150 Steeles Avenue East and 248, 250 & 314 Martin Street

Proposed Mixed-Use Development

Transportation Considerations

Town of Milton

Prepared For: 150 Steeles Milton Inc. (Neatt Communities)

February 2026



February 19, 2026

Tiffany Singh, MCIP, RPP
Senior Associate
Urban Strategies Inc.
E-mail: Tsingh@urbanstrategies.com

RE: 150 Steeles Avenue East and 248, 250 and 314 Martin Street Development – Updated TIS

Dear Tiffany:

Attached please find BA Group's **Updated** Traffic Impact Study for the proposed development at 150 Steeles Avenue East and 248, 250 and 314 Martin Street, located in the Town of Milton, in the Region of Halton.

The Mountainview West development application includes a site-wide **Official Plan Amendment (OPA)** application to permit a total net density of 3.6 FSI. For the purposes of this report, for the full build-out of the site (Phases 1 and 2), Urban Strategies Inc. has provided a conceptual mixed-use development proposal that includes a total of 4,115 residential units and 4,200 m^2 of commercial retail GFA.

The development of **Phase 1** is proposed through a phase-specific **Zoning By-law Amendment (ZBA)** application and includes 1,065 residential units, inclusive of 955 mid-rise units and 110 townhouses, along with 522 m^2 GFA of at-grade commercial retail. Phase 1 is expected to be completed by 2036. The number of residential units and floor areas by land use, for what is conceptually referred to as "**Phase 2**", are currently unknown but will be determined through future rezoning applications. For the purposes of this report, Phase 2 has been assumed to include a total of 3,050 residential units and 3,678 m^2 of commercial retail GFA. The Phase 2 concept (full site build-out) is assumed to be completed by 2046 for the purposes of the traffic analysis.

I can confirm that the enclosed report has been prepared under my supervision and to the best of my knowledge is accurate and true.
Sincerely,

BA Consulting Group Ltd.





Deanna Green, MSc. P.Eng.
Senior Associate

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150 Steeles Avenue, Milton
BA Group Responses to
Town of Milton and Region of Halton October 2025 Comments

The comments outlined below were provided in response to the Town and Region's review of BA Group's April 2025 Transportation Considerations Report (Traffic Impact Study).

Town of Milton Comments – October 3, 2025

Traffic Impact Study

Comment 1: Please provide clarification related to the Modal Split. Text within Section 5.3 implies that Driver mode share is higher than the 10-20% that was noted below Table 28.

Response: Additional clarification regarding the travel modal split has been provided in BA Group's February 2026 Report in **Section 5.3.** The modal split percentages outlined in Section 5.3 notes the approximate 70% residential auto driver mode share that has been referenced (i.e. the ITE and 2016 auto driver mode share that the proxy trip generation rates are based upon), with which to calculate the actual residential trip reduction percentage.

It was conservatively assumed that by 2051, the residential auto driver mode share will be slightly reduced from the 54% observed in the 2022 TTS data to 50%. As such, the assumed auto driver mode share reduction evolves from 70% to 50% (i.e. a 20% reduction) by 2051. This 20% is scaled to the other horizons as a 10% reduction per decade for area auto driver mode. This results in an assumed 0% reduction from 2031 to 2041, with a 10% reduction from 2041 to 2051 and a 20% reduction from 2051 and beyond.

The vehicle trip rates and trip generation presented in Table 28 of BA Group's December 2025 Report, have been based on the auto driver portion of the mode share. As discussed above, the vehicle trip rates were then adjusted at future horizons, as per the 0% to 20% reduction based on the horizon year.

In summary, the 10-20% that was noted refers to the percent reduction in auto driver mode share and by association, a percent reduction to the vehicle trip rate. The mode splits presented within Section 5.3 of BA Group's February 2026 Report, refers to the actual mode share values from the area versus proxy sources.

Comment 2: Please provide the TTS data that was used to estimate the background site traffic.

Response: 2016 TTS data was used to inform area travel mode share and trip distribution / assignment for background JBPE site traffic. All TTS data used for the traffic analysis of background JBPE site traffic is provided in **Appendix O** of BA Group's February 2026 Report.

Comment 3: The TIS must clearly outline/identify the recommended road improvements and associated phasing of improvements.

Response: To supplement **Figure 65** through **Figure 72** provided within BA Group's February 2026 Report, **Table 60** has been included within BA Group's February 2026 Report in **Section 6.5**, that clearly identifies the recommended road improvements and the associated phasing (i.e. horizon year) of the improvements.

Comment 4 : Please provide a section within the TIS that discusses the proposed roadway connections to Martin Street and also conducts an intersection review for internal roadways.

Response: Additional information has been included within BA Group's February 2026 Report that discusses the proposed roadway connections to Martin Street along with an intersection review of the queues at the internal streets connecting to Martin Street and Steeles Avenue (**Section 7.2**).

Comment 5: Please provide a SimTraffic assessment for the intersections along Martin Street as well the intersection of Street A at Street B to determine storage/queue lengths.

Response: As part of BA Group's February 2026 Report, a SimTraffic assessment has been undertaken for the focused study area network in the site vicinity, including assessment of the following 5 intersections:

- Martin Street/ Street A
- Martin Street/ Street D/Caves Court)
- Steeles Avenue/ Street A
- Steeles Avenue/ Street B
- Steeles Avenue/ Martin Street

The level of service and queuing results of the SimTraffic assessment are provided in **Section 7.1.2** and **Section 7.2.2.** The worksheets are provided in **Appendix BB** of BA Group's February 2026 Report. Given that the highest site traffic will be at the 2046 horizon (i.e. reflecting build out of all development phases and higher auto mode share prior to the expected 20% reduction by 2051), the recommended storage/queue lengths in relation to the site driveways, are based on results at the 2046 horizon.

Comment 6: Please provide additional justification related to the signalization of Martin Street at Street D.

Response: Additional justification for the signalization of Martin Street at Street D/ Caves Court has been provided in BA Group's February 2026 Report in **Section 8.3.**

Comment 7: Please provide an internal network review. The review is to also include and discuss the proposed intersections spacing and operations between Street A/Street B and Martin Street. The TIS should also include a review of the spacing between adjacent driveways shown in the proposed site plan for the Phase 1 development.

Response: The internal intersection spacing has been reviewed in **Section 7.2** of BA Group's February 2026 Report, inclusive of the proposed intersection spacing along Martin Street. A traffic operations review of internal intersections has been updated in BA Group's February 2026 Report in **Section 7.3**, in regard to queuing and level of service under the **2046 horizon**. This scenario considers that both phases of the development are fully built out but as 2046 is prior to the forecast decrease in auto driver mode share that is expected by 2051, 2046 represents the worst-case scenario.

The updated site traffic, including additional retail trips, has been distributed throughout the internal network, using SimTraffic microsimulation to better assess the internal queuing, relative to internal driveways and the spacing between intersections.

The following internal intersections plus the expected block driveway accesses were included in this analysis:

- Street A / Street C
- Street B / Street C
- Street A / Street B/ Street D
- Street A / Street E
- Street D / Street E

Comment 8: The TIS should acknowledge that future traffic analyses will be required in support of future development applications for blocks/sites within the Draft Plan of Subdivision.

Response: BA Group's February 2026 Report notes that future traffic analyses will be required in support of future development applications for blocks/sites within the Draft Plan of Subdivision.

Comment 9: At detailed design, updated traffic counts may be requested to compare the change in travel patterns, as well as provide a comparison between the volumes of the TMC's provided in the approved TIS.

Response: Noted.

Comprehensive Development Plan

Comment 1: Comments related to the Comprehensive Development Plan have been provided below: a. As requested in the section below (Drawings), an aerial view with the detailed cross-sections and lanes overlayed will need to be provided to the Town for review and visualization. b. Please ensure that the minimum width for sidewalks is 1.8m. c.*Additional comments may be provided at the time of detailed design.

Response: a) BA Group's February 2026 Report (**Appendix C** includes the wider site, **Appendix D** includes detailed cross-sections and **Appendix E** includes the proposed intersections along Steeles Avenue and on Martin Street). These drawings include an aerial view with the detailed cross-sections and lanes overlayed for the Town's review and visualization. b) The width of the sidewalks within the proposed new road network has been increase from 1.5 m to 1.8 m. c) Noted.

Drawings

Comment 1: Redlines related to the Draft Plan of Subdivision have been attached, please see the attached redlines for context:

a. Please provide appropriate daylighting at all intersections as per the requirements outlined in the Town's Engineering and Parks Standards Manual.

b. Please ensure that intersection spacing between Street E and Street D meet the Town's minimum requirements (60m).

i. A review of the intersections within the Draft Plan should also be discussed within the Traffic Impact Study.

ii. The proposed intersections to Martin Street should have a Sightline Analysis conducted.

iii. Additional lands from Block 09 may need to be conveyed to the Town to meet daylighting requirements.

Response:

i. An updated review of the internal road network intersection operations is provided in BA Group's February 2026 Report and includes Street A / Street B and Street A / Street C, Street A / Street E, Street D / Street E and Street A / site driveway.

ii. A sightline analysis has been completed for Martin Street/ Street A and Martin Street/ Street D/Caves Court and is included in BA Group's February 2026 Report in **Section 7.4**.

iii. Noted. Appropriate daylighting (7.5m x7.5m) as per the requirements outlined in the Town's Engineering and Parks Standards Manual, has been noted on the plans for Martin Street/ Street A and at Martin Street/ Street D/ Caves Court.

Comment 2: Additional drawings as part of Draft Plan Submission are required. Please provide the following:

a. Active Transportation/Pedestrian Routing Plan (Theressa)

b. On-Street Parking Plan (Theressa)

c. As part of the 1st Engineering Submission, the following will also be required i. Detailed Cross-sections and ii. Traffic Control Plan(s).

Response:

a) An active transportation routing plan is provided in BA Group's February 2026 Report in **Appendix W.**

b) An on-street parking plan is provided in BA Group's February 2026 Report in **Appendix X**.

c) Noted.

Comment 3: As there are two new intersections proposed along Martin Street, turning movements may result in vehicle headlights shining into nearby homes. The applicant is therefore expected to propose appropriate mitigation measures (e.g., masonry walls, landscaping) to reduce light intrusion. In good faith, coordination between Town Staff, the applicant and neighbouring residents will be necessary to support the implementation of the proposed mitigation measures at the intersections along Martin Street.

Response: An in-field evaluation was undertaken on the evening of November 2, 2025 to assess the potential impact of the headlights from eastbound vehicles travelling on Street A towards 311 Martin Street. The preliminary in-field evaluation indicated that due to the angle of Street A at Martin Street, the impact of headlights shining on 311 Martin Street would be minimal. The developer will continue to work with the resident of 311 Martin Street to ensure that all concerns are resolved in a reasonable manner.

Comment 4. Please provide an Aerial plan to help Town Staff visualize the following:

a. The proposed cross-sections, and how they tie into each intersection.

b. Show the proposed signalized intersections and associated turn-lanes along Martin Street.

c. Show any details regarding masonry walls/ landscaping to mitigate vehicle lights (and potentially noise) from entering nearby residential homes.

Response:

a. BA Group's February 2026 Report (**Appendix C** includes the wider site, **Appendix D** includes detailed cross-sections and **Appendix E** includes the proposed intersections along Steeles Avenue and on Martin Street). These drawings include an aerial view with the detailed cross-sections and lanes overlayed for the Town's review and visualization

b. See above response in "a".

c. See above response to Comment 3.

Comment 5. At detailed design, updated traffic counts may be requested to compare the change in travel patterns, as well as provide a comparison between the volumes of the TMC's provided in the approved TIS.

Response: Noted

Region of Halton Comments - October 7, 2025

Transportation

Comment: Steeles Avenue Right-of-Way Requirements:

Any lands within 17.5 metres of the centreline of the original right-of-way of Steeles Avenue that are part of the subject property shall be dedicated to the Regional Municipality of Halton for the purpose of road right-of-way widening and future road improvements.

A daylight triangle measuring 15 metres along Steeles Avenue and 15 metres along the proposed Street "A" and Street "B" connections (if approved by Halton Region) shall be dedicated to the Regional Municipality of Halton for the purpose of road right-of-way widening and future road improvements. The daylighting triangle must be measured from the ultimate Steeles Avenue right-of-way limit.

Response: Noted. Any lands within 17.5 metres of the centreline of the original right-of-way of Steeles Avenue that are part of the subject property will be dedicated to the Regional Municipality of Halton for the purpose of road right-of-way widening and future road improvements.

As confirmed by the Region in a November 14, 2025 e-mail, daylight triangles measuring 15 metres along Steeles Avenue and 15 metres along the proposed Street "A" and 12 metres along Steeles Avenue and 12 metres along the proposed Street "B" shall be dedicated to the Regional Municipality of Halton.

Transportation Impact Study Requirement:

Comment: All references to Halton Region's Official Plan should be removed in the TIS as the document was changed from a Regional plan to a Local plan as of July 1, 2024 in response to the provincial updates to Regional municipalities' roles in land-use planning.

Response: Noted. This has been updated in BA Group's February 2026 Report.

Comment: Section 4.2.1 and Table 9 only note the future widening of Steeles Avenue to four lanes from Industrial Drive to Tremaine Road as opposed to the "New" Steeles Avenue alignment itself. This section and table should note this realignment as a Capital Improvement in addition to the widening to four lanes.

Response: Noted. This has been updated in BA Group's February 2026 Report.

Comment: Section 4.2.1 and Table 9 only note the future interchange at "New" Tremaine Road and Highway 401 and the future widening of "New" Tremaine Road to six lanes from Highway 401 to Derry Road as opposed to the "New" Tremaine Road alignment itself that is currently under construction. This section and table should note this realignment (consisting of four travel lanes) as a Capital Improvement in addition to the future Highway 401 interchange and future widening to six-lanes.

Response: Noted. This has been updated in BA Group's February 2026 Report.

Comment: Section 4.2.1 and Table 9 note the future widening of James Snow Parkway to six-lanes from Highway 401 to Britannia Road. However, the segment of James Snow Parkway that is within the "wider study area" is from Highway 401 to Tremaine Road, which includes the Highway 401 ramp terminals, the intersection at Steeles Avenue and the intersection at Regional Road 25. Therefore, the future widening of James Snow Parkway to six-lanes from Highway 401 to Tremaine Road (with construction expected to start in 2030) should be listed as a Capital Improvement in this section and table.

Response: Noted. This has been updated in BA Group's February 2026 Report.

Comment: The expected construction start date for the Regional Road 25 widening to six- lanes from Highway 407 all the way to Derry Road is now realistically closer to 2028/2029 and thus should be updated accordingly in Section 4.2.1 and Table 9.

Response: Noted. This has been updated in BA Group's February 2026 Report.

Comment: The expected construction start date for the Regional Road 25 widening to six- lanes from Steeles Avenue to No. 5 Side Road is now 2027 and thus should be updated accordingly in Section 4.2.1 and Table 9.

Response: Noted. This has been updated in BA Group's February 2026 Report.

Comment: The reference in Section 4.2.1 and Table 9 to "5 ½ Line" as well as any other references to this future corridor in the TIS should be updated to its current name "New North Regional Road."

Response: Noted. This has been updated in BA Group's February 2026 Report.

Comment: Figure 10 "Halton Region TMP Road Upgrades (2023-2031)" is now outdated given the updates to Halton Region's Budget and Business Plan and ongoing Integrated Master Plan, and thus should be removed from the report.

Response: Noted. Figure 10 “Halton Region TMP Road Upgrades (2023-2031)” has been removed from BA Group’s February 2026 Report.

Comment: Clarification as to what the proposed modal split reduction is based on and reflects should be provided in the report. Additionally, the report should clearly note upfront (i.e. in Section 5.3) that the actual non-auto modal split reductions that were applied to 2041/2046 and to 2051 were 10% and 20%, respectively. The text as currently presented in the report may imply that auto driver mode shares of 60% and 50% were applied to 2041/2046 and 2051, respectively (which would correlate to non-auto modal split reductions of 40% and 50% applied to 2041/2046 & 2051, respectively).

Response: Noted. **Section 5.3** has been revised to provide additional context for the relationship between the presented auto driver mode share and adopted trip generation reduction percentages at the various study horizons. The text explicitly notes the 10% trip rate reduction at the 2041 and 2046 horizons and the 20% trip rate reduction at the 2051 horizon.

It should be noted that, auto driver mode shares of 60% and 50% at the 2041/2046 and 2051 horizons, respectively, do **not** correlate to a 40% and 50% reduction to the ITE auto trip generation rates. That would only be true if the ITE trip generation rates reflect a context with 100% auto driver mode share. However, per the investigation on the travel mode shares of ITE proxy sites presented in **Section 5.3** of BA Group’s February 2026 Report, the auto driver mode share for the average ITE suburban/urban context is in the order of 70%. The reductions to trip rates are based on the difference between the existing (ITE) auto driver mode share versus the forecast auto driver mode shares of 60% and 50% at the 2041/2046 and 2051 horizons.

Comment: The existing Regional Road 25 and Highway 401 ramp terminals are shown to be in the “focused study area” intersections per Figure 17, but are not listed in the “focused study area” intersections per Table 16. These ramp terminals should be listed in Table 16 for consistency.

Response: Noted. **Table 16** has been updated within BA Group’s February 2026 Report, to include Regional Road 25 / Highway 401 ramp terminals (signalized intersections).

Comment: The intersection of Steeles Avenue and Chris Hadfield Way appears to be omitted from the traffic operations analysis for most scenarios in the TIS, even though the capacity analysis output reports indicate that analysis was completed for these scenarios (although this intersection analysis is also missing from most scenarios in the output reports as well). The missing traffic operations analysis for this intersection must be added into the TIS as well as the appended capacity analysis output sheets.

Response: The traffic analysis within BA Group’s February 2026 Report has been updated to include the intersection of Steeles Avenue/ Chris Hadfield Way, for all analysis scenarios.

Comment: Section 5.5.2 should provide some more details regarding the volume balancing that was applied to the “raw” existing traffic volumes (e.g. what percentage threshold were the volumes balanced to, what intersections were selected as the reference point, etc.). Separate figures should also be provided to illustrate the “raw” existing traffic volumes and the “balanced” existing traffic volumes on the road network for clarity.

Response: Section 5.5.2 has been revised to provide additional information on the balancing of the “raw” existing traffic volumes. For clarity, the “raw” and “balanced” existing traffic volumes have been illustrated in **Figure 18** and **Figure 19** of BA Group’s February 2026 Report, respectively.

Comment: The TIS rounds existing traffic volumes, future background and total traffic volumes, “background site traffic” trip generation forecasts and development proposal trip generation forecasts to the nearest five for

use in the report calculations and analyses. The exact values for these parameters must be used in the analysis and forecasts. All calculations, tables, figures and analyses must be updated accordingly.

Response: Since the existing traffic volumes fluctuate daily and since the background growth and site traffic volumes are forecasts, BA Group believes that it is reasonable and prudent to round all traffic volumes to the nearest 5 vehicles. For this reason, the traffic volumes used for the analysis within BA Group's February 2026 Report, continue to be rounded to the nearest 5 vehicles.

Comment: The intersection of Steeles Avenue and Chris Hadfield Way is shown to operate with signal control in several of the road network lane configuration figures. The correct intersection control should be consistently shown on all road network lane configuration figures.

Response: The details regarding the intersection of Steeles Avenue and Chris Hadfield Way have been updated in BA Group's February 2026 Report such that the intersection has been shown to operate unsignalized with two-way stop control under all scenarios.

Comment: The future background traffic volumes that were used in the future background traffic analysis reflect the background growth rates provided by Halton Region as well as the re-assigned trips on the background road network based on the capacity constraint method of trip assignment. The "background site traffic" associated with the subject property (reflected by the JBPE's that Halton Region provided for the subject property) was removed from the road network before the current development proposal site traffic was added to the road network, as to avoid double counting the subject property under future total conditions. However, the future background traffic volumes that were used in the future background traffic analysis should have reflected the removed "background site traffic" as opposed to this traffic removal only being reflected under future total conditions. While this wouldn't impact the future total traffic volumes nor future total traffic analysis, this application would provide a more clear-cut "with and without" analysis of the future road network in relation to the current development proposal. This application would also ensure that the increase in traffic volumes from future background conditions to future total conditions more accurately reflects the addition of site generated traffic to the road network given the scale of the proposed development (as opposed to specific turning movement volumes being greater under future background conditions compared to future total conditions). Therefore, an additional "future background conditions" analysis should be added to the report that reflects the removed "background site traffic", with an additional "future-background-to-future-total comparison" added to the report that quantifies the increase in traffic operations between future background conditions (with "background site traffic" removed) and future total conditions.

Response: The analysis within BA Group's February 2026 Report has been updated to include a future background conditions analysis that reflects the removal of all JBPE background site traffic at each analysis horizon. The updated work also includes a comparison of future background conditions (with all site traffic removed), with future total conditions (inclusive of site traffic).

Comment: The bolded statement in Section 5.7.2 should be corrected to note that the JBPE's associated with the subject property that were used in the analysis were provided by Halton Region in November 2024 as opposed to November 2025.

Response: Noted. **Section 5.6.5** in regard to the use of the JBPE within BA Group's February 2026 Report has been updated.

Comment: The JBPEs that were provided by Halton Region in November 2024 were applied to this report. However, the employment estimates were not correctly applied in the analysis. In March 2025, the applicant's

team requested clarification from Halton Region on the interpretation of the employment estimates from the November 2024 JBPE's as presented in Halton Region's Terms of Reference comments. Staff responded to clarify that the employment estimates as presented in the Terms of Reference comments reflected the increases for each horizon year from the "base" existing employment estimate threshold of 259 jobs to determine the "ultimate" estimate threshold for each horizon year. For example, the employment estimate for the 2031 horizon year was listed as "+393" [jobs] which, combined with the footnote provided in the table, was meant to be added to the base threshold of 259 jobs for an ultimate estimate threshold of 652 jobs to be accounted for under the 2031 horizon year. In the response, staff provided a revised table to clearly identify the "ultimate" estimate thresholds for each horizon years to be considered in the analysis. Therefore, the "ultimate" employment estimate thresholds of 652, 1363 and 1564 jobs must be considered under the 2031, 2041/2046 and 2051 horizon years, respectively, in the "background site traffic" estimation and trip removal.

Response: As discussed in more detail in **Section 5.6.5** of BA Group's February 2026 Report, the updated JBPE provided by the Region in March 2025 was reviewed. A comparison of the original November 2024 JBPE and the March 2025 JBPE development information for the site, revealed that the population (5,103 persons by 2051) and the residential unit count (2,209 units by 2051) assumed for the site were consistent. However, a comparison of the employment assumed by 2051 for the site, equivalent to 1,305 jobs in the November 2024 JBPE and 1,564 jobs in the March 2025 JBPE, revealed that 259 jobs had been assumed for the existing site.

As the existing site has been vacant for many years, BA Group's traffic analysis methodology has been updated to consider the employment-related vehicle trips assumed by the Region related to the site. As BA Group's existing traffic counts reflect no traffic activity related to the site, a new existing traffic volume layer has been created called "Adjusted Existing Traffic Volumes" that adds the traffic related to the 259 jobs assumed for the site within the JBPE, to the existing traffic volumes.

Future background and subsequent background site traffic estimation and trip removal reflect the inclusion of the above-noted traffic allowance for the JBPE baseline jobs on the site, in addition to the associated growth of corridor traffic when the Regional growth rates are applied to the adjusted existing traffic volumes at each horizon. The additional corridor traffic is discussed in **Section 5.6.3** of BA Group's February 2026 Report.

Comment: Modal split reductions for the future horizon years were applied to the residential trips forecasted for the subject property from the JBPE's provided by Halton Region (for which this "background site traffic" is to be removed from the road network under future background conditions as to avoid double counting the subject property under future total conditions), but were not applied to the office trips from the "background site traffic." Justification for not applying modal split reductions to the office trips must be provided in the report.

Response: In BA Group's April 2025 Report, modal split reductions applied to the residential trips were derived based on a comparison of the baseline auto mode split of 70% (observed for both the ITE and 2016 TTS from which the baseline trip rates are adopted), relative to the ultimate future forecast auto mode split of 50% by 2051 (adopted based on a review of 2022 TTS data). This comparison informed the adopted 20% auto trip rate reduction adopted for the 2051 horizon (and the 10% for the interim 2041 and 2046 horizons).

As per the trip generation undertaken for the JBPE background site allowance in BA Group's February 2026 Report, a similar comparison was made between the existing auto mode split for work (office) trips within the ITE and 2016 TTS versus the 2022 TTS. It was observed that the office work auto mode share within the 2022 TTS is very similar to the 2016 TTS and thus no auto mode shift is anticipated for office trips under

future conditions. The detailed comparison and justification is provided in **Section 5.6.5** of BA Group's February 2026 Report.

Comment: The supporting TTS data that was used to estimate trip distribution for "background site traffic" is not appended to the report and thus should be appended for report clarity.

Response: The supporting TTS data that was used to estimate trip distribution for background site traffic has been provided in **Appendix O** of BA Group's February 2026 Report.

Comment: Justification should be provided in the report for applying LUC 220 "Multifamily Housing (Low-Rise)" from the ITE Trip Generation Manual, 11th Edition to the proposed townhouse units as the most appropriate LUC for trip generation forecasts.

Response: Additional justification for applying LUC 220 "Multifamily Housing (Low-Rise)" from the ITE Trip Generation Manual, 11th Edition to the proposed townhouse units as the most appropriate LUC for trip generation forecasts, has been provided in BA Group's February 2026 Report in **Section 5.7.3**. The LUC 220 trip rates were used to better differentiate the known townhome component from the more generic midrise allocation within the development proposal, for which LUC 221 was applied.

Comment: Trip generation was forecasted for the residential component of the proposed development but not for the retail component. The TIS rationalizes this omission by noting the comparably low retail GFA being proposed, the ancillary nature of the proposed retail component to the residential component of the overall development proposal, and the likeliness of trips to and from the local area to be made by walking as opposed to driving. Staff can appreciate that the proposed retail component will be primarily ancillary to the residential component of the overall development proposal and that a significant portion of trips to and from the local area may be made by walking as opposed to driving. However, the proposed retail GFA of 3,493 sq. m is not negligible from an auto trip generation perspective and thus some degree of primary auto trips could reasonably be generated, depending on the nature of the proposed retail. Accordingly, the TIS must describe the specific type and format of the proposed retail use to confirm that the retail use will be nearly fully ancillary to the residential component of the overall development proposal and thus be expected to generate minimal primary auto trips. Additionally, pass-by auto trips that may potentially be generated by the proposed retail use should be forecasted and accounted for at the proposed development accesses to the Regional and Town road network as appropriate.

Response: The updated TIS has conservatively included trip generation for the proposed retail components in both the Phase 1 and Phase 2 development. Given the minimal scale of the retail (only 522 m^2) proposed in Phase 1, no **internal** trips were assumed. Trip internalization relative to the residential uses on site and passby considerations, were only considered for the proposed retail uses for Phase 2.

Retail trip rates, internalization and passby rates were based on the ITE Trip Generation Manual 11th Edition LUC821. Traffic assignment was based on the ratio of future traffic along Martin Street versus Steeles Avenue by direction. The forecasting and updated operations analyses of the retail trips are provided in **Section 5.7.4** within BA Group's February 2026 Report.

Comment: The TIS uses Synchro 11 for modelling analysis of all study intersections. While this is proper industry practice for signalized, all-way stop controlled or side- street stop-controlled intersections, Synchro is not recognized as a proper analysis software to analyze roundabout traffic operations compared to more specific roundabout modelling software such as ARCADY. Therefore, ARCADY should be used for traffic operations analysis of the Steeles Avenue and Tremaine Road, and future "New" Steeles Avenue and "Old"

Steeles Avenue roundabouts west of the subject property. This would be in conformance to proper industry practice and provide more accurate results at these roundabouts, which is important especially when considering that future traffic operations issues are identified at the Steeles Avenue and Tremaine Road roundabout. To assist with the ARCADY analysis, as-built drawings for the roundabout of Steeles Avenue and Tremaine Road will be provided by Halton Region in a separate e- mail.

Response: The SIDRA software package has been utilized to update the traffic operations analysis at the Steeles Avenue / Tremaine Road and Steeles Avenue / Peru Street roundabouts under future conditions. The traffic operations analysis has been updated with the following scenarios: 1) the **unconstrained** future background conditions and 2) the **constrained** future background and future total conditions. The updated roundabout analysis is provided in **Section 6.2** and **Section 6.3** of the updated TIS and Sidra worksheets are provided in **Appendix CC**. Unconstrained and constrained traffic volumes are defined as follows:

- **Unconstrained** – future traffic volumes that align with the growth rates provided by the Region and Town.
- **Constrained** – future traffic volumes that have been reduced to better reflect available capacity within the road network.

Based on a traffic operations assessment, the future background traffic volumes (unconstrained) were reduced to reflect the constrained traffic volumes. The constrained future background traffic volumes reflect what the future road network is able to appropriately accommodate.

Comment: All critical volume-to-capacity ratios and 95th percentile queue lengths as defined by Halton Region's TIS Guidelines must be bolded or highlighted in the traffic operations results tables.

Response: Noted. Critical volume-to capacity ratios (i.e. > 0.95 for exclusive turning movements and >0.85 for all other movements) and 95th percentile queue lengths that are beyond the available storage, have been highlighted in BA Group's February 2026 Report in **Section 6.2** through **Section 6.4**. These criteria have also been applied to the analysis results presented in **Section 7.2**, **Section 7.3** and **Section 9.4**.

Comment: The TIS applies a lost-time adjustment of -3.0 seconds in the modelling to fully- protected left-turn movements on the future road network based on the rationale that 3 "sneakers" per cycle on average could be expected to clear the intersection during the intergreen period. While a lost-time adjustment is acceptable in the context of this analysis, the magnitude of this proposed adjustment is significant to the point where additional justification would typically be required by Halton Region to be applied. Therefore, the magnitude of the lost- time adjustment should either be reduced to -2.0 seconds or further justified in the TIS with supporting raw data or HCM calculations detailing amber time, all- red time, vehicle start-up, etc. Further, if the lost-time adjustment of -3.0 seconds is maintained, then the report must confirm that the modelling errors flagged by Synchro related to insufficient total lost-time (for the movements which the lost- time adjustment of -3.0 seconds was applied) are just qualitative only and do not impact the modelling results.

Response: The Synchro analysis has been updated such that all lost time adjustments have been set to a maximum of -2.0 seconds where required.

Comment: Consideration could be given to applying a PHF of 1.00 to the modelling analysis under future background and total conditions on the Regional Road network at intersections near capacity or beyond capacity as these intersections may be "consistently congested" during the entire peak hour, which would be

reflected by a PHF of 1.00. This assumption could be expected to improve traffic operations on the future road network but would have to be detailed and justified in the TIS.

Response: The revised analysis includes adoption of a PHF of 1.0 at all study area intersections under future conditions. Existing observed PHF have been maintained under existing conditions analysis.

Comment: The modelling analysis for the proposed RI/RO Street "B" connection to Steeles Avenue should be corrected so that the eastbound movement along Steeles Avenue is free-flow instead of stop-controlled. The modelling and analysis results should be updated accordingly.

Response: The traffic control at the Steeles Avenue / Street B intersection has been revised to correctly model a two-way stop control with stop control on Street B.

Comment: The TIS must clearly identify which recommended road improvements are triggered under future background conditions and which recommended road improvements are triggered under future total conditions (specifically by the addition of site generated traffic to the road network).

Response: Even with BA Group's adjustments to the Town's growth rates, a number of additional road improvements, beyond those being planned by the Town and Region, are being recommended within BA Group's February 2026 Report in **Section 6.5**, to accommodate general area background traffic growth. Although the proposed site traffic impact is moderate, it should be noted that all of the recommended road improvements are required under future background conditions and are not triggered specifically by site-related traffic.

Comment: Justification for the proposed full-moves Street "A" connection to Steeles Avenue opposite Morobel Drive and for the proposed RI/RO Street "B" connection to Steeles Avenue was requested, particularly a comparison of traffic operations, circulation, safety, etc. with and without the site accesses to Steeles Avenue. The purpose of this justification is to demonstrate the need for the proposed accesses to Steeles Avenue given that access to Steeles Avenue would technically not conform to Halton Region's Access By-Law NO. 32-17 (which states "access to a Regional Road from private property shall be permitted only where such access is necessary because access to a local road is not feasible") and the access spacing deficiencies along Steeles Avenue with both proposed connections (explained further in the following comments). This requested level of justification has not been provided in the TIS. Staff previously acknowledged and still acknowledge the need for at least one connection to Steeles Avenue given the scale of the proposed development and existing conditions along Martin Street – namely the proposed full-moves Street "A" connection. Therefore, justification for the proposed RI/RO Street "B" connection to Steeles Avenue must be provided which clearly demonstrates the benefits of permitting the proposed Street "B" connection to Steeles Avenue as well as the negative impacts of not permitting the proposed Street "B" connection. A comparison of traffic operations, circulation and safety with and without the proposed Street "B" connection to Steeles (as previously suggested) would be the most effective way to demonstrate the need for this access if it is truly needed. The proposed RI/RO Street "B" connection to Steeles Avenue will require approval from Halton Region.

Response: The results of a sensitivity analysis are provided in **Section 7.1.3** of BA Group's February 2026 Report that reviews the traffic operations on the internal street network and the site's street connections to Steeles Avenue, ***without*** the connection of Street B (RI/RO movements only) to Steeles Avenue. Although the Street B at Steeles Avenue RIRO connection is not technically required from a level of service and queuing perspective, this connection provides greater flexibility for internal traffic redistribution in the future,

particularly for outbound traffic that is currently forecast to use the Martin Street connections. Should Martin Street be busier than expected in the future and given its constraint to a 2-lane cross section, the Street B connection will be beneficial for additional routing options for site traffic to adjust to daily corridor traffic variations. This additional routing option is particularly desirable for site traffic routing eastbound along Steeles Avenue.

Comment: Section 6.6.1 of the TIS notes that the minimum spacing requirements per Halton Region's Access Management Guideline along Steeles Avenue from the proposed full-moves Street "A" connection to Steeles Avenue opposite Morobel Drive are satisfied. However, the proposed full-moves Street "A" connection would be located approximately 235 metres east of the existing intersection of Steeles Avenue and Bronte Street, which falls below the minimum 300 metre spacing requirement between full-moves accesses or intersections. Staff previously acknowledged and still acknowledge that the location of the proposed Street "A" connection to Steeles Avenue is the most ideal location from a traffic safety and overall access management perspective along Steeles Avenue as connecting to an existing intersection would reduce the number of total accesses along Steeles Avenue and avoid any offset access configurations which may result in vehicle-vehicle turning conflicts. Therefore, the TIS should note this rationale in support of the location of the proposed Street "A" connection to Steeles Avenue and also confirm that the proposed 95th percentile queue lengths along Steeles Avenue at Bronte Street and at Street "A" / Morobel Drive would not be expected to spillback to either intersection (e.g. that the span between Bronte Street and Street "A" / Morobel Drive can accommodate the forecasted queue lengths). SimTraffic queuing analysis does not have to be conducted for the entire road network under future total conditions but should be conducted along Steeles Avenue at the site frontage to confirm that the span between Bronte Street and Street "A" / Morobel Drive can accommodate the forecasted 95th percentile queue lengths.

Response: A review of the proposed intersection spacing along Steeles Avenue has been included in **Section 7.1** of BA Group's February Report. In addition, a SimTraffic assessment has been undertaken for the focused study area network in the site vicinity, including assessment of the following 5 intersections:

- Martin Street/ Street A
- Martin Street/ Street D/Caves Court)
- Steeles Avenue/ Street A
- Steeles Avenue/ Street B
- Steeles Avenue/ Martin Street

The level of service and queuing results of the SimTraffic assessment along Steeles Avenue are provided in **Section 7.1.2**. The worksheets are provided in **Appendix BB** of BA Group's February 2026 Report. Given that the highest site traffic will be at the 2046 horizon (i.e. reflecting build out of all development phases and higher auto mode share prior to the expected 20% reduction by 2051), the recommended storage/queue lengths in relation to the site driveways, are based on results at the 2046 horizon.

The analysis results indicate that the eastbound queues along Steeles Avenue at Street A will not reach Bronte Street during either analysis peak hour. However, the westbound left-turn queue during the afternoon peak hour (258 metres) has the potential to spillover into the westbound through lane in the future but is not expected to reach back to Street A (275 metres away) However, given the Steeles Avenue widening to four lanes, the two available westbound through lanes can accommodate the potential spillover of left-turn

vehicles and the through vehicles expected on the lanes. For the above-noted reasons, the spacing of the site intersections along Steeles Avenue is appropriate.

Comment: Section 6.6.1 of the TIS notes that the minimum spacing requirements per Halton Region's Access Management Guideline along Steeles Avenue from the proposed RI/RO Street "B" connection to Steeles Avenue are satisfied. However, the proposed RI/RO Street "B" connection would be located less than 100 metres west of the existing intersection of Steeles Avenue and Chris Hadfield Way, which falls below the minimum 115 metre spacing requirement from RI/RO accesses or intersections. Therefore, in addition to justifying the need for the proposed RI/RO Street "B" connection as noted above, the TIS must also demonstrate that this deficient access spacing associated with the proposed Street "B" connection, if approved in principle, would not result in any traffic operations or safety issues along Steeles Avenue (e.g. potential vehicle-vehicle turning conflicts between traffic exiting Street "B" onto Steeles Avenue eastbound and traffic exiting Chris Hadfield Way onto Steeles Avenue eastbound, weaving and merging conflicts with traffic exiting Street "B" onto Steeles Avenue and then merging over to the eastbound left-turn lanes at Martin Street / Regional Road 25 within a relatively short span, etc.). SimTraffic queuing analysis does not have to be conducted for the entire road network under future total conditions but should be conducted along Steeles Avenue at the site frontage to confirm any 95th percentile queuing impacts along Steeles Avenue between Chris Hadfield Way and the proposed RI/RO Street "B" connection. The proposed RI/RO Street "B" connection to Steeles Avenue will require approval from Halton Region.

Response: Section 7.1 within BA Group's February 2026 Report includes a review of the intersection spacing along Steeles Avenue between Street B, Chris Hadfield Way and Martin Street. The distance along Steeles Avenue between Chris Hadfield Way and the proposed Street B intersection is approximately 55 metres. The distance from Chris Hadfield Way to Martin Street is 150 metres but the taper for the dual eastbound left-turning lanes along Steeles Avenue, is located directly east of Chris Hadfield Way.

Traffic counts indicate that there are a maximum of 10 vehicles turning left to travel eastbound, from Chris Hadfield Way onto Steeles Avenue, and a maximum volume of 20 vehicles expected to turn right from Street B to travel eastbound along Steeles Avenue, during the peak hour of the day. Although the proposed intersection of Street B is only 55 west of Chris Hadfield Way, due to the low traffic volumes turning left from Chris Hadfield Way and low traffic volumes forecasted to turn right from Street B, weaving and merging conflicts along Steeles Avenue are expected to be minimal.

Comment: The TIS includes a qualitative analysis of traffic safety components associated with the proposed site accesses to Steeles Avenue. However, a quantitative analysis with comparisons between proposed values and minimum recommended values per the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR) was requested and must be provided for sight distance at the proposed accesses to Steeles Avenue and corner clearance requirements on Street "A" and Street "B" between Steeles Avenue and the nearest internal intersection or access.

Response: Section 7.4 in BA Group's February 2026 Report includes sections that review sight distance and corner clearance.

The sight distance assessment was undertaken at the following external site intersections and key internal intersections:

- Steeles Avenue / Street A

- Steeles Avenue / Street B
- Martin Street / Street A
- Martin Street / Street D
- Street D / Street E
- Street D / Block 6 driveway

The sight distance assessments provided in **Appendix Y** confirm that TAC standards are met at all reviewed intersections, for both turning sight distance and stopping sight distance.

A review of the corner clearance requirements on Street A and Street B, between Steeles Avenue and the nearest internal intersection / access has been undertaken and confirmed that the distance between Steeles and the nearest internal intersection along both Street A and Street B, exceed the minimum distance outlined in TAC Guidelines, therefore, the corner clearances are acceptable. Details regarding the corner clearance assessment is provided in **Section 7.0** of BA Group's February 2026 Report, with illustrations provided in **Appendix Z**.

Comment: Functional plans for the proposed Street "A" and Street "B" connections to Steeles Avenue were requested but have not been provided in the TIS. High- level functional (conceptual) plans should be prepared and included in the TIS to illustrate the proposed geometrics, traffic control, etc. for these proposed connections. Micro-level details pertaining to the geometrics, traffic control, etc. will be confirmed via review of Detail Design drawings through the future Engineering Submission phase of the development application process. The purpose of the high-level functional plans is to visualize the proposed accesses conceptually and confirm that they could feasibly be implemented in the context of the existing Steeles Avenue corridor.

Response: Functional plans for the proposed street connections to Steeles Avenue are provided in **Appendix E** of BA Group's February 2026 Report.

Comment: The vehicle turning diagrams for the swept path analysis illustrate a raised centre median on Steeles Avenue to physically restrict the proposed Street "B" connection to Steeles Avenue (subject to approval by Halton Region) to a RI/RO operation, which in theory is preferable to Halton Region. However, a raised centre median would also restrict existing adjacent driveways (especially on the opposite side of Steeles Avenue) which must be avoided. The TIS must consider this impact to existing adjacent driveways (e.g. curb depressions within the raised centre median to maintain full-moves operation at the existing driveways, or a pork-chop island at the Street "B" connection). If a pork-chop island is required to physically restrict the access without impeding the existing adjacent driveways, then the vehicle turning diagrams and functional plans must consider this pork-chop island from a vehicle swept path and overall geometric perspective.

Response: The functional plan for the proposed street connection of Street B to Steeles Avenue is provided in **Appendix E** of BA Group's February 2026 Report and illustrates a "pork-chop" type design to reinforce the RIRO movement only. Vehicle manoeuvring diagrams in **Appendix N** illustrate that the pork-chop design is functional.

Comment: The capacity analysis output reports for existing conditions appear to be missing from Appendix

“J” and thus should be included for report completeness.

Response: The Synchro analysis for existing conditions is provided in **Appendix J** of BA Group’s February 2026 Report.

Comment: The TIS should acknowledge that future traffic analyses will be required in support of future Site Plan Applications for blocks within the subdivision that reflect updated development statistics and site details, as well as any other updated analysis inputs if required.

Response: Noted. This acknowledgement have been added to BA Group’s February 2026 Report within the operations assessment section.

Comment: It is the consultant’s responsibility to ensure that any updates to the body of the TIS to address the comments above are consistently applied to the Executive Summary and Summary & Conclusions sections of the report where applicable.

Response: Noted.

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I. EXECUTIVE SUMMARY

Key Traffic Impact Study Summary

Based on the traffic analysis completed for this study, the conceptual development proposed for the site is expected to result in moderate traffic impacts on the area road network. However, it is important to note that the net impact, when compared to the as-of-right traffic potential included within the JBPE projections for the site, are expected to be minor.

The impact of the site traffic to overall intersection V/C ratios is moderate (5-10%) at the wider study area intersections and higher (10-15%) at key intersections within the focused study area, that a larger proportion of the site traffic would use, including Martin Street / Main Street, Ontario Street/ Main Street and Steeles Avenue/ Martin Street. However, with the inclusion of all planned and proposed infrastructure improvements, site-related traffic activity can be appropriately accommodated on the future area road network.

Development Proposal

The Mountainview West development application includes a site-wide **Official Plan Amendment (OPA)** application to permit a total net density of 3.55 FSI. For the purposes of this report, for the full build-out of the site (Phases 1 and 2), Urban Strategies Inc. has provided a conceptual mixed-use development proposal that includes a total of 4,115 residential units and 4,200 m^2 of commercial retail GFA. The development of **Phase 1** is proposed through a phase-specific **Zoning By-law Amendment (ZBA)** application and includes 1,065 residential units, inclusive of 955 mid-rise units and 110 townhouses, along with 522 m^2 GFA of at-grade commercial retail. Phase 1 is expected to be completed by 2036. The number of residential units and floor areas by land use, for what is conceptually referred to as "**Phase 2**", are currently unknown but will be determined through future rezoning applications. For the purposes of this report, Phase 2 has been assumed to include a total of 3,050 residential units and 3,678 m^2 of commercial retail GFA. The Phase 2 concept (full site build-out) is assumed to be completed by 2046 for the purposes of the traffic analysis.

A key component of the development concept is the construction of new public streets for all modes of travel, that provide connectivity between Steeles Avenue East and Martin Street. The site includes a new public road network with active transportation facilities, parks and a multi-use off-road pathway. The majority of the road network is proposed to be constructed as part of Phase 1.

- The new road network is proposed across the site and includes 5 public roads and a recommendation for 3 new traffic signals. The proposed new roads are as follows:
    - Street A: public local road extending from Steeles Avenue East to Martin Street;
    - Street B: public local road extending from Steeles Avenue East to Street A;
    - Street C: public local road extending from Street A to Street B;
    - Street D: public local road extending from Street A to Martin Street; and
    - Street E: public local road extending from Street A to Street D.
- The recommended signalized intersections are as follows:
    - Steeles Avenue East / Street A / Morobel Drive (4-legged intersection)
    - Martin Street / Street A (3-legged intersection)
    - Martin Street / Street D / Caves Court (4-legged intersection)

Transportation Context

The site is well-served by a variety of roadway connections provided across the Town and Region, and to / from the Greater Toronto and Hamilton Area (GTHA). Surface transit (bus) routes to serve the site are operated by Milton Transit, which provide local connections to higher-order transit services in the area (i.e. Milton GO Rail Line and GO Regional Bus Services) via Milton GO Station. The site is located approximately 1.0 km (a 10 to 15-minute walk) north of Downtown Milton. The site is currently served by a number of active transportation options including sidewalks, multi-use trails, bicycle lanes and park pathways. In order to

accommodate growth, the Region and Town have plans for a number of road upgrades, inclusive of active transportation facilities, within the site study area. Transit / GO Rail service is also being expanded in the future such that residents of the site will be encouraged to travel with transit.

Planned Growth in Milton

The Town of Milton is undertaking a review and update to the Town Official Plan in order to manage growth across Milton to the 2051 horizon year. In support of the Town Official Plan update and planned growth, the Milton TMP was updated in December 2024. The updated TMP considers all modes of transportation and identifies strategic improvements that will facilitate a shift toward sustainable travel across Milton. Halton Region is currently undertaking an Integrated Master Plan (IMP) to complete the next Region-wide water, wastewater and multi-modal transportation master plans. The IMP will provide the strategies, policies and tools required to meet the Region's infrastructure needs up to 2051. The transportation component of the IMP will focus on a multi-modal regional transportation network for all users and will review the needs of the Region's active transportation network to support non-auto modes of travel and the overall reduction of greenhouse gas emissions. Both the Town TMP and Regional IMP are informed by the Region's strategic transportation (EMME) model.

Travel Demand Forecasting

The traffic analysis considers a total of 4,115 residential units and 4,200 m^2 of commercial retail at full build-out of the site. Phase 1 includes 1,065 residential units and 522 m^2 of commercial retail, while Phase 2 includes 3,050 residential units and 3,678 m^2 of commercial retail.

The analysis scenarios of this study correspond with the proposed development horizons (2036 completion of Phase 1 and 2046 completion of Phase 2) plus 5-years post completion of each development phase (as per the Terms of Reference). The analysis scenarios are as follows and considered the AM and PM Peak weekday periods:

- 2024 Existing Traffic
- 2036 Future Background Traffic
- 2036 Future Total Traffic (Phase 1)
- 2041 Future Background Traffic
- 2041 Future Total Traffic (Phase 1 + 5 years)
- 2046 Future Background Traffic
- 2046 Future Total Traffic (Phase 2)
- 2051 Future Background Traffic
- 2051 Future Total Traffic (Phase 2 + 5 years)

Existing baseline traffic volumes were established at study area intersections for the weekday morning (6:00 am to 9:00 am) and afternoon (2:00 pm to 7:00 pm) street peak hour periods using traffic count information obtained from surveys undertaken by Spectrum Traffic Data Inc. on Tuesday May 7, 2024. Five additional intersection counts were conducted for the weekday morning and afternoon street peak hour periods using traffic count information obtained from surveys undertaken by Spectrum Traffic Data Inc. on Tuesday December 10, 2024, as per the terms of reference with the Town of Milton.

Traffic growth assumptions were based on the corridor growth rates provided by the Town and Region, based on the Regional transportation (EMME) model. The JBPE forecasts provided by the Region in March 2025, include future residential and employment allocations for the site. In order to avoid double counting site traffic, the "background site traffic" associated with the JBPE site forecasts has been estimated and removed from the road network.

The growth rates were provided with the understanding that resultant background traffic growth may be significant and may result in traffic congestion across the road network. The network capacity was reviewed at the base 2036 and 2051 future background traffic volume conditions (reflecting the full growth allowance)

as part of this study to determine the validity of the growth rates. Specifically, this review was undertaken to confirm whether there are capacity constraints across the road network, and if so, what are the resultant constrained growth rates, in consideration of available capacity and time horizon that the growth limit would be reached on a corridor basis. Based on the intersection operations review, the future background traffic volumes were adjusted (reduced) to reflect the capacity restrained growth rates.

Site traffic considerations include the removal of "background site traffic" associated with the Region's JBPE population growth assumption (as provided by the Region in March 2025 for the site (and included in the future background traffic growth). Site traffic generation corresponding with the current development proposal was then assigned to the future area road network. This approach has been taken to avoid double counting site traffic activity.

A conservative auto driver mode share assumption was adopted for traffic analysis purposes. It was assumed that the site travel characteristics reflect a 70% auto driver mode share (i.e. 0% reduction relative to existing conditions) at the first analysis horizon year (2036) and gradually reduce over time to 50% auto driver mode share by the ultimate (2051) horizon (i.e. 20% reduction relative to existing conditions). The auto driver mode share assumptions were assumed to evolve over time as follows:

- 2031 to 2041 (includes 2036 horizon) 70% auto driver mode share (0% reduction)
- 2041 to 2051 (includes 2041, 2046 horizon) 60% auto driver mode share (10% reduction)
- 2051 and beyond (includes 2051 horizon) 50% auto driver mode share (20% reduction)

The established travel mode share assumptions were applied to the trip generation methodology for both the "background site traffic" and the proposed development site traffic. It is noted that due to the expected evolving travel mode share, the site-related auto driver trips at full build-out, are lower in 2051 than in 2046.

The proposed development (**site traffic only**) is expected to generate the following two-way auto driver vehicle trips, during the weekday morning and afternoon peak hours as follows:

- 410 and 470 two-way auto driver vehicle trip in the 2036 horizon (Phase 1);
- 365 and 405 two-way auto driver vehicle trip in the 2041 horizon (Phase 1 + 5 years)
- 1,175 and 1,425 two-way auto driver vehicle trip in the 2046 horizon (Phase); and
- 1,050 and 1,260 two-way auto driver vehicle trip in the 2051 horizon (Phase 2 + 5 years).

By way of comparison, the **JBPE "background site traffic" allowance** is comprised of the following two-way auto driver vehicle trips, during the weekday morning and afternoon peak hours.

- 640 and 645 two-way auto driver vehicle trip in the 2036 horizon;
- 1,205 and 1,195 two-way auto driver vehicle trip in the 2041 horizon;
- 1,205 and 1,195 two-way auto driver vehicle trip in the 2046 horizon; and
- 1,295 and 1,275 two-way auto driver vehicle trip in the 2051 horizon.

Traffic Analysis Summary & Recommended Additional Road Improvements

- Based on the traffic analysis completed as part of this study, the current conceptual development proposed for the site will have similar or less traffic potential relative to the Joint Best Planning Estimate (JBPE) allowances, at all study horizons. However, the site traffic impact was established based on a comparison of future total traffic operations with the proposed site traffic, versus future background without the JBPE background site traffic allowance.

- Proposed site-related traffic volumes can be appropriately accommodated on the future area road network, with all planned and additional recommended infrastructure improvements required to accommodate background growth.

- It should be noted that the proposed site impact, relative to the site without any development, within the focused study area, is generally small and in the order of a 5% or less increase to overall intersection V/C ratios. Impact is moderate at some intersections, with increases to overall intersection V/C ratios by up to 16%, although all intersection movements remain under capacity. Site traffic impacts are also generally small and in the order of a 5% or less increase to overall intersection V/C ratios, at the wider study area, except at the Tremaine Road / Steeles Avenue West roundabout, where site traffic impacts are in the order of a 10% increase to the intersection V/C ratio.

- It should be noted that the impact of proposed site traffic relative to the JBPE background site traffic allowance at these intersections would be small at a 2% or less increase to overall V/C ratios (per the April 2025 study). Despite the site impact, proposed site-related traffic volumes can be appropriately accommodated on the future area road network, with the inclusion of all planned and proposed infrastructure improvements.

- Based on side street delay and road safety considerations, the external site intersections at 1) Steeles Avenue/ Street A/ Morobel Street, 2) Martin Street /Street A and 3) Martin Street/ Street D/ Caves Court, should all be signalized by 2036 (at build-out of Phase 1). The increasing traffic along Martin Street will increase the delays to any unsignalized side street connection. With the proposed signalization of the above-noted external site intersections, they will operate at level-of-service (LOS) D or better, with acceptable overall intersection V/C ratios 0.65 or better. Expected 95th percentile queues outbound can be accommodated within the proposed internal street network without impeding upstream block intersections.

- Including the adjustment to the Town's growth rates, a number of **additional improvements** (beyond those being considered by the Town and Region) are recommended at various horizons to accommodate general area **background traffic growth.** These improvements include:

    - RR25/Steeles/Martin
        - 2041 → overlapping SBR/EBL phase
        - 2051 → separate channelized SBR with exclusive receiving lane for free flow traffic operations

    - Ontario Street / Woodward Avenue
        - 2036 → WBL and SBL advance phases

    - Ontario Street / Main Street East
        - 2036 → new exclusive SBR lane

    - Bronte Street North / Main Street East
        - 2036 → additional exclusive NBR and SBR turn lanes
        - 2041 → additional SBTR and NBTR lanes (replacing the exclusive NBR and SBR)

    - Tremaine Road / Steeles Avenue West
        - 2036 → convert east leg configuration to exclusive WBL and shared WBTR

    - The storage within existing turning lanes needs to be extended at a number of intersections within the Focus Study area.

- James Snow Parkway is over capacity but the New North Regional Road EA is underway by the Region, is expected to include a set of improvements for that corridor. However, since the improvement recommendations from that study are not yet available to inform the future configuration of James Snow Parking, these intersections remain over capacity, with the understanding that downstream growth will be metered by this congestion.

- Based on a review with the peak 2046 horizon where site traffic potential is the highest, the internal site intersections will all operate acceptably at full build out with levels of service LOS B or better for all movements during both peak hours. The expected queues can be accommodated within the available storage within the internal network without potential queue blockage of internal block driveway accesses to facilitate effective traffic flow on the internal network. Similarly, the queuing potential at the points of site access along Martin Street and Steeles Avenue can be accommodated within the planned storage and will not extend to adjacent public street intersections.

Proposed Traffic Signals

The results of the traffic signal warrant assessment indicates that although the intersections may not technically meet all requirements for signalization, traffic signals will likely be required and are thus being recommended at 1) Steeles Avenue East & Street A / Morobel Drive (2051 score of 112%), 2) Martin Street & Street A (2051 score of 92%) and 3) Martin Street & Street D/ Caves Court (2051 score of 55%).

It is recommended that the 3 proposed traffic signals be installed as part of Phase 1, when Street A is connected to Steeles Avenue East and Street A and Street D are connected to Martin Street, for the following reasons: 1) addressing future traffic growth, traffic operations and the reduction of delays for site traffic, 2) road safety (including school zone safety) and 3) the provision of protected crossings for pedestrians and cyclists, including students travelling to/from the two schools on Martin Street.

School Peak Traffic Analysis

A supplementary traffic analysis was completed during school peak hours for the Martin Street intersections in the immediate vicinity to the schools. It is noted that the “school out afternoon peak hour” traffic volumes were extracted from the traffic counts, for the intersections along Martin Street, between Steeles Avenue and Jasper Street.

Given traffic signal timing optimization at the school driveway intersection at Martin Street/ Woodward Avenue, the local area intersections can accommodate the new site traffic under 2051 future conditions, during the school out peak hour and the school driveways will continue to operate acceptably. It is expected that since the highest traffic volume under 2051 conditions can be accommodated, traffic at earlier horizons can also be acceptably accommodated along Martin Street.

Multi-Modal Travel Assessment

For multi-modal travel demand forecasting purposes, an auto driver mode share of 50% was assumed at 2051 and the balance of the travel mode shares were based generally on 2022 TTS data.

In 2051, with full build-out of the proposed development, the site is forecast to generate approximately 1,479 and 1,733 two-way auto trips (auto driver + auto passenger), during the morning and afternoon peak periods, respectively and 624 and 790 two-way non-auto trips (transit, walking and cycling), during the morning and afternoon peak periods, respectively. Two-way site transit trips at the 2051 horizon are forecast to be in the order of 289 and 366 two-way trips during the morning and afternoon peak periods, respectively. Two-way site walking trips at the 2051 horizon are forecast to be in the order of 311 and 394 two-way trips during the morning and afternoon peak periods, respectively. Two-way 2051 site cycling trips are forecast to be in the order of 24 and 30 trips in the weekday morning and afternoon peak hours, respectively. The non-auto travel demands (transit, walking and cycling) related to the site, can be accommodated within the site and the surrounding transportation network.

Phase 1 Site Plan Elements

As the application for a Zoning By-law Amendment (ZBA) only relates to Phase 1 of the wider site, considerations for vehicle parking, bicycle parking and loading have been undertaken in consideration of Phase 1 only. The Town of Milton is currently undergoing the process of amending the Town’s Urban Zoning By-law (Zoning By-law 016-2014) with respect to the minimum parking space requirements for developments. However, at this time, the site is subject to the Town of Milton Comprehensive Zoning By-law 016-2014 (HUSP Urban Area – March 2023) for parking considerations.

Vehicle Parking

The parking rates for the proposed development align with a minimum resident parking rate of 1.0 space per apartment / condominium unit, 2.0 spaces per townhouse and a minimum visitor parking rate of 0.20 spaces unit. Application of the proposed parking rates to the site results in a minimum total vehicle parking requirement of 1,391 spaces, inclusive of 1,175 resident spaces and 216 visitor spaces. The proposed development includes a total of **1,438 parking spaces**, inclusive of **1,218 resident spaces** and **220 visitor spaces.** The proposed vehicle parking supply therefore exceeds the proposed minimum parking rates.

Bicycle Parking

As the redevelopment of the site envisions a mixed-use complete community that is well-connected to Milton's downtown area and encourages cycling trips throughout the site, the provision of a bicycle parking supply is proposed that aligns with the bicycle parking requirements specified in the Town of Milton Comprehensive Zoning By-law 016-2014 (UGC-MU). The proposed bicycle parking supply, inclusive of the townhome supply, includes a total of 1,139 spaces, inclusive of 82 short-term spaces and 1,057 long-term spaces. The proposed bicycle parking supply exceeds the requirements of the prevailing Zoning By-law and will meet the needs of the site.

Loading Considerations

Phase 1 includes loading facilities for the mid-rise residential blocks. Solid waste pick-up for the townhouses (Blocks 2 & 4) is expected to occur at the driveway of each unit. The proposed loading spaces and areas are located at-grade, without any overhead obstructions, with the exception of Block 6, where the loading space is located in an internal loading facility. A total of 6 formal loading spaces are proposed for Phase 1 of the development. The loading supply is appropriate and will meet the needs of solid waste vehicles, as well as moving and delivery activities.

Summary & Conclusions

Based on the comprehensive traffic analysis completed as part of this study, the current conceptual development proposed for the site is expected to have negligible net traffic generation relative to the JBPE allowances, at all study horizons. Despite the moderate site traffic impact relative to future background conditions after removal of the JBPE background site traffic allowance, **proposed site-related traffic volumes can be appropriately accommodated on the future area road network given all planned and additional recommended infrastructure improvements required to accommodate background growth.**

It is noted that additional traffic analysis will be required in the future to support development applications for blocks/sites within the Draft Plan of Subdivision.

1.0 INTRODUCTION

BA Group has been retained by the site owner 150 Steeles Milton Inc. (hereafter referred to as “Neatt Communities” or the “Applicant”) to provide transportation consulting services related to the proposed development of the 150 Steeles Avenue East and 248, 250 and 314 Martin Street property (the “150 Steeles Avenue East site” or the “Mountainview West development” or “the site”), located in the Town of Milton (the “Town”), in the Region of Halton (the “Region”).

The Mountainview West development application includes a site-wide **Official Plan Amendment (OPA)** application to permit a total net density of 3.55 FSI. For the purposes of this report, for the full build-out of the site (Phases 1 and 2), Urban Strategies Inc. has provided a conceptual mixed-use development proposal that includes a total of 4,115 residential units and 4,200 m^2 of commercial retail GFA.

The development of **Phase 1** is proposed through a phase-specific **Zoning By-law Amendment (ZBA)** application and includes 1,065 residential units, inclusive of 955 mid-rise units and 110 townhouses, along with 522 m^2 GFA of at-grade commercial retail. Phase 1 is expected to be completed by 2036. The number of residential units and floor areas by land use, for what is conceptually referred to as “**Phase 2**”, is currently unknown but will be determined through future rezoning applications. For the purposes of this study, Phase 2 is assumed to comprise 3,050 residential units, inclusive of 80 mid-rise units and 2,970 high-rise units, along with an additional 3,678 m^2 GFA of at-grade commercial retail with anticipated build out by 2046.

This Transportation Considerations Report (Traffic Impact Study or TIS) has been prepared to support the development applications being made to the Town of Milton, as summarized in **Table 1**. The Terms of Reference for the traffic analysis has been reviewed and approved by both the Town of Milton and Halton Region and is provided in **Appendix A**, along with the confirmed list of approved study area intersections and key correspondence.

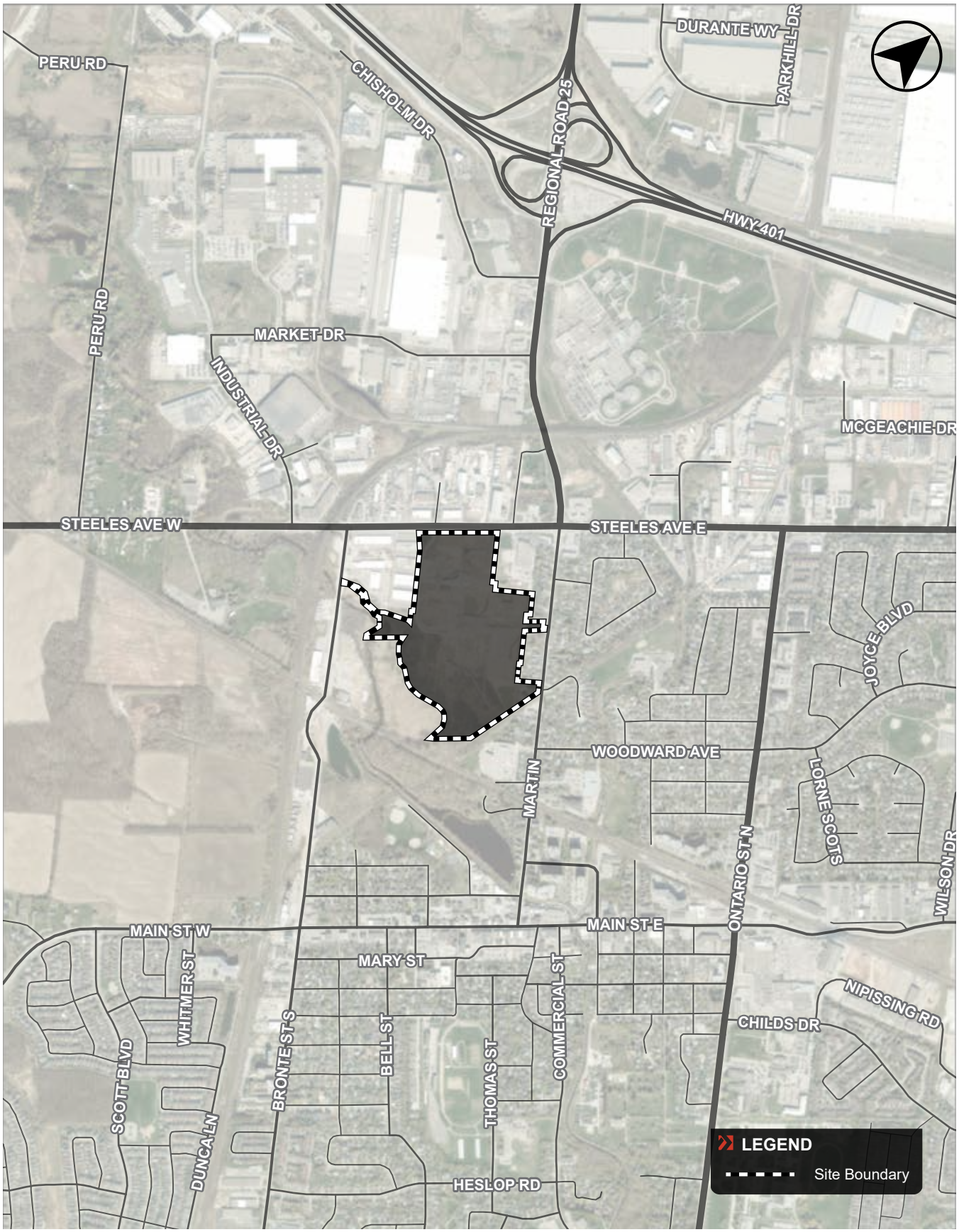
TABLE 1 CURRENT DEVELOPMENT APPLICATIONS

Planning Application	Development Proposal
Official Plan Amendment (OPA)	Entire Site (Phases 1 & 2)
Draft Plan of Subdivision (DPOS)	Entire Site (Phases 1 & 2)
Zoning By-law Amendment (ZBA)	Phase 1 Only

1.1 EXISTING SITE CONTEXT

The site is located in the southwest quadrant of the intersection of Steeles Avenue East and Martin Street. The site location is illustrated in **Figure 1**. The former warehouse and industrial uses on the site have been demolished and the site is currently vacant.

The site is approximately 21 hectares in size, with frontage along Steeles Avenue East and a portion of Martin Street. The site, formerly the location of the Meritor Suspension Systems Company, is currently undergoing extensive remediation to transform the former manufacturing site into clean and environmentally enhanced lands that will host a mixed-use community with a sustainable natural heritage interface. As such, the currently vacant site presents a unique opportunity for development in Milton that can support Milton’s Central Business District (CBD) and expand the community fabric of the Mountainview neighbourhood to the west. The site is approximately one kilometre south of Highway 401 and is well-served by a variety of roadway connections provided across the Town and Region, and to / from the Greater Toronto and Hamilton Area (GTHA). The site is currently served by surface bus routes operated by Milton Transit, which provide local connections to higher-order GO Transit services in the area (i.e. the Milton GO Rail Line and GO Regional Bus Services) via Milton GO Station. The Milton GO Station is located approximately 2.5 kilometres southeast of the site and is accessible by all regular bus services operated by Milton Transit, including those routes servicing the site area.



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Aerial maps provided courtesy of: Esri, DigitalGlobe, GeoEye, Earthstar Geographies, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, the GIS User Community and/or Google Earth/Maps.

FIGURE 1 SITE LOCATION

2.0 DEVELOPMENT PROPOSAL

2.1 PLAN OVERVIEW AND PHASING

The current development application being made to the Town of Milton is a joint OPA and DPOS application for the full development of the site (both Phases 1 and 2) and a ZBA application for the first phase of development (Phase 1 only). As such, this transportation study has been prepared to fulfill the requirements of an OPA / DPOS submission for the development of the full site, as well as the more detailed requirements of a ZBA submission for Phase 1.

The Draft Plan of Subdivision for the full build-out of the site is illustrated in **Figure 2**.

The development phasing is illustrated in **Figure 3** and the reduced scale architectural ground floor and parking level plans for Phase 1 are provided in **Appendix B**.

As summarized in **Table 2**, for the purposes of this report, for the full build-out of the site (Phases 1 and 2), Urban Strategies Inc. has provided a conceptual mixed-use development proposal that includes a total of 4,115 residential units and 4,200 m^2 of commercial retail GFA.

Phase 1 includes 1,065 residential units, inclusive of 955 mid-rise units and 110 townhouses, along with 522 m^2 GFA of at-grade commercial retail. Phase 1 is expected to be completed by 2036. **Table 3** provides a detailed summary of the components of Phase 1.

The number of residential units and floor areas by land use, for what is conceptually referred to as "**Phase 2**", are currently unknown but will be determined through future rezoning applications. For the purposes of this report, Phase 2 has been assumed to include a total of 3,050 residential units and 3,678 m^2 of commercial retail GFA. The Phase 2 concept (full site build-out) is assumed to be completed by 2046 for the purposes of the traffic analysis.

For the remainder of this study, the commercial retail component proposed within either phase of development will be referred to as "retail".

TABLE 2 DEVELOPMENT CONCEPT FOR OPA / DPOS APPLICATION (PHASES 1 & 2)

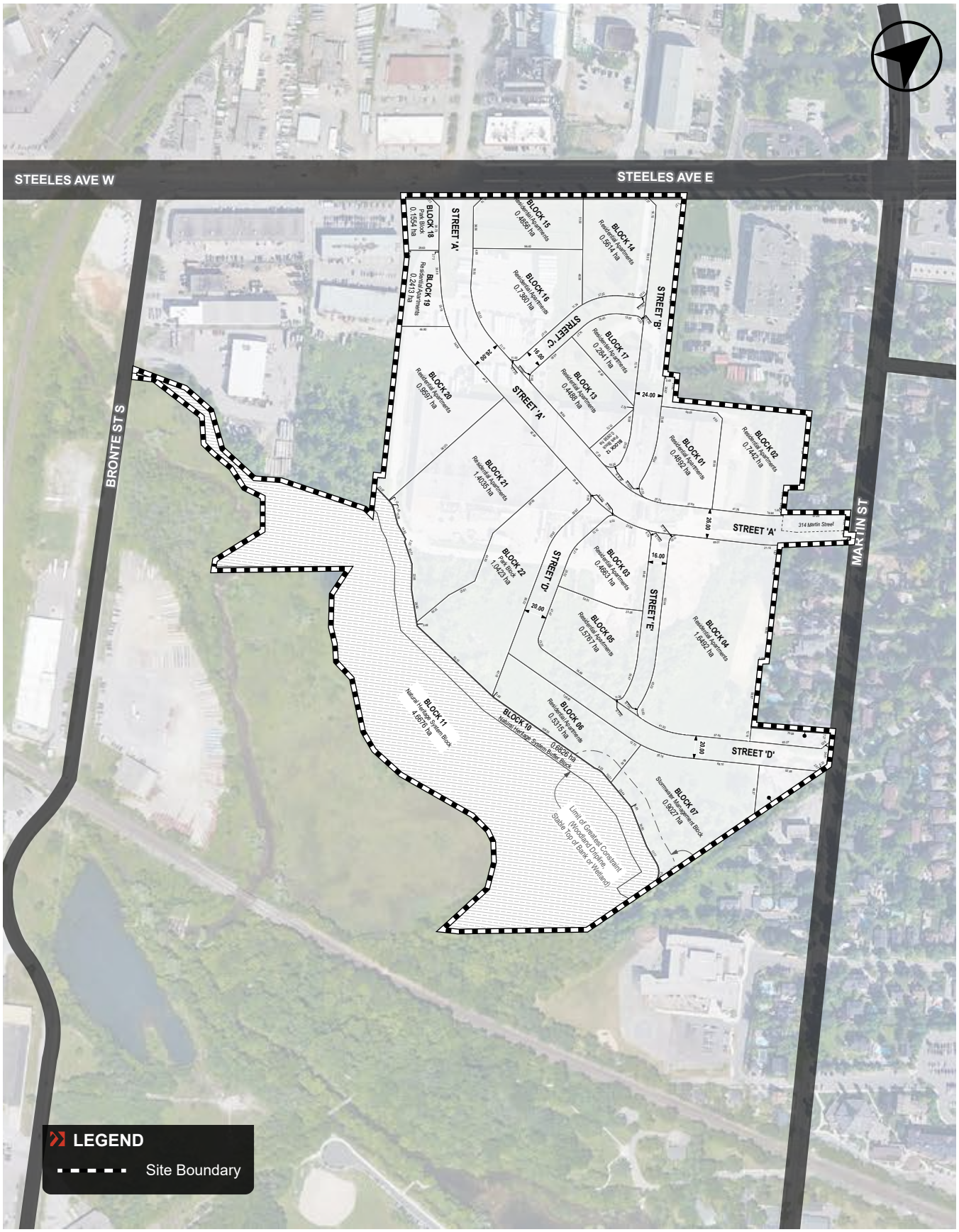
Use		Block	Proposed	Proposed Total
Phase 1				
Residential	**Mid-rise**	1	197	**1,065 units**
		3	186	
		5	338	
		6	234	
		Sub-total	**955**	
	Townhouses	2	31	
		4	79	
		Sub-total	**110**	
			Retail (GFA)	**522 m²**
Phase 2 Concept				
Residential	**Mid-rise**	--	80	**3,050 units**
	High-rise		2,970	
		Sub-total	**3,050**	
			Retail (GFA)	**3,678 m²**
TOTAL Phase 1 & 2	**Residential**			**4,115 units**
	Retail GFA			**4,200 m²**

Notes:
1. Site statistics based on site plans prepared by Core Architects dated January 2026.

TABLE 3 DEVELOPMENT PROPOSAL FOR ZBA APPLICATION (PHASE 1 ONLY)

Use	Phase 1						Total Proposed
	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	
Residential							
Residential Mid-Rise Units	197	--	186	--	338	234	**955 units**
Townhouse Units	--	31	--	79	--	--	**110 units**
Total Residential							**1,065 units**
Retail							
Retail (GFA)	--	--	--	--	522 m^2	--	**522 m^2**
Vehicle Parking							
Resident Parking Spaces	205	62	189	158	353	251	**1,218 spaces**
Visitor Parking Spaces	40	8	37	16	68	51	**220 spaces**
Total Vehicle Parking	**245**	**70**	**226**	**174**	**421**	**302**	**1,438 spaces**
Bicycle Parking							
Long-Term	198	23	208	36	357	235	**1,057 spaces**
Short-Term	10	8	10	16	22	16	**82 spaces**
Total Bicycle Parking	**208**	**31**	**218**	**52**	**379**	**251**	**1,139 spaces**
Loading							
Total Loading	2	--	1	--	2	1	**6 spaces**

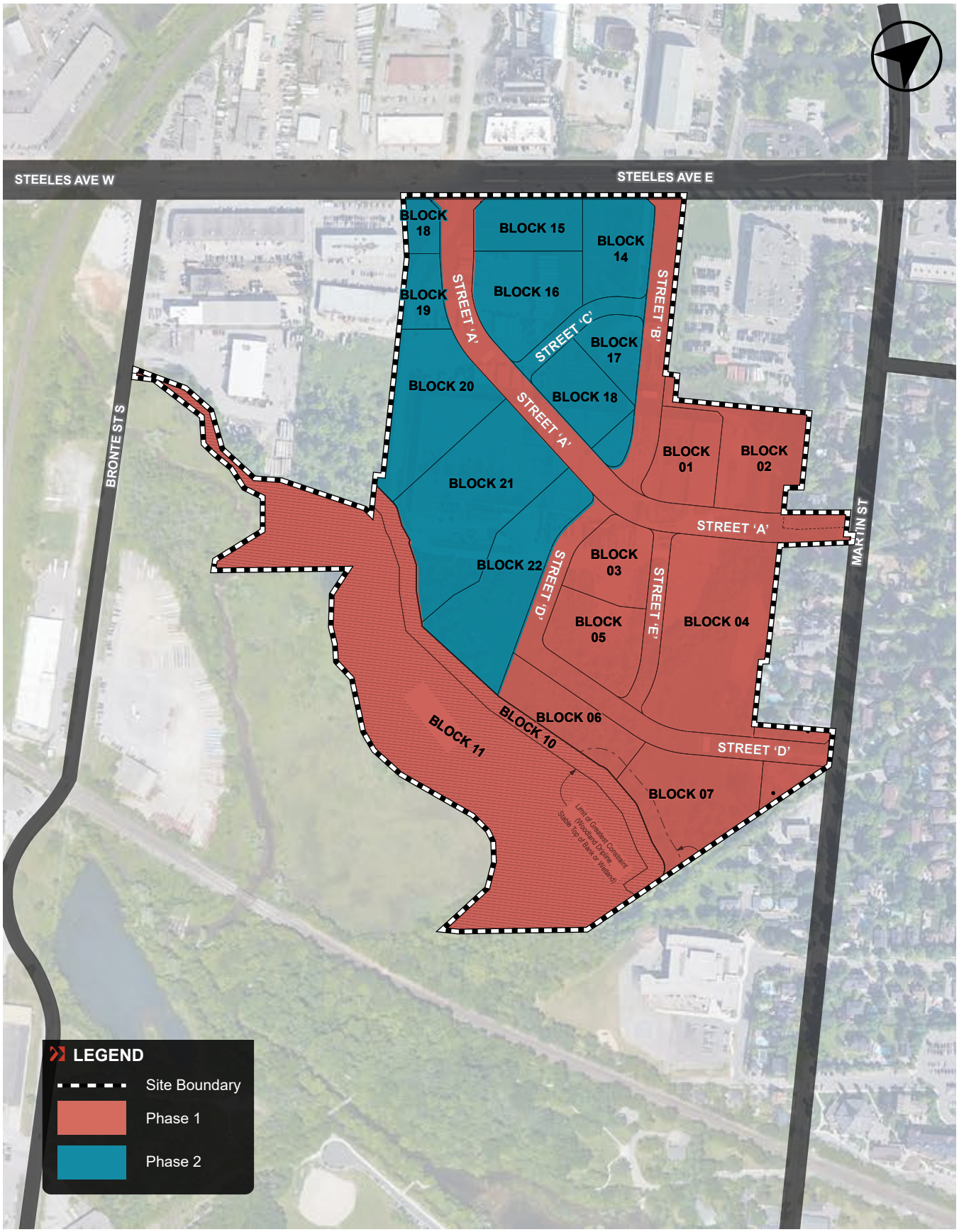
Notes:
1. Site statistics based on site plans prepared by Core Architects January 2026.



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Aerial maps provided courtesy of: Esri, DigitalGlobe, GeoEye, Earthstar Geographies, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, the GIS User Community and/or Google Earth/Maps.

FIGURE 2 DEVELOPMENT CONCEPT (DRAFT PLAN OF SUBDIVISION)



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Aerial maps provided courtesy of: Esri, DigitalGlobe, GeoEye, Earthstar Geographies, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, the GIS User Community and/or Google Earth/Maps.

FIGURE 3 DEVELOPMENT PHASING

2.2 TRANSPORTATION STRATEGY

2.2.1 Vision for the Site

The Town of Milton is continuing to urbanize as it manages new residential and employment growth, embracing complete communities and a transit-oriented built form. The site was formerly located within the 401 Industrial / Business Park Employment Area per the ***former*** Region of Halton Official Plan. The site was removed from the Employment Area designation through Regional Official Plan Amendment (ROPA) 48, where it was determined that the conversion from employment lands to an area planned for mixed-use intensification. The Proposed Development represents the implementation of the approved ROPA 48.

Growth in the Town is being directed to Strategic Growth Areas. In keeping with the site's planned context as a Strategic Growth Area, the development of the site is envisioned as a high-density mixed-use community that will expand housing options and community infrastructure and add complementary commercial space near Milton's Downtown.

The proposed Mountainview West Development includes the redevelopment of the former Meritor lands to support mixed-use, transit-supportive intensification while achieving a range of building and urban design objectives. The site will be anchored by public realm features, including the Community Green, Civic Plaza, Gateway Green, Steeles Avenue Frontage Improvement, Stormwater Management Pond and street frontage improvements.

The development of the site also includes approximately 2 hectares of parks and open space and is envisioned as a pedestrian focused neighbourhood with numerous pedestrian connections and cycling routes. Access to loading and below-grade parking is proposed to be from the internal street network, in order to mitigate impacts to the public realm.

2.2.2 Roads

A network of new public roads is proposed throughout the site for all modes of travel, with connectivity to both Steeles Avenue East and Martin Street. The proposed new road network includes 5 public roads and the recommendation for the installation of 3 new traffic signals.

The road network is further detailed in **Section 2.3** and includes cross-sections that have been designed with a focus on active transportation. The entirety of the internal road network, with the exception of Street C, is proposed to be constructed as part of Phase 1, along with the installation of the 3 new traffic signals.

2.2.3 Cycling

To encourage travel by bicycle, a comprehensive cycling network is planned as part of the development of the site. The new public road network includes a multi-use pathway along one side of both Street B and Street D and the proposed Valley Trail, that runs along the southern and western portion of the site, will provide connectivity for active travel between Steeles Avenue East and Martin Street. All buildings will include long and short-term bicycle parking, along with bicycle repair stations.

2.2.4 Transit

The location of the site is well-positioned with respect to existing and planned transit services along Steeles Avenue East. The site is transit-accessible to Milton GO Station at the western terminus of the Milton GO Rail Line. The Milton GO Station is located approximately 2.5 kilometres southeast of the site and is accessible by all regular bus services operated by Milton Transit, including the routes servicing the site area.

The development proposal includes sidewalks and multi-use pathways to facilitate walking trips to / from transit stops along Steeles Avenue East. As transit service evolves, the long-term vision for the site includes the accommodation of a transit route and bus stops / shelters along Street A, with the potential for transit service along Martin Street.

2.2.5 Parking

Parking standards outlined in the Town's Zoning By-law 016-2014 (HUSP Urban Area – March 2023) (ZBL 016-2014) are considered to overstate the parking needs of a residential development based on the evolving site transportation context, together with the implementation of a comprehensive Transportation Demand Management (TDM) Plan for the proposed development.

In order to encourage sustainable travel and reduce vehicle ownership, the following minimum parking rates are proposed for the site:

- 1.0 resident parking space per residential unit;
- 2.0 resident parking spaces per townhouse unit; and,
- 0.20 non-resident parking spaces per unit.

The proposed parking rates align with the minimum rates currently being considered by the Town as part of planned amendments to Zoning By-law 016-2014.

2.2.6 Transportation Demand Management

The Transportation Demand Management (TDM) plan strives to reduce automobile use through an on-going strategy that supports and promotes the use of non-auto transportation modes. The key objective of the TDM plan is to reduce peak hour single occupant automobile traffic by focusing on four specific policy areas:

1. Encourage the use of alternate travel modes (transit, cycling, walking);
2. Increase vehicle occupancy;
3. Shift travel to off-peak periods; and
4. Reduce vehicle kilometres travelled.

The physical infrastructure components or TDM measures outlined in this plan (i.e. bicycle parking spaces) will be incorporated into the development design. The implementation of these elements and the associated costs will be the responsibility of the developer. The operational measures of the TDM plan (i.e. travel mode choice information packages) will be implemented by the developer.

2.2.6.1 Proposed TDM Strategies

The existing and future area context provides for good public transit service as well as travel by active transportation. Proposed TDM strategies, including a reduced parking supply with "unbundled" parking, active transportation facilities and travel mode information packages, have been developed to further support the use of non-auto modes of travel. Proposed TDM measures for the site are summarized in **Table 4**.

TABLE 4 TDM STRATEGIES

Measure	Description	Cost Estimate	Implementation Strategy
Physical Measures			
Pedestrian Facilities	Provide walkway connections from all buildings to sidewalks and multi-use pathways to facilitate walking as a primary travel mode and to transit stops.	Integrated into overall development cost.	Construct as part of development.
Bicycle Parking	Long and short-term bicycle parking spaces to be provided in accordance Zoning By-law 2014-014.	Integrated into overall development cost.	Construct as part of development.
Bicycle Repair Station	Provide bicycle repair stations in long-term bicycle parking areas.	Integrated into overall development cost.	Construct as part of development.
Vehicle Parking	Proposed parking supply aligns with the minimum requirements of new standards currently be reviewed by the Town.	Integrated into overall development cost.	Construct as part of development.
Operational Measures			
Travel Mode Information Packages	Implement programs to inform new residents of available travel mode choices and existing mobile apps providing transit information.	To be determined.	Travel mode information packages will be distributed at the rental office.
Unbundled Parking	Parking spaces to be unbundled from rent / unit purchase.	n/a	Charge a separate fee for parking

2.3 PROPOSED NEW ROAD NETWORK

A network of new public roads is proposed throughout the site for all modes of travel, with connectivity to both Steeles Avenue and Martin Street.

The proposed new road network includes 5 public roads and the recommendation for the installation of 3 new traffic signals. The entirety of the internal public road network, with the exception of Street C, is proposed to be constructed as part of Phase 1, including the 3 new traffic signals.

The proposed points of access to the external road network are as follows:

- Street A & Steeles Avenue East (new signalized intersection with full movements permitted)
- Street B & Steeles Avenue East (right-in / right-out only)
- Street A & Martin Street (new signalized intersection with full movements permitted)
- Street D & Martin Street (new signalized intersection with full movements permitted)

A summary of the proposed public internal road network for the site is provided in **Table 5**.

The functional road plan for the proposed road network is illustrated in **Figure 4** and provided in **Appendix C**. Corresponding cross-sections for the proposed road network are provided in **Appendix D**. Functional plans for the external intersections (Steeles Avenue / Street A, Steeles Avenue / Street B, Martin Street / Street A, Martin Street / Street D) are provided in **Appendix E**.

TABLE 5 PROPOSED ROAD NETWORK – DESIGN SUMMARY

Proposed New Public Streets	Right-of-Way Width (m)	Road Class	Sidewalks (width)	Multi-Use Pathway (width)	On-Street Parking
Phase 1					
Street A	26	Local	Both sides (1.8 m to 2.65m)	--	Both sides
Street B	24	Local	East side (1.8 m)	West side (3.0 m)	Both sides
Street D	20	Local	East side (1.8 m)	West side (3.0 m)	East side (north/south segment)
Street E	16	Local	--	--	--
Phase 2					
Street C	16	Local	--	--	--

Notes:
1. Refer to **Appendix D, E and F** for location of streets and functional plans.

2.3.1 Proposed Road Network: Phase 1

All new public roads, with the exception of Street C, are proposed to be completed during Phase 1 of the development. The following provides an overview of the proposed road network.

Street A – 26 m ROW

Street A is a new public local road that extends from Steeles Avenue East in the north to Martin Street in the east. Street A is proposed with a 26-metre right-of-way (ROW) with 1 vehicle travel lane in each direction and dedicated left-turn lanes at its intersections with Steeles Avenue, Street C, Street B/ Street D and Martin Street.

Along Street A, sidewalks and lay-bys are proposed on either side of the road between Street C and Street B / Street D. Sidewalks are proposed on either side of Street A between Street B / Street D and Martin Street. Lay-bys are also proposed along Street A in front of Block 2 and Block 4.

At the intersection of Street A with Steeles Avenue East, a new 4-leg signalized intersection is proposed such that Street A will align with Morobel Drive (existing local road). A new 3-leg signalized intersection is proposed at the intersection of Street A and Martin Street.

Street B – 24 m ROW

Street B is a new north-south public local road that extends from Steeles Avenue East to Street A. Street B is proposed with a 24-metre ROW with 1 vehicle travel lane in each direction and dedicated left-turn lanes at its intersection with Street A. Sidewalks are proposed on the east side of Street B with a multi-use pathway (MUP) on the west side.

Along Street B, lay-bys are proposed on either side of the road in front of Blocks 1, 17 and 18, to support pick-up and drop-off activity at-grade. A new right-in / right-out intersection is proposed at the intersection of Street B with Steeles Avenue East.

Street D – 20 m ROW

Street D is a new public local road that extends from Street A to Martin Street. Street D extends south from Street A then turns eastward at Block 5 towards Martin Street. Street D is proposed with a 20-metre ROW with 1 vehicle travel lane in each direction. Sidewalks are proposed along one side of Street D with a multi-use pathway / promenade, adjacent to the storm water management pond and natural heritage area.

Street E – 16 m ROW

Street E is a new north-south public local road that extends from Street A to Street D, located between Block 3 / Block 5 and Block 4 / Block 6. Street E is proposed with a 16-metre ROW with 1 vehicle travel lane in each direction.

Proposed Traffic Signals

To facilitate traffic operations and to enhance safety and connectivity for all modes of travel, traffic signals are recommended to be installed as part of Phase 1 at the following intersections:

- Steeles Avenue East & Street A / Morobel Drive (4-legged intersection)
- Martin Street & Street A (3-legged intersection)
- Martin Street & Street D / Caves Court (4-legged intersection)

Further information regarding the traffic signal warrants is provided in **Section 8.0.**

Proposed All-Way Stop Control

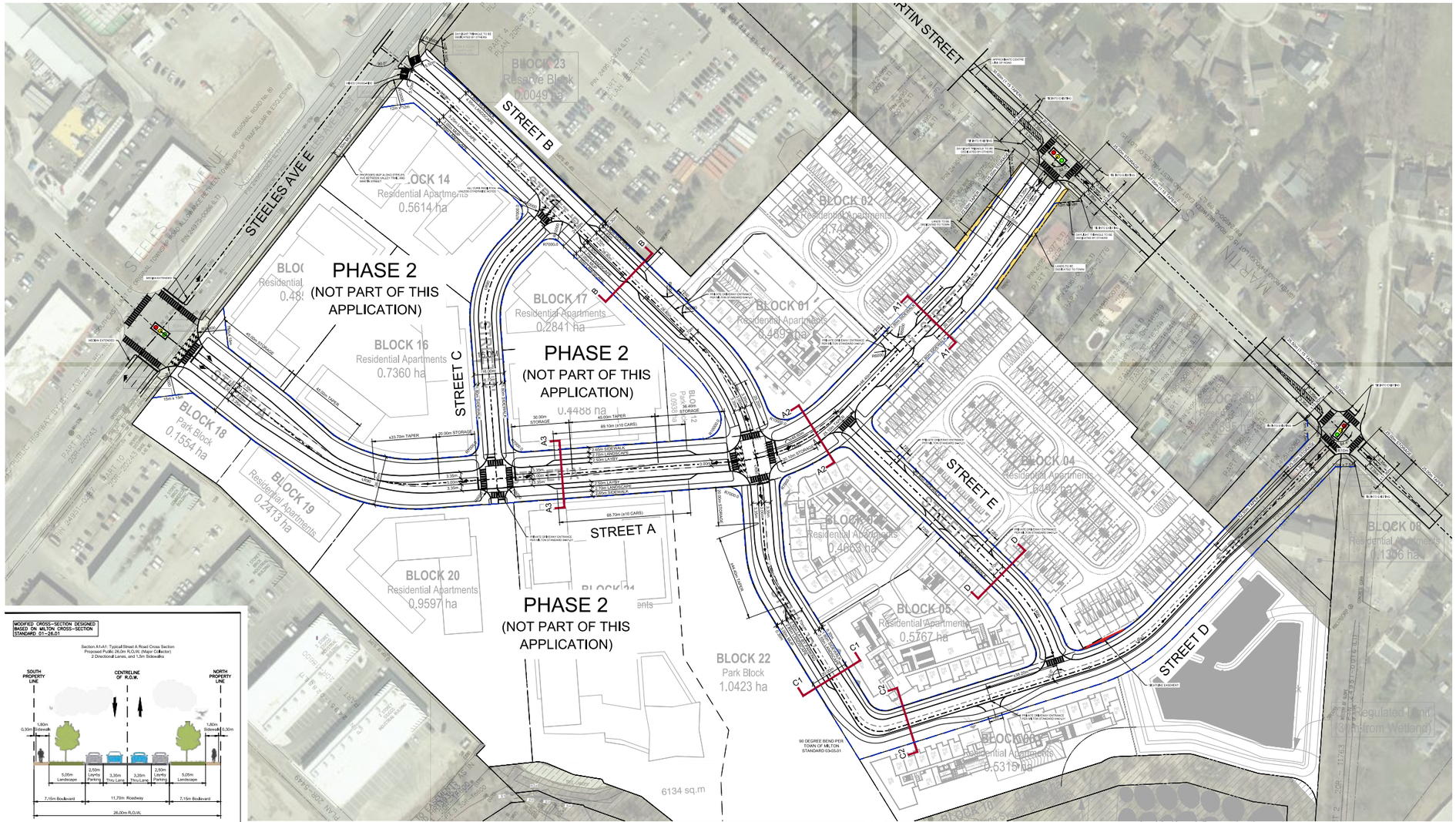
To facilitate traffic flow and provide protected crossings for both cyclists and pedestrians, all-way stop control is being proposed at the intersection of Street A/ Street C (3-legged intersection) and at Street A / Street B/D (4-legged intersection).

2.3.2 Proposed Road Network: Phase 2

Street C – 16 m ROW

Street C is a new north-south public local road that extends from Street A to Street B, located between Block 14 / Block 16 and Block 17 / Block 18 (Phase 2). Street C is proposed with a 16-metre ROW with 1 vehicle travel lane in each direction.

Street C is proposed to be constructed during Phase 2 of the development.



P:\8219\01\Graphics\Adobe\Id\8219-01-150 Steeles Avenue East.indd

FIGURE 4 PROPOSED FUNCTIONAL ROAD PLAN

2.4 THIS STUDY

Key transportation-related aspects reviewed in this report include the following:

Development Proposal

- A summary of the proposed development;
- An overview of the site and the area-wide transportation system that facilitates a shift towards non-automobile travel for prospective residents and visitors, while still being able to meet the practical and operational needs of the proposed development plan;
- An overview of the DPOS;
- A review of the transportation elements of the proposed development plan that includes vehicle access and circulation, loading and parking facilities; and
- An overview of potential Transportation Demand Management (TDM) measures and initiatives that are being considered to encourage prospective residents and visitors to use more active and sustainable modes of transportation.

Policy and Planning Context

- Review of relevant polices (Region and Town);
- Plans / growth / infrastructure.

Area Transportation Context

- A description of the existing transportation context, with consideration for the area road network, transit system and active transportation facilities; and
- A description of any future transportation changes and/or improvements to the area context such as transit improvements and other non-automobile dependent travel options.

Traffic Volume Forecasting

- An assessment of the existing travel patterns and traffic volumes in the study area, during the key weekday morning and afternoon peak hours;
- A comprehensive review of future growth that may occur in the area, including corridor growth and consideration for a number of other area development projects; and
- An assessment of the multi-modal trip generation potential of the proposed development.

Traffic Operations Analysis

- A review of traffic operations at intersections in the study area, under existing and future conditions, including an assessment of the operational impacts of the proposed development;
- Traffic signal warrant assessments for proposed traffic signals; and
- An assessment of any mitigative measures to accommodate the development traffic.

Multi-Modal Considerations

- A review of site multi-modal travel demands based on future mode share assumptions; and
- A review of multi-modal travel options and considerations.

Phase 1 Functional Site Plan

- A review of the adequacy of the vehicle and bicycle parking supply for Phase 1;
- A review of the adequacy of the loading space provisions for Phase 1; and
- A review of the functionality and appropriateness of the proposed vehicle, pedestrian and cycling facilities incorporated into the site plan, including loading/garbage collection facility arrangements.

The findings of this transportation study are summarized in the following sections.

3.0 POLICY & PLANNING CONTEXT

3.1 PROVINCIAL CONSIDERATIONS

3.1.1 2024 Provincial Policy Statement

The Provincial Planning Statement (PPS), released in 2024, provides integrated land use planning policies to form a new provincial planning policy tool and replace the former 2020 Provincial Policy Statement and Growth Plan for the Greater Golden Horseshoe. The Provincial Planning Statement became in effect on October 20, 2024.

The PPS 2024 aims to streamline land use planning policy framework. In particular, it provides municipalities with additional tools and flexibility to build more homes. The policies are related to 5 priority areas:

1. Generating an appropriate housing supply;
2. Making land available for development;
3. Providing infrastructure to support development;
4. Balancing housing with resources; and
5. Implementation.

Proposed land development and transportation-related policies under these pillars indicate meeting minimum density targets for Major Transit Station Areas (MTSAs) and urban growth centres, encourage transit-supportive greenfield density targets, require municipalities to implement intensification policies, require municipalities to plan for and protect corridors for transit infrastructure to accommodate growth, require the integration of land use planning and transportation through transit-supportive development, and require municipalities to reduce greenhouse gas emissions and improve air quality.

Chapter 2 (Building Homes, Sustaining Strong and Competitive Communities) and Chapter 3 (Infrastructure and Facilities) of the PPS 2024 contain transportation-related policies most relevant to this application.

Chapter 2 contains policies related to emphasizing the need for diverse housing options to support strong and competitive communities. It highlights policies that promote mixed housing types and encourage intensification, aiming to meet the growing demand for housing across various regions. These strategies are designed to accommodate population growth and enhance community development, reduce greenhouse gas emissions, and promote active transportation.

Chapter 3 contains policies related to providing safe, energy efficient transportation systems that can appropriately address projected needs. Policies therein include those related to promoting healthy and active communities through facilitating active transportation, planning public streets to meet the needs of all ages and abilities, providing opportunities for convenient public access to recreational areas, and making efficient use of existing and planning infrastructure through TDM strategies.

3.1.2 Ministry of Transportation Ontario – Highway 401 Improvements from Trafalgar Road to Regional Road 25 (2013)

In 2013, the Ministry Transportation Ontario (MTO) began a Preliminary Design and Class Environmental Assessment Study (EA) that recommends the widening of Highway 401 from Trafalgar Road to Regional Road 25, to improve capacity and operations by 2031. The EA study identifies both short-term and long-term widening requirements for Highway 401 and suggests initiatives that encourage transit use and carpooling.

The plan includes expanding the highway to up to 12 lanes, replacing and widening bridges, upgrading ramps and enhancing stormwater management and transportation systems in order to support future growth in Halton Region. The specific infrastructure improvements outlined in the MTO's Highway 401 Improvement EA study are further discussed in **Section 4.2.1**.

3.2 REGIONAL CONSIDERATIONS

3.2.1 Joint Best Planning Estimates (JBPE)

The Region's Joint Best Planning Estimates (JBPE) report includes growth forecasts for Halton Region, up to 2051. The JBPE is "*a critical planning tool used to identify where and when development is expected to take place and to assist municipalities in planning complete communities including the range and mix of housing supply as well as the type of jobs across the Region*". The Joint Best Planning Estimates are categorized by population, employment and housing units in ten-year increments from 2021 to 2051.

For the purposes of this report and the determination of background traffic volumes for the comprehensive traffic analysis, the Region provided residential and employment projections associated with the site, from the JBPE for 2031, 2041 and 2051, as part of their November 2024 comments regarding BA Group's Terms of Reference for the traffic analysis. However, in January 2025, after a review of the JBPE for the Bronte-Main-Meritor strategic growth area, the Town updated the allocation of units for the 150 Steeles Avenue East site. The Town provided the updated numbers to Regional staff such that the updated information could be shared with the Region's Public Works and Transportation staff for use in their ongoing master planning processes.

As discussed in more detail in **Section 5.6.5**, for the purposes of this report, the JBPE provided by the Region in November 2024 and March 2025 were reviewed. A comparison of the November 2024 JBPE and the March 2025 JBPE development information for the site, revealed that the population (5,103 persons by 2051) and the residential unit count (2,209 units by 2051) for the site were consistent. However, a comparison of the employment assumed by 2051 for the site, equivalent to 1,305 jobs in the November 2024 JBPE and 1,564 jobs in the March 2025 JBPE, revealed that 259 jobs had been assumed for the existing site. As the existing site has been vacant for many years, BA Group's traffic analysis methodology has been updated to consider the vehicle trips assumed by the Region related to the existing site.

3.2.2 Updated Status of Halton Region's Official Plan (OP)

The Halton Region Official Plan changed on July 1, 2024, to become a Local Plan for each of the four local municipalities, after changes to the provincial planning system eliminated the Region's role as an approval authority. The Region is no longer an approval authority for local official plans or amendments. Its new role is to provide assistance and support to the local municipalities, including developing guidelines and helping with growth strategies.

3.2.3 Halton Region Transportation Master Plan (2011)

The Halton Region Transportation Master Plan (the "Regional TMP"), known as the *2031 Road to Change*, was adopted by the Region in October 2011 to define the Region's framework for growth from 2021 to 2031. The Regional TMP supports the policies and objectives arising out of Regional Official Plan Amendment No. 38 (ROPA 38), which incorporated the results from the Sustainable Halton Official Plan Review process.

Most relevant to the proposed development, the Regional TMP identifies the schedule widening of Steeles Avenue from 2 to 4 lanes from Tremaine Road to Industrial Drive and the widening from 4 to 6 lanes from Regional Road 25 to Trafalgar Road by the 2031 horizon year. Infrastructure improvements outlined in the Regional TMP are further discussed in **Section 4.2**.

Halton Region is currently undertaking an Integrated Master Plan (IMP) to complete the next Region-wide water, wastewater and multi-modal transportation master plans to provide the strategies, policies and tools required to meet infrastructure needs up to 2051. The transportation component of the IMP will focus on a multi-modal regional transportation network for all users, including transit, active transportation (pedestrians and cyclists), cars, farm vehicles and trucks.

3.2.4 Halton Region Active Transportation Master Plan (2015)

In May of 2015, the Region released its first active transportation master plan, the Halton Active Transportation Master Plan (the "Regional ATMP"). The Regional ATMP is identified as another policy tool to support the guiding principles set out in the Regional TMP and arising out of and ROPA 38.

An objective of the Regional ATMP is to meet a mode share target for active transportation of 5% for all afternoon peak hour trips by 2031. To achieve this target the Regional ATMP established a Regional Cycling and Walking Network, as well as other supporting active transportation strategies. The Regional Cycling and Walking Network identifies Steeles Avenue as a primary corridor for future active transportation investment consistent with a boulevard multi-use path (MUP) and on-street bike lanes.

3.2.5 Halton Region Mobility Management Strategy (2016)

In 2016, the Region released the *Mobility Management Strategy for Halton* (the "Regional Mobility Strategy"), which was a high-level policy coordination strategy to align Regional OP policies with the Regional TMP and with Provincial directives, at that time, on the Metrolinx "Big Move" and Regional Express Rail (RER) Plans.

Most relevant to the study area, the Regional Mobility Strategy recommended the development of a region-wide Transit Priority Mobility Network which includes implementing transit priority corridors and mobility links corridors (local service / inter-municipal connections) along certain regional roads. The Transit Priority Mobility Network plans to enhance transit connectivity by improving infrastructure, operations, travel speeds, reliability and transit convenience along these identified corridors. Within the site vicinity, Regional Road 8 (Steeles Avenue) and Regional Road 25 (Ontario Street and Martin Street) have been identified as Transit Priority Corridors and Regional Road 25 (north of Steeles Avenue) has been identified as a mobility link.

3.2.6 Halton Region Integrated Master Plan (Currently Underway)

Halton Region is currently undertaking an Integrated Master Plan (IMP) to complete the next Region-wide water, wastewater and multi-modal transportation master plans to provide the strategies, policies and tools required to meet infrastructure needs up to 2051. The transportation component of the IMP will focus on a multi-modal regional transportation network for all users, including transit, active transportation (pedestrians and cyclists), cars, farm vehicles and trucks.

A key component of the IMP is to review the needs of the Region's active transportation network to accommodate future growth and support non-auto modes of travel and the overall reduction of greenhouse gas emissions. Additionally, the IMP will review the Region's recommended 2031 and 2041 transit priority corridor network and any additional improvements required to address the Region's travel needs for 2051. The IMP proposes to review and build upon the Regional TMP and Regional ATMP to develop the Region's future multi-modal transportation network to address Halton's travel needs to 2051 and beyond.

3.2.7 Supporting Regional Transportation Studies

Tremaine Rd / Hwy 410 Interchange Traffic Analysis Report

In December 2012, the Region completed the Traffic Analysis Report for the Tremaine Road / Highway 401 Interchange, which assessed the impact of the realignment of Tremaine Road and the planned addition of a new interchange at Highway 401. The study evaluated current (2006), opening-day (2015), and future (2021) traffic conditions based on information provided by the MTO's transportation forecasting model, and traffic reports and forecasts provided by the Region of Halton.

The study established "Peak Hour Rationalized Traffic Volume Forecasts" for both the morning (AM) and afternoon (PM) weekday peak periods along Highway 401 at the Tremaine Road, Regional Road 25, and James Snow Parkway interchanges. The report also projected 2031 PM peak hour ramp terminal volumes at the Tremaine Road / Highway 401 interchange. While the volumes from this report have not been used directly, they have been used to derive future turn distributions at the Highway 401 interchanges within Milton. Additional detail is provided in **Section 5.0**.

Regional Road 25 Municipal Class Environmental Assessment (MECA)Transportation Planning Report

In 2019, the Region completed the Regional Road 25 MCEA Transportation Planning Report to identify corridor needs along Regional Road 25 to support future traffic growth to 2031. The report recommended the following:

- Widen Regional Road 25 from 4 to 6 lanes from Steeles Avenue East to 5 Side Road;
- Increase traffic signal cycle lengths to 120 seconds in the AM and PM weekday peak hours along the Regional Road 25 corridor;
- An additional auxiliary left-turn lane at the eastbound approach to the Regional Road 25 / Market Drive intersection;
- An auxiliary right-turn lane along the northbound approach to the Regional Road 25 / Chisholm Drive intersection, and along the eastbound approach to the Regional Road 25 / 5 Side Road intersection; and
- An advanced westbound left-turn phase at the Regional Road 25 / High Point Drive intersection.

The above recommendations have been included within the future road network of the study area. While the volumes from this report have not been used directly, they have been used to derive future turn distributions along Regional Road 25 north of Steeles Avenue. Additional detail is provided in **Section 5.0**.

Steeles Avenue Corridor Study – Tremaine Road to Industrial Drive

In December 2022, Halton Region completed a Municipal Class Environmental Assessment (MCEA) Study to address the need for corridor improvements along Steeles Avenue in order to accommodate future traffic growth, consistent with recommendations outlined in the Regional TMP and Regional ATMP.

A traffic analysis was conducted for Steeles Avenue, from Tremaine Road (Regional Road 22) and Industrial Drive, for the existing (2017) and future (2031) conditions. As part of this analysis, traffic growth travel volumes and growth rates were projected along Steeles Avenue and at its intersections with Tremaine Road, Peru Road and Industrial Drive.

While the volumes from this report have not been used directly, they have been used to derive projected traffic volumes along Steeles Avenue between Tremaine Road and Industrial Drive. Additional detail is provided in **Section 5.0**.

New North Regional Road Corridor Municipal Class Environmental Assessment (MCEA) Study

Halton Region is currently undertaking the New North Regional Road Corridor MCEA Study to consider corridor improvements along James Snow Parkway, Steeles Avenue and Regional Road 25. The Region is currently at the “Phase 3: Alternative Design Concepts” stage; the final study is to be completed in 2025.

The study is evaluating the following corridor segments:

- James Snow Parkway between Britannia Road to Highway 401 (Urban Corridor)
- Steeles Avenue from Regional Road 25 to Trafalgar Road (Urban Corridor)
- Regional Road 25 from 5 Side Road to 10 Side Road (Rural Corridor)

The preliminary road designs are consistent with recommendations outlined in the Regional TMP and consider improvements such as roadway widenings, sidewalks and boulevard cycle tracks and protected intersections. Additionally, Steeles Avenue and James Snow Parkway have been identified to protect for future transit priority corridor infrastructure.

The above corridor improvements have been included within the future road network of the study area. Additional detail is provided in **Section 5.0**.

3.3 TOWN OF MILTON CONSIDERATIONS

3.3.1 Town of Milton Official Plan (2024)

The Town of Milton Official Plan (or the "Town OP") sets the long-term goals and objectives for the Town and informs the Town Council on land-use decisions and managing change within the Town. The Town OP reflects the vision for the Town to foster a vibrant economy, promote sustainable development and efficient land use and create community which puts people first.

Following the approval of Regional Official Plan Amendment 38 (ROPA 38), the Town of Milton similarly approved Official Plan Amendment 31 (OPA 31) to the Town Official Plan to align its planning policy framework with the Provincial Growth Plan for the Greater Golden Horseshoe and the Regional Official Plan. In keeping with the findings of the Regional OP, it recognizes that the Town's settlement area is nearly built out and future development in the Town will occur through intensification.

3.3.2 Town of Milton Official Plan Update – We Make Milton (Current)

A new Official Plan project, *We Make Milton*, was inaugurated in July 2019 with a focus on reviewing and updating the Town Official Plan with policies to mange growth to 2051. The new Town Official Plan is intended to consider the implementation of key transportation-related directions as identified in the updated 2024 Transportation Master Plan (TMP). The Province approved Part 1 of the New Official Plan on December 19, 2025. However, the applicable policy framework remains as the Town of Milton Official Plan (December 2024 Consolidation), which was in effect at the time of the initial submission. Notwithstanding this, the proposal has also been reviewed against Part 1 of the New Official Plan and remains aligned with its vision and policy direction.

Most relevant to the study area, intensification targets for the Urban Area (which the site falls within) are identified as 30 units per hectare on a net basis or 20 units per hectare on a gross residential land area. In addition, the boundaries of the "Strategic Growth Area" (which the site also falls within) are identified within the Town OP, which are understood to be areas for accommodating population and employment intensification and higher-density mixed uses in a more compact built form. The development of the site is therefore fully consistent with the guidance understood to be provided by the forthcoming Town OP and will help deliver the intensification targets of the Town and Region.

The Town OP also identifies several Secondary Plan Areas within Milton, of which the site falls within the Milton 401 Industrial / Business Park Secondary Plan area. In addition, the site is located in proximity to the Milton Hights, Milton Education and Boyne Survey Secondary Plan Areas. These secondary plan areas are discussed in further detail below and their locational context is illustrated in **Figure 5**.

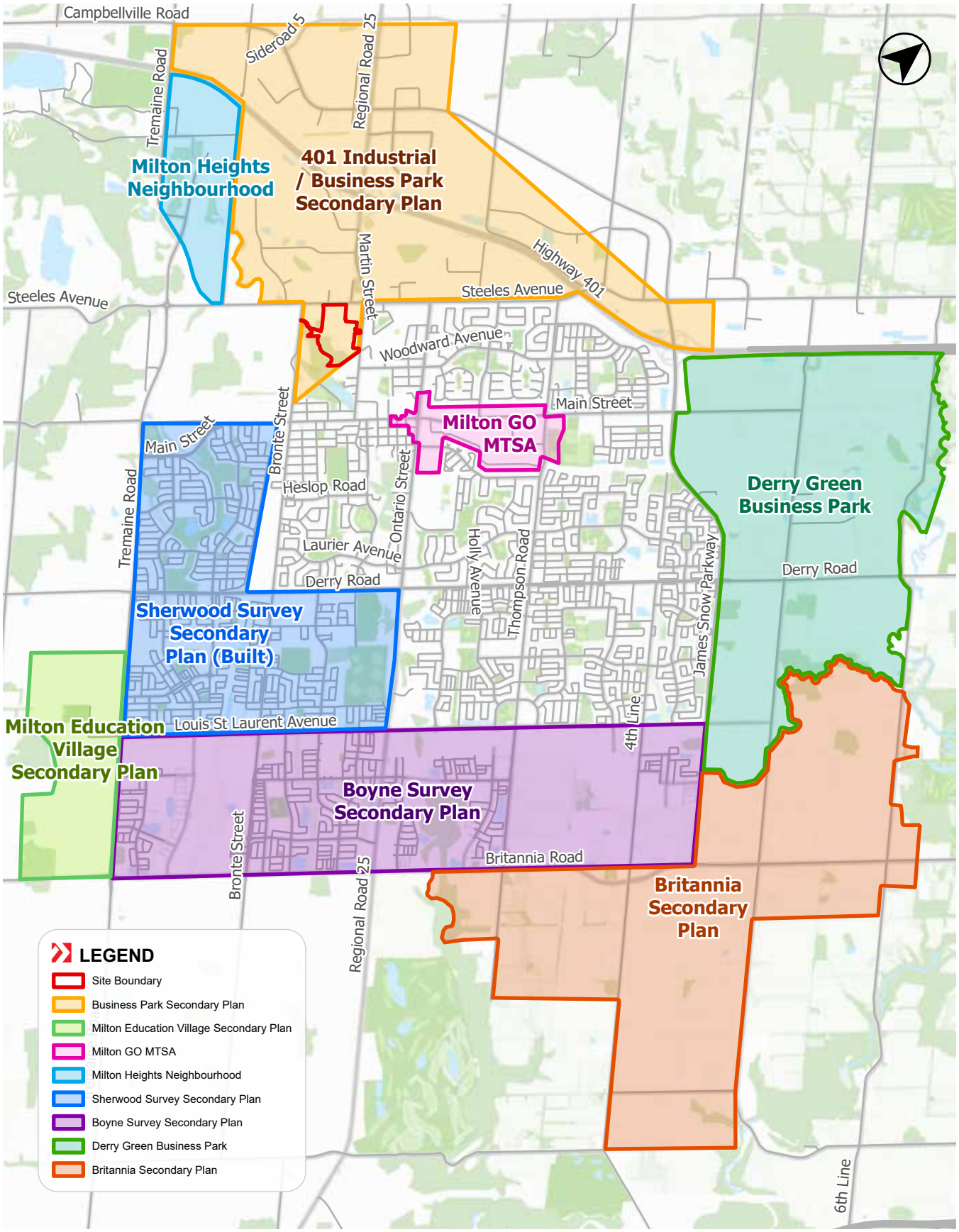


FIGURE 5 TOWN OF MILTON SECONDAY PLAN AREAS

3.3.3 Town of Milton Official Plan Secondary Plans

Milton 401 Industrial / Business Park Secondary Plan

The Milton 401 Industrial / Business Park Secondary Plan, in which the site is located within, is part of the Town OP's Established Urban Area. This Secondary Plan identified is designed to create a comprehensively planned, high quality, industrial/business park with an additional 23,700 employees.

Additionally, within this Secondary Plan, the site area has been identified as a "Special Study Area". The Special Study Area is bounded by Steeles Avenue, Martin Street, the CP Rail line and the CN Rail line. This area is also identified as a Strategic Growth area and further study is required with respect to land use, transportation, servicing and environmental issues.

Milton Education Village Secondary Plan

The Milton Education Village Secondary Plan, in which the site is located approximately 7 km north of, is part of the Town's Sustainable Halton Plan Urban Area. The vision for the Milton Education Village is to create a complete community which integrates both the Urban Area with surrounding natural and rural areas.

The Milton Education Village Secondary Plan area is bounded by Tremaine Road, Britannia Road and the Niagara Escarpment Plan Area and Greenbelt Plan Areas. The Milton Education Village Secondary Plan includes residential and employment development to accommodate an eventual 6,500 residents and 4,700 jobs by 2031.

Boyne Survey Secondary Plan Area

The Boyne Survey Secondary Plan, which is approximately 5 km north of the site, is part of the Milton Urban Expansion Area. It extends to the lands south of the Bristol Survey and Sherwood Survey Secondary Plan Areas, and forms Phase 3 of the expansion.

The Boyne Survey is a rectangular block of land south of Milton's urban core in the area bounded by Louis St Laurent Avenue in the north, James Snow Parkway in the east, Tremaine Road in the west and Britannia Road in the south. Approximately 930 hectares in size, the Boyne Survey will include residential development with some mixed-use areas to accommodate an additional 50,000 residents when fully developed.

Sherwood Survey Secondary Plan & Milton Heights Neighbourhood

The Sherwood Survey Secondary Plan is located within the Urban Area of Milton and includes the Milton Heights Neighbourhood future development. The Milton Heights neighbourhood is located approximately 4.5-km north-west of the site and is bounded by Highway 401, Peru Road, Steeles Avenue and Old Tremaine Road.

The planned density of development of the Milton Heights Neighbourhood is 40 units per net hectare in areas near arterial roads, highways and railway corridors. Steeles Avenue has been identified for proposed realignment to the south as part of the Sherwood Survey Secondary Plan. The secondary plan also identifies bike lanes for Steeles Avenue between Tremaine Road and Industrial Drive.

A detailed traffic study had been conducted for the Milton Heights Neighborhood by HDR in February 2013 which forecast traffic volumes along Tremaine Road and new traffic to and from neighbourhood roadways connecting to Tremaine Road at an interim and an ultimate time horizon. For the purposes of this analysis, the Milton Heights interim horizon has been assumed to be for 2036 and 2041 whereas the ultimate horizon has been assumed applicable for 2046 and 2051.

The interim and ultimate site traffic volumes from this report have been used directly to determine the level of traffic imbalance under future conditions at the associated time horizon along Tremaine Road between Steeles Avenue and the new Tremaine interchange. Further, the future total traffic volumes have been used to derive future turn distributions at Tremaine Road / Steeles Avenue West.

3.3.4 Milton Major Transit Station Area & Mobility Hub Study (2020)

The Milton Mobility Hub Study, completed in 2020, outlines a strategic vision for growth and development around the Milton GO Major Transit Station Area (MTSA), emphasizing higher-density and transit-oriented communities. It includes projections for population and employment growth, road and transit network improvements, and expanded active transportation infrastructure to support a more sustainable and connected urban environment.

The Milton Mobility Hub Study outlines significant growth projections for the town and is expected to occur over a period of 30 to 40 years. Full build-out is projected between 2055 and 2062, with an anticipated increase of 25,000 residents (15,000 units) and 4,000 new jobs within the mobility hub study area. This shift aligns with Regional and provincial targets, emphasizing higher-density, transit-oriented development near the Milton GO Station.

To support this growth, the Milton Mobility Hub Study highlights planned capital improvements for new transportation connections. These upgrades include widening key arterial roads, enhancing intersections, and integrating smart traffic management systems to accommodate increasing travel volumes. Key projects include the extension and proposal of new streets within the study area, aimed at improving connectivity.

The Milton Mobility Hub Study outlines the proposed active transportation network and transit network in the study area which will play a crucial role in shaping mobility within and to and from the hub. The active transportation plan focuses on expanding pedestrian and cycling infrastructure, including new multi-use paths and enhanced streetscapes, to create safer and more connected pathways for non-motorized users. Additionally, the transit network strategy emphasizes improved bus connectivity, enhanced service frequency, and integration with Regional transit systems, particularly GO Transit. Together, these initiatives aim to reduce car dependency, promote sustainability, and support a walkable, transit-friendly community.

The site is located approximately 3.5-km west of Milton GO Station and while outside the Milton Mobility Hub Study area, the site will be impacted by the expected growth of the area. Future residents are anticipated to travel to and from the mobility hub to access Milton GO Station’s Regional connections, and the study’s planned transit and active transportation improvements will encourage greater use of these modes.

3.3.5 Town of Milton Transportation Master Plan (2018)

In 2018, the Town of Milton developed a Transportation Master Plan (the “Town TMP”) to guide investment in all modes of transportation in order to accommodate travel future demands associated with the significant population and economic growth anticipated for the Town.

3.3.6 Town of Milton Transportation Master Plan (Current)

In March 2023, the Town began undertaking a Transportation Master Plan (TMP) Update. The Town TMP update aligns transportation policy with the Town’s growth plan and priorities and reflects recent policy directions from the Province, which focus Milton’s future growth on intensification within the “built boundary”, and the development of complete communities through Secondary Plan Areas. The Town TMP update considers all modes of transportation and identify strategic improvements that will facilitate a shift toward sustainable travel in the Town.

In December 2024, the Town completed the TMP update and a Notice of Completion (NOC) was issued for a 30-day review period ending on January 31, 2025. As identified in the 2024 issued Town TMP update, the items most relevant to the study area include road improvements along Ontario Street South and Main Street East and cycle infrastructure improvements along Steeles Avenue and Martin Street.

3.3.7 Town of Milton Transit Service Review and Master Plan (2019)

The *2019-2023 Milton Transit Service Review and Master Plan Update, June 2019* identified contemporary and future transit needs for the Town of Milton to the year 2023. The Milton Transit Service Review acknowledged the rapid growth of population and employment triggering the need to expand public services. The Transit Master Plan Update made recommendations to introduce new transit routes within the study area, which were subsequently adopted.

Subsequently, Milton Transit developed the *Five-Year Service Plan and Transit Master Plan Update*, effective for the years 2024-2029. This study included an update to the existing Transit Master Plan along with recommend short, medium and long-term sustainable transit requirements in growth areas, including Boyne, Derry Green, Britannia, Agerton/Trafalgar, the Major Transit Station Area (MTSA) and Milton Education Village (MEV). Town Council endorsed the recommendations of the Study on June 24th, 2024.

Future transit network recommendations, as outlined in *Five-Year Service Plan and Transit Master Plan Update,* are discussed in detail in **Section 4.0.**

4.0 AREA TRANSPORTATION CONTEXT

4.1 EXISTING TRANSPORTATION CONTEXT

4.1.1 Existing Area Road Network

The site is well-served by a variety of roadway connections provided across the Town and Region, and to / from the Greater Toronto and Hamilton Area (GTHA). A description of the existing area road network is provided in **Table 6**.

The existing area road network is illustrated in **Figure 6**. The existing lane configuration and traffic control is illustrated in **Figure 17** in **Section 5.5**.

4.1.2 Existing Area Transit Network

The site is currently served by surface transit (bus) routes operated by Milton Transit, which provide local connections to higher-order transit services in the area (i.e. Milton GO Rail Line and GO Regional Bus Services) via Milton GO Station. The existing area transit network is illustrated in **Figure 7**.

Local Transit Services

A detailed overview of the existing local area transit services is summarized in **Table 7**.

Within the site vicinity, 3 local bus routes operated by Milton Transit is accessible withing a 10-minute walk of the site. The nearest surface transit stops to the site are located on the corner of the Steeles Avenue East and Bronte Street North intersection (less than 5-minute walk from site), providing access to bus Route 1 – High Point.

Regional Transit Services

The site is transit-accessible to Milton GO Station, the western terminus of the Milton GO Rail Line. The Milton GO Rail Line provides commuter rail service connecting the greater Milton area to Downtown Toronto, as well as to Meadowvale Town Centre and Square One in Mississauga.

The Milton GO Rail Line currently operates a peak direction, peak period service of 9 trains between Milton GO and Union Station. Outside of regular peak periods, the GO Bus provides additional service in both the eastbound and westbound directions.

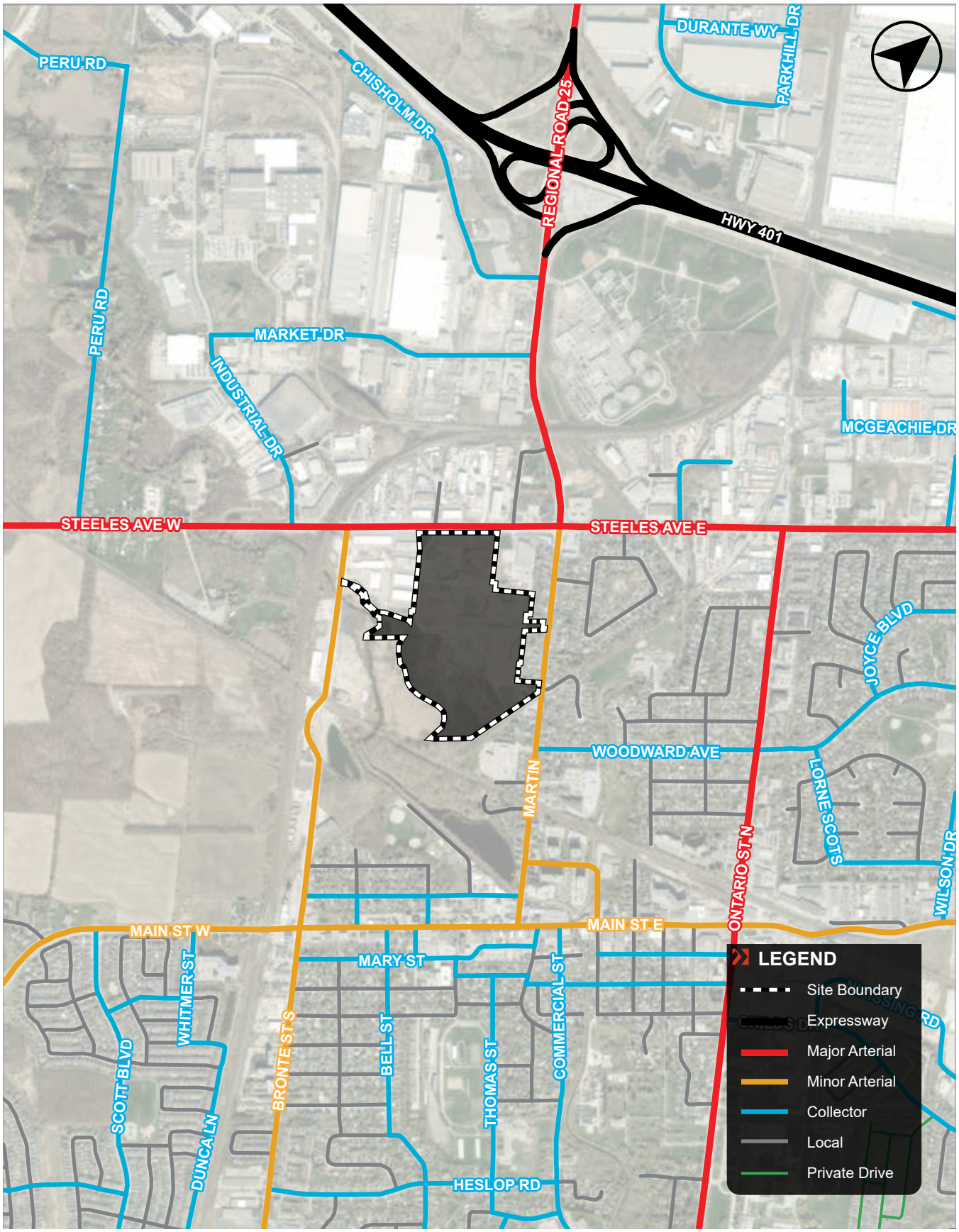
The Milton GO Station is located approximately 2.5 kilometres south-east of the site and is accessible by all regular bus services operated by Milton Transit, including those routes servicing the site area, as summarized in **Table 7**.

TABLE 6 SUMMARY OF EXISTING AREA ROAD NETWORK

Roadway	Description
Highways	
Highway 401	Highway 401 is a provincial freeway that runs east-west across the GTA and is under the jurisdiction of the MTO. Within the site vicinity, the freeway has a 6-lane cross section and has a partial cloverleaf (parclo) A4 interchange configuration with Martin Street. The eastbound and westbound off-ramp intersections with Martin Street are signalized. The posted speed limit is 100 km/h.
Major Arterials	
Steeles Avenue (Regional Road 8)	Steeles Avenue is an east-west major arterial road under the jurisdiction of Halton Region. Steeles Avenue extends across the GTA, from Appleby Line in Milton in the west to the eastern edge of Durham Region (as Taunton Road) in the east. In the site vicinity, Steeles Avenue has a 5-lane cross section, with 2 lanes traveling in each direction with a centre shared turning lane and dedicated turn lanes at key intersections. Steeles Avenue has signalized intersections with Bronte Street, Martin Street, and Ontario Street. The posted speed limit is 70 km/h.
Regional Road 25 (north of Martin Street)	Regional Road 25 (north of Martin Street) is a north-south major arterial road under the jurisdiction of Halton Region, north of Steeles Avenue. Martin Street continues as a collector road south of Steeles Avenue and extends north across Halton Region to Acton. In the vicinity of the site, Regional Road 25 has a 4-lane cross section with dedicated left and right turn lanes at key intersections. Regional Road has signalized intersections with Steeles Avenue, Market Drive and Highway 401 on/off ramps.
Ontario Street (Regional Road 25)	Ontario Street (Regional Road 25) is a north-south major arterial road under the jurisdiction of Halton Region, south of Steeles Avenue. Ontario Street extends south from Steeles Avenue to Lower Base Line where it continues as Bronte Road to Highway 407. In the site vicinity, Ontario Street has a 5-lane cross section, with 2 lanes traveling in each direction with a centre shared turning lane and dedicated turn lanes at key intersections. Its intersection with Steeles Avenue is signalized.
Minor Arterials	
Bronte Street	Bronte Street is a north-south minor arterial road under the jurisdiction of the Town of Milton. Bronte Street extends from Steeles Avenue E in the north to Britannia Road in the south where it continues as First Line. In the site vicinity, Bronte Street has a 2-lane cross section with a dedicated left turn lane at its signalized intersection with Steeles Avenue.
Main Street	Main Street is an east-west minor arterial road under the jurisdiction of the Town of Milton. Main Street extends from Tremaine Road in the west to Fifth Line in the east. In the site vicinity, Main Street has a 2-lane cross section with dedicated turn lanes at its signalized intersections with Bronte Street and Martin Street. On-Street parking is provided along Main Street between Bronte Street and Martin Street, the posted speed limit is 40 km/h.
Collectors	
Martin Street	Martin Street is a north-south collector road under the jurisdiction of the Town of Milton south of Steeles Avenue and extends south to Main Street. In the site vicinity, Martin Street has a 2-lane cross section with a dedicated left turn lane at its signalized intersection with Steeles Avenue.
Mill Street	Mill Street is an east west collection road under the jurisdiction of the Town of Milton. Mill Street is located south of the site and extends between Bronte Street and Martin Street. Mill Street has a 2-lane cross section and its intersections with Bronte Street and Martin Street are unsignalized.
Woodward Avenue	Woodward Avenue is an east west collection road under the jurisdiction of the Town of Milton. Woodward Avenue extends from Martin Street in the west to Maple Avenue in the east. In the site vicinity, Woodward Avenue has a 2-lane cross section, and its intersection with Martin Street is signalized.
Local Roads	
Morobel Drive	Morobel Drive is a north-south local road under the jurisdiction of the Town of Milton. Morobel Drive extends northward from Steeles Avenue East and ends in a cul-de-sac. Its intersection with Steeles Avenue is currently unsignalized. As part of the development plan the planned Street A will connect to Morobel Drive and a signal will be added.
Chris Hadfield Way	Chris Hadfield Way is a north-south local road under the jurisdiction of the Town of Milton. Chris Hadfield Way extends northward from Steeles Avenue East and connects with Martin Street.
Caves Court	Caves Court is a local road under the jurisdiction of the Town of Milton. Caves Court extends north-east from Martin Street and ends in a cul-de-sac. Its intersection with Martin Street is currently unsignalized. As part of the development plan the planned Street D will connect to Caves Court and a signal will be added.

TABLE 7 EXISTING LOCAL AREA TRANSIT SERVICES

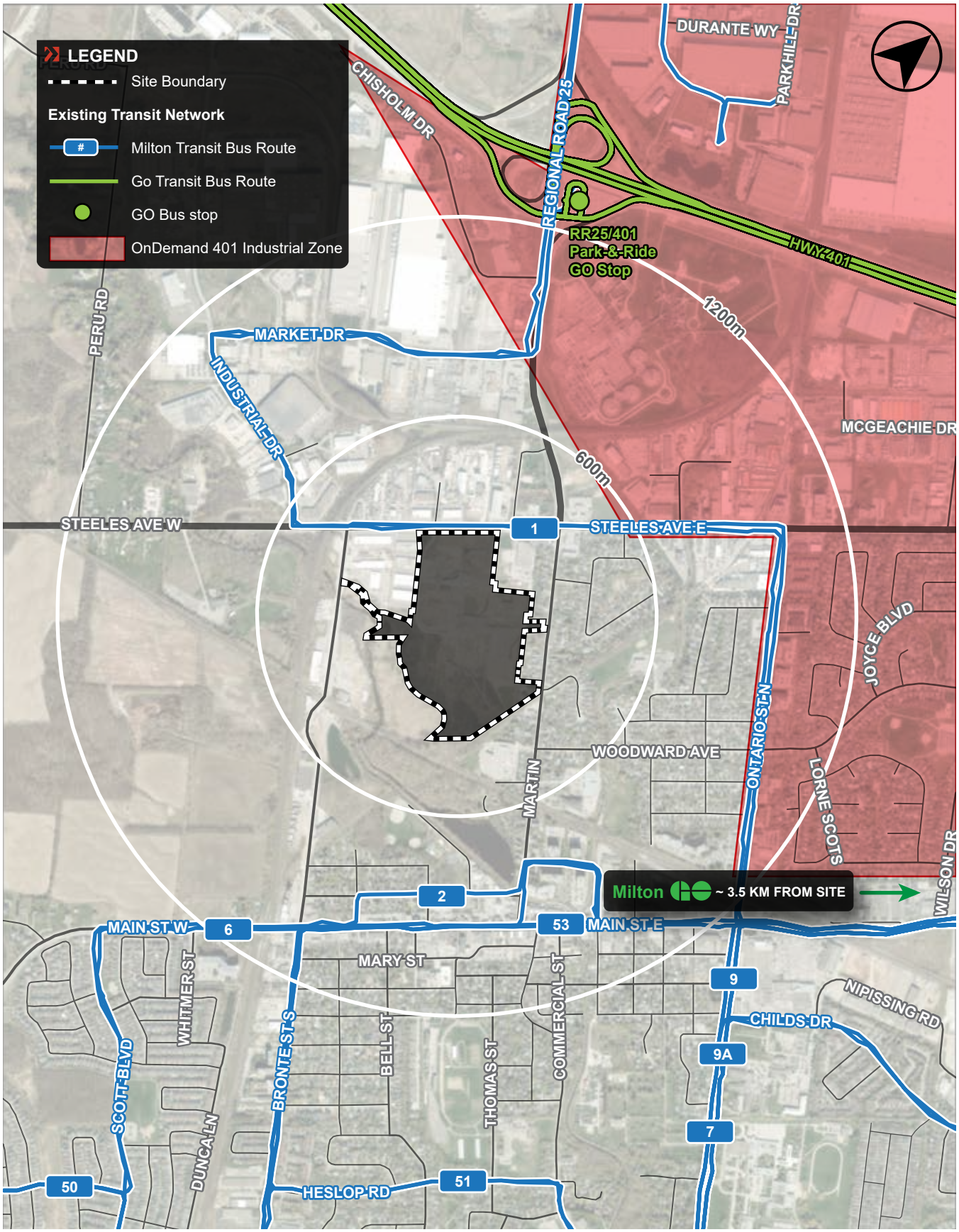
Route	Headways (Peak Hour)	Closest Stop Location	Description
Milton Transit			
Route 1 – High Point	Approx. 20-mins	Steeles Avenue E / Bronte Street N (adjacent to site)	Route 1 provides bi-directional service between Milton GO Station and areas in north Milton. The route generally operates in a north-south direction through the industrial areas along Regional Road 25 and Steeles Avenue E. With the vicinity of the site, the route operates along Steeles Avenue E before turning south along Ontario Street N towards Milton GO Station.
Route 2 – Main	Approx. 30-mins	Main Street E / Martin Street (400-m / 5-min. walk)	Route 2 provides service between Milton Crossroads Centre, Milton GO Station and Milton District Hospital. The route generally operates in an east-west direction along Main Street. Within the vicinity of the site, the route operates along Main Street and Mill Street.
Route 6 - Scout	Approx. 20-mins	Main Street E / Martin Street (400-m / 5-min. walk)	Route 6 provides service between Milton GO Station in the east and Milton Leisure Centre in the west. The route generally operates in an east-west direction along Main Street and operates north-south along Scott Boulevard. Within the vicinity of the site, the route operates along Main Street West.
GO Bus			
Route 25 – Waterloo / Mississauga	Approx. 30-mins (peak direction) Approx. 60-mins (off-peak direction)	Regional Rd 25 @ Hwy 401 Park & Ride (1.4-km / 20-min. walk)	This Regional GO Bus route provides service between the University of Waterloo in Waterloo and Square One in Mississauga. The route generally operates in an east-west direction along Highway 401 and operates in both directions. Within the vicinity of the site, the route stops at the Regional Rd 25 @ Hwy 401 park & ride bus stop located at the Highway 401 interchange.
Route 29 – Guelph Mississauga	Approx. 30-mins (peak direction) Approx. 120-mins (off-peak direction)	Regional Rd 25 @ Hwy 401 Park & Ride (1.4-km / 20-min. walk)	This Regional GO Bus route provides service between the Guelph Central in Guelph and Kipling Station in Toronto. The route generally operates in an east-west direction along Highway 401 and operates in both directions. Within the vicinity of the site, the route stops at the Regional Rd 25 @ Hwy 401 park & ride bus stop located at the Highway 401 interchange.



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FIGURE 6 EXISTING AREA ROAD NETWORK



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FIGURE 7 EXISTING AREA TRANSIT NETWORK

4.1.3 Existing Area Cycling Network

The site is currently served by a number of cycling infrastructure options including multi-use trails, bicycle lanes and park paths. The following provides a summary of the existing cycling infrastructure accessible from the site.

- **Multi-Use Trails** are provided along the south side of Steeles Avenue East between Bronte Street North and Martin Street and are provided along the north side of Steeles Avenue East between Morobel Drive and Martin Street, where they continue northward along Martin Street to Market Drive. Multi-use trails are provided along Bronte Street between Steeles Avenue East and Victoria Street. Further west of the site, multi-use trails are provided along both sides of Tremaine Road, located approximately 1.6 km from the site.
- **Bicycle Lanes** are provided on both sides of Steeles Avenue East between Bronte Street South and Martin Street and are directly accessible from the site's northern boundary. Bicycle Lanes are provided on both sides of Bronte Street, south of Main Street, located approximately 1.2 km south of the site. Existing bicycle lanes are also provided on both sides of Tremaine Road south of Steeles Avenue West, located approximately 1.6 km west of the site.
- **Park Trails** are available south of the site in Livingston Park surrounding Mill Pond. This park trail provides a 2.6 km loop around Mill Pond and extends along Sixteen Mile Creek. Trail access is available from Bronte Street North approximately 1 km south of the site or from Martin Street approximately 650 metres south of the site.

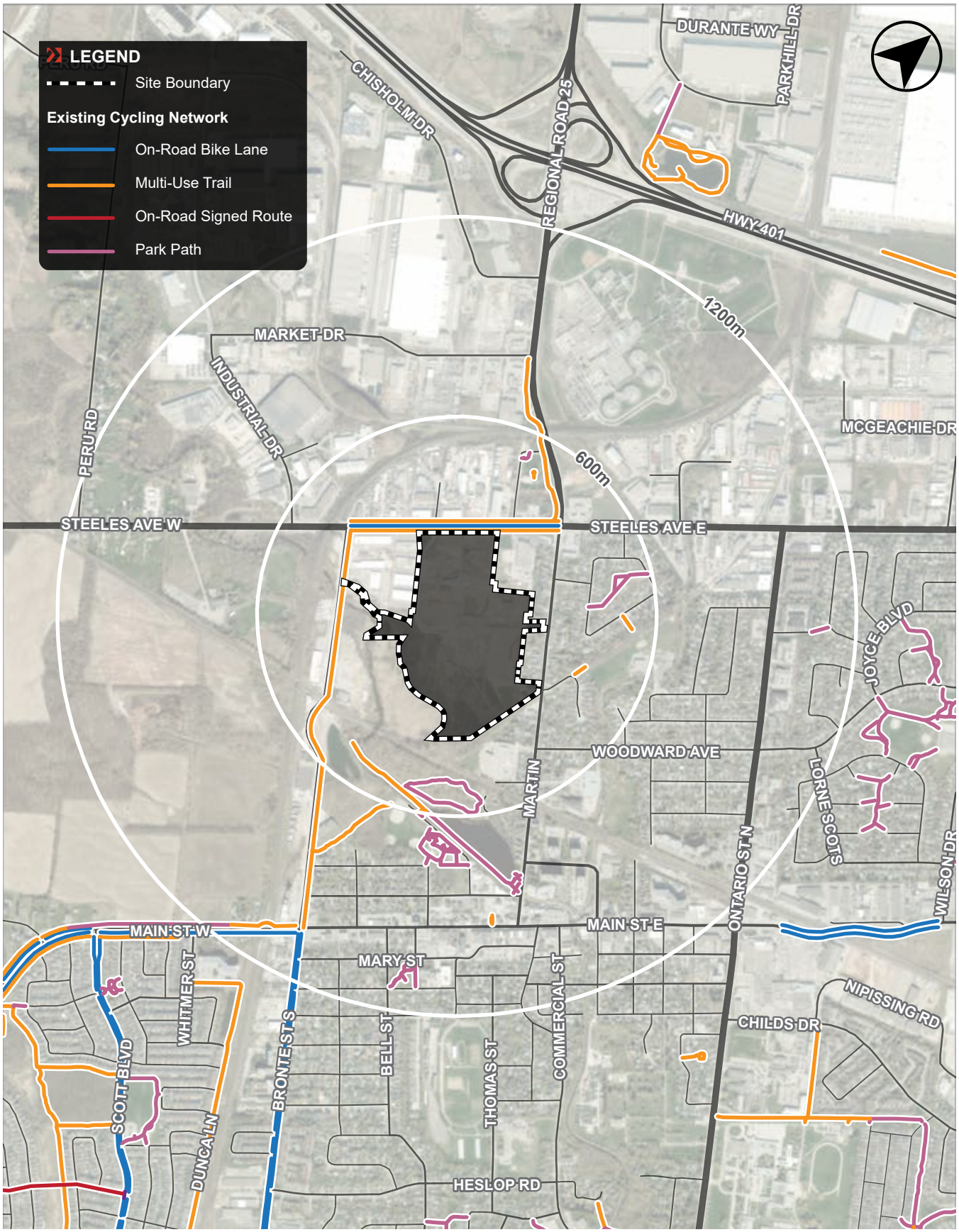
The existing area cycling network is illustrated in **Figure 8**.

4.1.4 Existing Area Pedestrian Network

The site is situated southwest of the Steeles Avenue Eat and Martin Street (Regional Road 25) intersection and is located in proximity to industrial land uses to the north and natural heritage park land to the south. The site is located approximately 1.0 km (a 10 to 15-minute walk) north of Downtown Milton.

There are currently multi-use paths along the north and south side of Steeles Avenue East, west of Martin Street to Bronte Street North. Multi-use paths are also provided along the east side of Bronte Street North south of Steeles Avenue East. Sidewalks are provided on both sides along Steeles Avenue East, east of Martin Street. Sidewalks are provided on both sides of Martin Street south of Steeles Avenue East and a multi-use path is provided on the west side of Martin Street north of Steeles Avenue East. Protected pedestrian crossings and visible pavement markings are provided at all signalized intersections within the study area.

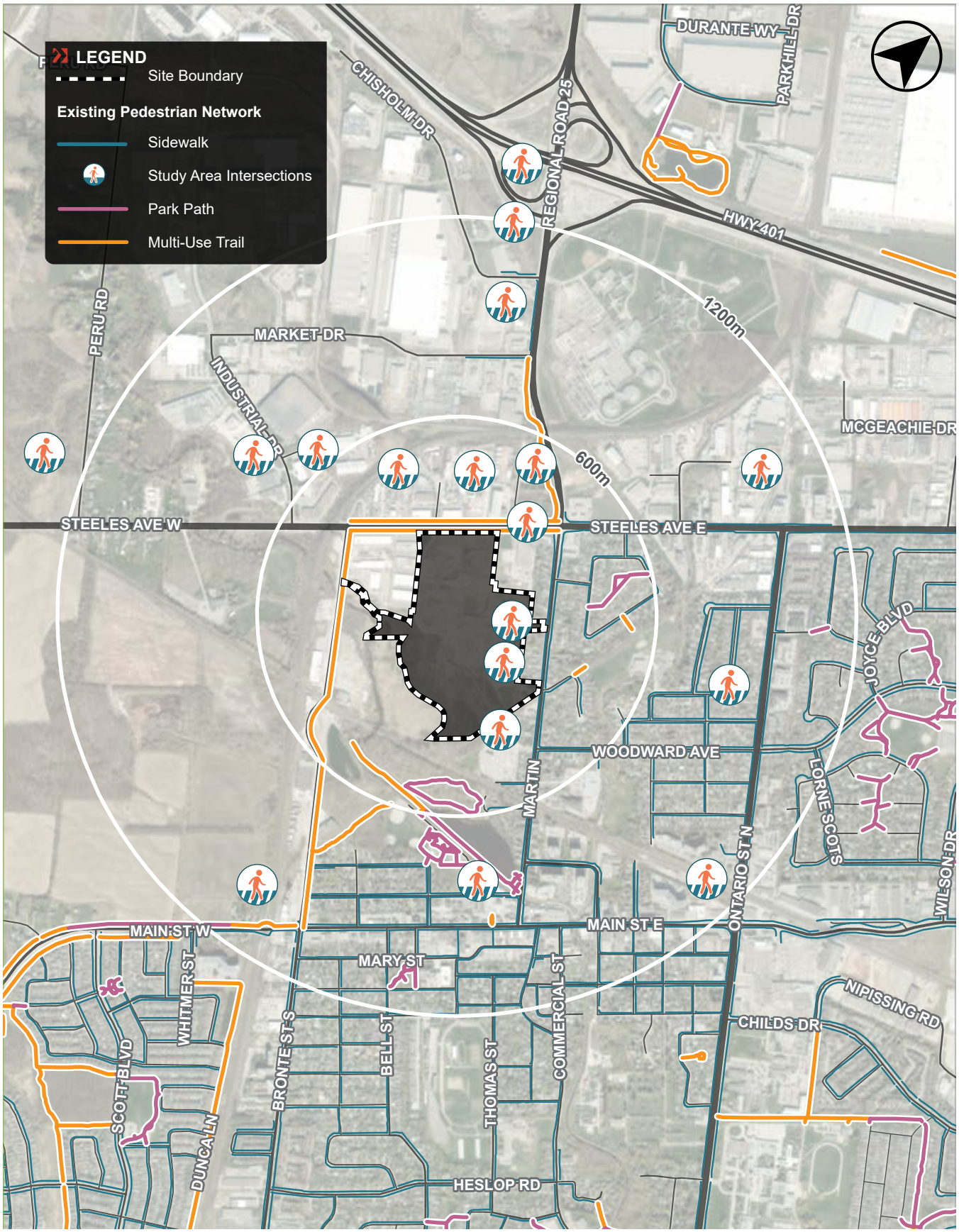
The existing area pedestrian context is illustrated in **Figure 9**.



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FIGURE 8 EXISTING AREA CYCLING NETWORK



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FIGURE 9 EXISTING AREA PEDESTRIAN NETWORK

4.2 FUTURE TRANSPORTATION CONTEXT

4.2.1 Future Area Road Network

The Region of Halton has developed and is implementing an extensive road development and improvement program. The Regional road improvements are generally identified in the Regional TMP (including improvements in the immediate vicinity of the site area).

Additionally, a review of the Town of Milton's construction project forecasts and the 2019 - 2023 Milton Transit Services Review & Master Plan Update has identified other improvements in the study area. The planned road improvements are described below. The planned road projects in the vicinity of the site are illustrated in **Figure 10.**

Halton Region Transportation Master Plan (2031 Improvements)

The Halton Region Transportation Master Plan (2031) was adopted in October 2011 defining the Region's framework for growth from 2021 to 2031. The Regional TMP is focused on a sustainable approach to accommodate 'greenfield' development and intensification of the Region from a transportation perspective. The Regional TMP has identified a number of initiatives to accommodate future growth in the Region.

The Regional TMP outlined the Halton Region Roads Capital Projects (2012 to 2031) which illustrated the planned road improvements and subsequent start year of construction of these projects. In December 2021, the Region published the 2022 Development Charges Background Study which included an update to the planned road improvements and timelines within the Region, which were originally identified in the Regional TMP.

These studies form part of the basis of Halton Region's planned Capital Improvements up to 2031. The following projects have been identified, with the "Start of Construction" year as noted in parenthesis:

- Steeles Avenue – Widening from 2 to 4 lanes from Tremaine Road to Industrial Drive (2026)
- Steeles Avenue – Realignment between Industrial Drive and New Tremaine Road (2031)
- Steeles Avenue – Grade separation at CN rail crossing west of Bronte Street (2026)
- Steeles Avenue – Widening from 4 to 6 lanes from Regional Road 25 to Trafalgar Road (2027)
- Tremaine Road – Widening from 4 to 6 lanes from Highway 401 to Derry Road (2031) with 4-lane extension to Highway 401.
- Regional Road 25 – Widening from 4 to 6 lanes from Britannia Road to Derry Road (2029)
- Regional Road 25 – Widening from 4 to 6 lanes from Steeles Avenue to 5 Side Road (2027)
- Regional Road 25 – Widening from 4 to 6 lanes from Highway 407 to Britannia Road (2029)
- James Snow Parkway – New 6 lane arterial road from Highway 407 to Britannia Road (2031)
- James Snow Parkway – Widening from 4 to 6 lanes from Highway 401 to Britannia Road (2026)
- James Snow Parkway from 4 to 6 lanes from Highway 401 to New Tremaine Road (2030)
- Derry Road – Widening from 4 to 6 lanes from Tremaine Road to Highway 407 (2031)
- 5 ½ Line (New North Regional Road) – New 6 lane arterial road from Britannia Road to Steeles Avenue and Interchange at Highway 401 (2031)
- Highway 401 & Tremaine Road – new interchange to be constructed (to be open by 2026) and realignment of "New Tremaine Road".

Town of Milton Transportation Master Plan

The 2024 Town of Milton Transportation Master Plan Update, outlines several road improvements within the Town of Milon. The Town TMP Update included a phased plan and high-level costing for the recommended road network improvements. The phasing plan includes three horizons: Short-Term (by 2031), Medium-Term (by 2041) and Long-Term (by 2051).

The following provides of the road improvement projects identified in the site vicinity, with the improvement phasing noted in parenthesis:

- Ontario Street South – Converting 2 lanes to HOV lanes from Derry Road to Main Street East (Short-term)
- Main Street East – 4-lane extension from Fifth Line to Trafalgar Road (Short-term)
- Fifth Line - Widening from 2 to 4 lanes from Derry Road to Britannia Road (currently underway)
- Sixth Line – Widening from 2 to 4 lanes from Highway 401 to Britannia Road (Short-term)
- Britannia Road – Widening from 2 to 4 lanes from Tremaine Road to Milton Education Village west boundary (Medium-term)
- NS Street – New 2-lane roadway from EW Street to Main Street E, within the Milton MTSA area (Long-term)
- EW Street – New 2-lane roadway from Wilson Drive to Thompson Road, within the Milton MTSA area (Long-term)
- Nipissing Road Extension– New 2-lane roadway from Nipissing Road to Ontario Street S, within the Milton MTSA area (Short-term)

Additionally, the TMP Update has included a number of intersection improvement projects. Within the vicinity of the site, the following intersection improvements are being considered:

- Main Street E & Ontario Street N – new 30m westbound right turn lane
- Ontario Street S & Childs Drive – new 30m northbound right turn lane
- Thompson Road N & Maple Avenue – new 30m westbound right turn lane and repurposing of existing through-left lane to a left turn lane

Ministry Transportation Ontario (MTO)

In 2013, MTO began a Preliminary Design and Class Environmental Assessment Study (EA) which recommends the widening of Highway 401 from Trafalgar Road to Regional Road 25 to improve capacity and operations by 2031. The plan includes expanding the highway to up to 12 lanes, replacing and widening bridges, upgrading ramps and enhancing stormwater management and transportation systems.

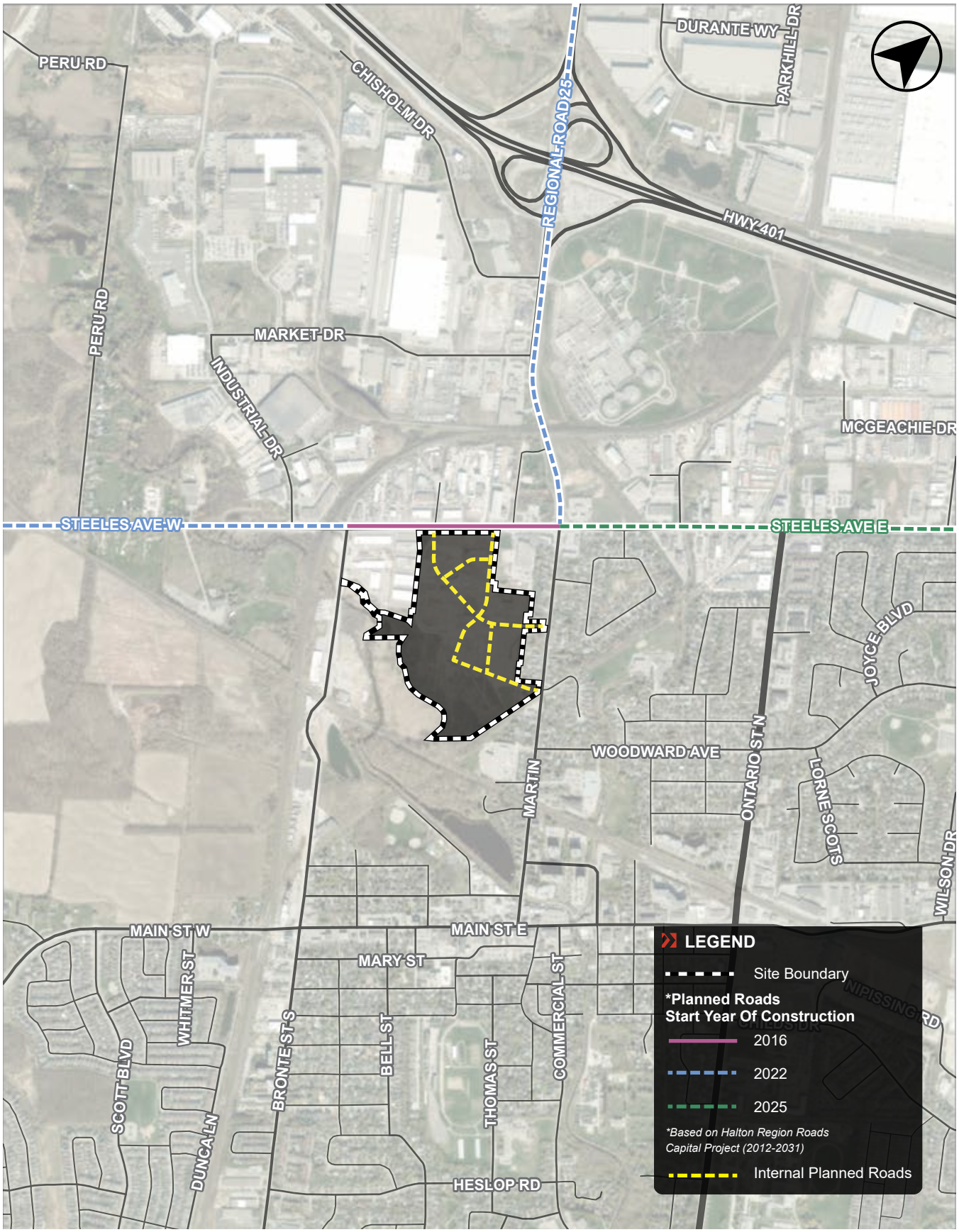
Key infrastructure upgrades within the site vicinity assessed in the Highway 401 EA Study include:

- Expansion from a 6-lane core to a 12-lane collector-distributor system (including two HOV lanes) from Trafalgar Road to James Snow Parkway.
- Expansion to a 10-lane core (including two HOV lanes) from James Snow Parkway to Regional Road 25.
- Replace bridges along Highway 401 at Trafalgar Road, Sixth Line, Oakville Creek West, Canadian National Railway (CNR) and Regional Road 25.
- Modification of the James Snow Parkway ramp entrances and exits to and from Highway 401.

Proposed Site Infrastructure

As part of the site development proposal, a network of new public roads is proposed throughout the site for all modes of travel. The proposed new road network includes 5 public roads and the recommendation for the installation of 3 new traffic signals.

A summary of the proposed internal road network for the site is provided in **Table 5.** Functional plans for the proposed new road network are provided in **Appendix C.**



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FIGURE 10 FUTURE AREA PLANNED ROAD UPGRADES

4.2.2 Future Area Transit Network

Town of Milton Five-Year Service Plan and Transit Master Plan Update

The Milton Five-Year Service Plan and Transit Master Plan Update recommended a proposed transit service plan for the 2029 horizon year. The proposed 2029 Milton Transit Network was designed to reflect changing travel patterns and enable local trips beyond the Milton GO station, where all current Milton Transit routes confluence. Key features of the proposed network relevant to the study area are outlined below.

- **Proposed New Route Characteristics:**

  Route #2 – Bronte: A proposed new Milton Transit route generally running in the north-south direction along Bronte Road connecting from Milton GO Station to the area around Regional Road 25 and Etheridge Avenue. In the vicinity of the site, the recommended alignment of #2 Route will operate along Main Street south of the site. Headways of 10 minutes are recommended for peak periods.

- **Phasing Strategy:**

  The Proposed 2029 Milton Transit Network is intended to replace existing Milton Transit operations in three phases to the year 2029.

  Route #1 – High Point is extended to Market Drive by 2025 (Phase 1). This route extension has since been implemented.

  Route # 2 – Main the western segment and 8 Willmott are replaced by aforementioned new 2 Bronte route by 2025 (Phase 1).

  Route #6 – Scott is altered to service Sherwood Community Centre and operation cycle time is extended to 45 minutes by 2025 (Phase 1).

The location of future stops to service the above-mentioned proposed new routes are still to be determined and will likely be released when detailed scheduling becomes available. The future area transit network is illustrated in **Figure 11**.

Halton Region Transit Priority Mobility Network to 2041

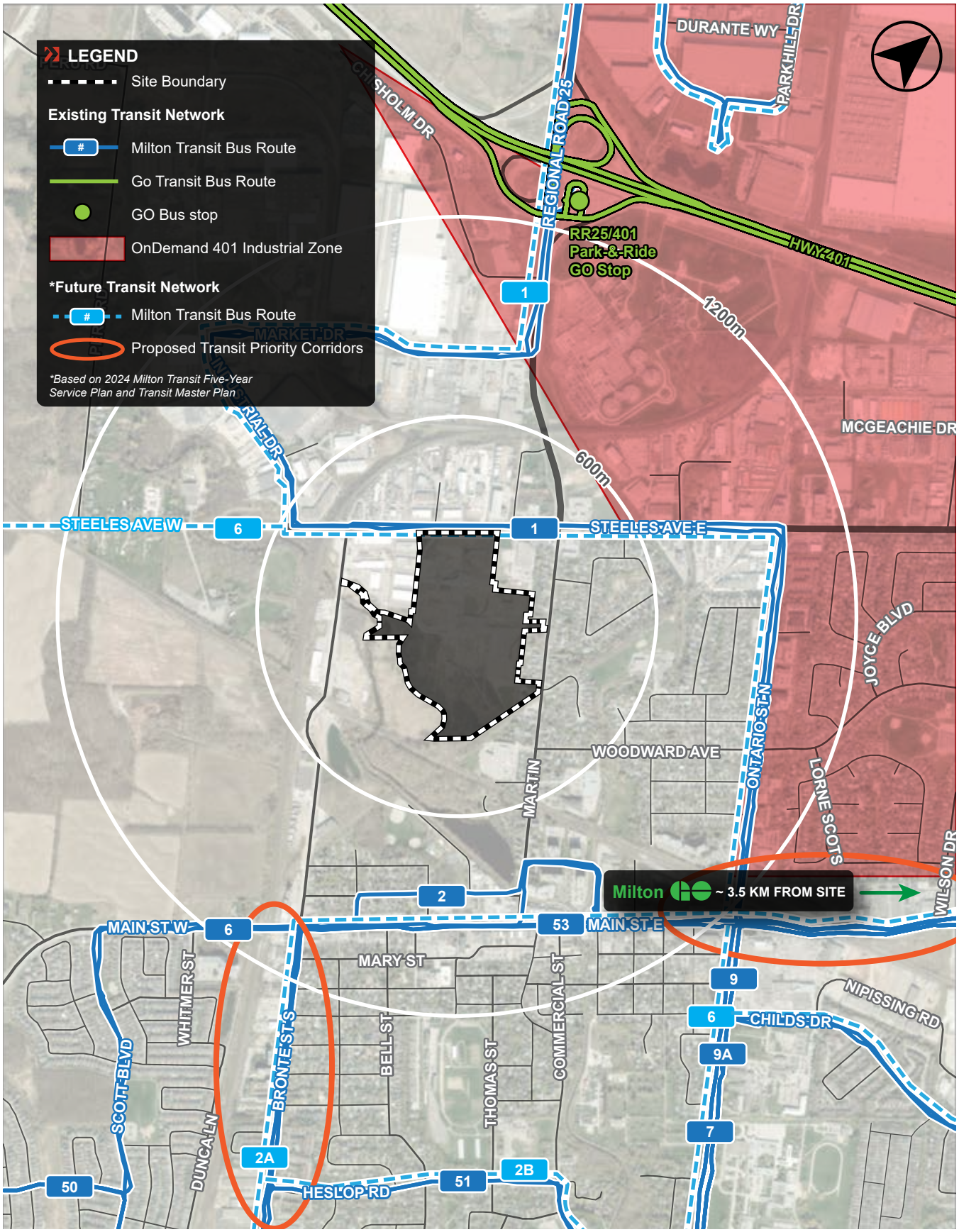
The Region has identified a proposed Transit Priority Mobility Network, effective to the year 2041. Most relevant to the study area, Steeles Avenue (Regional Road 8) and Ontario Street (Regional Road 25) are characterized as Transit Priority Corridors, and Martin Street (Regional Road 25) and Main Street are characterized as a Mobility Link. As per the Regional Mobility Strategy, such corridors are intended to function as local service/inter-municipal connection to provide increased accessibility to important intermunicipal destinations (i.e. social services, employment areas) through a variety of potential transit options, including those beyond traditional fixed route transit services

Milton GO Line Service Expansion

The Milton Line is an existing GO Rail/Bus service that currently provides two-way, all-day service 7 days a week between Toronto and Milton. It provides weekday rush-hour train service from Milton GO to Union GO Station in the morning and afternoon. On February 8th, 2024, the Provincial Government announced support for the expansion of GO train service along the Milton Line, proposing two-way all-day service by 2031.

Transit Opportunities Within Site

Transit opportunities serving the proposed site should be considered as it would encourage sustainable travel for future residents and visitors. Within the proposed internal street network, Street A is an ideal corridor for a future bus route. Street A directly connects to Steeles Avenue, where existing Milton Transit bus routes operate. This makes Street A, a viable candidate for either a new bus route or an extension of an existing route. Although the Town has not yet considered a transit route along Street A, it is recommended for future consideration as part of the development of the site. Establishing a bus route along this corridor would create an important link through this growing residential area and supports the Town's long-term sustainability goals.



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FIGURE 11 FUTURE AREA TRANSIT NETWORK

4.2.3 Future Area Cycling Network

Planned Cycling Improvements

The Town of Milton and the Region of Halton have identified cycling infrastructure improvements in their respective Transportation Master Plans and Active Transportation Master Plans. Both the Town and Region have proposed a number of cycling infrastructure improvements within the broader study area cycling network.

The following provides of the cycling network improvement projects identified in the site vicinity, with the associated planning document noted in parenthesis:

Cycle Tracks & Bike Lanes

- Cycle tracks are proposed along Steeles Avenue between Tremaine Road and Industrial Drive, and between Martin Street and Thompson Road. (Town of Milton)
- Cycle tracks are proposed along Martin Street between Market Drive and No. 5 Side Road. (Town of Milton, Region of Halton)
- Cycle tracks are proposed along Ontario Street between Steeles Avenue and Laurier Avenue. (Town of Milton)

On-Road Signed Routes

- On-road signed routes are proposed along Industrial Drive, Market Drive, and Martin Street from Market Drive to Steeles Avenue (Town of Milton).
- On-road signed routes are proposed along Woodward Avenue between Martin Street and Ontario Street (Town of Milton).
- On-road signed routes are proposed along Millside Drive between Martin Street and Main Street (Town of Milton).
- On-road signed routes are proposed along Mill Street between Bronte Street North and Ontario Street (Town of Milton).

Multi-Use Trails

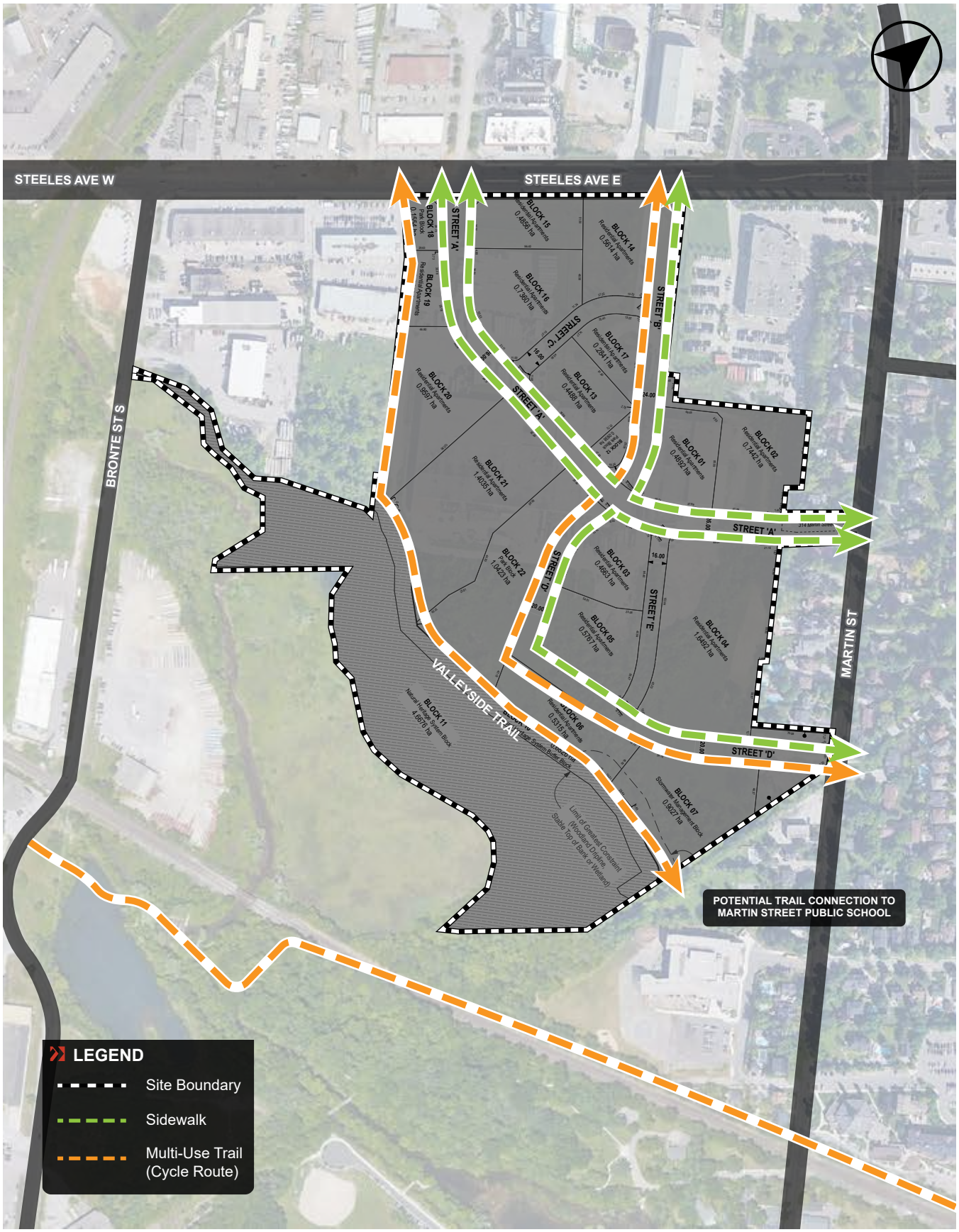
- Multi-use trails are proposed along the north side of the Canadian Pacific Railway rail corridor (Town of Milton).
- Boulevard Multi-Use Trails are proposed along both sides of Steeles Avenue between Tremaine Road and Winston Churchill Boulevard (Region of Halton).

Site Internal Cycling Network

To encourage travel by bicycle, a comprehensive cycling network is planned as part of the development of the site. The new public road network includes a multi-use pathway along the west side of both Street B and Street D and the proposed Valley Trail will provide connectivity between Steeles Avenue and Martin Street.

The site internal cycling network is illustrated in **Figure 12**.

The future area cycling network is illustrated in **Figure 13**.



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FIGURE 12 DEVELOPMENT PEDESTRIAN AND CYCLING ROUTING

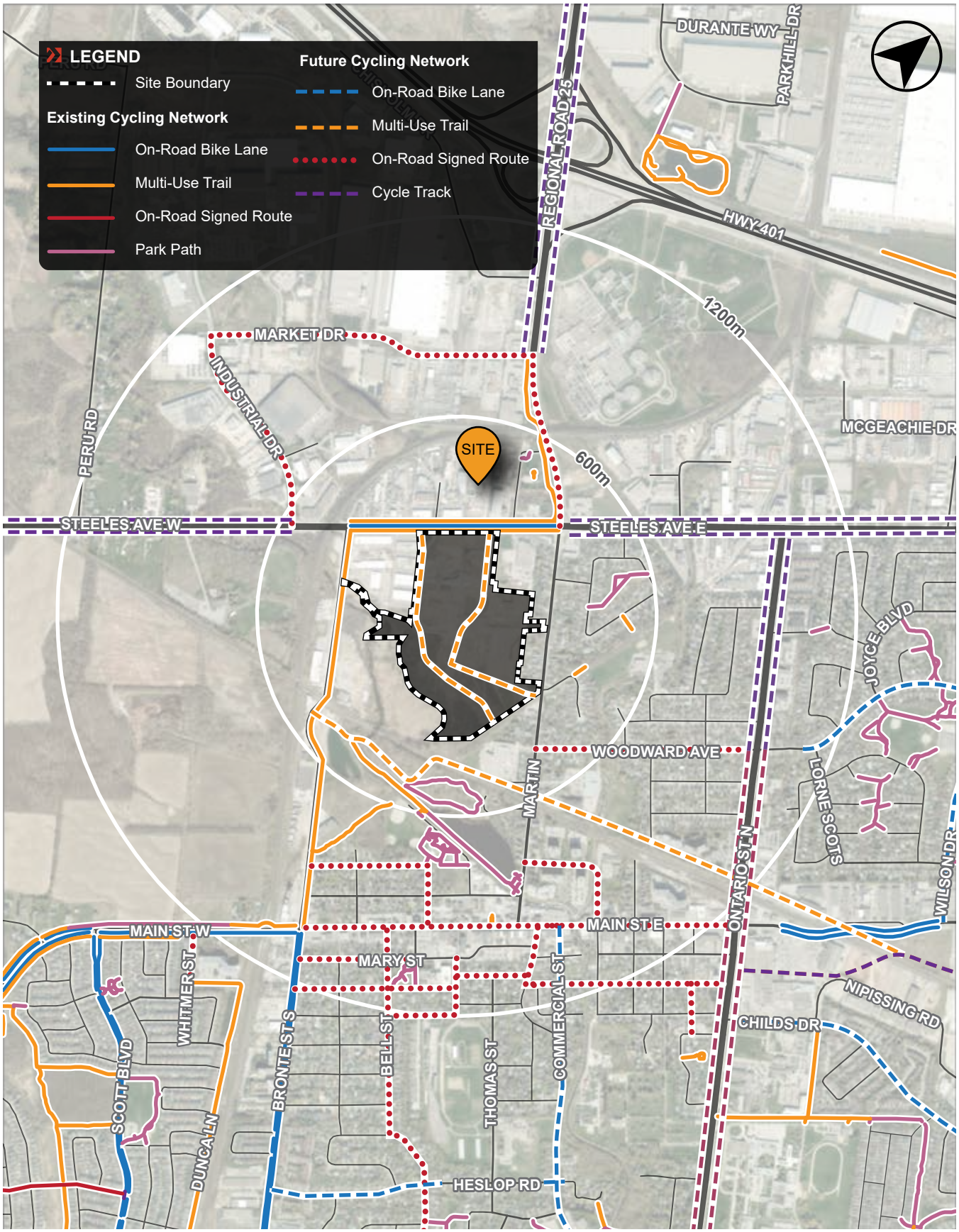


FIGURE 13 FUTURE AREA CYCLING NETWORK

4.2.4 Future Area Pedestrian Context

Planned Pedestrian Improvements

As discussed in **Section 4.2.3**, both the Town and Region have proposed a number of active transportation network improvements town wide. Within the vicinity of the site, a multi-use trail (MUP) is proposed along the north side of the Canadian Pacific Railway rail corridor. Access to this proposed MUP is provided via Bronte Street or Martin Street at the south end of the site.

Site Internal Pedestrian Network

The development proposal includes walkways throughout the site that will connect to future sidewalks along the planned road network. Sidewalks will be provided along the east side of Street B and the east side of Street D and sidewalks will be provided along both sides of Street A and Street C. The new public road network includes a multi-use pathway along the west side of both Street B and Street D and the proposed Valley Trail will provide connectivity between Steeles Avenue and Martin Street.

The pedestrian linkages to Steeles Avenue and Martin Street will provide connectivity to the existing sidewalks and multi-use paths along these streets. The proposed internal pedestrian network, which connects to the multi-use paths on Steeles Avenue, will also provide connectivity to transit stops in order to encourage transit trips to/from the site.

It is noted that an internal active transportation connection between the site and Martin Street Public School will be considered in the future.

The site internal pedestrian network is illustrated in **Figure 12**.

The future area pedestrian network is illustrated in **Figure 14.**



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FIGURE 14 FUTURE AREA PEDESTRIAN NETWORK

5.0 TRAVEL DEMAND FORECASTING

5.1 ADDRESSING FUTURE GROWTH

5.1.1 Transportation Master Plans

The Town of Milton is undertaking a review and update to the Town Official Plan in order to manage growth across Milton to the 2051 horizon year. In support of the Town Official Plan update and planned growth, the Milton TMP was recently updated in December 2024. The updated TMP considers all modes of transportation and identifies strategic improvements that will facilitate a shift toward sustainable travel across Milton. It also reflects recent policy directions from the Province, which focuses Milton's future growth on intensification within the "built boundary" and the development of complete communities through Secondary Plan Areas.

The Halton Region TMP was adopted in October 2011, defining the Region's transportation framework for growth from 2021 to 2031. Halton Region is currently undertaking an Integrated Master Plan (IMP) to complete the next region-wide water, wastewater and multi-modal transportation master plans. The IMP will provide the strategies, policies and tools required to meet the Region's infrastructure needs up to 2051. The transportation component of the IMP will focus on a multi-modal regional transportation network for all users and will review the needs of the Region's active transportation network to support non-auto modes of travel and the overall reduction of greenhouse gas emissions.

The above transportation master plan updates have been / are being completed in coordination between the Town of Milton and Halton Region. Both the Town TMP and Regional IMP are informed by the Region's strategic transportation (EMME) model. The future travel demands within the transportation (EMME) model have been updated to reflect the growth considered within the Region's Joint Best Planning Estimates (JPBE) report that forecasts population growth across the Region up to 2051.

The future background conditions of this traffic analysis have been closely coordinated with the Town of Milton and Halton Region. Traffic growth assumptions informed by the Region's strategic transportation (EMME) model have been provided by the Town and Region. The growth rates were provided with the understanding that the resultant background traffic may be significant and may result in traffic congestion across the area road network. As such, the traffic growth rates have been tested, from a capacity and intersection operations perspective, across the study area road network as part of the scope of this traffic analysis.

Note that the Region's JPBE population forecasts, forming the basis of the strategic transportation (EMME) model, include population and employment projections for the subject site. Therefore, as part of this study, assumptions are made to remove any vehicle trips associated with the JPBE site estimates so as to avoid double counting site traffic generation.

5.1.2 Planned Growth in Milton

The background traffic growth rates provided by the Town and Region reflect the traffic growth associated with population and employment increases across Milton as per assignment forecasts from the Region's transportation (EMME) model. The population and employment growth in Milton is related to the various Secondary Plan areas that are planned to be developed over the next 25 years.

Seven key Secondary Plan areas are expected to provide new housing for a total of 152,600 people and employment of 72,350 jobs by 2051 (not including the development of the site). The Secondary Plan areas and corresponding growth are summarized in **Table 8**. For context, the 2021 population and employment in Milton was approximately 132,979 people and over 100,000 jobs. The forecasted growth across the Secondary Plan areas will approximately double Milton's current population and employment.

TABLE 8 TOWN OF MILTON SECONDARY PLAN / GROWTH AREAS (2051 HORIZON)

Secondary Plan Area		Planned Growth		
		Number of Residents	Number of Jobs	Total Population & Employment
1.	Milton Heights	3,200	-	3,200
2.	Milton Education Village	16,800	5,200	22,000
3.	Boyne Survey	50,000	12,000	72,000
4.	Derry East	-	18,000	18,000
5.	Britannia	57,500	9,300	66,800
6.	Milton Core Mobility Hub	25,100	4,150	29,250
7.	Milton 401 Industrial / Business Park	-	23,700	23,700
Total Growth (not including site)		**152,600 people**	**72,350 jobs**	**224,950 people**

Notes:
1. Milton Heights Traffic Impact Study prepared by Milton Heights Landowners Group, February 2013. Assumed 3,200 residents based on projected 1,600 units assuming 2 people per unit.
2. Milton Education Village Secondary Plan prepared by the Town of Milton dated July 2024.
3. Boyne Survey Secondary Plan prepared by the Town of Milton dated July 2017.
4. Derry Green Corporate Business Park Secondary Plan, prepared by the Town of Milton, dated October 2015.
5. Britannia Secondary Plan - Population, Employment, and Housing Report, prepared by Malone Given Parsons Ltd for the Town of Milton, dated August 2024.
6. Milton Major Transit Station Area & Mobility Hub Study - Final Report, prepared for Town of Milton and Region of Halton, dated May 2020.
7. The Town of Milton Official Plan, prepared by the Town of Milton, dated January 2024.

The Secondary Plan areas (illustrated altogether in **Figure 15**) are primarily located at the outer boundaries of Milton to the west, south and east. Travel to and from the new development areas will increase usage of the roadways that connect these areas to the core of Milton. It is noted that the development areas to the west and south are primarily residential, whereas the areas to the east and north are primarily commercial / employment.

The significant increase in population and employment will shift existing travel distribution and origin-destination patterns from between the core of Milton and north employment areas towards the edges of Milton, with more work-based trips made to / from the east and more home-based trips to / from the south and west.

For purposes of this traffic analysis, the expected shift in travel distribution was estimated by adjusting the existing travel distribution derived from data from the 2022 Transportation Tomorrow Survey. This adjustment increases the proportion of trips to/from the areas of Milton to the south and east in associated with the Secondary Plan areas noted in **Table 8** given their anticipated population and employment growth.

5.1.3 Planned Road Improvements

Halton Region and the Town of Milton are undertaking various road improvements across the area road network in support of the planned growth outlined in the section above. Respectively, **Table 9** and **Table 10** summarize all planned Regional and Municipal improvements with corresponding timelines. Additional detail regarding the road improvements is provided in **Section 4.2.**

All planned Regional and Municipal road improvements outlined in **Table 9** and **Table 10** are expected to be completed by 2036. All road improvements have been included in the Region's strategic transportation (EMME) model and, therefore, are similarly included in the future background horizons of this traffic analysis.

TABLE 9 PLANNED REGIONAL ROAD NETWORK IMPROVEMENTS

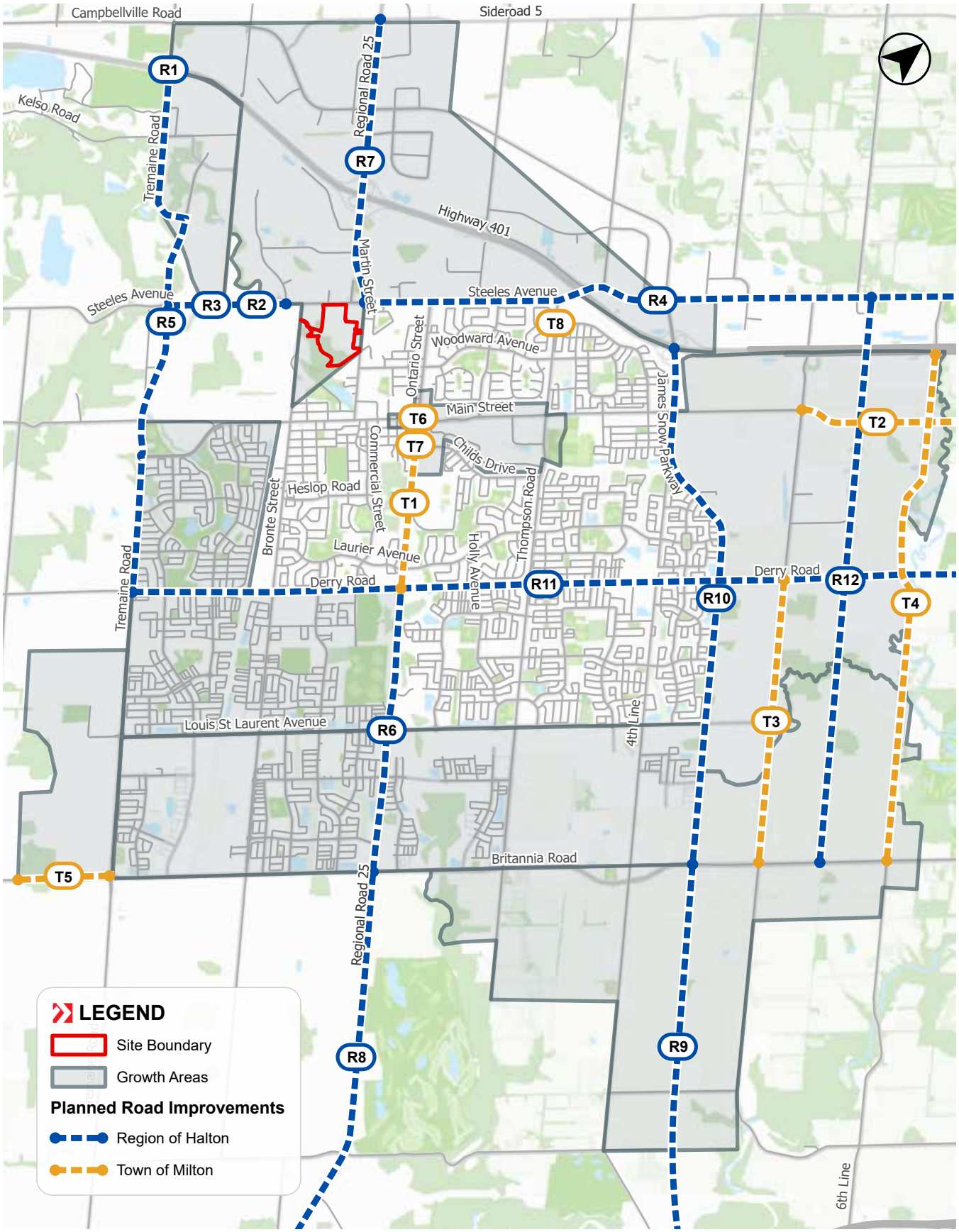
Road Network Improvement		Horizon Year
1.	Highway 401 / Tremaine Road New Interchange	2026
2.	Steeles Avenue Widening from 2 to 4 lanes From Tremaine Road to Industrial Drive	2031
3.	Steeles Avenue Realignment from Industrial Drive to New Tremaine Road.	2031
4.	Steeles Avenue Railway Grade Separation	2026
5.	Steeles Avenue Widening from 4 to 6 lanes From Regional Road 25 to Trafalgar Road	2025
6.	Tremaine Road Widening from 4 to 6 lanes From Highway 401 to Derry Road with realignment of "New Tremaine Road" and New Tremaine Road extension of 4 lanes to 401.	2031
7.	Regional Road 25 Widening from 4 to 6 lanes From Britannia Road to Derry Road	2029
8.	Regional Road 25 Widening from 4 to 6 lanes From Steeles Avenue to 5 Side Road	2027
9.	Regional Road 25 Widening from 4 to 6 lanes From Highway 407 to Britannia Road	2029
10.	James Snow Parkway New 6-lane Arterial Road From Highway 407 to Britannia Road	2031
11.	James Snow Parkway Widening from 4 to 6 lanes From Highway 401 to Britannia Road	2031
12.	James Snow Parkway from 4 to 6 lanes from Highway 401 to New Tremaine Road	2030
13.	Derry Road Widening from 4 to 6 lanes from Tremaine Road to Highway 407	2031
14.	5 ½ Line (New North Regional Road) New 6-lane Arterial Road From Britannia Road to Steeles Avenue / Highway 401 Interchange	2031

TABLE 10 PLANNED TOWN OF MILTON ROAD NETWORK IMPROVEMENTS

Road Network Improvement		Horizon Year
Road Improvements		
1.	Ontario Street South – Converting 2 lanes to HOV lanes from Derry Road to Main Street East	2031
2.	Main Street East – 4-lane extension from Fifth Line to Trafalgar Road (Short-term)	2031
3.	Fifth Line - Widening from 2 to 4 lanes from Derry Road to Britannia Road (currently underway)	Currently underway
4.	Sixth Line – Widening from 2 to 4 lanes from Highway 401 to Britannia Road (Short-term)	2031
5.	Britannia Road – Widening from 2 to 4 lanes from Tremaine Road to Milton Education Village west boundary (Medium-term)	2041
Intersection Improvements		
6.	Main Street E & Ontario Street N – new 30m westbound right turn lane	2031
7.	Ontario Street S & Childs Drive – new 30m northbound right turn lane	2031
8.	Thompson Road N & Maple Avenue – new 30m westbound right turn lane and repurposing of existing through-left lane to a left turn lane	2031

Figure 15 illustrates the Region of Halton and Town of Milton infrastructure improvements and how they generally connect the new Secondary Plan areas to the existing infrastructure and population centers within the Town of Milton. Based on the overlap of the new roads with the new Secondary Plan areas, the Derry Green Business Park, Britannia and Milton 401 employment areas will be well served by the new or widened streets.

To the west, growth is planned in south Milton, both east and west of Bronte Street, primarily located along Britannia Road. It is, therefore, expected that Britannia Road will be a major corridor for new traffic to distribute to the existing and new north-south corridors for circulation through Milton. It is noted that despite this, no improvements have been planned for Britannia Road. Similarly, no improvements are planned for Bronte Street (currently a 2-lane corridor), which will serve a similar role to Thompson Road (currently a 4-lane corridor) as they both provide alternate north-south corridors to the new growth at Britannia Road.



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FIGURE 15 MILTON SECONDARY PLAN GROWTH AREAS AND PLANNED ROAD IMPROVEMENTS

5.2 TRAFFIC ANALYSIS SCENARIOS

The traffic analysis scenarios assessed as part of this study were established in coordination with the Town and Region, as per the Terms of Reference in **Appendix A**. The analysis scenarios summarized in **Table 11** correspond with the proposed development horizons (2036 completion of Phase 1 and 2046 completion of Phase 2) and an additional 5-years post completion of each development phase.

The traffic analysis has been completed for typical weekday morning and afternoon street peak hours.

TABLE 11 TRAFFIC ANALYSIS SCENARIOS

Year	Scenario	Considerations
2024	Existing Traffic	• Existing network and traffic volumes
2036	Future Background	• Background growth to 2036 (without site) • Includes all planned infrastructure
2036	Future Total (Phase 1)	• Background growth to 2036 + Build-out of Phase 1 • Includes all planned infrastructure • Includes proposed Phase 1 infrastructure
2041	Future Background	• Background growth to 2041 (without site) • Includes all planned infrastructure
2041	Future Total (Phase 1 + 5 years)	• Background growth to 2041 + Build-out of Phase 1 • Includes all planned infrastructure • Includes proposed Phase 1 infrastructure
2046	Future Background	• Background growth to 2046 (without site) • Includes all planned infrastructure
2046	Future Total (Phase 2)	• Background growth to 2046 + Build-out of Phase 2 (full site) • Includes all planned infrastructure • Includes all proposed infrastructure
2051	Future Background	• Background growth to 2051 (without site) • Includes all planned infrastructure
2051	Future Total (Phase 2 + 5 years)	• Background growth to 2051 + Build-out of Phase 2 (full site) • Includes all planned infrastructure • Includes all proposed infrastructure

5.2.1 Background Traffic Considerations

As previously discussed, the Town and Region have provided corridor traffic growth assumptions to inform the future background traffic volumes considered as part of this study. The growth rates were extracted from the Region's transportation (EMME) model used as the basis of the Town TMP and Regional IMP updates.

The growth rates were provided with the understanding that the resultant background traffic growth may be significant and may result in traffic congestion across the area road network. Therefore, the traffic growth rates are reviewed and validated, from a road network capacity and intersection operations perspective, as part of this study (see **Section 5.5.3**).

5.2.2 Site Traffic Considerations

As previously discussed, the Region's JPBE population forecasts, which inform the strategic transportation (EMME) model travel demands, include population and employment projections for the subject site. The Region has provided the JPBE site residential and employment estimates for the 2031, 2041 and 2051 horizon years, which are not consistent with the current development proposal.

Therefore, as part of this study, vehicle trip generation assumptions were made for the JBPE site estimates, as per the JPBE provided by the Region in March 2025, for removal from the area road network so as to not double count site traffic activity under future total conditions.

5.2.3 Supplementary School Analysis

As the site is adjacent to two schools on Martin Street, the Town has requested a supplementary analysis during school peak hours. It is noted that Martin Street Public School is located on the west side of Martin Street, with access at Woodward Avenue and at Jasper Street, and Holy Rosary Elementary School is located on the east side of Martin Street, with the main access at Jasper Street and a secondary access at the Holy Rosary Parish south of the school.

The supplementary school analysis is discussed in **Section 9.0**.

5.3 TRAVEL MODE SHARES

Travel mode share assumptions, for purposes of this study, have been made based on a review of Transportation Tomorrow Survey (TTS) data and the Institute of Transportation Engineers (ITE) sources. Consideration has been given to both 2022 TTS data and 2016 TTS data, given the understanding that any travel demand forecasting undertaken prior to the recent release (December 2024) of the 2022 TTS data set (i.e. the Town TMP and Regional IMP updates) would have been informed by the 2016 TTS data set.

The 2016 TTS data indicates that the site and surrounding area had a residential travel auto driver mode share of 71%. This is comparable to the base 70% auto driver mode share assumption reflected in ITE residential trip generation rates as per the Trip Generation Handbook 3rd Edition (September 2017). This indicates that the auto driver mode share as per the 2016 TTS and ITE trip rates, are a good approximation of vehicle trip generation under existing conditions (i.e. the ITE trip rates already reflect a 70% auto driver mode share condition). However, the ITE trip rates will need to be adjusted relative to the baseline ITE auto driver mode share versus future auto driver mode share, to reflect the forecast shift in auto driver to active transportation modes in the future.

The recently released 2022 TTS data indicates that residential travel for the site area has an existing auto driver mode share in the order of 54%, a significant reduction from the 2016 characteristics. A comparison of the 2016 TTS, 2022 TTS and ITE mode shares relevant to the site area is provided in **Table 12**. To be conservative, it was assumed that the ultimate residential auto driver mode share will become 50% for an additional minor reduction of 4% on the 54% auto driver mode share, that was observed in the 2022 TTS.

TABLE 12 RESIDENTIAL TRAVEL MODE SHARE DATA COMPARISON

Mode	Two-Way Peak Hour Trips			
	2016 TTS[1]	ITE[4]	2022 TTS[2]	Ultimate Future
Auto (Driver)	**71%**	**70%**	**54%**	**50%**
Auto (Passenger)[3]	12%	30%	22%	50%
Transit	10%		9%	
Walk	7%		14%	
Cycle	0%		1%	
Total	**100%**	**100%**	**100%**	

Notes:
1. Based on 2016 TTS data for morning (6:00 - 8:59) and afternoon (15:00 - 17:59) peak traffic periods for Planning District 38.
2. Based on 2022 TTS data for morning (6:00 - 8:59) and afternoon (15:00 - 17:59) peak traffic periods for Planning District 38.
3. Auto passenger trips (includes auto passengers, school bus passengers and taxi passengers).
4. ITE Trip Generation Handbook 3rd Edition (September 2017) Appendix B.

Given the long-term planning horizons of this transportation study (2036, 2041, 2046, 2051) and the required coordination with the Region's JPBE site population projection horizons (2031, 2041, 2051), a transitional approach to travel mode share assumptions has been adopted. To be conservative, the 2016 TTS (and ITE) auto driver mode share of approximately 70% was adopted for the first analysis period (2031). The base ITE trip generation rates were adopted for 2031 and scaled down in future horizons, based on the incremental change in auto driver mode share.

Over time, it is assumed that a 10% auto driver mode share reduction occurs in ten-year increments. The transitional auto driver mode share assumption is as follows:

- 2031 to 2041 70% auto driver mode share
- 2041 to 2051 60% auto driver mode share
- 2051 & beyond 50% auto driver mode share

Therefore, for purposes of generating vehicle trips for the Region's JBPE site estimates provided in March 2025, the 70%, 60% and 50% auto driver mode shares have been applied to the 2031, 2041 and 2051 population forecasts, respectively.

For purposes of generating site traffic activity associated with the current development proposal, the auto driver mode share assumptions have been applied to the 2036, 2041, 2046 and 2051 horizon years, with the associated trip generation adjustment as presented in **Table 13**.

TABLE 13 ADOPTED RESIDENTIAL AUTO DRIVER TRAVEL MODE SHARE ASSUMPTIONS

Analysis Horizon	Auto Driver Mode Share[1,2]	Auto Driver Mode Share Reduction Relative to ITE Baseline[3]	Site Multi-Modal Assessment
Baseline (ITE & 2016 TTS)	~70%	--	--
2036	70%	0%	Multi-modal assessment undertaken for the 2051 Horizon only
2041	60%	10%	
2046	60%	10%	
2051	50%	20%	50%

Notes:
1. Based on a review of 2016 TTS data, 2022 TTS data, and ITE base assumptions.
2. Applied to the Region's JBPE "background site traffic" and the current development proposal site traffic.
3. Reflects the difference in auto driver mode share between the analysis horizon and baseline.

Based on the above, a 10% reduction was applied to trip generation rates at the 2041 and 2046 horizons and a 20% reduction was applied at the 2051 horizon. It is important to reiterate that this is a conservative approach to site traffic generation, as the 2022 TTS data indicates that residential travel for the site area currently reflects an auto driver mode share approaching 50%. For purposes of this study, a 50% auto driver mode share was assumed only to be reached by 2051.

For multi-modal purposes, the 2051 horizon year forms the basis of the multi-modal travel assessment given that it reflects the most conservative conditions with respect to non-auto site trip generation (assumed 50% auto driver mode share). The multi-modal (i.e. non-auto) mode share assumptions for the 2051 horizon year were generally based on the 2022 TTS values.

The adopted multi-modal residential travel mode share assumptions are summarized in **Table 14**. The multi-modal site travel assessment, which considers transit, cycling, walking, is provided in **Section 10.0**.

TABLE 14 ADOPTED RESIDENTIAL MULTI-MODAL TRAVEL MODE SHARE ASSUMPTIONS

Mode	Two-Way Peak Hour Trips	
	2022 TTS[1]	2051 Horizon[3]
Auto (Driver)	**54%**	**50%**
Auto (Passenger)[2]	22%	22%
Transit	9%	13%
Walk	14%	14%
Cycle	1%	1%
Total	**100%**	**100%**

Notes:
1. Based on 2022 TTS data for morning (6:00 - 8:59) and afternoon (15:00 - 17:59) peak traffic periods for Planning District 38.
2. Auto passenger trips (includes auto passengers, school bus passengers and taxi passengers).
3. Based on 2022 TTS data with 4% shift from auto driver to transit.

5.4 TRAFFIC ANALYSIS STUDY AREA

5.4.1 Wider Study Area

The Wider Study Area encompasses the analysis boundary that was determined in coordination with the Town of Milton and Halton Region (as outlined in the Terms of Reference in **Appendix A**). This study area generally extends from James Snow Parkway in the north and east, Tremaine Road in the west and Main Street in the south.

The Wider Study Area includes 17 existing signalized intersections and 5 existing unsignalized intersections. Under future background conditions (all horizon years), 2 new signalized intersections and 1 new unsignalized intersection (roundabout) will be introduced based on the Regional and Town planned infrastructure. The site development recommends 3 new signalized intersections and 1 new unsignalized intersection under future total conditions.

The Wider Study Area intersections are summarized in **Table 15** and illustrated in **Figure 16**.

5.4.2 Focused Study Area

Given the extent of the Wider Study Area outlined above, a more localized study area (Focused Study Area) was established for the detailed traffic operations analysis with respect to assessing the proposed site traffic impact.

The Focused Study Area extends generally from James Snow Parkway in the north to Main Street in the south and Bronte Street in the west to Ontario Street in the east.

The Focused Study Area includes 14 of the 22 total Wider Study Area intersections, in addition to the 4 proposed new site intersections.

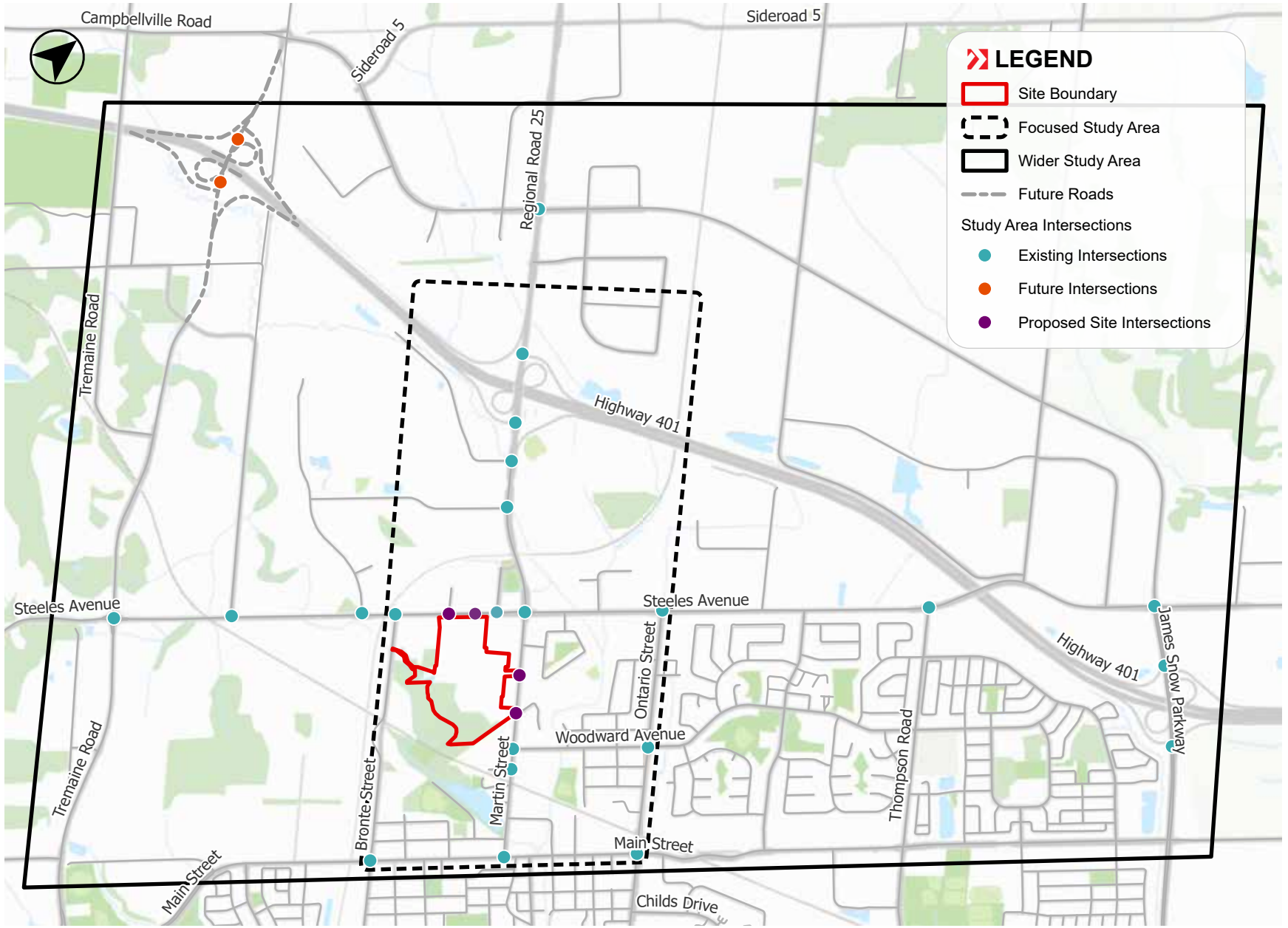
A summary of the Focused Study Area intersections is provided in **Table 16.** The study area is also illustrated in **Figure 16**.

TABLE 15 WIDER STUDY AREA INTERSECTIONS

Signalized	Unsignalized
Existing Intersections	
Steeles Avenue / Industrial Drive	Steeles Avenue / New Tremaine Road
Steeles Avenue / Thompson Road	Steeles Avenue / Peru Road
Steeles Avenue / James Snow Parkway	
James Snow Parkway / Highway 401 EB Ramp	
James Snow Parkway / Highway 401 WB Ramp	
Regional Road 25 / James Snow Parkway	
Future Intersections	
New Tremaine Road / Highway 401 EB Ramp (planned)	Steeles Avenue / Peru Road / New Steeles Avenue (planned roundabout)
New Tremaine Road / Highway 401 WB Ramp (planned)	

TABLE 16 FOCUSED STUDY AREA INTERSECTIONS

Signalized	Unsignalized
Existing Intersections	
Steeles Avenue / Bronte Street	Martin Street / Caves Court (to be signalized)
Steeles Avenue / Regional Road 25	Martin Street / Jasper Street
Steeles Avenue / Ontario Street	Martin Street / Kings Court Crescent
Regional Road 25 / Market Drive	Steeles Avenue / Chris Hadfield Way
Regional Road 25 / Chrisholm Drive	Steeles Avenue / Existing Site Access
Regional Road 25 / Highway 401 ramp terminals	
Main Street East / Ontario Street South	
Main Street East / Martin Street	
Main Street East / Bronte Street N	
Ontario Street / Woodward Avenue	
Martin Street / Woodward Avenue	
Future Intersections	
Steeles Avenue / New Street A (proposed)	Steeles Avenue & New Street B RIRO (proposed)
Martin Street / New Street A (proposed)	
Martin Street / New Street D / Caves Court (proposed)	



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FIGURE 16 TRAFFIC ANALYSIS STUDY AREAS (WIDER & FOCUSED)

5.5 EXISTING TRAFFIC VOLUMES

5.5.1 Existing Road Network

The existing area road network lane configuration and traffic control is illustrated in **Figure 17**.

5.5.2 Traffic Counts & Network Traffic Volumes

Existing baseline traffic volumes were established at study area intersections for the weekday morning (6:00 am to 9:00 am) and afternoon (2:00 pm to 7:00 pm) street peak hour periods using traffic count information obtained from surveys undertaken by Spectrum Traffic Data Inc. on Tuesday May 7, 2024.

It is noted that the “school out afternoon peak hour” traffic volumes were extracted from these traffic counts, for the intersections along Martin Street, between Steeles Avenue and Jasper Street.

Five additional intersection counts were conducted for the weekday morning (6:00 am to 9:00 am) and afternoon (2:00 pm to 7:00 pm) street peak hour periods using traffic count information obtained from surveys undertaken by Spectrum Traffic Data Inc. on Tuesday December 10, 2024, as per the terms of reference with the Town of Milton. These intersections include:

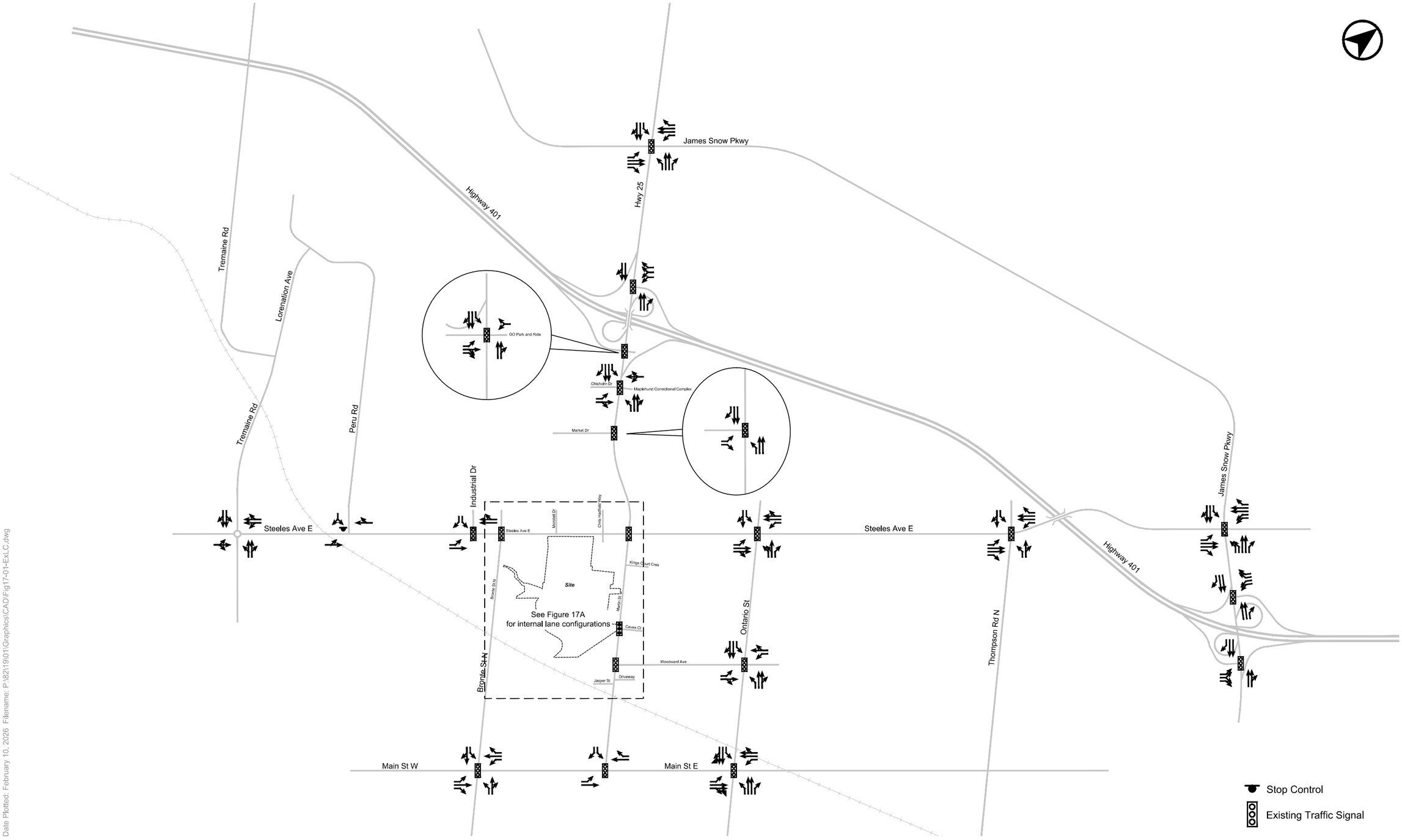
- Bronte Street / Main Street
- Martin Street / Main Street
- Ontario Street / Main Street
- Peru Road / Steeles Avenue West
- Woodward Avenue / Ontario Street North

Detailed existing turning movement counts for all study area intersections are provided in **Appendix F**. The baseline existing traffic volumes for the weekday morning and afternoon peak hours as observed within the appended traffic counts are illustrated in **Figure 18**.

Existing turning movement counts were reviewed in detail to ensure a general consistency in the traffic volumes on roadways between intersections. Where necessary, minor adjustments were made to balance traffic volumes between intersections to create a representative traffic volume base for the purposes of the traffic operations analyses undertaken as part of this study.

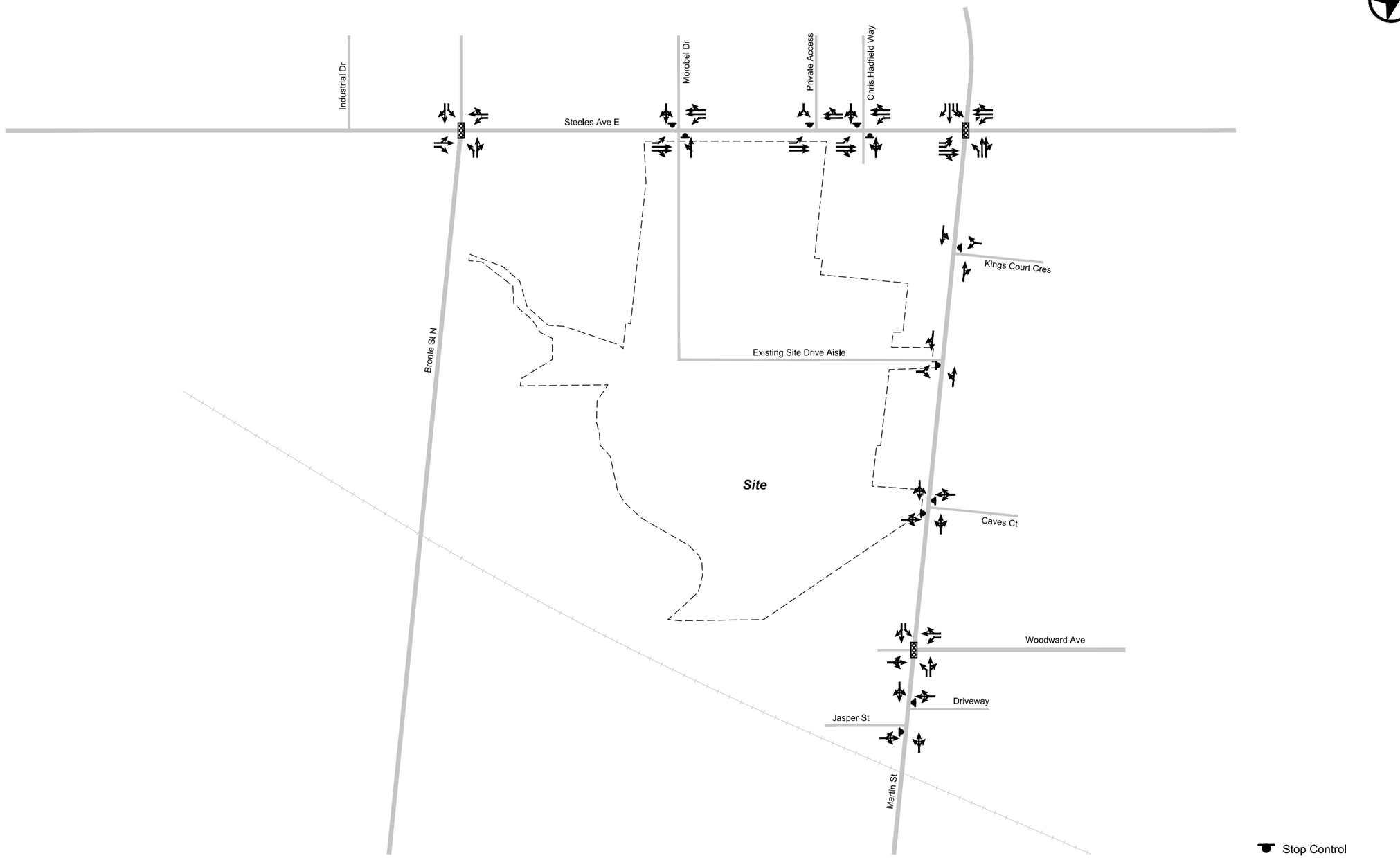
The balancing volumes are generally in the +/- 20 vehicle range for individual movements on the wider study area network using the Regional Road 25 highway ramp terminal and Steeles Avenue East / Ontario Street as the reference intersections. Along Martin Street, the balancing has generally increased volumes by up to 40 vehicles on the through movements based on Main Street / Martin Street as the reference intersection. This level of balancing trips is minor relative to the overall traffic on the network, representing approximately a 5% or less adjustment to intersection link traffic volume, and is consistent with typical daily fluctuations.

Adopted balanced existing traffic volumes for the weekday morning and afternoon peak hours are illustrated in **Figure 19**.



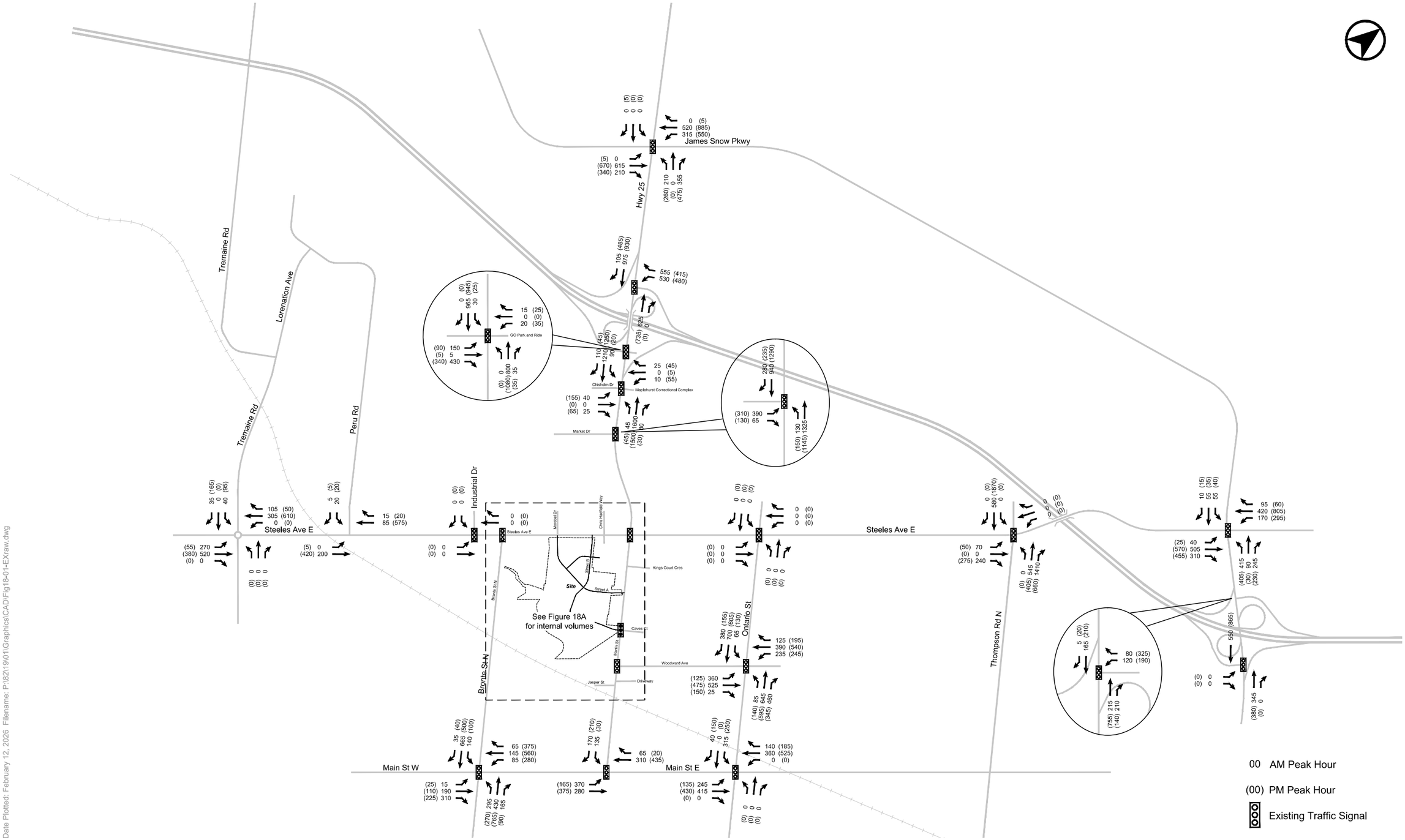
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FIGURE 17 EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL



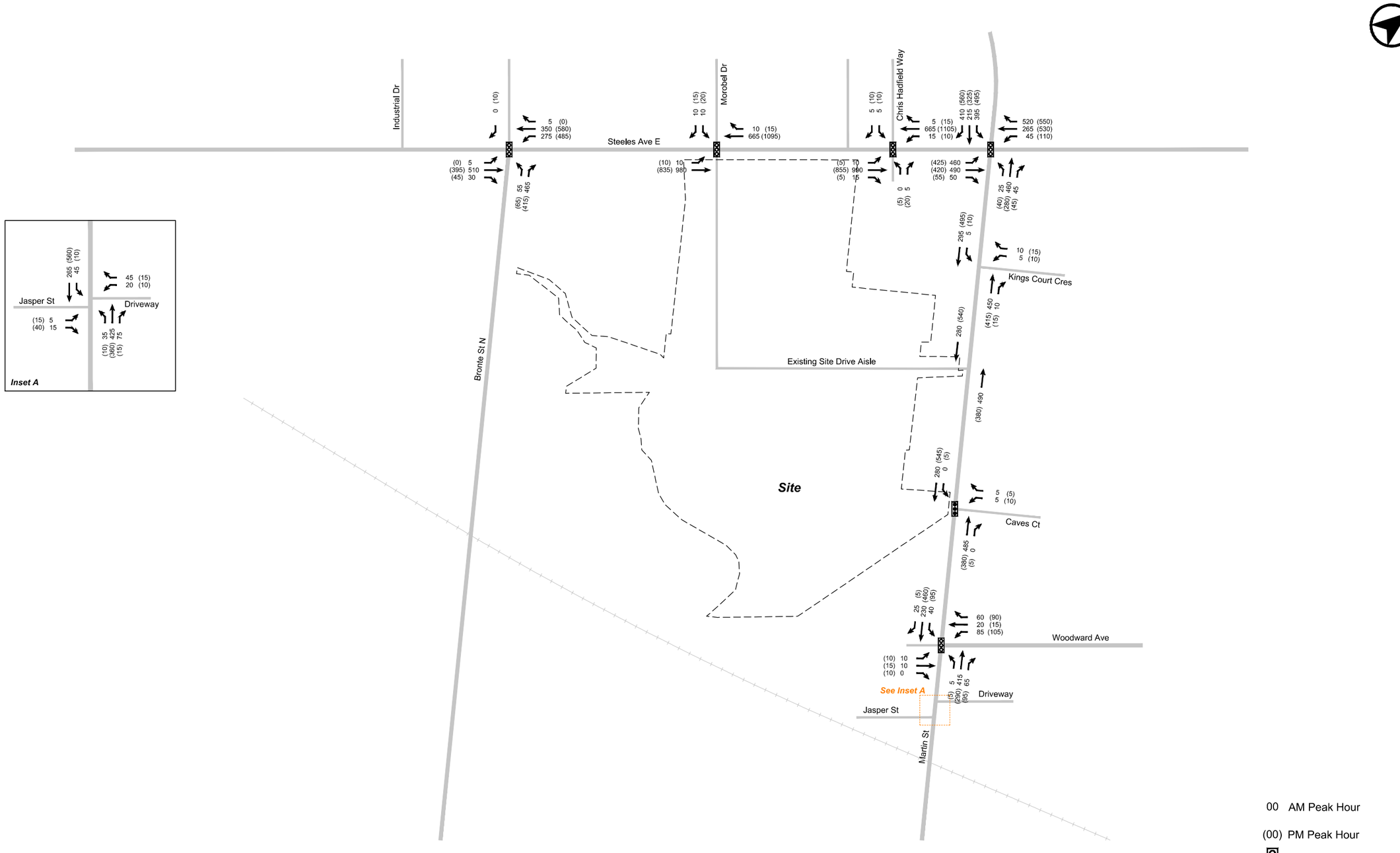
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FIGURE 17A EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL



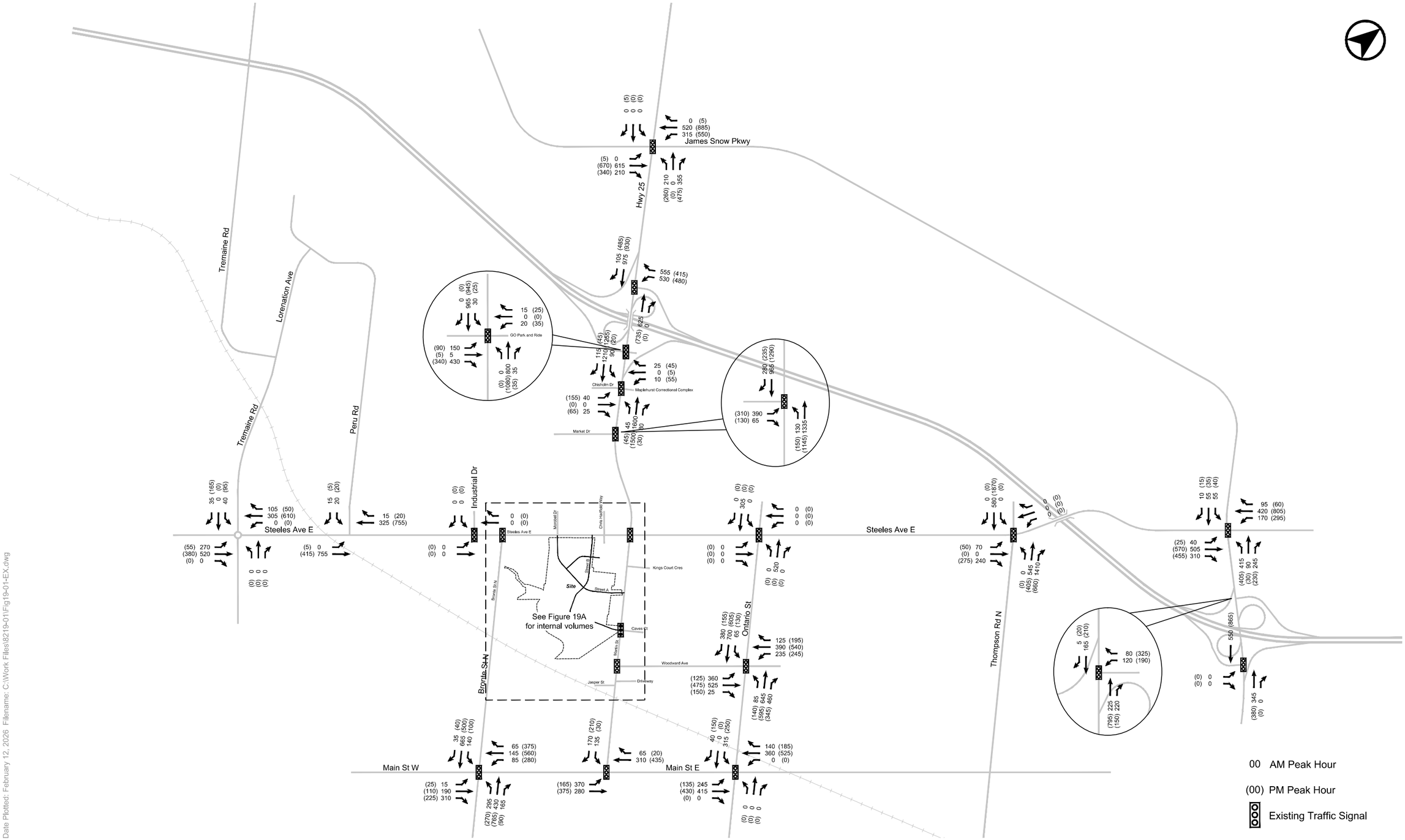
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FIGURE 18 EXISTING TRAFFIC VOLUMES (RAW)



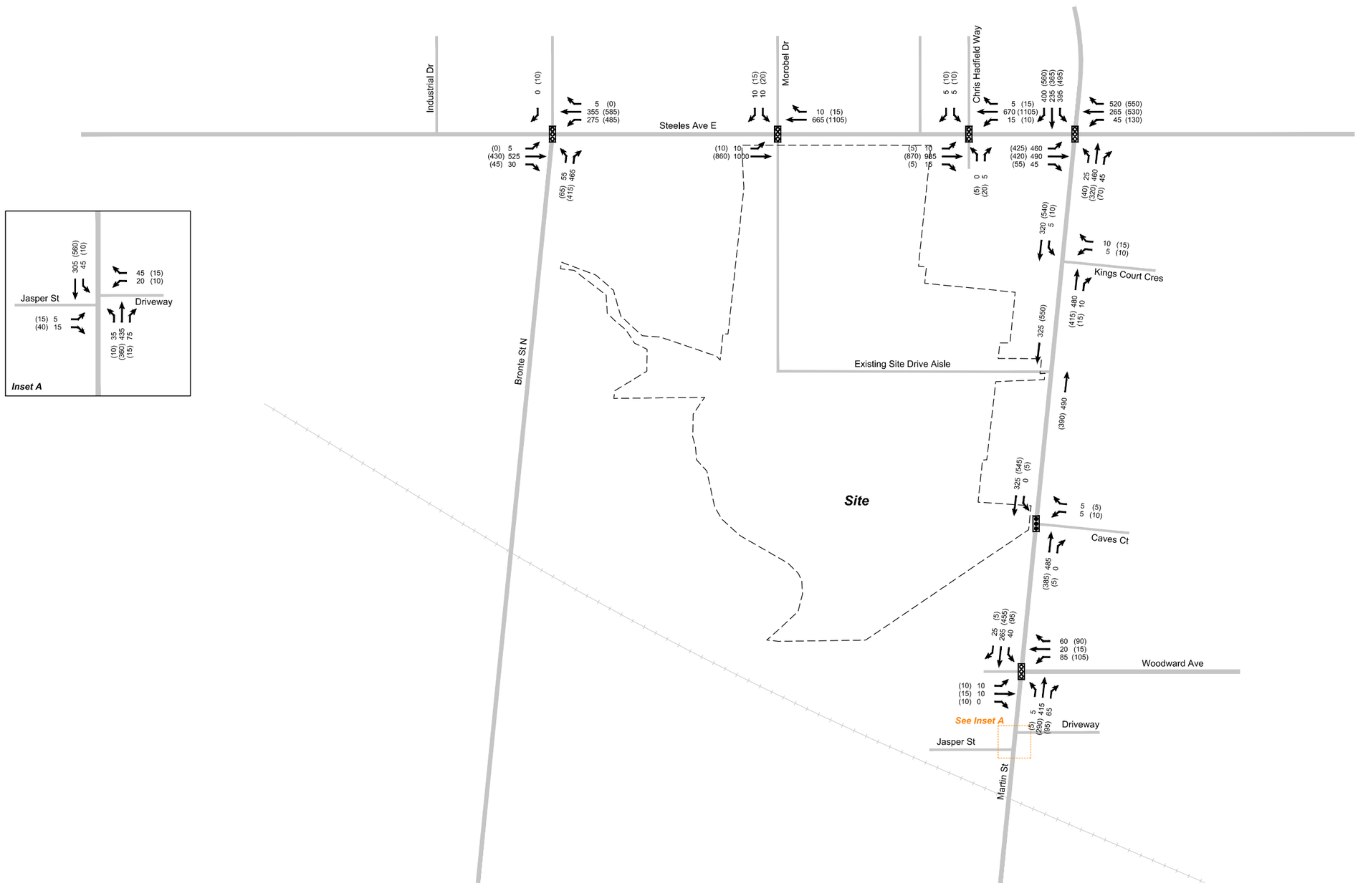
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FIGURE 18A EXISTING TRAFFIC VOLUMES (RAW)



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FIGURE 19 EXISTING TRAFFIC VOLUMES (BALANCED)



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FIGURE 19A EXISTING TRAFFIC VOLUMES (BALANCED)

5.5.3 Existing Site Traffic

The site is currently vacant and generates no traffic activity. The traffic counts at the existing external points of site access confirm that there is no traffic into and out of the site.

For the purposes of this report and the determination of background traffic volumes for the comprehensive traffic analysis, the Region provided residential and employment projections associated with the site, from the Joint Best Planning Estimates (JBPE) for the 2031, 2041 and 2051 horizons. The detailed breakdown of the JBPE allowances is provided in **Section 5.7.2**.

The JBPE projections have made allowances for some "existing" employment on the site under baseline conditions that is equivalent to 259 jobs. The travel demand related to these jobs has been included within the Region's baseline EMME model and therefore factors into the area corridor growth provided by the Town and Region, as output from the EMME model for the future horizons. As such, traffic associated with the 259 jobs on the site has been generated and added to the existing study area network to derive an "adjusted existing" on which growth and further traffic analysis have been applied.

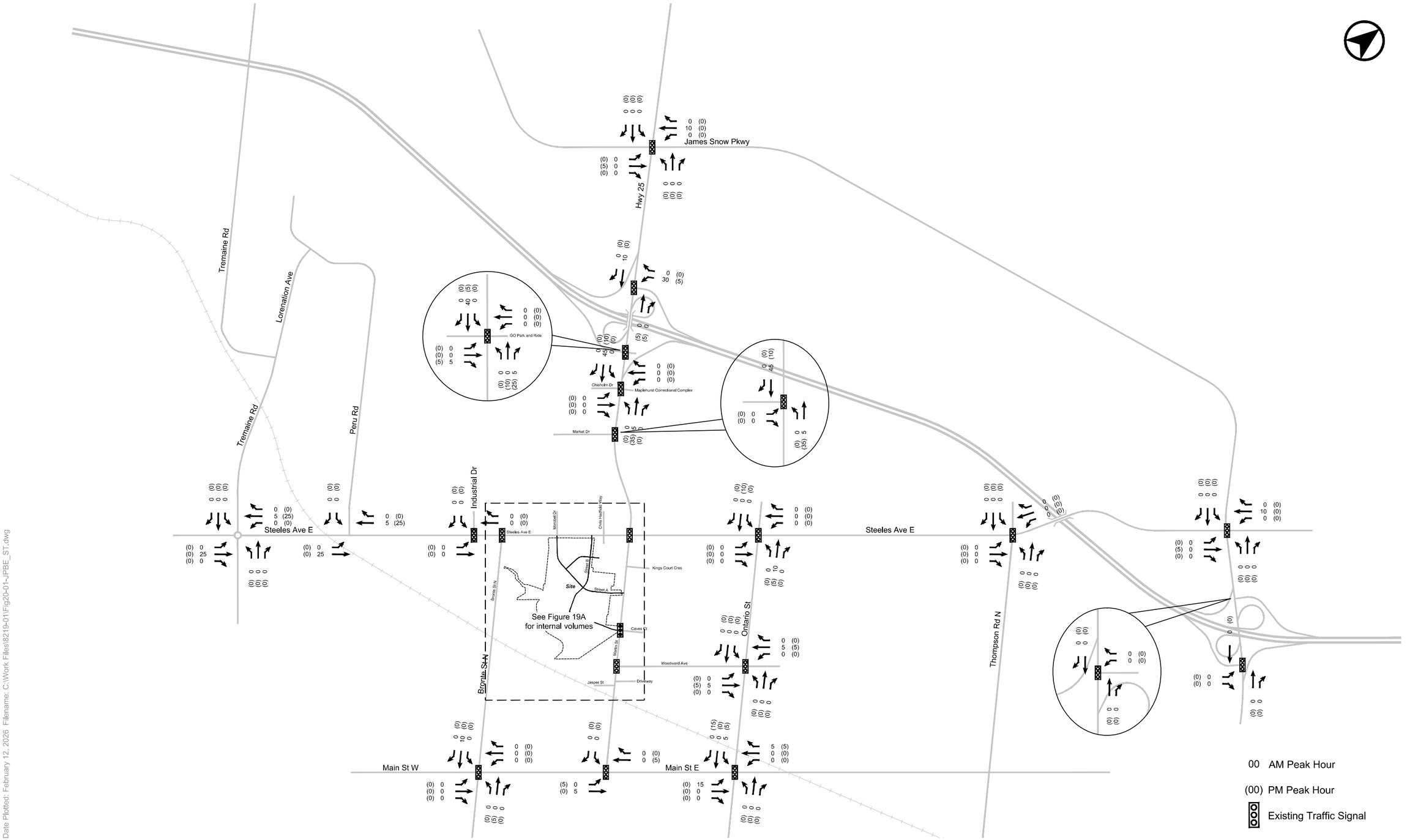
TABLE 17 "JBPE BASELINE SITE TRAFFIC" VEHICLE TRIP GENERATION

		AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Office (259 jobs)	*trips / job.*	*0.43*	*0.06*	*0.49*	*0.08*	*0.37*	*0.45*
	Trips	110	15	125	20	95	115

Notes:
1. Values rounded to the nearest 5 trips
2. Reflects baseline ITE trip generation rates and baseline auto mode share characteristics

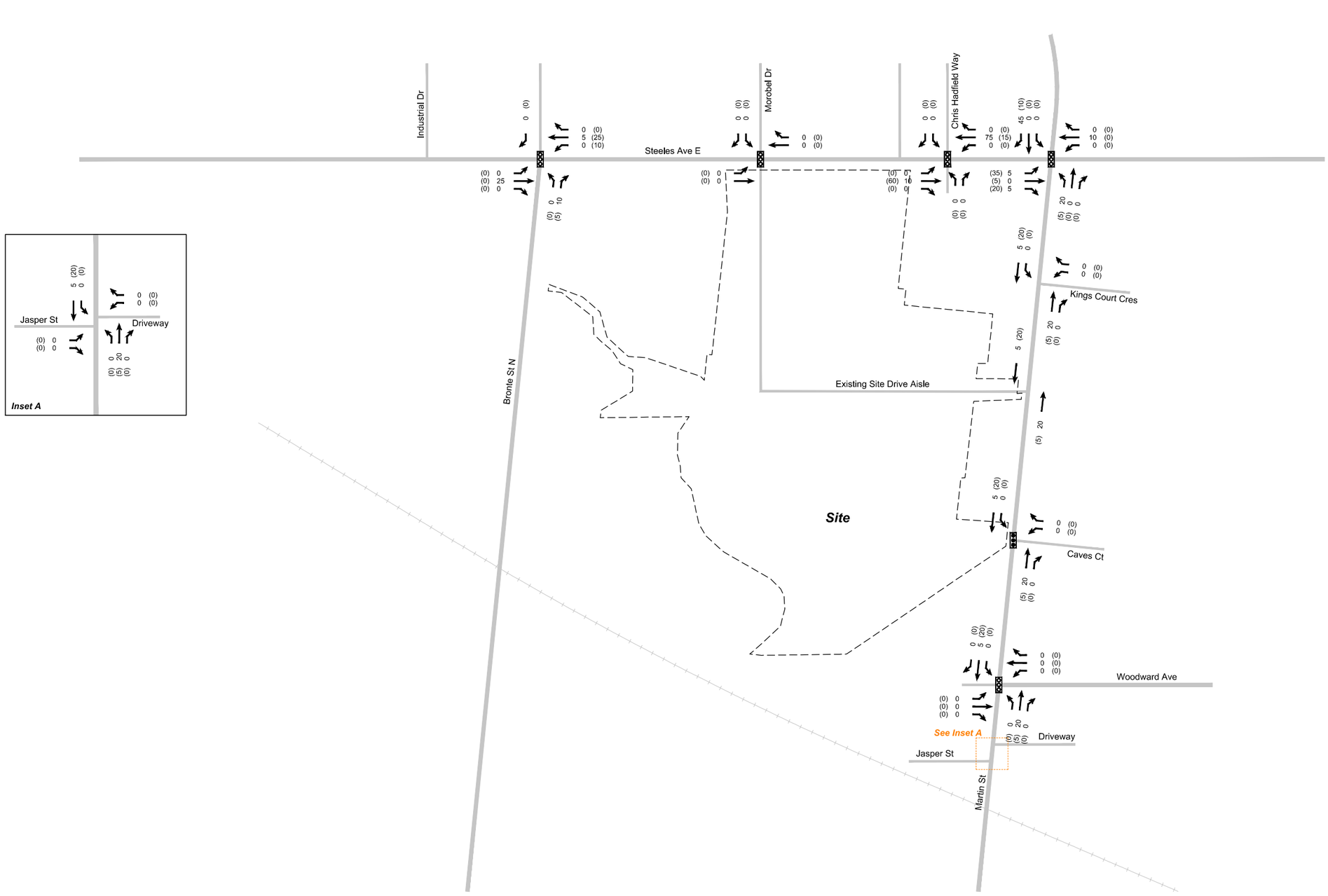
The existing site with JBPE assumptions would generate a baseline of 125 and 115 two-way vehicle trips, during the weekday morning and afternoon peak hours, respectively. These trips have been assigned onto the study area network, to and from the site, based on the existing access point along Steeles Avenue, as illustrated in **Figure 20**.

The adjusted existing traffic volumes, reflecting the sum of balanced existing traffic and the above baseline site JBPE traffic, is illustrated in **Figure 21**.



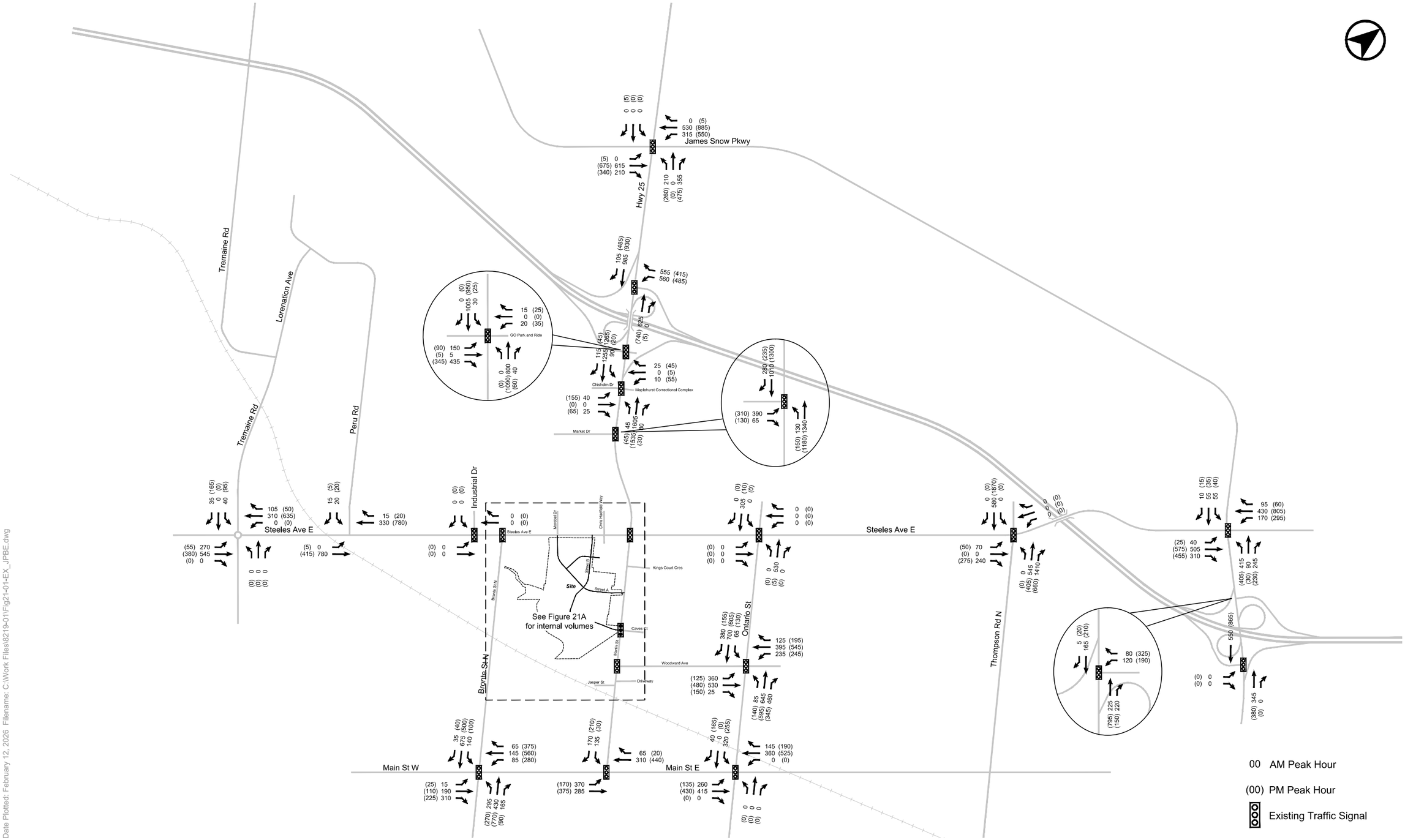
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FIGURE 20 JPBE BASELINE SITE TRAFFIC ALLOWANCE



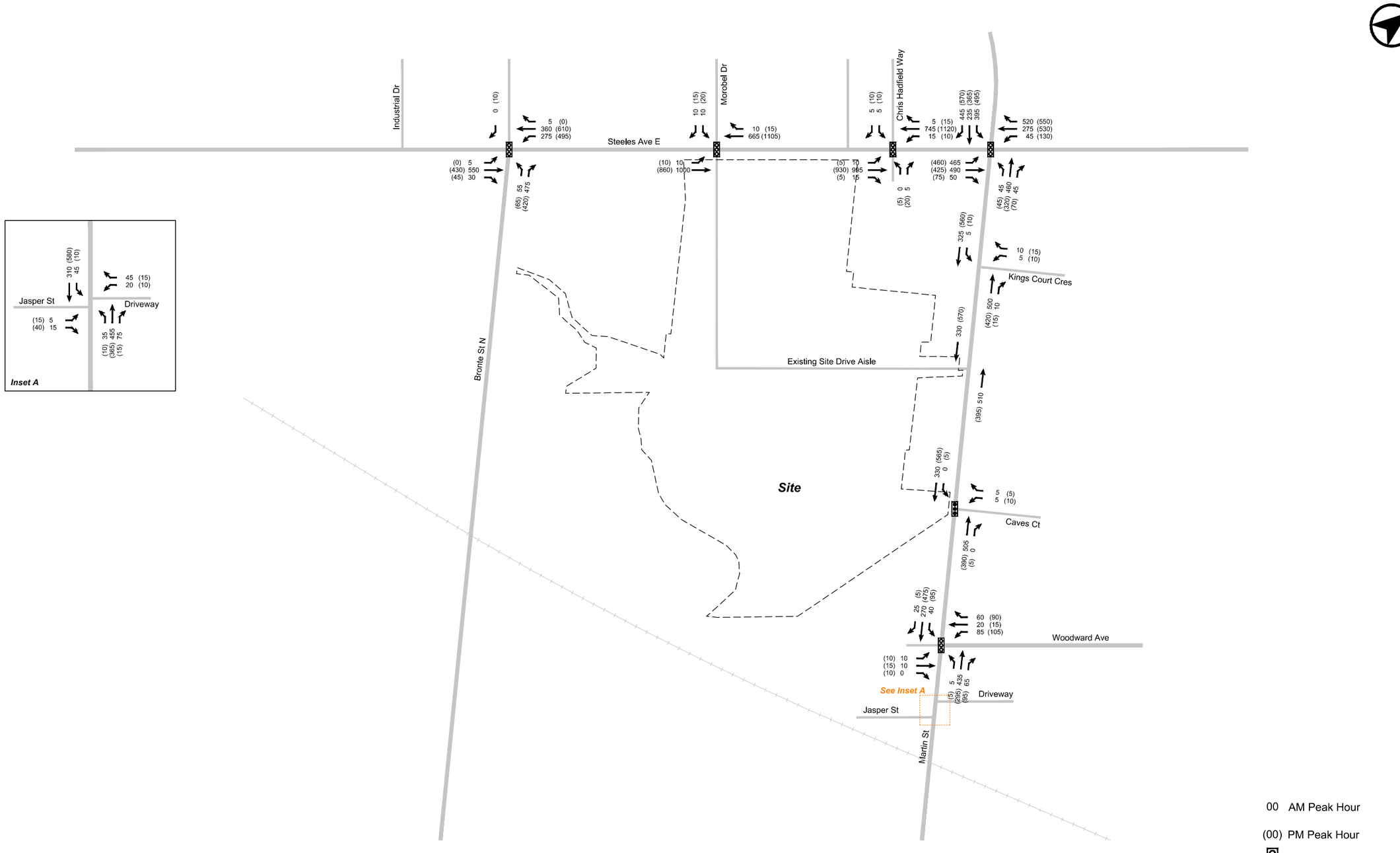
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FIGURE 20A JPBE BASELINE SITE TRAFFIC ALLOWANCE



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FIGURE 21 ADJUSTED EXISTING TRAFFIC WITH JPBE BASELINE



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FIGURE 21A ADJUSTED EXISTING TRAFFIC WITH JPBE BASELINE

5.6 FUTURE BACKGROUND TRAFFIC VOLUMES

5.6.1 Future Background Road Network

The future background road network lane configuration and traffic control is illustrated in **Figure 22**. All infrastructure improvements outlined in **Section 5.1.3** have been included in the future background road network for all study horizons.

5.6.2 Background Traffic Growth Validation

5.6.2.1 Approach

As discussed in **Section 5.1**, the Town of Milton recently completed the 2024 TMP Update and Halton Region is in the process of updating the Regional TMP / IMP. Therefore, for purposes of this study, a coordinated approach with both the Region and Town was undertaken to establish future background traffic volumes across the area road network.

Per annum corridor growth rates derived from the Region's transportation (EMME) model were provided by the Region and Town in order to inform future background traffic volumes. It is our understanding that these growth rates have taken into account development of Secondary Plan areas (as outlined in **Section 5.1.2**), other site-specific growth areas (such as the Region's JBPE population projection for the subject site provided in March 2025) and potential growth in municipalities that could interact with Milton.

It should be noted that these growth rates have been first applied to existing volumes which is "missing" the traffic allowance associated with the baseline JBPE 259 jobs for the site that are included within the Regional EMME model forecasts. However, under existing conditions, the site is vacant and therefore has no traffic activity in relation to the 259 jobs. As such, traffic allowance for the baseline 259 jobs and the traffic growth associated with that allowance have been added to the resultant background traffic.

The growth rates were provided with the understanding that resultant background traffic growth may be significant and may result in traffic congestion across the road network. As such, as outlined in the Terms of Reference (**Appendix A**), network capacity was reviewed at the base 2036 and 2051 future background traffic volume conditions (reflecting the full growth allowance) as part of this study to determine the validity of the growth rates.

Specifically, this review was undertaken to confirm whether there are capacity constraints across the road network, and if so, what are the resultant constrained growth rates, in consideration of available capacity and time horizon that the growth limit would be reached on a corridor basis.

The key intersections reviewed as part of this growth validation test are as follows:

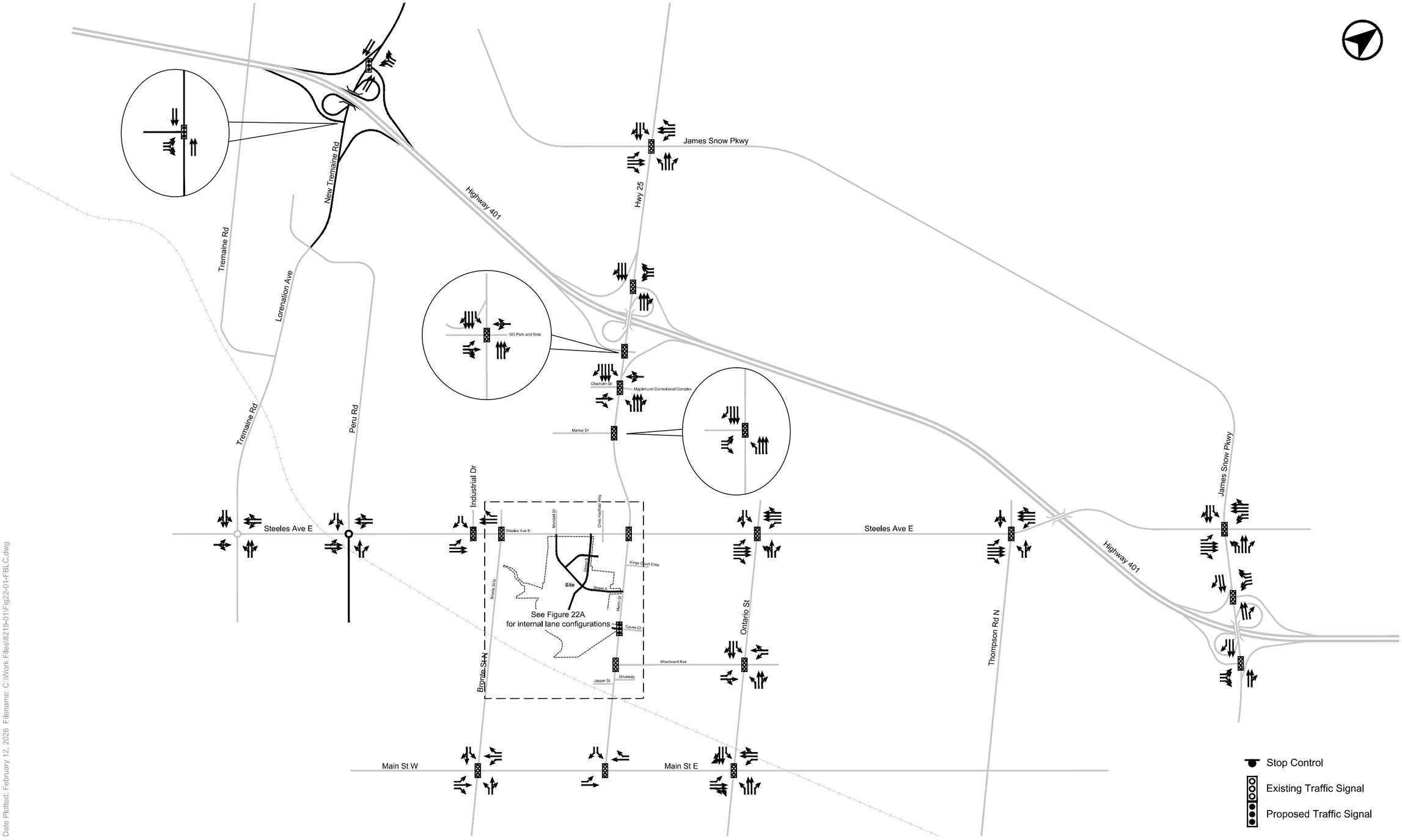
- Steeles Avenue East and Tremaine Road
- Steeles Avenue East and Regional Road 25 / Martin Street
- Steeles Avenue East and Ontario Street
- Steeles Avenue East and James Snow Parkway
- Bronte Street and Main Street
- Martin Street and Main Street
- Ontario Street and Main Street
- All Highway 401 ramp terminals

A discussion of the traffic volumes in the following sections includes the following:

- **Unconstrained** – future traffic volumes that align with the growth rates provided by the Region and Town.
- **Constrained** – future traffic volumes that have been reduced to better reflect available capacity within the road network.

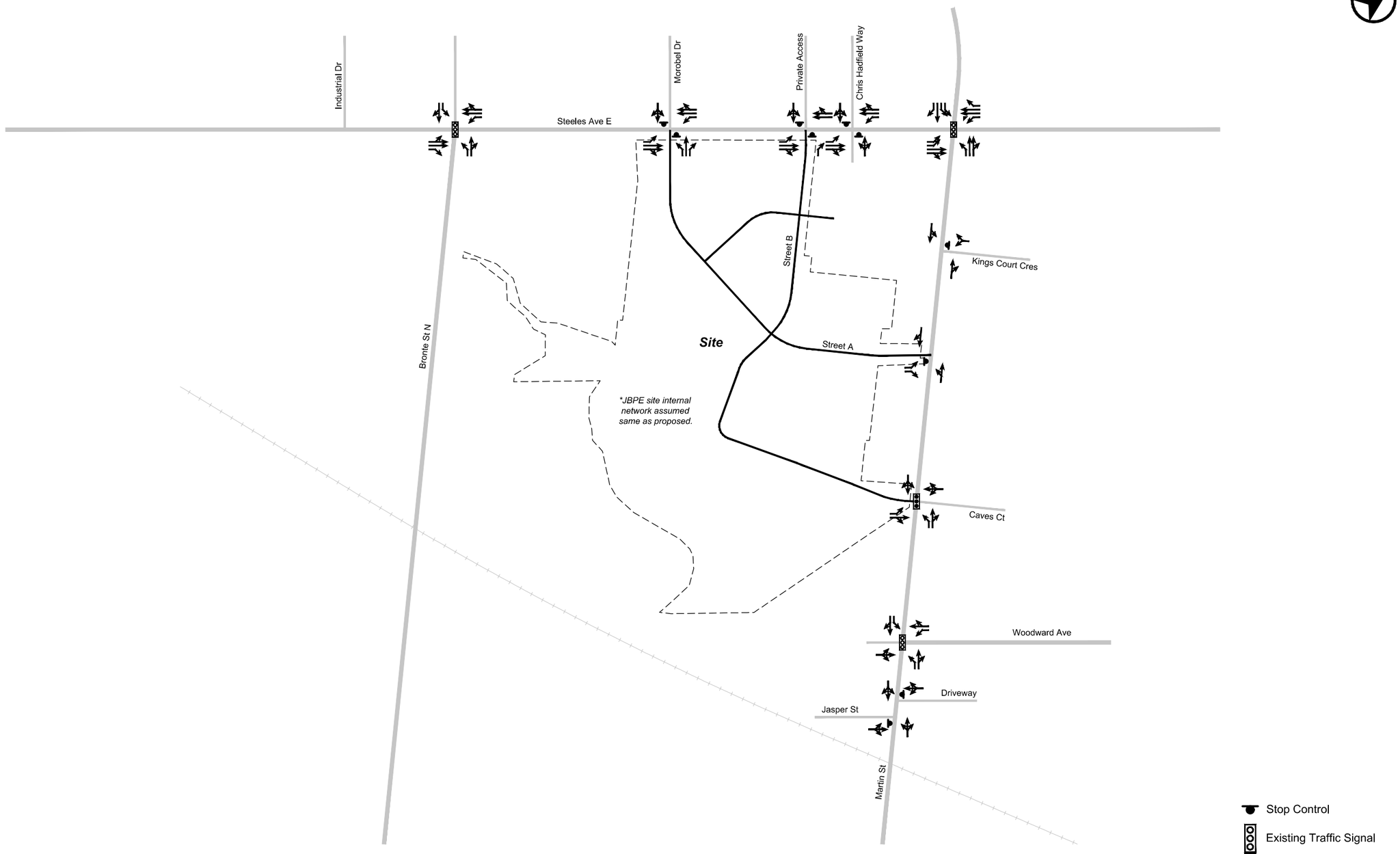
Based on a traffic operations assessment, the future background traffic volumes (unconstrained) were reduced to reflect the constrained traffic volumes.

The constrained future background traffic volumes reflect what the future road network is able to appropriately accommodate. The following sections detail the traffic volume reduction process to establish appropriate future background traffic volumes (constrained) to be used as the basis of the traffic operations analysis for this study.



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FIGURE 22 FUTURE BACKGROUND LANE CONFIGURATION AND TRAFFIC CONTROL



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FIGURE 22A FUTURE BACKGROUND LANE CONFIGURATION AND TRAFFIC CONTROL

5.6.2.2 Unconstrained Background Traffic Growth Rates

The corridor growth rates summarized in **Table 18** were provided by the Region for Regional roads within the study are road network. Note that the growth rates were compounded annually over each horizon period.

Town corridor growth rates obtained from the Town of Milton are summarized in **Table 19**. The specified rates include AM and PM growth on 5 main local roads; a base corridor growth rate of 2% was applied to all other Town roads. Similarly, the Town rates were also compounded annually.

TABLE 18 REGIONAL CORRIDOR GROWTH RATES

Road	Segment	Horizon		
		2024 – 2031	2031 – 2041	2041 – 2051
Steeles Avenue	New Tremaine Road to Industrial Drive	4%	3%	1%
	Regional Road 25 to Trafalgar Road	4%	3%	1%
Regional Road 25	Steeles Avenue to No. 5 Sideroad	5%	2%	1%
	Speers Road to Derry Road	4%	2%	1%
New Tremaine Road	Steeles Avenue to James Snow Parkway / Dublin Line	7%	2%	2%
	Derry Road to future Highway 401 interchange	6%	2%	1%
James Snow Parkway	Highway 401 to Tremaine Road	6%	2%	1%

Notes:
1. Growth rates compounded annually

TABLE 19 TOWN CORRIDOR GROWTH RATES

Road	Segment	AM Annual Growth	PM Annual Growth
Martin Street	Steeles Avenue to Main Street	1.33%	3.10%
Thompson Road	Steeles Avenue to Derry Road	1.56%	2.37%
Main Street	Termain Road to James Snow Parkway	2.16%	3.24%
Ontario Street	Steeles Avenue to Derry Road	1.61%	2.40%
Bronte Street	Derry Road to Steeles Avenue	2.80%	2.75%

Notes:
1. Growth rates compounded annually.

5.6.2.3 Unconstrained Background Traffic Volumes (2036 & 2051)

The corridor growth rates were applied to the area road network at the 2036 and 2051 horizon years, using a methodology consistent with the Milton Heights TIS (provided to BA Group by the Town), which applies 100% of growth to through volumes and 50% of growth to turning volumes for each intersection approach. The relevant sections of the Milton Heights TIS pertaining to this methodology is provided in **Appendix G**.

For t-intersections and other intersections where a large portion of the approach traffic volumes are turning movements, 100% of the growth has been applied to the turning volumes. The combined individual movement growth was taken as the link volume growth to be applied for each intersection approach.

A summary of the resultant link volume growth at the 2036 and 2051 horizons, based on the aforementioned methodology, on the key road network corridors is provided in **Table 20**.

TABLE 20 UNCONSTRAINED BACKGROUND TRAFFIC CORRIDOR APPROACH VOLUMES (2036 & 2051)

Corridor	Direction	Balanced Existing Traffic Volume[2]	Traffic Growth at 2036[3]	Traffic Growth at 2051[3]
Steeles Avenue Tremaine Road to Industrial Drive	EB	755 (420)	395 (220)	720 (400)
	WB	340 (760)	175 (400)	315 (730)
Steeles Avenue Regional Road 25 to Trafalgar Road	EB	855 (1015	350 (415)	670 (735)
	WB	945 (1160)	280 (505)	505 (910)
Regional Road 25 Steeles Avenue East to No. 5 Sideroad	NB	1465 (1295)	770 (670)	1245 (1080)
	SB	1030 (1420)	595 (660)	960 (1065)
Tremaine Road Steeles Avenue West to James Snow Parkway	NB	--	--	--
	SB	260 (240)	760 (985)	930 (1200)
New Tremaine Road from Derry Road to future Highway 401	NB	885 (590)	580 (355)	895 (555)
	SB	495 (835)	--	--
James Snow Parkway Highway 401 to Tremaine Road	NB	780 (1435)	310 (710)	470 (1090)
	SB	275 (340)	140 (175)	215 (270)
Martin Street Steeles Avenue East to Main Street	NB	530 (430)	270 (205)	440 (540)
	SB	355 (400)	60 (175)	150 (510)
Thompson Road Steeles Avenue East to Derry Road	NB	565 (735)	55 (110)	130 (275)
	SB	525 (890)	--	--
Main Street Tremaine Road to James Snow Parkway	EB	910 (750)	205 (280)	540 (800)
	WB	750 (980)	165 (345)	425 (975)
Ontario Street Steeles Avenue East to Derry Road	NB	1190 (1080)	190 (270)	480 (720)
	SB	1145 (890)	195 (245)	485 (650)
Bronte Street Derry Road to Steeles Avenue East/West	NB	420 (620)	135 (175)	375 (480)
	SB	495 (545)	130 (160)	350 (440)

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)
2. Reflects balanced existing traffic volumes without the additional traffic allowance for the 259 jobs assumed within the JBPE baseline.
3. Traffic growth presented for 2036 and 2051 reflects additional traffic on top of existing traffic.

The area surrounding the segment of Tremaine Road between Steeles Avenue West and Highway 401 is currently being built out and the north extent of Tremaine Road currently ends before joining with the future interchange. As such, the existing link volumes along Tremaine Road north of Steeles Avenue West are low (200 to 300 vehicles per hour) and do not coincide with the 7% per annum growth rate, if the segment of Tremaine Road south of Steeles Avenue West (with existing link volumes of 500 to 800 vehicles per hour) has a 6% per annum growth, due to a lack of continuity between the two segments. Therefore, for the purposes of this analysis, link growth volumes for the segment of Tremaine Road north of Steeles Avenue West were derived based on the average of existing north leg approach and south leg receiving traffic.

Given the extensive infrastructure improvements planned for the area road network and the location of planned growth areas in Milton (as per **Section 5.1.2**), the distribution of turning movements at area intersections may change, particularly at Regional intersections.

As discussed in **Section 3.2.7**, various EA studies have forecast future traffic volumes by movement at key Regional intersections considering the same infrastructure improvements and overall traffic growth. These EA studies have been referenced for purposes of deriving future turning movement distributions at Regional intersections as summarized in **Table 21**. Relevant excerpts from these studies are provided in **Appendix H**.

Therefore, in summary, future turning movement distribution assumptions have been made as follows:

- **Town Intersections**: future turning distributions based on existing turning movements, weighting through movements at 100% and turning movements at 50%; and
- **Regional Intersections**: future turning distributions derived by approach based on the future total traffic assignment turning ratios of the relevant EA studies (**Table 21**).

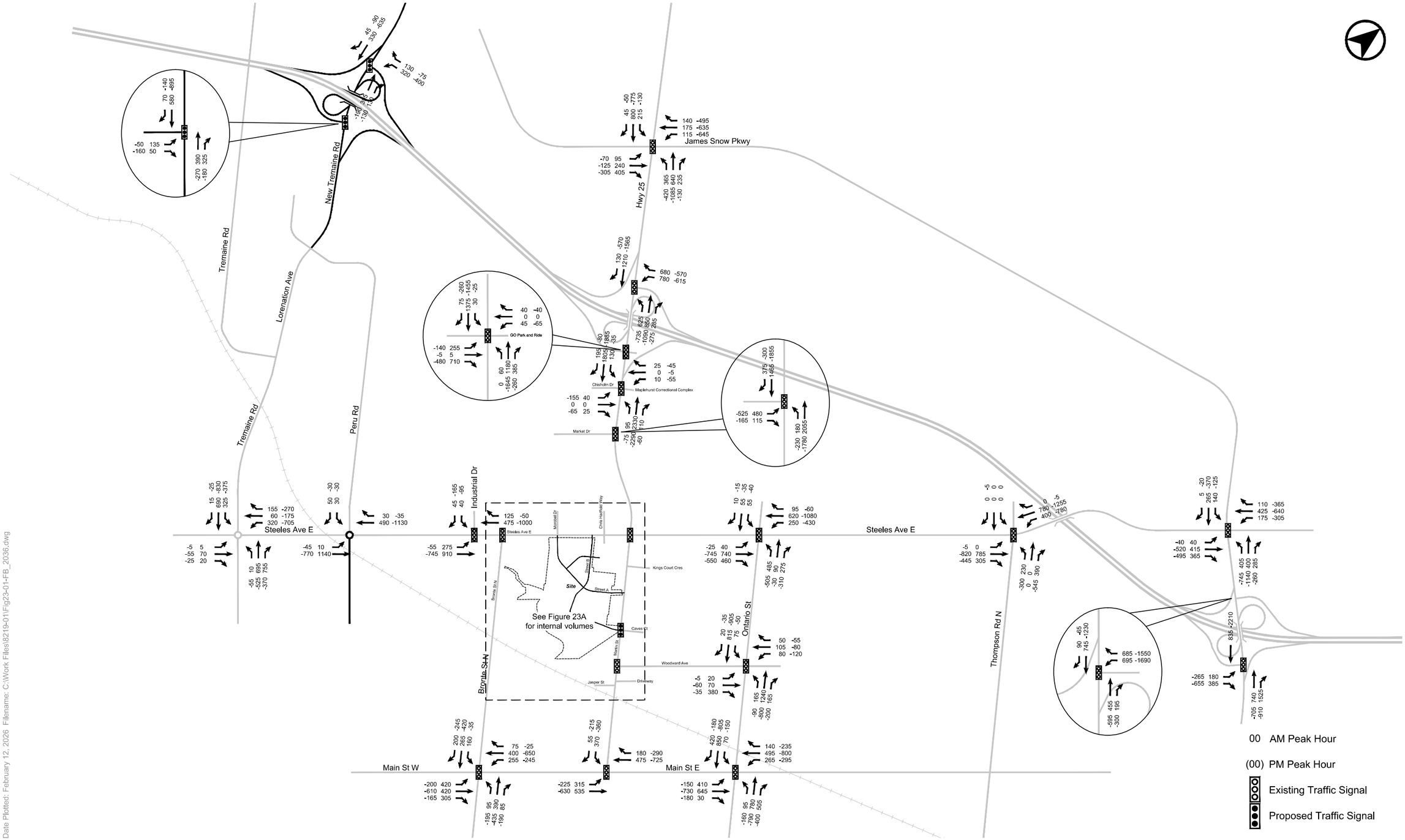
TABLE 21 FUTURE TURNING DISTRIBUTION SOURCE

Intersection	Study
Steeles Avenue / RR25 / Martin Street	RR25 Widening EA (Stantec – Jan 2019)
RR25 / Market Drive	
RR25 / Chisholm Drive	
RR25 / Hwy401 EB Off Ramp	
RR25 / Hwy401 WB Off Ramp	
Steeles Avenue / Peru Road	Steeles Tremaine to Industrial EA (WSP – Apr 2022)
Steeles Avenue / Industrial Drive	
Steeles Avenue / Tremaine Road	Milton Heights TIS (HDR – Feb 2013)
Tremaine Road / Hwy401 EB Off Ramp	
Tremaine Road / Hwy401 WB Off Ramp	
Steeles Avenue / James Snow Parkway	Halton Business Community TIS (TYLin – Dec 2023)

The traffic volumes have been balanced based on engineering judgment. The resultant balanced network-wide background traffic volumes with unconstrained growth are illustrated in **Figure 23** (2036) and **Figure 24** (2051). These are consistent with the unconstrained traffic volumes presented in the April 2025 submission.

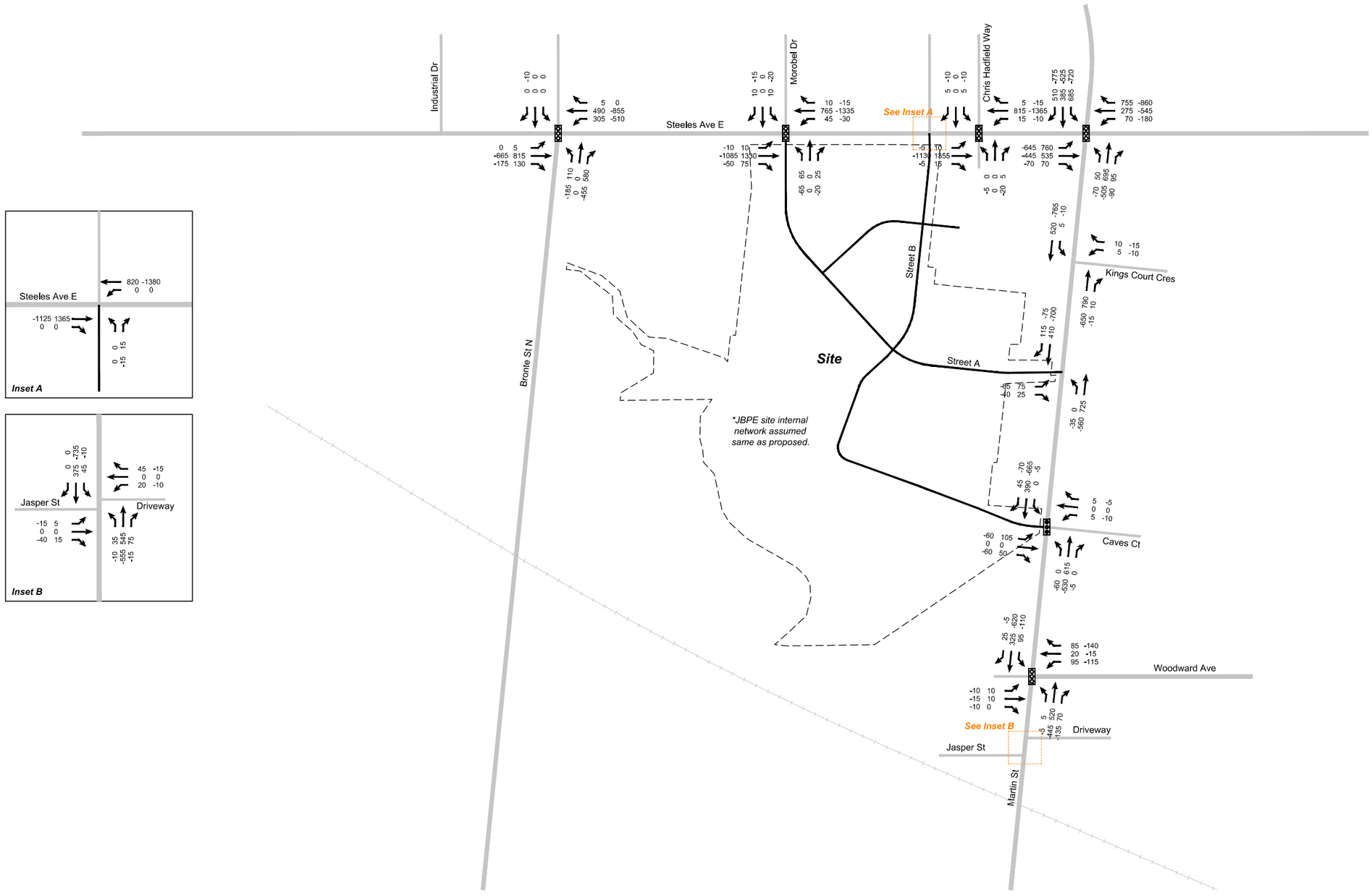
5.6.2.4 Additional Growth with respect to JBPE Baseline

As per discussions with Region of Peel and Town of Milton transportation staff, the traffic allowance for the baseline JBPE 259 jobs (see **Figure 20**) as well as the associated growth in relation to that traffic at the 2036 and 2051 horizons (see **Figure 31** and **Figure 34**, respectively) have been added to the above traffic. This associated growth was derived by applying the Region's corridor growth rates to the baseline JBPE traffic allowance at each study horizon (see **Section 5.6.3**). The resultant network-wide background traffic volumes with the total unconstrained growth are illustrated in **Figure 25** (2036) and **Figure 26** (2051).



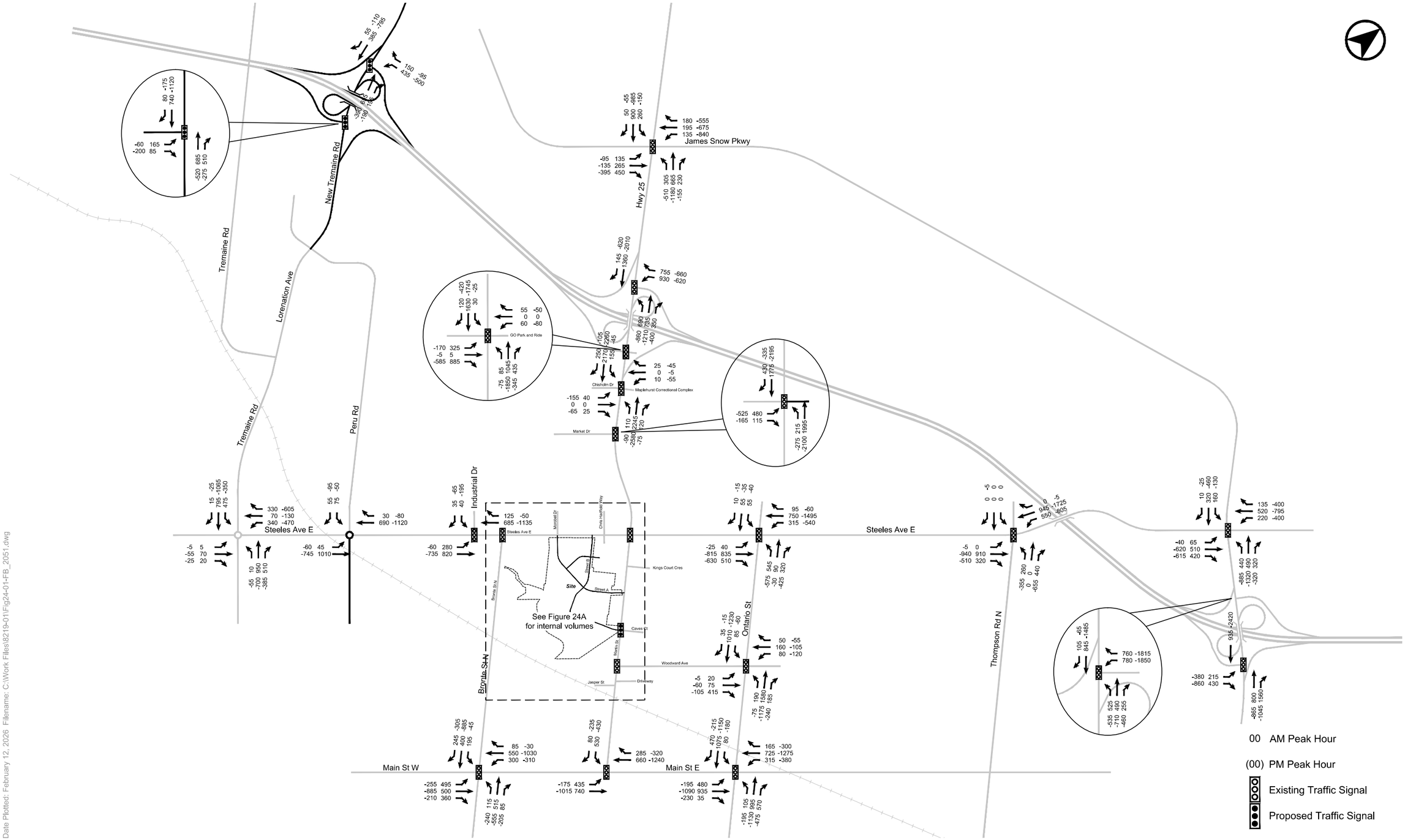
Date Plotted: February 12, 2026 Filename: C:\Work Files\8219-01\Fig23-01-FB_2036.dwg

FIGURE 23 2036 FUTURE BACKGROUND TRAFFIC VOLUMES (BASE GROWTH)



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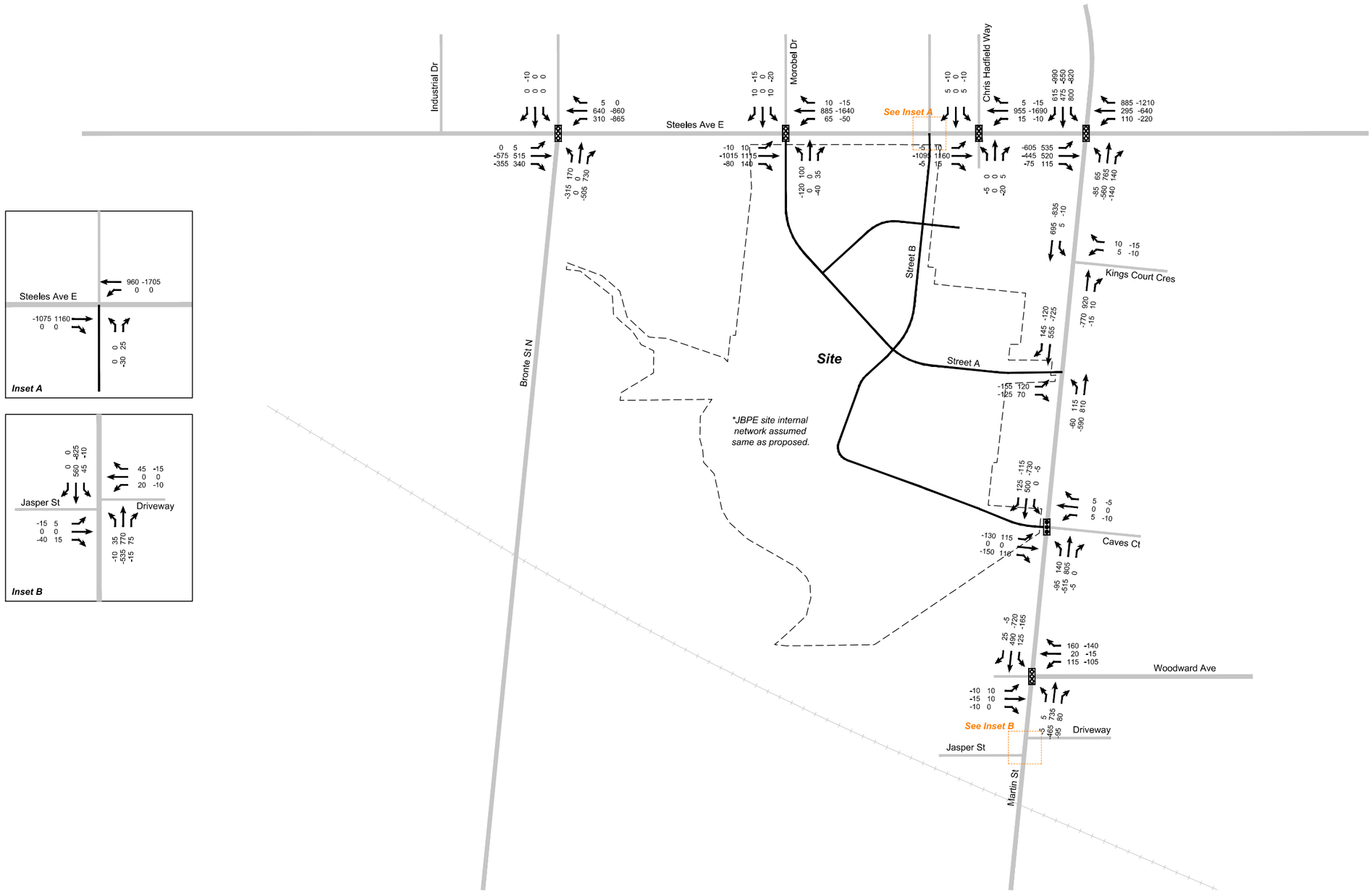
FIGURE 23A 2036 FUTURE BACKGROUND TRAFFIC VOLUMES (BASE GROWTH)



Date Plotted: February 12, 2026 Filename: C:\Work Files\8219-01\Fig24-01-FB_2051.dwg

FIGURE 24 2051 UNCONSTRAINED FUTURE BACKGROUND TRAFFIC VOLUMES (AS PER APRIL 2025 SUBMISSION)

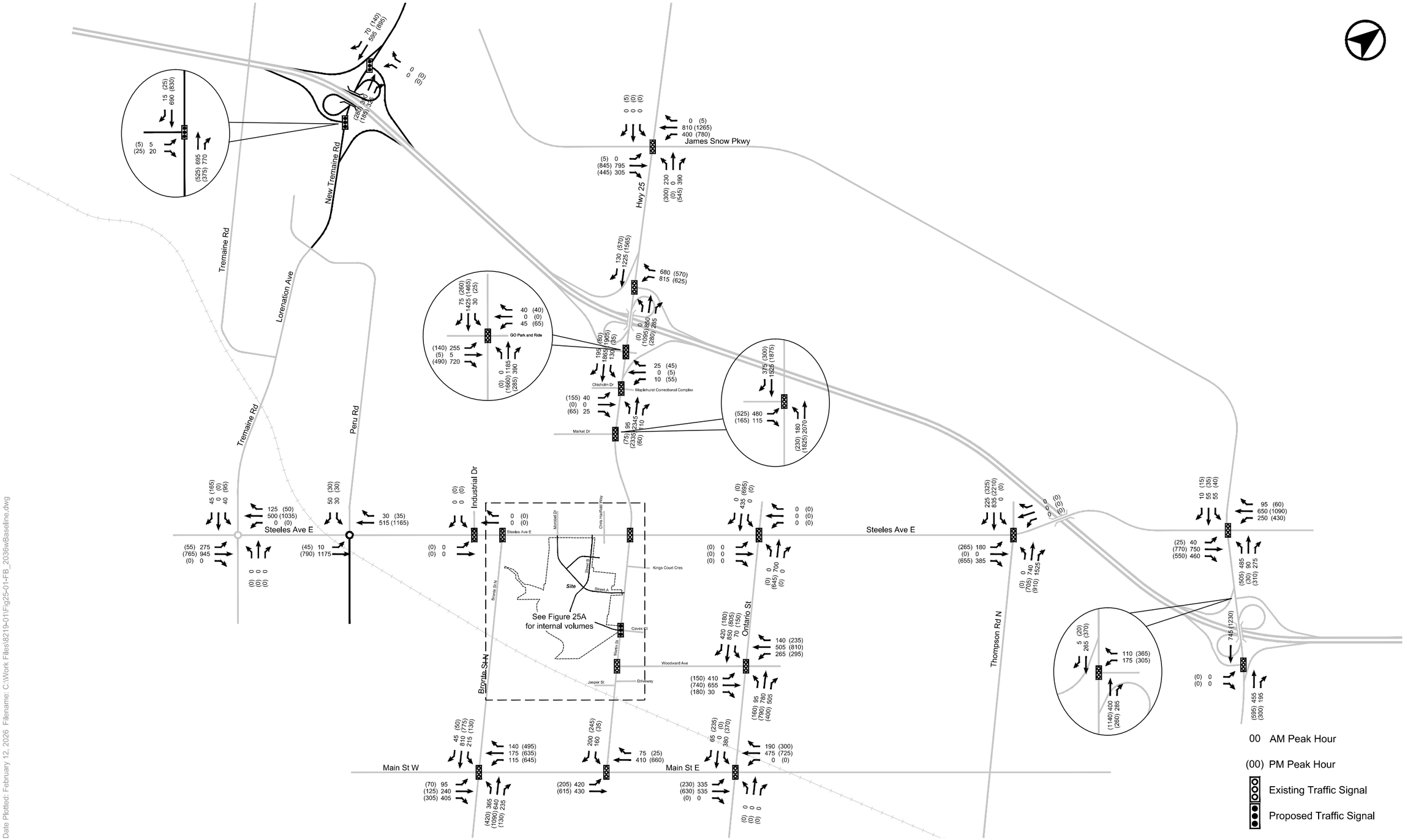
150 STEELES AVENUE EAST



Date Plotted: February 12, 2026 Filename: C:\Work Files\8219-01\Fig24-01-FB_2051.dwg

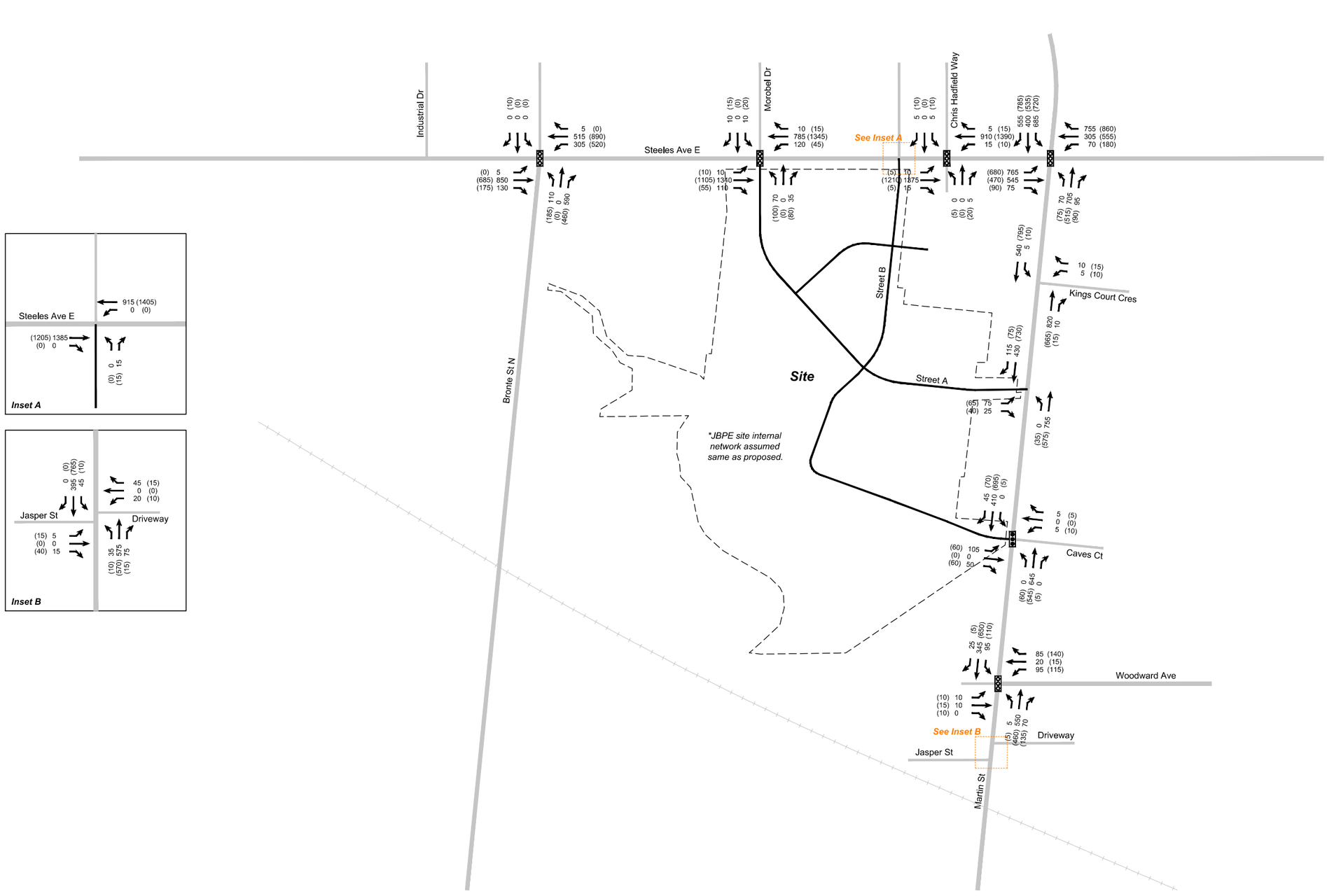
FIGURE 24A 2051 UNCONSTRAINED FUTURE BACKGROUND TRAFFIC VOLUMES (AS PER APRIL 2025 SUBMISSION)

150 STEELES AVENUE EAST



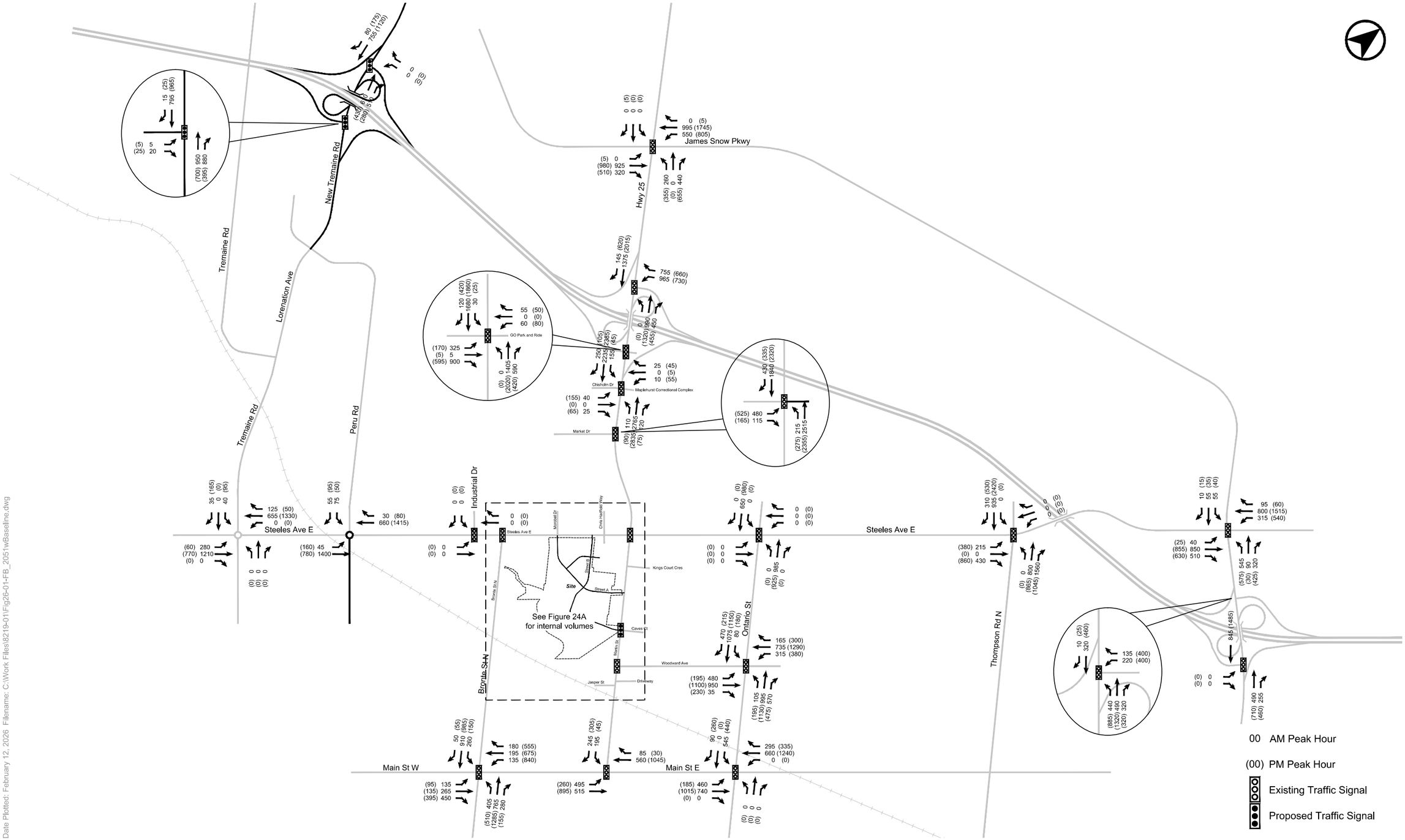
Date Plotted: February 12, 2026 Filename: C:\Work Files\8219-01\Fig25-01-FB_2036wBaseline.dwg

FIGURE 25 2036 UNCONSTRAINED FUTURE BACKGROUND TRAFFIC VOLUMES (WITH BASELINE JBPE)



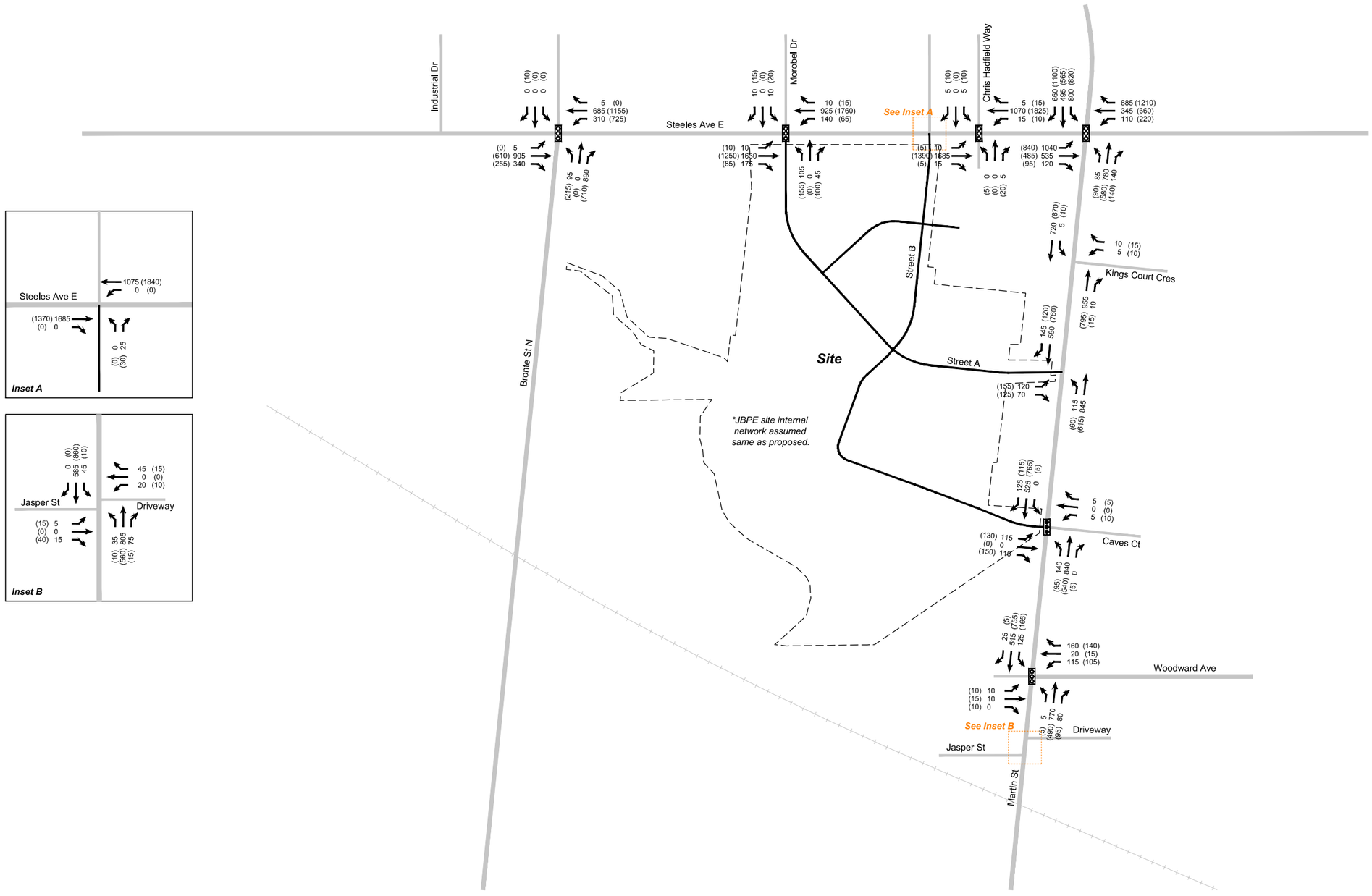
Date Plotted: February 12, 2026 Filename: C:\Work Files\8219-01\Fig25-01-FB_2036wBaseline.dwg

FIGURE 25A 2036 UNCONSTRAINED FUTURE BACKGROUND TRAFFIC VOLUMES (WITH BASELINE JBPE)



Date Plotted: February 12, 2026 Filename: C:\Work Files\8219-01\Fig26-01-FB_2051wBaseline.dwg

FIGURE 26 2051 UNCONSTRAINED FUTURE BACKGROUND TRAFFIC VOLUMES (WITH BASELINE JBPE)



Date Plotted: February 12, 2026 Filename: C:\Work Files\8219-01\Fig26-01-FB_2051wBaseline.dwg

FIGURE 26A 2051 UNCONSTRAINED FUTURE BACKGROUND TRAFFIC VOLUMES (WITH BASELINE JBPE)

5.6.2.5 Unconstrained Background Traffic Operations Review (2036 & 2051)

The 2036 and 2051 unconstrained background traffic volumes (including the JBPE site traffic allowance) have been assessed in Synchro using HCM2000 methodology (outlined in **Section 6.1**) at all intersections except at roundabouts, which have been assessed using SIDRA.

The resultant capacity and level of service assessment for the key intersections as part of this growth validation test are provided in **Table 22**, **Table 23** and **Table 24** for Region, Town and MTO ramp intersections, respectively. Detailed Synchro and SIDRA analysis sheets under the unconstrained 2036 and 2051 horizons are provided in **Appendix K** and **Appendix L**, respectively.

TABLE 22 UNCONSTRAINED JBPE FUTURE BACKGROUND (2036 & 2051) – REGIONAL

Lane Group	2036 Horizon		2051 Horizon	
	V/C	LOS	V/C	LOS
Steeles Avenue East / Tremaine Road				
EBLTR	0.17 (0.21)	A (B)	0.22 (0.19)	A (B)
WBTL	0.49 (0.83)	B (B)	0.64 (1.08)	B (F)
WBR	0.27 (0.39)	A (A)	0.50 (0.60)	A (A)
NBTL	0.71 (0.46)	A (B)	1.04 (0.52)	E (A)
NBTR	0.71 (0.46)	A (B)	1.04 (0.52)	E (A)
SBTL	0.51 (1.14)	B (F)	0.67 (1.65)	B (F)
SBTR	0.51 (1.14)	A (F)	0.67 (1.65)	A (F)
Steeles Avenue East / Regional Road 25 / Martin Street				
EBL	1.46 (1.13)	F (F)	1.98 (1.39)	F (F)
EBTR	0.77 (0.54)	D (D)	0.79 (0.51)	D (D)
WBL	0.42 (0.69)	C (E)	0.61 (0.79)	D (E)
WBT	0.71 (0.80)	D (E)	0.71 (0.84)	D (E)
WBR	0.56 (0.59)	A (A)	0.66 (0.83)	A (A)
NBL	0.21 (0.27)	C (D)	0.26 (0.39)	C (C)
NBTR	0.85 (0.78)	D (D)	1.02 (1.10)	E (F)
SBL	0.80 (0.84)	D (D)	0.86 (0.94)	D (E)
SBT	0.44 (0.68)	C (C)	0.59 (0.79)	C (D)
SBR	0.75 (1.10)	C (F)	0.96 (1.14)	E (F)
Overall	**0.99 (1.06)**	**E (E)**	**1.17 (1.22)**	**F (E)**
Steeles Avenue East / Ontario Street				
EBL	0.17 (0.20)	C (D)	0.23 (0.30)	D (D)
EBT	0.43 (0.53)	C (D)	0.55 (0.54)	D (D)
EBR	0.36 (0.38)	F (F)	0.40 (0.43)	F (F)
WBL	0.74 (0.82)	D (D)	0.95 (1.19)	E (F)
WBTR	0.32 (0.42)	C (C)	0.40 (0.59)	C (C)
NBL	0.85 (0.83)	E (E)	0.87 (0.85)	E (E)
NBTL	0.81 (0.81)	E (E)	0.84 (0.86)	E (E)
NBR	0.25 (0.32)	D (D)	0.41 (0.71)	D (D)
SBL	0.39 (0.37)	E (E)	0.42 (0.39)	E (E)
SBTR	0.42 (0.35)	E (E)	0.45 (0.37)	E (E)
Overall	**0.76 (0.81)**	**E (E)**	**0.90 (1.07)**	**E (E)**

Lane Group	2036 Horizon		2051 Horizon	
	V/C	LOS	V/C	LOS
Steeles Avenue East / James Snow Parkway				
EBL	0.14 (0.24)	C (B)	0.27 (0.23)	C (B)
EBT	0.26 (0.47)	C (C)	0.37 (0.44)	D (C)
EBR	0.30 (0.72)	C (E)	0.35 (0.94)	D (E)
WBL	0.62 (0.76)	E (E)	0.66 (0.79)	E (E)
WBTR	0.29 (0.62)	C (D)	0.40 (0.61)	C (C)
NBL	0.76 (0.95)	E (E)	0.77 (1.47)	E (F)
NBT	0.70 (1.00)	D (E)	0.78 (1.40)	D (F)
NBR	0.23 (0.24)	D (C)	0.41 (0.32)	D (D)
SBL	0.54 (0.69)	D (D)	0.59 (0.91)	D (F)
SBTR	0.68 (0.72)	E (E)	0.75 (0.90)	E (E)
Overall	**0.54 (0.88)**	**D (D)**	**0.64 (1.19)**	**D (F)**

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)

TABLE 23 UNCONSTRAINED JBPE FUTURE BACKGROUND (2036 & 2051) – TOWN

Lane Group	2036 Horizon		2051 Horizon	
	V/C	LOS	V/C	LOS
Bronte Street / Main Street				
EBL	1.08 (1.05)	F (F)	1.40 (1.03)	F (F)
EBT	0.78 (1.15)	D (F)	0.76 (1.41)	C (F)
EBR	0.21 (0.17)	C (C)	0.36 (0.24)	C (C)
WBL	1.05 (1.30)	F (F)	1.15 (1.26)	F (F)
WBT	0.83 (1.23)	D (F)	0.91 (1.64)	D (F)
WBR	0.05 (0.02)	C (C)	0.06 (0.02)	B (B)
NBL	0.38 (1.00)	C (F)	0.58 (0.94)	C (E)
NBTR	0.93 (0.94)	D (D)	1.59 (1.52)	F (F)
SBL	0.63 (0.23)	C (C)	0.85 (0.21)	D (C)
SBTR	0.80 (1.08)	D (F)	1.43 (1.81)	F (F)
Overall	**0.97 (1.17)**	**D (F)**	**1.31 (1.53)**	**F (F)**
Martin Street / Main Street				
EBL	0.86 (0.69)	C (B)	1.18 (0.63)	F (B)
EBT	0.55 (0.56)	B (B)	0.75 (0.92)	B (C)
WBT	0.78 (0.94)	C (D)	1.04 (1.55)	E (F)
WBR	0.21 (0.33)	B (B)	0.39 (0.41)	B (B)
SBL	0.89 (0.88)	D (D)	1.32 (1.01)	F (E)
SBR	0.09 (0.29)	B (C)	0.16 (0.38)	C (C)
Overall	**0.91 (0.88)**	**C (C)**	**1.12 (1.32)**	**E (F)**
Ontario Street / Main Street				
EBL	1.04 (0.52)	E (C)	1.51 (0.79)	F (D)
EBTR	0.79 (0.91)	D (D)	0.96 (1.27)	E (F)
WBL	0.91 (1.07)	D (F)	1.02 (1.26)	F (F)
WBTR	0.76 (0.98)	D (E)	0.91 (1.49)	D (F)
NBL	0.57 (0.82)	C (D)	0.60 (1.02)	C (F)
NBT	0.69 (0.77)	C (D)	0.92 (1.10)	D (F)
NBR	0.56 (0.37)	C (C)	0.77 (0.64)	D (D)
SBL	0.32 (0.67)	C (C)	0.52 (0.95)	C (E)
SBTR	1.16 (0.95)	F (D)	1.56 (1.32)	F (F)
Overall	**1.04 (1.03)**	**E (D)**	**1.21 (1.38)**	**F (F)**
Ontario Street / Woodward Avenue				
EBL	0.06 (0.03)	C (D)	0.06 (0.03)	C (D)
EBTR	0.86 (0.28)	D (D)	0.92 (0.53)	E (D)
WBL	1.09 (0.64)	F (D)	0.88 (0.75)	F (E)
WBTR	0.31 (0.42)	C (D)	0.39 (0.51)	C (D)
NBL	0.53 (0.28)	B (A)	0.96 (0.37)	E (B)
NBTR	0.71 (0.45)	B (A)	0.95 (0.64)	C (A)
SBL	0.63 (0.17)	C (A)	1.21 (0.39)	F (B)
SBTR	0.42 (0.41)	B (A)	0.56 (0.55)	B (A)
Overall	**0.82 (0.48)**	**C (B)**	**1.10 (0.66)**	**D (B)**

TABLE 24 UNCONSTRAINED JBPE FUTURE BACKGROUND (2036 & 2051) – 401 RAMPS

Lane Group	2036 Horizon		2051 Horizon	
	V/C	LOS	V/C	LOS
RR25 / WB Off Ramp[3]				
WBLR	0.87 (0.77)	C (C)	1.02 (0.85)	E (C)
WBR	0.97 (0.83)	E (D)	1.21 (0.93)	F (D)
NBT	0.47 (0.47)	B (B)	0.52 (0.60)	B (B)
SBT	0.71 (0.71)	C (B)	0.76 (0.96)	C (C)
Overall	**0.84 (0.76)**	**C (C)**	**0.97 (0.95)**	**D (C)**
RR25 / EB Off Ramp[2]				
EBL	0.70 (0.58)	D (D)	0.73 (0.57)	D (D)
EBTR	0.89 (0.76)	E (E)	1.00 (0.83)	F (E)
EBR	0.80 (0.56)	D (D)	0.90 (0.64)	E (D)
WBLTR	0.07 (0.07)	D (D)	0.10 (0.13)	D (D)
NBTR	0.64 (0.70)	C (C)	0.88 (0.94)	D (D)
SBL	0.24 (0.23)	B (B)	0.33 (0.25)	C (C)
SBT	0.68 (0.64)	C (B)	0.92 (0.93)	D (C)
Overall	**0.72 (0.66)**	**C (C)**	**0.91 (0.86)**	**D (D)**
Tremaine Road / WB Off Ramp				
WBLR	0.61 (0.65)	C (C)	0.67 (0.70)	C (C)
WBR	0.09 (0.05)	C (C)	0.10 (0.06)	C (C)
NBT	0.18 (0.09)	A (A)	0.28 (0.15)	A (A)
SBT	0.15 (0.30)	A (A)	0.19 (0.40)	A (A)
Overall	**0.27 (0.38)**	**B (B)**	**0.38 (0.48)**	**B (B)**
Tremaine Road / EB Off Ramp				
WBL	0.34 (0.20)	C (C)	0.40 (0.32)	C (C)
WBR	0.04 (0.16)	C (C)	0.06 (0.39)	C (C)
NBT	0.17 (0.12)	A (A)	0.26 (0.19)	A (A)
SBT	0.29 (0.45)	A (A)	0.37 (0.58)	A (A)
Overall	**0.30 (0.41)**	**A (A)**	**0.37 (0.55)**	**A (A)**

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)
2. Signal phasing optimized during the morning peak hour to allocate additional time (3 s) to eastbound from the north-south.
3. Westbound over capacity can be accommodated by including an additional WBR lane for a WB LLRR ramp configuration.

2036 Unconstrained Background Traffic Operations

Highway 401 Ramp Terminals

The capacity assessment of the unconstrained 2036 background traffic on the future study area street network indicates that the Regional and MTO's Highway 401 ramp terminal intersections are generally busy but will operate under capacity, with the various planned Regional road improvements. All Highway 401 off-ramp terminals will be operating with individual movement V/C ratios of 0.97 or less, during the weekday morning and afternoon peak hours, reflecting that future 2036 traffic growth flowing into and out of the study area, is not governed by the Highway 401 ramps.

Regional Intersections

The Regional constraints at the 2036 horizon are at the Steeles Avenue / Martin Street / RR25 intersection and the Steeles Avenue West / Tremaine Road roundabout. The EBL turn at Steeles Avenue / Martin Street will operate with an individual movement V/C ratio of 1.46, during the weekday morning peak hour. Both the EBL and SBR movements will be operating over capacity with V/C ratios of 1.13 and 1.10, during the afternoon peak hour, respectively. The Steeles Avenue West / Tremaine Road roundabout is constrained in the afternoon peak hour in the SB direction, operating with V/C ratios of 1.14.

Given these movement constraints, it is expected that a portion of traffic volumes will shift from using RR25 to the extended Tremaine Road to access Highway 401 and the north employment growth area. Conversely, existing and growth traffic from Industrial Road will have the option to use Bronte Street instead of Tremaine Road, reducing WBL volumes at the roundabout. This traffic redistribution is expected to occur incrementally from 2036 to 2051. The traffic redistribution for 2036 is illustrated in **Figure 28**.

Town Intersections

In the east-west direction, the Main Street intersections at Martin Street and Ontario Street are generally at capacity in the afternoon peak hour (V/C ratios ranging from 0.91 to 0.98). The left-turn movements are over capacity with V/C ratios of 1.04 during the morning peak hour and 1.07 during the afternoon peak hour.

In the north-south direction, Martin Street will have some remaining capacity. The southbound movement at Ontario Street, however, will be overcapacity (V/C ratio of 1.18), in the morning peak hour due to increased right-turn traffic. It is, therefore, recommended that the Town consider the installation of a dedicated southbound right-turn lane to address future background conditions at the Ontario Street / Main Street intersection.

Intersection configuration changes (i.e. widenings) along Main Street, within the historic Town centre, would likely have significant impact on existing buildings and the heritage character of this area. Therefore, it is assumed that there is no opportunity to increase traffic capacity along Main Street, east of Martin Street.

The existing single through lane configuration of all approaches of the Main Street / Bronte Street intersection results in overcapacity conditions in the eastbound, westbound and southbound movements by the 2036 horizon, in the afternoon peak hour. Specifically, the east-west movements (throughs and turns) will be over capacity with V/C ratios ranging from 1.04 to 1.30. The southbound operation on Bronte Street will be over capacity (V/C ratio of 1.08) in the afternoon peak hour due to the influx of traffic from the Tremaine Road interchange and traffic from the Milton Heights community via Peru Road.

At a macro scale, Bronte Street will provide a north-south through corridor across the Town of Milton, similar to Ontario Street today, and will function as a key route connecting the anticipated southwestern Secondary Plan growth areas to North Milton where the employment areas and Highway 401 interchanges are located. Bronte Street should mirror the configuration of parallel corridors such as Tremaine Road, Ontario Street and Thompson Road and be widened to a 4-lane cross section, between Steeles Avenue and Derry Road, despite not being part of the current planned capital works.

Based on the 2036 operating conditions along Tremaine Road and Ontario Street (i.e. the potential alternative north-south corridors to Bronte Street), there is insufficient capacity along these alternate roadways to support the potential traffic overflow from Bronte Street, should it be unable to accommodate the planned traffic growth.

It is recommended that the Town of Milton study the potential for widening Bronte Street to a 4-lane cross section, between Steeles Avenue and Derry Road to support expected background traffic growth. The widened north-south road will also allow some north-south green time to be reallocated to the east-west direction and will provide some benefit to the east-west turning movements. Should it be impractical to complete the widening by 2036, at a minimum, additional SBR and NBR turn lanes should be added at the Main Street / Bronte Street intersection to relieve capacity constraints and to accommodate anticipated growth and traffic redistribution.

Summary of 2036 Unconstrained Background Traffic Operations

The future street network, with the anticipated build-out of the road improvements identified in **Section 5.1.3**, can generally accommodate the full growth volumes anticipated by the Town and Region, under 2036 future background conditions.

All Highway 401 off-ramp terminals will continue to operate acceptably with full background growth.

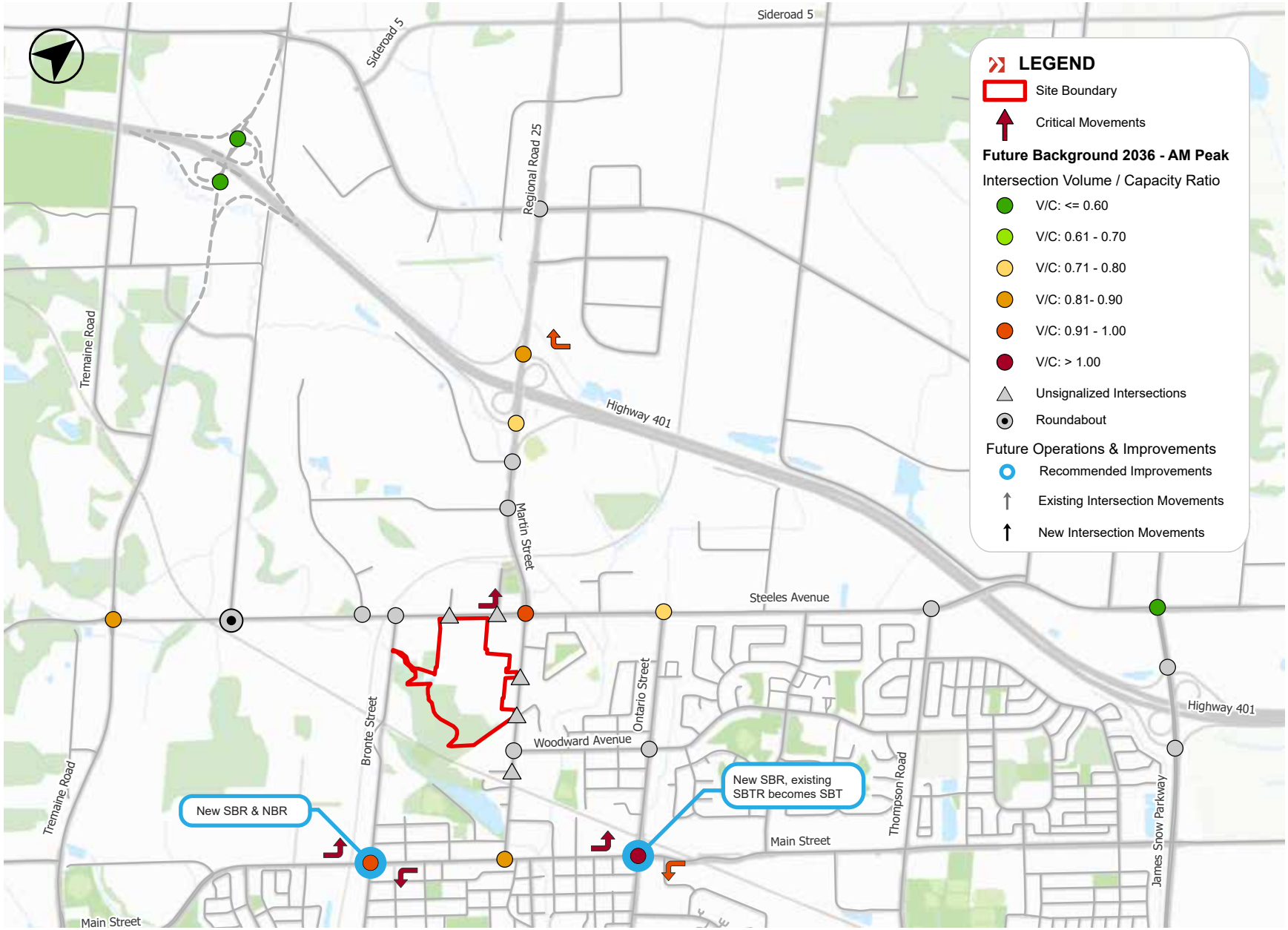
For the Town intersections, some capacity constraints will be present along Main Street, particularly at Bronte Street (all directions) and at Ontario Street (in the southbound direction). These constraints can be resolved with the provision of additional southbound turning lanes at both the Main Street / Ontario Street and Main Street / Bronte Street intersections by 2036.

For the Regional intersections, some capacity constraints will be present at the Steeles Avenue / Tremaine Road intersection (southbound and westbound movements) and the Steeles Avenue / Martin Street / RR25 intersection (eastbound left-turn and southbound right-turn).

The 2036 study area network operations and constraints are illustrated in **Figure 27A** and **Figure 27B**, and include the additional recommended improvements, beyond those already considered by the Town and Region capital works to accommodate the planned growth.

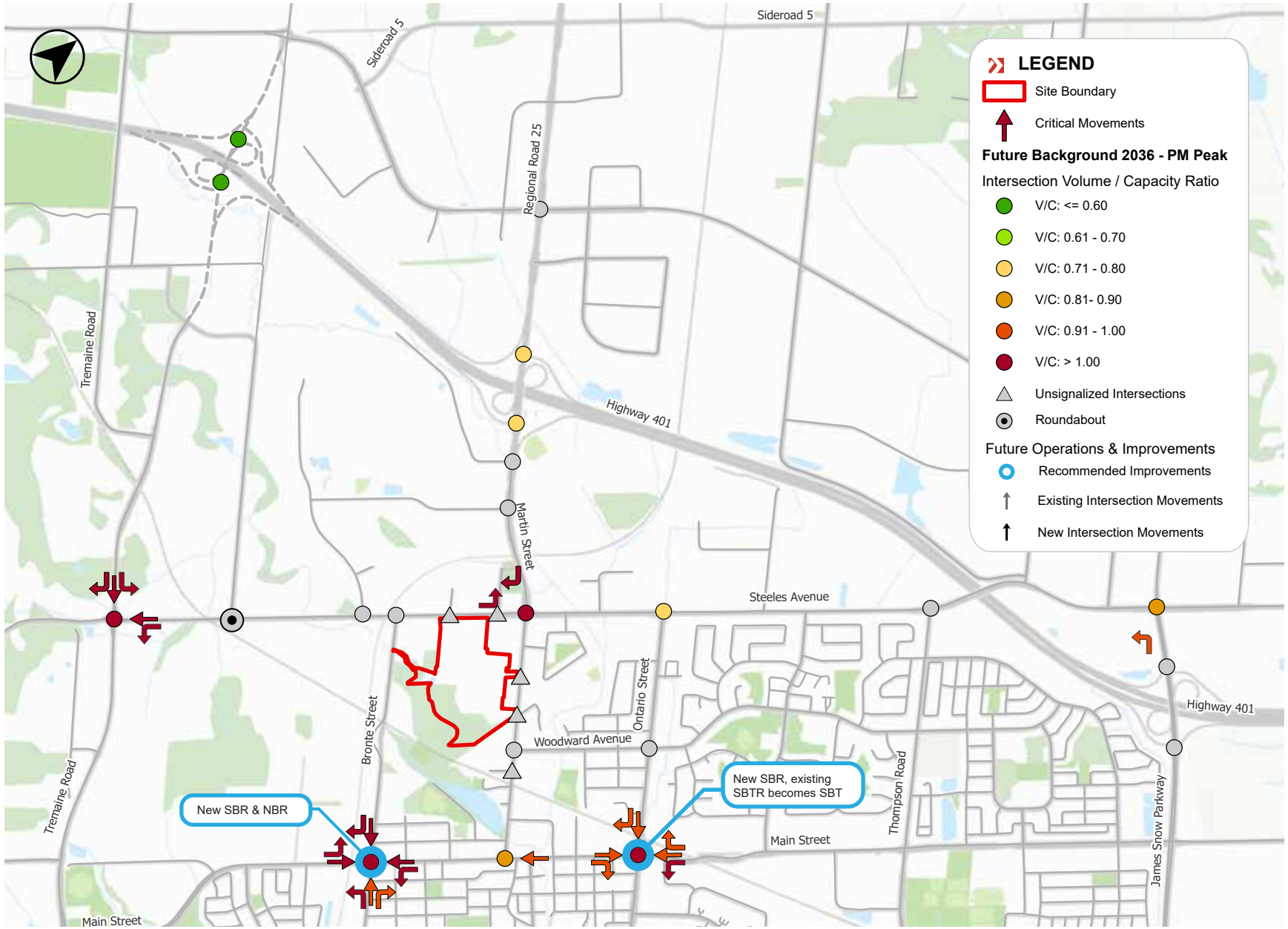
It is noted that the Region growth volumes can be accommodated with the redistribution of some existing and growth volumes associated with the constrained movements outlined above, including a shift from RR25 to the extended Tremaine Road, in order to reach the Highway 401 ramps and northern Milton employment area. Some existing and growth traffic from Industrial Road will use Bronte Street instead of Tremaine Road, reducing the westbound left turn at the roundabout.

The existing and growth traffic redistribution assumptions for 2036 is illustrated in **Figure 28**.



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FIGURE 27A 2036 TRAFFIC OPERATION CONSTRAINTS WITH REGIONAL & TOWN GROWTH (AM PEAK)



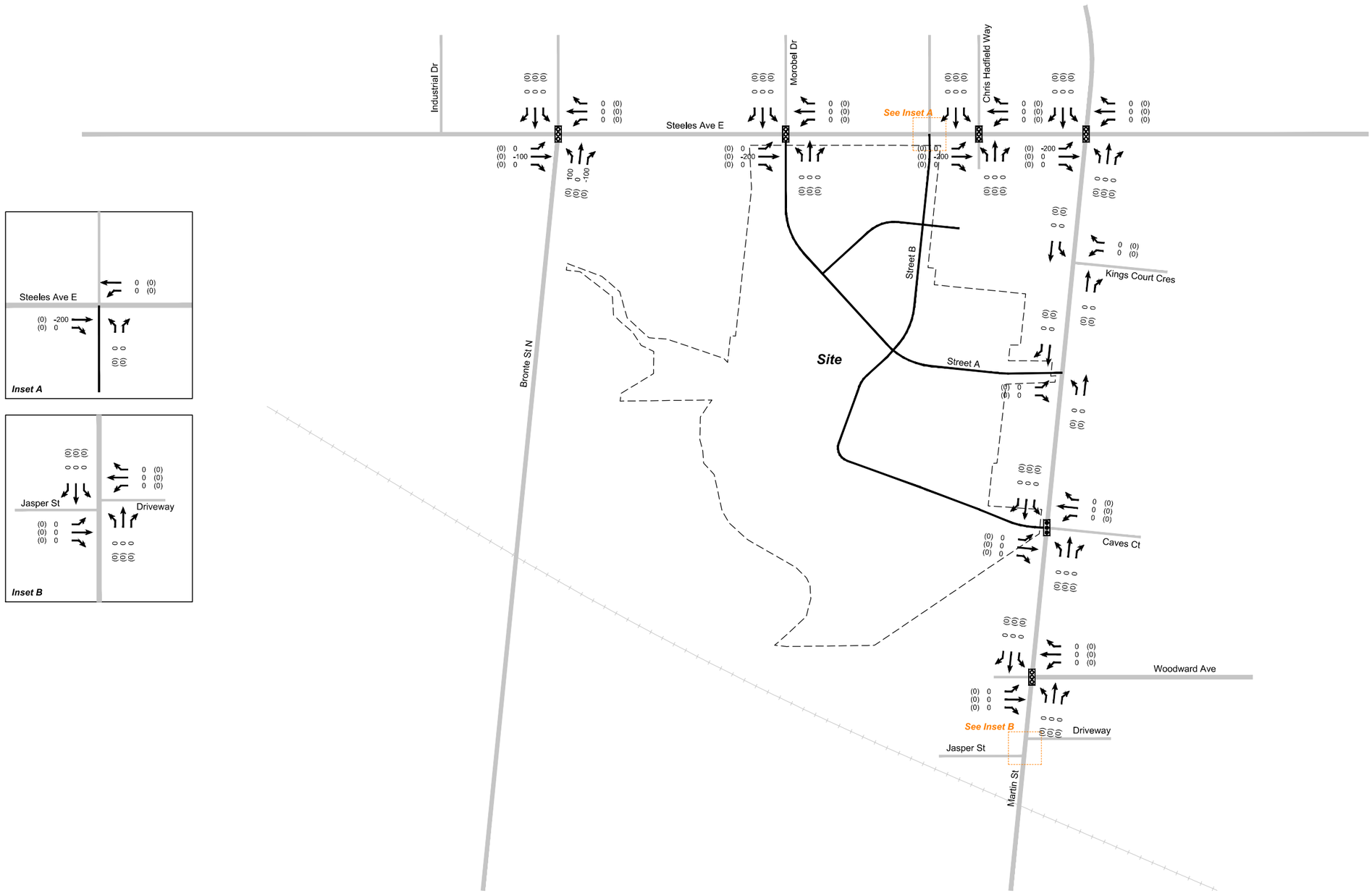
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FIGURE 27B 2036 TRAFFIC OPERATION CONSTRAINTS WITH REGIONAL & TOWN GROWTH (PM PEAK)



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FIGURE 28 2036 EXISTING AND GROWTH TRAFFIC REDISTRIBUTION



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FIGURE 28A 2036 EXISTING AND GROWTH TRAFFIC REDISTRIBUTION

2051 Unconstrained Background Traffic Operations

Highway 401 Ramp Terminals

The capacity assessment of the unconstrained 2051 background traffic on the future study area street network indicates that the Regional and MTO's Highway 401 ramp terminal intersections are generally busy and will be over capacity for the RR25 westbound off ramp movements during the morning peak hour (i.e. V/C ratios of 1.06 to 1.21).

With some traffic signal optimizations, all other Highway 401 off ramp terminals will be operating with individual movement V/C ratios of 1.00 or less, during the weekday morning and afternoon peak hours, reflecting that future 2051 traffic growth flowing into and out of the study area is generally not constrained by the Highway 401 ramps. The RR25 westbound off-ramp capacity constraint could be resolved by expanding the ramp from a left, shared-left-right, right turn to a dual left-turn and dual right-turn configuration.

Regional Intersections

The Regional constraints at the 2051 horizon continue to primarily be at the Steeles Avenue / Martin Street / RR25 intersection and the Steeles Avenue West / Tremaine Road roundabout.

The EBL turn at Steeles Avenue / Martin Street will operate with individual movement V/C ratios of 1.98 and 1.39 during the weekday morning and afternoon peak hour, respectively. Other over capacity movements at the intersection include the SBR and NBT, during the afternoon peak hour with V/C ratios of 1.14 and 1.10 respectively. As such, Martin Street is expected to have its northbound growth constrained during the afternoon peak hour by 2051. Overlapping SBR and EBL phases will help provide additional capacity to accommodate the anticipated growth.

The roundabout at Tremaine Road will be over capacity in the morning and afternoon peak hours. During the morning peak hour, it is constrained in the northbound direction, operating with V/C ratio of 1.04. During the afternoon peak hour, it is constrained in the southbound and WBL directions, operating with V/C ratios of 1.65 and 1.08, respectively.

Given the constraints outlined above, it is expected that a greater portion of existing and growth traffic will shift from using RR25 to the extended Tremaine Road to / from the Highway 401 and north employment growth area as compared to 2036 conditions. Existing and growth traffic from Industrial Road will route via Bronte Street instead of Tremaine Road, reducing the WBL at the roundabout. The existing and growth traffic redistribution for 2051 is illustrated in **Figure 30**.

It is noted that the Regional growth will be constrained in the northbound direction at the Steeles Avenue / James Snow Parkway intersection under 2051 conditions, during the afternoon peak hour (i.e. V/C ratios from 1.40 to 1.47). Based on the magnitude of the traffic volume reduction required to achieve a V/C ratio of 1.00 for the northbound movements (i.e. approximately 600 vehicles), it would be equivalent to a 60% reduction to the growth on James Snow Parkway by 2051, with the assumption that the existing Steeles Avenue / James Snow Parkway intersection configuration is maintained in the future.

However, given that the James Snow Parkway corridor is actively being reviewed as part of the New North Regional Road Coordinated EA, it is anticipated that intersection improvements will be recommended as part of the study, which should accommodate the anticipated growth.

Town Intersections

Without the ability to widen Main Street, the Town intersections along Main Street will be over capacity in the east-west movements (i.e. V/C ratios of up to 1.55). In the north-south direction, both Ontario Street and Bronte Street will also be over capacity (i.e. V/C ratios ranging from 1.10 to 1.81) and Martin Street will be over capacity southbound (i.e. V/C ratio of 1.32).

The east-west traffic growth along Main Street will greatly exceed capacity by the 2051 horizon due to its existing three-lane cross section (including the center left-turn lane), while simultaneously more than doubling the traffic volumes on the roadway through growth without roadway expansion.

It is acknowledged that the intersections along Main Street, within the historic town centre, cannot be widened without significant impact to existing buildings and the area's walkable heritage character. As such, the level of growth forecast by the Town of Milton for Main Street is not reasonable, along the segment of Main Street within the study area. The eastbound growth is approximately 20% to 30% over the roadway capacity limit and the westbound growth is approximately 40% over the roadway capacity limit.

The north-south traffic growth along Bronte Street will greatly exceed capacity by the 2051 horizon due to its existing two-lane cross section. It is noted the corridor is already considered constrained by the 2036 horizon. Specifically, the forecast north-south growth on Bronte Street will need to be reduced by at least 50%, through alternate routes or overall reduction to growth, unless an additional through lane is provided in each direction north-south.

It is noted that similar to Ontario Street at a macro scale, Bronte Street will provide a through north-south corridor across the Town of Milton and will function as a key route connecting the southwestern Secondary Plan growth areas to North Milton, where the employment and Highway 401 interchanges are located. Although there are parallel routes in the vicinity via Tremaine Road, Ontario Street and Thompson Road, the first two roads will also be overcapacity and Thompson Road does not have sufficient capacity to support the potential traffic overflow from Bronte Street.

It is recommended that the Town of Milton study the potential for widening Bronte Street to a 4-lane cross section, between Steeles Avenue and Derry Road to support its anticipated traffic growth.

The north-south traffic growth along Ontario Street will exceed capacity by the 2051 horizon, even with the additional southbound right-turn lane at Main Street / Ontario Street as recommended at the 2036 horizon. With the additional southbound right-turn lane, Ontario Street is expected to be approximately 10% over capacity, in both the northbound and southbound directions. The level of traffic reduction to maintain V/C ratios of 1.00 will require approximately 20% to 25% of the forecast growth to be removed. This traffic removal will likely be in relation to traffic to and from either Highway 401 to the north or Highway 407 to the south, as the capacity will be "filled" by local growth either originating or destined to areas in Milton.

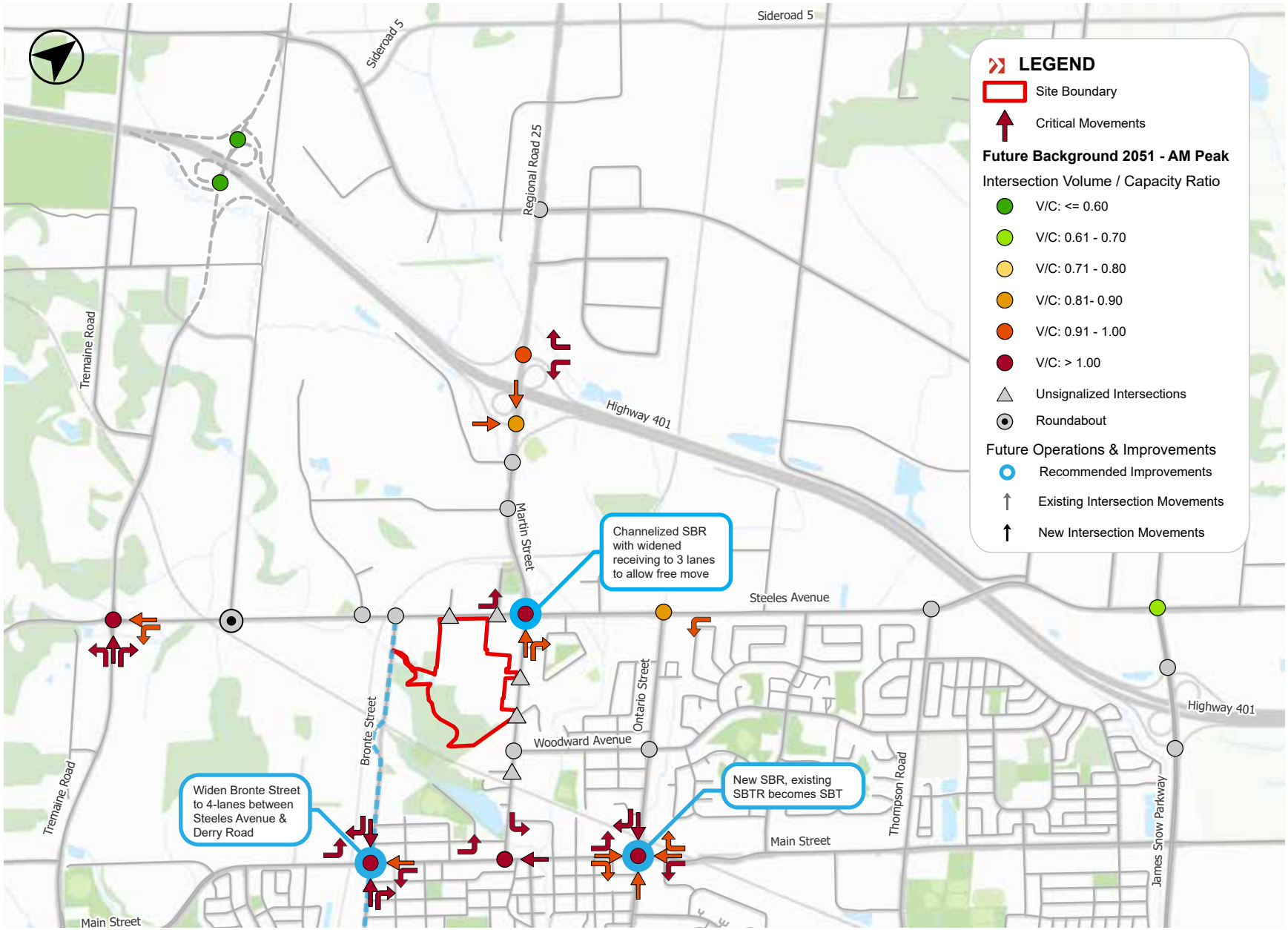
Summary of 2051 Unconstrained Background Traffic Operations

The future street network, with the anticipated build-out of road improvements identified in **Section 5.1.3**, can generally accommodate the full growth volumes anticipated by the Region, under 2051 future background conditions. The 2051 study area network operations and constraints are illustrated in **Figure 29A** and **Figure 29B**, including the additional recommended improvements, beyond those already considered by the Town and Region capital works to accommodate the planned growth.

The Highway 401 off ramp terminals will continue to operate acceptably under 2051 conditions with the full background growth given an additional right-turn lane for the westbound off ramp on RR25. However, due to the lack of proportional infrastructure improvement to the Town road network, in relation to the level of forecast growth, the projected growth will be constrained along the Town corridors.

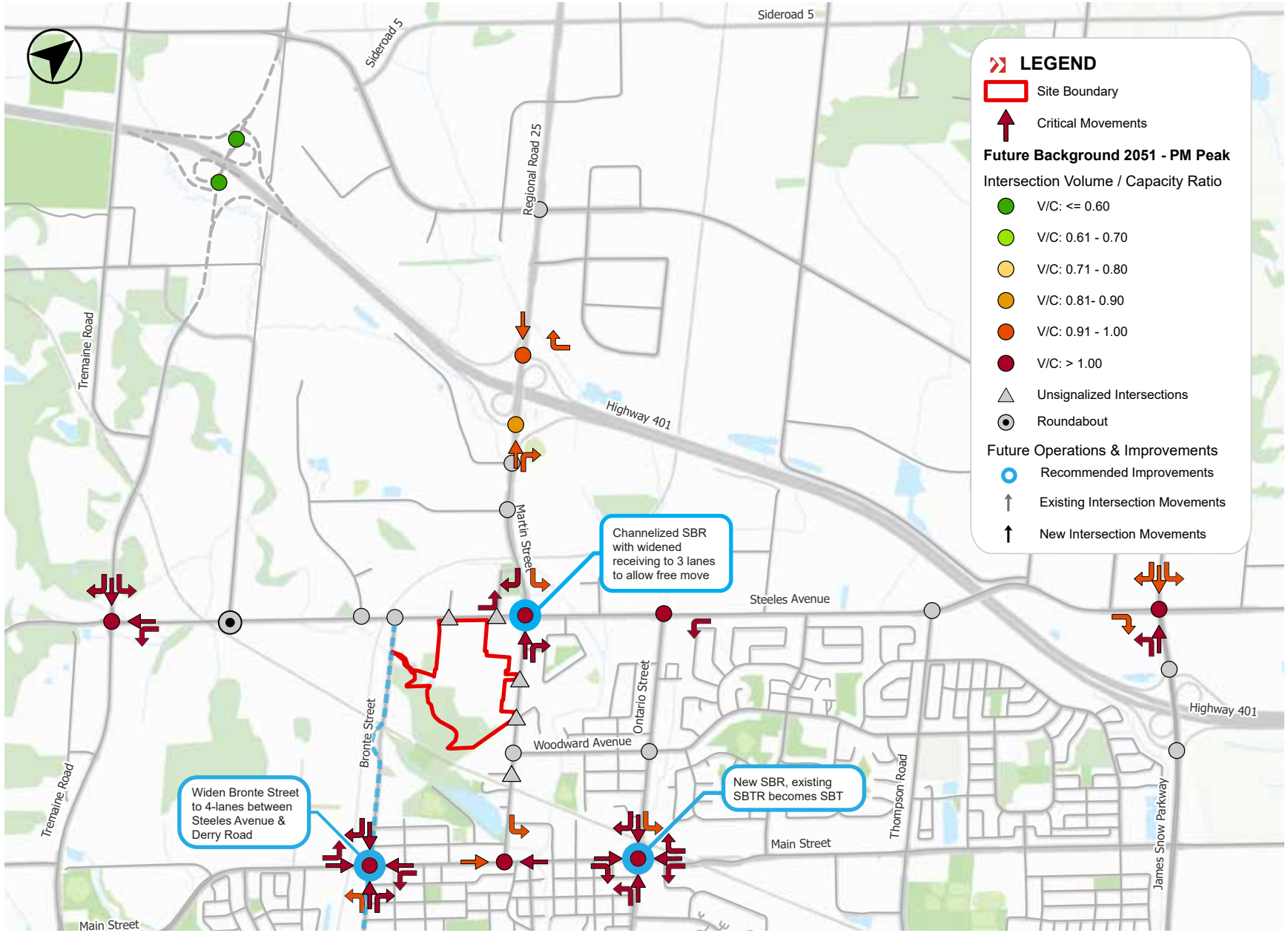
For the Town intersections, significant capacity constraints will be present along Main Street, Bronte Street and Ontario Street, generally in all directions with more minor capacity constraints southbound on Martin Street. These constraints would imply a required reduction to corridor growth in the order of 20% to 50%.

At Regional intersections, the Regional growth volumes can generally be accommodated with the redistribution of existing and growth volumes reflecting a shift from RR25 to the extended Tremaine Road to reach Highway 401 and the north employment area. Similarly, there will be a greater usage of Bronte Road to and from the south, instead of the existing Tremaine Road. Overlapping SBR and EBL phases at RR25 / Steeles Avenue East will help provide additional capacity to accommodate the anticipated growth.



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FIGURE 29A 2051 TRAFFIC OPERATION CONSTRAINTS WITH REGIONAL & TOWN GROWTH (AM PEAK)



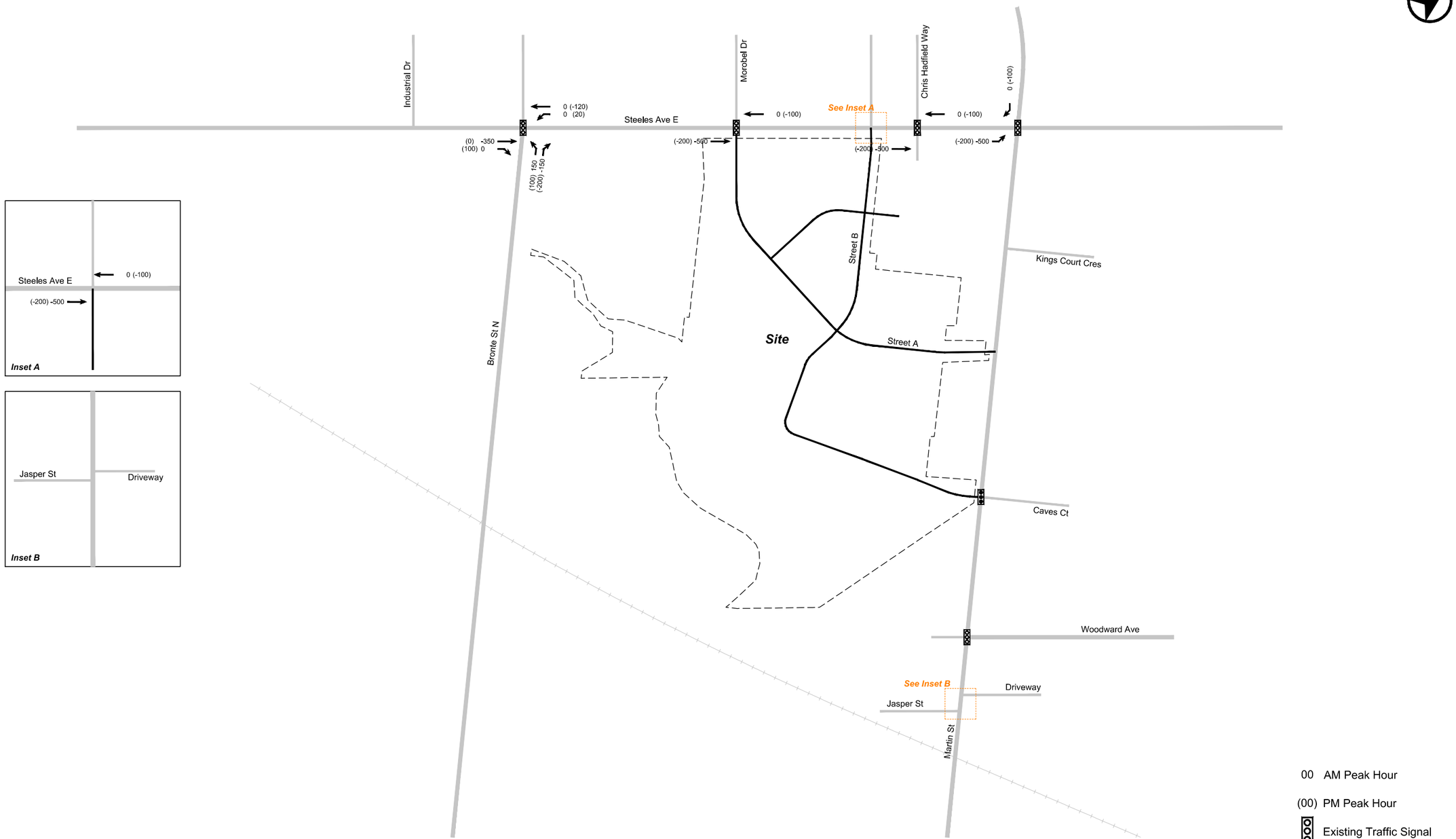
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FIGURE 29B 2051 TRAFFIC OPERATION CONSTRAINTS WITH REGIONAL & TOWN GROWTH (PM PEAK)



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FIGURE 30 2051 EXISTING AND GROWTH TRAFFIC REDISTRIBUTION



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FIGURE 30A 2051 EXISTING AND GROWTH TRAFFIC REDISTRIBUTION

5.6.2.6 Corridor Growth Adjustments Reflecting Capacity Constraints

Regional corridor growth areas of concern can be resolved through traffic redistribution, as enabled by the Tremaine Road extension and new interchange. However, traffic growth on Town corridors is constrained. Certain levels of traffic volumes need to be removed from the Town corridors in order to maintain V/C ratios of 1.00 by direction. The recommended widening of Bronte Road can alleviate the growth constraints north-south along Bronte Road but otherwise, it will reach capacity from growth to 2036 alone.

The traffic volumes for removal are expressed as a **proportion of total growth between 2024 and 2051**. Equivalent adjusted growth rates have been calculated to achieve the targeted reduced level of growth by 2051. It is noted that the adjusted growth rates are similarly compounded annually. Key values from this growth rate review are presented in **Table 25**.

It should be noted that for Bronte Street, it will already be at or close to capacity by 2036, with the application of only the growth allocation from 2024 to 2036. As such, all of the growth from 2036 to 2051 (i.e. 50% of total growth from 2024 through to 2051) cannot be accommodated, should the existing roadway configuration remain. With the provision of an additional north-south lane each direction along Bronte Street, all of the additional growth from 2036 to 2051 can be accommodated. **Table 25** notes the 50% reduction in growth necessary between 2024 and 2051 based on existing configurations, but with the recommendation to widen Bronte Street from 2 to 4 lanes, 100% of the growth requested by the Region has been applied for 2036 to 2051. The traffic analysis under future conditions has been undertaken with the assumption that Bronte Street will be widened in the future. Without the widening of Bronte Street, 50% of the growth suggested by the Region between 2024 and 2051 would need to be removed, in order for Bronte Street to operate acceptably under future background conditions.

For any corridor in **Table 25**, a 0% growth adjustment from 2036 to 2051 indicates the portion of growth suggested by the Region from 2024 up to 2036 has been applied, but no additional growth was considered between 2036 and 2051 due to capacity limitations.

TABLE 25 TOWN CORRIDOR ADJUSTED GROWTH RATES

Corridor	Direction	2024 - 2051 Base Growth Rate %	Proportion of Growth (2024-2051) Removal	2036 - 2051 Adjusted Growth Rate[2]%
Martin Street Steeles Avenue East to Main Street	NB	1.33% (3.10%)	0% (0%)	1.33% (3.10%)
	SB		40% (22%)	0.00%[2](1.41%)
Thompson Road Steeles Avenue East to Derry Road	NB	1.56% (2.37%)	0% (0%)	1.56% (2.37%)
	SB		0% (0%)	1.56% (2.37%)
Main Street Tremaine Road to James Snow Parkway	EB	2.16% (3.24%)	20% (30%)	0.27% (0.00%[2])
	WB		0% (40%)	2.16% (0.00%[2])
Ontario Street Steeles Avenue East to Derry Road	NB	1.61% (2.40%)	25% (20%)	0.00%[2] (0.90%)
	SB		25% (20%)	0.00%[2] (0.90%)
Bronte Street Derry Road to Steeles Avenue East	NB	2.80% (2.75%)	50% (50%)[3]	2.80% (2.75%)[4]
	SB		50% (50%)[3]	2.80% (2.75%)[4]

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour).
2. Denotes no additional growth can be accommodate after 2036 (intersection approach/movement at capacity by 2036).
3. Growth limitations only if Bronte Street is not widened.
4. Assumes the widening of Bronte Street from 2 to 4 lanes by 2041.

5.6.3 JBPE Baseline Site Traffic Growth

The Town and Region growth rates have been applied to the associated JBPE site traffic allowance based on its two-way link volumes along Steeles Avenue, Martin Street (Regional Road 25), and Tremaine Road for the 2036, 2041, 2046 and 2051 horizons.

It is noted that the JBPE site traffic allowance already increases based on the horizon year. As such, this growth on the JBPE baseline site allowance is treated as general corridor growth instead of routing to and from the site. The baseline link volumes, corridor growth rates and resultant corridor growth at the future study horizons are summarized in **Table 26**.

TABLE 26 SUMMARY OF TRAFFIC GROWTH ON JBPE BASELINE ALLOWANCE

Corridor	Baseline	2024-2031	2031-2041	2041-2046	2046-2051
Growth Rate					
Tremaine Road	--	6%	2%	1%	1%
Steeles Avenue	--	4%	3%	1%	1%
Martin Street	--	5%	2%	1%	1%
		2036	**2041**	**2046**	**2051**
Total Growth %					
Tremaine Road	--	66%	83%	93%	102%
Steeles Avenue	--	53%	77%	86%	95%
Martin Street	--	55%	72%	80%	89%
Total Two-Way Volume					
Tremaine Road	30 (35)	50 (55)	55 (55)	60 (60)	60 (70)
Steeles Avenue	55 (55)	85 (55)	95 (95)	105 (100)	110 (110)
Martin Street	40 (35)	65 (55)	70 (60)	70 (60)	75 (70)
Two-way Growth					
Tremaine Road	--	20 (20)	25 (20)	30 (25)	30 (35)
Steeles Avenue	--	30 (30)	40 (40)	50 (45)	55 (55)
Martin Street	--	25 (20)	30 (25)	30 (25)	35 (35)

The assignment of the above growth allowance on the JBPE baseline traffic is illustrated in **Figure 31**, **Figure 32**, **Figure 33**, and **Figure 34** for the 2036, 2041, 2046 and 2051 horizons, respectively.

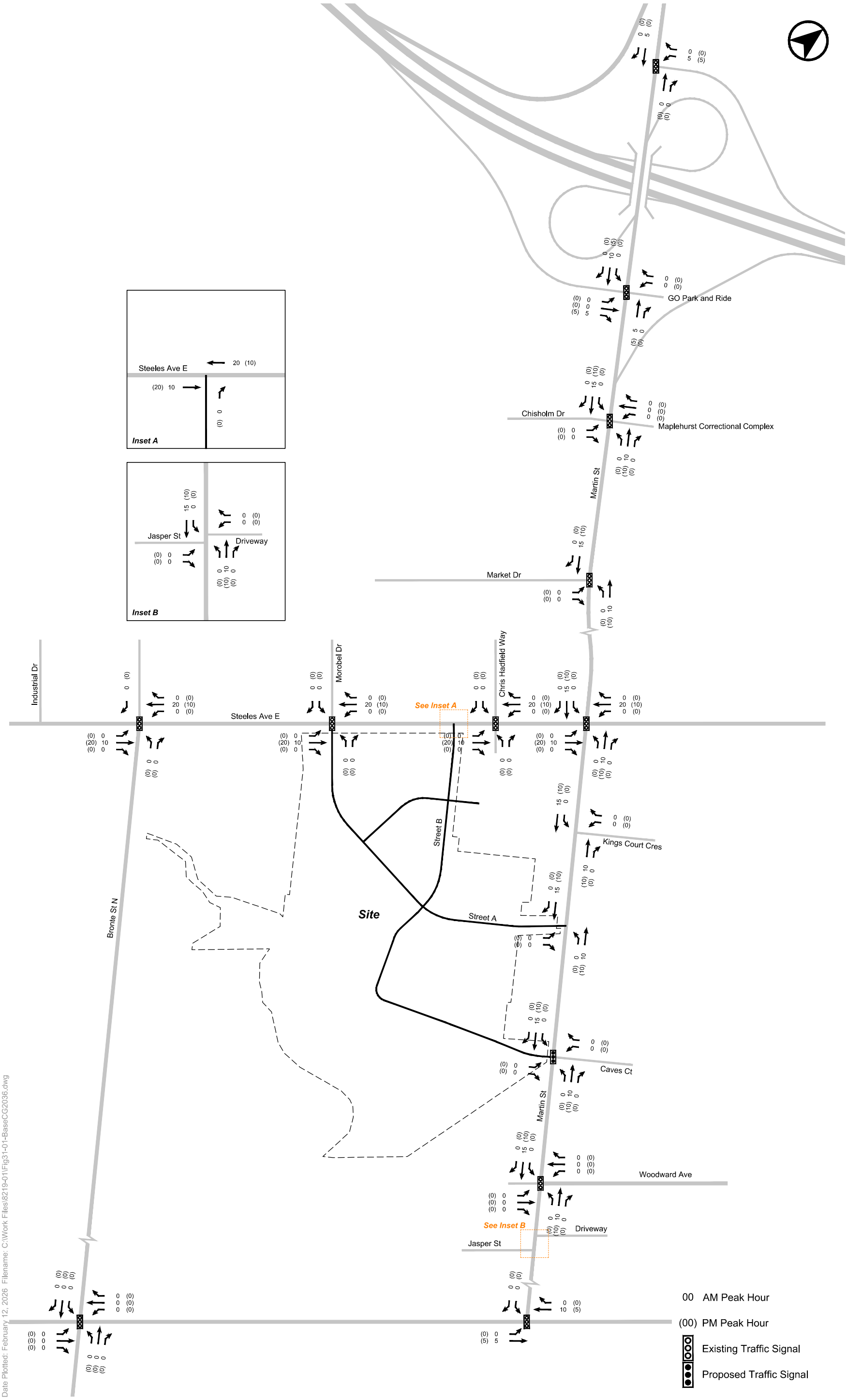


FIGURE 31 JPBE BASELINE GENERAL CORRIDOR GROWTH (2036)

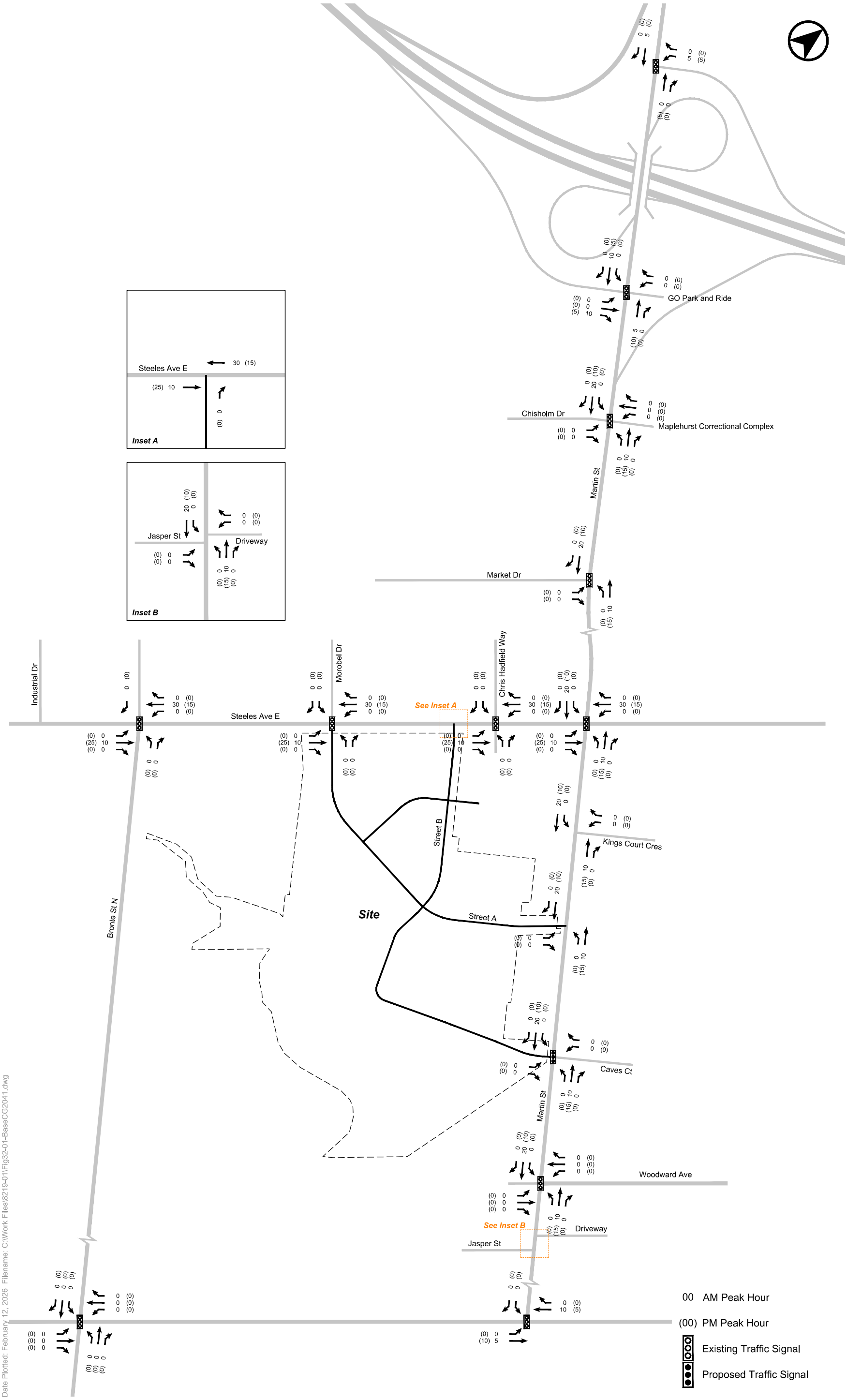


FIGURE 32 JPBE BASELINE GENERAL CORRIDOR GROWTH (2041)

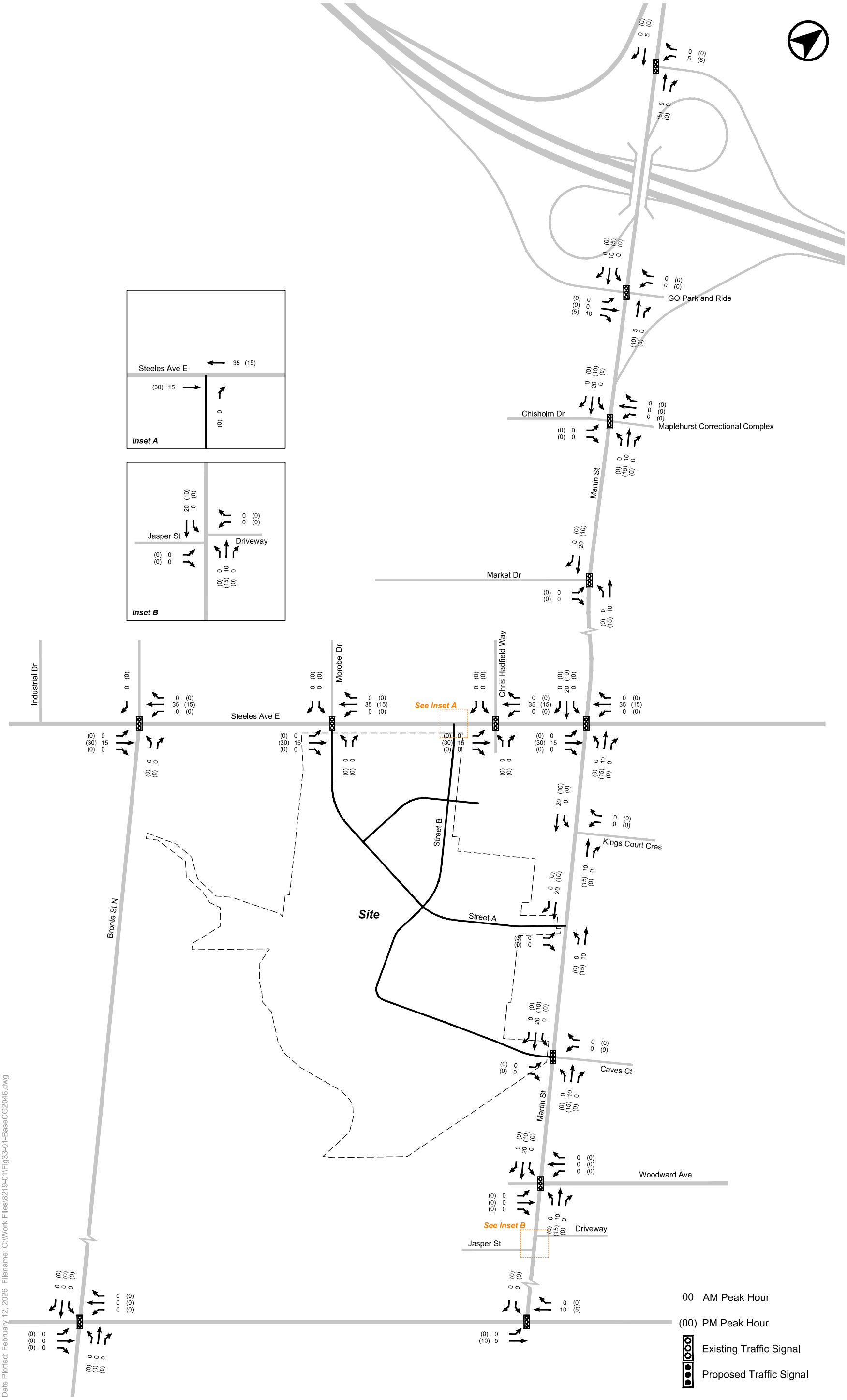


FIGURE 33 JPBE BASELINE GENERAL CORRIDOR GROWTH (2046)

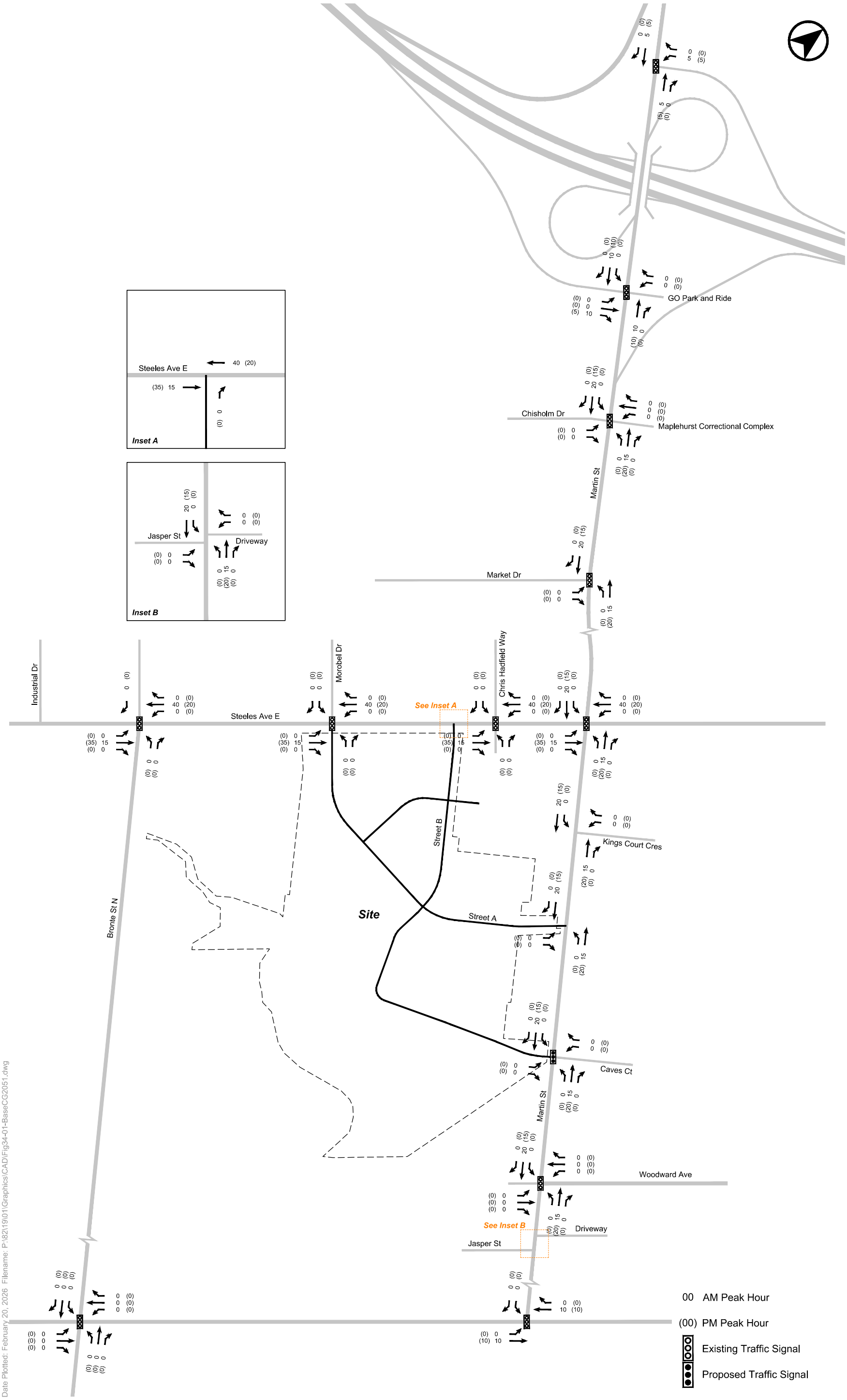


FIGURE 34 JPBE BASELINE GENERAL CORRIDOR GROWTH (2051)

5.6.4 Summary of JBPE Future Total Traffic Volumes & Network Improvements

In summary, future background traffic growth volumes have been established for each study horizon, based on the Region's growth rates outlined in **Table 18** and the adjusted growth rates for the Town roadways outlined in **Table 25.** These background traffic growth volumes have been further balanced at each horizon for better network continuity and to reflect more logical routing choice.

The future background traffic volumes for each analysis horizon were calculated by combining existing traffic, background traffic growth and JBPE baseline traffic and associated corridor growth for the given horizon and the respective traffic redistribution for existing volumes and future growth. The resultant adjusted JBPE future total traffic volumes for the 2036, 2041, 2046 and 2051 horizons are illustrated in **Figure 35**, **Figure 36**, **Figure 37**, and **Figure 38**, respectively.

The following cumulative improvements are recommended, beyond those already considered by the Town and Regional capital works, to accommodate the planned growth. The improvements are considered within both the future background and future total analysis scenarios included in this study.

2036 Horizon

- Ontario / Main Street: conversion of existing shared through-right-turn channel to a dedicated through lane and add an exclusive channelized southbound right-turn lane;
- Bronte Street / Main Street: additional SBR and NBR turn lanes (if Bronte Street widening from 2 to 4 lanes not feasible by 2036); and
- Ontario / Woodward Street: new EBL and WBL advance turn phases.

2051 Horizon

- Highway 401 RR25 Westbound Off Ramp: upgrade from left, shared-left-right, right-turn configuration to a dual left and dual right-turn configuration;
- Bronte Street widening from 2 to 4 lanes between Steeles Avenue East to Derry Road; and
- Steeles Avenue / Martin Street: overlapping SBR and EBL phases and widening of the receiving west leg to allow for free SBR channelized operations.

It is recognized that James Snow Parkway cannot accommodate the forecast growth by 2036 based on its current configuration at James Snow Parkway / Steeles Avenue East, particularly in the northbound direction where it will exceed capacity by approximately 40%. This growth is expected to be split coming from the southern growth areas and the Highway 401 off ramps. Due to the underlying EMME origin-destination matrices not being made available for this traffic analysis, it was not possible to verify the routing of the forecast growth on James Snow Parkway.

It will either need additional road infrastructure improvements or the growth must be constrained under future conditions at James Snow Parkway. Given that the James Snow Parkway corridor is actively being studied as part of New North Regional Road Coordinated EA, it is expected that a set of improvements will be suggested by the study to accommodate growth or the growth forecast will be refined.

To avoid inconsistency with potential future New North Regional Road EA findings, growth volumes along James Snow Parkway and at westbound movements along Steeles Avenue East downstream have generally been maintained for this analyses, resulting in specific movements being overcapacity under future conditions.

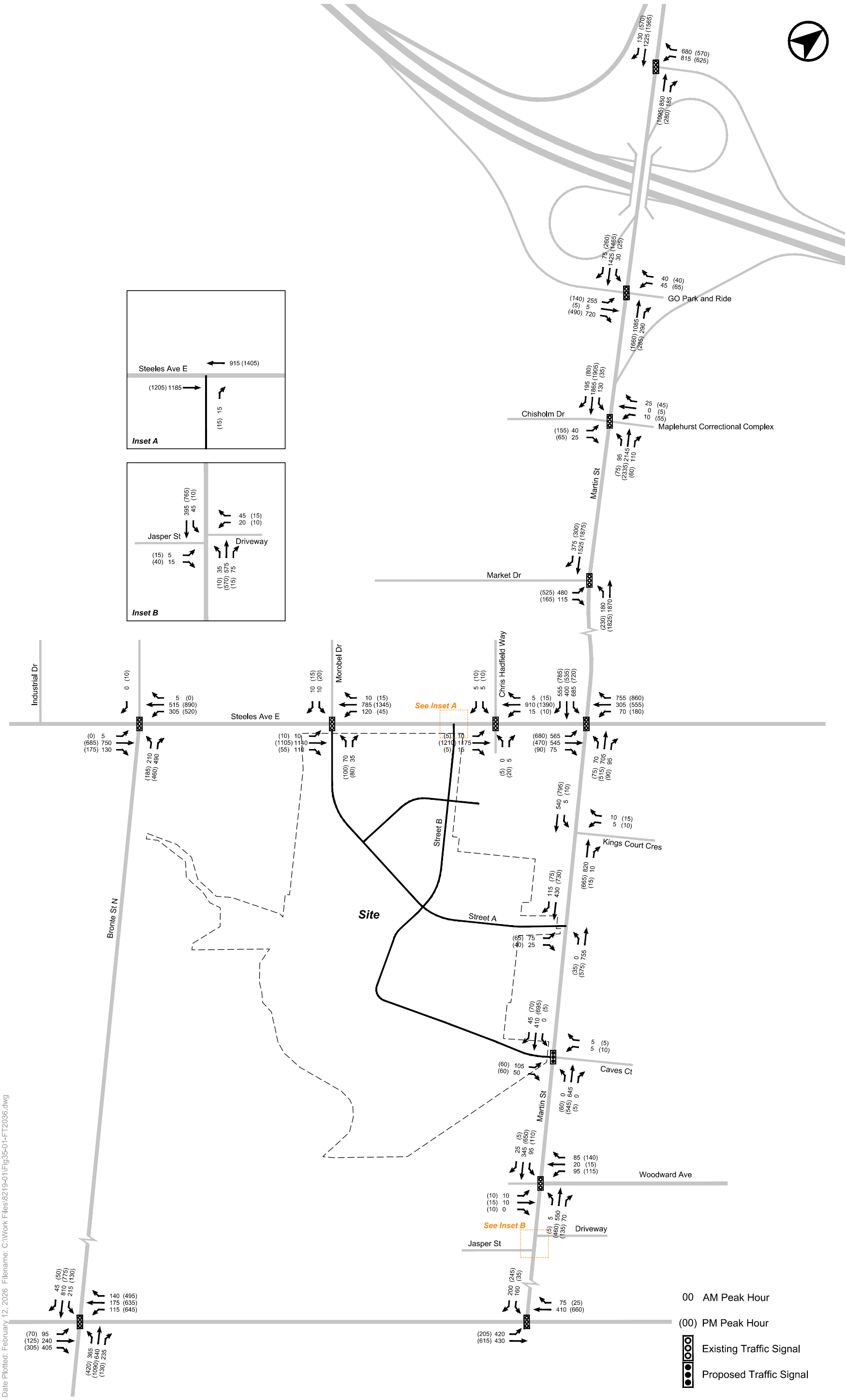
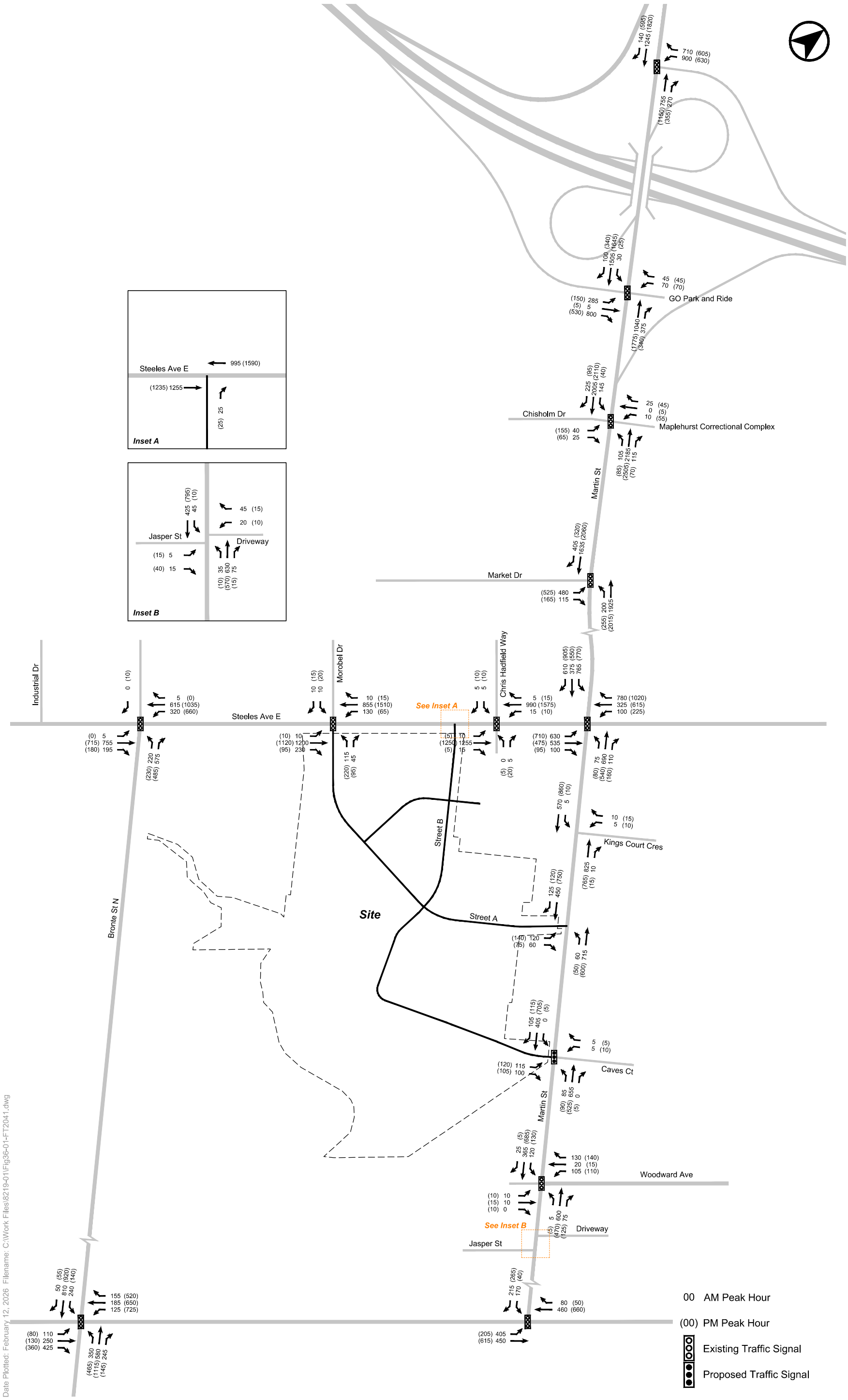


FIGURE 35 2036 JPBE FUTURE TOTAL TRAFFIC VOLUMES (ADJUSTED GROWTH)

BA GROUP 8219-01

150 STEELES AVENUE EAST



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FIGURE 36 2041 JBPE FUTURE TOTAL TRAFFIC VOLUMES (ADJUSTED GROWTH)

BA GROUP 8219-01

150 STEELES AVENUE EAST

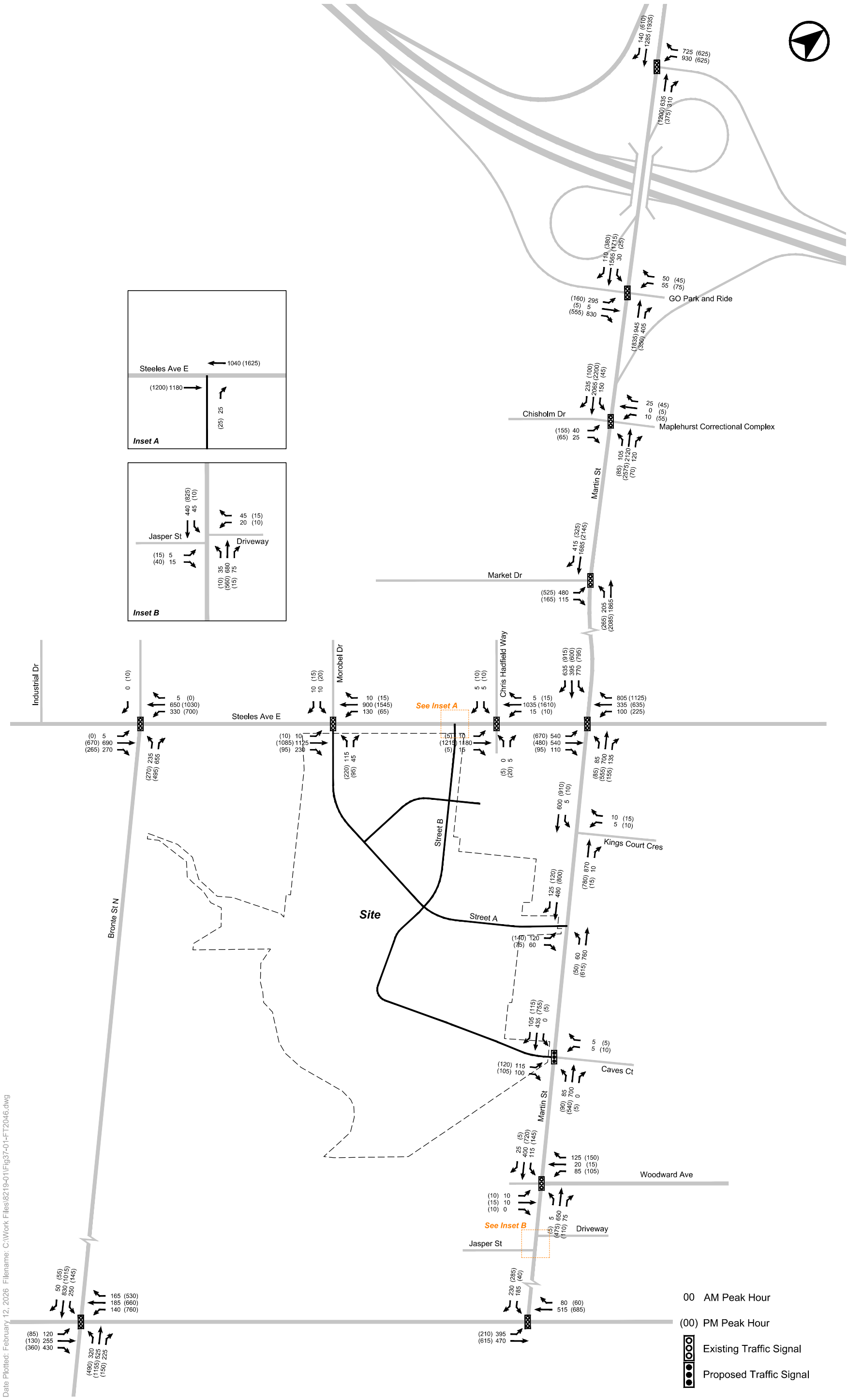


FIGURE 37 2046 JBPE FUTURE TOTAL TRAFFIC VOLUMES (ADJUSTED GROWTH)

BA GROUP 8219-01

150 STEELES AVENUE EAST

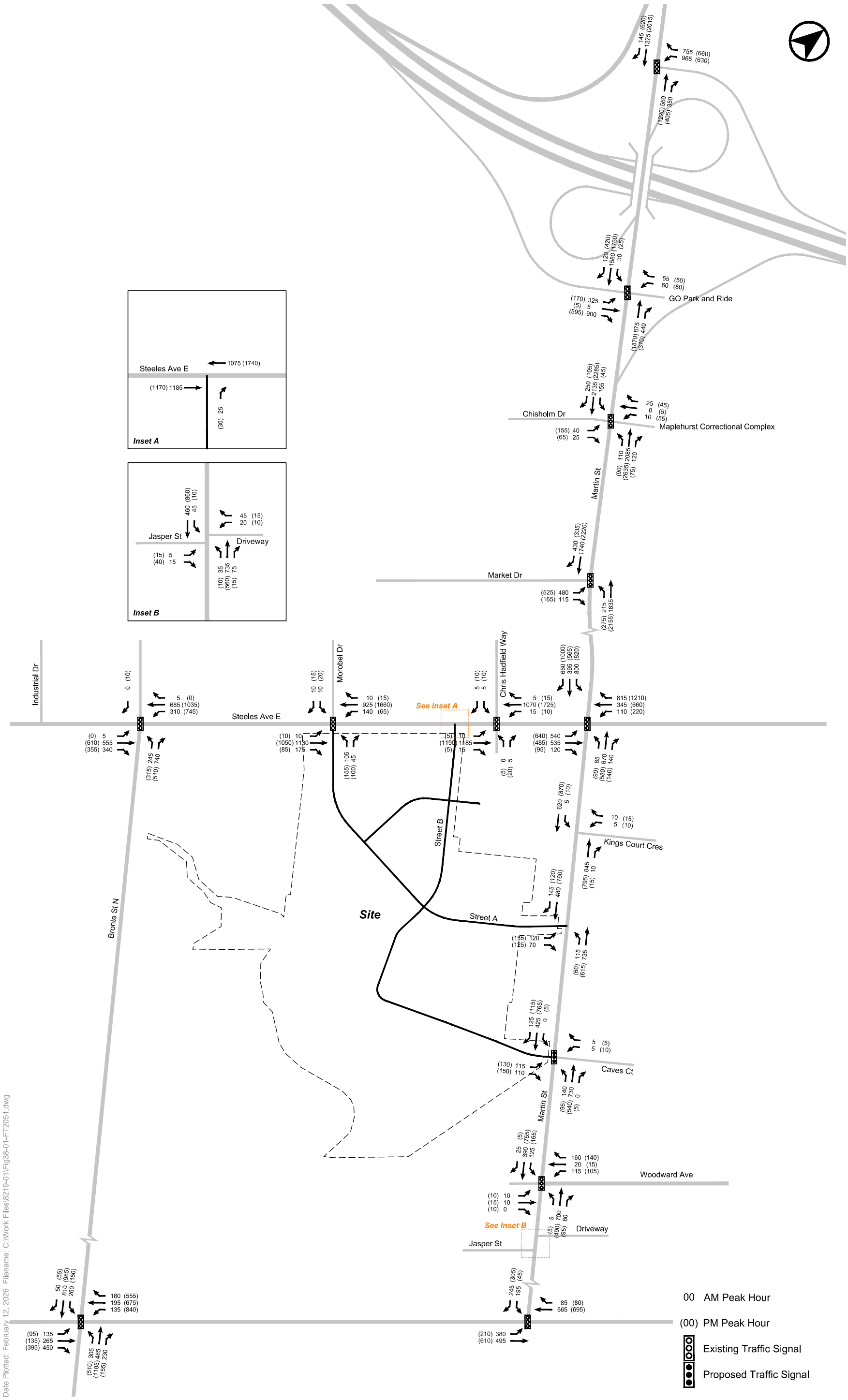


FIGURE 38 2051 JBPE FUTURE TOTAL TRAFFIC VOLUMES (ADJUSTED GROWTH)

BA GROUP 8219-01

150 STEELES AVENUE EAST

5.6.5 "Background Site Traffic" Removal

For the purposes of this report and the determination of background traffic volumes for the comprehensive traffic analysis, the Region provided residential and employment projections associated with the site, from the JBPE for the 2031, 2041 and 2051 horizons.

In November 2024, a first set of JBPE statistics was provided to BA Group. Later in March 2025, after a review of the JBPE for the Bronte-Main-Meritor strategic growth area, the Region clarified that the JBPE allocations for the site includes a baseline of 259 jobs under "existing" conditions and that the revised set of JBPE statistics reflect the ultimate planning estimates for the site at each horizon.

As part of this transportation study, the total vehicle volumes associated with the Town and Region site assumptions (i.e. trips associated with the cumulative JBPE allowance) were removed from the area road network to avoid double counting site traffic.

5.6.5.1 Joint Best Planning Estimates: Site Population Growth

The Region's JBPE residential and employment projections for the site provided by the Region in March 2025, are summarized in **Table 27.**

TABLE 27 JBPE SITE POPULATION GROWTH (PROVIDED BY REGION IN MARCH 2025)

	2031[1]	2041[1]	2051[1]
Residential (units)	1,198	1,999	2,209
Employment (jobs)[2]	652	1,363	1,564
Population (people)	2,618	4,589	5,103

Notes:
1. These numbers reflect the ultimate planning estimates for the subject property under each horizon year.
2. These employment values reflect 259 jobs under the baseline "existing" conditions

5.6.5.2 Vehicle Trip Generation

Trip generation rates from the ITE Trip Generation Manual (11the Edition) for General Urban / Suburban settings were referenced to determine the number of trips generated by the population and employment projections outlined in **Table 27**.

The residential trip generation rates considered as part of this study are summarized in **Table 28**. Given that the JBPE site projections do not specify type of housing, the mid-rise housing ITE rate (Land Use Code (LUC 221) was assumed for trip generation purposes.

TABLE 28 ITE RESIDENTIAL TRIP GENERATION RATE

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
ITE 11th Ed. LUC 222 (High-Rise)	0.07	0.20	0.27	0.20	0.12	0.32
ITE 11th Ed. LUC 221 (Mid-Rise)	0.09	0.28	0.37	0.24	0.15	0.39
ITE 11th Ed. LUC 220 (Townhouse)	0.10	0.30	0.40	0.32	0.19	0.51
Adopted Rate (Mid-Rise)	**0.09**	**0.28**	**0.37**	**0.24**	**0.15**	**0.39**

Notes:
1. Trip generation rate per residential unit.

The ITE rate for office trip generation by employee (LUC 710) has been applied to the JBPE site employment projections provided by the Region in March 2025. The office trip generation rate is summarized in **Table 29**.

TABLE 29 ITE OFFICE TRIP GENERATION RATE

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
ITE 11th Ed. LUC 710 (General Office)[1]	0.43	0.06	0.49	0.08	0.37	0.45

Notes:
1. Trip generation rate per employee.

The trip generation rates outlined above have been applied to the population and employment growth scenarios provided by the Region. It is noted that the 2031 resultant "background site traffic" is considered at the 2036 horizon analysis scenario and the 2041 resultant "background site traffic" is considered at both the 2041 and 2046 horizon analysis scenarios.

As discussed in **Section 5.3**, a transitional approach to travel mode share has been adopted for purposes of this study for residential vehicle trips. Based on the observed and forecast auto mode share, no trip rate adjustments are applied under the 2031 horizon. It was then assumed that a 10% reduction occurs over time, in ten-year increments, resulting in a 10% and 20% vehicle trip rate reduction for the 2041-2051 and 2051+ horizon periods, respectively. Similarly for office / work trips, a similarly comparison of travel mode share as derived from the 2022 TTS versus the 2016 TTS is summarized in **Table 30**.

TABLE 30 OFFICE / WORK TRIP TRAVEL MODE SHARE COMPARISON

Travel Mode	Two-Way Peak Hour Trips		
	2016 TTS[1]	2022 TTS[2]	ITE[3]
Transit	1%	3%	10%
Driver	90%	88%	80%
Passenger	7%	5%	10%
Cycle	0%	1%	
Walk	2%	3%	
Total	**100%**	**100%**	**100%**

Notes:
1. Based on 2016 TTS data for morning (0600-0900) and afternoon (1500-1800) for Milton.
2. Based on 2022 TTS data for morning (0600-0900) and afternoon (1500-1800) for Milton.
3. Reflects ITE Trip Generation Handbook 3rd Edition (September 2017) Appendix B BD Suburban.

The recently released 2022 TTS data indicates that office / work-related travel for the site area has an existing auto driver mode share in the order of 88%, effectively unchanged relative to 2016 characteristics. Furthermore, a comparison of this auto driver mode share to the ITE mode share, indicates that the ITE office trip rates already reflect a slightly lower auto driver mode share. Given the negligible change in auto driver mode share from 2016 to 2022, it is unlikely that travel behavior for office / work travel would significantly shift upwards of 10%. As such, reductions to trip generation rates under future conditions have not been applied to office trips.

A summary of the total "background site traffic" is summarized in **Table 31**.

TABLE 31 "BACKGROUND SITE TRAFFIC" VEHICLE TRIP GENERATION

		AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
2031 (applied to 2036 horizon)							
Residential (1,198 units)	*trips / unit*[1]	*0.09*	*0.28*	*0.37*	*0.24*	*0.15*	*0.39*
	trips	110	335	445	290	180	470
Office (652 jobs)	*trips / emp.*	*0.43*	*0.06*	*0.49*	*0.08*	*0.37*	*0.45*
	trips	280	40	320	50	240	290
	Total Trips	**280**	**360**	**640**	**320**	**325**	**645**
2041 (applied to 2041 & 2046 horizons)							
Residential (1,999 units)	*trips / unit*[2]	*0.08*	*0.25*	*0.33*	*0.22*	*0.14*	*0.36*
	trips	160	505	665	430	270	700
Office (1,363 jobs)	*trips / emp.*	*0.43*	*0.06*	*0.49*	*0.08*	*0.37*	*0.45*
	trips	585	80	665	105	505	610
	Total Trips	**635**	**570**	**1,205**	**515**	**680**	**1,195**
2051 (applied to 2051 horizon)							
Residential (2,209 units)	*trips / unit*[3]	*0.07*	*0.23*	*0.30*	*0.19*	*0.12*	*0.31*
	trips	160	495	655	425	265	690
Office (1,564 jobs)	*trips / emp.*	*0.43*	*0.06*	*0.49*	*0.08*	*0.37*	*0.45*
	trips	675	90	765	120	580	700
	Total Trips	**725**	**570**	**1,295**	**525**	**750**	**1,275**

Notes:
1. Assumes no reduction for mode share based on an auto driver mode share of 70% consistent with ITE.
2. Assumes a 10% reduction for mode share based an auto driver mode share of 60%, a 10% reduction with respect to the base ITE rate.
3. Assumes an auto driver mode share of 50%, a 20% reduction from the base ITE rate.
4. Residential units and employment are based on the JBPE provided by the Region in March 2025.

5.6.5.3 Trip Distribution & Assignment

Traffic distribution assumptions for the removal of "background site traffic" were based on the following:

- Traffic distribution patterns of area home-based and work-based trips based on 2016 TTS data; and
- Traffic redistribution assumptions accounting for Secondary Plan area growth across Milton.

As the Region's TMP and transportation (EMME) model updates were underway prior to the December 2024 release of the 2022 TTS data, it has been assumed that the underlying travel distributions within the Region's transportation model and the corridor growth rates provided, have been based on 2016 TTS data.

It is acknowledged that the underlying TTS vehicle trip origin-destination information only reflects the 2016 build-out of lands in Milton. Given the large-scale growth (152,500 people and 72,350 jobs by 2051) planned within and surrounding Milton, as described in **Section 5.1**, it is expected that the distribution patterns would shift to reflect the increased use of roadway corridors connecting to the new Secondary Plan areas.

An allowance for this redistribution was estimated by adjusting the residential and office 2016 TTS trip distribution through "upscaling" the proportion of trips to / from traffic zones in the vicinity of the Secondary Plan areas, reflecting the scale of population and employment increase in these Secondary Plan areas.

In summary, the "background site traffic" has been removed from the area road network based on the 2016 TTS distribution patterns for area home-based and work-based trips and adjusted for the location and scale of the planned growth across Milton. The resultant adjusted residential and office traffic volume distribution is summarized in **Table 32**.

TABLE 32 "BACKGROUND SITE TRAFFIC" REMOVAL DISTRIBUTION

Study Area Boundary	Residential		Office	
	Inbound	Outbound	Inbound	Outbound
Highway 401 to/from E	4% (31%)	28% (21%)	28%	29%
Highway 401 to/from W	4% (3%)	2% (0%)	11%	13%
Martin Street to/from N	4% (5%)	4% (9%)	11%	8%
Martin Street to/from S	0% (3%)	3% (0%)	0%	0%
Main Street to/from E	24% (13%)	12% (19%)	8%	10%
Woodward Avenue to/from E	8% (2%)	5% (13%)	4%	4%
Tremaine Road to/from S	8% (5%)	9% (0%)	4%	4%
Bronte Street to/from S	12% (3%)	3% (10%)	11%	10%
Steeles Avenue to/from E	7% (6%)	6% (7%)	8%	6%
Steeles Avenue to/from W	4% (1%)	1% (0%)	0%	0%
Thompson Street to/from S	6% (2%)	2% (0%)	4%	4%
Ontario Street to/from S	20% (26%)	24% (21%)	11%	12%

The resulting "background site traffic" removal layers are as follows:

- 2036 "Background Site Traffic" to be Removed **Figure 39**
- 2041 & 2046 "Background Site Traffic" to be Removed **Figure 40**
- 2051 "Background Site Traffic" to be Removed **Figure 41**

Future background traffic volumes adopted for the traffic analyses deduct these "background site traffic" removal layers (**Figure 39** to **Figure 41**) from the adjusted JBPE future total traffic volumes presented in **Figure 35** to **Figure 38** for each horizon. Future background traffic volumes are illustrated in **Figure 42** to **Figure 45** for the 2036, 2041, 2046 and 2051 horizons, respectively.

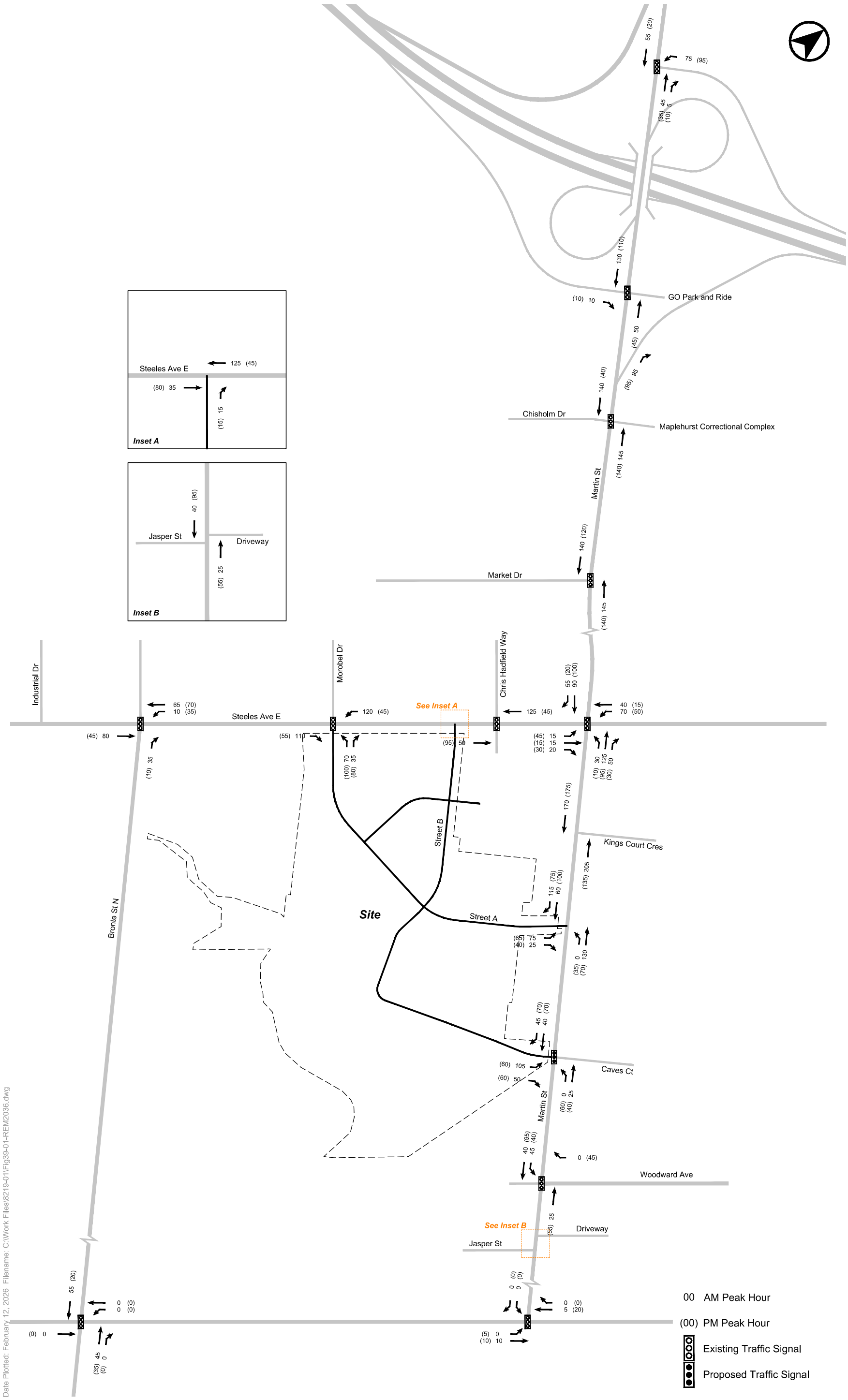


FIGURE 39 2036 "BACKGROUND SITE TRAFFIC VOLUMES" TO BE REMOVED

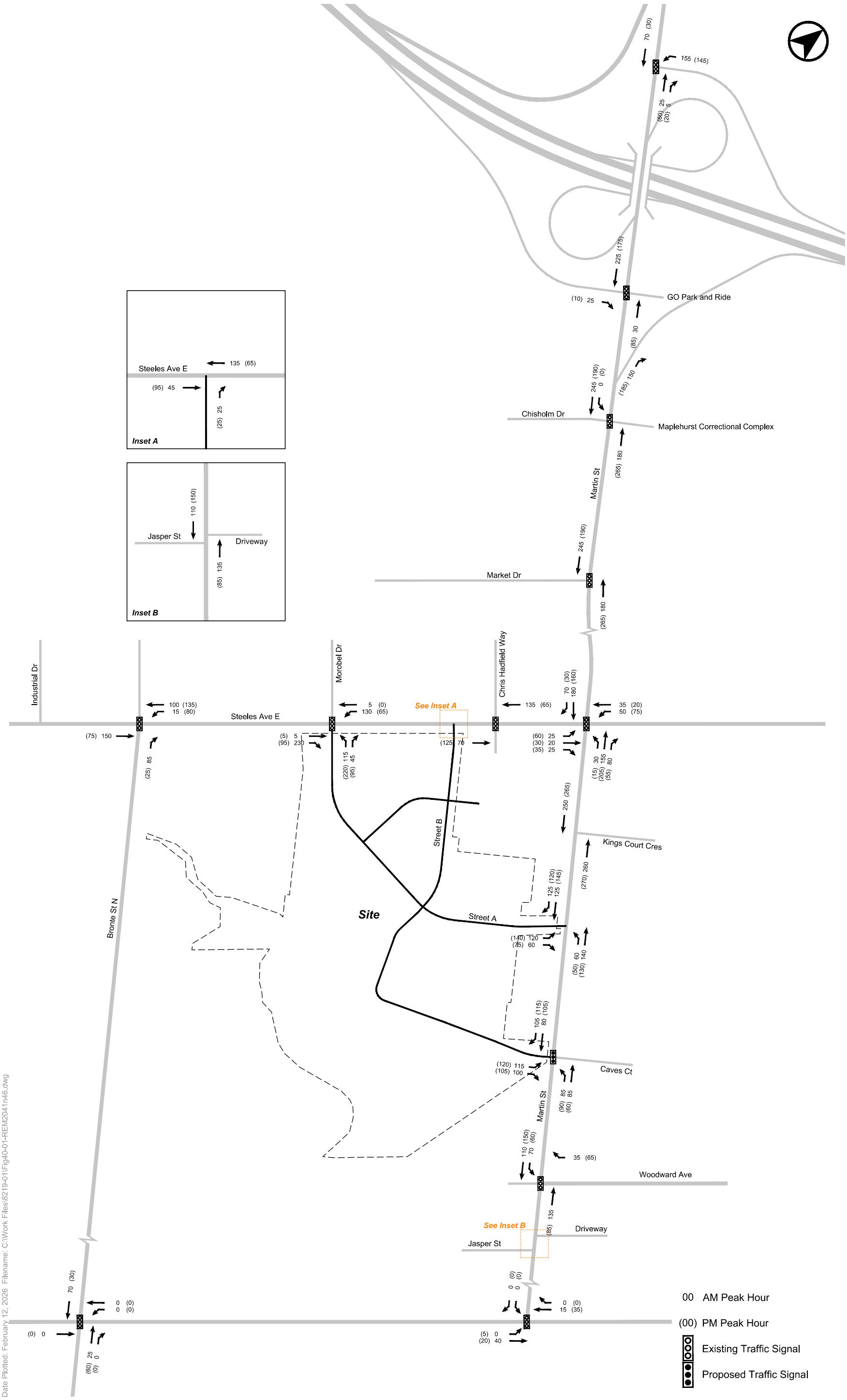


FIGURE 40 2041 & 2046 "BACKGROUND SITE TRAFFIC VOLUMES" TO BE REMOVED

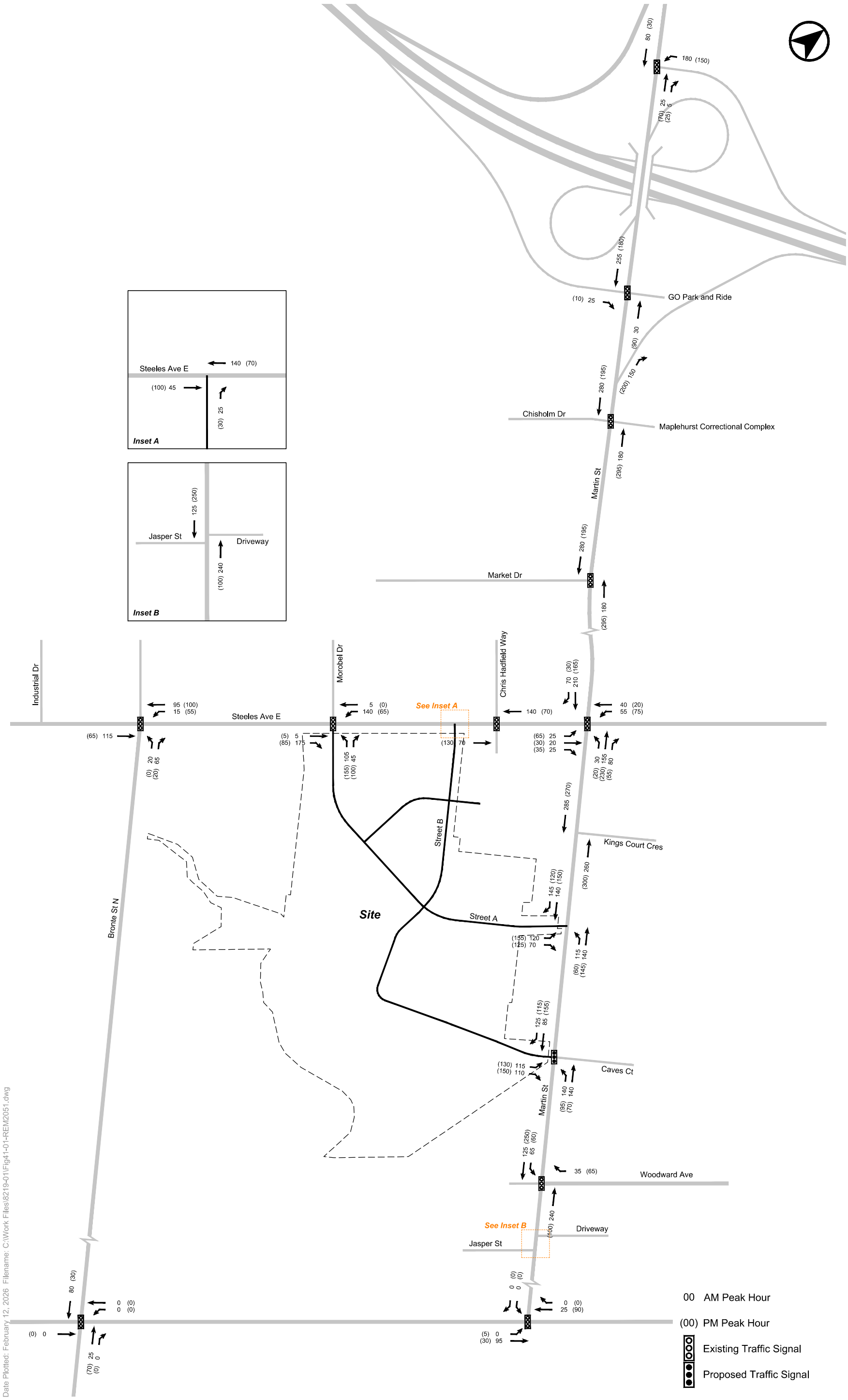
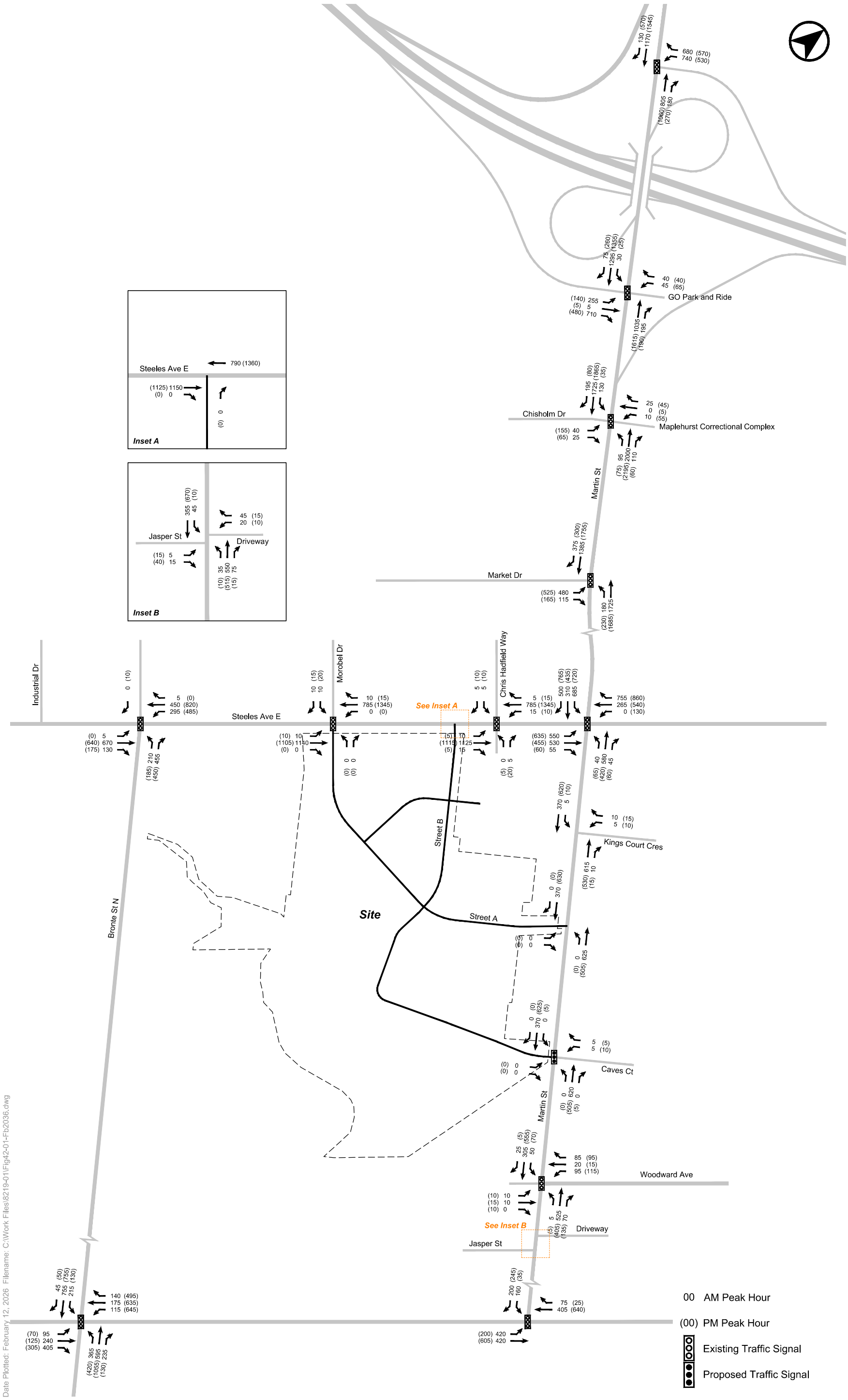


FIGURE 41 2051 "BACKGROUND SITE TRAFFIC VOLUMES" TO BE REMOVED



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FIGURE 42 2036 FUTURE BACKGROUND TRAFFIC VOLUMES

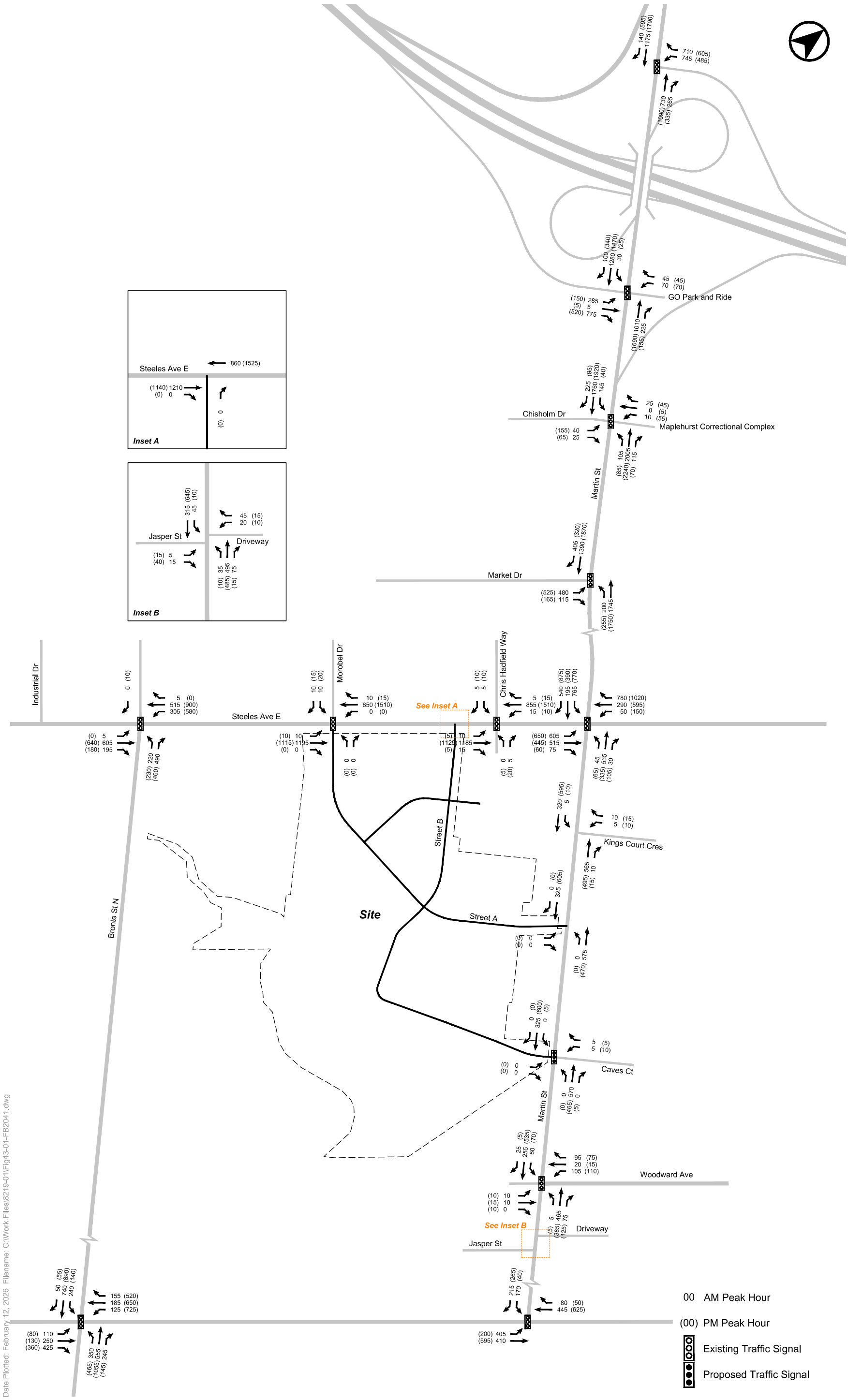


FIGURE 43 2041 FUTURE BACKGROUND TRAFFIC VOLUMES

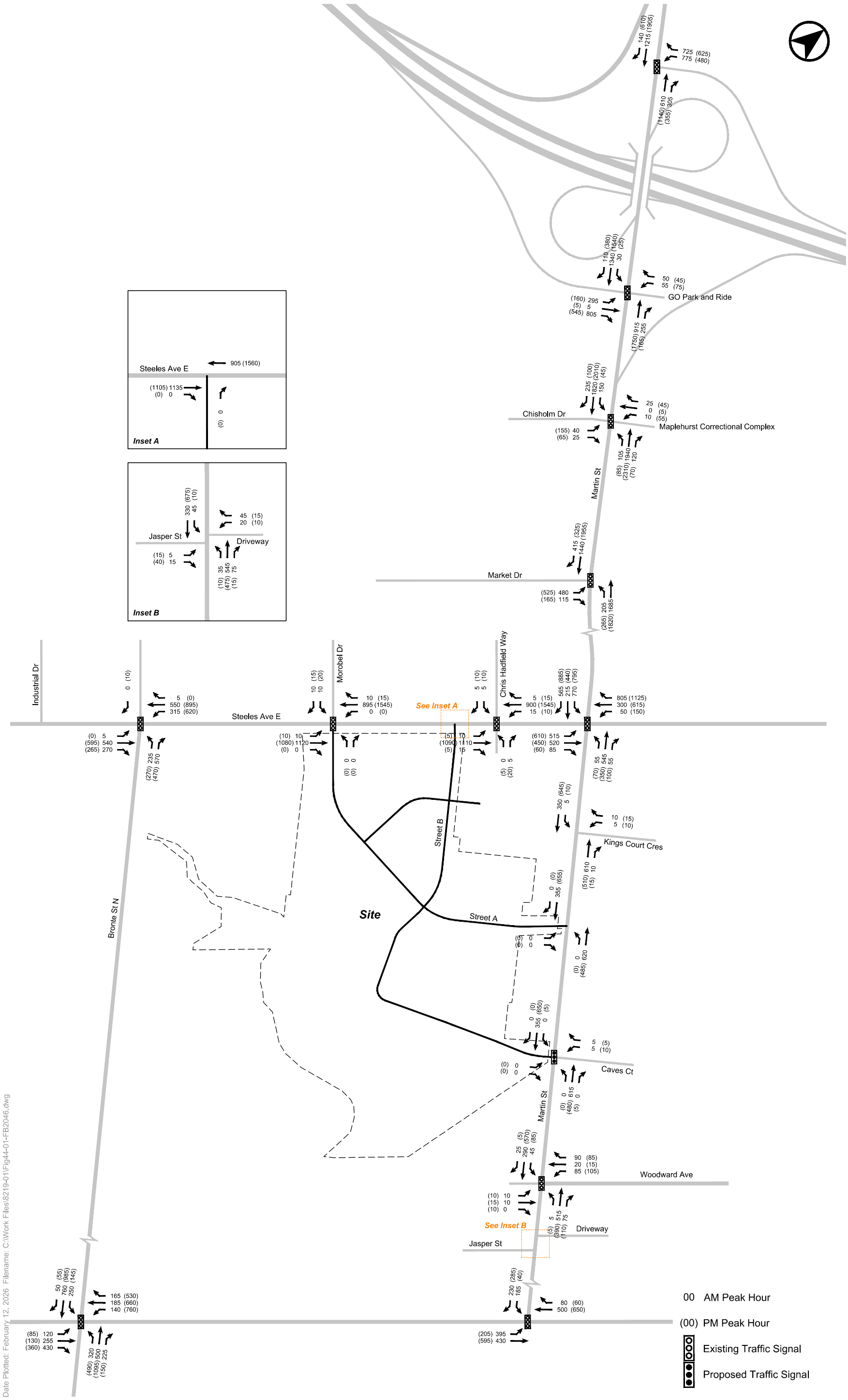
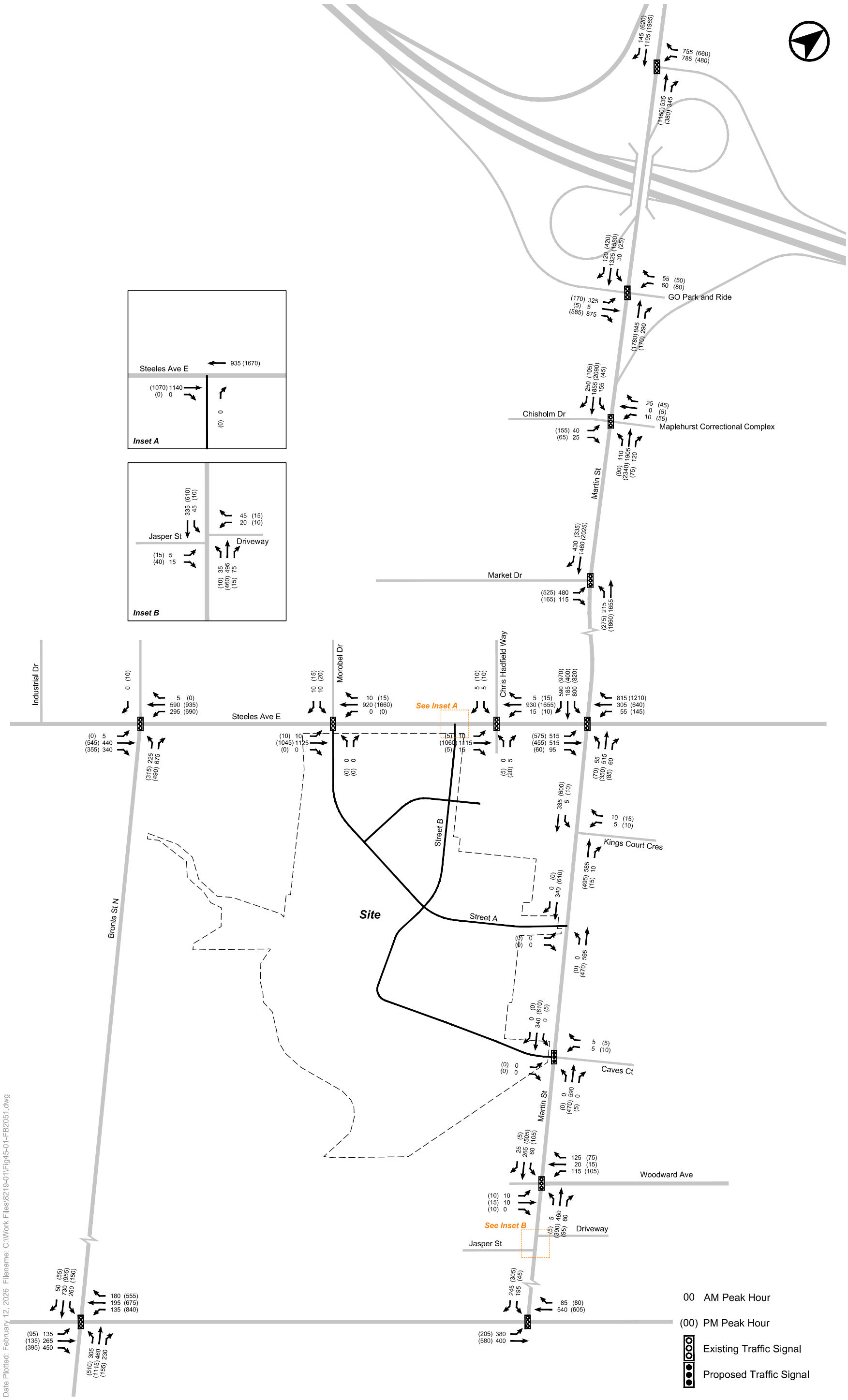


FIGURE 44 2046 FUTURE BACKGROUND TRAFFIC VOLUMES



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FIGURE 45 2051 FUTURE BACKGROUND TRAFFIC VOLUMES

5.7 NEW SITE TRAFFIC VOLUMES

5.7.1 Proposed Site Road Network

The proposed site road network, as described in **Section 4.2.1**, is to be constructed as part of the first phase of development (Phase 1), with the exception of Street C, which is to be constructed with Phase 2.

5.7.2 Development Statistics

The Mountainview West development application includes a site-wide **Official Plan Amendment (OPA)** application to permit a total net density of 3.55 FSI. For the purposes of this report, for the full build-out of the site (Phases 1 and 2), Urban Strategies Inc. has provided a conceptual mixed-use development proposal that includes a total of 4,115 residential units and 4,200 m^2 of retail GFA.

The development of **Phase 1** is proposed through a phase-specific **Zoning By-law Amendment (ZBA)** application and includes 1,065 residential units, inclusive of 955 mid-rise units and 110 townhouses, along with 522 m^2 GFA of at-grade retail. Phase 1 is expected to be completed by 2036.

The number of residential units and floor areas by land use, for what is conceptually referred to as "**Phase 2**", are currently unknown but will be determined through future rezoning applications. For the purposes of this application, Phase 2 has been assumed to include a total of 3,050 residential units and 3,678 m^2 of retail GFA. The Phase 2 concept (full site build-out) is assumed to be completed by 2046 for the purposes of the traffic analysis.

The site development statistics considered within the traffic analysis are summarized **Table 33**.

TABLE 33 SITE STATISTICS CONSIDERED FOR TRAFFIC ANALYSIS

	Phase 1 (completed in 2036)	Phase 2 (completed in 2046)	Full Build-Out
Residential	955 mid-rise units	80 mid-rise units	**1,035 mid-rise units**
	--	2,970 high-rise units	**2,970 high-rise units**
	110 townhouses	--	**110 townhouses**
Sub-total	**1,065 units**	**3,050 units**	**4,115 units**
Retail	522 m^2	3,678 m^2	**4,200 m^2**

5.7.3 Site Residential Vehicle Trip Generation

Residential vehicle trip generation was similarly based upon ITE Trip Generation Manual (11th Edition) for General Urban / Suburban settings. The housing type is known for the proposed development, therefore the corresponding ITE rates have been applied. The base trip generation rates are summarized in **Table 34**.

TABLE 34 ITE RESIDENTIAL TRIP GENERATION RATE

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
ITE 11th Ed. LUC 222 (High-Rise)	0.07	0.20	0.27	0.20	0.12	0.32
ITE 11th Ed. LUC 221 (Mid-Rise)	0.09	0.28	0.37	0.24	0.15	0.39
ITE 11th Ed. LUC 220 (Townhouse)	0.10	0.30	0.40	0.32	0.19	0.51

Note: . Trip generation rate per residential unit.

Travel mode share assumptions have been applied as per **Section 5.3**, consistent with the approach to "background site traffic" vehicle trip generation. A summary of the residential vehicle trips associated with the site is summarized in **Table 35.**

TABLE 35 PROPOSED SITE RESIDENTIAL VEHICLE TRIP GENERATION

		AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
2036 Horizon (1,065 units & 522 m² retail GFA)							
Mid-Rise (955 units)	Trip Generation Rate[1]	0.09	0.28	0.37	0.24	0.15	0.39
	Vehicle Trips	85	265	350	230	145	375
Townhouse (110 units)	Trip Generation Rate[1]	0.10	0.30	0.40	0.32	0.19	0.51
	Vehicle Trips	10	35	45	35	20	55
2036 Residential Vehicle Trips		**95**	**300**	**395**	**265**	**165**	**430**
Interaction with Retail[4]		**0**	**0**	**0**	**0**	**0**	**0**
2036 Primary Residential Vehicle Trips		**95**	**300**	**395**	**265**	**165**	**430**
2041 Horizon (1,065 units & 522 m² retail GFA)							
Mid-Rise (955 units)	Trip Generation Rate[2]	0.08	0.25	0.33	0.21	0.14	0.35
	Vehicle Trips	75	240	315	205	130	335
Townhouse (110 units)	Trip Generation Rate[2]	0.09	0.27	0.36	0.29	0.17	0.46
	Vehicle Trips	10	30	40	25	15	40
2041 Residential Vehicle Trips		**85**	**270**	**355**	**230**	**145**	**375**
Interaction with Retail[4]		**0**	**0**	**0**	**0**	**0**	**0**
2041 Residential Vehicle Trips		**85**	**270**	**355**	**235**	**145**	**375**
2046 Horizon (4,115 units & 4,200 m² retail GFA)							
High-Rise (2,970 units)	Trip Generation Rate[2]	0.06	0.18	0.24	0.18	0.11	0.29
	Vehicle Trips	185	535	720	535	320	855
Mid-Rise (1,035 units)	Trip Generation Rate[2]	0.08	0.25	0.33	0.21	0.14	0.35
	Vehicle Trips	80	260	340	220	140	360
Townhouse (110 units)	Trip Generation Rate[2]	0.09	0.27	0.36	0.29	0.17	0.46
	Vehicle Trips	10	30	40	30	20	50
2046 Residential Vehicle Trips		**275**	**825**	**1,100**	**785**	**480**	**1,265**
Interaction with Retail[4]		**-5**	**-5**	**-10**	**-40**	**-15**	**-55**
2046 Primary Residential Vehicle Trips		**270**	**820**	**1,090**	**745**	**465**	**1,210**
2051 Horizon (4,115 units & 4,200 m² retail GFA)							
High-Rise (2,970 units)	Trip Generation Rate[3]	0.06	0.16	0.22	0.16	0.10	0.26
	Vehicle Trips	165	475	640	475	285	760
Mid-Rise (1,035 units)	Trip Generation Rate[3]	0.07	0.23	0.30	0.19	0.12	0.31
	Vehicle Trips	75	235	310	200	125	325
Townhouse (110 units)	Trip Generation Rate[3]	0.08	0.24	0.32	0.26	0.15	0.41
	Vehicle Trips	10	25	35	30	15	45
2051 Residential Vehicle Trips		**250**	**735**	**985**	**705**	**425**	**1,130**
Interaction with Retail[4]		**-5**	**-5**	**-10**	**-40**	**-15**	**-55**
2051 Primary Residential Vehicle Trips		**245**	**730**	**975**	**665**	**410**	**1,075**

Notes:
1. Assumes an auto driver mode share of 70%, as per the base ITE rate.
2. Assumes an auto driver mode share of 60%, a 10% reduction from the base ITE rate.
3. Assumes an auto driver mode share of 50%, a 20% reduction from the base ITE rate.
4. Detailed interaction calculations between proposed residential and retail provided in **Appendix AA**.

5.7.3.1 Site Residential Trip Distribution & Assignment

Distribution assumptions for the residential site development traffic are based on the following:

- Traffic distribution patterns of site area home-based trips based on 2022 TTS data; and
- Traffic redistribution assumptions accounting for Secondary Plan area growth across Milton.

Residential site trip distribution patterns were derived based on home-based trips by direction to / from the site vicinity (i.e. residential area east of the site) as observed in the 2022 TTS.

It is acknowledged, however, that the TTS vehicle trip origin-destination information only reflects the 2022 buildout of lands in Milton. Given the large-scale growth planned in the Milton area, as described in **Section 5.1**, it is expected that the distribution patterns would shift to reflect the increased use of corridors that connect to the new Secondary Plan areas.

An allowance for this redistribution was estimated by adjusting the residential 2022 TTS trip distribution through "upscaling" the proportion of trips to / from traffic zones in the vicinity of the Secondary Plan areas, reflecting the scale of population and employment increase in these Secondary Plan areas. The resultant adjusted residential site traffic distribution is summarized in **Table 32**.

TABLE 36 PROPOSED SITE RESIDENTIAL TRAFFIC TRAVEL DISTRIBUTION

Study Area Boundary	Residential	
	Inbound	Outbound
Highway 401 to/from E	22% (22%)	12% (7%)
Highway 401 to/from W	0% (1%)	5% (2%)
Martin Street to/from N	21% (9%)	11% (7%)
Martin Street to/from S	6% (2%)	2% (2%)
Main Street to/from E	17% (21%)	19% (25%)
Woodward Avenue to/from E	3% (7%)	6% (8%)
Tremaine Road to/from S	0% (7%)	6% (10%)
Bronte Street to/from S	7% (3%)	3% (7%)
Steeles Avenue to/from E	11% (7%)	9% (9%)
Tremaine Road to/from N	0% (1%)	3% (0%)
Thompson Street to/from S	2% (4%)	4% (3%)
Ontario Street to/from S	11% (17%)	21% (20%)

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)

Proposed site traffic was assigned to the future road network based on the above adjusted residential travel distribution at each horizon. Proposed residential site traffic volumes at the 2036, 2041, 2046 and 2051 horizons are illustrated in **Figure 46** to **Figure 49**.

5.7.4 Site Retail Vehicle Trip Generation

Retail trip generation rates have been established based on a review of ITE trip generation rates outlined within the ITE Trip Generation Manual 11th Edition for the "Strip Retail Plaza" land use (i.e. LUC 822) that is most similar to the scale of total retail GFA being proposed. The ITE trip generation rates have been adopted as the baseline trip rates for the 2036 horizon. Reductions in the order of 10% and 20% to these baseline trip generation rates have been adopted for the 2041/2046 and 2051 horizons, respectively, to account for the continued auto driver mode share reduction in the future as discussed in **Section 5.3**.

Retail and residential trip interaction is calculated based on the methodology and interaction ratios prescribed in Section 6.5 within the ITE Trip Generation Handbook 3rd Edition (September 2017) at each horizon. The interaction calculations account for some distance between the retail and residential uses (in the order of approximately 250 metres on average) which yields a 2% reduction in baseline interaction ratios per the ITE methodology. Pass-by rates are based on the average pass-by ratio provided for LUC822 published in the ITE Trip Generation Appendices. Application of these ratios and interaction calculations are provided in **Appendix AA**. The retail vehicle trips associated with the site is summarized in **Table 37**.

TABLE 37 PROPOSED SITE RETAIL VEHICLE TRIP GENERATION

		AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
2036 Horizon (1,065 units & 522 m² retail GFA)							
Retail (522 m² GFA)	Trip Generation Rate[1]	1.42	0.94	2.36	3.30	3.29	6.59
	Vehicle Trips	10	5	15	20	20	40
Interaction with Residential		*0*	*0*	*0*	*0*	*0*	*0*
Pass-by (40%)		*0*	*0*	*0*	*8*	*8*	*16*
2036 Primary Retail Trips		**10**	**5**	**15**	**12**	**12**	**24**
2041 Horizon (1,065 units & 522 m² retail GFA)							
Retail (522 m² GFA)	Trip Generation Rate[2]	1.28	0.85	2.12	2.97	2.96	5.93
	Vehicle Trips	5	5	10	15	15	30
Interaction with Residential		*0*	*0*	*0*	*0*	*0*	*0*
Pass-by (40%)		*0*	*0*	*0*	*-6*	*-6*	*-12*
2041 Primary Retail Trips		**5**	**5**	**10**	**9**	**9**	**18**
2046 Horizon (4,115 units & 4,200 m² retail GFA)							
Retail (4,200 m² GFA)	Trip Generation Rate[2]	1.28	0.85	2.12	2.97	2.96	5.93
	Vehicle Trips	55	40	95	135	135	270
Interaction with Residential		*-5*	*-5*	*-10*	*-15*	*-40*	*-55*
Pass-by (40%)		*0*	*0*	*0*	*43*	*43*	*86*
2046 Primary Retail Trips		**50**	**35**	**85**	**77**	**52**	**129**
2051 Horizon (4,115 units & 4,200 m² retail GFA)							
Retail (4,200 m² GFA)	Trip Generation Rate[3]	1.14	0.75	1.89	2.64	2.63	5.27
	Vehicle Trips	50	35	85	120	120	240
Interaction with Residential		*-5*	*-5*	*-10*	*-15*	*-40*	*-55*
Pass-by (40%)		*0*	*0*	*0*	*37*	*37*	*74*
2051 Primary Retail Trips		**45**	**30**	**75**	**68**	**43**	**111**

Notes:
1. Rates in trips/1,000 ft² reflecting an auto driver mode share of 70%, as per the base ITE rate.
2. Rates in trips/1,000 ft² reflecting an auto driver mode share of 60%, a 10% reduction from the base ITE rate.
3. Rates in trips/1,000 ft² reflecting an auto driver mode share of 50%, a 20% reduction from the base ITE rate.
4. Detailed interaction calculations between proposed residential and retail provided in **Appendix AA.**

5.7.4.1 Site Retail Trip Distribution & Assignment

Net retail site traffic distribution is based on existing traffic volume ratios along Steeles Avenue East and Martin Street by direction during the morning and afternoon peak hours. Traffic volumes have been further distributed at the boundaries of the study area network along Steeles Avenue East (i.e. at Tremaine Road and James Snow Parkway) and along Martin Street (i.e. at Main Street) based on existing turning movement ratios. The resultant retail site traffic distribution is summarized in **Table 36**.

Pass-by retail traffic is similarly distributed to the Martin Street or Steeles Avenue East points of access based on the relative concentration of existing traffic along these roadways by direction.

TABLE 38 PROPOSED SITE RETAIL TRAFFIC TRAVEL DISTRIBUTION

Study Area Boundary	Retail	
	Inbound	Outbound
Highway 401 to/from E	--	--
Highway 401 to/from W	--	--
Martin Street to/from N	24% (32%)	17% (10%)
Martin Street to/from S	21% (15%)	12% (19%)
Main Street to/from E	--	--
Woodward Avenue to/from E	--	--
Tremaine Road to/from S	36% (26%)	23% (32%)
Bronte Street to/from S	--	--
Steeles Avenue to/from E	12% (22%)	42% (31%)
Steeles Avenue to/from W	4% (3%)	3% (6%)
Tremaine Road to/from N	3% (2%)	3% (2%)
Thompson Street to/from S	--	--
Ontario Street to/from S	--	--

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)

Proposed site traffic was assigned to the future road network based on the above retail travel distribution at each horizon. Proposed retail site traffic volumes at the 2036, 2041, 2046 and 2051 horizons are illustrated in **Figure 50** to **Figure 53**.

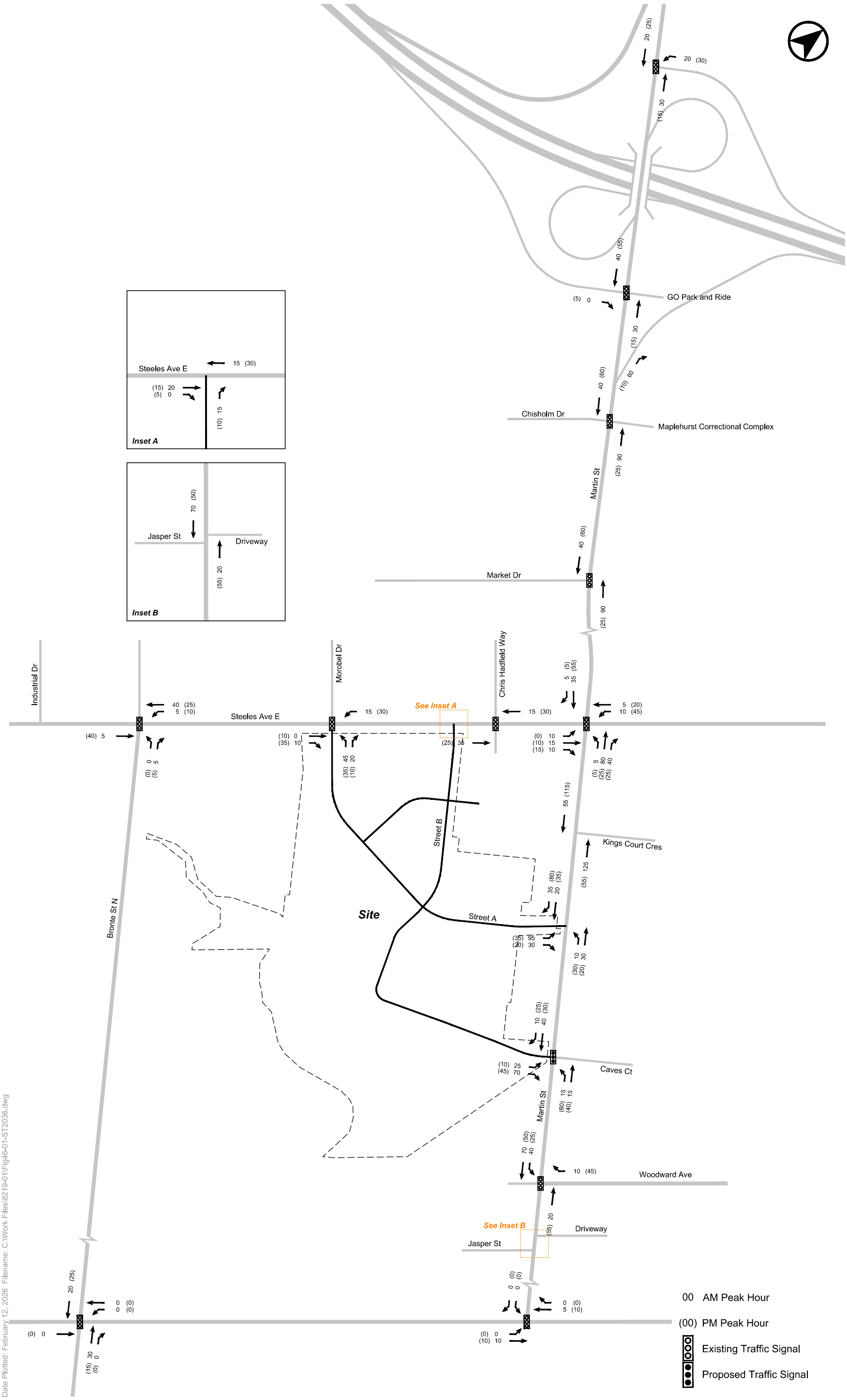


FIGURE 46 2036 SITE RESIDENTIAL TRAFFIC VOLUMES

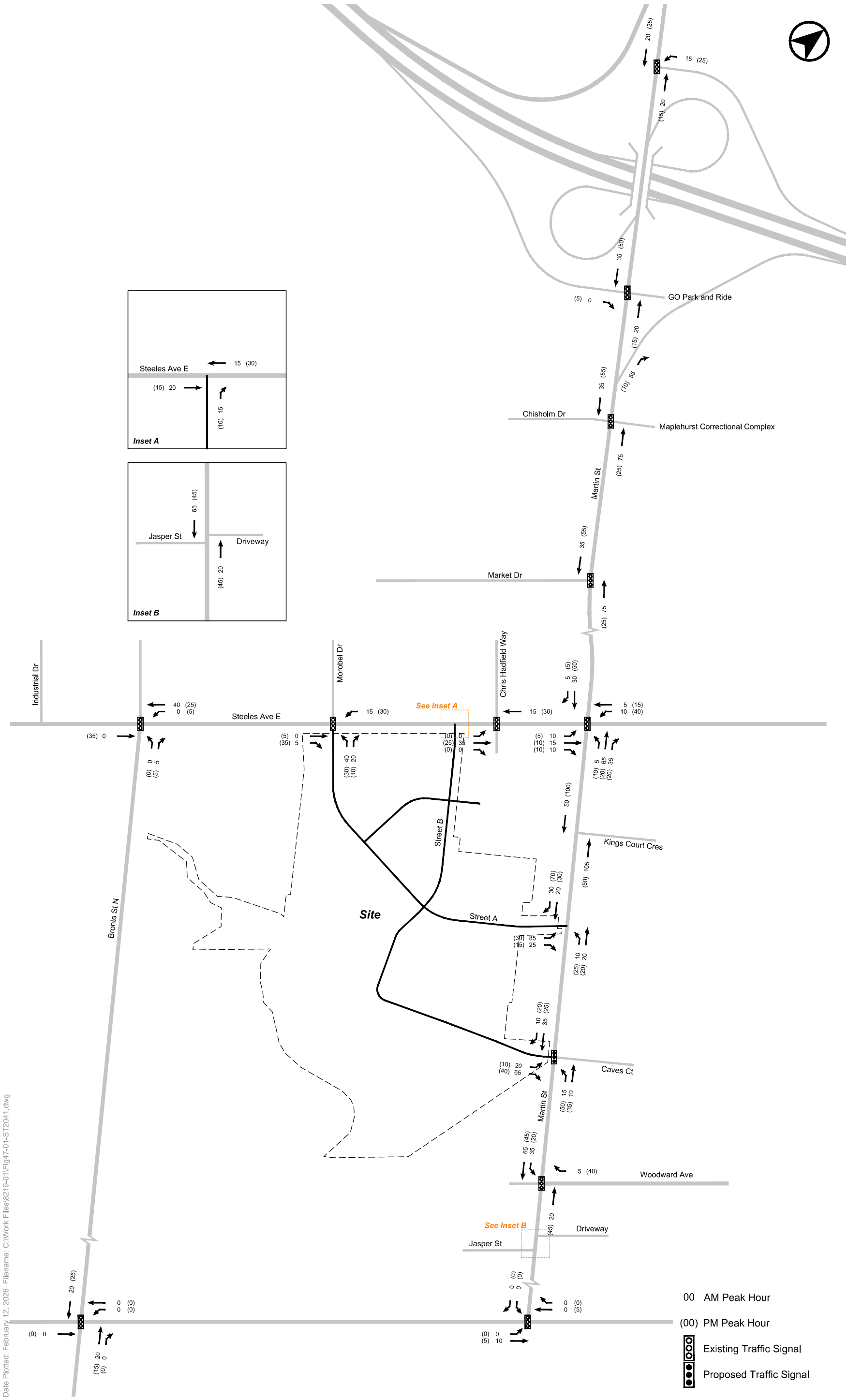


FIGURE 47 2041 SITE RESIDENTIAL TRAFFIC VOLUMES

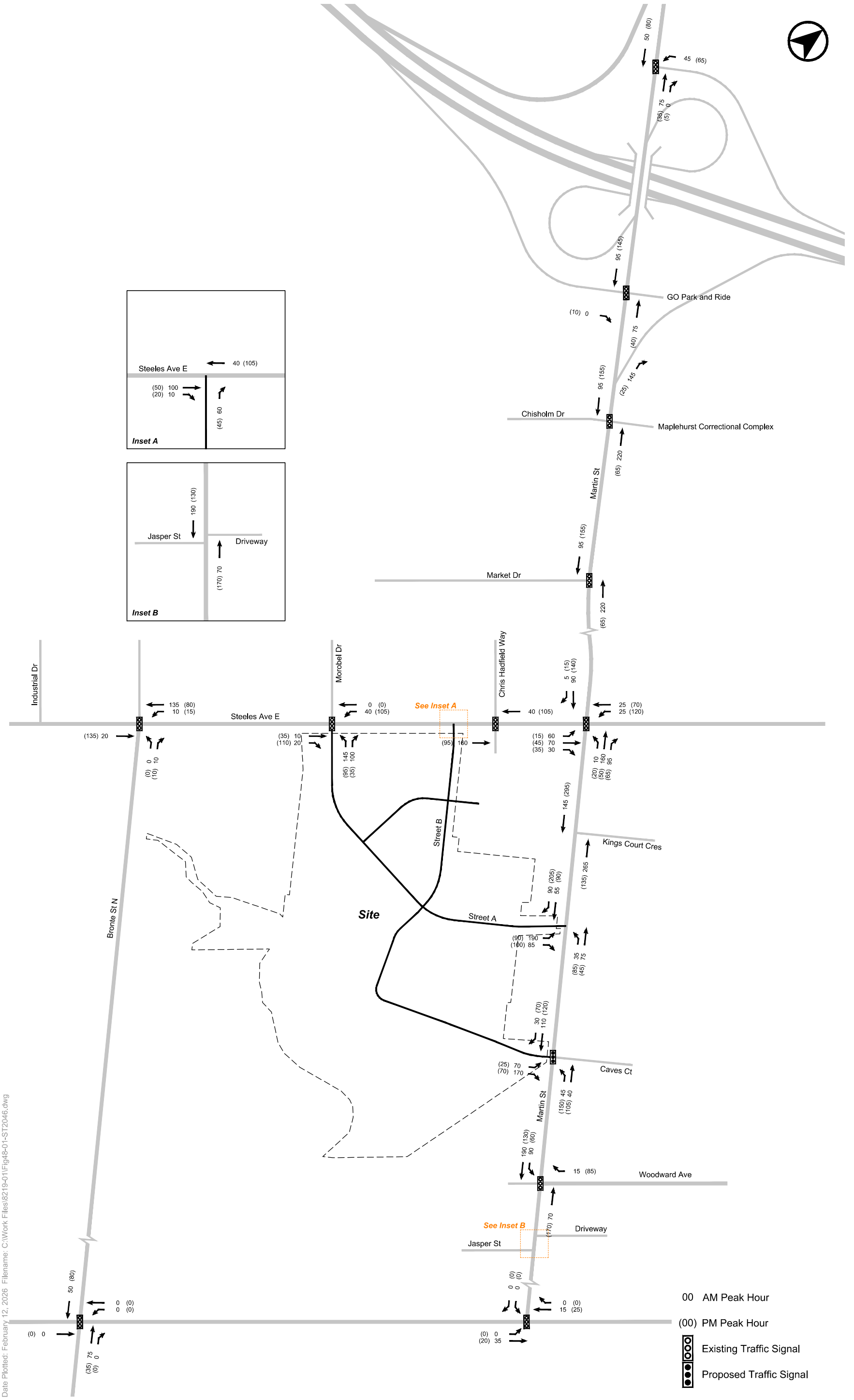


FIGURE 48 2046 SITE RESIDENTIAL TRAFFIC VOLUMES

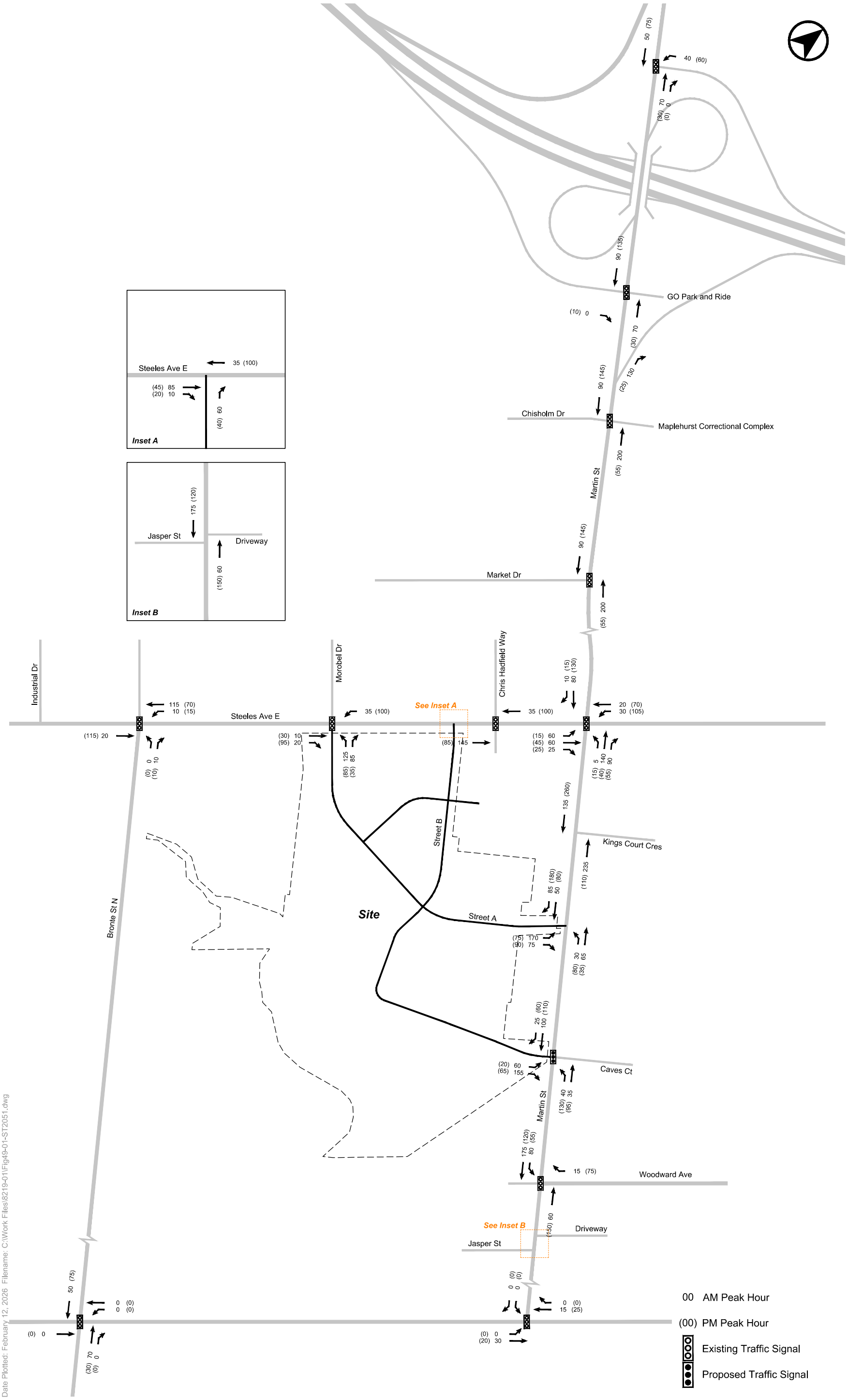


FIGURE 49 2051 SITE RESIDENTIAL TRAFFIC VOLUMES

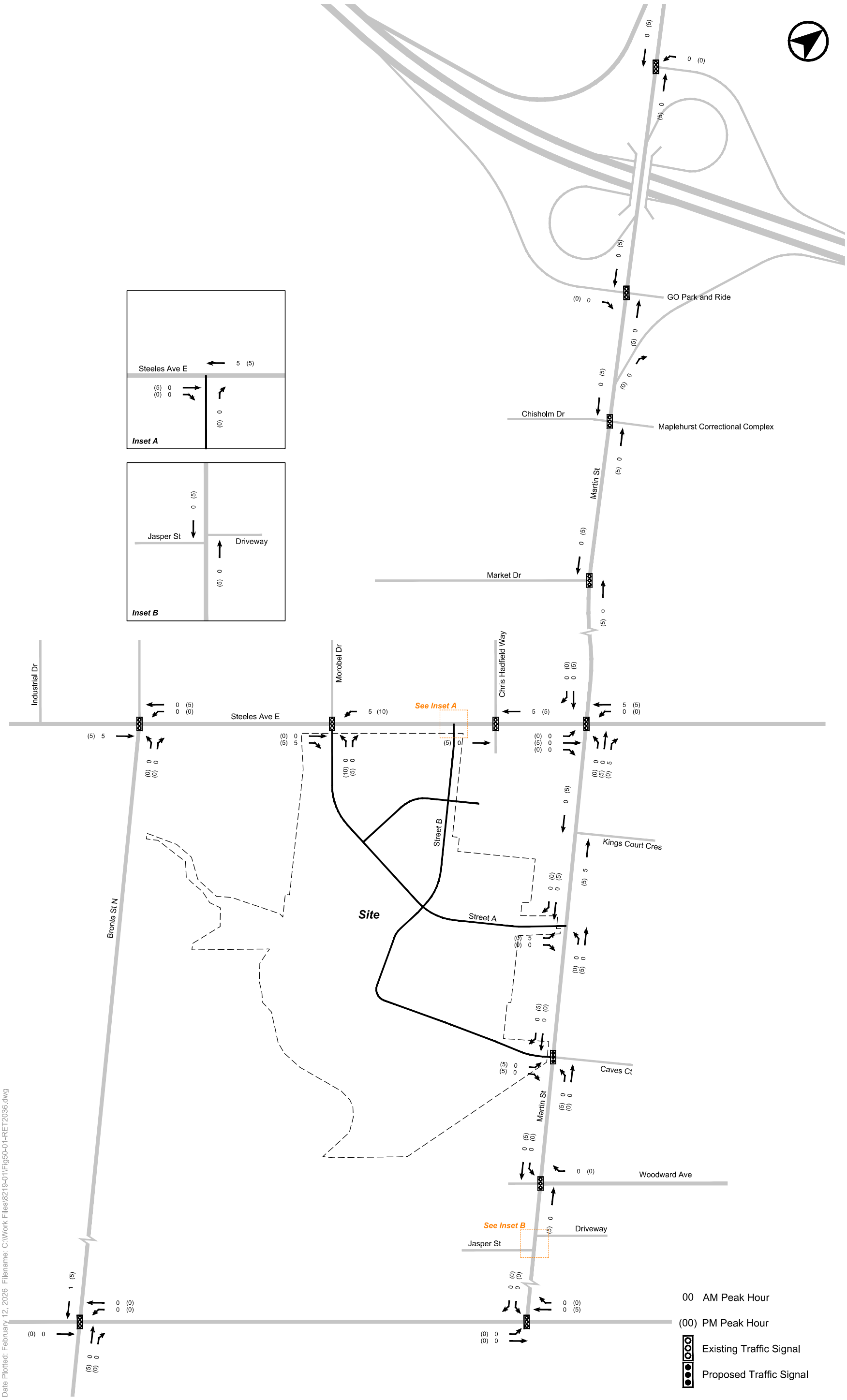


FIGURE 50 2036 SITE RETAIL TRAFFIC VOLUMES

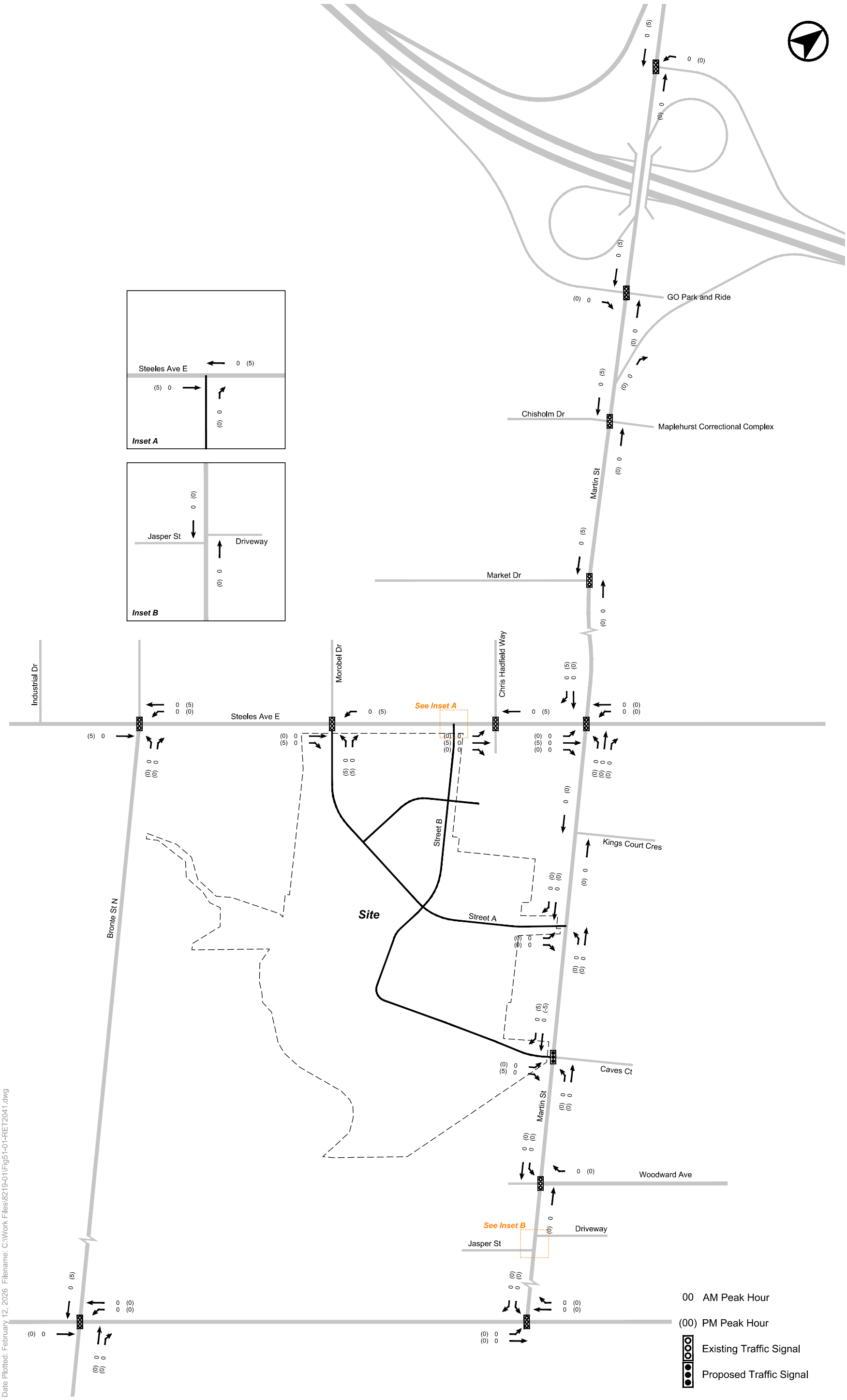


FIGURE 51 2041 SITE RETAIL TRAFFIC VOLUMES

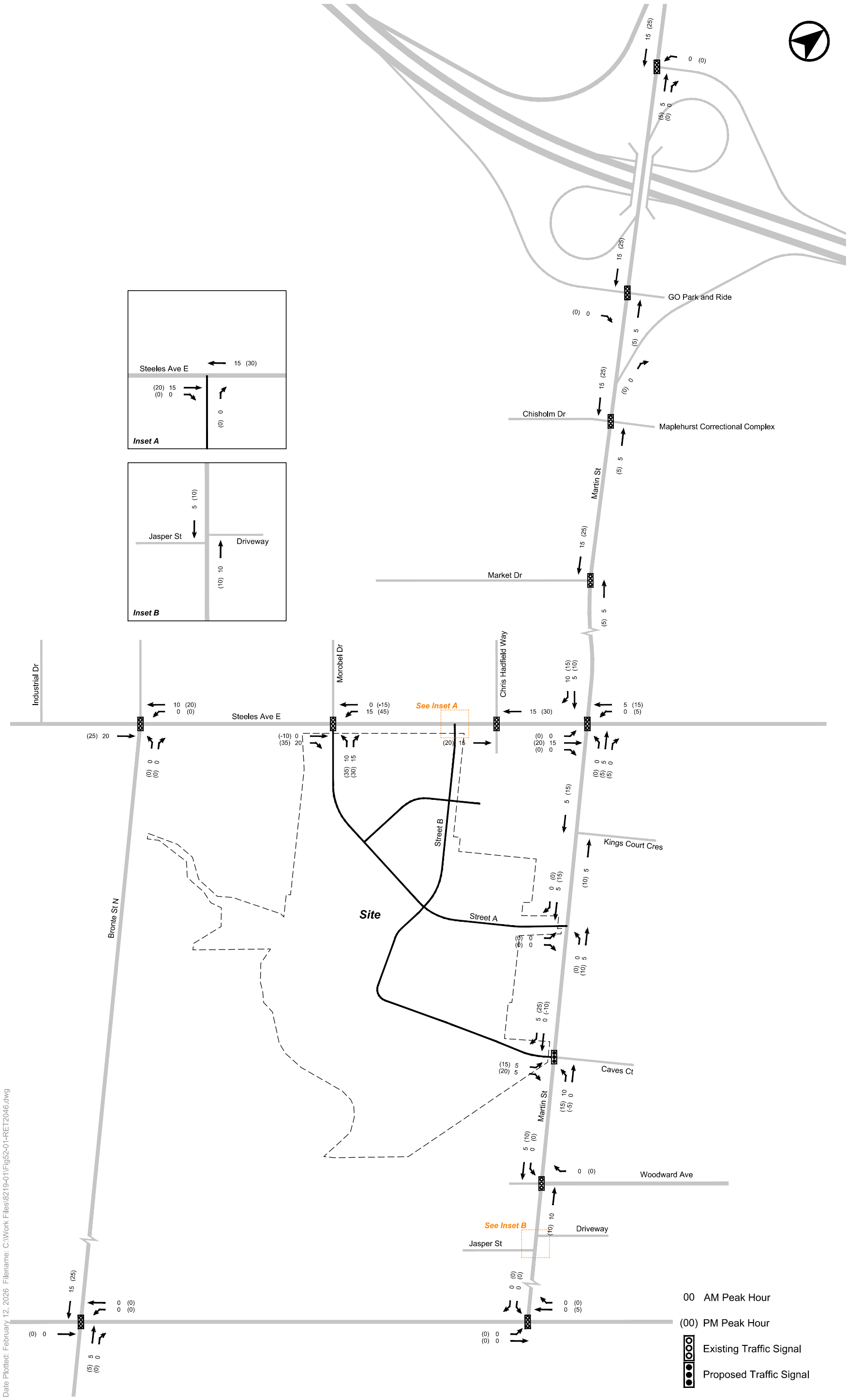


FIGURE 52 2046 SITE RETAIL TRAFFIC VOLUMES

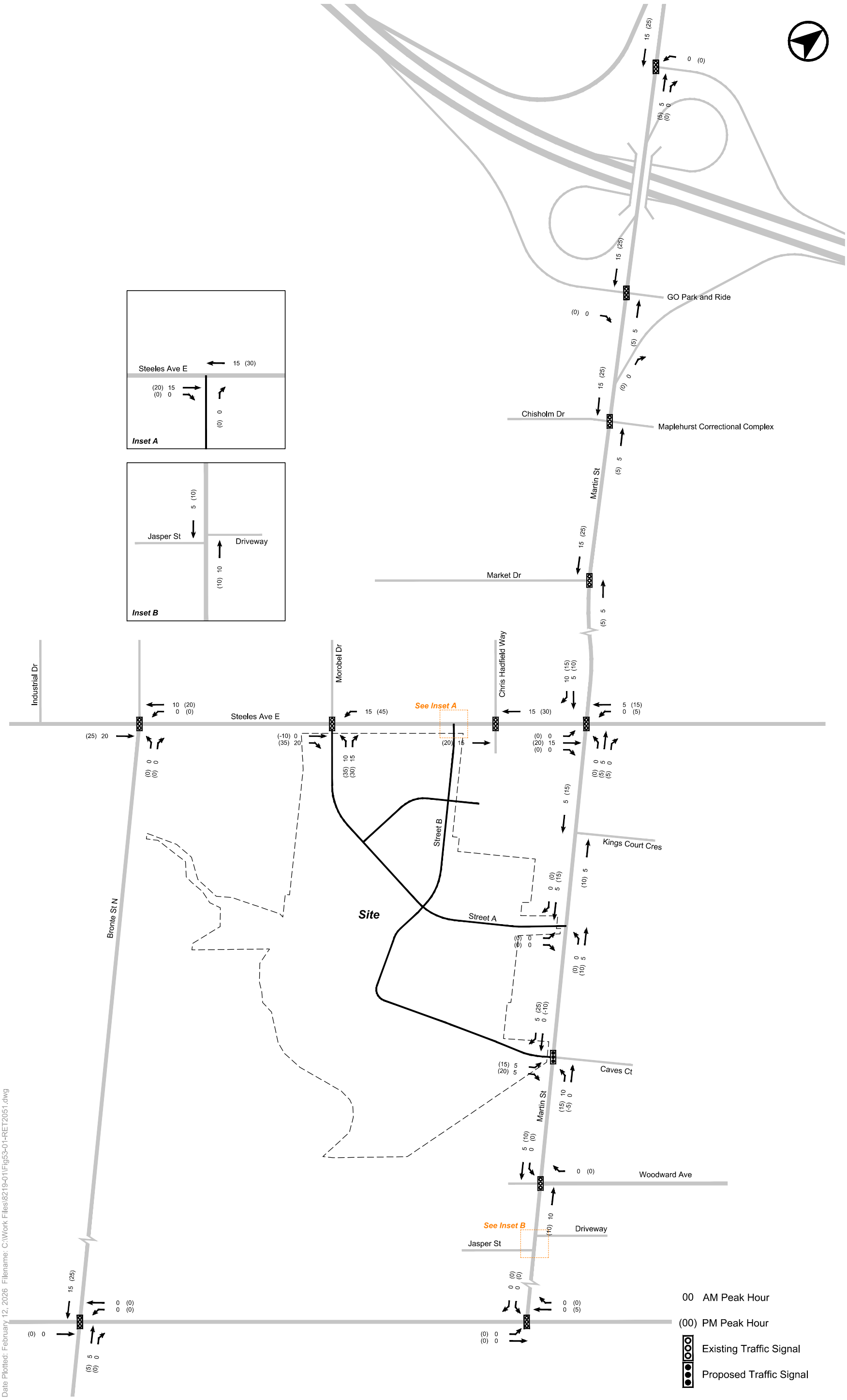


FIGURE 53 2051 SITE RETAIL TRAFFIC VOLUMES

5.7.5 Total Site Trip Generation

The total site traffic including the residential and retail components after accounting for interaction between these two uses are summarized in **Table 39** for each horizon. These values reflect declining **auto driver** mode share, with a 10% reduction in 2041 and 2046 and a 20% reduction in 2051. It is noted that these vehicle trips are considered to be **auto-driver** trips.

TABLE 39 SITE VEHICLE TRIP GENERATION SUMMARY

Horizon	Land Use		AM Peak Hour			PM Peak Hour		
			In	Out	2-Way	In	Out	2-Way
2036	Residential		95	300	395	265	165	430
	Retail	Primary	10	5	15	8	8	16
		Passby	0	0	0	12	12	24
	Total		**105**	**305**	**410**	**285**	**185**	**470**
2041	Residential		85	270	355	230	145	375
	Retail	Primary	5	5	10	6	6	12
		Passby	0	0	0	9	9	18
	Total		**90**	**275**	**365**	**245**	**160**	**405**
2046	Residential		270	820	1,090	745	465	1,210
	Retail	Primary	50	35	85	55	30	85
		Passby	0	0	0	65	65	130
	Total		**320**	**855**	**1,175**	**865**	**560**	**1,425**
2051	Residential		245	730	975	665	410	1,075
	Retail	Primary	45	30	75	68	43	111
		Passby	0	0	0	37	37	74
	Total		**290**	**760**	**1,050**	**770**	**490**	**1,260**

Based on the foregoing, the site will generate the following two-way vehicle trips at each horizon:

- **2036 Horizon** AM: 410 two-way site vehicle trips; PM: 470 two-way site vehicle trips
- **2041 Horizon** AM: 365 two-way site vehicle trips; PM: 405 two-way site vehicle trips
- **2046 Horizon** AM: 1,175 two-way site vehicle trips; PM: 1,425 two-way site vehicle trips
- **2051 Horizon** AM: 1,050 two-way site vehicle trips; PM: 1,260 two-way site vehicle trips

Total development site traffic including residential and retail trip assignment on the study area network is illustrated in **Figure 54** through **Figure 57** for the 2036, 2041, 2046 and 2051 horizons, respectively.

5.7.6 Site Traffic Comparison

Table 40 provides a comparison between the "background site traffic" (i.e. traffic associated with the Region's JBPE projections provided in March 2025) for removal from the area road network and the traffic generation associated with the current development proposal. **Across all scenarios, the development proposal is forecast to generate either less than or similar levels of site traffic volumes, when compared to the JBPE background traffic volumes assumed for the site**. The net development site traffic generation is as follows:

- **2036 Horizon** AM: -230 site vehicle trips; PM: -175 site vehicle trips
- **2041 Horizon** AM: -840 site vehicle trips; PM: -790 site vehicle trips
- **2046 Horizon** AM: -30 site vehicle trips; PM: +230 site vehicle trips
- **2051 Horizon** AM: -245 site vehicle trips; PM: -15 site vehicle trips

Although the current development concept includes more residential units than what was considered within the JBPE site projection (4,115 units vs. 2,209 units by 2051, respectively), the JBPE projection includes employment (1,305 jobs by 2051), which contributes to the generally higher site traffic volumes.

A comparison of the vehicle site trip generation based on the current development concept and the JBPE travel demands, are provided in **Table 40.**

TABLE 40 BACKGROUND SITE TRAFFIC" VS. PROPOSED DEVELOPMENT SITE TRAFFIC

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
2036 Horizon						
"Background Site Traffic" (1,198 units & 393 jobs)	280	360	640	320	325	645
Proposed Site Traffic (1,065 units & 522 m^2 retail GFA)	105	305	410	285	185	470
Difference	**-175**	**-55**	**-230**	**-35**	**-140**	**-175**
2041 Horizon						
"Background Site Traffic" (1,999 units & 1,104 jobs)	635	570	1,205	515	680	1,195
Proposed Site Traffic (1,065 units & 522 m^2 retail GFA)	90	275	365	245	160	405
Difference	**-545**	**-295**	**-840**	**-270**	**-520**	**-790**
2046 Horizon						
"Background Site Traffic" (1,999 units & 1,104 jobs)	635	570	1,205	515	680	1,195
Proposed Site Traffic (4,115 units & 4,200 m^2 retail GFA)	320	855	1,175	865	560	1,425
Difference	**-315**	**+285**	**-30**	**+350**	**-120**	**+230**
2051 Horizon						
"Background Site Traffic" (2,209 units & 1,305 jobs)	725	570	1,295	525	750	1,275
Proposed Site Traffic (4,115 units & 4,200 m^2 retail GFA)	290	760	1,050	770	490	1,260
Difference	**-435**	**+190**	**-245**	**+245**	**-260**	**-15**

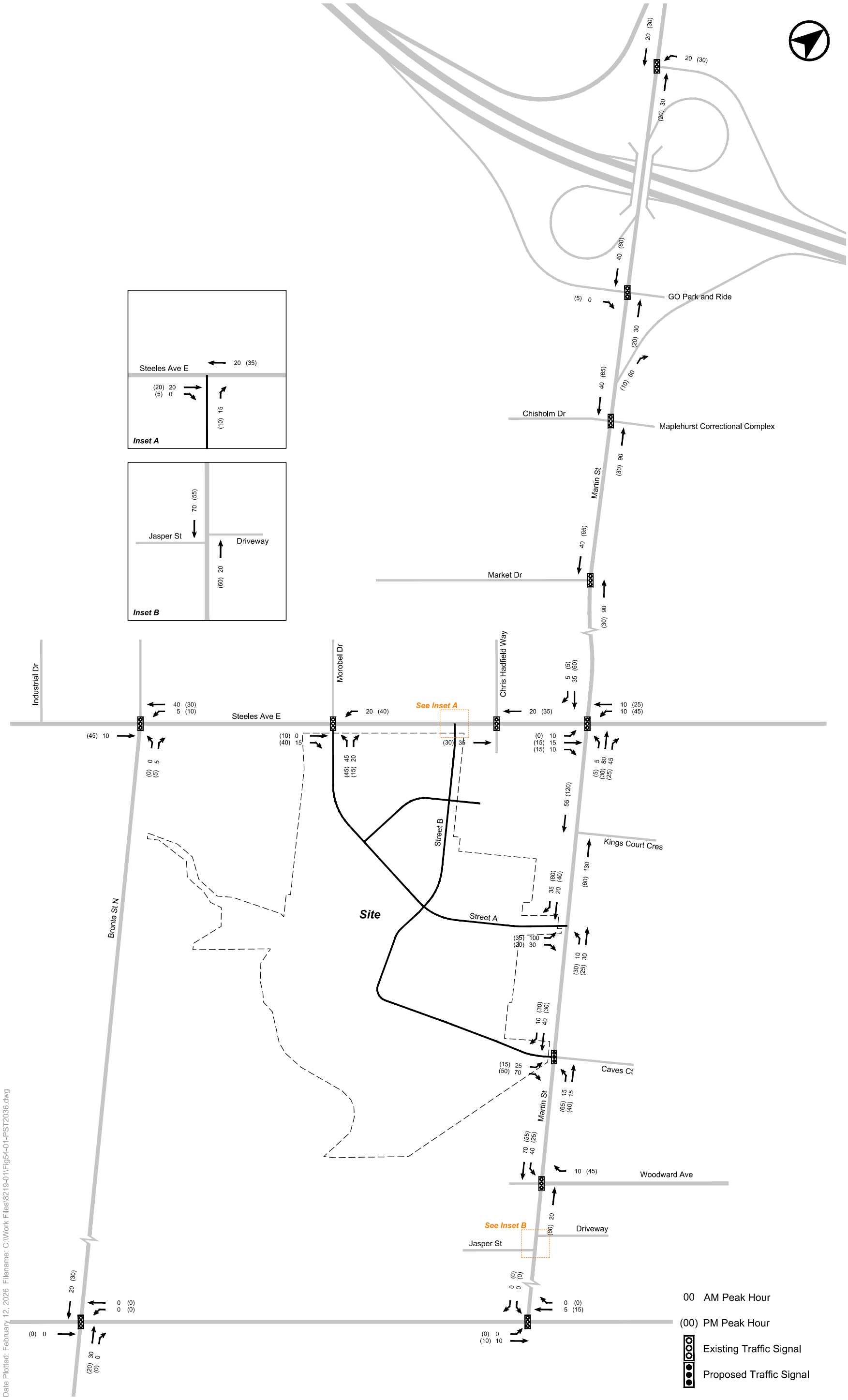


FIGURE 54 PROPOSED SITE TRAFFIC VOLUMES - 2036 HORIZON

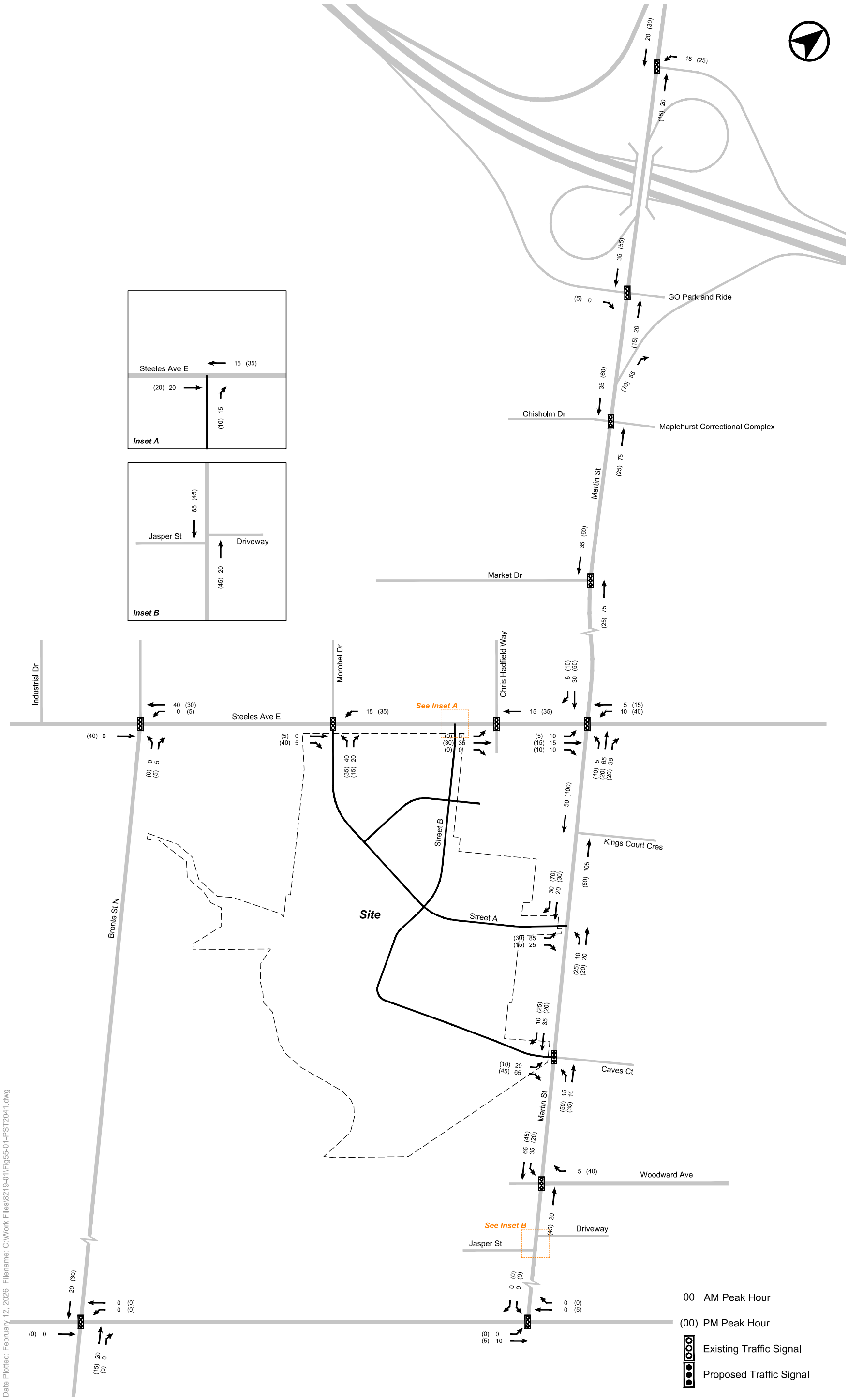


FIGURE 55 PROPOSED SITE TRAFFIC VOLUMES - 2041 HORIZON

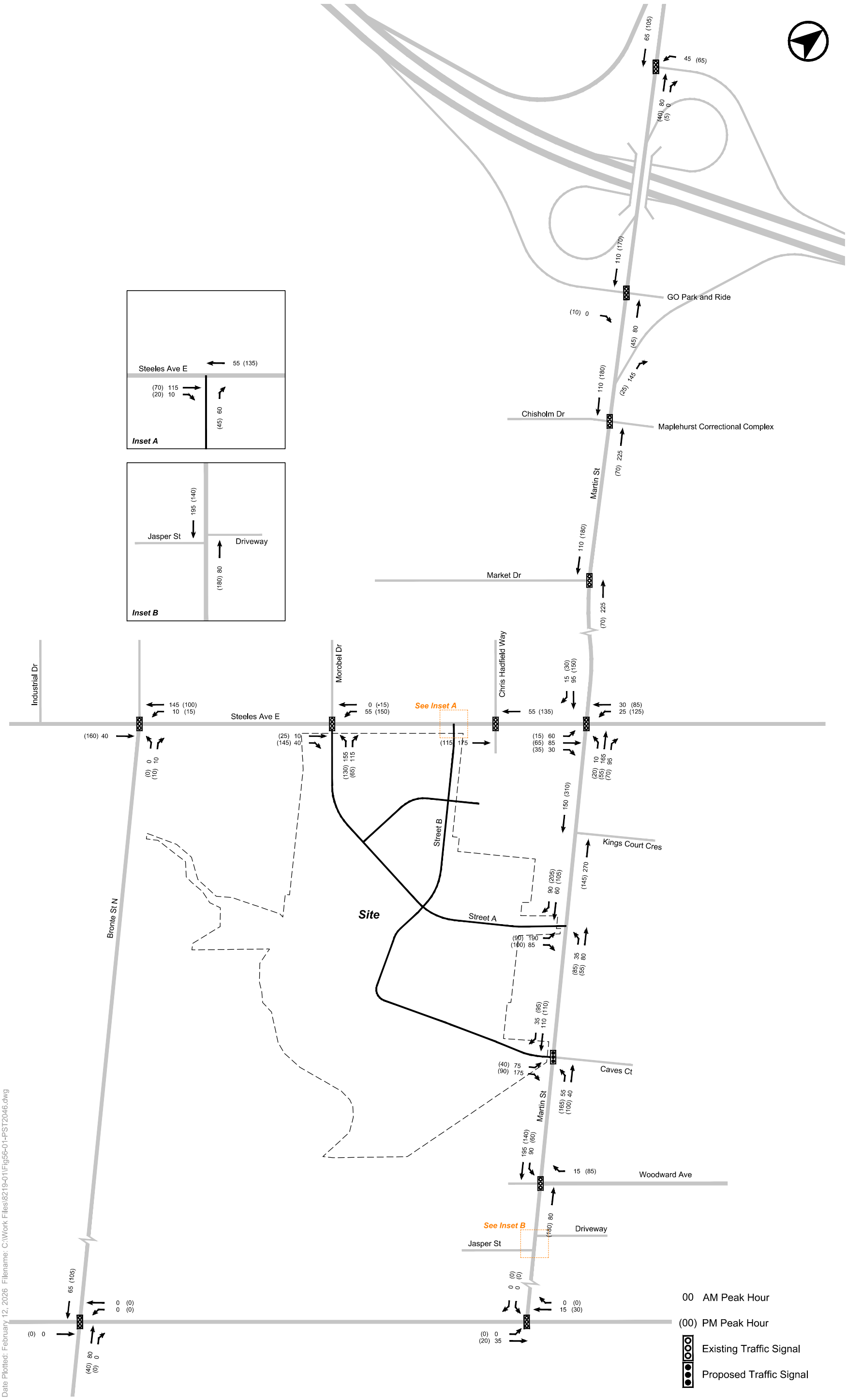


FIGURE 56 PROPOSED SITE TRAFFIC VOLUMES - 2046 HORIZON

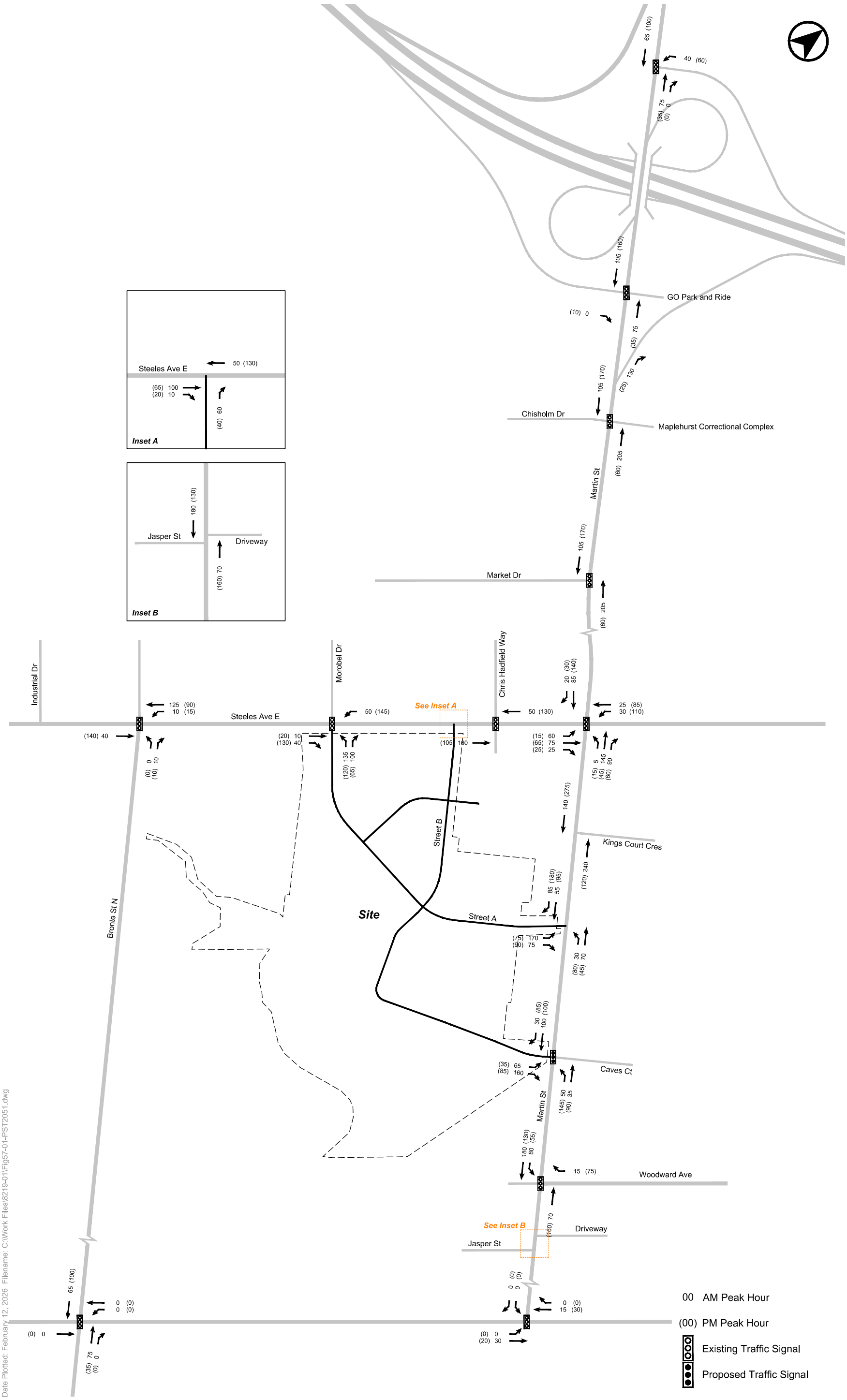


FIGURE 57 PROPOSED SITE TRAFFIC VOLUMES - 2051 HORIZON

5.8 FUTURE TOTAL TRAFFIC VOLUMES

5.8.1 Future Total Street Network

The future total street network includes all planned (Provincial, Regional, Town) road network improvements, as reflected in the future background road network, as well as the proposed site road network by development phase.

The proposed transportation network for the site is planned to be completed as part of Phase 1, with exception of Street C, which is to be constructed as part of Phase 2. Therefore, the horizon years consider the same future total street network, except for Street C, which has been included only in the 2046 and 2051 horizon road networks.

For the purposes of the future horizon operations assessment, the adopted future road network will reflect all the infrastructure improvements as identified by the Town and Region per **Section 5.1.3** in addition to the improvements suggested by BA Group to accommodate the critical traffic growth as outlined in the analysis in **Section 5.6.2**. The adopted future street network is illustrated in **Figure 58**.

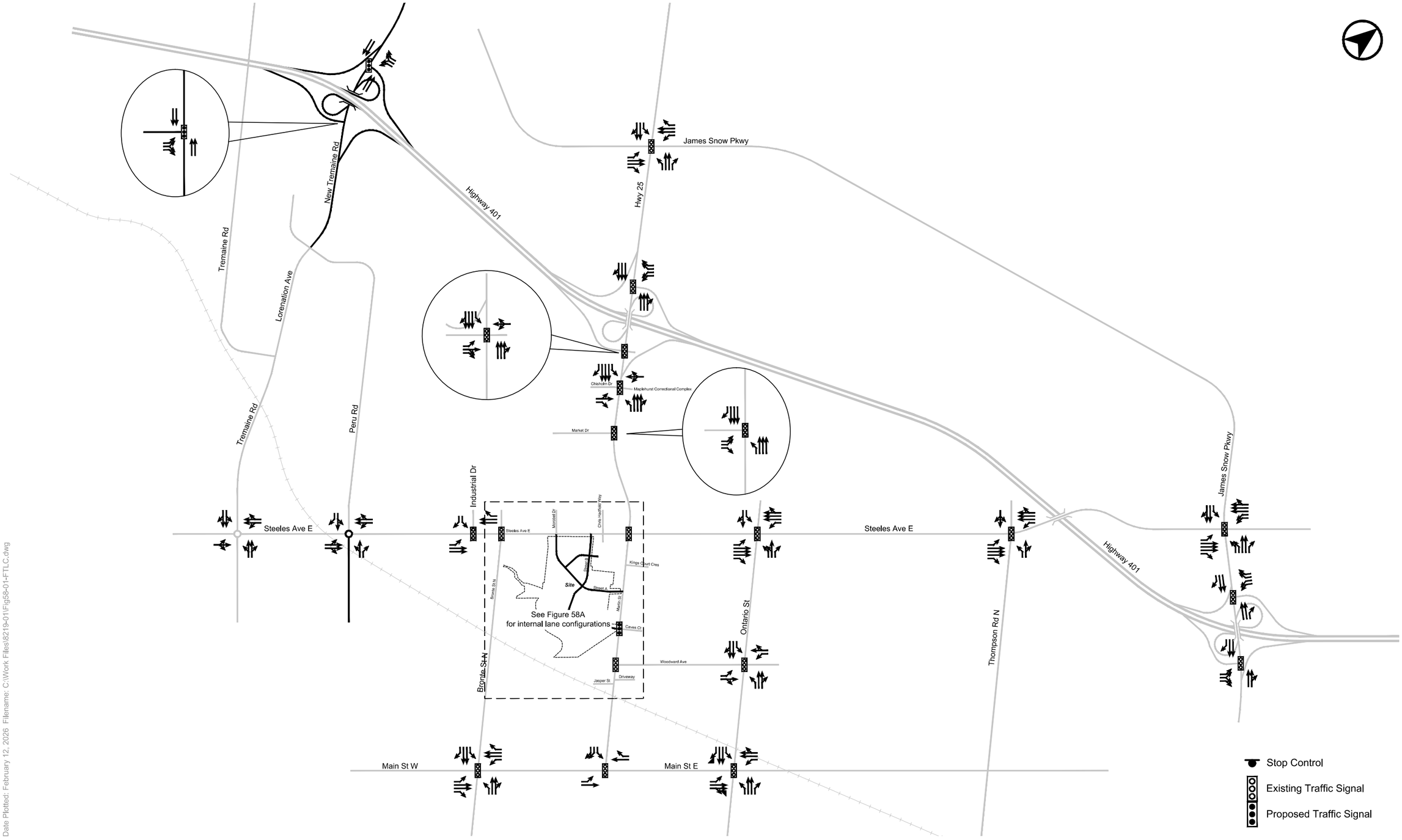
5.8.2 Future Total Volumes

The future total traffic volumes for each traffic analysis scenario represent the sum of future background, "background site traffic" removal and proposed site traffic volumes, corresponding to each horizon year. It is important to note that the future total volumes reflect the reduced (constrained) future background traffic volumes.

The future total traffic volume scenarios are summarized in **Table 41**.

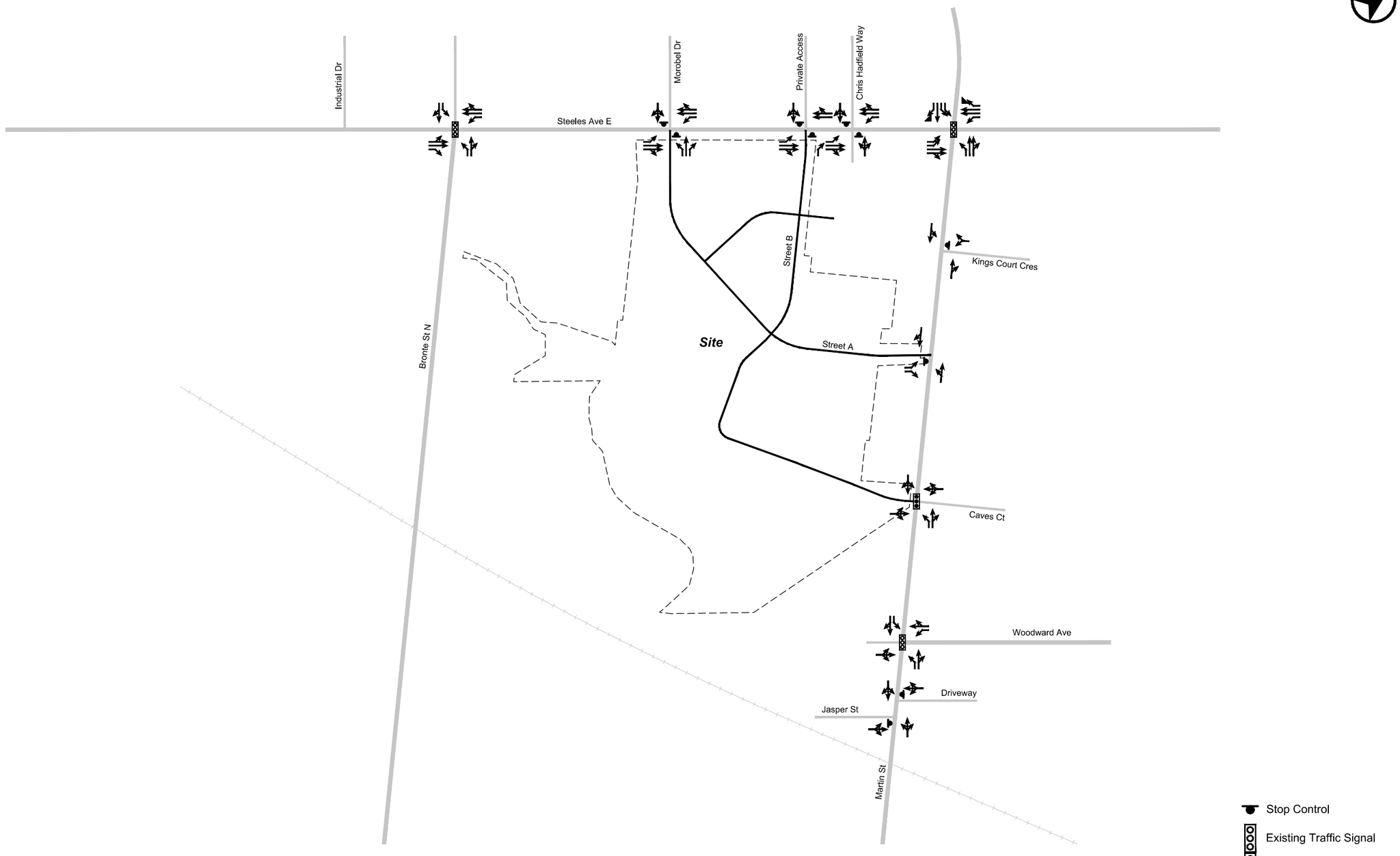
TABLE 41 FUTURE TOTAL TRAFFIC VOLUME SCENARIOS

Figure #	Future Total Scenario	Sum of Traffic Layers
Figure 59	2036 Future Total Conditions (Phase 1 Complete)	• 2036 Future Background Traffic Volumes (adjusted) • 2036 "Background Site Traffic" to be Removed • Proposed Site Traffic Volumes (Phase 1)
Figure 60	2041 Future Total Conditions (Phase 1 Complete + 5 years)	• 2041 Future Background Traffic Volumes (adjusted) • 2041 & 2046 "Background Site Traffic" to be Removed • Proposed Site Traffic Volumes (Phase 1)
Figure 61	2046 Future Total Conditions (Phases 1 & 2 Complete)	• 2046 Future Background Traffic Volumes (adjusted) • 2041 & 2046 "Background Site Traffic" to be Removed • Proposed Site Traffic Volumes (Phase 1 & 2)
Figure 62	2051 Future Total Conditions (Phases 1 & 2 Complete + 5 years)	• 2051 Future Background Traffic Volumes (adjusted) • 2051 "Background Site Traffic" to be Removed • Proposed Site Traffic Volumes (Phase 1 & 2)



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FIGURE 58 FUTURE TOTAL LANE CONFIGURATION AND TRAFFIC CONTROL



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FIGURE 58A FUTURE TOTAL LANE CONFIGURATION AND TRAFFIC CONTROL

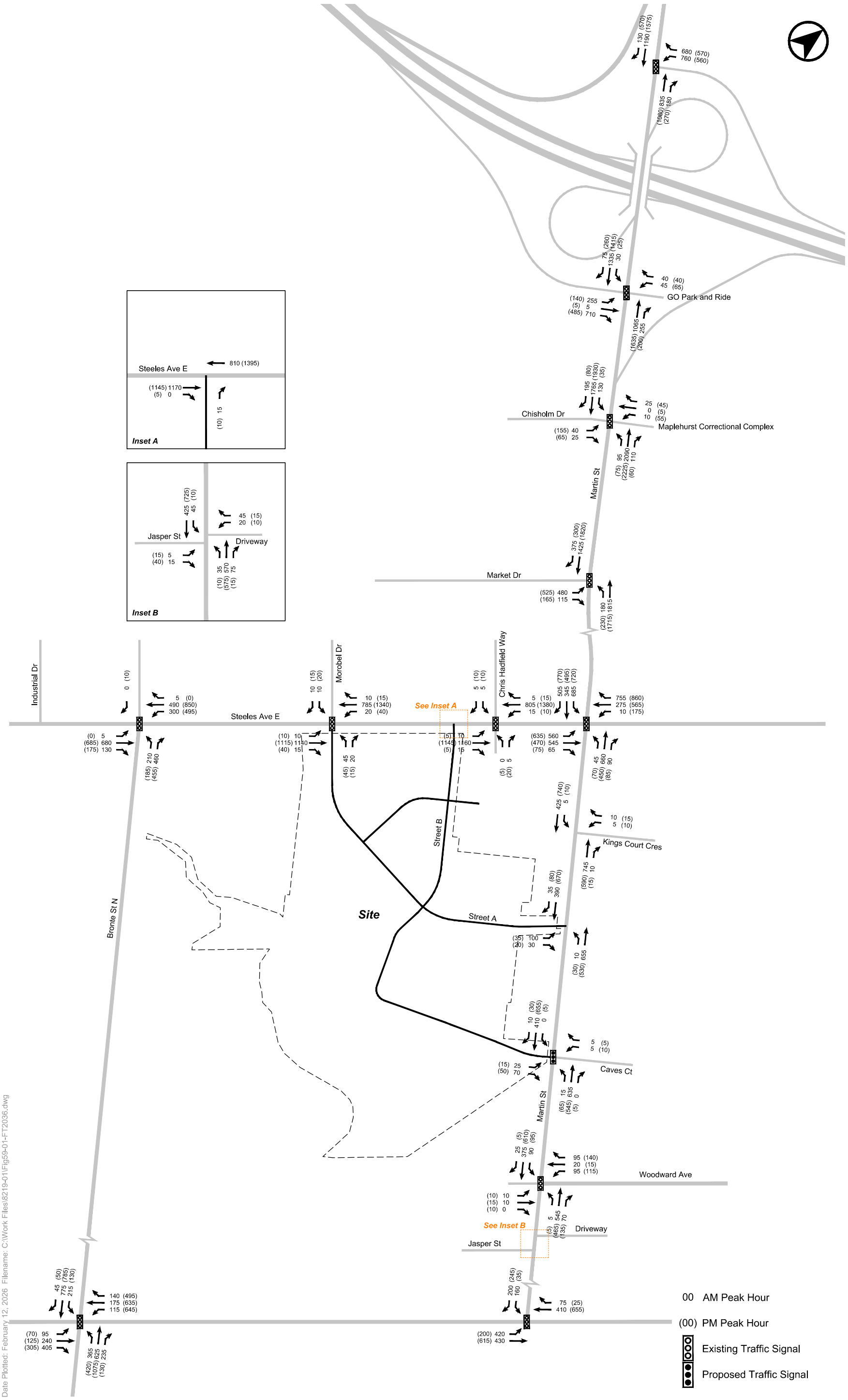


FIGURE 59 2036 FUTURE TOTAL TRAFFIC VOLUMES

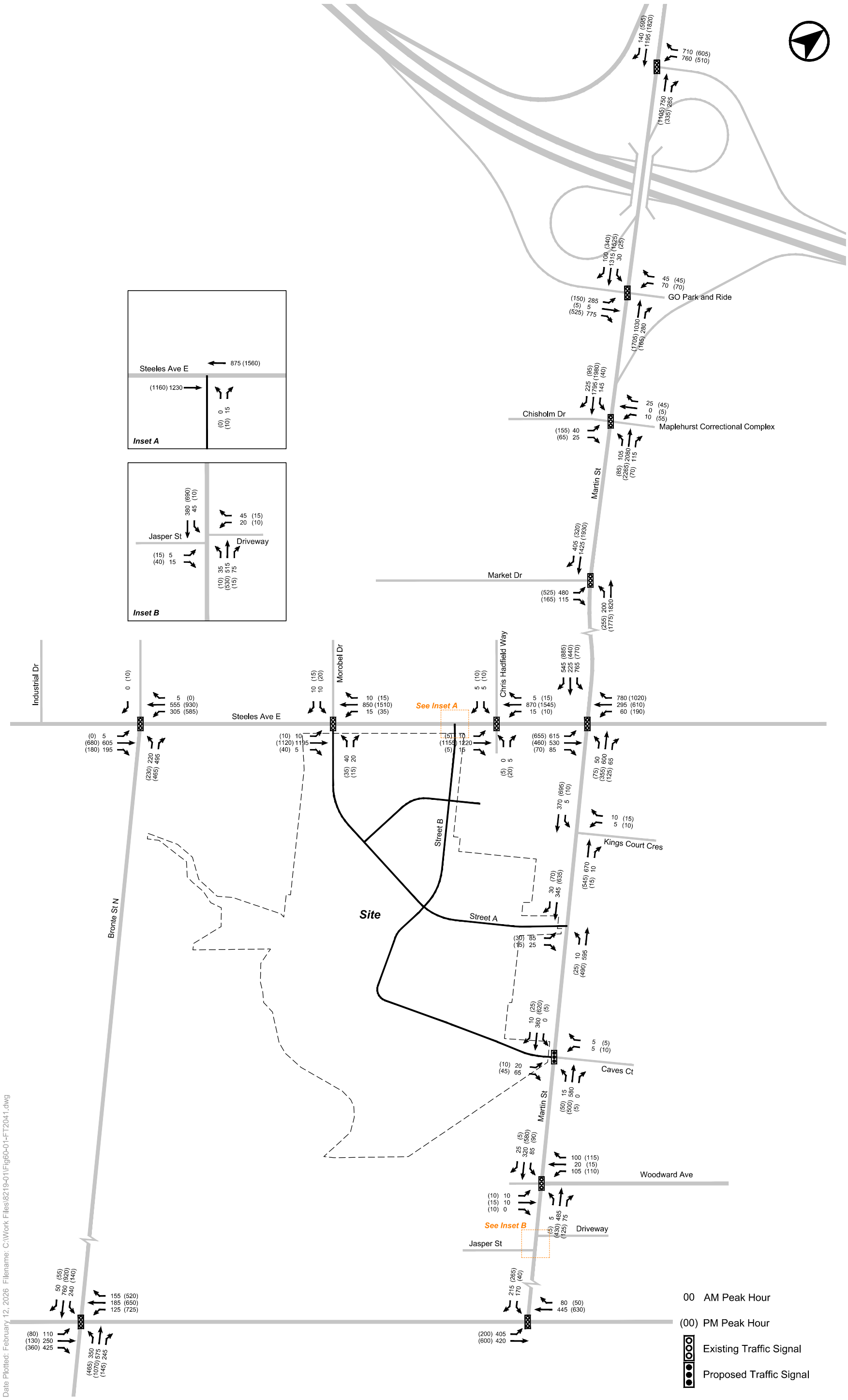


FIGURE 60 2041 FUTURE TOTAL TRAFFIC VOLUMES

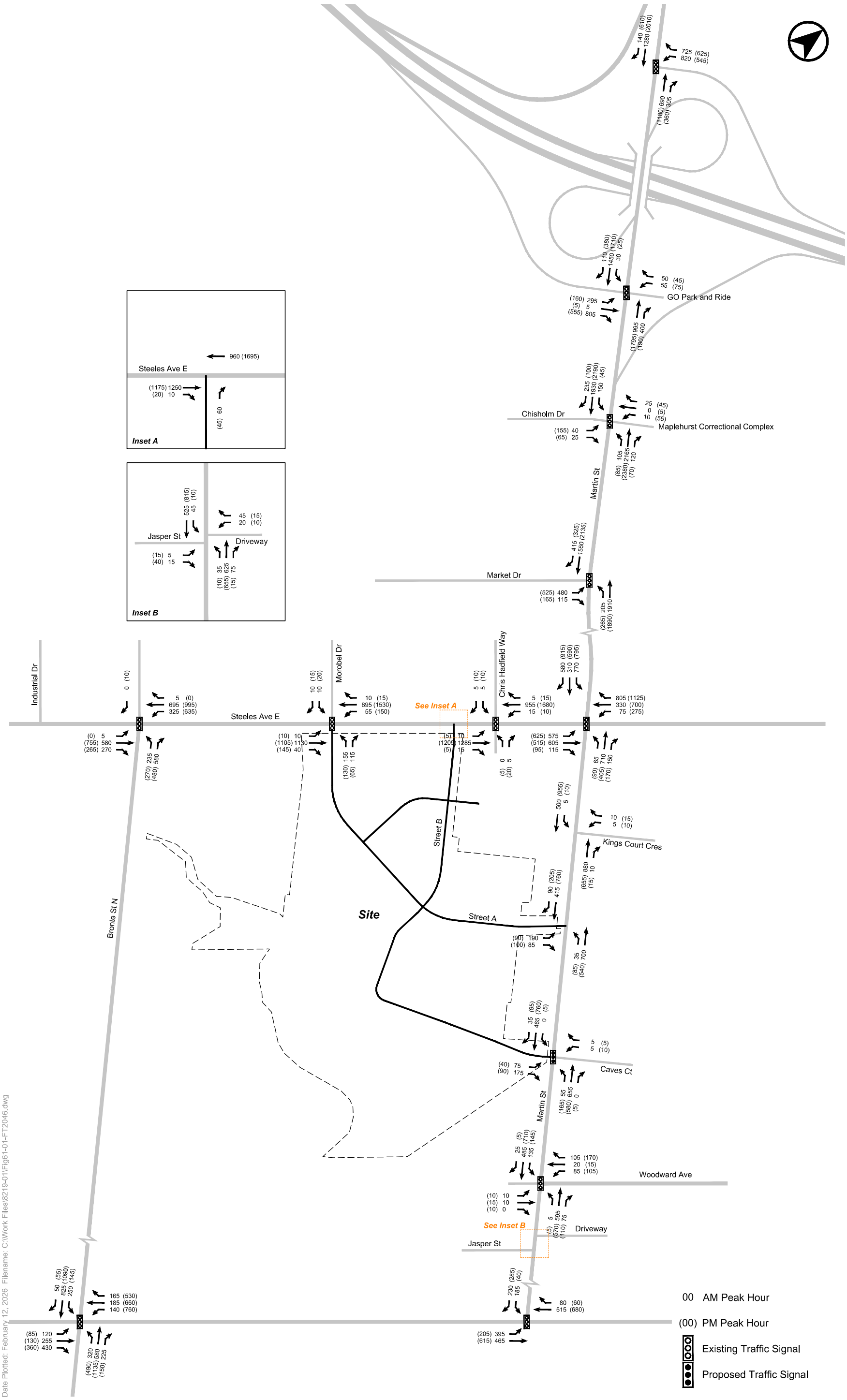
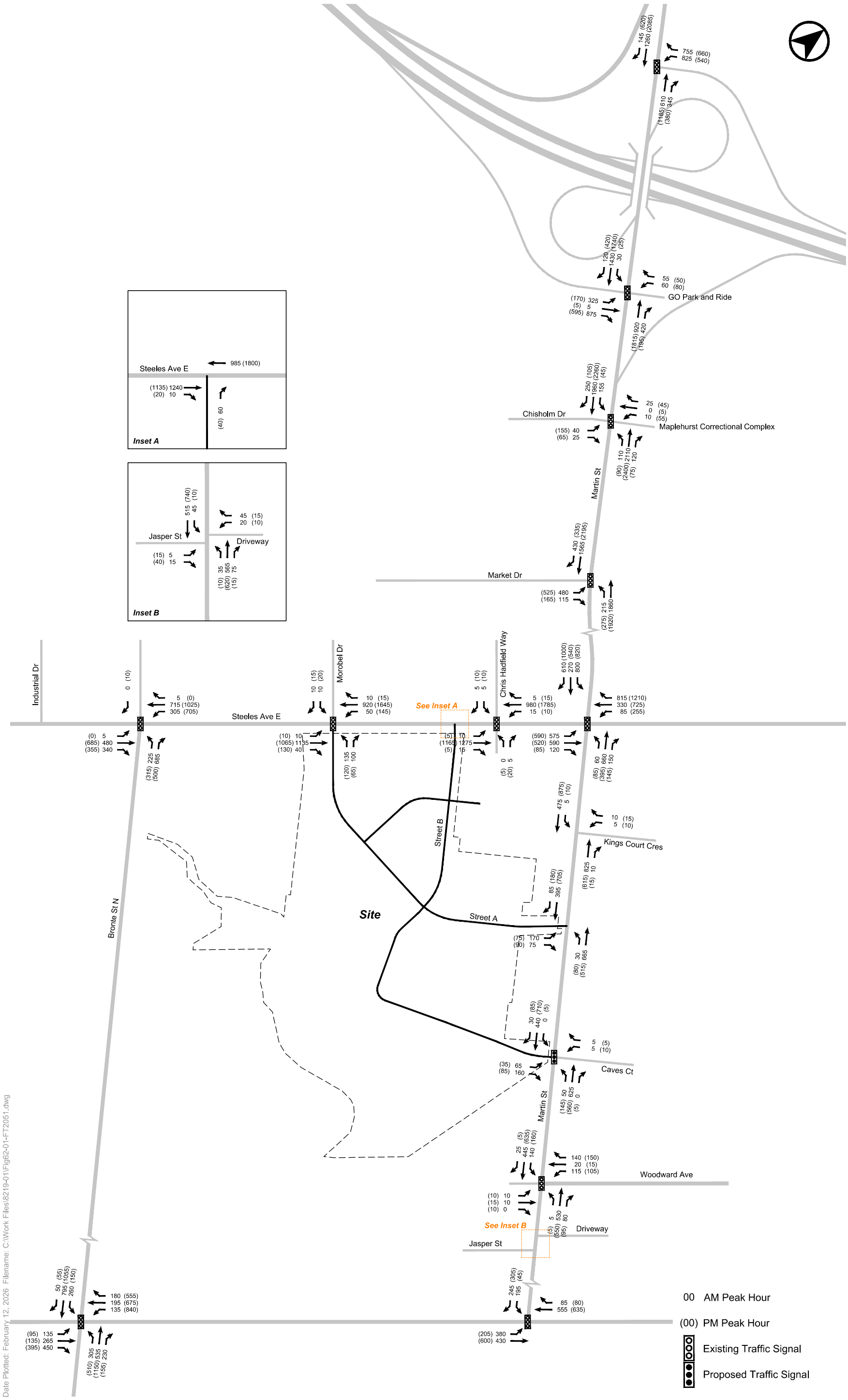


FIGURE 61 2046 FUTURE TOTAL TRAFFIC VOLUMES



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FIGURE 62 2051 FUTURE TOTAL TRAFFIC VOLUMES

6.0 TRAFFIC OPERATIONS ANALYSIS

As noted in **Section 5.4**, the traffic analysis study area had been divided into two areas as follows:

The Wider Study Area

- The Wider Study Area encompasses the analysis boundary that was determined in coordination with the Town of Milton and Halton Region (as outlined in the Terms of Reference in **Appendix A**). This study area generally extends from James Snow Parkway in the north and east, Tremaine Road in the west and Main Street in the south. The Wider Study Area intersections are summarized in **Table 15** and illustrated in **Figure 16**.

The Focused Study Area

- Given the extent of the Wider Study Area outlined above, a more localized study area (Focused Study Area) was established for the detailed traffic operations analysis with respect to assessing the proposed site traffic impact. The Focused Study Area extends generally from James Snow Parkway in the north to Main Street in the south and Bronte Street in the west to Ontario Street in the east. A summary of the Focused Study Area intersections is provided in **Table 16.** The study area is also illustrated in **Figure 16**.

Future background analysis would reflect future traffic volumes without the JBPE site traffic allowance at each horizon. Despite traffic impact for the proposed site traffic being more significant as presented in the following sections, it should be noted that the net impact of the proposed development relative to the “as-of-right” traffic potential on the site that was captured within the JBPE projections is a net decrease in two-way vehicle trips.

Although the site impacts will be larger than those reported within the original April 2025 submission (given the “accounting difference”), further network improvements to intersections within the “Wider Study Area” will be driven by the net increase in site traffic beyond those already considered within the JBPE projections as the Regional model would have already factored these into the capital works along the Regional roads. At this study area scale, it is important to identify the time horizon at which various specific additional improvements would be required and thus only overall intersection results are reported.

The “Focused Study Area” is expected to carry the highest traffic volumes of new site traffic. Therefore the traffic analysis includes a detailed review by movement, to determine specific site-related traffic impacts, relative to future background conditions.

6.1 ANALYSIS METHODOLOGY & ASSUMPTIONS

6.1.1 Intersection Capacity Analysis Methodology

The traffic operations analysis has been completed using the Synchro (Version 11) software package in accordance with the methodologies outlined in the *Highway Capacity Manual* (*HCM 2000*) for most intersections. All-way STOP control intersections have been assessed with the methodologies outlined in HCM6 due to the provision of queuing results for all-way STOP control intersections in HCM6. Roundabouts have been assessed using SIDRA, a specialized roundabout assessment program.

The key performance indicator of the signalized intersection evaluation is an intersection performance index (volume to capacity, or v/c), where the v/c index of 1.00 indicates ‘at or near capacity’ conditions.

The key performance indicator of unsignalized intersection / driveway analysis is the average delay per vehicle (in seconds) and a level of service (LOS) designation, ranging from LOS A (little delay) to LOS F (extended delay), with respect to the relative time for a motorist to complete a travel movement at an intersection or driveway.

6.1.2 Base Saturation Flow Rates

A base saturation flow rate of 1,900 passenger cars per hour of green time per lane (pcphgpl) has been adopted as the base assumption within all Synchro analysis detailed in this study.

6.1.3 Heavy Vehicle Assumptions

Heavy and medium truck percentage incorporated into the analysis were based upon information obtained from the existing intersection turning movement counts.

6.1.4 Peak Hour Factors

Intersection peak hour factors have been derived based on existing traffic count information by intersection at each analysis time period and have been carried forward to future conditions. At new intersections, the default Synchro peak hour factor of 0.92 has been maintained. Under future conditions, per comments received from Peel Region, a peak hour factor of 1.00 has been adopted at all external intersections in the study area.

6.1.5 Lost Time Adjustments

It should be noted that under future conditions, all movements with fully protected left-turn phases have been assumed to have up to 2 sneakers that complete their turns during the intergreen period. Intersections with fully protected left-turn phasing in the study area are typically the dual left-turn movements that can only turn left during the left-turn phase (no permissive left-turns permitted). This has been reflected in the Synchro model as a -2 seconds lost time adjustment for the specific left-turn movements. The amber for these turning movements are usually at least 3 seconds with additional time for all-red. As such, the sneakers are expected to use most of the amber phase to complete this “sneaking” movement.

In addition, depending on the level of turning traffic volume at left-turn movements with protected-permissive phases, it was assumed they could accommodate up to 1 sneaker per cycle. Heavy left-turning movements have been assigned a -1 second lost time adjustment as required. It is noted that the protected-permissive left turn phase includes amber and all-red of 3 seconds and 1 second, respectively. The assumed lost time adjustment can be accommodated within the 4 second total intergreen time.

6.1.6 Traffic Signal Timing Plans

Existing traffic signal timing plans for all signalized intersections within the study area were obtained from Halton Region, the Town of Milton and MTO. The traffic analysis was undertaken using these signal timing plans for existing, future background and future total traffic conditions. Where necessary, traffic signal timing plans were optimized in the future scenarios.

The existing traffic signal timing plans are provided in **Appendix I**.

6.2 EXISTING CONDITIONS

6.2.1 Wider Study Area

A summary of the overall intersection operations for the Wider Study Area intersections (outside of the Focused Study Area), under existing conditions, is provided in **Table 42**. Detailed Synchro and SIDRA reports for the signalized intersections, including details for all movements, are provided in **Appendix K**.

TABLE 42 EXISTING CONDITIONS – WIDER STUDY AREA INTERSECTIONS

[Node #] Intersection	V/C	LOS
Signalized Intersections		
[21] Steeles Avenue East / Industrial Road	0.44 (0.31)	A (B)
[31] James Snow Parkway / RR25	0.63 (0.69)	C (C)
[6] Tremaine Rd / Highway 401 EB Off Ramp	Future conditions only	
[7] Tremaine Rd / Highway 401 WB Off Ramp		
[27] James Snow Parkway / Steeles Avenue East	0.44 (0.64)	D (D)
[28] James Snow Parkway / Hwy 401 WB Off Ramp	0.37 (0.77)	C (C)
[29] James Snow Parkway / Hwy 401 EB Off Ramp	0.24 (0.70)	B (B)
[30] Thompson Road North / Private Access / Steeles Avenue East	0.64 (0.84)	C (D)
Unsignalized / Roundabout Intersections		
[22] Steeles Avenue West / Tremaine Road	0.41 (0.54)	A (A)
[15] Steeles Avenue West / Peru Road	0.32 (0.47)	A (A)

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)

Under existing conditions, all signalized intersections in the Wider Study Area operate acceptably, with overall V/C ratios of less than 0.85 during both peak hour periods. Wider area intersections operate acceptably at overall intersection level of service D or better.

It should be noted that the Highway 401 off-ramp terminal intersections at James Snow Parkway operate acceptably during the afternoon peak hour, with ample remaining capacity during the morning peak hour.

The roundabout at Steeles Avenue West / Tremaine Road operates acceptably under existing conditions, given the low level of traffic volume to / from the north and west. The intersection currently functions as a relatively free flow movement for the WBL and NBR movements.

6.2.2 Focused Study Area

6.2.2.1 Signalized Intersections (Focused Study Area)

A summary of intersection operations for the Focused Study Area signalized intersections, under existing conditions, is provided in **Table 43**. Queues and queue storage lengths for critical movements (i.e. with V/C over 0.85) are also summarized in the table. Existing storage lengths have only been provided where the resultant queuing is critical. Detailed Synchro reports for the signalized intersections are provided in **Appendix J**.

TABLE 43 EXISTING CONDITIONS – FOCUSED STUDY AREA SIGNALIZED INTERSECTIONS

Movement (critical queue)	V/C	LOS	95th Percentile Queue (m)
[7] Highway 401 WB Off Ramp / Regional Road 25			
WBLR	0.79 (0.71)	C (C)	68.6 (53.9)
WBR	0.72 (0.60)	C (C)	68.6 (50.2)
NBT	0.40 (0.40)	B (A)	51.0 (55.1)
SBT	0.67 (0.53)	B (B)	94.5 (76.3)
Overall	**0.71 (0.59)**	**C (B)**	**-- (--)**
[6] Highway 401 EB Off Ramp / Regional Road 25			
EBL	0.68 (0.58)	E (E)	57.4 (38.1)
EBTR	0.43 (0.25)	D (D)	42.2 (27.8)
EBR	0.40 (0.26)	D (D)	40.1 (28.7)
WBLTR	0.03 (0.04)	E (D)	-- (--)
NBT	0.46 (0.54)	B (B)	102.1 (125.3)
NBR	0.03 (0.03)	B (A)	-- (--)
SBL	0.11 (0.11)	A (A)	7.8 (5.8)
SBT	0.50 (0.44)	B (B)	107.2 (84.6)
Overall	**0.53 (0.52)**	**C (C)**	**-- (--)**
[5] Regional Road 25 / Chisholm Drive			
EBTL	0.47 (0.76)	E (E)	22.1 (57.7)
EBR	0.02 (0.04)	D (D)	0.0 (11.2)
WBLTR	0.03 (0.42)	D (D)	3.8 (32.7)
NBL	0.14 (0.17)	A (A)	m1.7 (m8.6)
NBTR	0.75 (0.69)	B (B)	235.3 (207.5)
SBL	0.41 (0.12)	B (A)	11.0 (4.1)
SBT	0.53 (0.59)	A (B)	97.2 (139.0)
SBR	0.10 (0.03)	A (A)	10.3 (3.2)
Overall	**0.70 (0.69)**	**B (B)**	**-- (--)**
[13] Regional Road 25 / Market Drive			
EBL (65m)	0.90 (0.81)	E (E)	#152.8 (100.4)
EBR	0.05 (0.09)	C (D)	10.8 (14.5)
NBL	0.49 (0.57)	B (B)	23.5 (31.0)
NBT	0.72 (0.51)	B (B)	157.1 (108.9)
SBT	0.66 (0.71)	D (C)	120.8 (#209.8)
SBR	0.21 (0.20)	F (D)	34.0 (55.7)
Overall	**0.81 (0.72)**	**C (C)**	**-- (--)**

Movement (critical queue)	V/C	LOS	95th Percentile Queue (m)
[4] Regional Road 25 / Martin Street / Steeles Avenue East			
EBL-dual (55m)	0.79 (0.83)	E (E)	#118.6 (#99.5)
EBTR	0.39 (0.35)	C (C)	63.9 (78.4)
WBL	0.17 (0.35)	C (C)	m4.7 (39.8)
WBTR (600m)	0.87 (1.06)	D (F)	59.1 (#163.1)
NBL	0.09 (0.16)	D (D)	9.0 (12.4)
NBTR	0.75 (0.66)	D (D)	89.9 (68.2)
SBL-dual	0.89 (0.91)	E (E)	71.9 (85.8)
SBT	0.38 (0.61)	C (D)	23.5 (65.4)
SBR	0.30 (0.53)	C (D)	70.1 (109.8)
Overall	**0.80 (0.90)**	**D (E)**	**-- (--)**
[1] Steeles Avenue East / Bronte Street			
EBTL	0.58 (0.51)	B (C)	173.1 (152.7)
EBR	0.02 (0.03)	B (B)	2.2 (2.9)
WBL	0.51 (0.64)	A (C)	m39.5 (m99.9)
WBTR	0.32 (0.43)	A (B)	m63.1 (m111.0)
NBL	0.23 (0.43)	D (E)	25.9 (32.5)
NBTR	0.47 (0.27)	D (E)	48.4 (0.0)
SBTR	-- (0.01)	-- (E)	-- (--)
Overall	**0.58 (0.62)**	**C (C)**	**-- (--)**
[26] Steeles Avenue East / Ontario Street			
EBL	0.12 (0.10)	C (B)	m21.8 (m8.8)
EBT	0.39 (0.38)	C (C)	96.8 (68.9)
EBR	0.24 (0.31)	F (E)	m32.8 (57.3)
WBL	0.42 (0.61)	C (C)	48.2 (93.9)
WBT	0.31 (0.44)	B (C)	66.3 (129.6)
NBL	0.80 (0.75)	E (E)	97.2 (85.0)
NBTL	0.77 (0.76)	E (E)	98.5 (86.3)
NBR	0.18 (0.16)	D (D)	20.8 (21.4)
SBL	0.39 (0.37)	E (E)	29.6 (23.1)
SBTR	0.42 (0.35)	E (E)	32.1 (23.7)
Overall	**0.53 (0.64)**	**D (D)**	**-- (--)**
[11] Martin Street / Woodward Avenue			
EBLTR	0.12 (0.13)	D (D)	10.1 (13.4)
WBL	0.61 (0.57)	D (D)	31.2 (36.4)
WBTR	0.16 (0.14)	D (D)	16.6 (17.1)
NBL	0.01 (0.01)	A (A)	1.9 (2.1)
NBTR	0.39 (0.34)	A (A)	74.7 (62.0)
SBL	0.07 (0.15)	A (A)	4.7 (10.2)
SBT	0.21 (0.35)	A (A)	27.7 (52.7)
Overall	**0.42 (0.40)**	**B (B)**	**-- (--)**

Movement (critical queue)	V/C	LOS	95th Percentile Queue (m)
[33] Martin Street / Main Street East			
EBL (15m)	0.51 (0.29)	A (A)	49.8 (45.5)
EBT	0.42 (0.36)	A (A)	25.9 (13.4)
WBT	0.55 (0.58)	B (B)	68.2 (94.6)
WBR (35m)	0.12 (0.16)	B (B)	12.3 (17.4)
SBL	0.76 (0.69)	C (C)	83.7 (53.1)
SBR	0.04 (0.10)	B (C)	8.0 (13.0)
Overall	**0.62 (0.60)**	**B (B)**	**-- (--)**
[32] Bronte Street / Main Street			
EBL	0.84 (0.69)	C (C)	#102.2 (#37.3)
EBT	0.48 (0.72)	C (D)	64.9 (92.7)
EBR	0.19 (0.09)	C (C)	16.7 (12.9)
WBL (40m)	0.51 (0.69)	C (C)	40.6 (#42.7)
WBT	0.61 (0.83)	C (D)	75.7 (#118.0)
WBR	0.04 (0.01)	C (C)	0.7 (0.0)
NBL (65m)	0.30 (0.68)	C (C)	17.5 (#43.4)
NBTR	0.79 (0.69)	D (C)	#102.0 (#119.6)
SBL (25m)	0.45 (0.11)	C (B)	27.5 (7.8)
SBTR	0.73 (0.86)	D (D)	#102.0 (#141.9)
Overall	**0.81 (0.81)**	**C (C)**	**-- (--)**
[34] Ontario Street / Main Street			
EBL (35m)	1.10 (0.44)	F (C)	#124.0 (27.2)
EBTR	0.72 (0.70)	D (C)	79.2 (80.3)
WBL (40m)	0.75 (0.72)	C (C)	#59.0 (#69.2)
WBTR	0.71 (0.75)	D (C)	70.6 (96.6)
NBL	0.48 (0.56)	C (C)	86.5 (80.0)
NBT	0.54 (0.62)	C (C)	45.7 (21.3)
NBR	0.41 (0.23)	C (C)	19.8 (32.5)
SBL	0.23 (0.43)	B (C)	15.9 (30.6)
SBTR	0.94 (0.79)	D (C)	#182.0 (103.1)
Overall	**0.98 (0.76)**	**D (C)**	**-- (--)**

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)

Under existing conditions, the Focused Study Area intersections operate acceptably and generally under capacity, with overall V/C ratios of 0.81 or less, during both peak hours, with the exception of the Ontario Street / Main Street and Steeles Avenue East / Martin Street / RR25 intersections.

Ontario Street / Main Street

Ontario Street / Main Street is approaching capacity due to high turning volumes in the EBL and SBR directions, during the morning peak hour. The EBL and WBL storage lengths are insufficient to accommodate the potential 95th percentile queues for these movements.

The channelized SBR is a free flow condition with a dedicated westbound receiving lane along Main Street, however, the receiving lane ends 65 metres west of the intersection, merging into the single westbound lane condition. East-west traffic flow along Main Street is sufficient to delay this merging condition, affecting the SBR traffic flow.

Steeles Avenue East / Martin Street / RR25

Steeles Avenue East / Martin Street / RR25 is busy during the afternoon peak hour, with the WBR being overcapacity due to a high volume of traffic turning northbound onto RR25 from Steeles Avenue. The channelized WBR has a dedicated northbound receiving lane, however the receiving lane ends 55 metres north of the intersection, merging into the two-lane condition (northbound) along RR25. Under future conditions, the lane widening on RR25 is expected to relieve this impact given the extra third lane.

The eastbound dual left-turn storage length at the Steeles Avenue East / Martin Street / RR25 intersection is insufficient to accommodate existing traffic volumes, however, this storage is restricted by all-movements access condition for the existing Honda dealership at 170 Steeles Avenue East.

Other Intersections

The Bronte Street / Main Street and Market Street / RR25 intersections have extended EBL queues under existing conditions. Future widening at Market Street or extension of EBL storage can alleviate the queuing.

The Ontario Street / Steeles Avenue East and Bronte Street / Steeles Avenue East intersections both operate with split phasing so that the north legs of the intersections are serviced only when demand is present on the private driveways. Both intersections operate acceptably with the split phasing, with overall intersection V/C ratios of 0.58 and 0.64 or better, during the weekday morning and afternoon peak hours, respectively.

Existing operating conditions and key movements are illustrated in **Figure 63** and **Figure 64** for the weekday morning and afternoon peak hours, respectively.

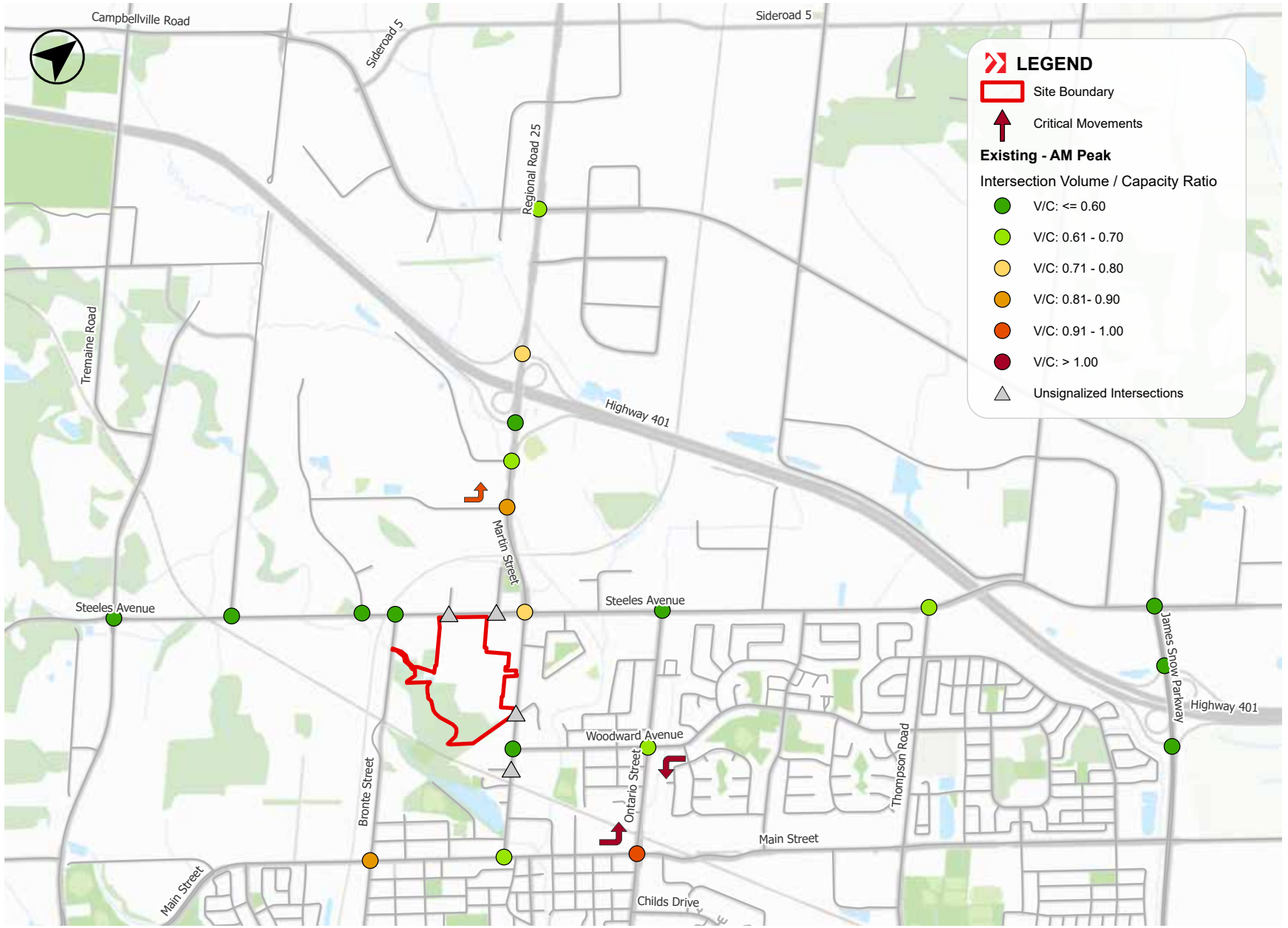
6.2.2.2 Unsignalized Intersections (Focused Study Area)

A summary of existing intersection operations for the unsignalized intersections is provided in **Table 44**. Detailed Synchro reports for the unsignalized intersections are provided in **Appendix L**.

Under existing conditions, all unsignalized intersections in the Focused Study Area operate acceptably with an LOS C or better, with exception of Steeles Avenue East / Peru Road, which operates with an LOS E during the morning peak period for the SBLR movement.

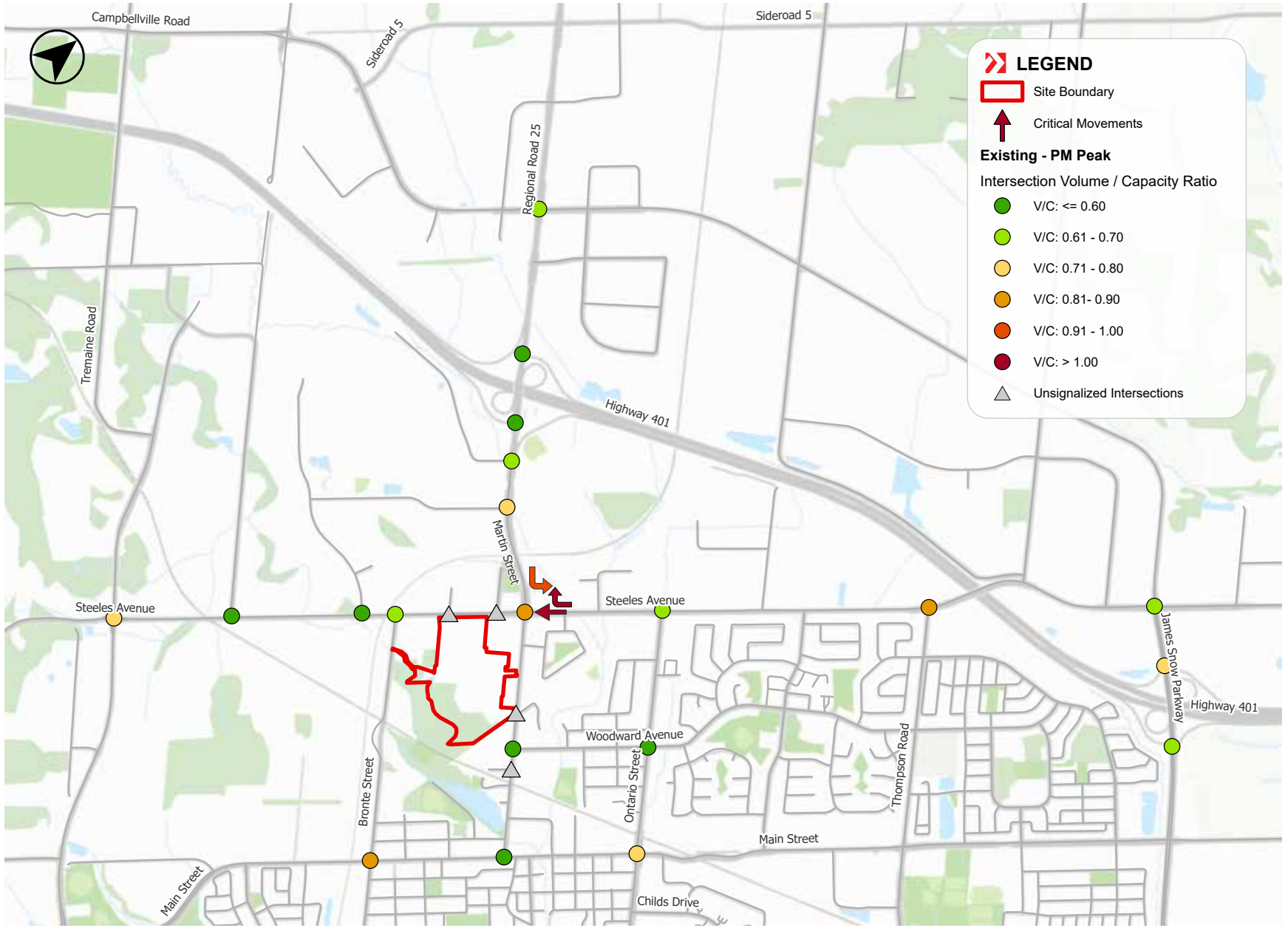
TABLE 44 EXISTING CONDITIONS – FOCUSED STUDY AREA UNSIGNALIZED INTERSECTIONS

Movement	LOS	Delay
[2] Street A / Morobel Drive & Steeles Avenue East		
EBL	A (B)	9.4 (11.2)
EBTR	A (A)	0.0 (0.0)
WBL	A (A)	0.0 (0.0)
WBTR	A (A)	0.0 (0.0)
NBLTR	A (A)	0.0 (0.0)
SBLTR	B (C)	14.8 (22.4)
[10] Martin Street & Street D/Caves Court		
EBTLR	A (A)	0.0 (0.0)
WBTLR	C (C)	15.3 (18.9)
NBTLR	A (A)	0.0 (0.0)
SBTLR	A (A)	0.0 (0.1)
[12] Martin Street & Jasper Street/Private Access		
EBTLR	B (C)	14.3 (17.8)
WBTLR	C (C)	18.6 (18.4)
NBTLR	A (A)	0.8 (0.4)
SBTL	A (A)	1.6 (0.3)
[14] Street B/Private Access & Steeles Avenue East		
EBL	A (A)	0.0 (0.0)
EBTR	A (A)	0.0 (0.0)
WBTR	A (A)	0.0 (0.0)
NBR	A (A)	0.0 (0.0)
SBTLR	A (A)	0.0 (0.0)
[15] Steeles Avenue East & Peru Road		
EBTL	A (A)	0.0 (0.2)
WBTR	A (A)	0.0 (0.0)
SBLR	E (C)	36.6 (24.0)



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FIGURE 63 EXISTING CAPACITY ANALYSIS RESULTS (AM PEAK)



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FIGURE 64 EXISTING CAPACITY ANALYSIS RESULTS (PM PEAK)

6.3 FUTURE BACKGROUND & FUTURE TOTAL (WIDER AREA)

The capacity analysis results for the Wider Study Area, under future background and future total conditions, reflecting the adjusted growth rates and additional recommended road network improvements at each study horizon, is summarized in **Table 45** and **Table 46**, respectively. It is noted that only the **overall intersection V/C ratios and levels of service** are summarized in this section.

Detailed Synchro analysis sheets for the future background and future total scenarios for the 2036, 2041, 2046 and 2051 horizons, with the individual movement results, are provided in **Appendix Q, R, S, and T**, respectively. SIDRA analysis sheets for the roundabouts across all horizons, scenarios and time periods are provided in **Appendix CC.**

TABLE 45 FUTURE BACKGROUND CONDITIONS – WIDER STUDY AREA INTERSECTIONS

[Node #] Intersection	2036		2041		2046		2051	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
Signalized Intersections								
[21] Steeles Avenue East / Industrial Road	0.39 (0.41)	A (B)	0.42 (0.45)	A (B)	0.44 (0.49)	A (B)	0.46 (0.54)	A (B)
[31] RR25 / James Snow Parkway	0.78 (1.62)	C (F)	0.79 (1.87)	C (F)	0.81 (2.08)	C (F)	0.80 (2.31)	D (F)
[6] Tremaine Rd / Highway 401 EB Off-Ramp	0.61 (0.64)	C (C)	0.67 (0.67)	C (C)	0.69 (0.70)	C (C)	0.73 (0.75)	D (C)
[7] Tremaine Rd / Highway 401 WB Off-Ramp	0.71 (0.72)	C (B)	0.70 (0.75)	C (B)	0.72 (0.79)	C (B)	0.73 (0.82)	C (C)
[27] James Snow Parkway / Steeles Avenue East	0.50 (0.88)	E (D)	0.54 (0.98)	D (E)	0.55 (1.06)	D (F)	0.57 (1.12)	D (F)
[28] James Snow Parkway / Highway 401 WB Off-Ramp	0.51 (1.04)	C (F)	0.55 (1.11)	C (F)	0.56 (1.16)	C (F)	0.58 (1.21)	C (F)
[29] James Snow Parkway / Highway 401 EB Off-Ramp	0.46 (1.09)	B (E)	0.52 (1.17)	B (F)	0.54 (1.22)	B (F)	0.56 (1.28)	B (F)
[30] Thompson Road N / Private Access / Steeles Avenue East	0.74 (0.87)	C (D)	0.81 (0.87)	C (D)	0.83 (0.89)	C (D)	0.85 (0.91)	C (D)
Roundabouts								
[22] Steeles Avenue West / Tremaine Road (with improvement)[2]	0.66 (0.76)	A (A)	0.75 (0.83)	A (B)	0.85 (0.88)	B (B)	0.92 (0.96)	B (B)
[22] Steeles Avenue West / Tremaine Road (without improvement)[3]	0.66 (1.04)	A (D)	0.75 (1.17)	A (F)	0.85 (1.19)	B (F)	0.92 (1.30)	B (F)
[15] Steeles Avenue West / Peru Road	0.32 (0.37)	A (A)	0.33 (0.43)	A (A)	0.34 (0.44)	A (A)	0.34 (0.46)	A (A)

Notes:

1. xx (xx) - AM Peak Hour (PM Peak Hour)
2. Reflects existing east leg configuration of shared through-left and exclusive right turn lanes
3. Reflects recommended east leg configuration of exclusive left turn and shared through-right lanes

TABLE 46 FUTURE TOTAL CONDITIONS – WIDER STUDY AREA INTERSECTIONS

Intersection	2036		2041		2046		2051	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
Signalized Intersections								
[21] Steeles Avenue East / Industrial Road	0.41 (0.42)	A (B)	0.44 (0.46)	A (B)	0.50 (0.52)	A (B)	0.51 (0.57)	A (C)
[31] RR25 / James Snow Parkway	0.78 (1.65)	C (F)	0.79 (1.90)	C (F)	0.82 (2.12)	C (F)	0.81 (2.44)	C (F)
[6] Tremaine Rd / Highway 401 EB Off-Ramp	0.63 (0.65)	C (C)	0.68 (0.68)	C (C)	0.73 (0.76)	C (C)	0.76 (0.80)	D (C)
[7] Tremaine Rd / Highway 401 WB Off-Ramp	0.73 (0.74)	C (B)	0.72 (0.77)	C (B)	0.75 (0.84)	C (C)	0.76 (0.87)	C (C)
[27] James Snow Parkway / Steeles Avenue East	0.50 (0.88)	E (D)	0.54 (0.98)	D (E)	0.56 (1.06)	D (F)	0.58 (1.14)	E (F)
[28] James Snow Parkway / Highway 401 WB Off-Ramp	0.51 (1.04)	C (F)	0.55 (1.11)	C (F)	0.56 (1.16)	C (F)	0.58 (1.22)	C (F)
[29] James Snow Parkway / Highway 401 EB Off-Ramp	0.46 (1.09)	B (E)	0.52 (1.17)	B (F)	0.54 (1.22)	B (F)	0.57 (1.28)	B (F)
[30] Thompson Road N / Private Access / Steeles Avenue East	0.74 (0.88)	C (D)	0.81 (0.88)	C (D)	0.84 (0.93)	C (D)	0.85 (0.94)	C (D)
Roundabouts[2]								
[22] Steeles Avenue West / Tremaine Road (with improvement)[2]	0.66 (0.80)	A (B)	0.75 (0.86)	A (B)	0.88 (1.01)	B (C)	0.99 (1.09)	C (D)
[22] Steeles Avenue West / Tremaine Road (without improvement)[3]	0.67 (1.12)	A (E)	0.76 (1.25)	A (F)	0.89 (1.50)	B (F)	1.02 (1.57)	C (F)
[15] Steeles Avenue West / Peru Road	0.33 (0.38)	A (A)	0.33 (0.44)	A (A)	0.36 (0.47)	A (A)	0.35 (0.50)	A (A)

Notes:
1. xx (xx) - AM Peak Hour (PM Peak Hour)
2. Reflects existing east leg configuration of shared through-left and exclusive right turn lanes
3. Reflects recommended east leg configuration of exclusive left turn and shared through-right lanes

With respect to the site, the proposed development is forecast to generate less (or equivalent) site traffic volumes, relative to the Region's JBPE population projections provided by the Region in March 2025, which are captured within the future background traffic volumes (see **Section 5.6.4**). Despite the negligible net traffic generation of the site relative to the JBPE traffic allowance, this analysis has evaluated the new site traffic impact relative to no traffic allowance on the subject site.

Roundabouts

Based on a comparison of the roundabout analysis, with and without the lane configuration improvement at Tremaine Road/Steeles Avenue, between future background versus future total, the improvement will be triggered at future background 2036 conditions. Without the lane configuration improvement, the roundabout would operate at overall V/C of 1.04 by 2036 under future background conditions. The significant increase in north-south through volumes to and from the new Highway 401/ Tremaine Road interchange, will create the capacity constraint. However, it is noted that the site traffic will have a moderate to considerable impact at the roundabout, particularly at the 2046 and 2051 horizons with full buildout of the site.

It is noted that even with the recommended lane configuration, the Tremaine Road/Steeles Avenue roundabout will be over capacity under future total conditions at the 2046 and 2051 horizons. An additional diversion of 100 westbound left-turning vehicles from the Tremaine/ Road/ Steeles Avenue to the Bronte Street/ Steeles Avenue intersection during the afternoon peak hour will alleviate the capacity constraint. A sensitivity analysis at the 2051 horizon for the two intersections with the diverted traffic is summarized in **Table 47.** It confirms that the overall wider network can operate under capacity and that the Bronte Street / Steeles Avenue intersection can accommodate the additional westbound left turns. The sensitivity analysis sheets at Steeles / Bronte reflecting the additional 100 westbound left turns are provided in **Appendix CC**.

TABLE 47 TREMAINE ROAD ROUNDABOUT SENSITIVITY WITH TRAFFIC DIVERSION

Intersection	V/C	LOS
[1] Steeles Avenue West / Bronte Street North (with diversion from roundabout)	Overall: 0.62 (0.92) WBL: 0.49 (1.00)	C (D)
[22] Steeles Avenue West / Tremaine Road (with improvement & diversion)[2]	0.99 (0.99)	C (C)

The adjacent Steeles Avenue West / Peru Road roundabout will operate well across all horizon years.

Interchange Ramp Intersections

The new Tremaine Road interchange off-ramp terminals are expected to operate acceptably, with overall intersection V/C ratios of 0.87 or less, across all horizon years and can, therefore, support the projected traffic growth along Tremaine Road and any traffic redistributed from the other Highway 401 interchanges.

The traffic redistribution from other interchanges to the new Tremaine Road interchange will be constrained by the Steeles Avenue West / Tremaine Road roundabout, especially during the afternoon peak hour. The roundabout will generally be at capacity by the 2051 horizon year with the proposed lane configuration changes.

Other Intersections

The James Snow Parkway corridor will be overcapacity, particularly during the afternoon peak hour, with a large proportion of traffic growth routing to / from the south, either to Highway 401 or the southern growth areas.

As discussed in **Section 5.6.2**, it is understood that the Region is concurrently undertaking the New North Regional Road EA, which includes an assessment of the James Snow Parkway corridor between Regional Road 25 and Derry Road, including the segment across the Highway 401. It is expected that further roadway improvements could be confirmed as part of the New North Regional Road EA that could accommodate the capacity shortfall along the James Snow Parkway corridor.

It should be noted that the overcapacity condition at Steeles Avenue East / Thompson Road, during the afternoon peak hour, is due to traffic growth turning from James Snow Parkway. As discussed above, the James Snow Parkway corridor will be constrained, and it is therefore uncertain whether the forecast high volume growth of WBL traffic from Steeles Avenue East onto Thompson Road will be actualized.

6.4 FUTURE BACKGROUND & FUTURE TOTAL (FOCUSED AREA)

The four traffic analysis horizons (2036, 2041, 2046, 2051) were reviewed under future background and future total conditions (reflecting the adjusted growth rates and additional recommended road network improvements as per **Section 5.6.4**). A comparison of future background and future total operations is provided in the following subsections for each of the analysis horizons, to compare the proposed site traffic impact relative to no traffic generated by the subject site.

Storage lengths are provided in metres within the summary tables for intersection movements where the expected 95th percentile queue exceeds the storage length or is approaching the storage capacity.

6.4.1 2036 Horizon

6.4.1.1 Signalized Intersections (Focused Study Area)

A summary of the Focused Study Area signalized intersection operations in 2036 is provided in **Table 48**. Storage lengths are provided only for movements where the 95th percentile queue are approaching or have exceed storage capacity. Detailed Synchro reports for signalized intersections are provided in **Appendix P**.

TABLE 48 2036 CONDITIONS – FOCUSED STUDY AREA SIGNALIZED INTERSECTIONS

Movement (Storage in metres)	2036 Future Background			2036 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[7] Regional Road 25 / Highway 401 WB Off-Ramp						
WBLR	0.82 (0.75)	C (C)	#95.1 (68.0)	0.83 (0.75)	C (C)	#103.5 (70.1)
WBR	0.86 (0.79)	D (C)	#121.6 (81.7)	0.89 (0.81)	D (D)	#127.0 (#89.4)
NBT	0.38 (0.44)	B (B)	38.3 (54.7)	0.39 (0.46)	B (B)	40.0 (55.9)
SBT	0.58 (0.68)	B (B)	61.0 (92.8)	0.60 (0.70)	B (B)	62.4 (95.4)
Overall	**0.71 (0.72)**	**C (B)**	**-- (--)**	**0.73 (0.74)**	**C (B)**	**-- (--)**
[6] Regional Road 25 / Highway 401 EB Off-Ramp						
EBL	0.71 (0.60)	D (D)	82.1 (49.6)	0.71 (0.60)	D (D)	82.1 (49.4)
EBTR	0.84 (0.75)	E (E)	100.8 (69.7)	0.84 (0.75)	E (E)	101.7 (71.0)
EBR	0.78 (0.56)	D (D)	93.1 (54.0)	0.77 (0.56)	D (D)	93.1 (54.9)
WBTLR	0.07 (0.07)	D (D)	5.3 (12.6)	0.07 (0.07)	D (D)	5.3 (12.6)
NBTR	0.49 (0.67)	C (C)	96.3 (#174.3)	0.50 (0.69)	C (C)	99.5 (#185.2)
SBL	0.16 (0.22)	B (B)	8.9 (8.0)	0.16 (0.23)	B (B)	8.9 (8.1)
SBT	0.54 (0.59)	B (B)	107.0 (135.2)	0.56 (0.62)	B (B)	111.4 (143.9)
Overall	**0.61 (0.64)**	**C (C)**	**-- (--)**	**0.63 (0.65)**	**C (C)**	**-- (--)**
[5] Regional Road 25 / Chisolm Drive / Maplehurst C.C.						
EBTL	0.44 (0.76)	E (E)	20.9 (57.7)	0.44 (0.76)	E (E)	20.9 (57.7)
EBR	0.02 (0.04)	D (D)	0.0 (11.2)	0.02 (0.04)	D (D)	0.0 (11.2)
WBTLR	0.03 (0.42)	D (D)	2.5 (32.7)	0.03 (0.42)	D (D)	2.5 (32.7)
NBL	0.36 (0.44)	A (B)	8.2 (17.1)	0.37 (0.46)	A (B)	6.8 (17.7)
NBT	0.60 (0.70)	B (B)	154.1 (181.1)	0.62 (0.71)	B (B)	164.2 (184.4)
NBR[1]	0.09 (0.04)	B (B)	19.7 (10.5)	0.09 (0.04)	B (B)	19.0 (10.8)
SBL	0.50 (0.31)	B (B)	25.9 (6.3)	0.53 (0.31)	B (B)	29.0 (6.3)
SBT	0.51 (0.61)	A (B)	89.5 (144.2)	0.52 (0.63)	A (B)	92.9 (152.2)
SBR	0.13 (0.06)	A (A)	7.8 (7.6)	0.13 (0.06)	A (A)	7.8 (7.6)
Overall	**0.57 (0.71)**	**B (B)**	**-- (--)**	**0.60 (0.72)**	**B (B)**	**-- (--)**

Movement (Storage in metres)	2036 Future Background			2036 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[13] Regional Road 25 / Market Drive						
EBL	0.77 (0.78)	D (D)	72.3 (80.2)	0.77 (0.78)	D (D)	72.3 (80.2)
EBR	0.08 (0.11)	D (D)	14.8 (17.1)	0.08 (0.11)	D (D)	14.8 (17.1)
NBL	0.61 (0.80)	B (D)	30.5 (69.1)	0.62 (0.80)	B (D)	32.8 (69.1)
NBT	0.52 (0.51)	A (A)	94.5 (95.3)	0.55 (0.52)	A (A)	102.2 (97.5)
SBT	0.52 (0.70)	C (D)	117.5 (191.8)	0.54 (0.73)	C (D)	117.0 (198.4)
SBR	0.26 (0.23)	E (F)	48.2 (63.4)	0.26 (0.23)	E (F)	44.6 (64.3)
Overall	**0.66 (0.81)**	**C (C)**	**-- (--)**	**0.67 (0.81)**	**C (C)**	**-- (--)**
[4] Regional Road 25 / Martin Street / Steeles Avenue East[2]						
EBL-dual (60m)	0.85 (0.90)	D (E)	#108.5 (#131.5)	0.97 (0.93)	E (E)	#111.9 (#128.9)
EBTR	0.45 (0.43)	C (D)	46.7 (85.8)	0.63 (0.47)	C (D)	81.5 (80.8)
WBL (90m)	-- (0.46)	-- (D)	-- (m44.5)	0.09 (0.62)	D (E)	m2.6 (m58.8)
WBT	0.51 (0.75)	D (E)	49.0 (84.5)	0.70 (0.77)	E (E)	m50.1 (90.2)
WBR[1]	0.54 (0.59)	A (A)	53.6 (90.2)	0.54 (0.59)	A (A)	53.7 (83.2)
NBL (85m)	0.13 (0.26)	D (D)	10.3 (18.5)	0.13 (0.28)	C (D)	11.3 (19.9)
NBTR	0.80 (0.78)	D (E)	123.3 (85.8)	0.76 (0.85)	D (E)	164.5 (101.3)
SBL (135m)	0.79 (0.87)	D (E)	103.7 (#139.0)	0.79 (0.88)	D (E)	103.6 (#139.0)
SBT	0.37 (0.62)	C (C)	77.7 (137.3)	0.36 (0.70)	B (D)	88.2 (161.9)
SBR	0.36 (0.84)	C (D)	21.4 (#190.9)	0.37 (0.86)	C (D)	21.7 (#197.1)
Overall	**0.81 (0.88)**	**C (D)**	**-- (--)**	**0.83 (0.90)**	**D (D)**	**-- (--)**
[9] Martin Street / Street A						
EBL (25m)	Intersection is unsignalized in Existing and Future Background Conditions			0.56 (0.40)	D (D)	33.9 (17.1)
EBR (100m)				0.02 (0.01)	D (D)	8.2 (7.4)
NBL (25m)				0.01 (0.07)	A (A)	m1.3 (3.6)
NBT				0.45 (0.37)	A (A)	44.7 (32.6)
SBTR				0.29 (0.53)	A (A)	37.1 (74.5)
Overall				**0.46 (0.52)**	**A (A)**	**-- (--)**
[10] Martin Street / Street D / Caves Court						
EBL (25m)	Intersection is unsignalized in Existing and Future Background Conditions			0.21 (0.14)	D (D)	12.9 (9.3)
EBTR (70m)				0.04 (0.03)	D (D)	0.7 (2.9)
WBTLR				0.01 (0.01)	D (D)	m1.4 (m8.5)
NBL (25m)				0.02 (0.11)	A (A)	51.4 (89.5)
NBTR				0.43 (0.38)	A (A)	24.1 (41.4)
SBTLR				0.28 (0.49)	A (A)	12.9 (9.3)
Overall				**0.41 (0.46)**	**A (A)**	**-- (--)**
[11] Martin Street / Woodward Avenue						
EBTLR	0.10 (0.07)	D (C)	10.0 (12.0)	0.10 (0.07)	D (C)	10.0 (12.0)
WBL	0.53 (0.33)	D (C)	32.6 (35.4)	0.53 (0.33)	D (C)	32.6 (35.4)
WBTR	0.15 (0.10)	D (C)	17.8 (15.8)	0.15 (0.14)	D (C)	18.4 (18.0)
NBL	0.01 (0.01)	A (B)	1.9 (2.6)	0.01 (0.01)	A (B)	2.0 (2.6)

Movement (Storage in metres)	2036 Future Background			2036 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
NBTR	0.49 (0.67)	A (C)	97.3 (121.9)	0.52 (0.75)	B (C)	105.6 (143.1)
SBL	0.09 (0.17)	A (B)	0.7 (11.3)	0.17 (0.26)	A (A)	4.6 (9.4)
SBT	0.24 (0.51)	A (B)	24.0 (97.4)	0.29 (0.56)	A (B)	29.1 (47.0)
Overall	**0.49 (0.55)**	**B (C)**	**-- (--)**	**0.51 (0.60)**	**B (C)**	**-- (--)**
[33] Martin Street / Main Street						
EBL (15m)	0.64 (0.65)	B (B)	30.3 (32.3)	0.69 (0.68)	B (B)	30.8 (#34.5)
EBT	0.48 (0.55)	A (A)	59.9 (75.3)	0.51 (0.56)	B (B)	61.5 (76.5)
WBT	0.65 (0.91)	C (C)	83.4 (#168.2)	0.68 (0.94)	C (D)	83.4 (#171.1)
WBR (35m)	0.17 (0.27)	B (B)	16.0 (28.0)	0.18 (0.34)	B (B)	16.8 (33.8)
SBL (85/160 m)	0.78 (0.81)	C (D)	#81.9 (#78.7)	0.85 (0.88)	D (D)	#104.2 (#94.5)
SBR	0.06 (0.20)	C (C)	9.0 (18.0)	0.07 (0.25)	B (C)	10.3 (21.7)
Overall	**0.71 (0.84)**	**B (C)**	**-- (--)**	**0.78 (0.88)**	**C (C)**	**-- (--)**
[32] Bronte Street / Main Street[2]						
EBL (80m)	0.89 (0.92)	C (E)	90.7 (63.3)	0.90 (0.77)	D (C)	93.3 (63.3)
EBT	0.64 (0.94)	C (D)	93.2 (#164.6)	0.66 (0.90)	C (D)	95.7 (168.4)
EBR	0.20 (0.16)	C (C)	16.6 (17.1)	0.20 (0.15)	C (B)	16.6 (17.1)
WBL (40m)	0.62 (0.95)	C (E)	37.1 (#68.6)	0.64 (0.83)	C (D)	37.1 (#71.0)
WBT	0.77 (0.97)	D (E)	99.1 (175.1)	0.78 (0.95)	D (D)	100.7 (181.6)
WBR	0.05 (0.02)	C (B)	0.0 (0.0)	0.05 (0.02)	C (B)	0.0 (0.0)
NBL (40m)	0.29 (0.81)	C (D)	21.8 (#59.9)	0.29 (0.67)	C (C)	21.8 (#62.2)
NBT	0.82 (0.78)	D (D)	106.4 (136.9)	0.83 (0.68)	D (C)	108.3 (138.8)
NBR[1]	0.05 (0.21)	-- (C)	0.0 (26.3)	0.06	C	0.0 (27.4)
SBL (25m)	0.61 (0.18)	C (C)	#40.6 (10.3)	0.61 (0.20)	C (C)	#34.6 (10.3)
SBT	0.52 (0.85)	C (D)	64.7 (124.4)	0.52 (0.54)	C (C)	65.9 (129.3)
SBR[1] (15m)	0.16 (0.38)	C (C)	19.3 (41.4)	0.16 (0.33)	C (C)	19.3 (41.4)
Overall	**0.90 (0.94)**	**C (D)**	**-- (--)**	**0.91 (0.86)**	**C (D)**	**-- (--)**
[1] Bronte Street / Steeles Avenue East						
EBTL	0.36 (0.43)	B (C)	78.7 (105.0)	0.37 (0.49)	B (C)	81.0 (113.0)
EBR	0.11 (0.18)	A (C)	16.9 (39.9)	0.11 (0.19)	A (C)	17.1 (39.8)
WBL (85m)	0.51 (0.75)	A (C)	17.0 (132.4)	0.52 (0.76)	B (C)	40.3 (#156.9)
WBTR	0.20 (0.34)	A (B)	13.8 (79.4)	0.22 (0.36)	A (B)	12.2 (91.5)
NBL (35m)	0.72 (0.71)	E (E)	77.3 (72.4)	0.72 (0.71)	E (E)	77.3 (72.4)
NBTR	0.33 (0.30)	D (D)	35.8 (5.1)	0.36 (0.30)	D (D)	38.7 (7.8)
SBTR	-- (0.01)	-- (E)	-- (--)	-- (0.01)	-- (E)	-- (--)
Overall	**0.59 (0.75)**	**C (C)**	**-- (--)**	**0.60 (0.76)**	**C (C)**	**-- (--)**
[2] Morobel Drive / Street A / Steeles Avenue East						
EBL	Intersection is unsignalized in Existing and Future Background Conditions			0.02 (0.04)	A (A)	m1.1 (m2.3)
EBTR				0.44 (0.43)	A (A)	38.2 (86.2)
WBL				0.06 (0.13)	A (A)	m5.7 (m2.0)
WBTR				0.32 (0.49)	A (A)	75.5 (42.6)

Movement (Storage in metres)	2036 Future Background			2036 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
NBL (45m)				0.26 (0.49)	D (E)	23.0 (25.5)
NBR (45m)				0.01 (0.01)	D (E)	0.0 (0.0)
SBTLR				0.01 (0.14)	D (E)	6.6 (14.2)
Overall				**0.42 (0.49)**	**A (A)**	**-- (--)**
[26] Ontario Street / Steeles Avenue East						
EBL	0.13 (0.20)	C (D)	m17.8 (m8.3)	0.13 (0.20)	C (D)	m16.4 (m7.9)
EBT	0.36 (0.51)	C (D)	87.6 (m62.9)	0.38 (0.53)	C (D)	88.5 (m64.0)
EBR (75m)	0.31 (0.37)	F (F)	m70.6 (m74.5)	0.33 (0.38)	F (F)	82.0 (m74.1)
WBL (85m)	0.62 (0.79)	C (C)	#77.2 (#223.7)	0.64 (0.82)	C (D)	#77.4 (#222.5)
WBTR	0.25 (0.41)	B (C)	46.3 (115.5)	0.25 (0.43)	B (C)	48.6 (118.8)
NBL (85m)	0.80 (0.78)	E (E)	101.8 (96.1)	0.81 (0.82)	E (E)	104.7 (104.7)
NBTL (85m)	0.77 (0.77)	E (E)	102.5 (96.1)	0.78 (0.81)	E (E)	105.3 (104.7)
NBR	0.19 (0.31)	D (D)	21.3 (34.8)	0.19 (0.32)	D (D)	22.1 (37.6)
SBL	0.45 (0.37)	E (E)	28.0 (23.1)	0.45 (0.37)	E (E)	28.0 (23.1)
SBTR	0.49 (0.35)	E (E)	30.8 (23.7)	0.49 (0.35)	E (E)	30.8 (23.7)
Overall	**0.68 (0.78)**	**D (E)**	**-- (--)**	**0.69 (0.80)**	**D (E)**	**-- (--)**
[35] Ontario Street / Woodward Avenue[2]						
EBL	0.08 (0.03)	C (D)	9.1 (3.9)	0.07 (0.03)	C (D)	9.1 (3.9)
EBTR	0.84 (0.25)	D (D)	#87.6 (24.9)	0.88 (0.34)	E (D)	#115.1 (31.4)
WBL	0.51 (0.63)	C (D)	19.9 (42.1)	0.51 (0.64)	C (D)	19.9 (42.0)
WBTR	0.27 (0.42)	C (D)	32.7 (37.1)	0.26 (0.49)	C (D)	34.0 (42.2)
NBL	0.54 (0.15)	C (A)	54.9 (9.4)	0.59 (0.25)	C (A)	61.0 (15.6)
NBTR	0.86 (0.43)	C (A)	#202.6 (62.1)	0.91 (0.45)	C (A)	#204.0 (66.1)
SBL	0.45 (0.16)	B (A)	14.9 (9.6)	0.47 (0.17)	C (A)	14.7 (9.9)
SBTR	0.41 (0.40)	B (A)	69.2 (59.9)	0.44 (0.41)	B (A)	72.1 (62.1)
Overall	**0.81 (0.47)**	**C (B)**	**-- (--)**	**0.86 (0.48)**	**C (B)**	**-- (--)**
[34] Ontario Street / Main Street East[2]						
EBL (40m)	0.92 (0.64)	D (C)	#114.7 (34.8)	0.94 (0.64)	D (C)	#110.4 (35.5)
EBTR	0.70 (0.87)	D (D)	86.0 (121.7)	0.76 (0.90)	D (D)	95.0 (#139.6)
WBL (40m)	0.80 (0.90)	D (E)	#57.5 (#116.3)	0.86 (0.95)	D (E)	#64.8 (#117.1)
WBTR	0.79 (0.84)	D (D)	82.5 (#158.8)	0.76 (0.90)	D (D)	82.7 (#174.9)
NBL (100m)	0.36 (0.74)	C (D)	22.4 (#44.2)	0.39 (0.79)	C (D)	23.2 (#47.8)
NBT	0.61 (0.76)	C (D)	103.2 (100.2)	0.63 (0.81)	C (D)	104.7 (109.5)
NBR	0.46 (0.41)	C (C)	59.2 (47.1)	0.48 (0.42)	C (C)	62.8 (49.5)
SBL (40m)	0.27 (0.65)	C (C)	17.5 (35.4)	0.28 (0.72)	C (D)	18.1 (#37.3)
SBT	0.68 (0.81)	C (D)	108.4 (108.7)	0.73 (0.83)	D (D)	116.2 (114.0)
SBR[1]	0.40 (0.20)	C (C)	51.4 (25.7)	0.43 (0.21)	C (C)	56.1 (26.8)
Overall	**0.74 (0.88)**	**D (D)**	**-- (--)**	**0.79 (0.92)**	**D (D)**	**-- (--)**

Notes:

1. xx (xx) – AM Peak Hour (PM Peak Hour)
2. Reflects additional lane provided relative to existing conditions
3. Reflects the suggested improvements

Under 2036 future total conditions, with completion of Phase 1 of the proposed development, all Focused Study Area signalized intersections operate acceptably with respect to overall capacity conditions. With respect to individual turning movements, some specific movements reach capacity under 2036 future background conditions and the following intersection modifications should be considered:

- **RR25 / Martin Street / Steeles Avenue East**

  Intersection has an overall V/C ratio of 0.90 or less and an individual v/c ratio of 0.97 for the EBL movement in the morning peak hour. Based on the reported queuing conditions, the EBL lane storage will need to be extended at future background conditions. Considering that the WBTR was already overcapacity under existing conditions, a separate WBR lane is recommended and is reflected in the above-noted results.

- **Bronte Street / Main Street**

  Intersection has an overall V/C ratio of 0.91 or better during both peak hours with the suggested additional SBR and NBR turn lanes at this horizon. All approaches in the east-west direction continue to be constrained and close to capacity.

- **Martin Street / Main Street**

  Intersection has an overall V/C ratio of 0.88 or less. Queues at the SBL movement are reported to potentially extend beyond the upstream Mill Street intersection, however without reaching the adjacent Martin Street pedestrian crossing (south of Millside Drive). The EBL queue storage should be extended to accommodate growth.

- **Ontario Street / Main Street**

  Intersection has an overall V/C ratio of 0.92 or less and the individual EBL and WBL turning movements are approaching capacity in the morning and afternoon peak hours, respectively. Both the EBL and WBL movements will benefit from turn-lane storage extensions under future background conditions. It is noted that a new exclusive SBR lane is recommended to replace the current shared through-right-lane configuration that transitions into a channelized right turn. The SBR lane will enable Ontario Street to better accommodate traffic growth without requiring as much of the cycle length, which is needed to accommodate the EBL and WBL volumes.

- **Ontario Street / Woodward Avenue**

  Intersection has an overall V/C ratio of 0.86 or less. Note that new EBL and WBL advance left-turn phases are recommended at the 2036 horizon to alleviate extended delays to side street turning movements, given the growth in conflicting traffic along Ontario Street but are not required for the intersection movements to operate under capacity.

It should be noted that all the above suggested improvements are triggered under future background conditions (per **Section 6.4.1.2**) and the proposed site traffic impacts are generally small (i.e. overall intersection V/C ratio change of 5% or less). The greatest site impacts are at the Martin Street / Main Street intersection, increasing the overall V/C ratio by 7% during the morning peak hour.

It is noted that the Highway 401 ramp terminals at Martin Street operate acceptably without extended queues on the off ramp.

6.4.1.2 Assessment for Road Network Improvements

Traffic analysis results under sensitivity conditions at the 2036 horizon without the improvements at the intersections, are summarized in **Table 49**. Synchro analysis sheets are provided in **Appendix Q**.

TABLE 49 2036 CONDITIONS SENSITIVITY WITHOUT RECOMMENDED IMPROVEMENTS

Movement (Storage in metres)	2036 Future Background			2036 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[32] Bronte Street / Main Street[2]						
EBL (80m)	0.97 (1.03)	D (F)	99.5 (62.6)	0.99 (1.03)	E (F)	104.3 (63.3)
EBT	0.69 (0.95)	C (D)	93.2 (#164.6)	0.72 (0.95)	C (D)	95.7 (168.4)
EBR	0.20 (0.16)	C (C)	16.6 (17.1)	0.20 (0.16)	C (B)	16.6 (17.1)
WBL (40m)	0.69 (1.02)	C (F)	37.1 (#68.6)	0.72 (1.05)	C (F)	37.1 (#71.0)
WBT	0.83 (0.97)	D (E)	99.1 (175.1)	0.86 (0.98)	D (E)	100.7 (181.6)
WBR	0.05 (0.02)	C (B)	0.0 (0.0)	0.05 (0.02)	C (B)	0.0 (0.0)
NBL (40m)	0.45 (0.87)	C (D)	21.8 (#69.1)	0.44 (0.88)	C (D)	21.8 (#68.9)
NBTR	0.91 (1.11)	D (F)	141.5 (218.1)	0.91 (1.14)	D (F)	146.0 (222.2)
SBL (25m)	0.68 (0.25)	C (C)	#46.8 (10.3)	0.68 (0.25)	C (C)	#47.6 (10.3)
SBTR	0.84 (1.35)	D (F)	138.3 (229.3)	0.84 (1.38)	D (F)	140.8 (234.2)
Overall	**0.99 (1.13)**	**D (F)**	**-- (--)**	**1.00 (1.16)**	**D (F)**	**-- (--)**
[35] Ontario Street / Woodward Avenue[2]						
EBL	0.07 (0.03)	C (D)	8.1 (3.9)	0.06 (0.03)	C (D)	7.7 (3.9)
EBTR	0.82 (0.25)	D (D)	#83.9 (24.9)	0.85 (0.34)	D (D)	#94.7 (31.4)
WBL	1.04 (0.63)	F (D)	41.1 (42.1)	0.98 (0.64)	F (D)	40.5 (42.0)
WBTR	0.33 (0.42)	C (D)	34.3 (37.1)	0.31 (0.49)	C (D)	34.0 (42.2)
NBL	0.44 (0.15)	B (A)	43.4 (9.4)	0.51 (0.25)	B (A)	50.5 (15.6)
NBTR	0.65 (0.43)	B (A)	#141.5 (62.1)	0.69 (0.45)	B (A)	152.2 (66.1)
SBL	0.49 (0.16)	C (A)	33.9 (9.6)	0.56 (0.17)	C (A)	37.3 (9.9)
SBTR	0.37 (0.40)	A (A)	64.7 (59.9)	0.40 (0.41)	B (A)	72.1 (62.1)
Overall	**0.76 (0.47)**	**C (B)**	**-- (--)**	**0.78 (0.48)**	**C (B)**	**-- (--)**
[34] Ontario Street / Main Street East[2]						
EBL (40m)	1.04 (0.64)	F (C)	#114.7 (35.2)	1.01 (0.64)	E (C)	#109.1 (36.1)
EBTR	0.77 (0.86)	D (D)	86.0 (121.7)	0.80 (0.87)	D (D)	95.0 (#139.6)
WBL (40m)	0.89 (1.04)	D (F)	#65.9 (#116.0)	0.91 (1.09)	E (F)	#73.8 (#116.6)
WBTR	0.79 (0.90)	D (D)	82.5 (#158.8)	0.75 (0.94)	D (D)	82.7 (#174.9)
NBL (100m)	0.49 (0.82)	C (D)	24.1 (#56.3)	0.50 (0.83)	C (D)	24.0 (#55.3)
NBT	0.57 (0.70)	C (D)	103.2 (100.2)	0.60 (0.77)	C (D)	104.7 (109.5)
NBR	0.44 (0.39)	C (C)	58.6 (46.4)	0.46 (0.41)	C (C)	62.5 (48.9)
SBL (40m)	0.24 (0.62)	B (C)	17.5 (35.4)	0.27 (0.68)	C (C)	18.1 (#37.5)
SBTR	0.96 (0.93)	D (D)	207.1 (154.1)	1.05 (0.97)	E (E)	220.1 (162.1)
Overall	**0.92 (1.01)**	**D (D)**	**-- (--)**	**0.96 (1.05)**	**D (D)**	**-- (--)**

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)
2. Reflects the existing configurations (without recommended improvements)

All recommended improvements at the 2036 horizon are required at the future background conditions.

6.4.1.3 Unsignalized Intersections (Focused Study Area)

A summary of the Focused Study Area unsignalized intersection operations in 2036 is provided in **Table 50**. The 95th Percentile queues are reported for critical movements (i.e. movements with LOS E or worse) for comparison to the available lane storage in the future. Detailed Synchro reports for unsignalized intersections are provided in **Appendix P**.

TABLE 50 2036 CONDITIONS – FOCUSED STUDY AREA UNSIGNALIZED INTERSECTIONS

Movement (Storage in metres)	2036 Future Background			2036 Future Total		
	LOS	Delay (s)	95th Percentile Queue (m)	LOS	Delay (s)	95th Percentile Queue (m)
[8] Martin Street / Kings Court Crescent						
WBLR	C (C)	15.7 (18.9)	1.1 (2.4)	C (C)	16.0 (19.4)	1.1 (2.5)
NBTR	A (A)	0.0 (0.0)	-- (--)	A (A)	0.0 (0.0)	-- (--)
SBTL	A (A)	0.2 (0.3)	0.1 (0.2)	A (A)	0.2 (0.3)	0.1 (0.3)
[2] Morobel Drive / Street A / Steeles Avenue East						
EBL	A (B)	9.6 (12.4)	0.3 (0.5)	Intersection signalized in Future Total Conditions		
SBLTR	B (C)	14.4 (24.2)	1.2 (4.6)			
[14] Street B / Steeles Avenue East						
NBR	Intersection not in Future Background			B (B)	10.7 (11.2)	0.6 (0.4)
[3] Chris Hadfield Way / Steeles Avenue East						
EBL	B (C)	10.8 (16.2)	0.4 (0.4)	B (C)	10.9 (16.6)	0.4 (0.4)
WBL	B (B)	10.7 (11.2)	0.6 (0.5)	B (B)	10.7 (11.0)	0.6 (0.4)
NBTLR	B (D)	12.8 (30.8)	0.3 (4.3)	B (C)	10.7 (21.0)	0.2 (2.7)
SBTLR	D (F)	32.9 (125.9)	1.8 (13.0)	C (F)	21.2 (61.9)	1.1 (7.5)
[10] Martin Street / Street D / Caves Court						
WBTLR	C (D)	17.6 (26.3)	0.8 (2.2)	Intersection signalized in Future Total Conditions		

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)
2. Reflects additional lane provided relative to existing conditions

Under future background conditions, all unsignalized intersections are operating acceptably with the exception of the Martin Street / Caves Court intersection.

Both the eastbound and westbound movements of the Martin Street / Caves Court intersection experience delays, especially with consideration of queues due to future growth of the conflicting through traffic along Martin Street.

With completion of Phase 1 of the proposed development, it is proposed to signalize the Martin Street / Caves Court intersection with the construction of the new public Street D that connects to Martin Street.

Once signalized, all movements at the Martin Street / Caves Court / Street D intersection will operate acceptably at a LOS C to D. All queues can be accommodated within the available storage, without extending to adjacent intersections upstream. It is noted that the Steeles Avenue East/ Street A / Morobel Drive and Martin Street / Street A intersections are also proposed to be signalized as part of Phase 1 of the proposed development:

The signalized intersection operating conditions are reported in **Table 48**. The balance of the unsignalized intersections operate acceptably at LOS C or better under future total conditions.

6.4.2 2041 Horizon

6.4.2.1 Signalized Intersections (Focused Study Area)

A summary of the Focused Study Area signalized intersection operations in 2041 is provided in **Table 48**. Storage lengths are provided only for movements where the 95th percentile queue are approaching or have exceed storage capacity. Detailed Synchro reports for signalized intersections are provided in **Appendix Q**.

TABLE 51 2041 CONDITIONS – FOCUSED STUDY AREA SIGNALIZED INTERSECTIONS

Movement (Storage in metres)	2041 Future Background			2041 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[7] Regional Road 25 / Highway 401 WB Off-Ramp						
WBLR	0.85 (0.74)	C (C)	#104.7 (63.6)	0.86 (0.75)	C (C)	#107.5 (65.8)
WBR	0.86 (0.77)	D (C)	#120.5 (75.9)	0.86 (0.78)	D (C)	#122.3 (78.2)
NBT	0.34 (0.43)	B (B)	34.5 (53.8)	0.35 (0.44)	B (B)	35.5 (54.7)
SBT	0.58 (0.74)	B (B)	61.4 (109.4)	0.59 (0.76)	B (B)	62.6 (112.6)
Overall	**0.70 (0.75)**	**C (B)**	**-- (--)**	**0.72 (0.77)**	**C (B)**	**-- (--)**
[6] Regional Road 25 / Highway 401 EB Off-Ramp						
EBL	0.69 (0.59)	D (D)	92.6 (50.4)	0.69 (0.58)	D (D)	92.6 (50.3)
EBTR	0.88 (0.76)	E (E)	#136.8 (74.8)	0.88 (0.76)	E (E)	#137.6 (75.7)
EBR	0.77 (0.57)	D (D)	#108.8 (57.4)	0.77 (0.58)	D (D)	#108.8 (57.7)
WBTLR	0.09 (0.07)	D (D)	15.0 (14.8)	0.09 (0.07)	D (D)	15.0 (14.8)
NBTR	0.54 (0.70)	C (C)	95.0 (#190.3)	0.55 (0.71)	C (C)	97.2 (#193.0)
SBL	0.18 (0.23)	B (B)	9.2 (8.1)	0.18 (0.23)	B (B)	9.2 (8.1)
SBT	0.60 (0.66)	C (B)	111.3 (158.7)	0.62 (0.69)	C (B)	115.3 (167.1)
Overall	**0.67 (0.67)**	**C (C)**	**-- (--)**	**0.68 (0.68)**	**C (C)**	**-- (--)**
[5] Regional Road 25 / Chisolm Drive / Maplehurst C.C.						
EBTL	0.44 (0.75)	E (E)	20.9 (56.8)	0.44 (0.75)	E (E)	20.9 (56.8)
EBR	0.02 (0.04)	D (D)	0.0 (11.0)	0.02 (0.04)	D (D)	0.0 (11.0)
WBTLR	0.03 (0.41)	D (D)	2.5 (32.0)	0.03 (0.41)	D (D)	2.5 (32.0)
NBL	0.41 (0.48)	A (B)	7.6 (19.4)	0.42 (0.50)	A (B)	7.3 (20.0)
NBT	0.61 (0.71)	B (C)	155.6 (182.2)	0.63 (0.72)	B (C)	166.1 (184.8)
NBR[1]	0.09 (0.05)	B (B)	20.8 (12.7)	0.09 (0.05)	B (B)	20.9 (12.3)
SBL	0.53 (0.30)	B (B)	31.0 (7.5)	0.56 (0.30)	C (B)	33.7 (7.5)
SBT	0.52 (0.62)	A (B)	94.9 (147.1)	0.53 (0.63)	A (B)	97.9 (154.4)
SBR	0.15 (0.07)	A (A)	8.5 (8.2)	0.15 (0.07)	A (A)	8.5 (8.2)
Overall	**0.58 (0.71)**	**B (B)**	**-- (--)**	**0.60 (0.72)**	**B (B)**	**-- (--)**
[13] Regional Road 25 / Market Drive						
EBL	0.77 (0.78)	D (D)	72.3 (78.1)	0.77 (0.78)	D (D)	72.3 (78.1)
EBR	0.08 (0.11)	D (D)	14.8 (17.2)	0.08 (0.11)	D (D)	14.8 (17.2)
NBL	0.65 (0.79)	B (D)	37.8 (74.9)	0.65 (0.79)	B (D)	39.8 (74.9)
NBT	0.53 (0.51)	A (A)	96.1 (94.3)	0.55 (0.51)	A (A)	102.6 (96.4)
SBT	0.54 (0.74)	C (D)	117.2 (197.4)	0.55 (0.76)	C (D)	120.6 (203.5)
SBR	0.28 (0.23)	E (F)	48.5 (65.3)	0.28 (0.23)	E (F)	49.2 (65.5)
Overall	**0.69 (0.80)**	**C (C)**	**-- (--)**	**0.70 (0.80)**	**C (C)**	**-- (--)**

Movement (Storage in metres)	2041 Future Background			2041 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[4] Regional Road 25 / Martin Street / Steeles Avenue East						
EBDL (55m)	0.90 (0.90)	E (E)	#114.7 (#143.6)	0.94 (0.93)	E (E)	#118.1 (#138.7)
EBTR	0.61 (0.43)	D (D)	82.4 (84.4)	0.66 (0.45)	D (D)	87.1 (88.4)
WBL (90m)	0.28 (0.50)	D (E)	10.4 (52.7)	0.35 (0.63)	D (E)	11.8 (65.0)
WBT	0.68 (0.82)	D (E)	51.5 (94.8)	0.72 (0.83)	D (E)	52.3 (98.2)
WBR[1]	0.56 (0.69)	A (A)	64.7 (124.4)	0.56 (0.69)	A (A)	64.5 (120.0)
NBL (85m)	0.15 (0.25)	D (D)	11.9 (18.0)	0.16 (0.29)	D (D)	12.8 (20.0)
NBTR	0.82 (0.71)	E (D)	98.3 (74.3)	0.91 (0.76)	E (E)	#130.2 (80.8)
SBL (135m)	0.75 (0.89)	D (E)	125.1 (#142.2)	0.76 (0.90)	D (E)	125.4 (#142.2)
SBT	0.22 (0.54)	C (C)	51.3 (116.0)	0.25 (0.61)	C (C)	59.7 (134.0)
SBR	0.47 (0.90)	B (D)	46.9 (#221.9)	0.48 (0.92)	B (D)	51.3 (#231.8)
Overall	**0.83 (0.92)**	**C (D)**	**-- (--)**	**0.87 (0.94)**	**D (D)**	**-- (--)**
[9] Martin Street / Street A						
EBL (25m)	Intersection is unsignalized in Existing and Future Background Conditions			0.51 (0.33)	D (D)	33.9 (17.1)
EBR (100m)				0.02 (0.01)	D (D)	8.2 (7.4)
NBL (25m)				0.01 (0.04)	A (A)	m1.3 (3.6)
NBT				0.40 (0.31)	A (A)	44.7 (32.6)
SBTR				0.26 (0.46)	A (A)	37.1 (74.5)
Overall				**0.41 (0.45)**	**A (A)**	**-- (--)**
[10] Martin Street / Street D / Caves Court						
EBL (25m)	Intersection is unsignalized in Existing and Future Background Conditions			0.17 (0.11)	D (D)	12.9 (9.3)
EBTR (70m)				0.04 (0.03)	D (D)	0.7 (2.9)
WBTLR				0.01 (0.01)	D (D)	m1.4 (m8.5)
NBL (25m)				0.02 (0.07)	A (A)	51.4 (89.5)
NBTR				0.39 (0.33)	A (A)	24.1 (41.4)
SBTLR				0.25 (0.43)	A (A)	12.9 (9.3)
Overall				**0.37 (0.40)**	**A (A)**	**-- (--)**
[11] Martin Street / Woodward Avenue						
EBTLR	0.09 (0.06)	D (C)	9.9 (11.3)	0.09 (0.06)	D (C)	9.9 (11.4)
WBL	0.56 (0.30)	D (C)	35.0 (32.6)	0.56 (0.30)	D (C)	35.0 (32.6)
WBTR	0.15 (0.08)	D (C)	18.1 (14.1)	0.15 (0.11)	D (C)	18.5 (16.3)
NBL	0.01 (0.01)	A (B)	2.0 (2.6)	0.01 (0.01)	A (B)	2.0 (2.6)
NBTR	0.45 (0.60)	A (C)	87.5 (104.7)	0.48 (0.66)	B (C)	94.5 (118.1)
SBL	0.09 (0.15)	A (B)	0.4 (12.7)	0.15 (0.21)	A (A)	4.5 (7.5)
SBT	0.20 (0.47)	A (B)	6.5 (93.2)	0.25 (0.51)	A (B)	24.7 (98.6)
Overall	**0.46 (0.50)**	**B (B)**	**-- (--)**	**0.48 (0.53)**	**B (B)**	**-- (--)**
[33] Martin Street / Main Street						
EBL (15m)	0.60 (0.66)	B (B)	26.6 (33.2)	0.63 (0.67)	B (B)	27.2 (#33.8)
EBT	0.48 (0.54)	A (A)	60.7 (73.6)	0.49 (0.55)	A (B)	62.1 (74.3)
WBT	0.68 (0.91)	C (C)	#95.9 (#170.8)	0.70 (0.94)	C (D)	#95.9 (#172.3)

Movement (Storage in metres)	2041 Future Background			2041 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
WBR (35m)	0.16 (0.24)	B (B)	16.0 (25.0)	0.17 (0.29)	B (B)	17.0 (29.1)
SBL (85/160m)	0.71 (0.79)	C (D)	62.4 (#74.0)	0.81 (0.85)	C (D)	#87.2 (#87.8)
SBR	0.05 (0.15)	C (C)	8.9 (15.7)	0.07 (0.20)	C (C)	10.6 (18.2)
Overall	**0.68 (0.84)**	**B (C)**	**-- (--)**	**0.73 (0.87)**	**B (C)**	**-- (--)**
[32] Bronte Street / Main Street						
EBL (80m)	0.71 (0.87)	B (D)	55.9 (56.9)	0.71 (0.87)	B (D)	56.4 (56.9)
EBT	0.59 (0.87)	C (D)	90.6 (#152.3)	0.61 (0.88)	C (D)	93.2 (#154.6)
EBR	0.21 (0.14)	C (B)	16.8 (16.2)	0.21 (0.14)	C (B)	16.8 (16.2)
WBL (40m)	0.57 (0.85)	B (D)	38.6 (#54.1)	0.60 (0.88)	B (D)	39.8 (#58.9)
WBT	0.73 (0.92)	C (D)	107.3 (#164.9)	0.74 (0.93)	C (D)	107.3 (#166.9)
WBR	0.05 (0.03)	C (B)	2.8 (0.0)	0.05 (0.03)	C (B)	2.8 (0.0)
NBL (40m)	0.42 (0.83)	C (D)	23.2 (#66.6)	0.41 (0.84)	C (D)	23.0 (#66.8)
NBTR	0.66 (0.59)	D (C)	54.6 (70.3)	0.67 (0.60)	D (C)	55.3 (71.6)
SBL (25m)	0.60 (0.18)	C (C)	#39.9 (11.2)	0.61 (0.19)	C (C)	#39.7 (11.2)
SBTR	0.39 (0.80)	C (D)	44.1 (86.8)	0.51 (0.80)	C (D)	43.8 (88.2)
Overall	**0.71 (0.91)**	**C (D)**	**-- (--)**	**0.72 (0.92)**	**C (D)**	**-- (--)**
[1] Bronte Street / Steeles Avenue East						
EBTL	0.33 (0.50)	B (C)	71.2 (101.2)	0.33 (0.57)	B (D)	71.1 (108.0)
EBR	0.18 (0.20)	A (C)	31.6 (40.1)	0.18 (0.21)	A (C)	31.5 (40.0)
WBL (85m)	0.51 (0.81)	B (C)	21.6 (#166.6)	0.51 (0.81)	B (C)	29.1 (#204.3)
WBTR	0.23 (0.37)	A (B)	19.0 (78.7)	0.25 (0.39)	A (B)	18.3 (88.2)
NBL	0.72 (0.74)	E (E)	79.4 (82.7)	0.72 (0.74)	E (E)	79.4 (82.7)
NBTR	0.40 (0.29)	D (D)	42.2 (2.1)	0.42 (0.30)	D (D)	44.0 (4.7)
SBTR	-- (--)	-- (--)	-- (--)	-- (0.01)	-- (E)	-- (--)
Overall	**0.59 (0.80)**	**C (C)**	**-- (--)**	**0.59 (0.80)**	**C (C)**	**-- (--)**
[2] Morobel Drive / Street A / Steeles Avenue East						
EBL	Intersection is unsignalized in Existing and Future Background Conditions			0.02 (0.04)	A (A)	m1.3 (m1.5)
EBTR				0.44 (0.43)	A (A)	46.9 (69.9)
WBL				0.06 (0.13)	A (A)	m3.8 (m0.7)
WBTR				0.32 (0.49)	A (A)	70.0 (m19.6)
NBL (45m)				0.26 (0.49)	D (E)	21.2 (20.2)
NBT (150m)				Neg. Vol.		
NBR (45m)				0.01 (0.01)	D (E)	0.0 (0.0)
SBTLR				0.01 (0.14)	D (E)	6.6 (13.4)
Overall				**0.42 (0.49)**	**A (A)**	**-- (--)**
[26] Ontario Street / Steeles Avenue East						
EBL	0.15 (0.24)	C (D)	m18.0 (m7.9)	0.15 (0.24)	C (D)	m17.2 (m7.7)
EBT	0.39 (0.55)	C (D)	93.4 (m66.0)	0.40 (0.55)	C (D)	m93.7 (m66.8)
EBR (75m)	0.32 (0.38)	F (F)	m83.9 (m79.2)	0.33 (0.39)	F (F)	m83.4 (m78.5)
WBL (85m)	0.71 (0.84)	C (D)	#107.5 (#262.4)	0.73 (0.87)	C (D)	#105.6 (#260.5)

Movement (Storage in metres)	2041 Future Background			2041 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
WBTR	0.29 (0.46)	C (C)	66.4 (133.7)	0.29 (0.48)	C (C)	66.0 (136.0)
NBL (85m)	0.80 (0.79)	E (E)	101.2 (95.7)	0.82 (0.81)	E (E)	105.1 (102.9)
NBTL (85m)	0.78 (0.78)	E (E)	102.9 (96.1)	0.80 (0.80)	E (E)	106.5 (102.4)
NBR	0.19 (0.41)	D (D)	22.1 (46.0)	0.19 (0.42)	D (D)	23.3 (48.3)
SBL	0.45 (0.35)	E (E)	28.0 (22.6)	0.45 (0.35)	E (E)	28.0 (22.7)
SBTR	0.49 (0.34)	E (E)	30.8 (22.9)	0.49 (0.34)	E (E)	30.8 (22.9)
Overall	**0.74 (0.81)**	**D (E)**	**-- (--)**	**0.75 (0.84)**	**D (E)**	**-- (--)**
[35] Ontario Street / Woodward Avenue						
EBL	0.10 (0.03)	C (D)	10.6 (4.0)	0.09 (0.03)	C (D)	10.6 (4.0)
EBTR	0.84 (0.26)	D (D)	#88.3 (24.9)	0.88 (0.32)	E (D)	#113.4 (29.4)
WBL	0.51 (0.61)	C (D)	19.9 (39.4)	0.51 (0.62)	C (D)	19.9 (39.4)
WBTR	0.32 (0.44)	C (D)	38.9 (38.0)	0.31 (0.51)	C (D)	40.1 (42.8)
NBL	0.47 (0.06)	C (A)	45.0 (4.7)	0.52 (0.13)	C (A)	47.5 (8.5)
NBTR	0.85 (0.41)	C (A)	#200.2 (56.6)	0.90 (0.42)	C (A)	#201.3 (59.4)
SBL	0.45 (0.14)	B (A)	14.9 (8.5)	0.47 (0.14)	C (A)	14.7 (8.7)
SBTR	0.41 (0.37)	B (A)	68.2 (52.3)	0.44 (0.37)	B (A)	70.7 (54.0)
Overall	**0.81 (0.44)**	**C (B)**	**-- (--)**	**0.85 (0.45)**	**C (B)**	**-- (--)**
[34] Ontario Street / Main Street East						
EBL (40m)	0.92 (0.62)	D (C)	#117.8 (32.2)	0.94 (0.63)	D (C)	#118.9 (33.5)
EBTR	0.63 (0.86)	D (D)	78.5 (115.0)	0.70 (0.88)	D (D)	88.2 (122.9)
WBL (40m)	0.77 (0.92)	D (E)	56.6 (#110.5)	0.83 (0.90)	D (E)	#61.1 (#111.8)
WBTR	0.79 (0.84)	D (D)	86.7 (#145.5)	0.80 (0.85)	D (D)	88.7 (#157.7)
NBL (100m)	0.36 (0.68)	C (C)	23.0 (#38.8)	0.38 (0.75)	C (D)	23.2 (#46.5)
NBT	0.62 (0.70)	C (D)	99.8 (96.7)	0.63 (0.78)	C (D)	101.5 (104.7)
NBR	0.46 (0.38)	C (C)	57.5 (44.2)	0.48 (0.41)	C (C)	61.6 (47.2)
SBL (40m)	0.27 (0.59)	C (C)	17.9 (35.4)	0.28 (0.67)	C (C)	18.1 (#36.7)
SBT	0.68 (0.76)	D (D)	102.5 (108.2)	0.71 (0.82)	D (D)	109.2 (112.3)
SBR	0.39 (0.19)	C (C)	47.4 (25.6)	0.42 (0.20)	C (C)	52.0 (26.4)
Overall	**0.74 (0.87)**	**D (D)**	**-- (--)**	**0.77 (0.88)**	**D (D)**	**-- (--)**

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)
2. Reflects additional lane provided relative to existing conditions

Under 2041 future total conditions, with completion of Phase 1 of the proposed development, all Focused Study Area signalized intersections operate acceptably with respect to overall intersection capacity. Some specific intersections movements reach capacity where an extension of queue storage should be considered. The Highway 401 ramp terminals at Martin Street continue to operate acceptably, with overall intersection V/C ratios of 0.80 or better during both peak hours.

The signalized proposed external points of site access intersections will all operate acceptably with overall intersection V/C ratios of 0.45 and 0.53 or better during the weekday morning and afternoon peak hours, respectively. The 95th percentile queues can be accommodated within the internal street network without impeding upstream intersections.

Key intersections include:

- **RR25 / Martin Street / Steeles Avenue East** with an overall V/C ratio of 0.94 or less and an individual v/c ratio of 0.94 for the EBL movement in the morning peak hour. Based on the reported queuing conditions, the dual EBL lane storage will need to be extended at future background conditions. In addition to the separate WBR lane recommended at the 2036 horizon, overlapping SBR and EBL phase will be necessary to process the traffic growth routing between southwest of the site to the RR25 interchange and North Milton employment lands.

- **Bronte Street / Main Street** with an overall V/C ratio of 0.92 during the afternoon peak hour, even with the suggested additional north-south through lanes at this horizon such that the right turn is shared with throughs in the new curbside lane. The east-west approaches continue to be busy, especially in the afternoon.

- **Bronte Street / Steeles Avenue East** with an overall V/C ratio of 0.80 or less. The NBL will have a continuous lane with the suggested widening of Bronte Street to 4-lanes which will help accommodate the expected 95th percentile queuing. The high WBL queue during the afternoon peak hour is due to high volume growth potentially originating from James Snow Parkway to the east and traffic diverted from Steeles/Tremaine. As noted in the Wider Area assessment, James Snow Parkway will become overcapacity. WBL traffic growth is likely overstated given that it will be metered by the upstream capacity constraints at James Snow Parkway and RR25.

- **Martin Street / Main Street** with an overall V/C ratio of 0.87 or less. Queues at the SBL movement are reported to potentially extend past the upstream Mill Street intersection, however without reaching the adjacent Martin Street pedestrian crossing (south of Millside Drive). The EBL storage should be extended to accommodate growth.

- **Ontario Street / Main Street** with an overall V/C ratio of 0.88 or less and the individual EBL and WBL turning movements being busy in the morning and afternoon peak hours, respectively. Both the EBL and WBL movements will benefit from lane storage extensions under future background conditions.

  It is noted that a new exclusive SBR lane is also recommended to replace the current shared thru-right lane configuration that transitions into a channelized right turn. The SBR lane will enable Ontario Street to better accommodate traffic growth without requiring as much of the cycle length, which is needed to accommodate the aforementioned EBL and WBL volumes.

- **Ontario Street / Woodward Avenue** with an overall V/C ratio of 0.85 or less. Note that new EBL and WBL advance turn phases are suggested from the 2036 horizon and onwards during the morning peak hour, to alleviate extended delays to side street turning movements given the growth in conflicting traffic along Ontario Street. These movements will be over capacity should the advance phase not be provided.

- **Ontario Street / Steeles Avenue East** with an overall V/C ratio of 0.84 or less and an individual V/C ratio of 0.87 for the WBL movement in the afternoon peak hour. The EBR queues will continue to potentially exceed the available storage whereas the NBL queue will extend to the 2-way left-turn lane. The high WBL queue during the afternoon peak hour is due to high volume growth potentially originating from James Snow Parkway to the east. As noted in the Wider Area assessment, James Snow Parkway will become overcapacity. WBL traffic growth is likely overstated, given that it will be metered by the upstream capacity constraints at James Snow Parkway and RR25.

It should be noted that all the above suggested improvements are triggered under future background conditions (per **Section 6.4.2.2**) and the proposed site traffic impacts are small (i.e. overall intersection V/C ratio change of 5% or less). The greatest site impacts are at the Martin Street / Main Street intersection, increasing overall V/C ratio by 5% during the morning peak hour.

6.4.2.2 Assessment for Road Network Improvements

Analysis results under sensitivity conditions at the 2041 horizon without the improvements recommended at the intersections are summarized in **Table 49**. Synchro analysis sheets are provided in **Appendix R**.

TABLE 52 2041 CONDITIONS SENSITIVITY WITHOUT RECOMMENDED IMPROVEMENTS

Movement (Storage in metres)	2041 Future Background			2041 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[32] Bronte Street / Main Street[2]						
EBL (80m)	0.82 (0.91)	C (E)	72.2 (55.4)	0.82 (0.91)	C (E)	72.5 (55.6)
EBT	0.66 (0.91)	C (D)	90.6 (#152.3)	0.67 (0.91)	C (D)	93.2 (154.6)
EBR	0.21 (0.15)	C (C)	16.8 (16.3)	0.21 (0.15)	C (C)	16.8 (16.3)
WBL (40m)	0.69 (0.92)	C (E)	39.4 (#57.4)	0.72 (0.95)	C (E)	40.2 (#60.1)
WBT	0.81 (0.96)	D (E)	107.3 (164.9)	0.82 (0.96)	D (E)	107.3 (166.9)
WBR	0.05 (0.03)	C (B)	2.8 (0.0)	0.05 (0.03)	C (B)	2.8 (0.0)
NBL (40m)	0.31 (0.85)	C (D)	22.9 (#69.0)	0.31 (0.86)	C (D)	22.9 (#69.0)
NBT	0.90 (0.77)	D (C)	130.1 (144.2)	0.90 (0.79)	D (C)	132.0 (146.1)
NBR	0.03 (0.19)	C (C)	0.0 (24.7)	0.04 (0.20)	C (C)	0.0 (25.9)
SBL (25m)	0.69 (0.20)	C (C)	#51.0 (11.2)	0.69 (0.20)	C (C)	#51.6 (11.2)
SBT	0.59 (0.95)	C (E)	79.2 (155.5)	0.59 (0.97)	C (E)	79.2 (157.8)
SBR	0.20 (0.38)	C (C)	24.1 (43.9)	0.16 (0.36)	C (C)	19.6 (40.7)
Overall	**0.84 (0.94)**	**C (D)**	**-- (--)**	**0.85 (0.95)**	**C (D)**	**-- (--)**
[4] Martin Street / Steeles Avenue / Regional Road 25[2]						
EBDL (55m)	0.90 (1.08)	E (F)	114.7 (143.6)	0.94 (1.11)	E (F)	118.1 (138.7)
EBTR	0.61 (0.47)	D (E)	82.4 (84.4)	0.66 (0.48)	D (D)	87.1 (88.4)
WBL (90m)	0.28 (0.53)	D (E)	10.4 (52.7)	0.35 (0.68)	D (E)	11.8 (65.0)
WBT	0.68 (0.82)	D (E)	51.5 (94.8)	0.72 (0.83)	D (E)	52.3 (98.2)
WBR[1]	0.56 (0.69)	A (A)	64.7 (124.4)	0.56 (0.69)	A (A)	64.5 (120.0)
NBL (85m)	0.15 (0.22)	D (D)	11.9 (18.0)	0.16 (0.26)	D (D)	12.8 (20.0)
NBTR	0.82 (0.58)	E (D)	98.3 (74.3)	0.91 (0.63)	E (D)	#130.2 (80.8)
SBL (135m)	0.75 (0.89)	D (E)	125.1 (#142.2)	0.76 (0.90)	D (E)	125.4 (#142.2)
SBT	0.22 (0.49)	C (C)	51.3 (116.0)	0.25 (0.56)	C (C)	59.7 (134.0)
SBR	0.39 (0.96)	C (E)	24.1 (#252.7)	0.40 (0.98)	C (E)	24.5 (#262.6)
Overall	**0.82 (0.98)**	**D (D)**	**-- (--)**	**0.86 (1.00)**	**D (D)**	**-- (--)**
[35] Ontario Street / Woodward Avenue						
EBL	0.09 (0.03)	C (D)	9.4 (4.0)	0.08 (0.03)	C (D)	9.0 (4.0)
EBTR	0.82 (0.26)	D (D)	#83.7 (24.9)	0.85 (0.32)	D (D)	93.2 (29.4)
WBL	1.10 (0.61)	F (D)	42.2 (39.4)	1.04 (0.62)	F (D)	41.1 (39.4)
WBTR	0.39 (0.44)	C (D)	40.7 (38.0)	0.37 (0.51)	C (D)	40.1 (42.8)
NBL	0.39 (0.06)	B (A)	36.3 (4.7)	0.44 (0.13)	B (A)	41.8 (8.5)
NBTR	0.65 (0.41)	B (A)	#140.5 (56.6)	0.68 (0.42)	B (A)	#150.3 (59.4)
SBL	0.48 (0.14)	C (A)	33.3 (8.5)	0.54 (0.14)	C (A)	36.7 (8.7)
SBTR	0.37 (0.37)	A (A)	64.2 (52.3)	0.40 (0.37)	B (A)	70.7 (54.0)
Overall	**0.77 (0.44)**	**C (B)**	**-- (--)**	**0.78 (0.45)**	**C (B)**	**-- (--)**

Notes:

1. xx (xx) – AM Peak Hour (PM Peak Hour)
2. Reflects the existing configurations (if no prior recommended improvements at the previous horizon yet) or the recommended configurations at the 2036 horizon

6.4.2.3 Unsignalized Intersections (Focused Study Area)

A summary of the Focused Study Area unsignalized intersection operations in 2041 is provided in **Table 53**. The 95th Percentile queues are reported for critical movements (i.e. movements with LOS E or worse) for comparison to the available lane storage in the future.

Detailed Synchro reports for unsignalized intersections are provided in **Appendix Q**.

TABLE 53 2041 CONDITIONS – FOCUSED STUDY AREA UNSIGNALIZED INTERSECTIONS

Movement (Storage in metres)	2041 Future Background			2041 Future Total		
	LOS	Delay (s)	95th Percentile Queue (m)	LOS	Delay (s)	95th Percentile Queue (m)
[8] Martin Street / Kings Court Crescent						
WBLR	B (C)	14.5 (16.8)	0.9 (2.0)	C (C)	15.0 (17.3)	1.0 (2.0)
NBTR	A (A)	0.0 (0.0)	-- (--)	A (A)	0.0 (0.0)	-- (--)
SBTL	A (A)	0.2 (0.3)	0.1 (0.2)	A (A)	0.2 (0.3)	0.1 (0.2)
[2] Morobel Drive / Street A / Steeles Avenue East						
EBL	A (B)	9.8 (12.9)	0.3 (0.5)	Intersection signalized in Future Total Conditions		
SBLTR	B (D)	14.9 (25.6)	1.3 (4.7)			
[14] Street B / Steeles Avenue East						
NBR	Intersection not in Future Background			B (B)	10.8 (11.4)	0.6 (0.4)
[3] Chris Hadfield way / Steeles Avenue East						
EBL	B (C)	11.2 (17.4)	0.2 (0.4)	B (C)	11.3 (18.0)	0.4 (0.4)
WBL	B (B)	11.3 (10.9)	0.3 (0.4)	B (B)	11.0 (10.8)	0.6 (0.4)
NBTLR	B (D)	13.1 (30.3)	0.1 (4.1)	B (C)	10.8 (21.2)	0.2 (2.7)
SBTLR	E (F)	38.5 (141.9)	2.2 (13.0)	C (F)	23.1 (71.3)	1.2 (7.8)
[10] Martin Street / Street D / Caves Court						
WBTLR	C (C)	15.9 (21.1)	0.7 (1.6)	Intersection signalized in Future Total Conditions		

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)
2. Reflects additional lane provided relative to existing conditions

Under future background conditions, all unsignalized intersections are operating acceptably at a LOS E or better, with the exception of the three points of external site access intersections.

As previously discussed, with completion of Phase 1 of the proposed development in 2036, the following intersections are proposed to be signalized (see **Table 51** for signalized intersection operating conditions):

- Steeles Avenue East/ Street A/ Morobel Drive
- Martin Street / Street A
- Martin Street / Street D / Caves Court

Once signalized, these movements with will operate acceptably with LOS D or better. The outbound queues at the proposed traffic signals will be improved to not rely on curtesy gaps as compared to without the signalized traffic control. The resultant queues can be accommodated within the available storage on site without extending to adjacent intersections upstream.

The balance of the unsignalized intersections operate acceptably at LOS C or better under future total conditions.

6.4.3 2046 Horizon

6.4.3.1 Signalized Intersections (Focused Study Area)

A summary of the Focused Study Area signalized intersection operations in 2046 is provided in **Table 48**. Storage lengths are provided only for movements where the 95th percentile queue are approaching or have exceed storage capacity. Detailed Synchro reports for signalized intersections are provided in **Appendix R**.

TABLE 54 2046 CONDITIONS – FOCUSED STUDY AREA SIGNALIZED INTERSECTIONS

Movement (Storage in metres)	2046 Future Background			2046 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[7] Regional Road 25 / Highway 401 WB Off-Ramp						
WBLR	0.88 (0.74)	C (C)	#111.4 (65.4)	0.90 (0.76)	C (C)	#117.5 (70.7)
WBR	0.80 (0.79)	C (C)	#110.9 (78.9)	0.89 (0.81)	D (D)	#127.1 (#88.7)
NBT	0.28 (0.45)	B (B)	28.6 (56.8)	0.32 (0.48)	B (B)	32.5 (59.3)
SBT	0.60 (0.79)	B (B)	64.2 (#125.2)	0.64 (0.86)	B (C)	68.7 (#147.4)
Overall	**0.72 (0.79)**	**C (B)**	**-- (--)**	**0.75 (0.84)**	**C (C)**	**-- (--)**
[6] Regional Road 25 / Highway 401 EB Off-Ramp						
EBL	0.70 (0.59)	D (D)	96.4 (53.1)	0.71 (0.57)	D (D)	96.4 (53.1)
EBTR	0.88 (0.78)	E (E)	#140.5 (80.0)	0.89 (0.79)	E (E)	#142.1 (83.4)
EBR	0.80 (0.58)	D (D)	#123.0 (60.9)	0.80 (0.59)	D (D)	#123.0 (62.4)
WBTLR	0.08 (0.08)	D (D)	11.5 (16.4)	0.08 (0.08)	D (D)	11.5 (16.4)
NBTR	0.50 (0.75)	C (C)	85.6 (#203.5)	0.53 (0.77)	C (C)	94.0 (#212.0)
SBL	0.16 (0.24)	B (B)	9.2 (8.1)	0.18 (0.24)	B (B)	9.2 (8.1)
SBT	0.63 (0.72)	C (C)	119.1 (174.9)	0.68 (0.79)	C (C)	132.2 (#217.1)
Overall	**0.69 (0.70)**	**C (C)**	**-- (--)**	**0.73 (0.76)**	**C (C)**	**-- (--)**
[5] Regional Road 25 / Chisolm Drive / Maplehurst C.C.						
EBTL	0.44 (0.75)	E (E)	20.9 (56.8)	0.44 (0.75)	E (E)	20.9 (56.8)
EBR	0.02 (0.04)	D (D)	0.0 (11.0)	0.02 (0.04)	D (D)	0.0 (11.0)
WBTLR	0.03 (0.41)	D (D)	2.5 (32.0)	0.03 (0.41)	D (D)	2.5 (32.0)
NBL	0.42 (0.51)	A (B)	7.9 (19.7)	0.45 (0.56)	A (B)	9.8 (22.1)
NBT	0.59 (0.73)	B (C)	147.8 (195.5)	0.66 (0.76)	B (C)	179.8 (209.9)
NBR[1]	0.10 (0.05)	B (B)	21.5 (12.7)	0.10 (0.05)	B (B)	21.2 (m12.4)
SBL	0.52 (0.33)	B (B)	30.4 (9.7)	0.59 (0.33)	C (B)	37.9 (9.7)
SBT	0.54 (0.64)	A (B)	100.2 (158.9)	0.57 (0.70)	A (B)	110.1 (183.8)
SBR	0.16 (0.08)	A (A)	8.7 (8.3)	0.16 (0.08)	A (A)	8.7 (8.3)
Overall	**0.57 (0.73)**	**B (C)**	**-- (--)**	**0.63 (0.75)**	**B (C)**	**-- (--)**
[13] Regional Road 25 / Market Drive						
EBL	0.77 (0.78)	D (D)	72.3 (78.1)	0.77 (0.78)	D (D)	72.3 (78.1)
EBR	0.08 (0.11)	D (D)	14.8 (17.2)	0.08 (0.11)	D (D)	14.8 (17.2)
NBL	0.66 (0.78)	B (D)	43.0 (#79.1)	0.67 (0.78)	C (D)	48.9 (#79.1)
NBT	0.51 (0.53)	A (A)	91.1 (100.0)	0.58 (0.55)	A (A)	110.8 (106.0)
SBT	0.56 (0.79)	C (D)	122.2 (205.9)	0.62 (0.86)	C (D)	132.6 (#239.9)
SBR	0.29 (0.24)	E (F)	50.6 (66.6)	0.28 (0.26)	F (F)	52.4 (71.5)
Overall	**0.71 (0.80)**	**C (D)**	**-- (--)**	**0.71 (0.82)**	**C (D)**	**-- (--)**

Movement (Storage in metres)	2046 Future Background			2046 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[4] Regional Road 25 / Martin Street / Steeles Avenue East						
EBL -dual (55m)	0.77 (0.89)	D (E)	#91.6 (#126.1)	0.93 (0.95)	E (E)	#117.5 (#131.4)
EBTR	0.57 (0.43)	D (D)	94.4 (80.9)	0.77 (0.51)	D (E)	110.3 (107.0)
WBL (90m)	0.24 (0.49)	D (D)	17.1 (48.1)	0.43 (0.91)	D (E)	22.7 (#94.5)
WBT	0.56 (0.80)	E (E)	55.6 (100.2)	0.71 (0.87)	E (E)	58.3 (116.1)
WBR[1]	0.58 (0.76)	A (A)	0.0 (138.9)	0.58 (0.76)	A (A)	0.0 (123.0)
NBL (85m)	0.17 (0.28)	D (D)	13.8 (19.2)	0.18 (0.47)	C (D)	16.6 (23.7)
NBTR	0.78 (0.72)	D (E)	96.8 (76.5)	0.90 (0.89)	E (E)	#153.5 (#106.1)
SBL-dual (185m)	0.90 (0.90)	E (E)	#156.1 (#149.7)	0.96 (0.93)	E (E)	#170.1 (#149.7)
SBT	0.26 (0.61)	C (C)	57.1 (134.6)	0.35 (0.85)	C (D)	86.7 (#208.4)
SBR[2] (220m)	0.52 (0.93)	B (D)	58.2 (226.4)	0.54 (1.03)	B (E)	79.6 (258.0)
Overall	**0.84 (0.96)**	**D (D)**	**-- (--)**	**0.95 (1.01)**	**D (D)**	**-- (--)**
[9] Martin Street / Street A						
EBL (25m)	Intersection is unsignalized in Existing and Future Background Conditions			0.66 (0.47)	D (D)	54.9 (31.5)
EBR (100m)				0.05 (0.06)	C (D)	12.1 (14.4)
NBL (25m)				0.06 (0.25)	A (A)	m3.5 (14.7)
NBT				0.52 (0.37)	A (A)	109.5 (65.2)
SBTR				0.38 (0.68)	A (A)	58.3 (133.5)
Overall				**0.54 (0.66)**	**B (B)**	**-- (--)**
[10] Martin Street / Street D / Caves Court						
EBL (25m)	Intersection is unsignalized in Existing and Future Background Conditions			0.44 (0.33)	D (D)	27.5 (17.6)
EBTR (70m)				0.11 (0.06)	D (D)	0.7 (2.7)
WBTLR				0.01 (0.01)	D (D)	m6.5 (m17.5)
NBL (25m)				0.08 (0.31)	A (A)	72.0 (59.1)
NBTR				0.46 (0.39)	A (A)	33.7 (90.0)
SBTLR				0.35 (0.59)	A (A)	27.5 (17.6)
Overall				**0.46 (0.56)**	**B (A)**	**-- (--)**
[11] Martin Street / Woodward Avenue						
EBTLR	0.10 (0.06)	D (C)	10.1 (11.3)	0.10 (0.06)	D (C)	10.1 (11.4)
WBL	0.50 (0.28)	D (C)	29.8 (31.3)	0.50 (0.28)	D (C)	29.8 (31.3)
WBTR	0.16 (0.09)	D (C)	18.4 (14.6)	0.17 (0.15)	D (C)	19.2 (18.7)
NBL	0.01 (0.01)	A (B)	1.8 (2.6)	0.01 (0.02)	A (B)	2.0 (2.6)
NBTR	0.48 (0.59)	A (C)	93.4 (102.4)	0.57 (0.80)	B (C)	120.9 (#161.7)
SBL	0.08 (0.18)	A (A)	0.1 (0.0)	0.27 (0.42)	A (B)	3.1 (11.4)
SBT	0.23 (0.50)	A (B)	0.0 (95.4)	0.36 (0.62)	A (B)	11.4 (108.7)
Overall	**0.47 (0.49)**	**B (B)**	**-- (--)**	**0.55 (0.62)**	**B (C)**	**-- (--)**
[33] Martin Street / Main Street						
EBL (15m)	0.67 (0.73)	B (C)	#46.4 (#44.3)	0.83 (0.79)	C (C)	#63.3 (#48.1)
EBT	0.49 (0.55)	A (B)	70.3 (75.9)	0.56 (0.58)	B (B)	75.0 (78.7)

Movement (Storage in metres)	2046 Future Background			2046 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
WBT	0.79 (0.91)	C (C)	#130.6 (#169.1)	0.87 (0.98)	C (D)	#132.3 (#175.6)
WBR (35m)	0.20 (0.22)	B (B)	20.6 (22.4)	0.28 (0.41)	B (B)	26.2 (39.8)
SBL (85/160m)	0.68 (0.81)	C (D)	58.4 (#79.2)	0.91 (1.00)	D (E)	#115.1 (#118.5)
SBR	0.05 (0.18)	C (C)	8.8 (17.0)	0.12 (0.29)	B (C)	13.8 (24.7)
Overall	**0.73 (0.86)**	**B (C)**	**-- (--)**	**0.91 (0.96)**	**C (C)**	**-- (--)**
[32] Bronte Street / Main Street						
EBL (80m)	0.89 (0.93)	D (E)	#101.3 (#57.9)	0.92 (0.93)	D (E)	#107.7 (#58.8)
EBT	0.62 (0.89)	C (D)	95.7 (#140.9)	0.67 (0.90)	C (D)	105.4 (#156.7)
EBR	0.24 (0.15)	C (C)	19.7 (16.0)	0.25 (0.15)	C (B)	22.1 (16.6)
WBL (40m)	0.59 (0.79)	B (C)	39.5 (#46.2)	0.66 (0.87)	C (D)	41.0 (#56.9)
WBT	0.87 (0.95)	D (D)	#140.9 (#167.3)	0.91 (0.97)	D (D)	#147.0 (#179.5)
WBR	0.05 (0.04)	C (B)	2.9 (0.0)	0.05 (0.04)	C (B)	2.9 (0.0)
NBL (40m)	0.48 (0.85)	C (D)	24.7 (#75.3)	0.48 (0.87)	C (D)	24.7 (#75.1)
NBTR	0.73 (0.61)	D (C)	67.2 (77.6)	0.74 (0.65)	D (C)	69.5 (#82.0)
SBL (25m)	0.81 (0.19)	D (C)	#57.1 (11.4)	0.84 (0.20)	D (C)	#58.5 (11.4)
SBTR	0.60 (0.92)	C (D)	56.1 (117.9)	0.61 (0.95)	C (D)	58.2 (122.0)
Overall	**0.93 (0.96)**	**C (D)**	**-- (--)**	**0.96 (0.99)**	**C (D)**	**-- (--)**
[1] Bronte Street / Steeles Avenue East						
EBTL	0.30 (0.51)	B (C)	68.2 (100.0)	0.33 (0.88)	B (E)	77.3 (129.2)
EBR	0.27 (0.37)	B (C)	54.4 (42.8)	0.28 (0.51)	B (D)	57.1 (43.7)
WBL (85m)	0.51 (0.84)	A (C)	48.2 (#165.0)	0.54 (0.82)	A (C)	36.9 (#255.6)
WBTR	0.25 (0.38)	A (B)	42.1 (90.7)	0.32 (0.42)	A (B)	40.5 (138.0)
NBL	0.72 (0.80)	E (E)	81.0 (98.2)	0.70 (0.80)	E (E)	78.9 (98.2)
NBTR	0.59 (0.30)	D (D)	64.0 (0.0)	0.66 (0.31)	D (D)	72.2 (0.0)
SBTR	-- (--)	-- (--)	-- (--)	-- (0.01)	-- (E)	-- (--)
Overall	**0.59 (0.84)**	**C (C)**	**-- (--)**	**0.62 (0.83)**	**C (D)**	**-- (--)**
[2] Morobel Drive / Street A / Steeles Avenue East						
EBL	Intersection is unsignalized in Existing and Future Background Conditions			0.03 (0.05)	A (A)	m1.4 (m0.7)
EBTR				0.47 (0.47)	A (A)	50.8 (175.2)
WBL				0.18 (0.52)	A (A)	10.6 (m47.7)
WBTR				0.38 (0.57)	A (A)	59.8 (49.2)
NBL (45m)				0.66 (0.70)	E (E)	61.5 (53.5)
NBT (150m)				Neg. Vol.		
NBR (45m)				0.07 (0.04)	D (D)	10.7 (0.0)
SBTLR				0.01 (0.07)	D (D)	6.2 (11.9)
Overall				**0.51 (0.59)**	**B (A)**	**-- (--)**
[26] Ontario Street / Steeles Avenue East						
EBL	0.15 (0.25)	C (D)	16.7 (m8.3)	0.16 (0.29)	C (D)	15.3 (m7.4)
EBT	0.40 (0.53)	C (D)	70.5 (m68.3)	0.45 (0.59)	C (D)	73.0 (m72.6)
EBR (75m)	0.32 (0.39)	C (F)	24.5 (m81.2)	0.39 (0.43)	C (F)	23.7 (m79.3)

Movement (Storage in metres)	2046 Future Background			2046 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
WBL (85m)	0.74 (0.90)	C (D)	#115.8 (#192.7)	0.79 (0.97)	D (E)	#113.9 (m#204.1)
WBTR	0.30 (0.50)	C (C)	69.5 (146.5)	0.31 (0.56)	C (C)	68.4 (157.7)
NBL (85m)	0.81 (0.82)	E (E)	102.7 (104.3)	0.84 (0.87)	E (E)	#120.2 (#134.4)
NBTL (85m)	0.79 (0.81)	E (E)	104.6 (103.1)	0.81 (0.88)	E (E)	#117.1 (#136.6)
NBR	0.21 (0.26)	D (D)	24.8 (28.4)	0.25 (0.26)	D (D)	31.3 (28.4)
SBL	0.45 (0.37)	E (E)	28.0 (22.9)	0.49 (0.37)	E (E)	28.8 (22.9)
SBTR	0.49 (0.35)	E (E)	30.8 (23.2)	0.52 (0.35)	E (E)	31.7 (23.2)
Overall	**0.76 (0.87)**	**C (E)**	**-- (--)**	**0.80 (0.94)**	**D (E)**	**-- (--)**
[35] Ontario Street / Woodward Avenue						
EBL	0.08 (0.03)	C (D)	9.1 (4.0)	0.06 (0.03)	C (D)	9.1 (3.9)
EBTR	0.86 (0.28)	E (D)	#99.6 (26.6)	0.97 (0.50)	E (D)	#151.3 (42.9)
WBL	0.51 (0.62)	C (D)	19.9 (39.4)	0.51 (0.73)	C (D)	19.9 (40.6)
WBTR	0.33 (0.46)	C (D)	41.4 (39.4)	0.30 (0.63)	C (D)	43.9 (53.1)
NBL	0.48 (0.05)	C (A)	45.3 (4.1)	0.63 (0.17)	C (A)	#55.6 (10.4)
NBTR	0.87 (0.43)	C (A)	#201.3 (61.3)	0.98 (0.47)	D (A)	#206.3 (72.4)
SBL	0.48 (0.16)	B (A)	16.0 (9.6)	0.51 (0.19)	C (A)	15.4 (10.3)
SBTR	0.42 (0.37)	B (A)	69.1 (54.1)	0.50 (0.40)	B (A)	77.9 (60.1)
Overall	**0.82 (0.46)**	**C (B)**	**-- (--)**	**0.93 (0.52)**	**D (B)**	**-- (--)**
[34] Ontario Street / Main Street East						
EBL (40m)	0.89 (0.64)	D (C)	#119.5 (34.9)	0.93 (0.64)	E (C)	#127.8 (36.1)
EBTR	0.60 (0.88)	C (D)	82.5 (120.1)	0.80 (0.96)	D (E)	113.1 (#159.4)
WBL (40m)	0.77 (0.92)	C (E)	60.5 (#106.5)	0.92 (0.96)	E (E)	#94.4 (#108.4)
WBTR	0.89 (0.85)	D (D)	#115.0 (#147.0)	0.93 (0.96)	E (D)	#131.1 (#189.4)
NBL (100m)	0.40 (0.76)	C (D)	23.2 (#49.4)	0.50 (0.98)	C (F)	24.3 (#71.6)
NBT	0.67 (0.74)	D (D)	100.6 (103.8)	0.70 (0.89)	D (D)	104.7 (#134.7)
NBR	0.41 (0.40)	C (C)	44.2 (46.2)	0.45 (0.44)	C (C)	51.0 (52.2)
SBL (40m)	0.30 (0.64)	C (C)	18.1 (35.4)	0.32 (0.79)	C (D)	18.1 (#49.2)
SBT	0.72 (0.80)	D (D)	101.5 (115.5)	0.84 (0.89)	D (D)	#129.1 (#137.5)
SBR	0.40 (0.20)	C (C)	46.2 (27.0)	0.47 (0.22)	C (C)	58.5 (29.5)
Overall	**0.79 (0.89)**	**D (D)**	**-- (--)**	**0.88 (1.00)**	**D (D)**	**-- (--)**

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)
2. Reflects additional lane provided relative to existing conditions

Under 2046 future total conditions, with completion of Phase 1 and 2 of the proposed development, all Focused Study Area signalized intersections operate acceptably under overall intersection capacity. Some specific intersections movements reach capacity where an extension of queue storage should be considered. The Highway 401 ramp terminals at Martin Street continue to operate acceptably, with overall intersection V/C ratios of 0.84 or better during both peak hours. The off ramp movements will be busy with individual movement V/C ratios of 0.90 or less, primarily during the morning peak hour. The resultant 95th percentile queues will not backup down the ramp to the highway collector lane.

The signalized proposed points of external points of site access intersections will all operate acceptably, with overall intersection V/C ratios of 0.54 and 0.66 or better, during the weekday morning and afternoon peak hours, respectively. The 95th percentile queues can be accommodated within the internal street network without impeding upstream block intersections.

It should be noted that the proposed site impacts are generally small within the focused study area, in the order of 5% or less increase to overall intersection V/C ratios. Site impact is moderate, at an 11% increase to overall intersection V/C ratios, during the morning peak hour at the adjacent Regional Road 25 / Martin Street / Steeles Avenue intersection. Key intersections include:

- **RR25 / Martin Street / Steeles Avenue East** with an overall V/C ratio of 0.95 and 1.13 during the morning and afternoon peak hours, respectively. Constrained individual movements (V/C > 0.95) are for all approach directions. Based on the reported queuing conditions, the dual EBL lane storage will need to be extended at future background conditions. The separate WBR lane and overlapping SBR and EBL phase will continue to be necessary to process the traffic growth at this intersection. Even with these improvements, the SBR will operate with V/C ratio of 1.03 during the afternoon peak hour. The SBR queue can potentially reach beyond the upstream Chris Hadfield Way intersection.

- **Bronte Street / Main Street** with an overall V/C ratio of 0.96 and 0.99 during the morning and afternoon peak hours, respectively, even with the suggested additional north-south through lanes such that the new curbside lanes will operate as through-right lanes. The east-west approach continue to approach capacity. An additional east-west lane will alleviate the capacity constraint by allowing the cycle time to be more efficiently split.

- **Bronte Street / Steeles Avenue East** with an overall V/C ratio of 0.62 and 0.83 during the morning and afternoon peak hours, respectively. The NBL will have a continuous lane with the suggested widening of Bronte Street to 4-lanes which will help accommodate the expected 95th percentile queuing. The high WBL queue during the afternoon peak hour is due to high volume growth potentially originating from James Snow Parkway to the east. As noted in the Wider Area assessment, James Snow Parkway will become overcapacity. WBL traffic growth is likely overstated, given that it will be metered by the upstream capacity constraints at James Snow Parkway and RR25.

- **Martin Street / Main Street** with an overall V/C ratio of 0.92 and 0.96 during the morning and afternoon peak hours, respectively. Multiple individual movements will approach or be at capacity. Queues at the SBL movement are reported to potentially extend past the upstream Mill Street intersection, however without reaching the adjacent Martin Street pedestrian crossing (south of Millside Drive). The EBL storage should be extended to accommodate growth.

- **Ontario Street / Main Street** with an overall V/C ratio of 0.88 and 1.00, during the morning and afternoon peak hours, respectively. Both the EBL and WBL movements will benefit from lane storage extensions under future background conditions.

  It is noted that a new exclusive SBR lane is also recommended to replace the current shared thru-right-lane configuration that transitions into a channelized right turn. The SBR lane will enable Ontario Street to better accommodate traffic growth without requiring as much of the cycle length, which is needed to accommodate the aforementioned EBL and WBL volumes.

- **Ontario Street / Woodward Avenue** with an overall V/C ratio of 0.93 or less. It is noted that new EBL and WBL advance turn phases are suggested from the 2036 horizon and onwards during the morning peak hour to alleviate extended delays to side street turning movements given the growth in conflicting traffic along Ontario Street. These movements will be over capacity should the advance phase not be provided.

- **Ontario Street / Steeles Avenue East** with an overall V/C ratio of 0.80 and 0.94 during the morning and afternoon peak hours, respectively. The WBL movement is a key constraining movement with V/C ratio of 0.97 during the afternoon peak hour. The EBR and WBL queues will continue to exceed the available storage whereas the NBL queue will run into the 2-way left-turn lane.

  The high WBL queue during the afternoon peak hour is due to high volume growth originating from James Snow Parkway to the east. As noted in the Wider Area assessment, James Snow Parkway will become overcapacity. WBL traffic growth is likely overstated given that it will be metered by the upstream capacity constraints at James Snow Parkway and RR25.

It should be noted that all the above suggested improvements are triggered under future background conditions (per **Section 6.4.3.2**) and the proposed site traffic impacts are generally small (i.e. overall intersection V/C ratio change of 5% or less) with some exceptions.

With full buildout of the site, the greatest site impact, relative to the site without any development, is at the following locations:

- RR25 / Martin Street / Steeles Avenue East, increasing overall V/C ratio by 11%, during the morning peak hour but with all movements operating within capacity;
- Martin Street / Woodward Avenue, increasing overall V/C ratio by 13%, during the afternoon peak hour but with all movements operating at V/C 0.80 or less;
- Ontario Street / Main Street, increasing overall V/C ratio by 11%, during the afternoon peak hour but will all movements operating within or at capacity.

6.4.3.2 Assessment for Road Network Improvements

Analysis results under sensitivity conditions at the 2046 horizon without the improvements recommended at the intersections are summarized in **Table 49**. Synchro analysis sheets are provided in **Appendix S**.

TABLE 55 2046 CONDITIONS SENSITIVITY WITHOUT RECOMMENDED IMPROVEMENTS

Movement (Storage in metres)	2046 Future Background			2046 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[32] Bronte Street / Main Street[2]						
EBL (80m)	1.01 (0.93)	E (E)	110.0 (57.9)	1.03 (0.93)	E (E)	113.3 (58.8)
EBT	0.68 (0.89)	C (D)	95.7 (#140.9)	0.72 (0.90)	C (D)	105.4 (156.7)
EBR	0.25 (0.15)	C (C)	20.7 (16.1)	0.27 (0.15)	C (B)	23.4 (16.6)
WBL (40m)	0.66 (0.79)	C (C)	39.5 (#46.2)	0.73 (0.87)	C (D)	41.0 (#56.9)
WBT	0.94 (0.95)	E (D)	140.9 (167.3)	0.95 (0.97)	E (D)	147.0 (179.5)
WBR	0.05 (0.04)	C (B)	2.9 (0.0)	0.05 (0.04)	C (B)	2.9 (0.0)
NBL (40m)	0.39 (0.85)	C (D)	24.7 (#75.3)	0.42 (0.87)	C (D)	24.7 (#75.1)
NBT	1.10 (0.85)	F (D)	174.8 (162.7)	1.12 (0.89)	F (D)	179.0 (167.3)
NBR	0.03 (0.20)	C (C)	0.0 (26.3)	0.04 (0.23)	C (C)	0.0 (28.7)
SBL (25m)	0.87 (0.24)	D (C)	#62.1 (11.4)	0.69 (0.27)	E (C)	#61.7 (11.2)
SBT	0.70 (1.20)	C (F)	105.4 (199.9)	0.73 (1.25)	C (F)	110.0 (206.4)
SBR	0.26 (0.45)	C (C)	30.7 (50.9)	0.27 (0.46)	C (C)	31.7 (50.9)
Overall	1.08 (1.03)	**D (E)**	**-- (--)**	1.10 (1.05)	**D (E)**	**-- (--)**

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)
2. Reflects the recommended configurations at the 2041 horizon

6.4.3.3 Unsignalized Intersections (Focused Study Area)

A summary of the Focused Study Area unsignalized intersection operations in 2046 is provided in **Table 50**. 95th Percentile queues are reported for critical movements (i.e. movements with LOS E or worse) for comparison to the available lane storage in the future.

Detailed Synchro reports for unsignalized intersections are provided in **Appendix R**.

TABLE 56 2046 CONDITIONS – FOCUSED STUDY AREA UNSIGNALIZED INTERSECTIONS

Movement (Storage in metres)	2046 Future Background			2046 Future Total		
	LOS	Delay (s)	95th Percentile Queue (m)	LOS	Delay (s)	95th Percentile Queue (m)
[8] Martin Street / Kings Court Crescent						
WBLR (95m)	C (C)	15.4 (18.1)	1.0 (2.2)	C (D)	19.4 (27.4)	1.4 (3.6)
NBTR	A (A)	0.0 (0.0)	-- (--)	A (A)	0.0 (0.0)	-- (--)
SBTL	A (A)	0.2 (0.3)	0.1 (0.2)	A (A)	0.2 (0.3)	0.2 (0.3)
[2] Morobel Drive / Street A / Steeles Avenue East						
EBL	B (B)	10.0 (13.1)	0.3 (0.5)	Intersection signalized in Future Total Conditions		
SBTLR	C (D)	15.3 (26.7)	1.4 (4.9)			
[14] Street B / Steeles Avenue East						
NBR	Intersection not in Future Background			B (B)	11.1 (11.0)	2.4 (1.8)
[3] Chris Hadfield Way / Steeles Avenue East						
EBL	B (C)	11.5 (18.0)	0.4 (0.4)	B (C)	11.8 (20.2)	0.5 (0.5)
WBL	B (B)	10.6 (10.5)	0.6 (0.4)	B (B)	11.3 (10.8)	0.6 (0.4)
NBTLR	B (C)	11.3 (21.4)	0.2 (2.7)	B (C)	10.9 (19.1)	0.2 (2.3)
SBTLR	D (F)	25.5 (79.5)	1.4 (8.6)	D (F)	25.4 (66.5)	1.3 (7.4)
[10] Martin Street / Street D / Caves Court						
WBTLR (90m)	C (C)	17.2 (23.1)	0.8 (1.8)	Intersection signalized in Future Total Conditions		

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)

Under future background conditions, all unsignalized intersections are operating acceptably at a LOS D or better. As previously discussed, with completion of the Phase 1 of the proposed development in 2036, the following intersections are proposed to be signalized (see **Table 54** for signalized intersection operating conditions):

- Steeles Avenue East/ Street A/ Morobel Drive
- Martin Street / Street A
- Martin Street / Street D / Caves Court

Once signalized, these movements will operate acceptably with LOS D or better. The outbound queues at the proposed traffic signals will be improved to not rely on curtesy gaps as compared to without the signalized traffic control. The resultant queues can be accommodated within the available storage on site without extending to adjacent intersections upstream. The balance of the unsignalized intersections operate acceptably at LOS D or better under future total conditions.

6.4.4 2051 Horizon

6.4.4.1 Signalized Intersections (Focused Study Area)

A summary of the Focused Study Area signalized intersection operations in 2051 is provided in **Table 48**. Storage lengths are provided only for movements where the 95th percentile queue are approaching or have exceed storage capacity. Detailed Synchro reports for signalized intersections are provided in **Appendix S**.

TABLE 57 2051 CONDITIONS – FOCUSED STUDY AREA SIGNALIZED INTERSECTIONS

Movement (Storage in metres)	2051 Future Background			2051 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[7] Regional Road 25 / Highway 401 WB Off-Ramp						
WBLR	0.88 (0.75)	C (C)	#116.3 (68.1)	0.91 (0.76)	C (C)	#121.7 (72.6)
WBR	0.75 (0.80)	C (C)	#104.7 (83.6)	0.85 (0.83)	D (D)	#122.7 (#100.3)
NBT	0.25 (0.47)	B (B)	25.0 (57.5)	0.29 (0.49)	B (B)	28.6 (59.7)
SBT	0.60 (0.84)	B (C)	62.6 (#144.3)	0.63 (0.90)	B (C)	67.2 (#156.8)
Overall	**0.73 (0.82)**	**C (C)**	**-- (--)**	**0.76 (0.87)**	**C (C)**	**-- (--)**
[6] Regional Road 25 / Highway 401 EB Off-Ramp						
EBL	0.71 (0.58)	D (D)	107.9 (56.4)	0.72 (0.57)	D (D)	107.9 (56.4)
EBTR	0.90 (0.81)	E (E)	#163.8 (89.4)	0.92 (0.82)	E (E)	#165.4 (92.2)
EBR	0.82 (0.62)	D (D)	#144.0 (67.8)	0.83 (0.62)	D (D)	#144.0 (69.7)
WBTLR	0.09 (0.09)	D (D)	15.0 (19.7)	0.09 (0.09)	D (D)	15.0 (19.7)
NBTR	0.50 (0.79)	C (C)	79.2 (#211.2)	0.53 (0.81)	C (C)	86.9 (#217.9)
SBL	0.16 (0.24)	B (B)	9.2 (8.1)	0.17 (0.24)	B (B)	9.2 (8.1)
SBT	0.67 (0.77)	C (C)	118.5 (186.7)	0.71 (0.84)	C (C)	130.9 (#229.8)
Overall	**0.73 (0.75)**	**D (C)**	**-- (--)**	**0.76 (0.80)**	**D (C)**	**-- (--)**
[5] Regional Road 25 / Chisolm Drive / Maplehurst C.C.						
EBTL	0.44 (0.75)	E (E)	20.9 (56.8)	0.44 (0.75)	E (E)	20.9 (56.8)
EBR	0.02 (0.04)	D (D)	0.0 (11.0)	0.02 (0.04)	D (D)	0.0 (11.0)
WBTLR	0.03 (0.41)	D (D)	2.5 (32.0)	0.03 (0.41)	D (D)	2.5 (32.0)
NBL	0.45 (0.51)	A (B)	8.4 (23.7)	0.48 (0.52)	A (B)	12.0 (23.3)
NBT	0.59 (0.74)	B (C)	144.3 (202.0)	0.64 (0.76)	B (C)	172.7 (214.4)
NBR[1]	0.10 (0.05)	B (B)	21.5 (13.9)	0.10 (0.05)	B (B)	22.2 (13.4)
SBL	0.51 (0.33)	B (B)	30.8 (9.4)	0.57 (0.33)	C (B)	38.0 (9.4)
SBT	0.55 (0.68)	A (B)	104.7 (170.9)	0.58 (0.74)	A (B)	114.5 (196.0)
SBR	0.17 (0.08)	A (A)	9.0 (8.5)	0.17 (0.08)	A (A)	9.0 (8.5)
Overall	**0.56 (0.74)**	**B (C)**	**-- (--)**	**0.62 (0.76)**	**B (C)**	**-- (--)**
[13] Regional Road 25 / Market Drive						
EBL	0.77 (0.78)	D (D)	72.3 (78.1)	0.77 (0.78)	D (D)	72.3 (78.1)
EBR	0.08 (0.11)	D (D)	14.8 (17.2)	0.08 (0.11)	D (D)	14.8 (17.2)
NBL	0.68 (0.76)	C (D)	47.5 (#86.9)	0.68 (0.76)	C (D)	53.6 (#86.9)
NBT	0.50 (0.54)	A (A)	88.8 (103.5)	0.56 (0.56)	A (A)	106.1 (108.8)
SBT	0.58 (0.83)	C (D)	125.6 (#218.6)	0.64 (0.90)	C (D)	135.7 (#251.6)
SBR	0.30 (0.26)	E (F)	53.6 (70.7)	0.30 (0.28)	E (F)	55.3 (75.0)
Overall	**0.72 (0.81)**	**C (D)**	**-- (--)**	**0.72 (0.84)**	**C (D)**	**-- (--)**

Movement (Storage in metres)	2051 Future Background			2051 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[4] Regional Road 25 / Martin Street / Steeles Avenue East						
EBL (55m)	0.78 (0.89)	D (E)	#83.4 (#120.8)	0.95 (0.95)	E (F)	#119.8 (#126.1)
EBTR	0.57 (0.44)	D (D)	78.4 (80.7)	0.78 (0.51)	D (E)	99.3 (89.1)
WBL (90m)	0.25 (0.47)	D (D)	11.5 (46.7)	0.44 (0.84)	D (E)	13.6 (79.6)
WBT	0.57 (0.82)	D (E)	53.0 (105.1)	0.70 (0.88)	D (E)	51.2 (121.1)
WBR[1]	0.58 (0.81)	A (A)	73.2 (149.9)	0.58 (0.81)	A (A)	68.8 (134.4)
NBL (85m)	0.17 (0.27)	D (D)	13.9 (18.9)	0.16 (0.35)	C (D)	15.2 (22.3)
NBTR	0.77 (0.71)	D (D)	92.7 (74.4)	0.87 (0.85)	D (E)	132.5 (#96.2)
SBL (185m)	0.93 (0.92)	E (E)	164.5 (157.2)	0.99 (0.95)	E (E)	177.9 (157.2)
SBT	0.23 (0.54)	C (C)	49.9 (119.4)	0.31 (0.77)	C (D)	73.9 (173.7)
SBR[2] (220m)	0.43 (0.63)	A (A)	0.0 (0.0)	0.44 (0.65)	A (A)	0.0 (0.0)
Overall	**0.84 (1.00)**	**C (D)**	**-- (--)**	**0.94 (1.01)**	**D (D)**	**-- (--)**
[9] Martin Street / Street A						
EBL (25m)	Intersection is unsignalized in Existing and Future Background Conditions			0.63 (0.49)	D (D)	50.6 (27.6)
EBR (100m)				0.05 (0.06)	D (D)	11.8 (14.0)
NBL (25m)				0.05 (0.19)	A (A)	m3.3 (4.5)
NBT				0.49 (0.34)	A (A)	117.2 (19.7)
SBTR				0.36 (0.61)	A (A)	52.0 (103.7)
Overall				**0.51 (0.60)**	**B (A)**	**-- (--)**
[10] Martin Street / Street D / Caves Court						
EBL (25m)	Intersection is unsignalized in Existing and Future Background Conditions			0.40 (0.29)	D (D)	24.7 (16.1)
EBTR (70m)				0.10 (0.05)	D (D)	0.7 (2.7)
WBTLR				0.01 (0.01)	D (D)	m6.7 (m17.9)
NBL (25m)				0.07 (0.26)	A (A)	74.2 (73.4)
NBTR				0.44 (0.38)	A (A)	30.8 (55.0)
SBTLR				0.33 (0.54)	A (A)	24.7 (16.1)
Overall				**0.43 (0.52)**	**B (A)**	**-- (--)**
[11] Martin Street / Woodward Avenue						
EBTLR	0.09 (0.06)	D (C)	9.8 (11.3)	0.09 (0.06)	D (C)	9.8 (11.4)
WBL	0.59 (0.28)	D (C)	37.3 (31.3)	0.59 (0.28)	D (C)	37.3 (31.3)
WBTR	0.17 (0.08)	D (C)	19.5 (14.1)	0.18 (0.14)	D (C)	20.3 (18.0)
NBL	0.01 (0.01)	A (B)	2.0 (2.6)	0.01 (0.01)	A (B)	2.2 (2.6)
NBTR	0.46 (0.57)	B (C)	91.0 (98.3)	0.54 (0.76)	B (C)	114.9 (148.1)
SBL	0.10 (0.21)	A (B)	2.0 (17.3)	0.26 (0.43)	A (B)	5.6 (12.8)
SBT	0.21 (0.44)	A (B)	29.6 (85.1)	0.34 (0.55)	A (A)	43.3 (70.6)
Overall	**0.47 (0.47)**	**B (B)**	**-- (--)**	**0.54 (0.59)**	**B (C)**	**-- (--)**
[33] Martin Street / Main Street						
EBL (15m)	0.74 (0.71)	B (C)	#52.3 (#42.1)	0.87 (0.77)	C (C)	#64.1 (#46.5)
EBT	0.50 (0.54)	A (A)	66.6 (74.3)	0.54 (0.58)	B (B)	71.0 (77.0)
WBT (110m)	0.83 (0.92)	C (C)	#137.5 (#173.6)	0.88 (0.99)	C (D)	#139.0 (#180.0)

Movement (Storage in metres)	2051 Future Background			2051 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
WBR (35m)	0.17 (0.21)	B (B)	17.5 (21.3)	0.24 (0.38)	B (B)	22.2 (36.0)
SBL (85/160m)	0.65 (0.78)	C (D)	58.5 (#72.2)	0.91 (0.95)	D (E)	#111.7 (#108.6)
SBR	0.06 (0.13)	C (C)	9.9 (14.2)	0.14 (0.22)	B (C)	15.6 (20.5)
Overall	**0.78 (0.85)**	**C (C)**	**-- (--)**	**0.94 (0.95)**	**C (C)**	**-- (--)**
[32] Bronte Street / Main Street						
EBL (80m)	0.99 (0.92)	E (E)	#112.6 (#60.7)	1.01 (0.92)	E (E)	#113.2 (#61.8)
EBT	0.61 (0.89)	C (D)	89.5 (#140.4)	0.66 (0.92)	C (D)	97.6 (#154.6)
EBR	0.27 (0.15)	C (C)	23.6 (16.3)	0.28 (0.15)	C (C)	26.2 (16.9)
WBL (40m)	0.64 (0.85)	C (D)	42.9 (#54.6)	0.70 (0.94)	C (E)	44.5 (#66.5)
WBT	0.98 (0.91)	E (D)	#157.7 (#152.5)	0.99 (0.95)	E (D)	#163.8 (#164.8)
WBR	0.06 (0.05)	C (B)	3.8 (2.5)	0.06 (0.05)	C (B)	3.8 (2.5)
NBL (40m)	0.37 (0.81)	C (C)	25.7 (#73.2)	0.37 (0.84)	C (D)	25.7 (#74.6)
NBTR	0.82 (0.64)	D (C)	#86.8 (82.2)	0.84 (0.66)	D (C)	#94.1 (84.7)
SBL (25m)	0.92 (0.22)	E (C)	#62.2 (12.0)	0.95 (0.23)	E (C)	#60.6 (12.0)
SBT	0.41 (0.77)	C (C)	44.5 (84.3)	0.42 (0.78)	C (C)	45.7 (86.5)
SBR[1] (55m)	0.26 (0.50)	C (C)	29.0 (54.3)	0.27 (0.49)	C (C)	29.8 (54.3)
Overall	**1.04 (0.93)**	**D (D)**	**-- (--)**	**1.08 (0.97)**	**D (D)**	**-- (--)**
[1] Bronte Street / Steeles Avenue East						
EBTL	0.26 (0.55)	B (C)	62.4 (66.5)	0.30 (0.92)	B (E)	67.9 (88.9)
EBR	0.35 (0.63)	B (D)	75.6 (66.6)	0.36 (0.82)	B (E)	78.1 (74.9)
WBL (85m)	0.45 (0.87)	A (C)	73.9 (#212.5)	0.49 (0.88)	A (C)	25.0 (#289.2)
WBTR	0.28 (0.41)	A (B)	72.2 (126.0)	0.34 (0.45)	A (B)	30.3 (142.5)
NBL	0.60 (0.83)	D (E)	70.6 (116.4)	0.56 (0.83)	D (E)	71.2 (#116.4)
NBTR	0.75 (0.31)	E (D)	86.6 (0.0)	0.79 (0.32)	E (D)	102.1 (0.0)
SBTR	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
Overall	**0.56 (0.76)**	**C (C)**	**-- (--)**	**0.62 (0.86)**	**C (D)**	**-- (--)**
[2] Morobel Drive / Street A / Steeles Avenue East						
EBL	Intersection is unsignalized in Existing and Future Background Conditions			0.03 (0.06)	A (A)	m1.6 (m0.4)
EBTR				0.47 (0.45)	A (A)	69.1 (22.5)
WBL				0.17 (0.46)	B (A)	17.5 (m11.6)
WBTR				0.39 (0.60)	B (A)	103.7 (55.8)
NBL				0.59 (0.68)	D (E)	55.1 (50.5)
NBT				Neg. Vol.		
NBR				0.06 (0.04)	D (D)	7.0 (0.0)
SBTLR				0.01 (0.07)	D (D)	6.3 (12.1)
Overall				**0.49 (0.61)**	**B (A)**	**-- (--)**
[26] Ontario Street / Steeles Avenue East						
EBL	0.16 (0.28)	C (D)	m16.1 (m8.2)	0.17 (0.33)	C (D)	m13.5 (m7.5)
EBT	0.42 (0.54)	C (D)	m92.6 (m67.9)	0.48 (0.61)	C (D)	m96.1 (m75.7)
EBR (75m)	0.33 (0.39)	F (F)	m74.5 (m81.4)	0.39 (0.48)	F (F)	m74.2 (m82.4)

Movement (Storage in metres)	2051 Future Background			2051 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
WBL (85m)	0.77 (0.92)	C (D)	#128.6 (#199.3)	0.80 (0.98)	C (E)	#129.7 (#210.2)
WBTR	0.31 (0.53)	B (C)	64.5 (157.7)	0.32 (0.59)	B (C)	66.0 (168.9)
NBL (85m)	0.82 (0.83)	E (E)	104.8 (107.6)	0.84 (0.88)	E (E)	#115.4 (#136.2)
NBTL (85m)	0.78 (0.82)	E (E)	102.9 (106.1)	0.81 (0.89)	E (E)	#111.4 (#138.3)
NBR	0.22 (0.29)	D (D)	26.4 (29.9)	0.26 (0.29)	D (D)	31.8 (29.9)
SBL	0.45 (0.37)	E (E)	28.0 (22.9)	0.49 (0.37)	E (E)	28.8 (22.9)
SBTR	0.49 (0.35)	E (E)	30.8 (23.2)	0.52 (0.35)	E (E)	31.7 (23.2)
Overall	**0.78 (0.89)**	**D (E)**	**-- (--)**	**0.81 (0.94)**	**E (D)**	**-- (--)**
[35] Ontario Street / Woodward Avenue						
EBL	0.07 (0.03)	C (D)	9.1 (4.0)	0.06 (0.03)	C (D)	9.1 (3.9)
EBTR	0.87 (0.30)	E (D)	#107.3 (28.5)	0.97 (0.53)	E (D)	#153.7 (45.4)
WBL	0.51 (0.63)	C (D)	19.9 (39.5)	0.51 (0.77)	C (E)	19.9 (41.1)
WBTR	0.36 (0.50)	C (D)	46.4 (42.7)	0.33 (0.63)	C (D)	47.6 (54.0)
NBL	0.49 (0.03)	C (A)	45.4 (2.5)	0.63 (0.13)	D (A)	#55.8 (8.4)
NBTR	0.89 (0.45)	C (A)	#201.3 (67.0)	0.98 (0.50)	D (A)	#204.9 (79.2)
SBL	0.48 (0.18)	B (A)	15.8 (9.9)	0.51 (0.20)	C (A)	15.4 (10.9)
SBTR	0.43 (0.38)	B (A)	69.6 (55.5)	0.51 (0.40)	B (A)	77.9 (62.5)
Overall	**0.84 (0.49)**	**C (B)**	**-- (--)**	**0.93 (0.55)**	**D (B)**	**-- (--)**
[34] Ontario Street / Main Street East						
EBL (40m)	0.90 (0.64)	D (C)	#123.3 (34.3)	0.94 (0.64)	E (C)	#131.0 (36.5)
EBTR	0.60 (0.88)	C (D)	82.5 (115.8)	0.78 (0.93)	D (D)	110.4 (#152.6)
WBL (40m)	0.79 (0.93)	D (E)	#68.0 (#101.8)	0.93 (0.95)	E (E)	#99.6 (#104.2)
WBTR	0.90 (0.87)	D (D)	#122.7 (#145.5)	0.95 (0.95)	E (D)	#137.7 (#184.1)
NBL (100m)	0.41 (0.78)	C (D)	23.2 (55.9)	0.51 (0.98)	C (F)	24.3 (72.0)
NBT	0.68 (0.75)	D (D)	99.8 (110.4)	0.71 (0.91)	D (D)	103.8 (#141.2)
NBR	0.42 (0.40)	C (C)	44.5 (48.0)	0.45 (0.45)	C (C)	50.7 (53.9)
SBL (40m)	0.31 (0.66)	C (C)	18.1 (#38.7)	0.33 (0.82)	C (D)	18.1 (#52.4)
SBT	0.74 (0.82)	D (D)	102.5 (122.4)	0.85 (0.92)	D (D)	#122.2 (#145.2)
SBR	0.40 (0.21)	C (C)	46.8 (29.0)	0.47 (0.23)	C (C)	57.4 (30.8)
Overall	**0.81 (0.90)**	**D (D)**	**-- (--)**	**0.88 (0.99)**	**D (D)**	**-- (--)**

Notes: xx (xx) – AM Peak Hour (PM Peak Hour)

1. Reflects additional lane provided relative to existing conditions
2. Reflects channelized SBR turn with additional receiving lane on the west leg at RR25/Martin St/Steeles Ave E

Under 2051 future total conditions, with completion of Phase 1 and 2 of the proposed development, all Focused Study Area signalized intersections operate acceptably under overall intersection capacity. Some specific intersections movements reach capacity where an extension of queue storage should be considered. The Highway 401 ramp terminals at Martin Street continue to operate acceptably with overall intersection V/C ratios of 0.87 or better during both peak hours. The off ramp movements will approach capacity with individual movement V/C ratios of 0.92 or less, primarily during the morning peak hour. The resultant 95th percentile queues will not backup the ramp into the highway collector lane.

The signalized proposed external points of site access intersections will all operate acceptably with overall intersection V/C ratios of 0.51 and 0.60 or better, during the weekday morning and afternoon peak hours, respectively. The 95th percentile queues can be accommodated within the internal street network without impeding upstream block intersections.

It should be noted that the proposed site impacts are small, in the order of a 5% or less increase to overall intersection V/C ratios. Impact is moderate at some intersections, with increases to overall intersection V/C ratios by up to 16%, although all intersection movements remain under capacity. Key intersections include:

- **RR25 / Martin Street / Steeles Avenue East** with overall V/C ratios of 0.94 and 1.01, during the morning and afternoon peak hours, respectively. Constrained individual movements (V/C > 0.95) are for all approach directions. Based on the reported queuing conditions, the dual EBL lane storage will need to be extended at future background conditions. The separate WBR lane and overlapping SBR and EBL phase will continue to be necessary to process the traffic growth at this intersection. The high volume of SBR can be accommodated by providing a separate SBR channelized turn lane (instead of splitting from the through as SBTR) with its own receiving lane on the west leg on Steeles Avenue East to allow free movement.

- **Bronte Street / Main Street** with overall V/C ratios of 1.06 and 0.97, during the morning and afternoon peak hours, respectively, even with the suggested additional north-south through lanes and separate SBR lane. The east-west approach continue to approach capacity. An additional east-west lane will alleviate the capacity constraint by allowing the cycle time to be more efficiently split.

- **Bronte Street / Steeles Avenue East** with an overall V/C ratio of 0.62 and 0.86, during the morning and afternoon peak hours, respectively. The NBL will have a continuous lane with the suggested widening of Bronte Street to 4-lanes which will help accommodate the expected 95th percentile queuing. The WBL queue during the afternoon peak hour is due to high volume growth potentially originating from James Snow Parkway to the east. As noted in the Wider Area assessment, James Snow Parkway will become overcapacity. WBL traffic growth is likely overstated given that it will be metered by the upstream capacity constraints at James Snow Parkway and RR25.

- **Martin Street / Main Street** with overall V/C ratios of 0.94 and 0.95, during the morning and afternoon peak hours, respectively. Multiple individual movements will approach or be at capacity. Queues at the SBL movement are reported to potentially extend past the upstream Mill Street intersection, however without reaching the adjacent Martin Street pedestrian crossing (south of Millside Drive). The EBL storage should be extended to accommodate growth.

- **Ontario Street / Main Street** with overall V/C ratios of 0.88 and 0.99, during the morning and afternoon peak hours, respectively. Both the EBL and WBL movements will benefit from lane storage extensions under future background conditions.

  It is noted that a new exclusive SBR lane is also recommended to replace the current shared thru-right lane configuration that transitions into a channelized right turn. The SBR lane will enable Ontario Street to better accommodate traffic growth without requiring as much of the cycle length, which is needed to accommodate the aforementioned EBL and WBL volumes.

- **Ontario Street / Woodward Avenue** with an overall V/C ratio of 0.93 or less. Note that new EBL and WBL advance turn phases are suggested from the 2036 horizon and onwards, during the morning peak hour to alleviate extended delays to side street turning movements given the growth in conflicting traffic along Ontario Street. These movements will be over capacity should the advance phase not be provided.

- **Ontario Street / Steeles Avenue East** with overall V/C ratios of 0.81 and 0.94 during the morning and afternoon peak hours, respectively. The WBL movement is a key constraining movement with V/C ratio of 0.98 during the afternoon peak hour. The EBR queues will continue to exceed the available storage whereas the NBL queue will run into the 2-way left-turn lane.

The high WBL queue during the afternoon peak hour is due to high volume growth potentially originating from James Snow Parkway to the east. As noted in the Wider Area assessment, James Snow Parkway will become overcapacity. WBL traffic growth is likely overstated given that it will be metered by the upstream capacity constraints at James Snow Parkway and RR25.

It should be noted that all the above suggested improvements are triggered under future background conditions (per **Section 6.4.4.2**) and the proposed site traffic impacts are generally small (i.e. overall intersection V/C ratio change of 5% or less) with some exceptions.

With full buildout of the site, the greatest site impact, relative to the JBPE allowance is at the following locations:

- Martin Street / Woodward Avenue, increasing overall V/C ratio by 7% during the morning peak hour and 12% during the afternoon peak hour;
- Martin Street / Main Street, increasing overall V/C ratio by 16% during the morning peak hour and 10% during the afternoon peak hour;
- Bronte Street / Steeles Avenue, increasing overall V/C ratio by 6% during the morning peak hour and 10% during the afternoon peak hour;
- Ontario Street / Woodward Avenue, increasing overall V/C ratio by 9% during the morning peak hour and 6% during the afternoon peak hour; and
- Ontario Street / Main Street, increasing overall V/C ratio by 7% during the morning peak hour and 9% during the afternoon peak hour.

It should be noted that for all these intersections, despite the increase to overall intersection V/C ratios due to new site traffic, these intersections continue to operate within capacity, given the suggested improvements.

6.4.4.2 Assessment for Road Network Improvements

Analysis results under sensitivity conditions at the 2051 horizon without the improvements recommended at the intersections are summarized in **Table 49**. Synchro analysis sheets are provided in **Appendix T**.

TABLE 58 2051 CONDITIONS SENSITIVITY WITHOUT RECOMMENDED IMPROVEMENTS

Movement (Storage in metres)	2051 Future Background			2051 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[32] Bronte Street / Main Street[2]						
EBL (80m)	0.99 (1.02)	E (F)	112.6 (61.0)	1.01 (1.02)	E (F)	113.2 (61.8)
EBT	0.61 (0.92)	C (D)	89.5 (#140.4)	0.66 (0.93)	C (D)	97.6 (154.6)
EBR	0.27 (0.15)	C (C)	23.6 (16.3)	0.28 (0.15)	C (C)	26.2 (16.9)
WBL (40m)	0.64 (0.95)	C (E)	42.9 (#59.0)	0.70 (1.01)	C (F)	44.5 (#66.9)
WBT	0.98 (0.93)	E (D)	157.7 (152.5)	0.99 (0.95)	E (D)	163.8 (164.8)
WBR	0.06 (0.05)	C (B)	3.8 (2.5)	0.06 (0.05)	C (B)	3.8 (2.5)
NBL (40m)	0.55 (0.88)	C (D)	25.7 (#82.5)	0.56 (0.89)	C (D)	25.7 (#81.9)
NBTR	0.82 (0.61)	D (C)	86.8 (82.2)	0.84 (0.64)	D (C)	94.1 (84.7)
SBL (25m)	0.92 (0.20)	E (C)	#62.2 (12.0)	0.95 (0.22)	E (C)	#60.6 (12.0)
SBTR	0.58 (1.01)	C (E)	60.0 (145.9)	0.60 (1.05)	C (E)	62.2 (149.8)
Overall	**1.04 (1.02)**	**D (D)**	**-- (--)**	**1.06 (1.05)**	**D (D)**	**-- (--)**
[4] Martin Street / Steeles Avenue / Regional Road 25[2]						
EBDL (55m)	0.77 (0.86)	D (E)	#83.4 (#120.5)	0.95 (0.95)	E (F)	#119.8 (#126.1)
EBTR	0.57 (0.44)	D (D)	78.4 (80.7)	0.78 (0.51)	D (E)	99.3 (89.1)
WBL (90m)	0.26 (0.48)	D (D)	11.5 (46.7)	0.44 (0.84)	D (E)	13.6 (79.6)
WBT	0.58 (0.85)	D (E)	53.0 (105.1)	0.70 (0.88)	D (E)	51.2 (121.1)
WBR[1]	0.58 (0.81)	A (A)	73.2 (149.9)	0.58 (0.81)	A (A)	68.8 (134.4)
NBL (85m)	0.17 (0.27)	D (D)	13.9 (18.9)	0.16 (0.35)	C (D)	15.2 (22.3)
NBTR	0.77 (0.71)	D (D)	92.7 (74.4)	0.87 (0.85)	D (E)	132.5 (96.2)
SBL (135m)	0.93 (0.92)	E (E)	164.5 (#157.2)	0.99 (0.95)	E (E)	177.9 (#157.2)
SBT	0.23 (0.54)	C (C)	49.9 (119.4)	0.31 (0.77)	C (D)	73.9 (173.7)
SBR	0.54 (1.02)	B (E)	64.1 (#281.1)	0.57 (1.13)	B (F)	86.0 (#271.9)
Overall	**0.85 (1.03)**	**D (D)**	**-- (--)**	**0.95 (1.09)**	**D (D)**	**-- (--)**

6.4.4.3 Unsignalized Intersections (Focused Study Area)

A summary of the Focused Study Area unsignalized intersection operations in 2051 is provided in **Table 50**. 95th Percentile queues are reported for critical movements (i.e. movements with LOS E or worse) for comparison to the available lane storage in the future.

Detailed Synchro reports for unsignalized intersections are provided in **Appendix S**.

TABLE 59 2051 CONDITIONS – FOCUSED STUDY AREA UNSIGNALIZED INTERSECTIONS

Movement (Storage in metres)	2051 Future Background			2051 Future Total		
	LOS	Delay (s)	95th Percentile Queue (m)	LOS	Delay (s)	95th Percentile Queue (m)
[8] Martin Street / Kings Court Crescent						
WBLR	D (E)	26.4 (47.2)	2.3 (6.8)	C (C)	19.8 (23.2)	1.6 (3.1)
NBTR	A (A)	0.0 (0.0)	-- (--)	A (A)	0.0 (0.0)	-- (--)
SBTL	A (A)	0.2 (0.3)	0.2 (0.3)	A (A)	0.2 (0.3)	0.2 (0.3)
[2] Morobel Drive / Street A / Steeles Avenue East						
EBL	B (B)	10.1 (14.1)	0.3 (0.6)	Intersection signalized in Future Total Conditions		
SBTLR	C (D)	15.7 (31.6)	1.4 (6.0)			
[14] Street B / Steeles Avenue East						
NBR	Intersection not in Future Background			B (B)	11.1 (11.0)	2.4 (1.6)
[3] Chris Hadfield Way / Steeles Avenue East						
EBL	B (C)	11.7 (19.9)	0.4 (0.5)	B (C)	12.0 (22.5)	0.5 (0.6)
WBL	B (B)	10.6 (10.4)	0.6 (0.4)	B (B)	11.3 (10.7)	0.6 (0.4)
NBTLR	B (C)	11.3 (22.2)	0.2 (2.8)	B (C)	10.9 (20.3)	0.2 (2.5)
SBTLR	D (F)	26.6 (106.4)	1.4 (10.7)	D (F)	26.3 (93.3)	1.4 (9.7)
[10] Martin Street / Street D / Caves Court						
WBTLR	C (C)	16.5 (21.5)	0.8 (1.6)	Intersection signalized in Future Total Conditions		

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour)

Under future background conditions, all unsignalized intersections are operating acceptably at a LOS E or better.

As previously discussed, with completion of the Phase 1 of the proposed development in 2036, the following intersections are proposed to be signalized (see **Table 57** for signalized intersection operating conditions):

- Steeles Avenue East/ Street A/ Morobel Drive
- Martin Street / Street A
- Martin Street / Street D / Caves Court

Once signalized, these movements at these intersections will operate acceptably with LOS D or better. The outbound queues at the proposed signal will be vastly improved as compared to without the signalized traffic control. The resultant queues can be accommodated within the available storage on site without extending to adjacent intersections upstream. The balance of the unsignalized intersections operate acceptably at LOS C or better under future total conditions.

6.5 OVERALL TRAFFIC ANALYSIS CONCLUSIONS

The impact of the site traffic to overall intersection V/C ratios is small (5% or less) at the wider study area intersections, with the exception of the Tremaine/Steeles roundabout which has a higher impact of up to 10%. The site traffic impact is also generally small (5% or less) at most key intersections within the focused study area. There are some intersections where a larger proportion of the site traffic would use that have moderate to high impacts (10%-16%). These intersections include Martin Street / Main Street, Ontario Street/ Main Street and Steeles Avenue/ Martin Street.

Despite the site traffic impact relative to future background conditions after removal of the JBPE background site traffic allowance, **proposed site-related traffic volumes can be appropriately accommodated on the future area road network with some existing traffic redistribution given all planned and additional recommended infrastructure improvements required to accommodate background growth.**

Based on the expected side street delays, the external points of site access at Steeles Avenue/ Street A/ Morobel Street, Martin Street / Street A and Martin Street/ Street D/ Caves Court, are recommended to be signalized by 2036 (at build-out of Phase 1). The increased traffic volumes along Martin Street will increase delays at any unsignalized side street connections. With signalization of the above-noted 3 intersections, the new signalized intersections will operate at LOS D or better, with acceptable overall intersection V/C ratios 0.55 or better. Expected 95th percentile outbound queues can be accommodated within the proposed internal street network, without impeding upstream block driveways.

Including the adjustment to the Town's growth rates, a number of additional improvements (beyond those being considered by the Town and Region) are being recommended at various horizons to accommodate general area background growth and/or new site-specific traffic. These improvements and the developmental trigger for their necessity (in square brackets) are summarized in **Table 60.**

TABLE 60 SUMMARY OF RECOMMENDED ROAD IMPROVEMENTS

Intersection	Horizon Year			
	2036	2041	2046	2051
Regional Road 25 / Steeles Avenue / Martin Street	--	Overlapping SBR and EBL turn phase ***[Background]***	Overlapping SBR and EBL turn phase ***[Background]***	Overlapping SBR and EBL turn phase Separate channelized SBR with exclusive receiving lane ***[Background]***
Ontario Street / Woodward Avenue	New WBL and SBL turn phases ***[Optional]***	New WBL and SBL turn phases ***[Background]***	New WBL and SBL turn phases ***[Background]***	New WBL and SBL turn phases ***[Background]***
Ontario Street / Main Street East	New exclusive SBR lane ***[Background]***	New exclusive SBR lane ***[Background]***	New exclusive SBR lane ***[Background]***	New exclusive SBR lane ***[Background]***
Bronte Street North / Main Street East	Exclusive NBR lane Exclusive SBR lane ***[Background]***	Widening from 2 to 4 lanes along Bronte Street ***[Optional]***	Widening from 2 to 4 lanes along Bronte Street ***[Background]***	Widening from 2 to 4 lanes along Bronte Street Exclusive SBR lane ***[Background]***
Tremaine Road / Steeles Avenue	Convert east leg configuration to exclusive WBL and shared WBTR ***[Background]***	Convert east leg configuration to exclusive WBL and shared WBTR ***[Background]***	Convert east leg configuration to exclusive WBL and shared WBTR ***[Background]***	Convert east leg configuration to exclusive WBL and shared WBTR ***[Background]***

Although, the proposed site traffic impact is moderate, it should be noted that all the above suggested network improvements are triggered under future background conditions.

Turn lane storage needs to be extended at a number of intersections within the Focus Study area as identified for the highlighted movements in the results tables in **Sections 6.4.1** through **6.4.4**, where the expected 95th percentile queues will exceed the available storage capacity.

James Snow Parkway is over capacity but the New North Regional Road EA is underway by the Region, which is expected to include a set of improvements for that corridor. However, since the improvement recommendations from that study are not yet available to inform the future configuration of James Snow Parkway, these intersection remains over capacity, with the understanding that those recommended improvements will address this congestion.

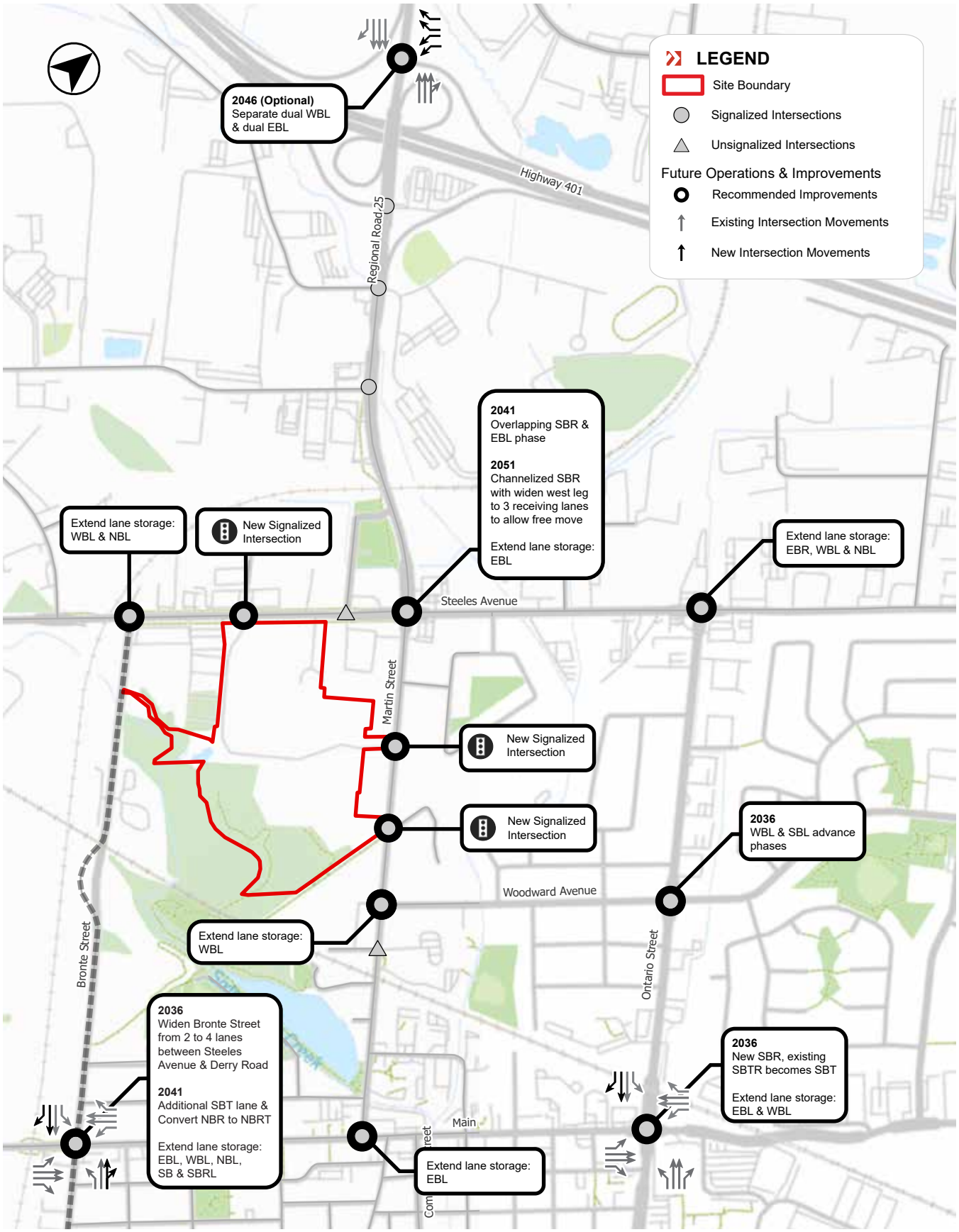


FIGURE 65 RECOMMENDED ADDITIONAL IMPROVEMENTS TO ADDRESS BACKGROUND GROWTH

7.0 ROAD DESIGN CONSIDERATIONS

7.1 JUSTIFICATION FOR STEELES AVENUE POINTS OF ACCESS

7.1.1 Proposed Accesses and Spacing on Steeles Avenue

The site plan includes a full movements access on Steeles Avenue at Street A / Morobel Drive and a right-in / right-out only access on Steeles Avenue at Street B.

Regional staff continue to acknowledge that the location of the proposed Street A connection to Steeles Avenue is the most ideal location from a traffic safety and overall access management perspective along Steeles Avenue, as connecting to an existing intersection would reduce the number of total accesses along Steeles Avenue and avoid any offset access configurations which may result in vehicle-vehicle turning conflicts.

The spacing of key intersections along Steeles Avenue, inclusive of existing intersections and the proposed site connections, is summarized in **Table 61**.

TABLE 61 PROPOSED INTERSECTION SPACING ALONG STEELES AVENUE

Segment Along Steeles Avenue	Spacing (metres)
Bronte Street to Street A	275
Street A to Street B	189
Street B to Chris Hadfield Way	55
Chris Hadfield Way to Martin Street	150
Street A to Martin Street (traffic signal to traffic signal)	394
Street B to Martin Street	205

The Region's Right-of-Way Guidelines classify Steeles Avenue, adjacent to the site, as a C2 Urban road. The Region's Access Management Guidelines require a minimum of 300 metres between full intersections and a minimum spacing of 115 metres between right-in/ right-out points of access.

The proposed 4-legged intersection on Steeles Avenue East / Street A / Morobel Drive, is recommended to be signalized and is located approximately **394 metres** west of the intersection of Steeles Avenue East / Martin Street and **189 metres** west of the proposed right-in / right-out access at Steeles Avenue East / Street B. The intersection of Steeles Avenue East / Street B is located **205 metres** west of Steeles Avenue East / Martin Street. The intersection of Street B is approximately **55 metres** west of Chris Hadfield Way.

The intersection spacings along the **south** side of Steeles Avenue meet the Region's requirements, with the exception of the **275 metre spacing** along Steeles Avenue, between Street A and Bronte Street. However, as discussed in the following section, the traffic analysis confirms that queuing is not expected to be a concern along Steeles Avenue, between Bronte Street and Street A.

The distance along Steeles Avenue between Chris Hadfield Way and the proposed Street B intersection is approximately 55 metres. The distance from Chris Hadfield Way to Martin Street is 150 metres but the taper for the dual eastbound left-turning lanes along Steeles Avenue, is located directly east of Chris Hadfield Way.

Traffic counts indicate that there are a maximum of 10 vehicles turning left to travel eastbound, from Chris Hadfield Way onto Steeles Avenue, and a maximum volume of 20 vehicles expected to turn right from Street B to travel eastbound along Steeles Avenue, during the peak hour of the day. Although the proposed intersection of Street B is only 55 west of Chris Hadfield Way, due to the low traffic volumes turning left from Chris Hadfield Way and low traffic volumes forecasted to turn right from Street B, weaving and merging conflicts along Steeles Avenue are expected to be minimal.

It is important to note that without these proposed points of access along Steeles Avenue, all site traffic would be required to use Martin Street and all traffic travelling to / from the north (i.e. Highway 401) would likely travel through Steeles Avenue at Martin Street, which would create additional traffic concerns.

7.1.2 Traffic Operations & Queuing along Steeles Avenue

The 2046 future total scenario reflects the highest site traffic generation due to the full build out of the site and higher auto mode split assumptions, relative to the ultimate 2051 scenario. As such, for the purposes of reviewing access spacing along Steeles Avenue, the queues between Bronte Street and Street A have been assessed at the 2046 future total scenario based on an average of 5 simulation runs with SimTraffic.

The resultant capacity, level of service and queueing metrics for the intersections along Steeles Avenue are summarized in **Table 62.** Detailed SimTraffic analysis sheets at Steeles Avenue intersections along the site frontage are provided in **Appendix BB.**

The results indicate that the eastbound queues along Steeles Avenue at Street A will not reach Bronte Street during either analysis peak hour. However, the westbound left-turn queue during the afternoon peak hour (258 metres) has the potential to spillover into the westbound through lane in the future but is not expected to reach back to Street A (275 metres away). However, given the Steeles Avenue widening to four lanes, the two available westbound through lanes can accommodate the potential spillover of left-turn vehicles and the through vehicles expected on the lanes.

For the above-noted reasons, the spacing of the site intersections along Steeles Avenue is appropriate.

TABLE 62 2046 TRAFFIC OPERATIONS AT STEELES AVENUE SITE CONNECTIONS

Intersection / Movement	Storage (m)	V/C	Delay	95th Percentile Queue (m)[2]
[2] Street A / Steeles Avenue East				
NBL	55[3]	0.55 (0.60)	35 (56)	41 (47)
NBT	125	Neg. Vol	0 (1)	5 (0)
NBR	55[3]	0.05 (0.02)	15 (14)	25 (15)
EBL	50	0.03 (0.05)	17 (19)	7 (8)
EBTR	280	0.47 (0.47)	9 (4)	68 (43)
[14] Street B / Steeles Avenue East				
NBR	90	0.06 (0.05)	21 (17)	20 (16)
[1] Steeles Avenue East / Bronte Street				
WBL	280	0.54 (0.82)	33 (45)	75 (111)
WBTR	280	0.32 (0.42)	10 (13)	60 (163)

Notes:

1. xx (xx) – AM Peak Hour (PM Peak Hour)

7.1.3 Sensitivity Analysis for Street B Access on Steeles Avenue

The 2046 future total scenario reflects the highest site traffic generation due to the full build out of the proposed site and higher auto mode split assumptions relative to the ultimate 2051 scenario. For the purposes of reviewing the performance of the points of external access, without the RIRO Street B connection to Steeles Avenue, a sensitivity analysis has been conducted with the EBR and NBR traffic at the intersection shifted to the Street A point of access.

Table xx summarizes the operational results at Street A / Steeles Avenue East with the additional traffic without Street B. Detailed Synchro analysis sheets for the sensitivity scenario is attached in **Appendix R**.

TABLE 63 2046 TRAFFIC OPERATIONS AT STEELES AVENUE SITE CONNECTIONS (SENSITIVITY)

Intersection / Movement	Storage (m)	V/C	Delay	95th Percentile Queue (m)[2]
[2] Street A / Steeles Avenue East				
NBL	55[3]	0.66 (0.70)	E (E)	62 (54)
NBT	125	Neg. Vol	--	--
NBR	55[3]	0.21 (0.07)	D (D)	29 (7)
EBL	50	0.03 (0.05)	A (A)	1 (1)
EBTR	280	0.47 (0.47)	A (A)	51 (175)

Notes:

1. xx (xx) – AM Peak Hour (PM Peak Hour)

The Street A intersection at Steeles Avenue can accommodate the redistributed site traffic that would have used Street B, relative to both level of service and queuing metrics although the northbound left-turn storage would need to be extended by approximately 10 metres. Furthermore, based on the results for the internal network intersections presented in **Section 7.3.2**, all internal intersections have ample capacity to accommodate the internal traffic redistribution to shift site traffic routing from Street B to Street A.

Although the Street B at Steeles Avenue RIRO connection is not technically required from a level of service and queuing perspective, this connection provides greater flexibility for internal traffic redistribution in the future, particularly for outbound traffic that is currently forecast to use the Martin Street connections. Should Martin Street be busier than expected in the future and given the constraint to a 2-lane cross section, the Street B connection will be beneficial for additional routing options for site traffic to adjust to daily corridor traffic variations. This additional routing option is particularly desirable for site traffic routing eastbound along Steeles Avenue.

7.2 PROPOSED POINTS OF ACCESSS ON MARTIN STREET

7.2.1 Proposed Accesses and Spacing on Martin Street

The site plan includes a full movements access on Martin Street at Street A (3-legged intersection) and a full movements access on Martin Street at Street D / Caves Court (4-legged intersection). As discussed in **Section 8.0**, both of these intersections are recommended to be signalized as part of the development of the site. The functional plans for the proposed Martin Street intersections are provided in **Appendix E**. It is noted that a dedicated northbound left-turn lane is being proposed at both Martin Street at Street A and Martin Street at Street D/ Caves Court.

The proposed new traffic signal on Martin Street / Street A, is located approximately **314 metres** south of the intersection of Steeles Avenue East / Martin Street and **207 metres** north of the proposed traffic signal on Martin Street / Street D. The proposed new traffic signal on Martin Street / Street D/ Caves Court is located approximately **207 metres** south of the proposed traffic signal at Martin Street / Street A and **189 metres** north of the existing traffic signal at Martin Street / Woodward Avenue.

Although the Town classifies Martin Street in the area of the site as a collector road, there are two schools located on Martin Street and it is signed as a Community Safety Zone. Although the proposed traffic signal spacing is slightly less than the minimum desired 200 metre spacing between Street D / Caves Court and Woodward Street, as discussed in the following section, both of the recommended traffic signals could function acceptably with optimization of the traffic signal coordination.

7.2.2 Traffic Operations & Queuing on Martin Street

The 2046 future total scenario reflects the highest site traffic generation due to the full build out of the proposed site and higher auto mode split assumptions relative to the ultimate 2051 scenario. The queues between Street A, Street D /Caves Court and Woodward Avenue, have been assessed at the 2046 future total scenario based on an average of 5 simulation runs with SimTraffic. The resultant capacity, level of service and queueing metrics for the intersections along Martin Street are summarized in **Table 64.** V/C results are based on Synchro whereas delay and queue results are based on SimTraffic outputs. Detailed SimTraffic analysis sheets at Steeles Avenue intersections along the site frontage are provided in **Appendix BB.**

TABLE 64 2046 TRAFFIC OPERATIONS ALONG MARTIN STREET SITE CONNECTIONS

Intersection / Movement	Storage (m)	V/C	Delay (s)	95th Percentile Queue (m)[2]
[9] Martin Street / Street A				
EBL	30[1]	0.66 (0.47)	40.8 (37.2)	46 (28)
EBTR	90	0.05 (0.06)	10.1 (12.3)	40 (25)
NBL	30[1]	0.06 (0.25)	22.7 (24.4)	27 (33)
[10] Martin Street / Street D/ Caves Court				
EBL	35[1]	0.44 (0.33)	37.0 (42.4)	25 (18)
EBTR	160	0.11 (0.06)	9.5 (12.4)	28 (17)
NBL	30[1]	0.08 (0.31)	13.9 (25.1)	20 (45)
NBTR	185	0.46 (0.39)	7.6 (10.7)	64 (69)
[11] Martin Street / Woodward Avenue				
SBL	35	0.27 (0.42)	16.5 (29.5)	32 (40)
SBTR	185	0.36 (0.62)	6.9 (10.4)	56 (80)

Notes:
1. Reflects portion of taper length with width wide enough to store a vehicle.
2. xx (xx) – AM Peak Hour (PM Peak Hour)

The expected 95th percentile queues can generally be accommodated within the proposed/existing storage lengths. There are no queuing concerns between the intersections at Street A, Street D / Caves Court and at Woodward Avenue apart from a potential spillover of 1 to 2 vehicles on Martin Street.

7.3 INTERNAL INTERSECTIONS

7.3.1 Spacing of Internal Site Intersections

As part of the design-related review of Phase 1, an assessment of the proposed intersection spacing was undertaken for the internal key intersections and driveways as discussed below. The spacing dimensions for the intersections have been included within the functional road plan provided in **Appendix C**.

7.3.1.1 Street A / Street E and Street A/ B/ D

The distance between Street A / Street E to Street A/ B/ D is approximately **48.6 metres**.

The Town of Milton standards (Note 4 in Town of Milton Standards Table 1.2) state that the spacing to a 3-legged intersection can be a minimum of 40 metres. The spacing distances of 48.6 m along Street A, would thus be acceptable.

Based on the comprehensive traffic analysis, it has been confirmed that the westbound queuing along Street A at the intersection of Street A/B/D will be minimal (less than 15 m) hence from an analysis perspective, the intersection spacing as proposed, is expected to be functional and not impact the intersection of Street A at Street E.

The Town's review of the above-noted spacing, confirmed that they have no concerns with the spacing between Street A / Street E to Street A/ B/ D.

7.3.1.2 Street A / Street E and Block 1 & 2 Driveway

The distance between Street A / Street E to Street A/ B/ D is approximately **46.4 metres**.

The Town of Milton standards (Note 4 in Town of Milton Standards Table 1.2) state that the spacing to a 3-legged intersection can be a minimum of 40 metres. The spacing distances of 46.4 m, along Street A, would thus be acceptable. As traffic volumes along Street A, entering and exiting both Street E and the driveway to Block 1 & 2, are expected to be low, there are expected to be no concerns with traffic operations or queuing between these two intersections.

7.3.1.3 Street D / Block 6 Driveway and Street D / Street E

The distance between Street D / Block 6 Driveway to Street D / Street E is approximately **38.2 metres**.

The Town of Milton standards (Note 4 in Town of Milton Standards Table 1.2) state that the spacing to a 3-legged intersection can be a minimum of 40 metres. The spacing distances of 38.2 m, along Street D, is just *slightly* below the Town's minimum requirement. As traffic volumes along Street D, entering and exiting both Street E and the driveway to Block 6, are expected to be low, there are expected to be no concerns with traffic operations or queuing between these two intersections.

7.3.2 Traffic Operations at Internal Intersections

The traffic operations review of internal intersections has been updated, in regard to queuing and level of service under the **2046 horizon**. This scenario considers that both phases of the development are fully built out but as 2046 is prior to the forecast decrease in auto driver mode share expected by 2051, 2046 represents the worst-case scenario.

The updated site traffic, including additional retail trips, has been distributed throughout the internal network, using SimTraffic microsimulation (results in **Appendix BB**) to better assess the internal queuing, relative to internal driveways and the spacing between intersections.

The following internal site intersections have been included in this analysis:

- Street A / Street C
- Street B / Street C
- Street A / Street B/ Street D
- Street A / Street E
- Street D / Street E

7.3.2.1 Internal Traffic Volumes

At the 2046 horizon, the entire site is expected to be built out and will reflect the maximum traffic volumes that would be generated on the internal road network, in consideration future travel modes. It is noted that although detailed driveway locations have been illustrated in the site plan for the blocks as part of the Phase 1 development, these driveway locations are unknown for the Phase 2 concept development blocks. For the purposes of this review, assumptions were made for the driveway locations accessing the Phase 2 buildings, generally to minimize the number of driveways by sharing accesses between buildings and to preserve the public open space areas where possible.

It is noted that the unit count for the Phase 2 development was estimated based on density allowances and was prorated to the individual Phase 2 blocks, based on the relative footprint of the buildings. The 2046 inbound and outbound traffic volumes at the two points of access at Steeles Avenue East (Street A and Street B) and the two points of access on Martin Street (Street A and Street D), have been prorated and distributed to each group of development block points of access based on:

- The shared access driveway location; and
- The number of residential units being proposed with respect to the total development concept.

The most direct travel route was selected to and from each block driveway, to and from the points of access along Steeles Avenue East and along Martin Street. The resultant balanced 2046 internal traffic assignment is illustrated in **Appendix BB**.

7.3.2.2 Internal Operations Assessment

At the 2046 horizon, the entire site is expected to be built out and will reflect the maximum traffic volumes that would be generated on the internal road network, in consideration of future travel modes. As such, the internal operations assessment has been conducted for the 2046 horizon.

Internal site intersection operations have been assessed based on a combination of Synchro and SimTraffic for the all-way stop control and two-way stop control intersections. For the internal intersections, the capacity utilization results are based on HCM2000 from Synchro, whereas the level of service (delay) and queuing results are based on the average of 5 simulation runs in SimTraffic. The results of this analysis are summarized in **Table 65**.

Synchro results are provided in **Appendix U**, and SimTraffic results are provided in **Appendix BB**.

TABLE 65 2046 TRAFFIC OPERATIONS AT INTERNAL SITE INTERSECTIONS

Intersection / Movement	Storage (m)	V/C	Total Delay (s)	95th Percentile Queue (m)[2]
Street A / Street C / Block 19-21 Driveway				
NBL	30	0.11 (0.33)	9 (10)	14 (18)
NBTR	110	0.12 (0.06)	10 (10)	15 (15)
EBLTR	15	0.35 (0.24)	9 (8)	29 (20)
WBLTR	135	0.26 (0.24)	7 (11)	25 (18)
SBL	25[3]	0.12 (0.32)	7 (10)	16 (21)
SBTR	170	0.06 (0.20)	8 (7)	13 (18)
Street A / Street B / Street D				
NBL	30[3]	0.09 (0.17)	6 (8)	15 (16)
NBTR	240	0.11 (0.25)	7 (9)	14 (21)
EBL	35	0 (0)	-- (--)	-- (--)
EBTR	110	0.37 (0.30)	0 (11)	28 (21)
WBL	10	0 (0)	-- (--)	-- (--)
WBTR	200	0.23 (0.39)	1 (8)	19 (25)
SBL	25	0.17 (0.12)	6 (8)	16 (14)
SBTR	155	0.18 (0.11)	6 (8)	13 (15)
Street B / Street C				
NBLT	160	0.07 (0.17)	2 (4)	3 (12)
EBLR	130	0.24 (0.22)	5 (11)	24 (19)
SBTR	100	-- (--)	1 (0)	-- (--)
Street D / Street E / Block 6 Driveway				
NBLTR	15	0.05 (0.03)	7 (7)	14 (11)
EBLTR	250	-- (--)	0 (0)	4 (--)
WBLTR	185	-- (0)	1 (5)	4 (2)
SBLTR	160	0.08 (0.04)	6 (8)	14 (12)
Street A / Street E				
NBLR	165	0.16 (0.09)	7 (11)	16 (15)
EBTR	40	-- (--)	2 (3)	-- (2)
WBLT	165	0.03 (0.05)	3 (3)	10 (10)

Intersection / Movement	Storage (m)	V/C	Total Delay (s)	95th Percentile Queue (m)[2]
Street C / Block 14-16 Driveway / Block 13+17 Driveway				
NBLTR	85*	0.06 (0.07)	3 (6)	11 (9)
EBLTR	15	0.17 (0.37)	7 (9)	16 (23)
WBLTR	15	0.23 (0.50)	7 (8)	18 (28)
SBLTR	15*	0.09 (0.05)	2 (4)	18 (8)
Street B / Block 1+2 Driveway				
NBTR	80*	-- (--)	2 (3)	-- (--)
WBLR	15	0.03 (0.02)	6 (7)	12 (9)
SBLT	80*	-- (--)	0 (4)	-- (--)
Street A / Block 1+2 Driveway				
EBLT	45*	0 (0.01)	2 (1)	3 (4)
WBTR	120*	-- (--)	1 (1)	-- (--)
SBLR	15	0.05 (0.03)	5 (8)	13 (9)
Street E / Block 3+5 Driveway / Block 4 Driveway				
NBLTR	70*	-- (0.01)	2 (4)	-- (3)
EBLTR	15	0.08 (0.06)	4 (6)	13 (13)
WBLTR	15	0.06 (0.03)	5 (6)	14 (12)
SBLTR	95*	0.01 (0.02)	2 (4)	1 (5)
Street D / Block 3+5 Driveway				
NBTR	170*	-- (--)	0 (0)	-- (--)
WBLR	15	0.08 (0.06)	5 (7)	16 (14)
SBLT	75*	0.01 (0.02)	3 (6)	3 (7)

Notes:
1. xx (xx) – AM Peak Hour (PM Peak Hour).
2. Values reflect meters based on a conversion ratio of 7 metres per vehicle.
3. Includes portion of taper wide enough to accommodate a vehicle.

Based on this review, the internal site intersections will operate acceptably at full build out with the proposed traffic control, with levels of service LOS B or better for all movements, during both peak hours. The expected 95th percentile queues can be accommodated by the storage lengths provided within the internal site network. These internal intersection 95th percentile queues are not expected to reach or impede block driveway accesses and effective traffic flow can be maintained on the internal network.

The internal driveways accesses for the proposed parking facilities will also operate acceptably and can accommodate the expected queues.

7.4 SIGHT DISTANCE ASSESSMENT

BA Group undertook a comprehensive sight distance review for the key proposed site intersections that included the following:

- Horizontal sight distance conditions at the proposed new intersections;
- Adopted sight distance standards and existing vehicle speed information along the key road corridors; and
- Stopping and decision sight distance analysis at the proposed access locations.

The sight distance was assessed in compliance with the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads methodology, 2017 Edition.

The sight distance assessment was undertaken at the following proposed external site intersections:

- Steeles Avenue / Street A
- Steeles Avenue / Street B
- Martin Street / Street A
- Martin Street / Street D

7.4.1 Sight Distance Design Standards

The TAC Geometric Design Guide for Canadian Roads (Chapter 2) provides guidelines for sight distance standards that are applicable to the site intersections. Sight distance provides motorists sufficient time to react and decide whether to preform a movement and is highly dependent on the speed of incoming vehicles.

The intersection design standards / requirements and assumptions adopted as part of the analysis are summarized in **Table 66**.

TABLE 66 SIGHT DISTANCE STANDARDS AND ASSUMPTIONS

Key Value	TAC Minimum Requirement	Adopted
Departing Vehicle Setback	4.4 metres to 5.4 metres	4.4 metres
Object Height	0.60 metres	0.60 metres
Steeles Avenue Design Speed	--	70 km/h (10 km/h above the speed limit of 60 km/h)
Martin Street Design Speed	--	60 km/h (10 km/h above the posted speed limit or 50 km/h)
Local Road Design Speed	--	50 km/h (Milton Engineering & Parks Standards Manual – Part 1)

7.4.2 Proposed External Site Intersections

A network of new public roads is proposed throughout the site and provides connectivity to both Steeles Avenue and Martin Street. The proposed new road network includes 4 new intersections (2 on Steeles Avenue and 2 on Martin Street), with the recommendation for the installation of 3 new traffic signals. **Table 67** provides a summary of the key characteristics for each proposed intersection.

TABLE 67 SUMMARY OF PROPOSED EXTERNAL SITE INTERSECTIONS

Intersection	Intersection Type	Lane Configuration on New Street
Steeles Avenue / Street A	Signalized, Full-movements	Dedicated northbound left-turn lane and northbound right-turn lane on Street A
Steeles Avenue / Street B	Unsignalized, Right-In / Right-Out	--
Martin Street / Street A	Signalized, Full-movements	Dedicated eastbound left-turn lane on Street A.
Martin Street / Street D	Signalized, Full-movements	Dedicated eastbound left-turn lane on Street D.

7.4.2.1 Turning Sight Distance – Left Turn at Signalized Intersection (Case D)

It is noted that the Steeles Avenue / Street A intersection, the Martin Street / Street A intersection and the Martin Street/ Street D intersections, are proposed to be signalized. As outlined in TAC Section 9.9.3 Case D, at signalized intersections, left and right-turning vehicles should have sufficient sight distance to select a gap between oncoming traffic to complete the turn. The horizontal alignment and the offset of opposing left-turn lanes can impact the sightlines (TAC Section 9.1.2.3).

All signalized intersection are proposed to be designed at an acceptable angle (between 80 to 90 degrees), as outlined in TAC Section 9.4.5.4. In addition, there is no visual blockage, as outlined in TAC Section 9.1.2.3, as there are no opposing left-turn lanes at all three signalized intersections. Therefore, acceptable visibility to oncoming traffic can be provided. Generally, Case D outlines that no other sight triangles are needed for a signalized intersection, therefore, no further left turn from stop analysis is required for the signalized intersections.

The Street B / Steeles Avenue intersection is unsignalized and restricted to right-in / right-out movements only. therefore, no left turn from stop analysis is required for this intersection.

7.4.2.2 Turning Sight Distance – Right Turn from Stop (Case B2)

Notwithstanding the foregoing, as a conservative approach, right turn from stop analyses have been conducted at all four new intersections, with the assumption that right turn on red will not be restricted at the signalized intersections.

The sight distance for the new proposed public roads connecting to Steeles Avenue and Martin Street have been evaluated based on Transportation Association of Canada (TAC) design criteria. The relevant sight distance figures are provided in **Appendix Y.**

As per the TAC guidelines, the turning sight distance is determined in reference to the intersection sight distance equation provided in section 9.9.2.3 based on the type of manoeuvre, the type of vehicle and the design speed of the subject roadway. These parameters affect the intersection sight distance (ISD) required for each intersection, which is calculated using equation 9.9.1:

$$ISD = 0.278V_{major}t_g$$

Where:

- ISD = intersection sight distance (length of the leg of sight triangle along the major road) (m)
- V_{major} = design speed of the major road (km / h)
- t_g = time gap for minor road vehicle to enter the major road (s)

For this review, Street A and Street B were considered as minor roads while Steeles Avenue and Martin Street were considered as major roads. The time gap was referenced using TAC Table 9.9.5 for right turn from stop analysis. The driver's eye of the departing vehicle is setback at 4.4 metres from the edge of the major road, as referenced in section 9.9.2.3 of the TAC Guidelines.

A summary of the minimum sight distance requirements is provided in **Table 68**. A detailed review of the sight distance requirements and calculations is provided in the following sections.

TABLE 68 MINIMUM SIGHT DISTANCE REQUIREMENTS – EXTERNAL SITE INTERSECTIONS

Intersection	Case	Vehicle	TAC Minimum Turning Sight Distance / Stopping Sight Distance[2] Requirement	Turning Sight Distance / Stopping Sight Distance Requirements Satisfied
Steeles Avenue/ Street A	Case B2 – Right Turn from Stop	TAC P	140m / 105m	Yes / Yes
		Single Unit Truck	180m / 105m	Yes / Yes
Steeles Avenue / Street B	Case B2 – Right Turn from Stop	TAC P	140m / 105m	Yes / Yes
		Single Unit Truck	180m / 105m	Yes / Yes
Martin Street / Street A	Case B2 – Right Turn from Stop	TAC P	110m[1] / 85m	Yes / Yes
		Single Unit Truck	145m / 85m	Yes / Yes
Martin Street / Street D	Case B2 – Right Turn from Stop	TAC P	110m[1] / 85m	Yes / Yes
		Single Unit Truck	145m / 85m	Yes / Yes

Notes:
1. TAC Geometric Design Guide for Canadian Roads, June 2017, Table 9.9.6
2. TAC Geometric Design Guide for Canadian Roads, June 2017, Table 2.5.2

The sight distance for right turn from stop at all four external site intersections meets the TAC Guidelines for sight distances. Further, while turning sight distance is one measure to consider when reviewing the adequacy of sightlines, stopping sight distance can also be considered. This is a measure of the distance that a car approaching the driveway on the main road requires to come to a stop upon seeing a turning vehicle from the driveway. The stopping sight distance required for each intersection meets the requirements as outlined in the TAC Guidelines.

Steeles Avenue / Street A

As noted, the intersection of Steeles Avenue / Street A is proposed as a new signalized intersection with full movements permitted. This results in one analysis scenario; right turn from stop for both passenger vehicles and truck traffic.

As the vehicles making a right turn from Street A onto Steeles Avenue would need to cross a cycling lane, for a conservative approach, the cycling lane is assumed to be an excess lane, thus, an additional 0.5 seconds is added to the time gap of 6.5 seconds for passenger vehicles (referenced in Table 9.9.5 of the TAC Guidelines).

Using the assumptions adopted in **Table 66** and substituting the parameters into equation 9.9.1 of the TAC Guidelines:

$$\text{Passenger Vehicle ISD} = 0.278*70*(6.5+0.5)$$
$$\text{ISD} = 136.22 \text{ m} \approx \textbf{140 metres}$$

Further, an additional 0.7 seconds is added to the time gap of 8.5 seconds for trucks (referenced in Table 9.9.5 of the TAC Guidelines). Using the assumptions adopted in **Table 66** and substituting the parameters into equation 9.9.1 of the TAC Guidelines:

$$\text{Single-Unit Truck ISD} = 0.278*70*(8.5+0.5)$$
$$\text{ISD} = 175.15 \text{ m} \approx \textbf{180 metres}$$

Drawing SD-01A and SD-01B provided in **Appendix Y** illustrate appropriate visibility / sightlines at the specified intersection setback distance (i.e. 4.4 metres from edge of roadway), using the calculated distances and assumptions adopted in **Table 66.**

Steeles Avenue/ Street B

As noted, the intersection of Steeles Avenue / Street B is proposed as a right-in / right-out only intersection, where Street B is stop controlled. This results in one analysis scenario; right turn from stop for both passenger vehicles and truck traffic.

As the vehicles making a right turn from Street B onto Steeles Avenue would need to cross a cycling lane, for a conservative approach, the cycling lane is assumed to be an excess lane, thus, an additional 0.5 seconds is added to the time gap of 6.5 seconds for passenger vehicles (referenced in Table 9.9.5 of the TAC Guidelines).

Using the assumptions adopted in **Table 66** and substituting the parameters into equation 9.9.1 of the TAC Guidelines:

$$\text{Passenger Vehicle ISD} = 0.278*70*(6.5+0.5)$$
$$\text{ISD} = 136.22 \text{ m} \approx \textbf{140 metres}$$

Further, an additional 0.7 seconds is added to the time gap of 8.5 seconds for trucks (referenced in Table 9.9.5 of the TAC Guidelines). Using the assumptions adopted in **Table 66** and substituting the parameters into equation 9.9.1 of the TAC Guidelines:

$$\text{Single-Unit Truck ISD} = 0.278*70*(8.5+0.5)$$
$$\text{ISD} = 175.15 \text{ m} \approx \textbf{180 metres}$$

Drawing SD-02A and SD-02B provided in **Appendix Y** illustrate appropriate visibility / sightlines at the specified intersection setback distance (i.e. 4.4 metres from edge of roadway), using the calculated distances and assumptions adopted in **Table 66.**

Martin Street / Street A

As noted, the intersection of Martin Street / Street A is proposed as a new signalized intersection with full movements permitted. This results in one analysis scenario; right turn from stop for both passenger vehicles and truck traffic.

As the vehicles turning right from Street A onto Martin Street do not cross additional lanes, the required sight distance for passenger vehicles were assessed as per TAC Guidelines Table 9.9.6, using a design speed of 60 km/h. The required distance for a right turn from stop for a passenger vehicle is **110 metres**.

Further, as described in Section 9.9.2.3 of the TAC Guidelines, the time gap for single-unit trucks is 8.5 seconds. Using the assumptions adopted in **Table 66** and substituting the parameters into equation 9.9.1 of the TAC Guidelines:

Single-Unit Truck ISD = 0.278*60*(8.5)

ISD = 141.78 m ≈ **145 metres**

Drawing SD-03A and SD-03B provided in **Appendix Y** illustrates appropriate visibility / sightlines at the specified intersection setback distance (i.e. 4.4 metres from edge of roadway), using the calculated distances and assumptions adopted in **Table 66.**

Martin Street / Street D

As noted, the intersection of Martin Street /Street D is proposed as a new signalized intersection with full movements permitted. This results in one analysis scenario; right turn from stop for both passenger vehicles and truck traffic.

As the vehicles turning right from Street D onto Martin Street do not cross additional lanes, the required sight distance for passenger vehicles were assessed as per TAC Guidelines Table 9.9.6, using design speed of 60 km/h. The required distance for a right turn from stop for a passenger vehicle is **110 metres**.

Further, as described in Section 9.9.2.3 of the TAC Guidelines, the time gap for single-unit trucks is 8.5 seconds. Using the assumptions adopted in **Table 66** and substituting the parameters into equation 9.9.1 of the TAC Guidelines:

Single-Unit Truck ISD = 0.278*60*(8.5)

ISD = 141.78 m ≈ **145 metres**

Drawing SD-04A and B provided in **Appendix Y** illustrate appropriate visibility / sightlines at the specified intersection setback distance (i.e. 4.4 metres from edge of roadway), using the calculated distances and assumptions adopted in **Table 66.**

7.4.2.3 Stopping Sight Distance

As per the TAC Guidelines (Section 2.5.3), the stopping sight distance is determined based on the reference Table 2.5.2 indicating several roadway types and design speeds. An assessment of the stopping sight distance at each of the four proposed external site intersections is as follows:

Steeles Avenue / Street A

Based on the local roadway type and design speed of 70 km/h, the stopping sight distance required for Street A at Steeles Avenue is **105 metres**.

Drawing SD-01A and SD-01B provided in **Appendix Y** illustrates that there are appropriate visibility / sightlines at the specified road setback distance (i.e., 4.4 metres from edge of roadway), using the calculated distance and assumptions adopted in **Table 66**. It is noted that the stopping sight distance for Steeles Avenue / Street A is met per TAC Guidelines.

Steeles Avenue / Street B

Based on the local roadway type and design speed of 70 km/h, the stopping sight distance required for Street B at Steeles Avenue is **105 metres**.

Drawing SD-02A and SD-02B provided in **Appendix Y** illustrate that there are appropriate visibility / sightlines at the specified road setback distance (i.e., 4.4 metres from edge of roadway), using the calculated distance and assumptions adopted in **Table 66**. It is noted that the stopping sight distance for Steeles Avenue / Street B is met per TAC Guidelines.

Martin Street / Street A

Based on the local roadway type and design speed of 60 km/h, the stopping sight distance required for Street A at Martin Street is **85 metres**.

Drawing SD-03A and SD-03B provided in **Appendix Y** illustrate that there are appropriate visibility / sightlines at the specified road setback distance (i.e., 4.4 metres from edge of roadway), using the calculated distance and assumptions adopted in **Table 66**. It is noted that the stopping sight distance for Martin Street / Street A is met per TAC Guidelines.

Martin Street / Street D

Based on the local roadway type and design speed of 60 km/h, the stopping sight distance required for Street D at Martin Street is **85 metres**.

Drawing SD-04A and SD-04B provided in **Appendix Y** illustrate that there are appropriate visibility / sightlines at the specified road setback distance (i.e., 4.4 metres from edge of roadway), using the calculated distance and assumptions adopted in **Table 66**. It is noted that the stopping sight distance for Martin Street / Street D is met per TAC Guidelines.

7.4.3 Proposed Internal Site Intersections and Driveways

As discussed in **Section 7.4.2.2**, the TAC guidelines provides suggested turning sight distances based on the type of manoeuvre, the type of vehicle and the design speed of the subject roadway.

For this review, block driveway and stop-controlled local roads (i.e. Street E) were considered as minor roads while Street A and Street B were considered as major roads. The driver's eye of the departing vehicle is setback at 4.4 metres from the edge of the major road, as referenced in section 9.9.2.3 of the TAC Guidelines.

A summary of the minimum sight distance requirements is provided in **Table 68**. A detailed review of the sight distance requirements is provided in the following sections.

TABLE 69 MINIMUM SIGHT DISTANCE REQUIREMENTS – INTERNAL SITE INTERSECTIONS / BLOCK DRIVEWAYS

Intersection	Case	Vehicle	TAC Minimum Turning Sight Distance / Stopping Sight Distance[2] Requirement	Turning Sight Distance / Stopping Sight Distance Requirements Satisfied
Street D / Street E	Case B1 – Left Turn from Minor Road	TAC P	105m [1]/ 65m	No / Yes
	Case B2 – Right Turn from Stop	TAC P	95m / 65m	No / Yes
Street D / Block 6 Driveway	Case B1 – Left Turn from Minor Road	TAC P	105m (65m)[3] / 65m	Yes / Yes
	Case B2 – Right Turn from Stop	TAC P	95m (55m)[3] / 65m	Yes / Yes

Notes:
1. TAC Geometric Design Guide for Canadian Roads, June 2017, Table 9.9.6
2. TAC Geometric Design Guide for Canadian Roads, June 2017, Table 2.5.2
3. Further details discussed in the sections below.

7.4.3.1 Turning Sight Distance – Left Turn from Minor Road (Case B1)

Street D / Street E

A sight distance analysis has been undertaken for Street E at Street D due to the curvature of Street D.

The required sight distance for passenger vehicles was assessed as per TAC Guidelines Table 9.9.4, using a design speed of 50 km/h. The required distance for a left turn from stop for a passenger vehicle is **105 metres**.

The sight distance of 105 metres is met looking to the right (for vehicles approaching eastbound along Street D), however, due to the curvature of Street D, the required sight distance of 105 metres looking to the left is not met. While turning sight distance is one measure to consider when reviewing the adequacy of sightlines, stopping sight distance can also be considered, particularly in an urban environment. To improve the sightlines at the intersection, the townhouse units have been set back with a proposed sightline easement to accommodate the required stopping sight distance (further discussed in **Section 7.4.3.3**).

Drawing SD-05 provided in **Appendix Y** illustrates the visibility / sightlines at the specified intersection setback distance (i.e. 4.4 metres from edge of roadway), using assumptions adopted in **Table 66**.

Street D / Block 6 Driveway

In addition to the new proposed external site intersections, a sight distance analysis has been undertaken for the Block 6 Site driveway, due to its proximity to an "elbow" to the west along Street D. It is noted that Block 6 is a proposed mid-rise residential building, therefore the sight distance analysis has been undertaken for passenger vehicles.

The required sight distance for passenger vehicles was assessed as per TAC Guidelines Table 9.9.4, using a design speed of 50 km/h. The required distance for a left turn from stop for a passenger vehicle is **105 metres**.

The available sight distance, looking to the west, at the proposed driveway is 78.9 metres. However, to the west of the proposed driveway, Street D bends with a 90 degree elbow design. Vehicles travelling eastbound around the bend, approaching the driveway, will typically travel through the bend at a reduced speed. A reduced design speed of 30 km/h has been assumed through the bend. As such, the required sight distance for a left turn from stop for a passenger vehicle is **65 metres**, which is met by the available sight distance.

While turning sight distance is one measure to consider when reviewing the adequacy of sightlines, stopping sight distance can also be considered, particularly in an urban environment. Further details are provided in **Section 7.4.2.3**. Drawing SD-06 provided in **Appendix Y** illustrates the visibility / sightlines at the specified intersection setback distance (i.e. 4.4 metres from edge of roadway), using the calculated distances and assumptions adopted in **Table 66**.

7.4.3.2 Turning Sight Distance – Right Turn from Minor Road (Case B2)

Street E / Street D

A sight distance analysis has been undertaken for Street E at Street D due to the curvature of Street D.

The required sight distance for passenger vehicles was assessed as per TAC Guidelines Table 9.9.4, using a design speed of 50 km/h. The required distance for a right turn from stop for a passenger vehicle is **95 metres**.

As discussed in **Section 7.4.3.1**, due to the curvature of Street D, the required sight distance of 95 metres is not met. To improve the sightlines at the intersection, the townhouse units have been set back with a proposed sightline easement to accommodate the required stopping sight distance (further discussed in **Section 7.4.3.3**).

Drawing SD-05 provided in **Appendix Y** illustrates the visibility / sightlines at the specified intersection setback distance (i.e. 4.4 metres from edge of roadway), using the calculated distances and assumptions adopted in **Table 66**.

Street D / Block 6 Driveway

The required sight distance for passenger vehicles are assessed per TAC Guidelines Table 9.9.4, using design speed of 50 km/h. The required distance for a right turn from stop for a passenger vehicle is **95 metres**.

In addition, as discussed in **Section 7.4.3.1**, vehicles travelling eastbound approaching the driveway will travel through the elbow road at a reduced speed. For design speed of 30 km/h, the required sight distance for a right turn from stop for a passenger vehicle is **55 metres**, which is met by the available sight distance (as discussed in **Section 7.4.3.1)**. It is also noted that the required sight distance for a right turn from stop is less than that required for a left turn from stop.

While turning sight distance is one measure to consider when reviewing the adequacy of sightlines, stopping sight distance can also be considered, particularly in urban environment. Further details are provided in **Section 7.4.2.3**.

Drawing SD-05 provided in **Appendix Y** illustrates the visibility / sightlines at the specified intersection setback distance (i.e. 4.4 metres from edge of roadway), using the calculated distances and assumptions adopted in **Table 66**.

7.4.3.3 Stopping Sight Distance

Street D / Street E

As per the TAC Guidelines (Section 2.5.3), the stopping sight distance is determined based on the reference Table 2.5.2 indicating several roadway types and design speeds. Based on the local roadway type and design speed of 50 hm/h, a stopping sight distance of **65 metres** is required. Due to the curvature of Street D, a sightline easement to maintain a clear, unobstructed area that can provide the required stopping sight distance of 65 metres is proposed.

Drawing SD-05 provided in **Appendix Y** illustrates that there are appropriate visibility / sightlines at the specified road setback distance (i.e., 4.4 metres from edge of roadway), using the calculated distance and assumptions adopted in **Table 66**.

Block 6 Driveway / Street D

As per the TAC Guidelines (Section 2.5.3), the stopping sight distance is determined based on the reference Table 2.5.2 indicating several roadway types and design speeds. Based on the local roadway type and design speed of 50 hm/h, a stopping sight distance of **65 metres** is required.

Drawing SD-06 provided in **Appendix Y** illustrates that there are appropriate visibility / sightlines at the specified road setback distance (i.e., 4.4 metres from edge of roadway), using the calculated distance and assumptions adopted in **Table 66**. It is noted that the stopping sight distance for the Block 6 driveway at Street D is appropriate.

7.5 CORNER CLEARANCE ASSESSMENT

As requested by the Region of Halton, a review of the corner clearance requirements on Street A and Street B, between Steeles Avenue and the nearest internal intersection / access has been undertaken.

A summary of the approximate corner clearances along Street A and Street B to the nearest internal intersection, is summarized below:

- **Along Street A from Steeles Avenue**: Approximately 185 metres from Steeles Avenue to the Street A / Street C intersection
- **Along Street B from Steeles Avenue**: Approximately 105.4 metres from Steeles Avenue to the Street B / Street C intersection

A review of the corner clearances is provided in **Appendix Z**.

7.5.1 Overview of TAC Guidelines

Section 9.4.2 of the TAC Guidelines provides recommended minimum intersection spacing distances along arterials, collectors and local roads. Street A and Street B of the site are both proposed new public roads with right-of-way widths of 26 metres and 24 metres, respectively, and recognized by the Town of Milton as collector roads. It is noted that although these roads are classified as collector roads under the Town's right-of-way standards, the cross sections have been modified to function more as local roads.

TAC Guidelines recommend a minimum of 60 metres between adjacent intersections along both collector roads and local roads.

Further, Figure 8.8.2 of the TAC Guidelines provides recommended minimum corner clearances to accesses at major intersections. The relevant corner clearance distances along Street A and Street B (assuming both streets are collector roads) from Steeles Avenue to an access, are summarized below:

Along Street A from Steeles Avenue:

- minimum 55 metres for an access located along the south side of Street A; and
- minimum 55 metres for an access located along the north side of Street A.

Along Street B from Steeles Avenue:

- minimum 25 metres for an access located along the east side of Street B; and
- minimum 20 metres for an access located along the west side of Street B.

Further, TAC specifies a minimum corner clearance of 15 metres for any accesses along a local road, per Figure 8.8.2 of the TAC Guidelines.

7.5.2 Review of Corner Clearances Along Street A and Street B

Based on the foregoing, the distance between Steeles and the nearest internal intersection along both Street A and Street B, exceed the minimum distance outlined in TAC Guidelines, therefore, the corner clearances are acceptable.

8.0 PROPOSED NEW TRAFFIC SIGNALS

In order to determine if traffic signals will be required as part of the development of the site, a traffic signal warrant analysis was undertaken based on the Ontario Traffic Manual (OTM) Book 12 methodology (Justification 7) at the following intersections:

- Steeles Avenue East / Street A / Morobel Drive (4-legged intersection)
- Martin Street / Street A (3-legged intersection)
- Martin Street / Street D / Caves Court (4-legged intersection)

To be conservative, the traffic signal warrant analysis was undertaken at 5 years beyond build-out of both Phase 1 (2041) and build-out of Phase 2 (2051). A summary of the traffic signal warrant assessment undertaken is summarized in the following sections. The relevant excerpts for the traffic signal warrants and the detailed analysis are provided in **Appendix M**.

It is noted that the Ontario Traffic Manual Book 12 - Traffic Signals, was updated in July 2024. For Justification 7, the new thresholds to warrant traffic signals are as follows:

- **Case 1**: The traffic signal is certainly warranted - the suggested threshold for this condition is meeting 200 % or more of Justifications 1 or 2.
- **Case 2**: The traffic signal might be warranted - falls between cases 1 and 3, somewhere between 100% and 199% of Justifications 1 or 2.
- **Case 3**: Signal warrant is unlikely – meets less than 100% of Justifications 1 or 2.

8.1 STEELES AVENUE EAST / STREET A / MOROBEL DRIVE

The proposed new traffic signal on Steeles Avenue East / Street A / Morobel Drive, is located approximately 394 metres west of the intersection of Steeles Avenue East / Martin Street and 189 metres from the proposed right-in / right-out access at Steeles Avenue East / Street B. The results of the traffic signal warrant analysis for the new 4-legged intersection at Steeles Avenue East / Street A / Morobel Drive are summarized in **Table 70**. The table includes the results for both 5 years beyond the build-out of Phase 1 (2041) and for 5 years beyond the build-out of Phase 2 (2051).

The traffic signal warrant analysis demonstrates that the Steeles Avenue East / Street A / Morobel Drive intersection scores **52%** in 2041 (Phase 1) and **112%** in 2051 (Phase 2).

Although a traffic signal is not technically warranted at the intersection of Steeles Avenue East / Street A / Morobel Drive in 2041, the score indicates “might be warranted” by 2051, it is recommended that a traffic signal be installed at this location as part of Phase 1, when Street A is connected to Steeles Avenue East. As a traffic signal will likely be required when future traffic volumes result in a traffic signal warrant score of 80% (both Justification 1 & 2) or 100% (for either Justification 1 or 2), it is expected that appropriate warrants for signalization will be met in the future.

In addition to the consideration for warrants, it is noted that the installation of a traffic signal at this location is important for safety-related reasons. Without a traffic signal at this intersection, as Steeles Avenue East is a high-volume roadway, left turns to and from Street A, as well as Morobel Street, are expected to be challenging, especially during peak periods of the day. A traffic signal at this intersection would also provide a protected crossing for both pedestrians and cyclists and will enhance connectivity for active transportation to and from the site. As the distance between Steeles Avenue East / Street A / Morobel Drive and adjacent intersections along Steeles Avenue East, exceeds the spacing requirements noted in the Region’s Access Management Guidelines, a traffic signal at this location can operate efficiently, especially when operated as a fully actuated and coordinated traffic signal.

TABLE 70 PHASE 1 & PHASE 2 TRAFFIC SIGNAL WARRANTS: STEELES / STREET A / MOROBEL

Justification	Description	Minimum Requirement 2 Lane Highways [Restricted Flow] 4-legged	Compliance		
			Sectional		Entire % (≥150)[1]
		Base	Actual Traffic Volumes	% of Required	
Phase 1 (2041): Steeles Avenue East / Street A / Morobel Drive					
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	900	1245	138%	**52%**
	B. Vehicle volume, along minor streets (average hour)	170	41	24%	
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	900	1204	134%	
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)- left + highest through +peds	75	39	52%	
Phase 2 (2051): Steeles Avenue East / Street A / Morobel Drive					
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	900	1413	157%	**112%**
	B. Vehicle volume, along minor streets (average hour)	170	119	70%	
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	900	1294	144%	
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)- left + highest through +peds	75	84	112%	

Notes:

1. Average hourly volumes were derived based on the formula presented in the OTM Book 12. AHV = (weekday morning peak hour volumes + weekday afternoon peak hour volumes) ÷ 4
2. There are errors within the OTM excerpts (confirmed in discussions with MTO staff): (1) the 50% increase due to “T” intersections only applies to Justification 1B, and (2) Justification 2B has a requirement value of 75, not 170, under restricted flow in 2 or more lanes.
3. Section 2B assumes 25 pedestrians crossing Steeles Avenue in each peak period.
4. Relevant OTM excerpts are provided in **Appendix M**.

8.2 MARTIN STREET / STREET A

The proposed new traffic signal on Martin Street / Street A, is located approximately 314 metres south of the intersection of Steeles Avenue East / Martin Street and 207 metres north of the proposed traffic signal on Martin Street / Street D.

The results of the traffic signal warrant analysis for the new 3-legged intersection at Martin Street / Street A are summarized in **Table 71**. The table includes the results for both 5 years beyond the build-out of Phase 1 (2041) and for 5 years beyond the build-out of Phase 2 (2051).

The traffic signal warrant analysis demonstrates that the Martin Street / Street A, intersection scores **53% of** in 2041 (Phase 1) and **92%** in 2051 (Phase 2).

Although a traffic signal is not technically warranted at the intersection of Martin Street / Street A, in either 2041 or 2051, it is recommended that a traffic signal be installed at this location as part of Phase 1, when Street A is connected to Martin Street. As a traffic signal will be required when future traffic volumes result in a traffic signal warrant score of 80% (both Justification 1 & 2) or 100% (for either Justification 1 or 2), it is expected that appropriate warrants for signalization will be met in the future.

In addition to the consideration for warrants, it is noted that the installation of a traffic signal at this location is important for safety-related reasons. Without a traffic signal at this intersection, left turns to and from Street A, are expected to be challenging, especially during peak periods of the day. A traffic signal at this intersection would also provide a protected crossing for both pedestrians and cyclists and will enhance connectivity for active transportation to and from the site.

It is important to note that this intersection is close to two schools on Martin Street (Martin Street Public School and Holy Rosary Elementary School) and within a Community Safety Zone. A traffic signal at Martin Street / Street A will enhance school zone safety and provide a protected crossing for students travelling to and from school. As the distance between Martin Street / Street A and the adjacent recommended traffic signal at Martin Street / Street D is 207 metres, a traffic signal at this location could operate efficiently at this location, especially when operated as a fully actuated and coordinated traffic signal.

TABLE 71 PHASE 1 & PHASE 2 TRAFFIC SIGNAL WARRANTS: MARTIN / STREET A

Justification	Description	Minimum Requirement 1 Lane Highways [Restricted Flow] 3-legged	Compliance		
			Sectional		Entire % (≥150)[1]
		Base	Actual Traffic Volumes	% of Required	
Phase 1 (2041): Martin Street / Street A					
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	720	589	82%	**53%**
	B. Vehicle volume, along minor streets (average hour)	255[3]	41	16%	
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	720	550	76%	
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)- left + highest through +peds	75	40	53%	
Phase 2 (2051): Martin Street / Street A					
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	720	766	106%	**92%**
	B. Vehicle volume, along minor streets (average hour)	255[3]	103	40%	
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	720	664	92%	
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)- left + highest through +peds	75	71	95%	

Notes:

1. Average hourly volumes were derived based on the formula presented in the OTM Book 12. AHV = (weekday morning peak hour volumes + weekday afternoon peak hour volumes) ÷ 4
2. There are errors within the OTM excerpts (confirmed in discussions with MTO staff): (1) the 50% increase due to "T" intersections only applies to Justification 1B, and (2) Justification 2B has a requirement value of 75, not 170, under restricted flow in 2 or more lanes.
3. Section 2B assumes 20 pedestrians crossing Martin Street in each peak period.
4. Relevant OTM excerpts are provided in **Appendix M**.

8.3 MARTIN STREET / STREET D / CAVES COURT

8.3.1 Review of Traffic Signal Warrants

The proposed new traffic signal on Martin Street / Street D / Caves Court is located approximately 207 metres south of the proposed traffic signal at Martin Street / Street A and 189 metres north of the existing traffic signal at Martin Street / Woodward Avenue.

The results of the traffic signal warrant analysis for the new 4-legged intersection at Martin Street / Street D / Caves Court are summarized in **Table 73**. The table includes the results for 5 years beyond the build-out of Phase 1 (2041) and for 5 years beyond the build-out of Phase 2 (2051).

The traffic signal warrant analysis demonstrates that the Martin Street / Street D / Caves Court intersection scores **32%** in 2041 (Phase 1) and **55%** in 2051 (Phase 2).

Although a traffic signal is not technically warranted at the intersection of Martin Street / Street D / Caves Court, in either 2041 or 2051, it is recommended that a traffic signal be installed at this location as part of Phase 1, when Street D is connected to Martin Street. As a traffic signal will be required when future traffic volumes result in a traffic signal warrant score of 80% (both Justification 1 & 2) or 100% (for either Justification 1 or 2), it is expected that appropriate warrants for signalization may be close to being met in the future.

8.3.2 Justification for Traffic Signal on Martin Street / Street D/ Caves Court

In addition to the consideration for warrants, it is noted that the installation of a traffic signal at Martin Street/ Street D/ Caves Court is important for safety-related reasons. Without a traffic signal at this intersection, left turns to and from Street D will rely on gaps provided by the operation of the adjacent traffic signals, especially during peak periods of the day. A traffic signal at this intersection will facilitate traffic flow to and from Street D and Caves Court and will provide a protected crossing for both pedestrians and cyclists, which will enhance connectivity for active transportation to and from the site.

It is important to note that this intersection is close to two schools on Martin Street (Martin Street Public School and Holy Rosary Elementary School) and within a Community Safety Zone. A traffic signal at Martin Street / Street D / Caves Court will enhance school zone safety and provide a protected crossing for students travelling to and from school.

As the distance between Martin Street / Street D / Caves Court and the adjacent recommended traffic signal at Martin Street / Street A is 207 metres and the distance between Martin Street / Street D / Caves Court and the existing traffic signal at Woodward Avenue is 189 metres, a traffic signal at this location could operate efficiently at this location, especially when operated as a fully actuated and coordinated traffic signal.

As a sensitivity analysis, BA Group reviewed the operations at Martin Street / Street D / Caves Court and at the adjacent Martin Street / Street A, **without** the proposed traffic signal at Martin Street/ Street D/ Caves Court, under the 2041 horizon (Phase 1) and the 2051 horizon (full buildout). Results from this sensitivity analysis are summarized in **Table 72** and Synchro analysis sheets are provided in **Appendix Q** and **Appendix S** for the 2041 and 2051 horizons, respectively.

TABLE 72 SENSITIVITY – MARTIN STREET / STREET D / CAVES - NO TRAFFIC SIGNAL

Movement (Storage in metres)	2041 Future Total			2051 Future Total		
	v/c	LOS	95th Percentile Queue (m)	v/c	LOS	95th Percentile Queue (m)
[9] Martin Street / Street A						
EBL (25m)	0.51 (0.33)	D (D)	29.9 (14.6)	0.63 (0.50)	D (D)	50.6 (33.9)
EBR (100m)	0.02 (0.01)	D (D)	7.6 (6.3)	0.05 (0.06)	D (D)	11.8 (13.7)
NBL (25m)	0.01 (0.04)	A (A)	1.9 (3.5)	0.05 (0.21)	A (A)	5.7 (11.4)
NBT	0.40 (0.31)	A (A)	83.2 (106.9)	0.49 (0.35)	A (A)	108.6 (71.4)
SBTR	0.26 (0.46)	A (A)	30.2 (55.2)	0.36 (0.63)	A (A)	52.0 (114.5)
Overall	**0.41 (0.45)**	**A (A)**	**-- (--)**	**0.51 (0.61)**	**B (A)**	**-- (--)**
[10] Martin Street / Street D / Caves Court						
EBL (25m)	0.08 (0.05)	C (C)	2.2 (1.3)	0.34 (0.07)	D (D)	11.4 (1.8)
EBTR (70m)	0.09 (0.09)	B (B)	2.5 (2.4)	0.26 (0.20)	B (D)	8.1 (5.9)
WBTLR	0.04 (0.07)	C (C)	0.9 (1.8)	0.06 (0.11)	D (D)	1.5 (3.0)
NBL (25m)	0.01 (0.05)	A (A)	0.3 (1.4)	0.05 (0.19)	A (A)	1.1 (5.5)
NBTR	0.34 (0.0)	A (A)	0.0 (0.0)	0.37 (0.33)	A (A)	0.0 (0.0)
SBTLR	0.00 (0.1)	A (A)	0.0 (0.1)	0.00 (0.01)	A (A)	0.0 (0.1)
Overall	**-- (--)**	**-- (--)**	**-- (--)**	**-- (--)**	**-- (--)**	**-- (--)**

Notes: xx (xx) – Morning Peak Hour (Afternoon Peak Hour)

Although the traffic signal at Martin Street / Street D / Caves Court is not strictly necessary from a capacity, delay and queuing perspective, the signalization of this intersection is desirable to provide pedestrians with additional protected crossing opportunities. Furthermore, the availability of two signalized accesses for the site along Martin Street provides greater flexibility in routing options for site traffic such that vehicles can optimize their routing for balanced usage at both intersections.

TABLE 73 PHASE 1 & PHASE 2 TRAFFIC SIGNAL WARRANTS: MARTIN / STREET D / CAVES

Justification	Description	Minimum Requirement 1 Lane Highways [Restricted Flow] 4-legged	Compliance		
			Sectional		Entire % (≥150)[1]
		Base	Actual Traffic Volumes	% of Required	
Phase 1 (2041): Martin Street / Street D / Caves Court					
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	720	581	81%	**32%**
	B. Vehicle volume, along minor streets (average hour)	170	39	23%	
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	720	543	75%	
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)- left + highest through +peds	75	24	32%	
Phase 2 (2051): Martin Street / Street D / Caves Court					
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	720	753	105%	**55%**
	B. Vehicle volume, along minor streets (average hour)	170	93	54%	
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	720	660	92%	
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)- left + highest through +peds	75	41	55%	

Notes:

1. Average hourly volumes were derived based on the formula presented in the OTM Book 12. AHV = (weekday morning peak hour volumes + weekday afternoon peak hour volumes) ÷ 4
2. There are errors within the OTM excerpts (confirmed in discussions with MTO staff): (1) the 50% increase due to "T" intersections only applies to Justification 1B, and (2) Justification 2B has a requirement value of 75, not 170, under restricted flow in 2 or more lanes.
3. Section 2B assumes 25 pedestrians crossing Martin Street in each peak period.
4. Relevant OTM excerpts are provided in **Appendix M**.

8.4 SUMMARY OF PROPOSED NEW TRAFFIC SIGNALS

As summarized in **Table 74**, the results of the traffic signal warrant assessment indicates that traffic signals do not technically meet the 150% required score for installation at 1) Steeles Avenue East / Street A / Morobel Drive, 2) Martin Street / Street A and 3) Martin Street / Street D / Caves Court.

TABLE 74 SUMMARY OF TRAFFIC SIGNAL WARRANT ASSESSMENT

Location	2041 Horizon	2051 Horizon
Steeles Avenue East / Street A / Morobel Drive	52%	**112%**
Martin Street / Street A	53%	**92%**
Martin Street / Street D / Caves Court	32%	**55%**

- **Case 1**: The traffic signal is certainly warranted - the suggested threshold for this condition is meeting 200 % or more of Justifications 1 or 2.
- **Case 2**: The traffic signal might be warranted - falls between cases 1 and 3, somewhere between 100% and 199% of Justifications 1 or 2.
- **Case 3**: Signal warrant is unlikely – meets less than 100% of Justifications 1 or 2.

It is recommended however that the proposed traffic signals be installed as part of Phase 1, when Street A is connected to Steeles Avenue East and Street A and Street D are connected to Martin Street, for the following reasons:

- As traffic signals will be required when future traffic volumes result in a traffic signal warrant score of 80% (both Justification 1 & 2) or 100% (for either Justification 1 or 2) at any of the intersections, it is expected that appropriate warrants for signalization may met in the future;
- Improve the level of safety with protected crossings for pedestrians, cyclists, transit and vehicles travelling to / from the site and throughout the area;
- Reduce delays for vehicles travelling to / from the site, thereby reducing idling and greenhouse gas emissions;
- The spacing between adjacent signalized intersections is adequate and the traffic signals could operate efficiently;
- If operated as fully actuated, the traffic signals would not create additional traffic operational concerns and can be coordinated with adjacent traffic signals, in order to minimize delays along the corridors; and
- The traffic signals proposed along Martin Street will enhance school zone safety (a designated Community Safety Zone) and provide protected crossings for students travelling to and from school.

It is recommended that the 3 proposed traffic signals be installed as part of Phase 1, when Street A is connected to Steeles Avenue East and Street A and Street D are connected to Martin Street, for the following reasons: 1) being prepared for future traffic growth, traffic operations and the reduction of delays for site traffic, 2) road safety (including school zone safety) and 3) the provision of protected crossings for pedestrians and cyclists, including students travelling to/from the two schools on Martin Street.

9.0 SUPPLEMENTARY: SCHOOL PEAK PERIOD ANALYSIS

The site is adjacent to two schools on Martin Street. Martin Street Public School is located on the west side of Martin Street, with access at Woodward Avenue and Jasper Street and Holy Rosary Elementary School is located on the east side of Martin Street, with the main access at Jasper Street and a secondary access at the Holy Rosary Parish, south of the school.

Given the proximity of the site to the elementary schools along Martin Street to the south, traffic operations have been assessed for the school out peak hour, which is typically one to two hours earlier than the regular afternoon peak hour. Recognizing that school-related traffic will peak earlier than the PM peak period, traffic operations have been assessed at the 2051 future horizon to confirm that the potentially higher traffic volumes for specific movements will operate acceptably along Martin Street with the level of growth and the proposed site traffic.

9.1 SUPPLEMENTARY STUDY AREA

The study area for the “school out” sensitivity assessment was limited to the localized proposed intersections along Martin Street that are immediately adjacent to the two school driveway intersections. The intersections included in the supplementary study area were as follows:

- Jasper Street / Martin Street / Holy Rosary Catholic Elementary School Driveway
- Woodward Avenue / Martin Street / Martin Street Public School Driveway
- Proposed Site Access Points (Martin Street/ Street A and Martin Street / Street D)

9.2 SUPPLEMENTARY ASSESSMENT APPROACH

BA Group collected 8-hour traffic counts that included the school out peak period (2:00 to 4:00 pm) at the above-noted supplementary study area intersections. These traffic counts were conducted on the same day as the regular weekday peak periods to allow for comparison between typical and school out afternoon peak traffic.

The forecast 2051 growth volumes during the typical afternoon peak hour were adjusted to reflect the school out peak hour, based on the observed ratio of existing Martin Street corridor traffic volumes during the school peak hour versus the typical afternoon peak hour by direction. With the assumption of a cordon line along Martin Street between the two schools, once the school-related trips were excluded (i.e. trips turning into and out of either school driveways), **the remaining corridor traffic was observed to be less during the school out peak hour**, than the typical afternoon peak hour. By direction during the school out peak hour, the northbound traffic is 92% and the southbound traffic is 79% of the typical afternoon peak hour traffic. These ratios have been applied to the 2051 growth volumes (i.e. 2051 adjusted future background minus existing) along Martin Street, after removing future school traffic, to estimate the overall corridor volume growth during the school out peak hour.

It is noted that traffic entering and exiting the school sites is expected to increase up to the school capacity limits for students, relative to their current student population. Based on a review of the school details on the Halton District School Board, it is noted that Martin Street Public Street currently has a student population of 621 and has capacity for up to 753 students. As such, it was assumed that by 2051, the school-related traffic volumes could increase by 21% (i.e. scaling 621 to 753 students), hence this ratio was applied for both the Martin Street Public School and the Holy Rosary Catholic Elementary School driveway traffic volumes.

Based on the above derivations for school traffic volumes and through traffic (i.e. general corridor growth), the school out peak volumes at the school intersections were estimated. These volumes were then balanced to the north intersections.

9.3 SITE TRAVEL DEMAND – SCHOOL PEAK

Site traffic during the school out peak hour was derived based on application of temporal distribution ratios to the typical afternoon peak hour site traffic that was presented in **Section 5.7.2** under 2051 conditions. The temporal distribution ratios have been calculated based on the proportion of daily traffic values provided for the school out peak hour (i.e. 3:00 to 4:00 pm) versus the typical afternoon peak hour (i.e. 5:00 to 6:00 pm) in the ITE Trip Generation Manual 11th Edition Appendices for mixed-use residential mid rise uses that are not close to rail transit within a general urban / suburban area.

These proportions and resulting reduction ratios are summarized in **Table 75**.

TABLE 75 TEMPORAL DISTRIBUTION RATIOS FOR MID-RISE RESIDENTIAL

Direction	Proportion of Daily Site Traffic[1]		Reduction Ratio
	3:00 to 4:00 pm	5:00 to 6:00 pm	
Inbound	5.9%	13.1%	45%
Outbound	3.8%	5.8%	66%

Notes:
1. Percentages provided within the ITE Trip Generation Manual 11th Edition Appendices

These reduction ratios were applied to the forecast 2051 site traffic, by direction, at the Martin Street site points of access (Martin Street / Street A and Martin Street / Street D), north of the school intersections. Taking these adjusted site traffic volumes as the site turning volumes during the school out peak hour, the remaining movements were calculated through balancing with the southern school intersections.

The existing and resultant 2051 traffic volumes during the school out peak hour, for the supplemental study area intersections are illustrated in **Appendix T**.

9.4 SUPPLEMENTARY TRAFFIC ANALYSIS

BA Group conducted the capacity analysis for the supplementary study area intersections with the existing and 2051 school peak hour traffic volumes. Synchro capacity analysis sheets are provided in **Appendix T**. Supplementary study area intersection capacity results from this analysis during the 2051 school out peak hour are provided in **Table 76**.

The local Martin Street intersections will operate acceptably with LOS E or better on the minor street movements, whereas the north-south corridor will maintain acceptable levels of service of LOS C or better. Minor streets will generally be operating at lower V/C ratios with capacity to accommodate additional traffic should it be necessary. Traffic growth and new site traffic generally impact the Jasper Street / Martin Street / Holy Rosary Driveway more given it is unsignalized. The minor street traffic will have its level of service increase from LOS C to LOS E under future conditions. However, all movements continue to operate under capacity and with acceptable levels of service.

The area street network, under 2051 conditions, can support the anticipated site traffic and general traffic growth during the school out peak hour. Although there will be some impact to side street school driveways, they will continue to operate at acceptable levels of service.

TABLE 76 2051 FUTURE TOTAL SCHOOL OUT PEAK HOUR SENSITIVITY ANALYSIS

Intersection / Movement	Existing		2051 Future Total	
	V/C	LOS	V/C	LOS
Martin Street / Street A				
EBLR	--	--	0.48	D
NBTL	0.21	A	0.47	A
SBTR	0.27	A	0.50	A
Overall	**0.30**	**A**	**0.50**	**A**
Martin Street / Street D / Caves Court				
EBLTR	--	--	0.20	D
WBLTR	0.25	E	0.01	D
NBL	--	--	0.11	A
NBTR	0.22	A	0.41	A
SBLTR	0.29	A	0.44	A
Overall	**0.29**	**A**	**0.42**	**A**
Martin Street / Woodward Avenue / Martin Street Public School Driveway				
EBLTR	0.11	C	0.14	C
WBL	0.19	C	0.19	C
WBTR	0.09	C	0.17	C
NBL	0.05	B	0.07	B
NBTR	0.53	C	0.78	C
SBL	0.10	A	0.32	B
SBTR	0.38	B	0.51	B
Overall	**0.41**	**B**	**0.56**	**C**
Martin Street / Jasper Street / Holy Rosary Catholic Elementary School Driveway				
EBLTR	0.19	C	0.45	E
WBLTR	0.28	C	0.59	E
NBLTR	0.02	A	0.02	A
SBLTR	0.02	A	0.03	A
Overall	**--**	**A**	**--**	**B**

10.0 MULTI-MODAL TRAVEL ASSESSMENT

Multi-model travel considerations were reviewed for the proposed development of the site, for both the residential and non-residential uses, at the 2051 horizon year, given that this timeline reflects the most conservative condition with respect to non-auto site-related travel demand. To be conservative, the multi-modal travel assessment does not include trips internal to the site between the residential and retail uses, but the retail pass-by trips have been included.

10.1 SITE MULTI-MODAL TRAVEL DEMAND

Multi-modal travel demands have been projected based on the 2051 site traffic generation established in **Section 5.7** and the recent 2022 TTS travel mode share data for the site's surrounding area. Transit considerations include a review of the projected site transit ridership, in the context of available transit services and active transportation considerations include a review of walking and cycling facilities available to future site residents and visitors. The 2051 site vehicle trip generation established in **Section 5.7** is summarized in **Table 39**. In the ultimate 2051 horizon, the full site development is projected to generate approximately 1,050 and 1,260 two-way **auto driver** vehicle trips, during the weekday morning and afternoon peak hours respectively.

TABLE 77 FORECAST SITE AUTO DRIVER VEHICLE TRIP GENERATION (2051 HORIZON)

Site Vehicle Trips for 2051 Horizon		AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Residential (4,115 residential units)		245	730	975	665	410	1,075
Retail (4,200 m² GFA)	Primary	45	30	75	68	43	111
	Passby	0	0	0	37	37	74
	Subtotal[1]	*45*	*30*	*75*	*105*	*80*	*185*
Total		**290**	**760**	**1,050**	**770**	**490**	**1,260**

Notes:
1. Interaction trip between the site's residential and retail uses have been excluded from the overall site auto-driver vehicle trips.

10.1.1 Residential Multi-Modal Travel Demand

As outlined in **Section 5.3**, the 2022 TTS travel mode share data for the site area reports an existing residential auto driver mode share of 54%. A conservative assumption was adopted for the basis of the traffic analysis, assuming a 50% auto driver mode share is achieved by 2051. Therefore, for multi-modal travel demand forecasting purposes, an auto driver mode share of 50% is assumed at 2051 and the balance of the travel mode shares are based generally on the 2022 TTS data. The adopted residential multi-modal travel mode share is summarized in **Table 78**.

TABLE 78 ADOPTED RESIDENTIAL MULTI-MODAL TRAVEL MODE SHARE (2051 HORIZON)

Mode	Two-Way Peak Hour Trips	
	2022 TTS[1]	2051 Horizon[3]
Auto (Driver)	**54%**	**50%**
Auto (Passenger)[2]	22%	22%
Transit	9%	13%
Walk	14%	14%
Cycle	1%	1%
Total	**100%**	**100%**

Notes:
1. Based on 2022 TTS data for morning (6:00 - 8:59) and afternoon (15:00 - 17:59) peak traffic periods for Planning District 38.
2. Auto passenger trips (includes auto passengers, school bus passengers and taxi passengers).
3. Based on 2022 TTS data with 4% shift from auto driver to transit.

Application of the 50% auto driver mode to the site residential vehicle trip generation (**Table 35**) results in a total person trip generation in the order of 1,952 and 2,152, two-way person trips in the morning and afternoon peak hours, respectively. The resulting multi-modal travel demand forecast is summarized in **Table 79**. It is noted that the auto driver trips below have considered the interactions between residential and retail.

TABLE 79 RESIDENTIAL MULTI-MODAL TRAVEL DEMANDS FOR 2051 HORIZON

	Mode Share[1]	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Auto (Driver)	50%	245	730	975	665	410	1,075
Auto (Passenger)	22%	108	321	429	293	180	473
Total Auto Trips	**72%**	**353**	**1,051**	**1,404**	**958**	**590**	**1,548**
Transit	13%	64	190	254	173	107	280
Walk	14%	69	204	273	186	115	301
Cycle	1%	5	16	21	14	9	23
Total Non-Auto Trips	**28%**	**138**	**410**	**548**	**373**	**231**	**604**
Total Person Trips	**100%**	**491**	**1,461**	**1,952**	**1,331**	**821**	**2,152**

Notes:
1. Based on 2022 TTS data with 4% shift from auto driver to transit.

At the 2051 horizon, the site is projected to generate a total of 1,404 and 1,548 two-way auto-based trips (auto driver + auto passenger trips), during the morning and afternoon street peak hours, respectively. The site is expected to generate 548 and 604 two-way non-auto trips, during the morning and afternoon street peak hours.

10.1.2 Retail Multi-Modal Travel Demand

Multi-modal travel demand was also considered for the proposed non-residential uses. As the travel demand for the retail use is determined using ITE trip generation rates, the ITE trip generation rates reflect a mode split of 70% auto-based trips. As per the table notes in **Table 37**, it is expected that the auto mode share (auto driver + auto passenger) will decrease to 50%, which is a 20% reduction from the base ITE rate. It is also assumed that the remaining 50% non-auto mode will be divided into transit, walking and cycling in the same proportions as the residential multi-modal travel demand for 2051. The proposed retail will generate 151 and 371 two-way person trips during the morning and afternoon street peak hours respectively, as summarized in **Table 80**.

TABLE 80 RETAIL MULTI-MODAL TRAVEL DEMANDS FOR 2051 HORIZON

		Mode Share[1]	AM Peak Hour			PM Peak Hour		
			In	Out	2-Way	In	Out	2-Way
Auto-Based	Primary	50%	45	30	75	68	43	111
	Pass-by		0	0	0	37	37	74
	Auto Trips		**45**	**30**	**75**	**105**	**80**	**185**
Transit		23%	21	14	35	49	37	86
Walking		25%	23	15	38	53	40	93
Cycle		2%	2	1	3	4	3	7
Non-Auto Trips			**46**	**30**	**76**	**106**	**80**	**186**
Total Person Trips		**100%**	**91**	**60**	**151**	**211**	**160**	**371**

Notes:
1. To be conservative for non-auto person trips, the retail auto travel mode includes auto driver + auto passenger.

10.1.3 Overall Site Multi-Modal Travel Demand

Overall, the site is projected to generate 2,103 and 2,523 two-way person trips in the morning and afternoon peak hours. A portion of these trips, 624 and 790 two-way person-trips, are expected to be non-auto based, including transit, cycling and walking. **Table 81** summarizes the overall site multi-modal travel demand.

TABLE 81 OVERALL SITE MULTI-MODAL TRIPS FOR 2051 HORIZON

	Mode	AM Peak Hour Trips			PM Peak Hour Trips		
		In	Out	2-Way	In	Out	2-Way
Residential	Auto-based	353	1,051	1,404	958	590	1,548
	Transit	64	190	254	173	107	280
	Walking	69	204	273	186	115	301
	Cycle	5	16	21	14	9	23
Retail	Auto-based	45	30	75	105	80	185
	Transit	21	14	35	49	37	86
	Walking	23	15	38	53	40	93
	Cycle	2	1	3	4	3	7
Overall Site	**Auto-based**	**398**	**1,081**	**1,479**	**1,063**	**670**	**1,733**
	Transit	85	204	289	222	144	366
	Walking	92	219	311	239	155	394
	Cycle	7	17	24	18	12	30
	Non-Auto	**184**	**440**	**624**	**479**	**311**	**790**
Site Total Trips		**582**	**1,521**	**2,103**	**1,542**	**981**	**2,523**

10.2 TRANSIT TRAVEL ASSESSMENT

The site transit trips, as established above, are summarized in **Table 82**. The site is projected to generate approximately 289 and 366 two-way transit trips in the morning and afternoon peak hours, respectively. The distribution of site transit trips considers the site distribution patterns established for vehicle assignment purposes, as well as the transit services available to site residents and visitors. The general site transit trip distribution is summarized in **Table 83**.

TABLE 82 SITE TRANSIT TRIPS FOR 2051 HORIZON

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
2051 Horizon Site Transit Trips	85	204	289	222	144	366

Notes:
1. Full site (Phases 1 & 2) transit trips associated with 4,115 residential units and 4,200 m² GFA Retail

TABLE 83 SITE TRANSIT TRIP DISTRIBUTION ASSUMPTIONS

To/ From	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
North	18	29	47	22	10	32
South	22	73	95	73	60	133
East	45	92	137	124	72	196
West	0	10	10	2	3	5
Total	**85**	**204**	**289**	**221**	**145**	**366**

The primary local Milton Transit services available to the site today are as follows:

- **Route 1 – High Point:** Operates generally in a north-south direction at 20-minute peak hour headways, servicing Milton GO Station and north Milton. With the vicinity of the site, the route operates along Steeles Avenue E, before turning south along Ontario Street N towards Milton GO Station. Closest stop is at Steeles Avenue East / Bronte Street (just west of the site).
- **Route 2 – Main:** Operates generally in an east-west direction at 30-minute peak hour headways, servicing Milton Crossroads Centre, Milton GO Station and Milton District Hospital. Closest stop at Main Street / Martin Street, an approximate 5-minute walk from site.
- **Route 6 – Scout:** Operates generally in an east-west direction at 20-minute peak hour headways, servicing Milton GO Station and Milton Leisure Centre. Closest stop at Main Street / Martin Street an approximate 5-minute walk from site.

With the expansion of GO train service along the Milton Line (as announced by the Province in February 2024), local transit connectivity to the station will become increasingly important. All of the above-noted local services connect directly to the Milton GO Station and can therefore be expected to see increased ridership with the improvement of GO rail services (2-way all-day service by 2031).

It is noted that a new Milton Transit bus route is proposed along Bronte Road. Route 2 – Bronte is proposed to operate generally in the north-south direction along the Bronte Road corridor, connecting Milton GO Station to the area around Regional Road 25 and Etheridge Avenue.

Local surface transit services will adapt over time to accommodate and support increasing site and area transit demands, particularly in an evolving transportation context with significant investments being made to encourage the use of higher-order transit such as the Milton GO service expansions.

10.3 WALKING ASSESSMENT

Pedestrian travel can be categorized into two types of pedestrian trips as follows:

- **Direct Pedestrian Trips:** External trips that are made to / from the site solely by walking, thus excluding pedestrians routing to / from transit stops / stations (i.e. primary mode of travel is walking).

- **Transit-Based Pedestrian Trips:** External trips that reflect pedestrian routing between the site and nearby transit services (i.e. the primary mode of travel is transit).

Direct pedestrian trips are assumed to route along key pedestrian network links surrounding the site (nearby sidewalks) and proposed future pedestrian infrastructure. Transit-related pedestrian trips are assumed to occur between the site and nearby transit services, using the appropriate existing and future pedestrian infrastructure improvements.

Internal (or local) pedestrian trips resulting from the interaction between site uses (i.e. residential and retail) are not directly quantified as part of this study, however they have been considered as part of the proposed transportation network, as internal pedestrian trips are assumed to use the site pedestrian facilities and pedestrian access / circulation.

Based on the site multi-modal travel demand forecasts outlined in **Table 79**, the site pedestrian trips are summarized in **Table 84**. Total site pedestrian trips (direct + transit based) are in the order of 609 and 813 two-way walking trips in the morning and afternoon peak hours, respectively.

TABLE 84 SITE WALKING TRIPS FOR 2051 HORIZON

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Direct Walking Trips	92	219	311	239	155	394
Transit Based Walking Trips	85	204	289	222	144	366
Total Pedestrian Trips	**177**	**423**	**600**	**461**	**299**	**760**

Notes:
1. Full site (Phases 1 & 2) walking trips associated with 4,115 residential units and 4,200 m² GFA Retail.

The distribution of pedestrian trips is based upon population densities, destinations around the site, available pedestrian infrastructure and the location of transit services. The assignment of site pedestrian trips (direct and transit-based trips) is summarized in **Table 85**.

TABLE 85 SITE WALKING TRIP ASSIGNMENT FOR 2051 HORIZON

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Walking Trips to / from Steeles Avenue	89	212	301	231	150	381
Walking Trips to / from Martin Street	88	211	299	230	149	379

The proposed pedestrian facilities throughout the site will provide connectivity to both Steeles Avenue East and Martin Street, including consideration for an internal walkway between the site and Martin Street Public School. The 3 traffic signals being recommended as part of Phase 1, when Street A is connected to Steeles Avenue East and Street A and Street D are connected to Martin Street, will improve the level of safety for pedestrians travelling to/from the site and throughout the area. The traffic signals proposed along Martin Street will enhance school zone safety (a designated Community Safety Zone) and provide protected crossings for students travelling to and from school.

The proposed site pedestrian facilities and the surrounding pedestrian network will accommodate and facilitate future walking trips.

10.4 CYCLING ASSESSMENT

The site cycling trips, outlined in **Table 79** are summarized in **Table 86**. The site is projected to generate approximately 24 and 31 two-way cycling trips in the morning and afternoon peak hours, respectively.

TABLE 86 SITE CYCLING TRIPS FOR 2051 HORIZON

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
2051 Horizon Site Cycling Trips	7	17	24	18	12	30

Notes:
1. Full site (Phases 1 & 2) cycling trips associated with 4,115 residential units and 4,200 m² GFA Retail.

Similar to the walking trips, the site's cycling trip distribution is assumed to be evenly split between Steeles Avenue and Martin Street. The assignment of site cycling trips is summarized in **Table 87**.

TABLE 87 SITE CYCLING TRIP ASSIGNMENT FOR 2051 HORIZON

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Cycling Trips to / from Steeles Avenue	4	9	13	9	6	15
Cycling Trips to / from Martin Street	3	8	11	9	6	15

The proposed signalized intersections at Steeles Avenue East/ Street A / Morobel, Martin Street / Street A and Martin Street / Street D / Caves Court, will provide protected active transportation crossings and will support active travel connectivity within the area public street network.

The proposed site cycling facilities and the surrounding cycling network will accommodate and facilitate future cycling trips.

11.0 SAFETY REVIEW

In order to identify any potential safety or operational issues related to the development of the site, a safety review was undertaken, as summarized in **Table 88**.

TABLE 88 SUMMARY OF SAFETY REVIEW

Item	Notes
Weaving and Merging	There are no merging or weaving concerns expected as a result of the development of the site.
Transit conflicts	No conflicts with transit operations are expected with existing services along Steeles Avenue. Provisions will be made for future transit along Street A to provide more transit options for future residents.
Collision history	The collision history for any study area intersection or road segment will be reviewed if requested by the Town or Region.
Corner clearances	The Region's minimum spacing requirements are met in regard to both the proposed intersection at Street A as well as the proposed right-in/ right-out intersection at Street B. The proposed intersection on Martin Street & Street A, is located approximately 145 metres south of the intersection of Kings Court Crescent and 207 metres north of the proposed traffic signal on Martin Street/ Street D. The intersection of Martin Street/ Street D is 189 m north of Woodward Avenue. These spacings provide more than adequate corner clearance.
Sight distance	Due to the limited horizontal and vertical curvature, there are not expected to be sightline issues at the proposed points of access along Steeles Avenue at Street A and Street B and along Martin Street at Street B and Street D.
Vehicle-pedestrian conflicts	Sidewalks along Steeles Avenue East and along Martin Street, with connectivity to sidewalks/ Multi-use pathways within the site, are expected reduce vehicle-pedestrian conflicts.
School crossings	The site is adjacent to two schools on Martin Street. Martin Street Public School is located on the west side of Martin Street, with access at Woodward Avenue and Jasper Street and Holy Rosary Elementary School is located on the east side of Martin Street, with the main access at Jasper Street and a secondary access at the Holy Rosary Parish, south of the school. The 2 recommended traffic signals at Martin Street/ Street A and Martin Street/ Street D, will enhance school zone safety and provide 2 additional protected pedestrian crossings along Martin Street.
Cyclist movements	There are existing on-street cycling lanes along Steeles Avenue in the vicinity of the site. With the cycling network being proposed as part of the development of the site, connectivity between Steeles Avenue East and Martin Street will be provided. There are no concerns regarding cyclist movements at this time in relation to the development of the site.
Heavy truck conflicts	The number of heavy trucks related to the development of the site is expected to be negligible and related to garbage trucks, moving trucks and delivery vehicles. There are no concerns regarding potential heavy vehicle conflicts.
Vehicle maneuvering diagrams	Vehicle maneuvering diagrams for representative passenger and refuse collection vehicles are provided in **Appendix N** of this Report.
Queuing	A comprehensive queuing assessment is provided in **Section 6.0** of this Report.

12.0 PHASE 1 SITE PLAN ELEMENTS

12.1 VEHICLE PARKING CONSIDERATIONS

As the application for a Zoning By-law Amendment (ZBA) only relates to Phase 1 of the wider site, the vehicle parking considerations section has been undertaken in consideration of Phase 1 only.

12.1.1 Zoning By-law Requirements

The Town of Milton is currently undergoing the process of amending the Town's Urban Zoning By-law (Zoning By-law 016-2014) with respect to the minimum parking space requirements for residential apartment buildings. However, at this time, the site is subject to the Town of Milton Comprehensive Zoning By-law 016-2014 (HUSP Urban Area – March 2023) for parking considerations.

Application of this by-law to the site is summarized in **Table 89** and results in a total minimum parking requirement of 1,922 spaces, inclusive of 1,653 resident spaces and 269 visitor spaces. As the GFA of the proposed retail for Phase 1 is only 522 m^2, the retail is considered to be ancillary such that the resident visitor parking can be shared with the limited demand for retail parking.

12.1.2 Proposed Parking Supply

Resident parking standards outlined in Zoning By-law 016-2014 could be considered to overstate the parking needs of a residential development based on the evolving site transportation context, together with the implementation of a comprehensive Transportation Demand Management Plan for the proposed development.

The parking rates for the proposed development align with a minimum resident parking rate of 1.0 space per apartment / condominium unit and a minimum visitor parking rate of 0.20 spaces unit. Consistent with Zoning By-law 016-2014 (HUSP Urban Area – March 2023), the proposed townhouses will include resident parking at a rate of 2.0 spaces per unit with garage and residential driveway capacity.

As summarized in **Table 90**, application of the proposed parking rates to the site results in a minimum total vehicle parking requirement of 1,391 spaces, inclusive of 1,175 resident spaces and 216 visitor spaces.

The proposed development includes a total of **1,438 parking spaces**, inclusive of **1,218 resident spaces** and **220 visitor spaces.** The proposed vehicle parking supply therefore exceeds the proposed minimum parking rates.

TABLE 89 ZONING BY-LAW 016-2014 MINIMUM PARKING REQUIREMENTS

Land Use		Number of Units	Minimum Required Parking Rate (spaces/unit)	Minimum Number of Parking Spaces Required
Resident Parking				
Block 1	Mid-Rise Buildings	197	1.5	296
Block 3		186		279
Block 5		338		507
Block 6		234		351
Sub-total		**955**	**--**	**1,433**
Block 2	Townhouses	31	2.0	62
Block 4		79		158
Sub-total		**110**	**--**	**220**
Resident Sub-total		**1,065**	**--**	**1,653**
Non-Resident Parking				
Block 1	Mid-Rise Buildings	197	0.25	50
Block 3		186		47
Block 5		338		85
Block 6		234		59
Sub-total		**955**		**241**
Block 2	Townhouses	31	0.25	8
Block 4		79		20
Sub-total		**110**	--	**28**
Non-Resident Sub-total		**1,065**	**--**	**269**
			SITE TOTAL	**1,922 spaces**

Notes:
1. Site statistics based on site plans prepared by Core Architects dated January 2026.
2. If the calculation of the number of required parking spaces results in a number with a fraction, the number is rounded up to the nearest whole number, but there may not be less than one parking space.

TABLE 90 PROPOSED PARKING SUPPLY

Land Use		Number of Units	Proposed Parking Rate (spaces/unit)	Required Parking Supply[3] (number of spaces)	Proposed Parking Supply (number of spaces)
Resident Parking					
Block 1	Mid-Rise Buildings	197	1.0	197	205
Block 3		186		186	189
Block 5		338		338	353
Block 6		234		234	251
Sub-total		**955**	**--**	**955**	**998**
Block 2	Townhouses	31	2.0	62	62
Block 4		79		158	158
Sub-total		**110**	**--**	**220**	**220**
Resident Sub-total		**1,065**	**--**	**1,175**	**1,218**
Non-Resident Parking					
Block 1	Mid-Rise Buildings	197	0.20	40	40
Block 3		186		38	37
Block 5		338		68	68
Block 6		234		47	51
Sub-total		**955**	--	**193**	**196**
Block 2	Townhouses	31	0.20	7	8
Block 4		79		16	16
Sub-total		**110**	--	**23**	**24**
Non-Resident Sub-total		**1,065**	**--**	**216**	**220**
SITE TOTAL				**1,391**	**1,438**

Notes:
1. Site statistics based on site plans prepared by Core Architects dated January 2026.
2. Calculation of required parking spaces resulting in a fraction are rounded up to nearest whole number.
3. Minimum required parking supply is based on the proposed parking rates of 1.0 resident spaces/unit for the mid-rise buildings, 2.0 resident spaces/unit for the townhouses and 0.20 visitor spaces/unit (to be shared with retail) for all units.

12.1.3 Accessible Parking Requirements

The Town of Milton Comprehensive Zoning By-law 016-2014 requires that accessible parking spaces be provided at the following minimum rates:

- Supply of 1 – 12 spaces: 1 Type A space;
- Supply of 13 – 100 spaces: 4% of supply;
- Supply of 101 – 200 spaces: 3% of supply + 1 space; and
- Supply of 201 – 1000 spaces: 2% of supply + 2 spaces.

Since a reduced parking requirement is being sought for the site, the requirements for the accessible parking supply have been determined by the proposed parking supply for the site. The By-law states that for lots with an even number of total accessible parking spaces, an equal number of Type 'A' and Type 'B' spaces must be provided. Where the minimum number of accessible parking spaces is odd, an equal number of Type 'A' and Type 'B' accessible parking spaces shall be provided but the last accessible parking space may be a Type B. The two types of spaces must adhere to the following dimensions:

- Type A space: 5.8 metres (length) x 3.4 metres (width)
- Type B space: 5.8 metres (length) x 2.75 metres (width)

Both types must include a 1.5-metre (width) x 5.8-metre (length) pedestrian aisle adjacent to the accessible space. The minimum accessible parking requirements are summarized in **Table 91**.

Application of Zoning Bylaw 016-2014 to the site, with consideration that the accessible parking requirement is based on the proposed parking supply, results in a total minimum accessible parking requirement of **42 accessible spaces**. As Phase 1 includes a total of 49 accessible parking spaces, the proposed supply is appropriate and meets the requirements of the Zoning By-law.

TABLE 91 ZONING BY-LAW 016-2014 ACCESSIBLE PARKING REQUIREMENTS

Land Use		Proposed Parking Supply (number of spaces)	Minimum Accessible Parking Rate	Minimum Accessible Parking Requirement (spaces)[4]
Resident Spaces				
Block 1	Mid-Rise Buildings	205	2% + 2 accessible spaces	6
Block 3		189	3% + 1 accessible space	7
Block 5		353	2% + 2 accessible spaces	9
Block 6		251	2% + 2 accessible spaces	8
Sub-Total	**--**	**998**	**--**	**30**
Visitor Spaces				
Block 1	Mid-Rise Buildings	40	4% of supply	2
Block 3		37	4% of supply	2
Block 5		68	4% of supply	3
Block 6		51	4% of supply	3
Block 2	Townhouses[3]	8	1 accessible space	1
Block 4		16	4% of supply	1
Sub-Total	**--**	**220**	**--**	**12**
SITE TOTAL		**1,218 spaces** **(excludes 220 resident townhome spaces that brings total supply to 1,438 spaces)**	**--**	**42 spaces**

Notes:
1. Site statistics based on site plans prepared by Core Architects dated January 2026.
2. Zoning By-law 016-2014 Section 5.9 (ii) states that if the calculation of the number of required parking spaces results in a number with a fraction, the number is rounded up to the nearest whole number, but there may not be less than one parking space.
3. Accessible space requirements for proposed townhouse units are calculated relative to visitor parking spaces. Resident townhouse parking spaces are provided within boulevard driveways and fulfill the requirements for accessible parking.
4. Required accessible parking supply is **based on the proposed parking supply** for the site as opposed to the current Zoning By-law minimum requirements.

TABLE 92 PROPOSED ACCESSIBLE PARKING SUPPLY BY BLOCK

Land Use	Required Accessible Parking (spaces)[4]			Proposed Accessible Parking (spaces)		
	Resident	Visitor	Total	Resident	Visitor	Total
Block 1	6	2	**8**	8	2	**10**
Block 2	--	1	**1**	--	1	**1**
Block 3	7	2	**9**	7	2	**9**
Block 4	--	1	**1**	--	2	**2**
Block 5	9	3	**12**	11	4	**15**
Block 6	8	3	**11**	9	3	**12**
Sub-Total	**30**	**12**	**42**	**35**	**14**	**49**

Notes:
1. Site statistics based on site plans prepared by Core Architects dated January 2026.
2. Zoning By-law 016-2014 Section 5.9 (ii) states that if the calculation of the number of required parking spaces results in a number with a fraction, the number is rounded up to the nearest whole number, but there may not be less than one parking space.
3. Accessible space requirements for proposed townhouse units are calculated relative to visitor parking spaces. Resident townhouse parking spaces are provided within boulevard driveways and fulfill the requirements for accessible parking.
4. Required accessible parking supply is **based on the proposed parking supply** for the site as opposed to the current Zoning By-law minimum requirements.

12.1.4 Parking Summary

The proposed parking supply for Phase 1 includes the adoption of the following minimum parking standards:

- 1.0 resident parking space per residential unit;
- 2.0 resident parking spaces per townhouse unit (consistent with prevailing By-law); and,
- 0.20 non-resident parking spaces per unit (visitor parking to be shared with retail).

The Town of Milton is currently undergoing the process of amending the Town's Urban Zoning By-law (Zoning By-law 016-2014) with respect to the minimum parking space requirements for residential apartment buildings. The proposed parking standard for the site, aligns with the minimum parking rates currently being considered by the Town as part of planned amendments to Zoning By-law 016-2014.

The proposed development plan for Phase 1 includes a total of **1,438 vehicle parking spaces,** inclusive of 1,218 resident parking spaces and 220 visitor parking spaces (to be shared with retail uses) with a total of **49 accessible spaces**.

12.2 BICYCLE PARKING CONSIDERATIONS

As the application for a Zoning By-law Amendment (ZBA) only relates to Phase 1 of the wider site, the bicycle parking considerations section has been undertaken in consideration of Phase 1 only.

12.2.1 Zoning By-law Bicycle Parking Requirements

As the redevelopment of the site envisions a mixed-use complete community that is well-connected to Milton's downtown area and encourages cycling trips throughout the site, the provision of a bicycle parking supply is proposed that aligns with the bicycle parking requirements specified in the Town of Milton Comprehensive Zoning By-law 016-2014 (UGC-MU).

Application of the Zoning By-law bicycle parking requirements to Phase 1 of the site (townhouses excluded) is summarized in **Table 93** and results in requirement of a minimum total of 1,004 bicycle parking spaces, inclusive of 955 long-term spaces and 49 short-term spaces. It is noted that the Zoning By-law requires a minimum bicycle parking supply for retail that is equivalent to 3% of the minimum required vehicle parking spaces for retail. As the GFA of the proposed retail for Phase 1 is only 522 m^2, the retail is considered to be ancillary such that the resident visitor bicycle parking (short-term bicycle parking supply) can be shared with the demand for retail bicycle parking.

TABLE 93 ZONING BY-LAW 016-2014 MINIMUM BICYCLE PARKING REQUIREMENT

Land Use		Number of Units	Type of Space	Minimum Bicycle Requirement		Proposed Bicycle Parking Supply (spaces)
				Minimum Rate (spaces / unit)	Minimum Required Number of Spaces	
Mid-Rise Buildings	Block 1	197	Short-Term	0.05	10	**10**
			Long-Term	1.0	197	**198**
	Block 2	31	Short-Term	--	--	**8**
			Long-Term	--	--	**23**
	Block 3	186	Short-Term	0.05	10	**10**
			Long-Term	1.0	186	**208**
	Block 4	79	Short-Term	--	--	**16**
			Long-Term	--	--	**36**
	Block 5	338	Short-Term	0.05	17	**22**
			Long-Term	1.0	338	**357**
	Block 6	234	Short-Term	0.05	16	**16**
			Long-Term	1.0	235	**235**
--		**955**	**Total Short-Term**		**49 spaces**	**82 spaces**
--			**Total Long-Term**		**955 spaces**	**1,057 spaces**
SITE TOTAL					**1,004 spaces**	**1,139 spaces**

Notes:
1. Site statistics based on site plans prepared by Core Architects dated January 2026.
2. Bicycle parking supply for Townhouse units on Blocks 2 and 4 included although not required as part of ZBL bicycle parking supply requirements.
3. Bicycle parking spaces have been rounded up to the nearest whole number.

12.2.2 Proposed Bicycle Parking Supply

As summarized in **Table 93**, the architectural plans for Phase 1 provided in **Appendix B** illustrate a bicycle parking supply (inclusive of townhome supply) of a total of 1,139 spaces, inclusive of 82 short-term spaces and 1,056 long-term spaces. The proposed bicycle parking supply exceeds the requirements of the prevailing Zoning By-law and will meet the needs of the site.

12.3 LOADING CONSIDERATIONS

As the application for a Zoning By-law Amendment (ZBA) only relates to Phase 1 of the wider site, the loading considerations section has been undertaken in consideration of Phase 1 only.

12.3.1 Zoning By-law Requirements

The Town of Milton Comprehensive Zoning By-law 016-2014 (HUSP Urban Area – March 2023) does not currently regulate the provision of loading spaces for residential uses. Therefore, the applicable Zoning By-law loading requirement for the residential component of the proposed development is zero. However, the By-law does specify loading requirements for commercial uses located within a "Residential Zone" (such as the site), as summarized in **Table 94.** As the proposed retail for Phase 1 is proposed to be only 209 m^2, a dedicated loading area for the retail is not required.

TABLE 94 ZONING BY-LAW 016-2014 COMMERCIAL LOADING REQUIREMENTS

Site Retail GFA	Loading Requirements			Number of Spaces / Areas	
	GFA Rage	Loading Spaces	Loading Area	Loading Spaces	Loading Area
209 m^2	280 m^2 or less	0	0	-	-
SITE TOTAL				**0**	**0**

Notes:
1. Site statistics based on site plans prepared by Core Architects dated March 21, 2025.
2. Per Table 5J of Town of Milton Comprehensive Zoning By-law 016-2014 (HUSP Urban Area – March 2023).

12.3.2 Proposed Loading Facilities

Phase 1 includes loading facilities for the mid-rise residential blocks. Solid waste pick-up for the townhouses (Blocks 2 & 4) is expected to occur at the driveway of each unit. A summary of the proposed loading facilities is provided in **Table 95**. The proposed loading spaces and areas are located at-grade, without any overhead obstructions, with the exception of Block 6, where the loading space is located in an internal loading facility. A total of 6 formal loading spaces are proposed for Phase 1 of the development.

TABLE 95 PROPOSED LOADING FACILITIES

Location	Proposed Loading Space (larger)	Proposed Loading Space (smaller)	Total Loading Spaces	Notes
Block 1	1 space (12 m x 3.5 m)	1 space (6 m x 3.5 m)	2	Garbage pick up to occur in larger loading space while move in / out could occur in the smaller loading space.
Block 3	1 space (12 m x 3.5 m)	--	1	Loading space to facilitate both garbage pick-up (for Blocks 3 & 5) and move in / out activities.
Block 5	--	2 spaces (6 m x 3.5 m)	2	Loading zones could accommodate 1 cube van or 1 TAC single unit vehicle.
Block 6	1 space (12 m x 3.5 m) includes 7.5 m clearance	--	1	Loading space to facilitate both garbage pick-up and move in / out activities.
Phase 1 Total			**6**	**--**

The proposed loading facilities have been designed to accommodate the in/out manoeuvring of the loading space for a Halton Region front loading refuse truck and a single unit (SU) truck (which will undertake both residential moving operations and deliveries to the proposed building). The proposed loading facilities incorporate adequate turnaround area to ensure that refuse collection vehicles can enter/exit the site in a forward motion. Vehicle Manoeuvring Diagrams illustrating the turning movement requirements of these vehicles entering and exiting the site, as well as manoeuvring in and out of the proposed loading space are included in **Appendix N.**

The larger loading facilities (12 m x 3.5 m) for solid waste include a turnaround area and access to the proposed loading facilities, and have been designed to accommodate a minimum unencumbered height clearance of 4.4 metres throughout the entire area, with the exception that a minimum height clearance of 7.5 metres is maintained throughout the entire collection point (including the loading and staging area), satisfying the minimum requirements of the Halton Region Waste Collection Standards. A minimum height clearance of 7.5 metres is provided above the entire length of the loading space to enable compacted bulk lift bin collection.

These diagrams confirm the functionality of the proposed site loading facilities and access arrangements to accommodate the maneuvering needs of the representative design vehicles. The loading requirements set out in Comprehensive Zoning By-law 016-2014 (HUSP Urban Area – March 2023) are therefore met and/or exceeded by the proposed loading supply, which will fully enable the loading needs of the site to be met.

13.0 SUMMARY AND CONCLUSIONS

BA Group was retained by the site owner 150 Steeles Milton Inc. (Neatt Communities) to provide transportation consulting services in relation to a joint Official Plan Amendment (OPA), Draft Plan of Subdivision (DPOS) and Zoning By-law Amendment (ZBA) application being made to the Town of Milton for a mixed-used development located at 150 Steeles Avenue East and 248, 250 and 314 Martin Street property, in the Town of Milton, in the Region of Halton (the "site"). The OPA and DPOS applications are being made for the full site development (Phases 1 and 2), while the ZBA application is being made for Phase 1 of the development only. Therefore, this study was prepared to fulfill the requirements of an OPA / DPOS application for the full site development, as well as the more detailed requirements of a ZBA application for Phase 1.

13.1 DEVELOPMENT PROPOSAL

- The Mountainview West development application is for a mixed-use, multi-building development with distinct blocks that include residential units and street-level commercial retail uses. A key component of the development is the construction of 5 new public streets and the recommendation for 3 new traffic signals, providing connectivity between Steeles Avenue East and Martin Street, as well as a new public park and dedicated active transportation facilities.

- The Mountainview West development application includes a site-wide **Official Plan Amendment (OPA)** application to permit a total net density of 3.55 FSI. For the purposes of this report, for the full build-out of the site (Phases 1 and 2), Urban Strategies Inc. has provided a conceptual mixed-use development proposal that includes a total of 4,115 residential units and 4,200 m^2 of commercial retail GFA.

- The development of **Phase 1** is proposed through a phase-specific **Zoning By-law Amendment (ZBA)** application and includes 1,065 residential units, inclusive of 995 mid-rise units and 110 townhouses, along with 522 m^2 GFA of at-grade commercial retail. Phase 1 is expected to be completed by 2036. The majority of the proposed new public roads are to be constructed as part of Phase 1, including Street A, Street B, Street D, Street E, and the recommendation for 3 new traffic signals. Phase 1 includes the provision of 1,438 parking spaces (1,218 resident, 220 visitor spaces), 1,139 bicycle parking spaces (1,057 long-term, 82 short-term spaces) and 6 formal loading spaces.

- The number of residential units and floor areas by land use, for what is conceptually referred to as "**Phase 2**", are currently unknown but will be determined through future rezoning applications. For the purposes of this report, Phase 2 has been assumed to include a total of 3,050 residential units and 3,678 m^2 of commercial retail GFA. The Phase 2 concept (full site build-out) is assumed to be completed by 2046 for the purposes of the traffic analysis. The balance of the road network (Street C) is proposed to be constructed as part of Phase 2.

13.2 PROPOSED SITE TRANSPORTATION INFRASTRUCTURE

- The proposed new roads are as follows:
    - Street A: public local road extending from Steeles Avenue East to Martin Street;
    - Street B: public local road extending from Steeles Avenue East to Street A;
    - Street C: public local road extending from Street A to Street B;
    - Street D: public local road extending from Street A to Martin Street; and
    - Street E: public local road extending from Street A to Street D.

- The proposed signalized intersections are as follows:
    - Steeles Avenue East & Street A / Morobel Drive (4-legged intersection)
    - Martin Street & Street A (3-legged intersection)

- Martin Street & Street D / Caves Court (4-legged intersection)

- Street A has a 26m ROW with 1 vehicle travel lane in each direction and dedicated left-turn lanes at its intersections with Steeles Avenue East, Street C, Street B, Street D and Martin Street. Cross-sectional elements include sidewalks (both-sides) and on-street parking (lay-bys).
- Street B has a 24m ROW with 1 vehicle travel lane in each direction and dedicated left-turn lanes at its intersection with Street A. Cross-sectional elements include sidewalks (one side), a multi-use pathway (MUP) and on-street parking (lay-bys).
- Street C has a 16m ROW with 1 vehicle travel lane in each direction.
- Street D has a 20m ROW with 1 vehicle travel lane in each direction. Cross-sectional elements include sidewalks (one side) and a multi-use pathway.
- Street E has a 16m ROW with 1 travel lane in each direction.
- All proposed road network elements (roads and intersections) are to be constructed as part of Phase 1, with exception of Street C, which will be constructed with completion of Phase 2 (full build-out).
- A functional road plan has been developed by BA Group for the proposed road network, detailing all proposed street alignments, rights-of-way and cross-sectional elements.

13.3 TRANSPORTATION STRATEGY & DEMAND MANAGEMENT

- The proposed road network has been designed to improve connectivity between Steeles Avenue East and Martin Street for all modes of travel, particularly active transportation. The multi-use pathway along Street B and Street D provide a direct and dedicated cycling connection between the two boundary roads (Steeles Avenue East and Martin Street), while providing access and circulation across the site.
- The proposed new system of public sidewalks, pedestrian crossings and signalized intersections, together with the proposed parks, plazas and pedestrian-scale design of the urban plan, will encourage walking both internal to the site and to / from the surrounding street network and existing / planned transit services.
- As transit service evolves, the development plan has a long-term vision of accommodating a transit route along Street A, including bus stops / shelters. Street A has been designed to accommodate bus circulation so as to enable and encourage future transit service expansion through the site.
- The development proposal is supported by a Transportation Demand Management (TDM) plan that sets an objective to reduce peak hour single occupant automobile trips by encouraging the use of alternate travel modes (transit, cycling, walking), increasing vehicle occupancy, shifting travel to off-peak periods and reducing vehicle kilometres travelled.
- The following physical infrastructure TDM measures will be incorporated into the development design at the cost of the developer:
    - Pedestrian Facilities: connections from all buildings to sidewalks / multi-use paths
    - Bicycle Parking: long and short-term bicycle parking provisions
    - Bicycle Repair Stations: stations provided in long-term bicycle parking areas
    - Vehicle Parking: reduced parking supply aligned with new Town standards
- The following operational TDM measures will be implemented and operated by the developer:
    - Travel Information: programs to inform residents of travel mode choices
    - Unbundled Parking: parking supply unbundled from rent / unit purchase

13.4 CONSIDERATION FOR GROWTH & TRANSPORTATION CONTEXT

- Significant growth is planned for the Town of Milton, as reflected in the recently updated Town of Milton Official Plan and corresponding Secondary Plans.
- The Town just updated their Transportation Master Plan (TMP), in coordination with Halton Region and the updates that are currently underway for the Region's Infrastructure Master Plan (IMP), in order to plan for the necessary infrastructure improvements to support the planned growth across the Region.
- The site is located adjacent to two regional corridors (Steeles Avenue East and Martin Street) and located approximately one kilometre south of Highway 401. The site is well served from a vehicle access and circulation perspective.
- Regional planned road network key improvements:
    - Steeles Avenue widening from 2 to 4 lanes between Tremaine Road and Industrial Drive;
    - Steeles Avenue widening from 4 to 6 lanes between Regional Road 25 and Trafalgar Road;
    - Regional Road 25 widening from 4 to 6 lanes from Britannia Road to Derry Road, Steeles Avenue to 5 Side Road, and from Highway 407 to Britannia Road;
    - James Snow Parkway widening from 4 to 6 lanes between Highway 401 and Britannia Road; and
    - James Snow Parkway new 6-lane arterial road extension between Highway 407 and Britannia Road.
- Town planned road network key improvements:
    - Ontario Street South, conversion of 2 lanes to HOV lanes from Derry Road to Main Street East; and
    - Main Street East, 4-lane from Fifth Line to Trafalgar Road.
- Provincial planned road network key improvements:
    - Highway 401 widening from 6-lane core to 12-lane collector-distributor system (with 2 HOV lanes) from Trafalgar Road to James Snow Parkway;
    - Highway 401 widening to 10-lane core (with 2 HOV lanes) from James Snow Parkway to Regional Road 25; and
    - Improvements to James Snow Parkway ramp entrances and exits to and from Highway 401.
- All of the planned infrastructure improvements are expected to be completed by 2036 and have been included in the future area road network for all analysis horizons (2036, 2041, 2046, 2051).
- The site is currently served by 3 surface transit routes with the nearest bus stops on Steeles Avenue East. The site is located 2.5 km from Milton GO Station and is accessible by all bus routes that service the site vicinity.
- The Town of Milton Five-Year Service Plan and Town TMP propose transit service improvements to be implemented by 2029. Within the site vicinity, transit service improvements include a new bus route generally running north-south along Bronte Road and east-west along Main Street E south of the site. Other existing bus routes within the site vicinity are proposed to be realigned or extended and service headways are planned to be reduced.
- The Milton GO Line has planned service improvements to expand GO train service to provide two-way all-day service by 2031.

- The site internal street network has been planned to allow for transit service opportunities in the future. Street A has been identified as an ideal corridor for a future bus route to encourage sustainable travel for future residents and visitors of the site.
- The site is currently served by a number of cycling infrastructure options including multi-use trails, bicycle lanes and park paths. Within the site vicinity, multi-use trails and bicycle lanes are provided along Steeles Avene East (between Bronte Street and Regional Road 25) and Bronte Street South.
- Planned cycling improvements have been identified in the Town TMP, Regional TMP and Regional ATMP. Most significantly to the site, future cycle tracks are proposed along Steeles Avenue, extending east-west cycling connection.
- As part of the site internal road development, a comprehensive cycling network is planned which includes multi-use pathways along Street B and Street D, along with a new Valley trail connecting Steeles Avenue and Martin Street.
- The site is currently well accessed by pedestrian infrastructure. Multi-use pathways are provided along Steeles Avenue and Bronte Street, sidewalks are provided along Steeles Avenue, Bronte Street and Martin Street.
- The site is located approximately 1.0 km (a 10 to 15-minute walk) north of Downtown Milton.
- A new multi-use pathway is proposed along the north side of the Canadian Pacific Railway rail corridor and is accessible via Bronte Street and Martin Street south of the site.
- As part of the development proposal, walkways are provided throughout the site and will connect to future sidewalks along the planned internal road network. Sidewalks will be provided along Street A, Street B and Street D. Multi-use pathways will be provided along Street B and Street D.

13.5 TRAVEL DEMAND FORECASTING CONSIDERATIONS

- The analysis scenarios of this study correspond with the proposed development horizons (2036 completion of Phase 1 and 2046 completion of Phase 2) plus 5-years post completion for each development phase (as per the Terms of Reference). The analysis scenarios are as follows:
    - 2024 Existing Traffic
    - 2036 Future Background Traffic
    - 2036 Future Total Traffic (Phase 1)
    - 2041 Future Background Traffic
    - 2041 Future Total Traffic (Phase 1 + 5 years)
    - 2046 Future Background Traffic
    - 2046 Future Total Traffic (Phase 2)
    - 2051 Future Background Traffic
    - 2051 Future Total Traffic (Phase 2 + 5 years)
- Unconstrained future background traffic conditions have been established in coordination with the Town and Region. Traffic growth assumptions were based on the corridor growth rates provided by the Town and Region, based on the regional transportation (EMME) model. The growth rate assumptions were reviewed and validated as part of this study. These growth rates are inclusive of the net growth within the Joint Best Planning Estimate (JBPE) forecasts provided by the Region in March 2025.

- The JBPE forecasts provided by the Region in March 2025 include future residential and employment allocations for the site. In order to avoid double counting site traffic, the “background site traffic” associated with the JBPE site forecasts have been estimated and removed from the road network.
- Through discussions with Region and Town transportation staff, it is noted that the JBPE baseline traffic includes trip potential for 259 jobs on the existing site, despite the site being vacant under existing conditions. This additional traffic allowance needed to be first added to existing traffic and later removed from the road network as part of the traffic analysis methodology.
- Site traffic considerations therefore include vehicle travel demand forecasting for the “background site traffic” for removal and for the current proposed development plan for the site (vehicles added to the area road network under future total conditions).
- Travel mode share considerations for the site, for both the “background site traffic” and proposed development site traffic, were based on Institute of Transportation Engineers (ITE) assumptions and Transportation Tomorrow Survey (TTS) data.
- The 2016 TTS residential auto driver mode share (two-way peak hour trips) for the site area is approximately 70%. This is reflective of the auto driver assumption used in the ITE trip generation methodology adopted for this study (similarly 70%). It is noted however that recent 2022 TTS data reports a resident auto driver mode share of approximately 55% for the site area.
- A conservative auto driver mode share assumption has been adopted for traffic analysis purposes. It was assumed that the site travel characteristics reflect the 70% auto driver mode share at the first analysis horizon year (2036) and gradually reduce over time to 50% by the ultimate (2051) horizon. As the traffic forecast are based on ITE trip rates, trip reduction to reflect declining auto driver mode share are relative to the original 70% ITE auto driver mode share. The auto driver mode share assumptions were assumed to evolve over time as follows:
    - 2031 to 2041 (i.e. 2036 horizon) 70% auto driver mode share (0% reduction)
    - 2041 to 2051 (i.e. 2041, 2046 horizon) 60% auto driver mode share (10% reduction)
    - 2051 and beyond (i.e. 2051 horizon) 50% auto driver mode share (20% reduction)
- The evolving auto driver mode share considers a conservative approach given that a 50% auto driver mode share was assumed to be reached by 2051 only, notwithstanding that the 2022 TTS data reports a 55% auto driver mode share for the site area today.
- The established travel mode share assumptions have been applied to the trip generation methodology for both the “background site traffic” and the proposed development site traffic.

13.6 TRAFFIC VOLUMES

- The Wider Study Area extends generally from James Snow Parkway in the north and east, Tremaine Road in the West and Main Street in the south, and incudes 17 signalized and 7 unsignalized intersections (consistent with the Terms of Reference).
- Given the extent of the Wider Study Area, a more localized study area (Focused Study Area) was considered for the local area site traffic impact analysis. The Focused Study Area extends generally from James Snow Parkway in the north to Main Street in the south, and Bronte Street in the west to Ontario Street in the east and includes 10 signalized and 4 unsignalized intersections. In addition to these, the Focused Study Area also includes the 4 proposed site access points.

- Existing traffic volumes were established based on traffic surveys undertaken by Spectrum Traffic Data Inc. on Tuesday, May 7, 2024 and Tuesday, December 10, 2024. Existing turning movements counts were reviewed for consistency in traffic volumes between intersections; minor adjustments to balance traffic volumes between intersections were made as necessary.

Total Background Growth

- Future background traffic conditions were established based on traffic growth assumptions and infrastructure improvements provided by the Town / Region, based on current TMP / IMP updates.
- Future background traffic growth volumes for each analysis scenario were derived for each horizon based on traffic growth assumptions (corridor rates) provided by the Town and Region by first validating the growth rates at key intersections, establishing any adjustments and then applying the adjusted growth rates. More detailed steps for background traffic growth derivation are as follows:
    - Apply growth rates provided by Region and Town for the 2036 and 2051 horizons by individual corridor segments to determine initial link growth volumes;
    - Distribute link growth volumes by movement based on future total volumes presented in background EA studies at key intersections (i.e. the Highway 401 ramp terminals, Steeles/Tremaine, Steeles/Martin, Steeles/James Snow Parkway) that reflect the future network improvements and associated travel pattern changes where available or based on existing turning movement ratios where unavailable (i.e. along Main and Martin Streets);
    - Balance overall growth volumes at the 2036 and 2051 horizons, respecting anticipated growth area locations within the wider study area and traffic allowance for the site as per the JBPE provided by the Region in March 2025;
    - Review the overall limits of growth, if any, at the 2036 and 2051 horizons based on intersection capacity at key intersections within the future study area network;
    - Establish the adjusted growth rates between 2036 to 2051 that reflects the limits of growth for the regional and town corridors within the study area network;
    - Establish any potential traffic redistribution corresponding to key movements and routing pathways at the 2036 and 2051 horizons based on movement capacity at key intersections beyond the overall corridor growth limits within the future study area network; and
    - Apply the adjusted growth rates at each horizon year for the adjusted background growth at each development horizon to be used for the basis of this study.
- Given the various planned Regional road widenings, realignment of Steeles Avenue West and the new Tremaine interchange, the Regional roads in the wider study area are generally able to accommodate the anticipated growth rates as provided by the Region. However, forecasted growth by the Town will be constrained starting from the 2041 horizon, due to the lack of proportional road network improvements to address the anticipated growth, as constrained by the existing Downtown Milton Heritage right-of-way which cannot be widened to meet the capacity needs of the Town's projected growth, without significant impact to buildings and overall character in the historic area.
- The Town's growth constraints are generally expected along Main Street, Ontario Street and Bronte Street, which will generally reach capacity in one or both directions by growth to 2036. Some capacity for growth remains along Martin Street and the full growth allowance can be accommodated on Thompson Road. Growth rates have been reduced as required along these Town roads for the period between 2036 to 2051.
- Beyond these overall corridor growth limits on the Town roads, a redistribution of existing traffic is expected to and from the Regional Road 25 interchange due to the future Tremaine interchange. The capacity constraint for turning movements at Regional Road 25 / Steeles Avenue will shift traffic distribution along Steeles Avenue West and Bronte Street to use Tremaine Road, instead of Regional Road 25 to connect to/from Highway 401 and the north Milton employment area.

- In summary, the 2036 future background traffic scenario maintains the growth rate assumptions provided by the Town and Region, whereas the 2041, 2046 and 2051 future background traffic scenarios reflect a reduced traffic growth based on network capacity tests at the 2051 horizon.

- This reduced growth was adopted as the validated background growth per study horizon and was applied to existing traffic to forecast the constrained future traffic volumes. Since existing traffic counts do not include the JBPE traffic allowance for the 259 jobs on the existing vacant site, the future travel demand associated with the 259 jobs was removed from the future background traffic volumes, when the additional corridor growth was added to develop the JBPE constrained future total traffic at each horizon.

Proposed and "Joint Best Practices Estimate" Site Traffic

- Site traffic considerations include the removal of "background site traffic" associated with the Region's JBPE population growth assumption (as provided by the Region in March 2025 for the site (and included in the future background traffic growth). Site traffic generation corresponding with the current development proposal was then assigned to the future area road network. This approach has been taken to avoid double counting site traffic activity.

- The Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) for General Urban / Suburban settings was used for both the residential and employment land use components of the assumed population growth in order to estimate the "background site traffic" to be removed. The residential mode share assumptions were applied.

- The two-way "background site traffic" that was removed from the area road network was estimated for each horizon year as follows:

    - **2036 Horizon:** **AM: 640 trips, PM: 645 vehicle trips**
    - **2041 Horizon:** **AM: 1,205 trips, PM: 1,195 vehicle trips**
    - **2046 Horizon:** **AM: 1,205 trips, PM: 1,195 vehicle trips**
    - **2051 Horizon:** **AM: 1,295 trips, PM: 1,275 vehicle trips**

- Site traffic generation for the development proposal was based on the same methodology - ITE (11th Edition) trip generation rates and the residential mode share assumptions established for this study. Given the ancillary and street-related format of the proposed retail and the limited parking supply available for retail, it is expected that site retail trips will generally be active transportation trips.

- The proposed development concept is forecast to generate the following two-way auto driver vehicle traffic at each analysis horizon year:

    - **2036 Horizon:** **AM: 410 trips; PM: 470 trips**
    - **2041 Horizon:** **AM: 365 trips; PM: 405 trips**
    - **2046 Horizon:** **AM: 1,175 trips; PM: 1,425 trips**
    - **2051 Horizon:** **AM: 1,050 trips; PM: 1,260 trips**

- It should be noted that the proposed site traffic generation associated with the current development plan is equal to or less than the "background site traffic" generation associated with the JBPE population and employment growth assumption (provided by Region in March 2025) for the site that have, thus far, been included in the Town Official Plan and Transportation Master Plan Update.

- Future background volumes for each analysis scenario (2036, 2041, 2046, 2051) reflects removal of the JBPE site traffic allowance from the JBPE constrained future total traffic.

- Future total traffic volumes for each analysis scenario (2036, 2041, 2046, 2051) includes the addition of new proposed site traffic volumes to the above future background volumes.

13.7 TRAFFIC OPERATIONS

- The existing and future background traffic conditions have been assessed for the Wider Study Area, which includes all intersections identified by the Town of Milton and Halton Region for the area generally bound by James Snow Parkway in the north and east to Tremaine Road in the west to Main Street East in the south (as defined in the Terms of Reference).

- Under **existing traffic conditions** all signalized intersections operate appropriately. However, some key intersections are already operating under busy conditions approaching capacity. These constrained intersections include:

    - The Ontario Street / Main Street intersection is approaching capacity in the morning street peak hour with an overall V/C ratio of 0.98.

    - The Steeles Avenue / Regional Road 25 intersection is busy in the afternoon peak hour, specifically for the westbound through-right movement operating at V/C ratio of 1.06, and the southbound left movement operating at V/C ration of 0.91.

Future Background Assessment

- The four traffic analysis horizons (2036, 2041, 2046, 2051) were reviewed under future background conditions, reflecting validated background growth plus the additional 259 job JBPE baseline allowance, and removal of total “background site traffic” allowance associated with the Region’s JBPE growth projections for the site (as provided by Region in March 2025). It is noted that all planned area infrastructure improvements are to be completed by 2036 and have therefore been considered within the area road network for all traffic analysis horizons.

- In 2036 future background conditions, the majority of study area intersections are operating acceptably with overall V/C ratios of less than 0.90. Key intersections that are approaching capacity are as follows:

    - Regional Road 25 / Martin Street / Steeles Avenue East;
    - Martin Street / Caves Court;
    - Thompson Road North / Steeles Avenue East;
    - Ontario Street / Main Street;
    - Bronte Street / Main Street; and
    - Highway 401 Eastbound and Westbound Off-Ramps at James Snow Parkway.

- In 2041 and 2046 conditions, additional area growth will fill the study area network as the Town of Milton builds out, resulting in the above-noted key intersections operating under increasingly capacity constrained conditions. The overall area street network will operate acceptably, given the suggested network improvements triggered by background traffic.

- By the 2051 horizon, the area road network is generally busy along all major corridors in the study area (Regional and Town), including the following key corridors (as established in the preliminary growth rate review):

    - Main Street corridor;
    - Bronte Street corridor;
    - Tremaine Road corridor;
    - James Snow Parkway corridor;
    - Martin Street corridor; and
    - Regional Road 25 / Highway 401 Off-Ramps at James Snow Parkway.

- The wider area traffic to be accommodated by the Tremaine interchange will be constrained by the roundabout at Tremaine Road / Steeles Avenue and will not support heavy turning flows between

Tremaine Road to Steeles Avenue or vice versa (particularly from Steeles Avenue to Tremaine Road southbound).

- It is expected that over time, the Tremaine interchange at Highway 401 will generally serve the Milton Heights area, the north Milton employment areas and other future developments along Tremaine Road (i.e. north-south through traffic) rather than provide greater relief for the RR25 and James Snow Parkway interchanges (i.e. turning traffic).
- A summary of suggested road network or traffic signal improvements at the study area street network intersections, above and beyond those considered within the Town and Region TMP, is provided in **Section 6.5.**

Future Total Assessment

- The four traffic analysis horizons (2036, 2041, 2046, 2051) were reviewed under future total conditions. It is noted that all proposed site transportation infrastructure, with the exception of Street C, is to be constructed as part of Phase 1. As such, the 2036 and 2041 future total road networks include all site road infrastructure excluding Street C and the 2046 and 2051 future total road networks include all proposed site road infrastructure, with Street C.
- In 2036 future total conditions with the completion of Phase 1 of the proposed development, there will be moderate impacts, primarily to the Martin Street / Steeles Avenue intersection. Other traffic impacts will be noticed along Martin Street south to Main Street. However, it should be noted these intersections will continue to operate within capacity.
- In 2036, to accommodate site traffic, 3 new signalized intersections are recommended at site points of access at the following locations: 1) Steeles Avenue/ Street A/ Morobel Drive, 2) Martin Street/ Street A and 3) Martin Street/ Street D/ Caves Court. All three signalized intersections operate appropriately with overall V/C ratios of 0.55 or less.
- The 2041 future total conditions will continue to have moderate impacts to the Martin Street / Steeles Avenue intersection, although it will continue to operate acceptably under capacity. Other traffic impacts will be noticed along Martin Street south to Main Street. However, it should be noted these intersections will continue to operate within capacity.
- In 2046 future total conditions with completion of Phase 2, which includes full site build-out and the construction of Street C, the wider study area boundary intersections are expected to operate in similar conditions as the 2046 future background conditions with various key movements at or approaching capacity. Traffic impacts will primarily be noted at Martin Street / Main Street and Martin Street / Steeles Avenue.
- The balance of the area intersections are operating as per 2046 future background conditions, with corridor capacity constraints along James Snow Parkway and Main Street.
- In 2051 future total conditions, the area network will be operating under busy conditions with various key movements at or approaching capacity. The municipal corridors, particularly through the historic centre of Milton, are at capacity.
- The proposed 3 new signalized intersections connecting the site to the external area network are operating acceptably, with intersections operating at V/C ratios of 0.65 and below.

Traffic Analysis Summary & Recommended Additional Road Improvements

- The impact of the site traffic to overall intersection V/C ratios is small (5% or less) at the wider study area intersections, with the exception of the Tremaine/Steeles roundabout which has higher impact of up to 10%. The site traffic impacts are also generally small (5% or less) at most key intersections within the focused study area. There some key intersections where a larger proportion of the site

traffic would be present that have moderate to high impacts (10%-16%). These intersections include Martin Street / Main Street, Ontario Street/ Main Street and Steeles Avenue/ Martin Street.

- Based on the comprehensive traffic analysis completed as part of this study, the current conceptual development proposed for the site is expected to have negligible net traffic generation relative to the JBPE allowances, at all study horizons. Despite the moderate site traffic impact relative to future background conditions after removal of the JBPE background site traffic allowance, **proposed site-related traffic volumes can be appropriately accommodated on the future area road network given all planned and additional recommended infrastructure improvements required to accommodate background growth.**

- A total of 3 external site intersections, based on side street delay, are recommended to be signalized by 2036 (at build-out of Phase 1). The increasing traffic along Martin Street will increase delays at the intersection of Martin Street/ Street A and Martin Street/ Street D/ Caves Court. With signalization of the 3 points of external site access, the intersections will operate at LOS D or better, with acceptable overall intersection V/C ratios 0.65 or better. Expected 95th percentile queues outbound can be accommodated within the proposed internal street network, without impeding upstream block intersections.

- Including the adjustment to the Town's growth rates, a number of **additional improvements** (beyond those being considered by the Town and Region) are recommended at various horizons to accommodate general area background growth. These improvements include:

    - RR25/Steeles Avenue/Martin Street
        - 2041 → overlapping SBR/EBL phase
        - 2051 → separate channelized SBR with exclusive receiving lane for free flow operations

    - Ontario Street / Woodward Avenue
        - 2036 → WBL and SBL advance phases

    - Ontario Street / Main Street East
        - 2036 → new exclusive SBR lane

    - Bronte Street North / Main Street East
        - 2036 → additional exclusive NBR and SBR turn lanes
        - 2041 → additional SBTR and NBTR lanes (replacing the exclusive NBR and SBR)

    - Tremaine Road / Steeles Avenue
        - 2036 → convert east leg configuration to exclusive WBL and shared WBTR

    - The storage within existing turning lanes needs to be extended at a number of intersections within the Focus Study area.

- James Snow Parkway is over capacity but the New North Regional Road EA is underway by the Region, which is expected to include a set of improvements for that corridor. However, since the improvement recommendations from that study are not yet available to inform the future configuration of James Snow Parking, these intersections remain over capacity, with the understanding that downstream growth will be metered by this congestion.

- It is noted that additional traffic analysis will be required in the future to support development applications for blocks/sites within the Draft Plan of Subdivision.

13.8 PROPOSED NEW TRAFFIC SIGNALS

- A traffic signal warrant analysis based on the Ontario Traffic Manual (OTM) Book 12 methodology (Justification 7), was undertaken at the following intersections for both the 2041 and 2051 horizons:
    - Steeles Avenue East & Street A / Morobel Drive (4-legged intersection)
    - Martin Street & Street A (3-legged intersection)
    - Martin Street & Street D / Caves Court (4-legged intersection)

The results of the traffic signal warrant assessment indicates that although the intersections may not technically meet all requirements for signalization, traffic signals will likely be required and are thus being recommended at 1) Steeles Avenue East & Street A / Morobel Drive (**2051 score of 112%**) and 2) Martin Street & Street A (**2051 score of 92%**) and are being recommended and would be beneficial at 3) Martin Street & Street D/ Caves Court (**2051 score of 55%**).

It is however recommended that the proposed traffic signals be installed as part of Phase 1, when Street A is connected to Steeles Avenue East and Street A and Street D are connected to Martin Street, for the following reasons:

- As traffic signals will be required when future traffic volumes result in a traffic signal warrant score of 80% (both Justification 1 & 2) or 100% (for either Justification 1 or 2) at any of the intersections, it is expected that appropriate warrants for signalization may be met in the future;
- Improve the level of safety for pedestrians, cyclists, transit and vehicles travelling to/from the site and throughout the area;
- Reduce delays for vehicles travelling to/from the site, thereby reducing idling and greenhouse gas emissions;
- The spacing between adjacent signalized intersections is adequate and the traffic signals could operate efficiently;
- If operated as fully actuated, the traffic signals would not create additional traffic operational concerns and can be coordinated with adjacent traffic signals in order to minimize delays along the corridors;
- The traffic signals proposed along Martin Street will enhance school zone safety (a designated Community Safety Zone) and provide protected crossings for students travelling to and from school.

13.9 SUPPLEMENTARY SCHOOL PEAK ANALYSIS

- As requested by the Town, a supplementary traffic analysis has been completed during school peak hours for the Martin Street intersections in the immediate vicinity to the schools. The site is adjacent two schools on Martin Street (Martin Street Public School and Holy Rosary Elementary School).

- Time distribution patterns for the northbound and southbound link volumes were reviewed based on the extended afternoon traffic count at the Martin Street / Steeles Avenue intersection. This temporal ratio between the school out and afternoon peak period traffic was applied to the Martin Street traffic volumes to derive the school out peak hour traffic along the general Martin Street corridor.

- Traffic to/from Martin Street Public School and Holy Rosary Elementary School were taken from their respective traffic count during the school out peak hour. Similarly, school out peak site traffic was derived through a review of residential temporal distribution from the ITE Trip Generation Manual appendices of LUC210 between the school out and afternoon peak period traffic.

- Given signal timing optimization at the school driveway intersection at Martin Street/ Woodward Avenue, the local area intersections can accommodate the new site traffic under 2051 future conditions, during the school out peak hour and the school driveways will continue to operate acceptably. It is expected since the highest traffic volume under 2051 conditions can be accommodated, traffic at earlier horizons can also be acceptably accommodated along Martin Street.

13.10 MULTI-MODAL TRAVEL CONSIDERATIONS

- The multi-modal travel demand and assessment considerations have been completed for the ultimate 2051 scenario.
- A conservative assumption was adopted for the basis of the traffic analysis, assuming a 50% auto driver mode share is achieved by 2051. Therefore, for multi-modal travel demand forecasting purposes, an auto driver mode share of 50% was assumed at 2051 and the balance of the travel mode shares were based generally on the 2022 TTS data.
- Transit considerations review the site transit ridership in the context of future transit service availability, and active transportation considerations review the connectivity and conditions of walking and cycling facilities available for future site residents, patrons and visitors.
- In 2051, with full build-out of the proposed development, the site is forecast to generate approximately 1,479 and 1,733 two-way auto trips (auto driver + auto passenger), during the morning and afternoon peak periods, respectively and 624 and 790 two-way non-auto trips (transit, walking and cycling), during the morning and afternoon peak periods, respectively.
- Two-way site transit trips at the 2051 horizon are forecast to be in the order of 289 and 366 two-way transit trips during the morning and afternoon peak periods, respectively.
- Area transit services will be able to appropriately accommodate future site transit demands, particularly in an evolving transportation context. Significant investment is being made to encourage the use of higher-order transit services (i.e. Milton GO service expansion); local surface transit services will correspondingly adapt to support increasing demands.
- Direct and transit-based pedestrian trips were reviewed as part of the site pedestrian travel assessment. The 2051 site two-way walking trips are projected as follows:
    - Direct Walking Trips: AM: 311 trips and PM: 394 walking trips
    - Transit Walking Trips AM: 289 trips and PM: 366 transit/walking trips
- Direct pedestrian trips were assumed to route along key pedestrian network links surrounding the site and proposed site pedestrian infrastructure. Transit-related walking trips were assumed to occur between the site and nearby transit services using existing and future pedestrian connections.
- Note that internal (or local) pedestrian trips resulting from the interaction between site uses (residential and retail) are not directly quantified as part of this study, however, they have been considered as part of the overall master plan urban design considerations, proposed pedestrian facilities, parks and open space, and pedestrian site access / circulation arrangements.
- The future site and area pedestrian infrastructure and context will accommodate site walking trips appropriately. Proposed signalized intersections with protected crossings will facilitate pedestrian connectivity with the area public street network.
- Two-way 2051 site cycling trips are forecast to be in the order of 24 and 30 cycling trips in the weekday morning and afternoon peak hours, respectively.
- The proposed site cycling facilities will accommodate and facilitate travel by bike. Proposed signalized intersections and crossing controls will support cycling connectivity with the area public street network.

13.11 PHASE 1 SITE PLAN ELEMENTS

- The ZBA application relates to Phase 1 of the development proposal. Therefore, the functional site plan elements (parking, bicycle parking, loading) have been reviewed for Phase 1 only.
- The site is subject to the Town of Milton Comprehensive Zoning By-law 016-2014 (HUSP Urban Area – March 2023).
- Application of ZBL 016-2014 to Phase 1 of the development plan results in a minimum vehicle parking requirement of 1,922 spaces, including 1,653 resident spaces and 269 visitor spaces.
- The ZBL 016-2014 parking requirements are considered to overstate the parking needs of an urban development in an evolving site transportation context supported by a comprehensive TDM Plan. For this reason, the Town is currently undergoing a review process to amend the ZBL 016-2014 parking standards to included reduced parking requirements including a residential rate of 1.0 spaces per apartment / condominium units.
- The development includes a proposed minimum resident parking rate of 1.0 space per apartment / condominium unit and 2.0 spaces per townhouse unit with garage and residential driveway capacity. A minimum visitor parking rate of 0.20 spaces per unit is proposed to be adopted for the site. These rates are consistent with the parking rates currently being considered by the Town.
- The proposed parking rates result in a minimum vehicle parking requirements of 1,391 spaces, including 1,175 resident spaces and 216 visitor spaces.
- The development proposes a total of 1,438 vehicle parking spaces, including 1,218 resident spaces and 220 visitor spaces, meeting the proposed minimum parking standards.
- Application of the ZBL 016-2014 accessible parking standards to the proposed parking supply results in a total accessible parking requirement of 42 spaces. The proposed accessible parking supply of 49 spaces is appropriate.
- Application of ZBL 016-2014 minimum bicycle parking requirements to Phase 1 of the development results in 1,004 bicycle parking spaces, including 955 long-term and 49 short-term spaces.
- The Phase 1 development proposal (inclusive of townhome supply) includes a total of 1,139 bicycle parking spaces, including 82 short-term and 1,057 long-term spaces and meets the minimum ZBL 016-2014 requirements.
- ZBL 016-2014 does not currently regulate the provision of loading spaces for residential uses and application of the commercial loading standards to the site retail of 522 m^2, similarly, does not require a loading space.
- Notwithstanding the ZBL 016-2014 loading requirements, it is proposed to provide 6 formal loading spaces for Phase 1 with the following dimensions:
    - 3 loading spaces (overhead waste collection) 12 m x 3.5 m
    - 3 loading spaces (moving activity, deliveries) 6 m x 3.5 m
- Note that solid waste pick-up for townhouses is proposed to occur at the driveway of each unit.
- The proposed waste collection loading facilities (12 m x 3.5 m) have been designed to accommodate the manoeuvring of Halton Region front loading refuse trucks and satisfy the minimum design requirements of the Halton Region Waste Collection Standards.
- The loading spaces designated for moving and delivery activity (6 m x 3.5m) have been designed to accommodate the manoeuvring of single unit (SU) trucks.The proposed loading facilities are appropriate for the development of Phase 1.