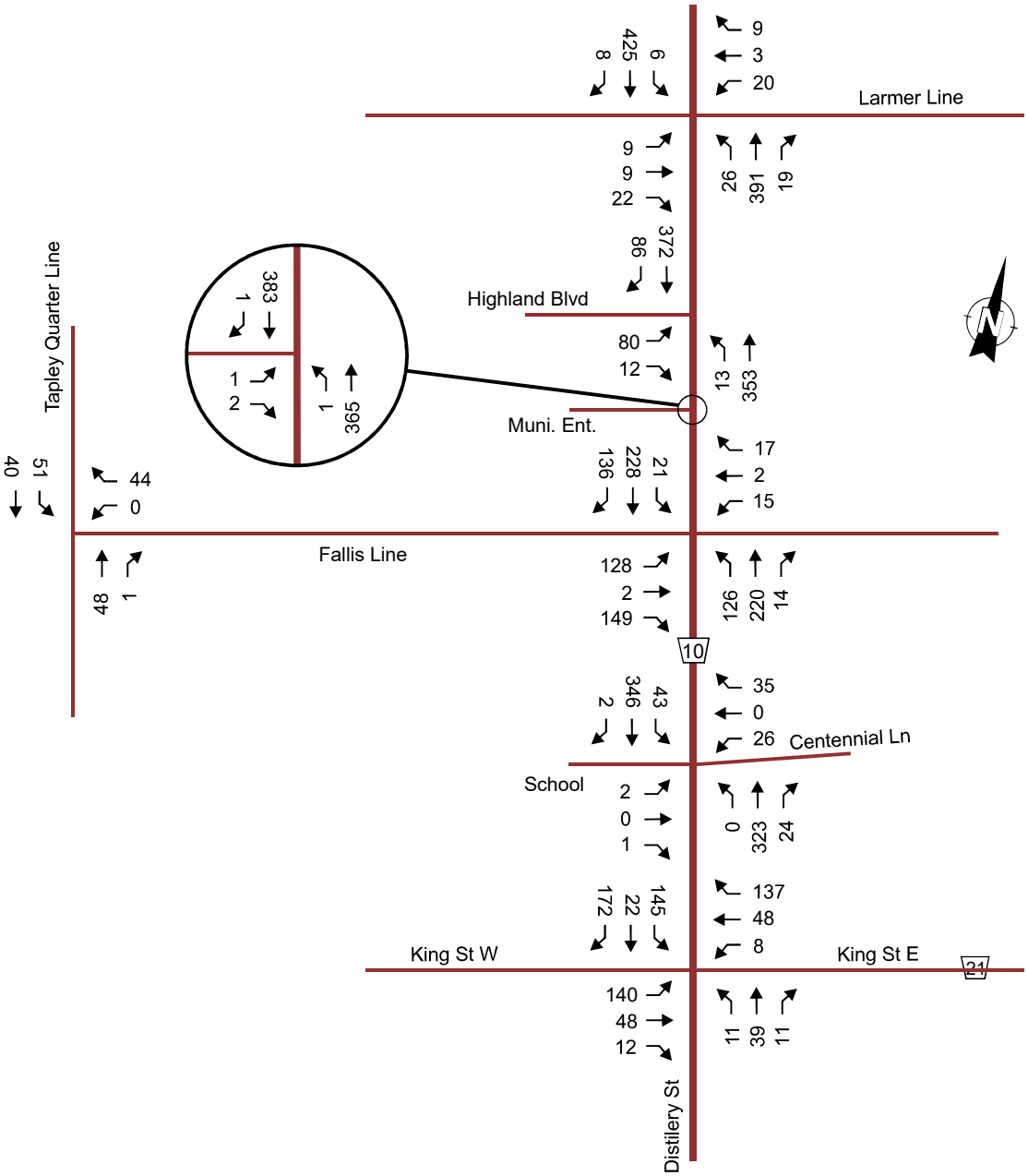
Background Volumes, AM Peak Hour, 2027
(including nearby developments)



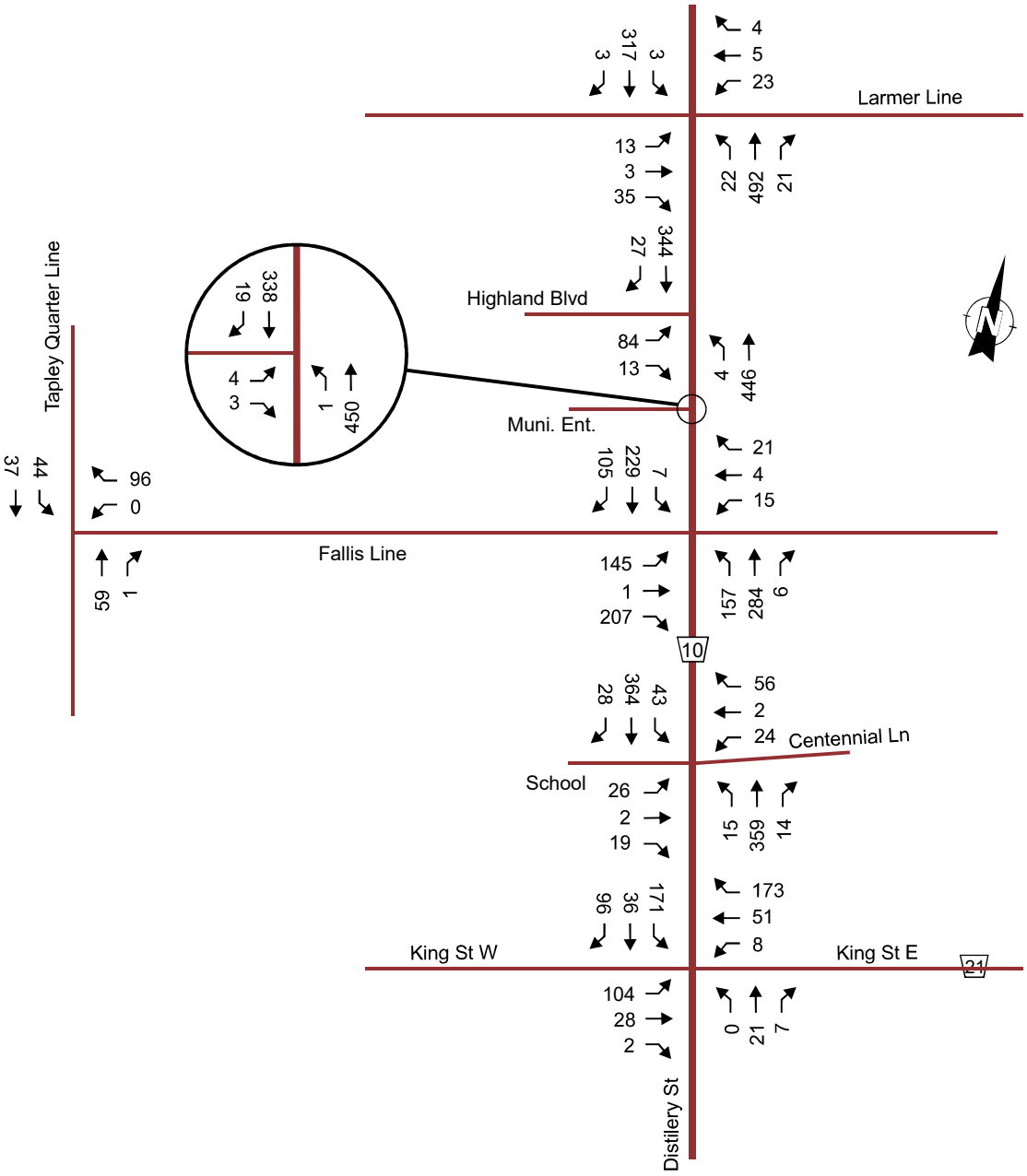
Background Volumes, PM Peak Hour, 2027
(including nearby developments)



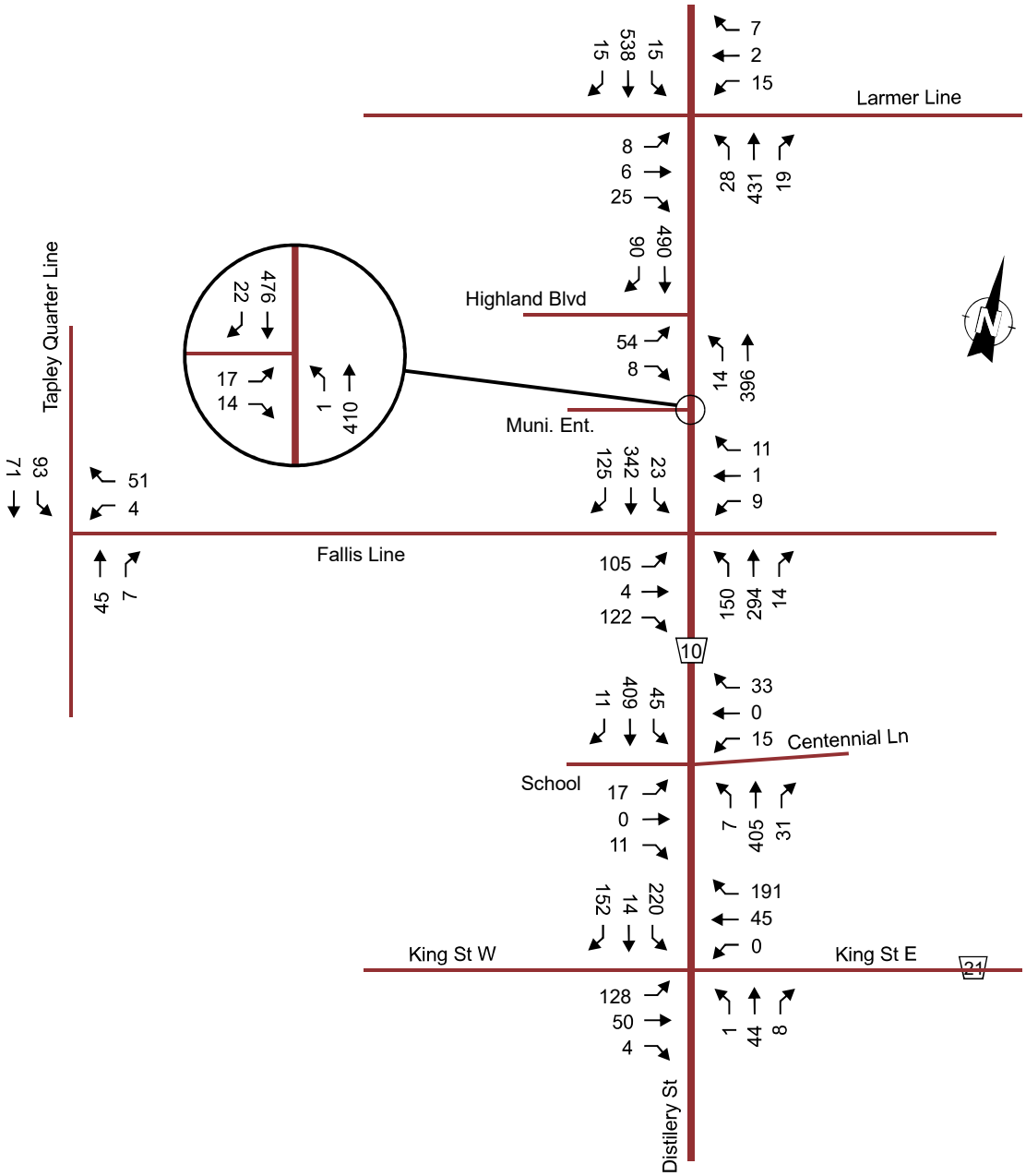
Background Volumes, SAT Peak Hour, 2027
(including nearby developments)



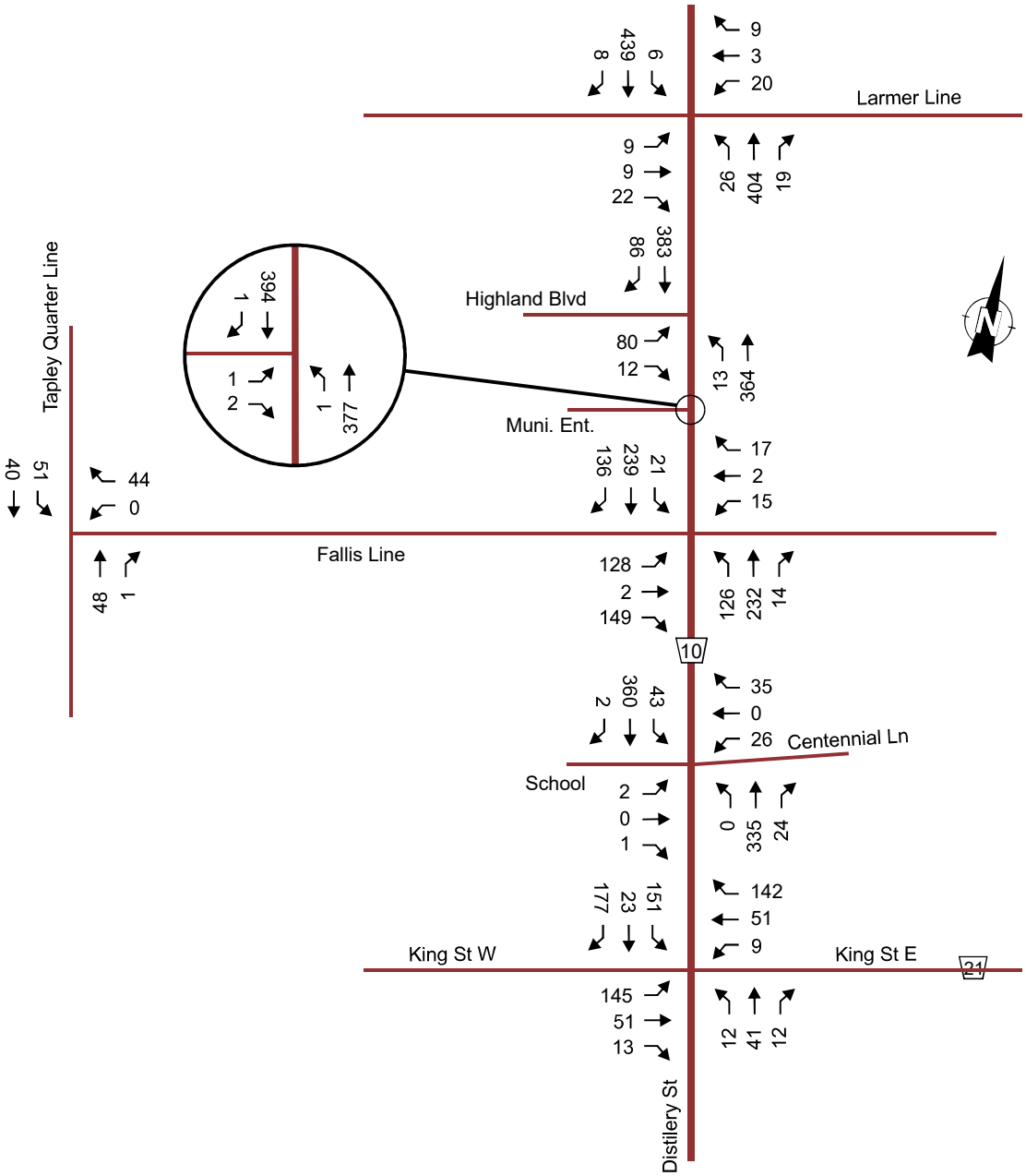
Background Volumes, AM Peak Hour, 2030
(including nearby developments)



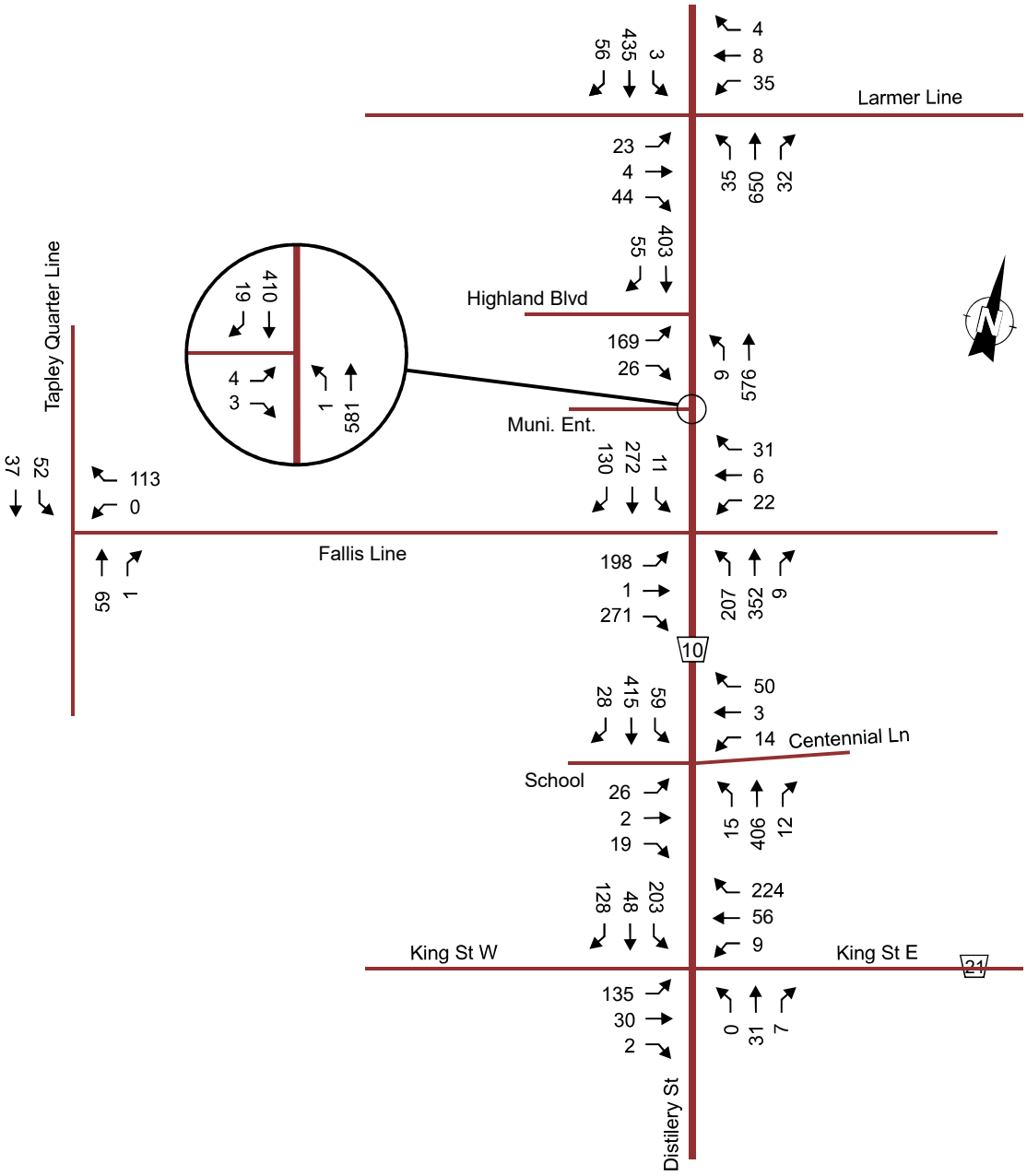
Background Volumes, PM Peak Hour, 2030
(including nearby developments)



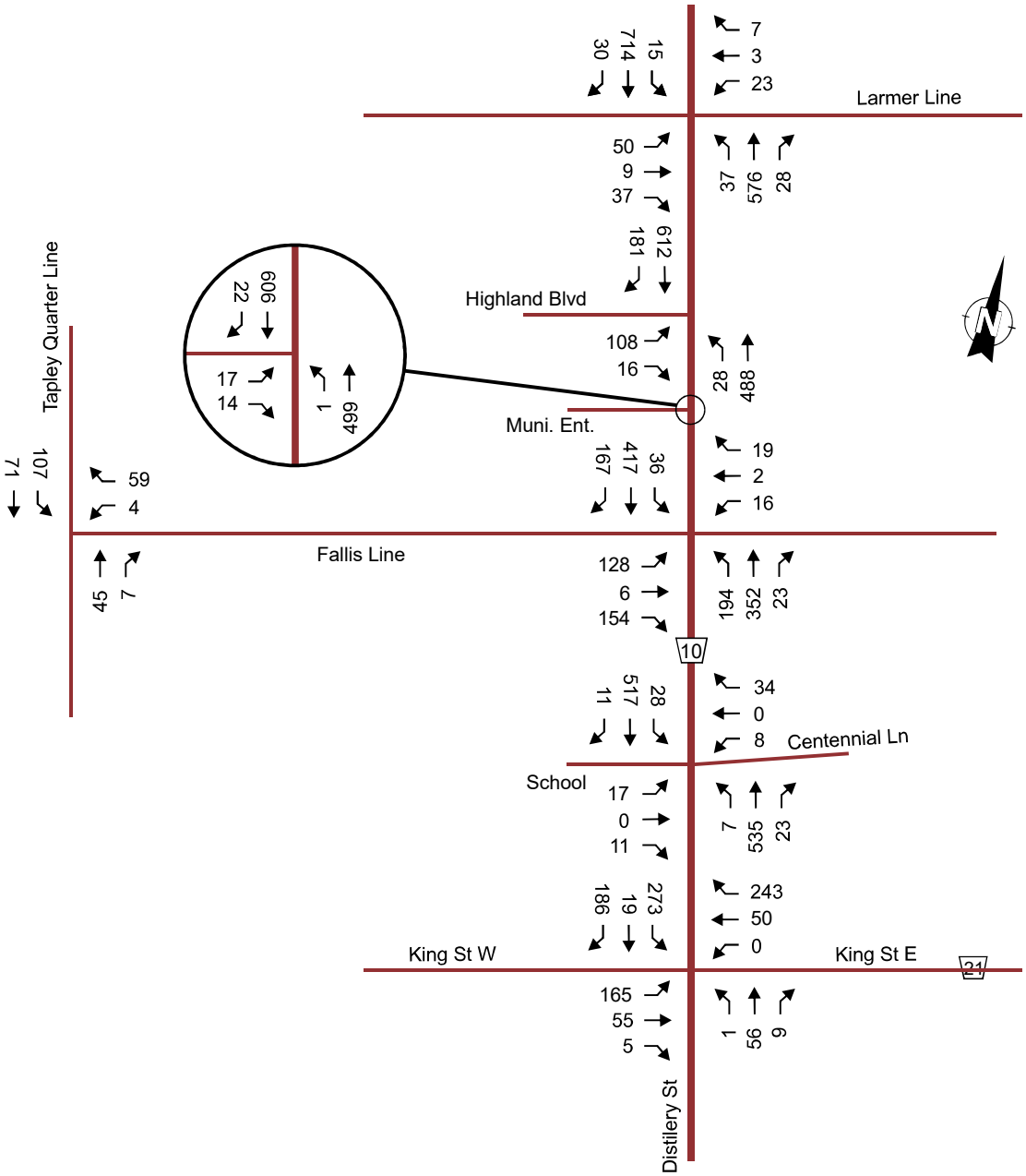
Background Volumes, SAT Peak Hour, 2030
(including nearby developments)



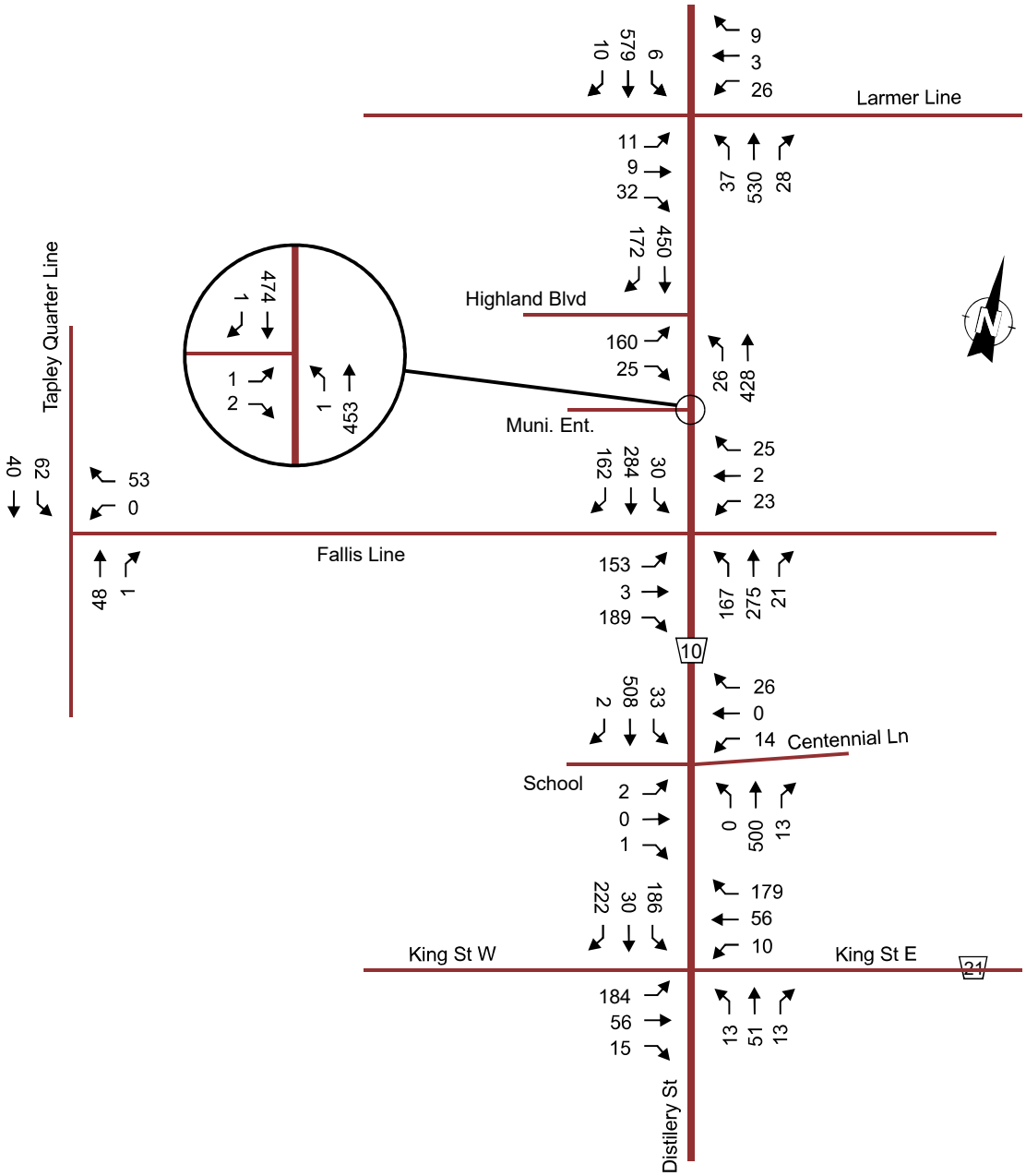
Background Volumes, AM Peak Hour, 2035
(including nearby developments)



Background Volumes, PM Peak Hour, 2035
(including nearby developments)



Background Volumes, SAT Peak Hour, 2035
(including nearby developments)



Appendix D

Correction to Intersection

Capacity Analysis Tables

		Intersection Capacity, Background Volumes 2035											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
CR10 / Larmer Line (signalized)	EB-LTR	0.40	22.2	16.2	C	0.52	33.9	26.0	C	0.28	22.0	12.8	C
	WB-LTR	0.34	37.2	17.1	D	0.22	30.1	12.2	C	0.23	30.7	13.0	C
	NB-L	0.06	2.6	3.4	A	0.09	3.5	4.4	A	0.05	2.2	3.0	A
	NB-TR	0.51	4.7	60.2	A	0.43	4.5	56.7	A	0.34	2.7	33.5	A
	SB-L	0.01	2.7	0.6	A	0.03	3.1	2.1	A	0.01	2.2	0.9	A
	SB-TR	0.36	3.4	35.3	A	0.54	5.6	80.7	A	0.36	2.8	36.3	A
	Overall	0.51	6.3	-	A	0.54	7.4	-	A	0.36	4.3	-	A
CR10 / Municipal Access (stop control)	EB-L	0.02	18.9	0.4	C	0.07	20.0	1.7	C	0.00	17.5	0.1	C
	EB-R	0.01	11.4	0.2	B	0.03	12.0	0.7	B	0.00	11.2	0.1	B
	NB-L	0.00	8.7	0.0	A	0.00	8.9	0.0	A	0.00	8.5	0.0	A
	NB-T	0.44	0.0	0.0	A	0.32	0.0	0.0	A	0.30	0.0	0.0	A
	SB-TR	0.34	0.0	0.0	A	0.37	0.0	0.0	A	0.32	0.0	0.0	A
CR10 / Fallis Line (signalized)	EB-L	0.74	39.9	48.3	D	0.58	36.0	33.3	D	0.62	36.0	39.0	D
	EB-TR	0.52	5.6	8.2	A	0.40	8.0	14.8	A	0.44	7.0	14.4	A
	WB-L	0.20	25.5	8.2	C	0.09	24.2	6.7	C	0.15	25.0	8.7	C
	WB-TR	0.10	9.0	6.0	A	0.07	11.8	5.5	B	0.09	10.3	5.9	B
	NB-L	0.42	9.8	29.5	A	0.34	5.7	18.3	A	0.26	5.6	18.1	A
	NB-T	0.41	12.7	69.4	B	0.34	10.2	52.1	B	0.27	9.3	43.7	A
	NB-R	0.01	0.0	0.0	A	0.03	0.4	0.7	A	0.02	0.3	0.5	A
	SB-L	0.02	8.2	3.0	A	0.05	4.6	4.6	A	0.05	5.2	4.5	A
	SB-T	0.42	19.3	56.9	B	0.47	14.6	72.0	B	0.34	13.8	50.9	B
	SB-R	0.25	4.2	7.2	A	0.21	2.8	10.0	A	0.21	3.0	9.9	A
	Overall	0.74	15.0	-	B	0.58	11.9	-	B	0.62	11.8	-	B
CR10 / Highland Blvd (signalized)	EB-L	0.43	17.7	29.1	B	0.31	17.9	20.1	B	0.38	14.5	23.5	B
	EB-R	0.07	7.2	4.6	A	0.05	8.6	3.7	A	0.06	6.3	3.9	A
	NB-L	0.02	5.3	1.9	A	0.07	5.0	3.6	A	0.06	5.8	3.6	A
	NB-T	0.62	10.6	60.5	B	0.42	6.5	41.4	A	0.42	7.8	37.9	A
	SB-T	0.43	8.0	37.1	A	0.53	7.8	57.8	A	0.45	8.0	40.6	A
	SB-R	0.07	2.1	3.5	A	0.17	1.4	5.5	A	0.18	1.8	6.1	A
	Overall	0.62	10.2	-	B	0.53	7.3	-	A	0.45	7.9	-	A
Fallis Line / Tapley Q. Line (stop control)	WB-LR	0.14	9.3	3.8	A	0.07	9.0	1.6	A	0.06	8.8	1.4	A
	NB-TR	0.04	0.0	0.0	A	0.03	0.0	0.0	A	0.03	0.0	0.0	A
	SB-LT	0.04	4.6	1.1	A	0.07	4.7	1.8	A	0.04	0.3	1.1	A
CR10 / King St (stop control)	EB-LTR	0.33	11.9	21.3	B	0.49	15.7	25.0	C	0.45	13.5	24.3	B
	WB-LTR	0.49	13.2	29.0	B	0.57	16.3	29.6	C	0.39	11.9	23.5	B
	NB-LTR	0.08	9.8	15.6	A	0.15	11.3	14.3	B	0.14	10.3	15.4	B
	SB-L	0.44	13.6	24.8	B	0.65	21.2	27.6	C	0.37	12.3	22.4	B
	SB-TR	0.32	10.0	21.8	A	0.41	11.8	22.2	B	0.41	11.2	24.2	B

Table 6: *Intersection Capacity, Background Volumes 2035.*

		Intersection Capacity, Total Volumes 2030 (Phase 2)											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
CR10 / Larmer Line (signalized)	EB-LTR	0.28	17.2	12.8	B	0.25	19.7	12.0	B	0.23	20.6	12.0	C
	WB-LTR	0.50	38.2	26.6	D	0.32	32.1	17.3	C	0.41	35.8	20.4	D
	NB-L	0.04	3.2	3.5	A	0.07	2.7	3.5	A	0.06	2.9	3.5	A
	NB-T	0.47	5.2	63.5	A	0.40	3.4	48.3	A	0.37	3.8	42.5	A
	NB-R	0.04	1.2	2.4	A	0.05	0.8	2.5	A	0.04	0.9	2.3	A
	SB-L	0.02	3.3	1.3	A	0.05	2.6	2.9	A	0.02	2.7	1.7	A
	SB-TR	0.30	3.8	34.5	A	0.48	4.0	63.7	A	0.39	3.9	45.4	A
	Overall	0.50	7.5	-	A	0.48	5.1	-	A	0.41	5.8	-	A
CR10 / Municipal Access / Driveway D (stop control)	EB-L	0.02	25.4	0.5	D	0.23	65.2	6.2	F	0.01	45.2	0.3	E
	EB-TR	0.01	13.6	0.2	B	0.05	15.0	1.1	C	0.01	18.3	0.3	C
	WB-L	0.15	26.4	4.0	D	1.03	178.1	48.8	F	0.83	111.1	37.6	F
	WB-TR	0.06	13.5	1.5	B	0.18	14.5	4.8	B	0.16	13.6	4.3	B
	NB-L	0.00	8.2	0.0	A	0.00	8.8	0.0	A	0.00	8.4	0.0	A
	NB-TR	0.38	0.0	0.0	A	0.37	0.0	0.0	A	0.35	0.0	0.0	A
	SB-L	0.08	9.3	1.9	A	0.11	9.3	2.9	A	0.11	9.1	2.9	A
	SB-TR	0.26	0.0	0.0	A	0.36	0.0	0.0	A	0.29	0.0	0.0	A
CR10 / Fallis Line (signalized)	EB-L	0.85	54.0	52.0	D	0.65	37.6	40.7	D	0.67	36.3	46.4	D
	EB-TR	0.46	7.0	13.5	A	0.36	10.0	18.4	B	0.39	8.7	18.2	A
	WB-L	0.24	24.2	13.2	C	0.40	28.8	24.4	C	0.44	29.6	26.2	C
	WB-TR	0.38	18.8	30.2	B	0.25	12.5	15.8	B	0.26	11.5	16.4	B
	NB-L	0.31	10.0	21.4	A	0.26	6.5	16.4	A	0.20	6.8	15.4	A
	NB-T	0.53	20.2	75.9	C	0.41	12.7	71.9	B	0.39	13.5	65.9	B
	NB-R	0.10	4.3	5.5	A	0.10	3.2	7.6	A	0.11	3.4	7.8	A
	SB-L	0.13	9.3	8.8	A	0.09	5.8	7.8	A	0.09	6.4	8.0	A
	SB-T	0.38	19.7	49.2	B	0.51	16.5	85.5	B	0.39	15.2	64.7	B
	SB-R	0.26	4.3	7.3	A	0.21	3.2	10.9	A	0.21	3.2	10.9	A
	Overall	0.85	18.9	-	B	0.65	14.4	-	B	0.67	14.3	-	B
CR10 / Highland Blvd (signalized)	EB-L	0.32	17.4	18.0	B	0.23	16.3	12.9	B	0.25	14.4	15.9	B
	EB-TR	0.10	9.2	6.5	A	0.07	10.0	5.1	A	0.10	8.5	6.6	A
	WB-L	0.09	14.6	6.8	B	0.17	15.4	10.8	B	0.10	13.2	7.9	B
	WB-TR	0.12	6.9	6.4	A	0.25	7.0	10.2	A	0.20	6.4	9.1	A
	NB-L	0.02	4.8	1.8	A	0.10	5.3	4.3	A	0.07	5.3	4.7	A
	NB-TR	0.56	8.6	60.3	A	0.56	8.1	53.9	A	0.45	6.8	51.3	A
	SB-L	0.14	6.1	6.1	A	0.28	7.4	11.1	A	0.19	6.3	10.1	A
	SB-T	0.38	6.6	35.2	A	0.55	8.1	54.0	A	0.41	6.4	45.2	A
	SB-R	0.03	2.2	2.5	A	0.10	1.5	4.0	A	0.09	1.7	4.3	A
	Overall	0.56	8.4	-	A	0.56	8.1	-	A	0.45	6.9	-	A

Fallis Line / Tapley Q. Line (stop control)	WB-LR	0.16	9.4	4.3	A	0.08	9.0	1.9	A	0.07	8.8	1.7	A
	NB-TR	0.04	0.0	0.0	A	0.03	0.0	0.0	A	0.03	0.0	0.0	A
	SB-LT	0.05	4.9	1.2	A	0.09	5.2	2.2	A	0.06	5.0	1.3	A
CR10 / King St (stop control)	EB-LTR	0.34	12.2	23.7	B	0.54	17.4	24.8	C	0.51	15.5	25.4	C
	WB-LTR	0.35	13.4	28.3	B	0.64	19.0	29.0	C	0.46	13.3	24.6	B
	NB-LTR	0.07	9.9	14.5	A	0.18	12.0	14.7	B	0.17	11.0	15.3	B
	SB-L	0.49	14.7	25.6	B	0.72	25.9	27.8	D	0.42	13.8	22.0	B
	SB-TR	0.31	10.0	20.0	A	0.45	13.0	21.6	B	0.47	12.6	23.0	B

Table 11: *Intersection Capacity, Total Volumes 2030.*

		Intersection Capacity, Total Volumes 2035 (5 years after Phase 2)											
		AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS	V/C	Delay (s)	Q_{95} (m)	LOS
CR10 / Larmer Line (signalized)	EB-LTR	0.35	17.8	16.7	B	0.56	31.5	29.2	C	0.29	18.9	13.7	B
	WB-LTR	0.57	41.9	31.3	D	0.43	37.4	20.4	D	0.40	35.0	21.0	C
	NB-L	0.11	4.2	6.9	A	0.19	5.2	7.5	A	0.10	3.3	5.0	A
	NB-T	0.59	7.3	101.4	A	0.56	6.5	85.4	A	0.45	4.5	57.8	A
	NB-R	0.06	1.3	2.9	A	0.06	1.0	3.2	A	0.05	0.9	2.5	A
	SB-L	0.02	3.8	1.5	A	0.07	3.7	3.6	A	0.02	2.8	1.7	A
	SB-TR	0.44	5.3	59.8	A	0.68	8.6	127.1	A	0.48	4.7	64.0	A
	Overall	0.59	9.0	-	A	0.68	9.7	-	A	0.48	6.3	-	A
CR10 / Municipal Access / Driveway D (stop control)	EB-L	0.03	28.2	0.6	D	0.32	94.7	8.5	F	0.01	55.2	0.3	F
	EB-TR	0.01	14.7	0.2	B	0.06	17.4	1.3	C	0.01	20.3	0.3	C
	WB-L	0.16	28.8	4.1	D	1.26	283.0	56.7	F	0.94	152.7	42.2	F
	WB-TR	0.08	15.3	1.9	C	0.21	16.1	6.0	C	0.18	14.7	5.0	B
	NB-L	0.00	8.7	0.0	A	0.00	9.5	0.0	A	0.00	8.7	0.0	A
	NB-TR	0.47	0.0	0.0	A	0.42	0.0	0.0	A	0.39	0.0	0.0	A
	SB-L	0.08	10.2	1.9	B	0.13	9.8	3.4	A	0.13	9.5	3.3	A
	SB-TR	0.34	0.0	0.0	A	0.44	0.0	0.0	A	0.35	0.0	0.0	A
CR10 / Fallis Line (signalized)	EB-L	0.87	51.6	65.4	D	0.68	38.8	44.5	D	0.72	38.5	53.1	D
	EB-TR	0.52	6.7	13.7	A	0.39	8.9	19.0	A	0.43	7.9	19.5	A
	WB-L	0.48	33.3	20.6	C	0.43	30.1	25.2	C	0.50	32.0	27.7	C
	WB-TR	0.24	8.3	12.2	A	0.25	11.5	15.8	B	0.26	10.1	16.3	B
	NB-L	0.50	13.0	28.1	B	0.39	8.2	22.6	A	0.31	8.5	22.9	A
	NB-T	0.59	21.2	89.7	C	0.49	15.4	87.6	B	0.44	16.5	80.4	B
	NB-R	0.10	4.2	5.4	A	0.12	3.3	8.3	A	0.12	3.8	8.6	A
	SB-L	0.11	9.7	6.9	A	0.13	6.6	10.1	A	0.12	7.7	10.7	A
	SB-T	0.56	24.3	71.1	C	0.59	19.3	105.6	B	0.47	18.7	81.2	B
	SB-R	0.33	4.3	7.5	A	0.26	3.2	12.4	A	0.26	3.5	12.3	A
	Overall	0.87	20.0	-	B	0.68	15.5	-	B	0.72	15.7	-	B
CR10 / Highland Blvd (signalized)	EB-L	0.58	27.4	44.7	C	0.43	24.2	30.0	C	0.54	22.8	35.7	C
	EB-TR	0.13	10.3	10.3	B	0.10	11.5	8.1	B	0.15	8.6	10.0	A
	WB-L	0.07	19.3	8.1	B	0.15	20.0	13.5	B	0.10	15.7	9.0	B
	WB-TR	0.13	8.1	8.2	A	0.25	8.9	13.8	A	0.21	7.3	11.4	A
	NB-L	0.04	6.4	3.4	A	0.20	7.5	9.1	A	0.22	8.8	9.9	A
	NB-TR	0.73	14.2	116.7	B	0.58	9.3	84.9	A	0.66	12.4	79.6	B
	SB-L	0.26	10.4	11.0	B	0.33	9.3	17.1	A	0.38	12.1	16.9	B
	SB-T	0.52	9.7	68.7	A	0.62	10.1	96.7	B	0.63	11.7	73.4	B
	SB-R	0.07	2.1	4.3	A	0.18	1.4	6.4	A	0.21	1.9	7.2	A
	Overall	0.73	13.3	-	B	0.62	9.9	-	A	0.66	11.6	-	B

Fallis Line / Tapley Q. Line (stop control)	WB-LR	0.17	9.5	4.8	A	0.08	8.9	1.9	A	0.07	8.8	1.8	A
	NB-TR	0.04	0.0	0.0	A	0.03	0.0	0.0	A	0.03	0.0	0.0	A
	SB-LT	0.06	5.0	1.4	A	0.09	5.2	2.3	A	0.06	5.2	1.4	A
CR10 / King St (stop control)	EB-LTR	0.43	14.4	27.5	B	0.69	25.4	29.4	D	0.62	19.8	30.3	C
	WB-LTR	0.63	17.7	34.0	C	0.81	32.2	36.8	D	0.55	16.5	31.9	C
	NB-LTR	0.10	10.8	17.4	B	0.24	14.1	15.5	B	0.21	12.2	16.8	B
	SB-L	0.57	18.0	25.7	C	0.91	49.5	35.5	E	0.51	16.6	25.2	C
	SB-TR	0.42	12.1	22.4	B	0.57	17.2	21.9	C	0.59	16.5	27.4	C

Table 12: *Intersection Capacity, Total Volumes 2035.*

Throughout the study years, the recommended improvements are expected to manage the significant growth of traffic on the network. Almost all movements within the study area are projected to operate with LOS "D" or better.

Particularly, the intersection of CR10 & Municipal Access/Driveway D shows LOS "F" by 2027 for the movements turning left out of the driveways. This indicates that those drivers may experience extended delays to merge into CR10. Based on the HCM procedures, Synchro capacity factors at a given intersection are determined independent of the rest of the road network.

As such, this result cannot be representative for recommendations, due to the real-world effect that signals at one intersection will have some effect on the capacity of another nearby intersection. To simulate a more realistic behaviour of the road network, the SimTraffic module was applied to the worst-case scenario (2035 total volumes). The simulation results show that the delays equivalent to LOS "D" are instead projected for these movements, see *Appendix L*. It is clear that the signalization of CR10 & Fallis Ln and CR10 & Highland Blvd will generate some effect on the adjacent intersections resulting in sufficient gaps for traffic flow along CR10 during peak hours.

5.3 Future Total Traffic Operations at Accesses

The configuration of the planned entrances is shown in *Appendix N*. The site accesses capacity factors for the worst-case scenario (2035 total traffic volumes, 5 years after the Phase 2 build-out) are shown in the following ***Table 13***.

The results show that the accesses will be able to handle the increases in traffic throughout the study years, regardless of the scenario.

Appendix E

Correction to Section 4.1

4 Proposed Development Traffic Forecasting

4.1 Traffic Impact Study Methodology

The traffic impact analysis was completed in accordance with the methodologies published by the Transportation Research Board (TRB), the Transportation Impact Analysis for Site Developments published by the Institute of Transportation Engineers (ITE) as well as the Traffic Impact Study Guidelines published by the County of Peterborough.

The estimation of trips generated by the proposed development were derived from the Trip Generation Manual, 11th Edition, published by ITE.

4.2 Site Trip Generation

The land uses which most closely describe the proposed development blocks are the following, separated by phase of development:

Phase 1 – Commercial Plaza (Block 189)

- Code 821 – Shopping Plaza (40k-150k) w/ Supermarket – 10,708 m^2 GFA
- Code 960 – Super Convenience Market/Gas Station – 8 fueling positions

Phase 2 – General Offices (Block 188) & Residential Units

- Code 210 – Single Family Detached Housing – 159 dwelling units
- Code 215 – Single Family Attached Housing – 148 dwelling units
- Code 220 – Multifamily Housing (Low-rise) – 45 dwelling units
- Code 221 – Multifamily Housing (Mid-rise) – 131 dwelling units
- Code 710 – General Office Building – 4,150 m^2 GFA

The ITE trip generation rates and entering/exiting proportions for the above land uses are shown in ***Table 7***, and the estimated trips generated by each phase of development are shown in ***Tables 8 and 9*** respectively. As per the methodology,

Appendix F

Trip Generation Rates, Land Use Code 960

ITE Trip Generation Manual, 10th Edition

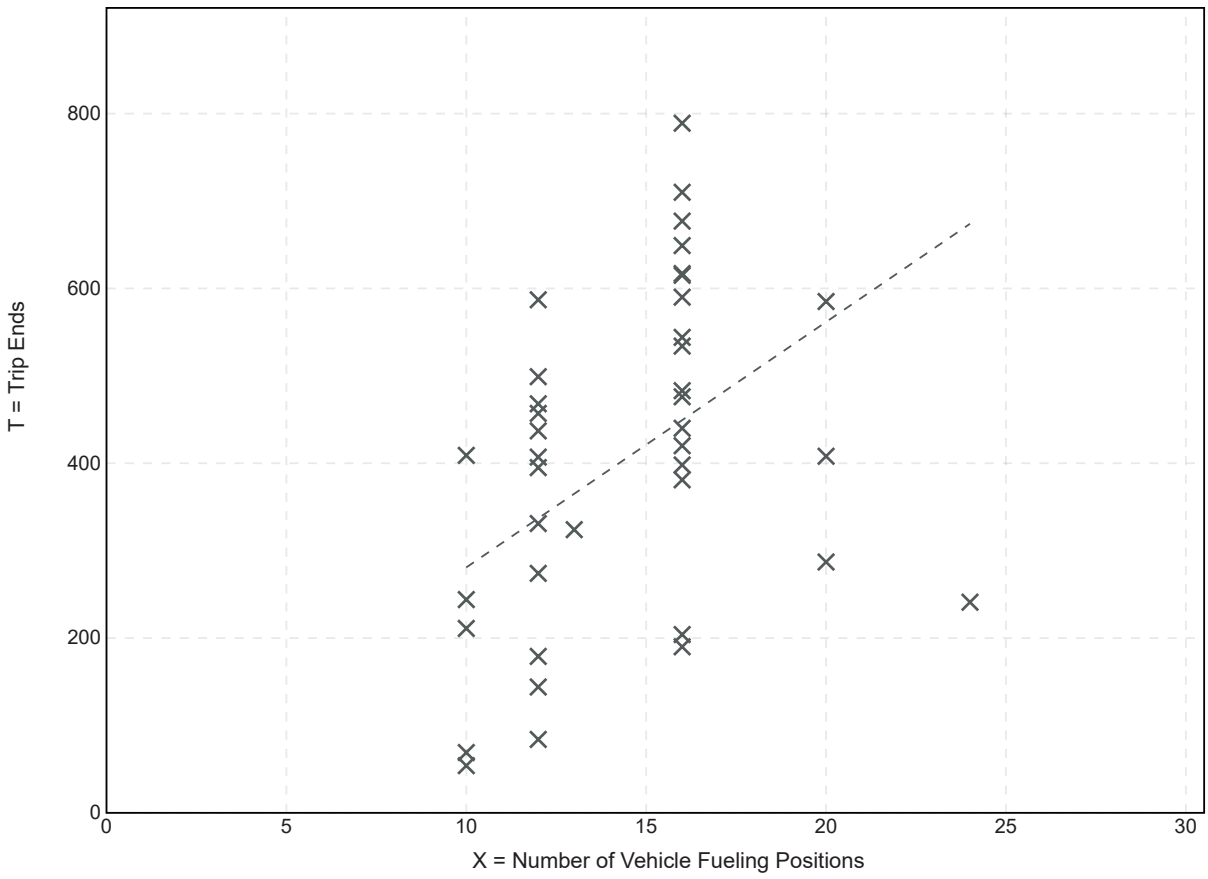
Super Convenience Market/Gas Station
(960)

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 7 and 9 a.m.**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	39
Avg. Num. of Vehicle Fueling Positions:	14
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
28.08	5.40 - 49.31	11.98

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

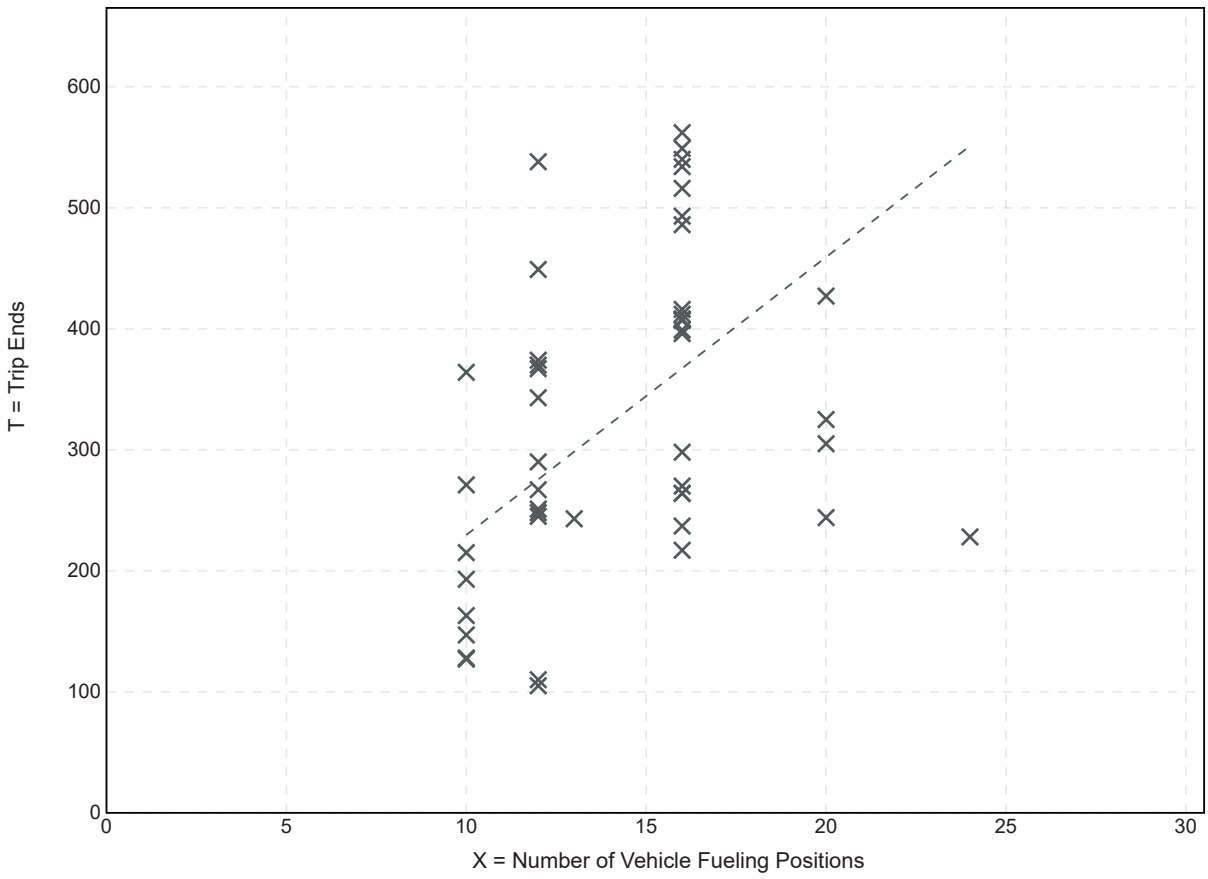
Super Convenience Market/Gas Station
(960)

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 4 and 6 p.m.**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	48
Avg. Num. of Vehicle Fueling Positions:	14
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
22.96	8.75 - 44.83	8.34

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

Super Convenience Market/Gas Station
(960)

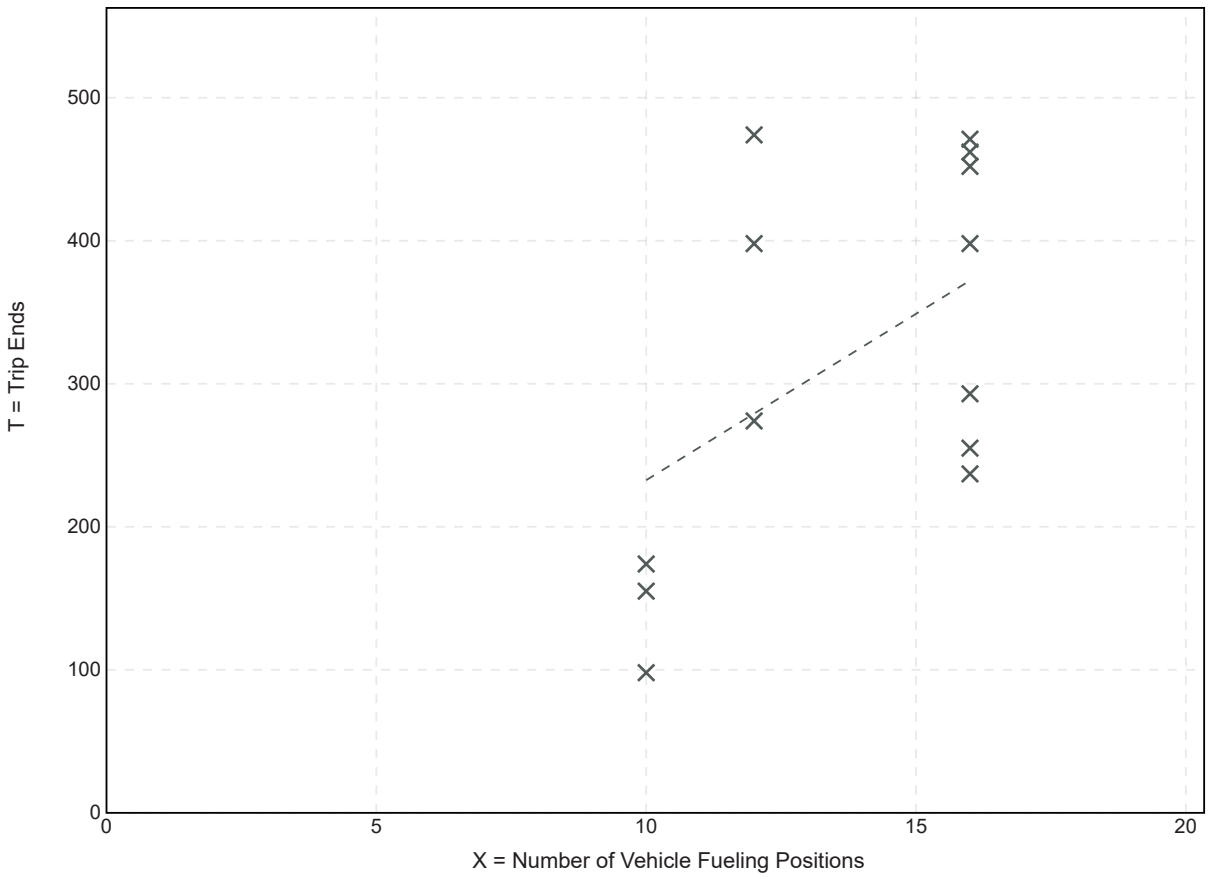
Vehicle Trip Ends vs: **Vehicle Fueling Positions**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 13
Avg. Num. of Vehicle Fueling Positions: 14
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
23.26	9.80 - 39.50	8.20

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

Appendix G

Timeline of Recommendations for the Proposed Road Network Configuration

Timeline of Recommendations for the Proposed Road Network Configuration

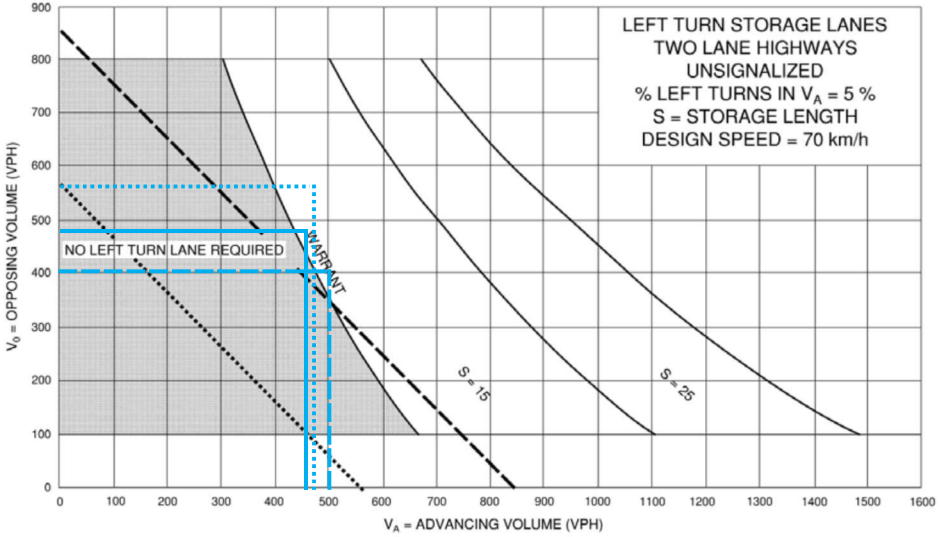
Intersection	Total Traffic Volumes, 2027	Total Traffic Volumes, 2030	Total Traffic Volumes, 2035
County Road 10 & Larmer Line	85 m NB left turn lane (taper as per TAC Table 9.17.1) 85 m SB left turn lane (taper as per TAC Table 9.17.1) No changes to the existing two-way stop control.	70 m NB right turn lane (taper as per TAC Table 9.14.2) Traffic signals are required.	No additional geometric upgrades needed. Maintain the traffic signals and their timing.
County Road 10 & Street G	Intersection does not exist yet.	Street G in-place. 85 m SB left turn lane (taper as per TAC Table 9.17.1)	No additional geometric upgrades needed.
County Road 10 & Driveway A (right-in-right-out)	Intersection does not exist yet.	Driveway A in-place.	No additional geometric upgrades needed.
County Road 10 & Highland Blvd	Already planned: EB & NB left turn lanes, SB right turn lane 85 m SB left turn lane (taper as per TAC Table 9.17.1) 30 m WB left turn lane (taper as per TAC Table 9.17.1) Traffic signals are required.	No additional geometric upgrades needed. Maintain the traffic signals and their timing.	No additional geometric upgrades needed. Maintain the traffic signals and their timing.
County Road 10 & Driveway D / Municipal Entrance	Driveway D in-place. 40 m SB left turn lane (taper meets taper at Highland) 30 m WB left turn lane (taper as per TAC Table 9.17.1)	No additional geometric upgrades needed.	No additional geometric upgrades needed.
County Road 10 & Driveway E (right-in-right-out)	Driveway E in-place. NB right turn taper (length as per TAC Table 9.14.1)	No additional geometric upgrades needed.	No additional geometric upgrades needed.
County Road 10 & Fallis Line	70 m EB left turn lane 30 m WB left turn lane 85 m SB left turn lane (tapers as per TAC Table 9.17.1) 70 m NB right turn lane (taper as per TAC Table 9.14.2) Traffic signals are required.	No additional geometric upgrades needed. Maintain the traffic signals and their timing.	No additional geometric upgrades needed. Maintain the traffic signals and their timing.
County Road 10 & County Road 21 (King Street)	Monitor over time for traffic signal justification. Extend the SB left turn lane length to 40 m.	Monitor over time for traffic signal justification.	Monitor over time for traffic signal justification.
Fallis Line & Tapley Quarter Line	No geometric upgrades needed.	No geometric upgrades needed.	No geometric upgrades needed.
County Road 10 Posted Speed	Speed transition from 80 km/h to 60 km/h now located north of Highland Boulevard.	Speed transition from 80 km/h to 60 km/h now located north of Larmer Line.	No further changes to the posted speed.

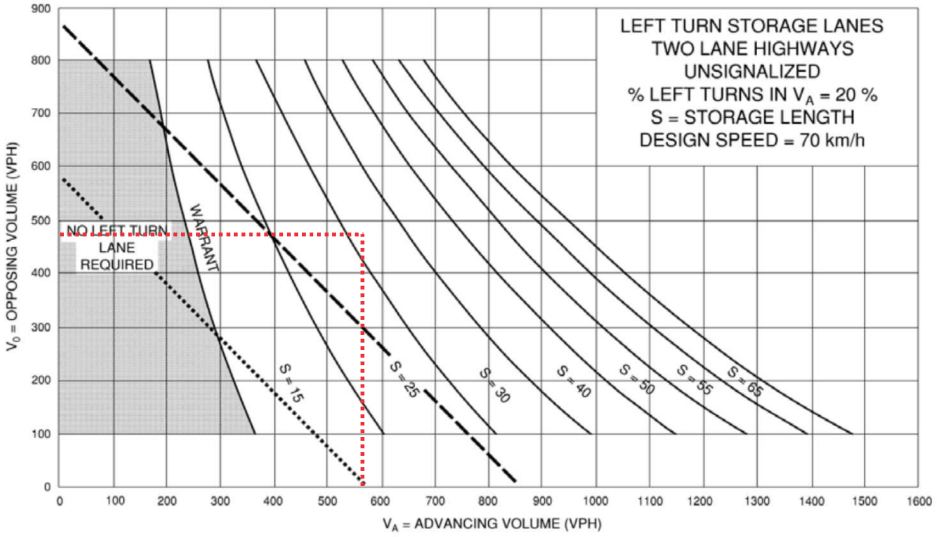
Appendix H

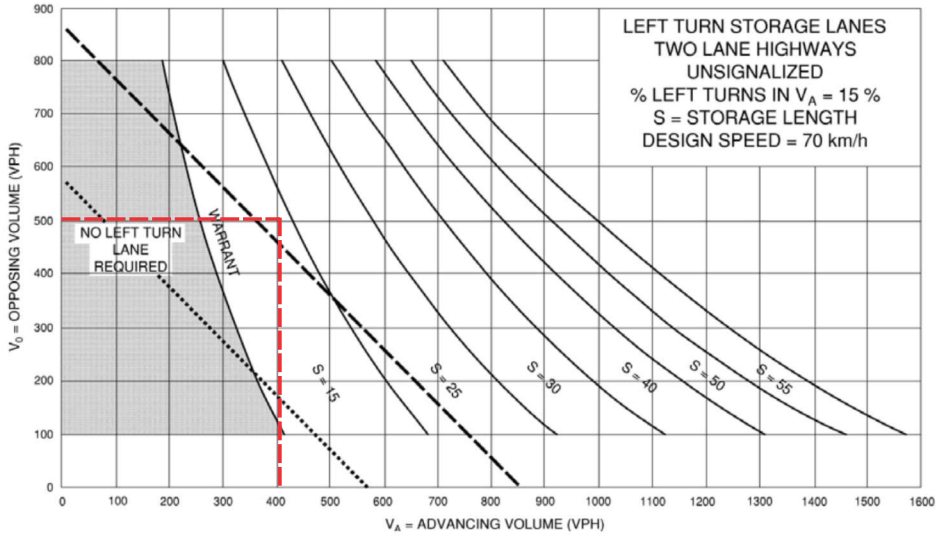
Left Turn Lane Warrants

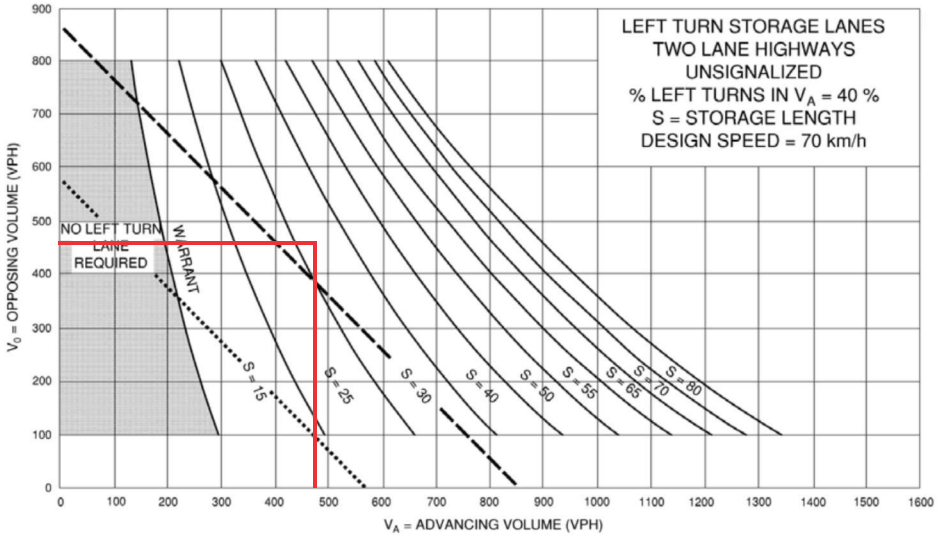
for Site Access Driveways

Left Turn Lane Warrant
County Road 10 & Driveway D / Municipal Entrance
MTO Supplement to the TAC Design Guide





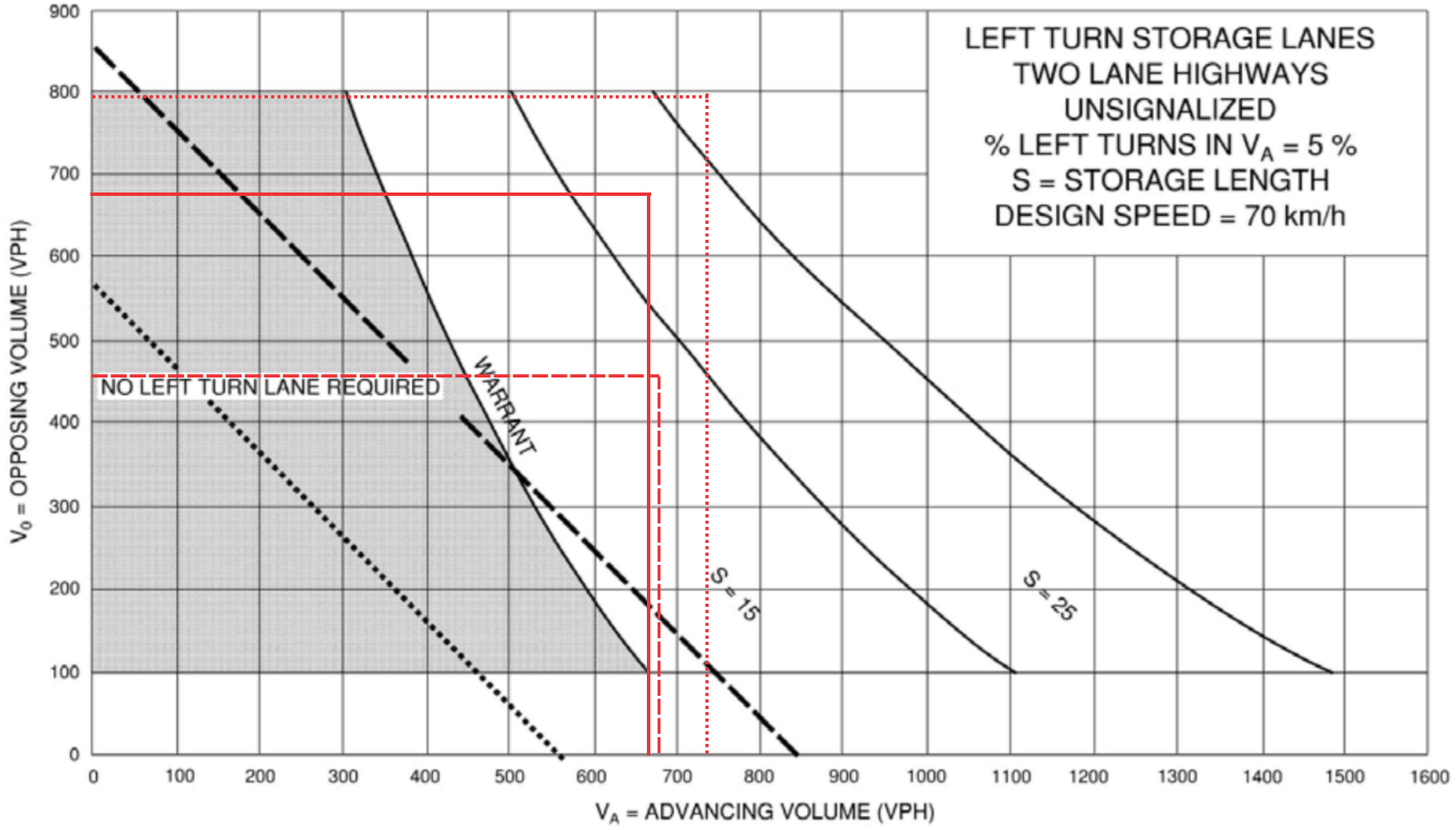




Total Traffic Volumes 2027

	CR 10 & Driveway D / Municipal Ent			CR 10 & Driveway D / Municipal Ent		
	NB-AM	NB-PM	NB-SAT	SB-AM	SB-PM	SB-SAT
Advance Volume (V_a)	503	474	460	402	566	480
Opposing Volume (V_o)	402	566	480	503	474	460
Left Turn Traffic Volume (V_L)	1	1	1	54	106	180
% Left Turns in V_a	0.2% (5%)	0.2% (5%)	0.2% (5%)	13.4% (15%)	18.7% (20%)	38.5% (40%)
Legend						

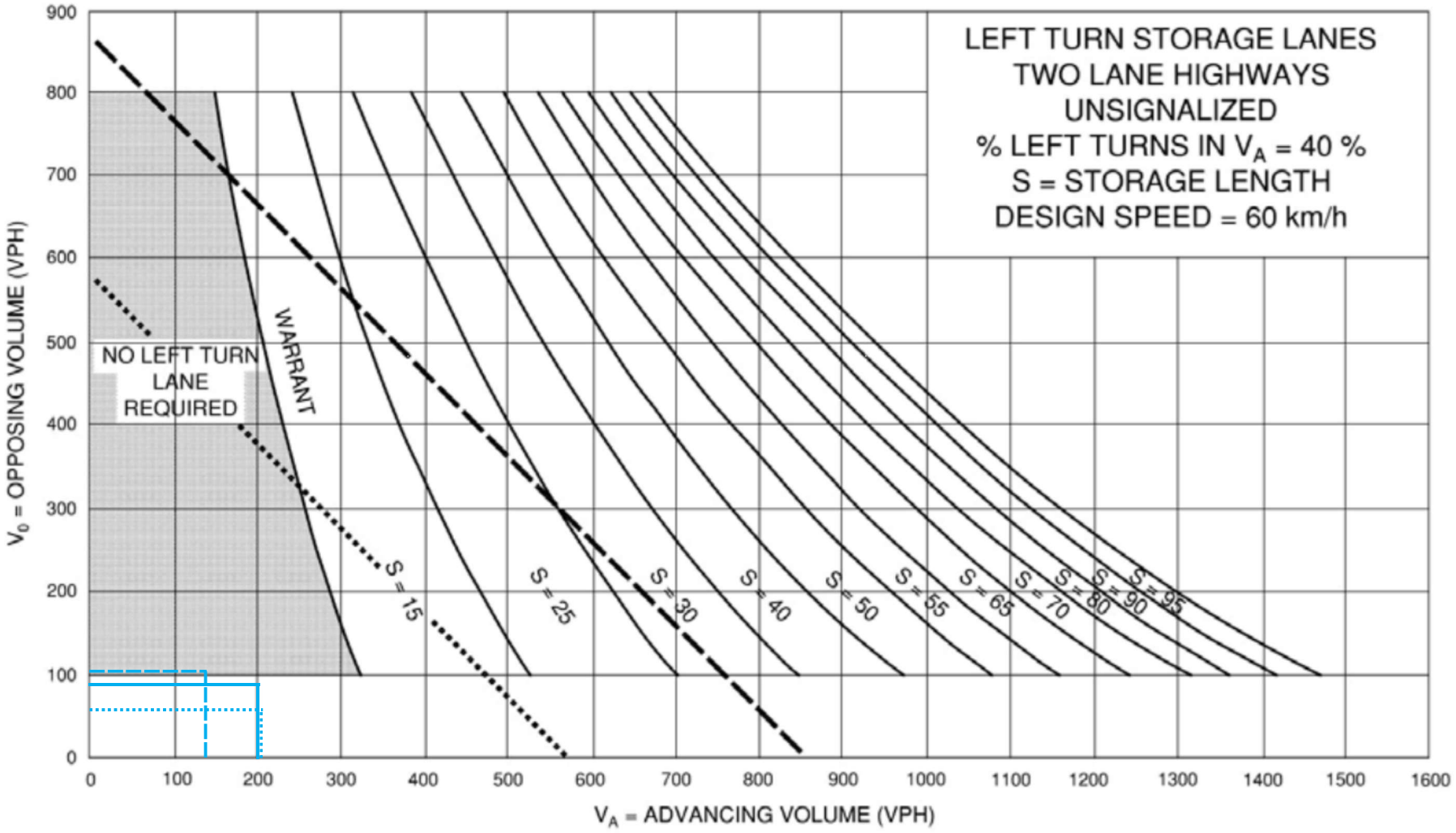
Left Turn Lane Warrant
County Road 10 & Street G
MTO Supplement to the TAC Design Guide



Total Traffic Volumes 2030

	CR 10 & Street G			CR 10 & Street G		
	NB-AM	NB-PM	NB-SAT	SB-AM	SB-PM	SB-SAT
Advance Volume (V_a)	686	737	682	453	796	670
Opposing Volume (V_o)	453	796	670	686	737	682
Left Turn Traffic Volume (V_L)	N/A	N/A	N/A	6	24	18
% Left Turns in V_a	N/A	N/A	N/A	1.3% (5%)	3.0% (5%)	2.7% (5%)
Legend						

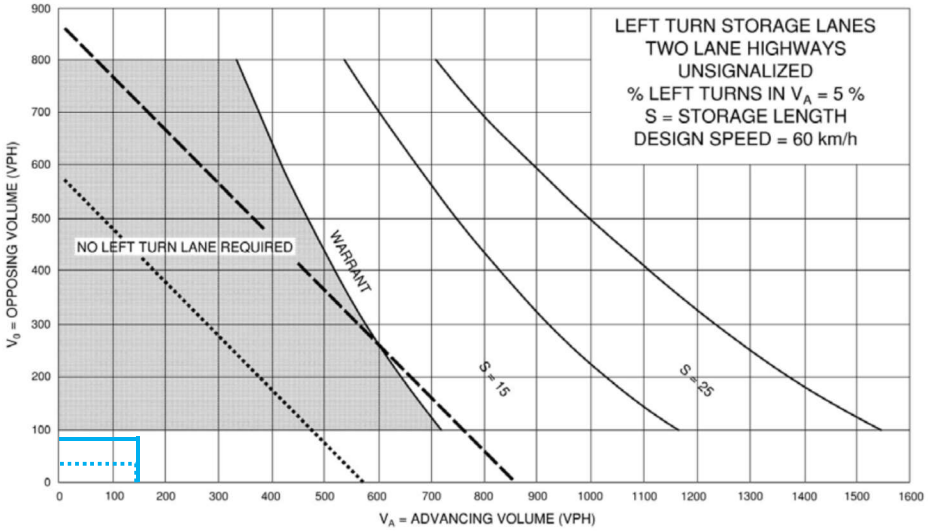
Left Turn Lane Warrant
Fallis Line & Driveway F
MTO Supplement to the TAC Design Guide

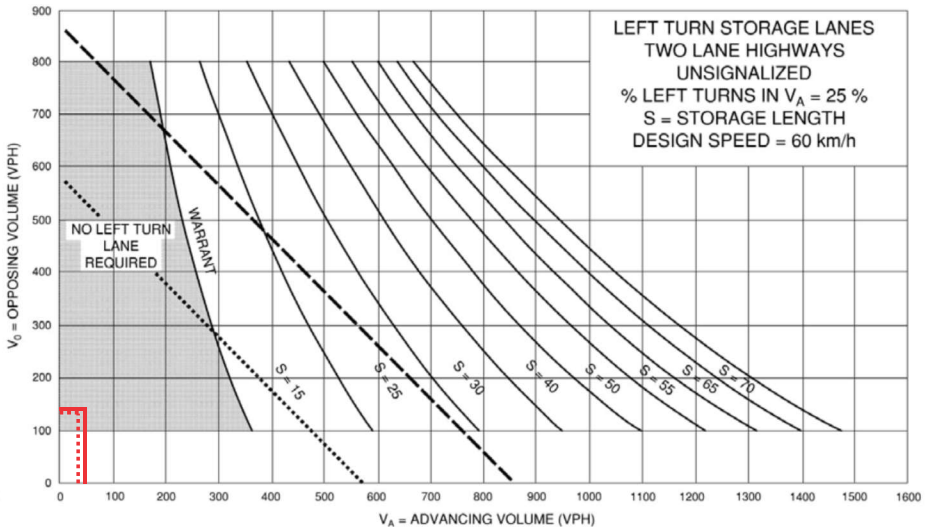


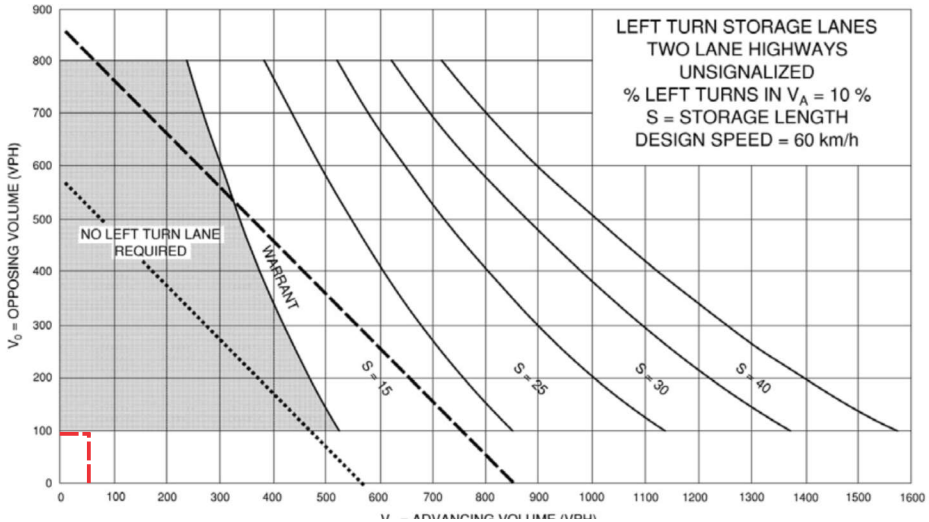
Total Traffic Volumes 2035

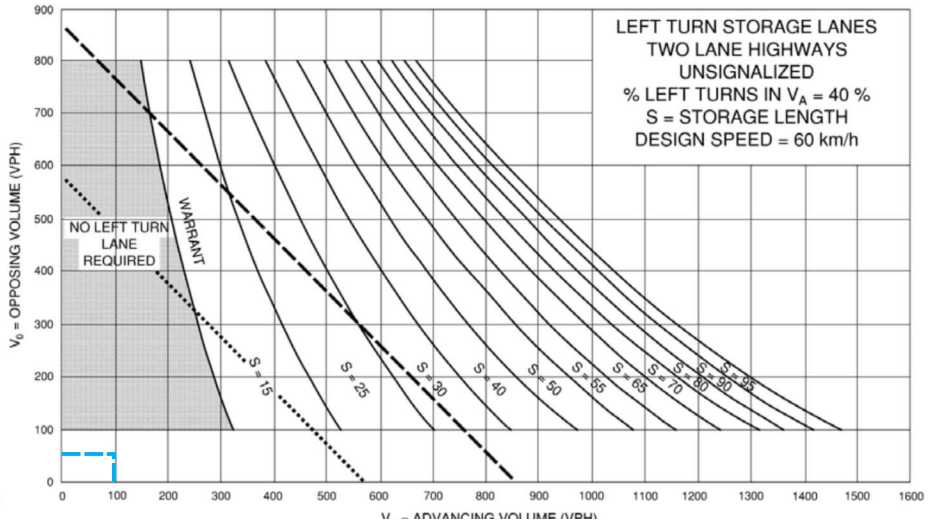
	Fallis Line & Driveway F			Fallis Line & Driveway F		
	EB-AM	EB-PM	EB-SAT	WB-AM	WB-PM	WB-SAT
Advance Volume (V_a)	136	204	201	105	58	89
Opposing Volume (V_o)	105	58	89	136	204	201
Left Turn Traffic Volume (V_L)	106	111	118	N/A	N/A	N/A
% Left Turns in V_a	78% (40%)	54% (40%)	59% (40%)	N/A	N/A	N/A
Legend	– – – –	.....	———			

Left Turn Lane Warrant
Highland Blvd & Driveway B / Driveway C
MTO Supplement to the TAC Design Guide









Total Traffic Volumes 2035

	Highland Blvd & Dwy B / Dwy C			Highland Blvd & Dwy B / Dwy C		
	EB-AM	EB-PM	EB-SAT	WB-AM	WB-PM	WB-SAT
Advance Volume (V_a)	96	139	140	53	36	49
Opposing Volume (V_o)	53	36	89	96	139	140
Left Turn Traffic Volume (V_L)	37	2	1	5	10	11
% Left Turns in V_a	38.5% (40%)	1.4% (5%)	0.7% (5%)	9.4% (10%)	27.4% (25%)	22.6% (25%)
Legend						