RANGEVIEW ESTATES

Urban Transportation Considerations
City of Mississauga
Official Plan Amendment (OPA)

Prepared For: Rangeview Landowners Group Inc.

May 2025

RANGEVIEW ESTATES

RESPONSES TO COMMENTS REGARDING BA GROUP'S MAY 31, 2024 TRANSPORTATION REPORT (OPA)

BA Group submitted an updated Urban Transportation Considerations Report dated May 31, 2024, entitled *Rangeview Estates, Urban Transportation Considerations, City of Mississauga, Official Plan Amendment (OPA)* to the City of Mississauga. The May 31, 2024 BA Group Report provided an update to the development proposal in consideration of a Ministerial Zoning Order (MZO) permitting the development of 16,000 residential units on the adjacent Lakeview Village property. Since that time, comments have been received from City Traffic staff dated July 10, 2024 and through a peer review by HDR, dated July 10, 2024. Comments were also been received from the Region of Peel dated November 22, 2024.

Comments and responses are summarized in this document for the following:

1. City of Mississauga (OPA) - July 10, 2024
2. HDR Peer Review comments (OPA) - December 13, 2024
3. Region of Peel Comments (OPA) - November 22, 2024

CITY OF MISSISSAUGA TRAFFIC COMMENTS (JULY 10, 2024 - OPA)

Comment 25 (1): The TIS has identified a number of critical movements in Scenario 7a, including several over capacity movements. No recommendations and/or proposed mitigation measures have been identified in the report. It appears that the proposal is heavily dependent on the auto mode share being 35% in order for the adjacent road network to be able to satisfactorily accommodate the site generated traffic. However, no recommendations or measures have been identified that would justify a 35% auto mode share (see comment #2 for additional mode share comments).

As per the City's TIS Guidelines, any physical and operational road network deficiencies and/or traffic control inadequacies identified in the TIS need to be addressed and solutions provided that are feasible and economic to implement. For all intersections identified as "critical", determine the contribution of the development proposal to the situation, possible remedial measures, a recommended solution, and the effectiveness of the solution towards resolving the situation. In general, the objective is to ensure that no new "critical" movements are created by the proposed development and that "critical" movements that exist without the addition of site-generated traffic are not worsened by the development proposal. Consideration must be given to impacts on pedestrians, cyclists, and transit for any intersection improvements.

Response: BA Group's May 2025 Report has been updated to include a 40% auto driver travel mode share in future scenarios. The analysis results for 35% auto driver are no longer being reported. The traffic analysis scenarios only consider the auto driver mode share of 50% being reduced to 40%. The updated traffic

analysis results presented in BA May 2025 Group's Report, confirm that based on the adopted methodologies, assumptions and proposed road improvements, no critical movements have been identified in any of the traffic analysis scenarios.

Comment 25 (2): Regarding the proposed 35% auto mode share scenario, the report provides insufficient technical justification for this aggressive assumption. While the report includes a comparison to different proxy sites, the report does not adequately justify the similarities in characteristics (e.g. transit, density, land use, built form, etc). between the proxy areas and the subject site or provide rationale for their selection. Further, no other measures, recommendations, or supporting rationale was included to justify exceeding a 40% auto mode share. A 35% auto mode share is beyond what was assumed for the Lakeview subdivision and exceeds what was noted in the approved ToR. Based on the foregoing, a 35% auto mode share does not appear appropriate at this time.

Response: BA Group's May 2025 Report has been updated to include a 40% auto driver travel mode share in future scenarios. The analysis results for 35% auto driver are no longer being reported. The traffic analysis scenarios only consider the auto driver mode share of 50% being reduced to 40%.

Comment 25 (3): Pertaining to the proposed scenarios and project phasing, please evaluate and clarify the required existing and proposed road network improvements (and the timing of these improvements) necessary to support the different scenarios/phases (e.g. Rangeview at 2500 units, 3700 units, and 5300 units). Which improvements need to be in place in order to accommodate the proposed densities of these scenarios? Any road network improvements that are not available to the developer (i.e. external private lands) that are required to support the development shall be identified.

Response: Table 7 in BA Group's May 2025 Report has been updated to include a summary of the required road improvements, along with the timing of the improvements for each scenario.

Comment 25 (4): A recommendation sections must be included within the report. This section should include, but not be limited to:

a. A list of proposed on-site and off-site roadway/infrastructure improvements and remedial measures, including timing, necessary to accommodate the projected site generated traffic;
b. Access management recommendations, based on the City's OP policies and industry best practices, for future development blocks within the proposed road network;
c. Provisions for future traffic monitoring and transportation impact studies, including warrants for auxiliary turn lanes, all-way stop controls, and traffic signals, etc.;
d. Implementation of Interim and Ultimate conditions in accordance with the proposed development phasing including the consideration of participating and non-participating land owners. It is unclear how an interim road network could be achieved.

Response: BA Group's May 2025 Report has been updated to include a recommendations section inclusive of the following:

a. A list of proposed on-site and off-site roadway/infrastructure improvements and remedial measures, including timing, necessary to accommodate the projected site generated traffic;

b. Access management recommendations, based on the City's OP policies and industry best practices, for future development blocks within the proposed road network;
c. Provisions for future traffic monitoring and transportation impact studies, including warrants for auxiliary turn lanes, all-way stop controls, and traffic signals, etc.;
d. Implementation of Interim and Ultimate conditions for the road network, in accordance with the proposed development phasing including the consideration of participating and non-participating land owners.

It is important to note that in the Ultimate condition, the points of access along Lakeshore Road East that are needed to provide direct access to properties in the Interim condition, will be closed and used for future active transportation routes only.

It is noted that although the updated report includes all key internal intersections for each traffic analysis scenario, the warrants for traffic control (i.e. traffic signal vs. type of stop control) and justification for dedicated right and left-turn lanes, has only been undertaken for the 2041 scenario for the full build-out of Rangeview and Lakeview. As the location and schedule of the phased development within both the Rangeview and Lakeview sites is currently unknown, it is challenging to accurately determine the assignment of internal traffic volumes prior to full build-out. However, as individual applications are submitted and traffic studies are updated, better information will become available regarding the location and phasing of both the Rangeview and Lakeview developments. Should a control warrant assessment be conducted in the future, the traffic warrants results should be considered relative to finalization of a block plan.

Comment 25 (5): The following required study area intersections have erroneously been excluded and must be evaluated in the future submission(s): Rangeview Road & Street G

a. Lakeshore Road East & West Avenue
b. Lakeshore Road East & Greaves Avenue
c. Lakeshore Road East & Westmount Avenue
d. Lakeshore Road East & Alexandra Avenue
e. Lakeshore Road East & Meredith Avenue
f. Lakeshore Road East & Edgeleigh Avenue
g. Lakeshore Road East & Strathy Avenue
h. Lakeshore Road East & Orchard Road
i. Lakeshore Road East & Fergus Avenue

Response: The above-noted intersections have been added to the traffic analysis within BA Group's Updated Report.

Comment 25 (6): The Rangeview Road ROW width should be increased from 22.25m to a minimum of 23.05m in order to adequately accommodate all of the necessary cross-section elements. A 1.7m wide planting zone is not sufficient to accommodate street trees.

Response: Noted. The Rangeview Road right-of-way has been increased to from 22.25 metres to 23.05 metres as per the functional road plans included in **Appendix D** of BA Group's Updated Report.

Comment 25 (7): As per the approved ToR, new data collection is required to be undertaken for the existing transportation conditions.

Response: Noted. The traffic analysis in BA Group's May 2025 Report has been updated to include traffic counts undertaken in April 2024, within the study area.

Comment 25 (8): The following are incorrect existing lane configuration assumptions found in the report.

a. Westbound right-turn lane at Lakeshore Road East & West Avenue / Montbeck Crescent
b. Northbound left-turn lane at Lakeshore Road East & East Avenue
c. Northbound left-turn lane at Lakeshore Road East & Hydro Road
d. Northbound left-turn lane at Lakeshore Road East & Hydro Road

Response: The above-noted lane configurations have been updated in BA Group's May 2025 Report.

Comment 25 (9): Future lane configurations and intersection control improvements resulting from Lakeview Village and from Rangeview Estates must both be uniquely differentiated on all Future Lane Configuration Diagrams

Response: As per the modelling methodology outlined in the Terms of Reference and agreed to by all parties, an aggregate approach that considers the combined Site traffic for both the Rangeview and Lakeview development has been undertaken. It is not appropriate to consider the future lane and intersection control improvements for each development at this stage of the development application process.

Vehicle trips have been generated and assigned to the road network for the consideration of the overall development. This approach allows for the reallocation of traffic volumes across the Site as residential densities are further refined and determined in future block and phasing plans. Any determination of lane configuration and intersection control improvements reflect the existing block and phasing plan which remains preliminary and will be finalized in future applications. The required lane and traffic control improvements are determined on an overall basis and appropriately reflects the OPA stage in the development process.

Comment 25 (10): The report has neglected to consider, an/or properly document, a number of roadway improvements that were identified through the Lakeview Subdivision TIS including, but not necessarily limited to the following:

a. Construction of eastbound right turn lane at Haig Boulevard & lakeshore Road East (appears to be considered in Synchro analysis but not listed under scenario road improvement assumptions)
b. Northbound lanes at Ogden Avenue and Lakeshore Road East configured to include a dedicated left-turn lane and a shared through/right lane (Synchro analysis incorrectly assumes a dedicated northbound right turn lane. Northing listed under scenario road improvement assumptions)
c. Northbound lanes at Haig Boulevard and Lakeshore Road East configured to include a dedicated left-turn lane and a shared through/right/ lane (Synchro analysis incorrectly assumes a dedicated northbound right turn lane and a shared through/left. Northing listed under scenario road improvement assumptions)
d. Southbound lanes reconfigured at Dixie Road and Lakeshore Road East to include a dedicated right-turn lane and a shared left/through lane (appear to be considered in Synchro analysis but not listed under scenario road improvement assumptions)

e. Dual Eastbound left-turn lanes at Lakeshore Road East / Cawthra Road (appears to be considered in Synchro analysis but not listed under scenario road improvement assumptions)
f. Eastbound right-turn lane at Lakeshore Road East / East Avenue
g. Traffic control & left-turn lane warrants and lane configurations for internal intersections not documented/provided.

Response: The traffic analysis in BA Group's May 2025 Report has been updated to include the following road improvements:

a. Construction of eastbound right-turn lane at Haig Boulevard & lakeshore Road East (Phase 1)
b. Northbound lanes at Ogden Avenue and Lakeshore Road East configured to include a dedicated left-turn lane and a shared through/right lane (Phase 1 & Phase 2 includes NBL/NBT/NBR)
c. Northbound lanes at Haig Boulevard and Lakeshore Road East configured to include a dedicated left-turn lane and a shared through/right/ lane
d. Southbound lanes reconfigured at Dixie Road and Lakeshore Road East to include a dedicated right-turn lane and a shared left/through lane
e. Dual Eastbound left-turn lanes at Lakeshore Road East / Cawthra Road (Phase 1)
f. Eastbound right-turn lane at Lakeshore Road East / East Avenue (currently exists)
g. Traffic control & left-turn lane warrants and lane configurations for internal intersections at the 2041 horizon with full build-out of Rangeview and Lakeview.

Other road improvements have also been considered within the traffic analysis i.e. WBR at Lakeshore/Cawthra and the EBR at Lakeshore/Ogden. The comprehensive list of road improvements is provided in BA Group's May 2025 Report in **Section 7.2.**

Comment 25 (11): Sensitivity analyses without the Ogden Avenue extension must be evaluated. How many units can the road network accommodate without the Ogden Avenue extension?

Response: A sensitivity analysis was undertaken to determine the how many residential units could be accommodated on the Site, with and without Ogden Avenue. The sensitivity analysis considered the build-out of the site in two phases, in relation to the construction of Ogden Avenue. It was determined that a total of 10,000 residential units could be accommodated in Phase 1, without the construction of Ogden Avenue. Additional units could be developed as part of Phase 2 following the construction of Odgen Avenue. Additional details regarding this sensitivity analysis are provided in BA Group's May 2025 Report in **Section 7.4.**

Comment 25 (12): A Community Impacts section must be included within the report. Any transportation related impacts on the existing community and comments from the public through the planning approvals process shall be addressed in the report. This section shall include summary statements outlining the resulting traffic increases to the critical streets, movements, and intersections. Comments or concerns from the community through public meetings and engagements that are related to traffic shall also be addressed in this section. This section should also assess the potential for traffic infiltration through adjacent residential streets.

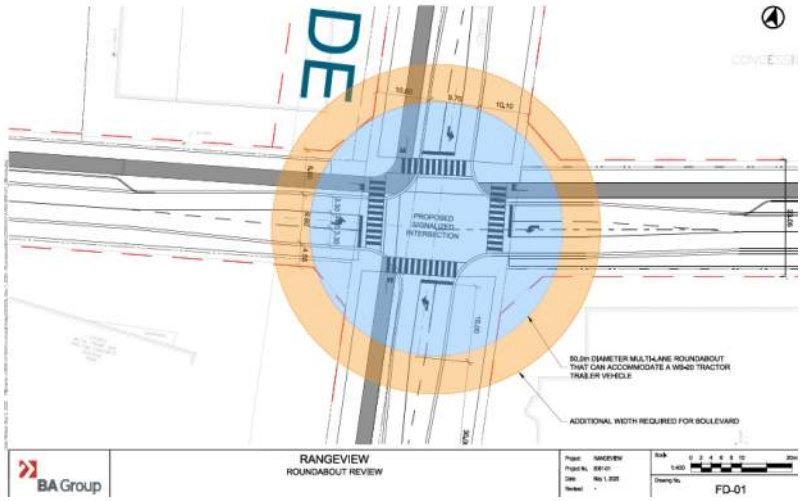
Response: It is important to note that the focus of the public meetings has been related to traffic conditions along Lakeshore Road, along with the future operation of the BRT. As the only external intersections related to the site connect to Lakeshore Road and the residential streets within the site have not yet been constructed, a Community Impacts section has not been included in the report at this time. It is recommended that a Community Impacts be considered at a later time when traffic studies are updated with the phased development of the site.

Comment 25 (13): Traffic Control Warrants (e.g. all-way stop, traffic control signals, roundabouts, left-turn lanes) are to be provided, where applicable, for all three scenarios (existing, future background, future total) including for internal public road intersections.

Response: It is noted that although the updated report includes all key internal intersections for each traffic analysis scenario, the warrants for traffic control (i.e. traffic signal vs. type of stop control) and justification for dedicated right and left-turn lanes, has only been undertaken for the 2041 scenario for the full build-out of Rangeview and Lakeview. As the location and schedule of the phased development within both the Rangeview and Lakeview sites is currently unknown, it is challenging to accurately determine the assignment of internal traffic volumes prior to full build-out. However, as individual applications are submitted and traffic studies are updated, better information will become available regarding the location and phasing of both the Rangeview and Lakeview developments. Should a control warrant assessment be conducted in the future, the traffic warrants results should be considered relative to finalization of a block plan.

Comment 25 (14): A roundabout feasibility study shall be included for the intersection of Lakefront Promenade and Rangeview Road.

Response: The figure below illustrates the concept for a two-lane roundabout at the intersection of Lakefront Promenade and Rangeview Road. It is important to note that the development group for the site does not own all of the land required for the roundabout and it could take decades to acquire the land. As a traffic signal could be installed when required and much sooner than a roundabout, it is recommended that a traffic signal be installed at the intersection, in order to ensure that there is a protected crossing for active transportation.



Comment 25 (15): The consultant shall verify the network assumptions made in the analysis reflect the latest plans for the Lakeshore BRT design. Please contact the City's Rapid Transit team (Adnan.Aamir@mississauga.ca) to confirm.

Response: BA Group's May 2025 Report considered the most recently available plans for the Lakeshore Road BRT.

Comment 25 (16): The City provided updated traffic growth forecasts in May 2024. It is not clear whether these have been adopted. Please clarify.

Response: BA Group's May 2025 Report traffic analysis has been updated to include the growth forecasts provided by the City in May 2024.

Comment 25 (17): Has an existing conditions VISSIM model been developed, including undertaking the necessary steps to calibrate and validate the model? This step should be undertaken to ensure the model is sound for existing conditions and can be used to test network/ land use alternatives.

Response: As part of the traffic analysis update, an existing conditions VISSIM model has been included. This model has been calibrated based on GEH and Corridor Travel Time and the results We have results for both calibrations and the graphs to support the validation of the existing model.

Comment 25 (18): The link for the VISSIM simulation recording shows the afternoon peak period. However, page 9 of the report notes that it is the simulation of the morning peak period. Please revise accordingly.

Response: An updated VISSIM simulation recording for both the AM and PM Peak conditions has been included with BA Group's Report. The updated link to the YouTube video has been provided on Page 1 of the Executive Summary in BA Group's May 2025 Report.

Comment 25 (19): Please prepare a VISSIM model showing results for the 40% auto mode share scenario.

Response: BA Group's updated May 2025 report includes a VISSIM model that shows results for the 40% auto driver mode share at full build-out of both the Rangeview and Lakeview sites.

Comment 25 (20): While it is acknowledged that the objective of the VISSIM validation (and use of static assignment) was to ensure it matched Synchro volumes, please evaluate sensitivity scenarios using the dynamic assignment procedure in VISSIM. Considering the expected level of delays that will be experienced in the area this assignment procedure would present more realistic route choice of drivers, specifically within the grid network provided within the development site.

Response: It is noted that as the VISSIM model for the traffic analysis only includes Lakeshore Road East and the north/south intersections (not internal intersections), the model does not include dynamic assignment as there are no options for routing decisions.

Comment 25 (21): Please clarify how the Synchro model considers the proposed BRT infrastructure. If not, is it appropriate that the report validates the VISSIM results against those achieved with Synchro?

Response: It is noted that Synchro has limited simulation settings dedicated to modelling BRT. However, the Synchro intersection parameters have been modified at signalized intersections to better reflect the impacts of BRT on traffic operations as follows:

- Addition of fully protected east-west left-turn phases along Lakeshore Road;
- Consideration for north-south pedestrian crossings with pedestrian actuation of the traffic signal, to simulate boarding and alighting on the proposed centre median BRT platforms; and
- Increased minimum pedestrian clearance times to account for a widened pedestrian crossing distance to accommodate the dedicated BRT lanes.

Although the above-noted modifications appropriately account for BRT within the Synchro model, the Lakeshore BRT is proposed to operate with transit signal priority, hence the VISSIM analysis considered BRT along Lakeshore Road. Transit signal priority timings require additional temporal considerations, which warrants the utilization of a stochastic model such as VISSIM. VISSIM allows for additional model parameters to be considered including the following:

- Dedicated BRT lanes within the model;
- Cycle tracks on the north and south sides of Lakeshore Road; and
- Transit signal priority at intersections.

Comment 25 (22): Is truck demand considered in the VISSIM model? Please document this, and all other assumptions.

Response: As part of the VISSIM model, 2% heavy vehicle volumes has been adopted. It is noted that the proposed development within both the Rangeview and Lakeview sites include mixed-use communities with multi-family residential units, with some commercial development. Given these proposed land uses, 2% heavy vehicle volumes is considered to be conservative and representative of heavy vehicle activity expected to be generated by loading and delivery activities at residential and commercial land uses.

Comment 25 (23): Have any of the standard VISSIM driver behaviour attributes been adjusted as part of this analysis? If yes, please document those and provide justification.

Response: As part of the VISSIM analysis parameters, the “Wiedemann 74” driving behaviour was adopted, as it is which is appropriate for urban motorized conditions. The saturation flow has been adjusted to reflect approximately 1900 vehicles per hour, by adjusting the W74bxAddd to 2.33 and the W74bvMult to 3.33, instead the default values 2.00 & 3.00 respectively, that represents a higher saturation flow.

Comment 25 (24): Please document that the entire demand within the VISSIM model can be loaded into the network.

Response: The proposed road network can acceptably accommodate the expected future total traffic volumes. Consistent with the previous BA Group Report, future background travel patterns have been modified to better reflect the planned transportation improvements in the area.

The future eastern terminus of the Lakeshore BRT is Long Branch GO, a key transit connection to GO rail and other transit services. The implementation of the service will influence the travel mode of both existing and future trips on Lakeshore Road East. Under existing conditions, transit services on Lakeshore Road East are subject to the same travel constraints as private autos. However, under future conditions, as a result of dedicated BRT lanes and transit signal priority, the BRT will provide faster and more reliable travel along Lakeshore Road East, when compared to travel by private auto. It is expected that the implementation of the BRT will encourage transit-based trips along the corridor and to the Long Branch GO Station.

Furthermore, station upgrades as part of Metrolinx's *Station Access Plan¸* are planned to further reduce the travel mode share of auto trips to Long Branch GO. As outlined in the *Station Access Plan,* Long Branch GO currently provides 280 unreserved spaces but parking is currently at capacity, with average weekday parking utilization rates at or above 95%. Furthermore, as part of the 2041 planned improvements, the total parking supply is planned to be reduced by approximately 40% from 280 to 160 spaces, with 85% of future spaces to be reserved for carpooling. On this basis, background traffic on Lakeshore Road East should be adjusted to reflect both the future BRT as well as the future reduced parking supply at the Long Branch GO Station.

To better reflect the future transportation context along Lakeshore Road East, particularly the implementation of the Lakeshore BRT and the future reduced parking supply at Long Branch GO Station, the background traffic for BA Group's traffic analysis has been adjusted as follows in both the VISSIM and Synchro models **for Scenario 4 only**:

- AM Peak: 200 vehicles per hour in the peak direction only (Eastbound)
- PM Peak: 300 vehicles per hour in both directions

Comment 25 (25): Page 76 of the report indicates that the future travel mode shares were applied once the number of vehicle trips was determined. Please clarify whether the vehicle trips are expressed from a total person perspective. If trips are already expressed from a vehicle perspective it would not be appropriate to apply the mode splits directly onto these trips as they would already account for some level of non-auto use.

Response: The trip generation methodology determined the number of auto driver trips, which were then used to derive the person trips using the agreed upon travel mode share. This methodology is appropriate and frequently utilized on other urban transportation assessments across the City.

Comment 25 (26): Regarding page 175, if possible, please extract the queue results for turn lanes from the VISSIM model simulation and include them in the report.

Response: Section 9.0 in BA Group's May 2025 Report includes the VISSIM queuing results for turning lanes.

Comment 25 (27): While it is understood that this study references the Lakeview Village TIS, all methodologies and assumptions regarding trip generation, assignment, distribution, growth rates, etc. must be clearly documented within the body of the report

Response: BA Group's May 2025 Report has been updated to document the traffic analysis methodologies and assumptions regarding trip generation, assignment, distribution and growth rates.

Comment 25 (28): All raw data and supporting documentation must be appended to the report.

Response: BA Group's May 2025 Report has been updated to include all raw data and supporting documentation in the appendices.

Comment 25 (29): The following is a list of comments regarding the Vissim models:

a. Please confirm that the VISSIM coding parameters identified in the Urban Transportation report are utilized in the provided VISSIM files. There seems to be discrepancies between what is reported in the report and the coding in the model, for example the report notes that the reduced speed areas for left turns is coded as 20 -25km/h, but the distribution in the VISSIM model is shown as 25km/h to 30km/h.
b. Dixie Rd in SB direction should not be coded as 2 lanes, please confirm that the assumption made in the model does not impact results. In addition the SB direction geometry does not match the assumptions highlighted in Figure 38 in the report
c. The geometry at the intersection of Lakeshore Rd and East Ave in the NB direction does not match the assumptions highlighted in Figure 38.
d. The geometry at the intersection of Lakeshore Rd and West Ave/ Montbeck Cres does not match the assumptions highlighted in Figure 38.
e. The VISSIM model should be expanded to include the internal site network. The analysis shows NB queues leaving the site may extend beyond available storage, as such the expanded VISSIM study area would provide an understanding of what impact that may have on the internal road network, including Rangeview Road.

Response:
BA Group's May 2025 Report considered the following in regard to the VISSIM model utilized for the traffic analysis:

a. The VISSIM coding parameters identified in BA Group's Report have been reviewed and no discrepancies between the report and the model were found.
b. As the traffic analysis confirms that the SBR at Lakeshore Road/ Dixie Road will be very busy in the future, in order to accurately capture the magnitude of the queueing, the 2 lanes have been extended to avoid starvation upstream.
c. Figure 38 has been corrected for the northbound approach under existing conditions at Lakeshore Road/ East Avenue.
d. The geometry at the intersection of Lakeshore Road/ West Avenue/ Montbeck Crescent, has been revised in Figure 38.
e. The VISSIM model has been expanded to include the internal site network. The updated traffic analysis demonstrates the impact of the development at the internal intersections as best as possible with the current

information available. Additional traffic analysis updates will be undertaken in the future when more accurate information is available, in regard to phasing and locations to be developed within Rangeview and Lakeview.

Comment 25 (30): All comments provided by the City's Peer Reviewer must be addressed. These comments will be forwarded to the applicant as they become available.

Response: All comments provided by the City's Peer Reviewer have been appropriately addressed as part of BA Group's Report update, with responses included within this document.

Comment 25 (31): Please submit a comprehensive, revised report addressing the aforementioned comments in PDF format.

Response: BA Group's May 2025 Report has been updated in order to address all comments provided by the City, Peer Reviewer and Region and is attached in PDF format.

Comment 26: In addition to staff comments, the City has retained a Traffic Engineering Consultant to conduct a Peer Review on the Traffic Impact Study prepared by BA Group Ltd. on behalf of the developer. Prior to Recommendation Report, the following shall be addressed: (i) Address comments as provided by the City's Peer Reviewer. These comments will be forwarded to the developer as they become available; (ii) Make satisfactory arrangements with this section to pay for this peer review that will be conducted by an independent consultant chosen by the City, in accordance with the City's Fees and Charges By-law.

Response: As part of the updates to BA Group's May 2025 Report, HDR's December 13, 2024 peer review comments have been addressed and responses are summarized in the following section.

Comment 27: The Owner will be required to gratuitously dedicate the following to the City of Mississauga, but not limited to:

(A) MUNICIPAL ROADS

(i) Street 'F' (Ogden Avenue Extension) with an approximate right-of-way of 23m-26m for the creation of a Minor Collector road (north-south road connecting Lakeshore Road East to just south of Rangeview Road);

(ii) Street 'G' with a right-of-way of approximately 19m-20m for the creation of a Local road (north-south road connecting Rangeview Road to just south);

(iii) Street 'L' with a right-of-way approximately 17-20m for the creation of a Local road (east-west road connecting East Avenue to Hydro Road,

(iv) Street 'O' (East Avenue Extension) with an approximate right-of-way of 23m;

(B) RIGHT OF WAY WIDENINGS

(i) All right-of-way widenings on existing municipal roads as may be required through the City's Official Plan;

(C) SIGHT TRIANGLES / ROUNDINGS

(i) At all municipal intersections in accordance with City Standards and Industry Practices; (D) 0.3 METRE RESERVES

(ii) 0.3 m reserves will be required and determined further through the Development Application Review process. [NOTE: The applicant is further advised that additional Land Dedications and

Easements may be further identified through the development application review process and Lakeshore BRT project.]

Response: Noted.

Comment 28: The developer shall provide a right-of-way package for all proposed roads within the development. The right-of-way package is to include reference to the relevant City of Mississauga standard drawings with detailed cross-sections that are applicable for each road. The developer should be advised that further comments on the development concept may be provided after the ROW package is submitted and therefore, revisions to the overall draft plan may be required. ***NOTE: Any deviation from a City of Mississauga standard is subject to a comprehensive review and approval process by City staff and all affected external agencies. If non-standard cross sections are proposed, the following information will also be required, but not limited to: An extensive right-of-way package that includes details of all design elements within a proposed right-of-way for each proposed street. The right-of-way package is to be prepared in two parts:
(A) The right-of-way package shall include plan views and a description for each of the following considerations:
(i) Public Transit Facilities;
(ii) Pedestrian Facilities;
(iii) Cycling Facilities;
(iv) On-Street Parking and Curbside Management; and
(v) Traffic Calming.
(B) The right-of-way package shall also include typical cross-section details of each street that include the following information:
(i) Street Name;
(ii) Road Classification;
(iii) Right-of-way widths;
(iv) Pavement widths and lane widths;
(v) Boulevard widths;
(vi) Sidewalks, curbs, splash pads, grades; and
(vii) All above and below ground utilities.

[NOTE: This comment shall be cleared once all Right of Way Package comments have been satisfactorily addressed. Refer to Traffic Comment Ref. #29 for Right of Way Package Comments.

Response: The right-of-ways for the proposed new internal roads have been provided in **Appendix D** of BA Group's May 2025 Report.

Comment 29: After review of the proposed right-of-ways, the following comments are provided:
(i) There are discrepancies between the "Street Network and Right of Way Considerations Report" and the "Public Right of Way Sections" drawing. For example, the Rangeview Road cross-sections are different in both documents.
(ii) The Rangeview Road ROW width should be increased from 22.25m to a minimum of 23.05m in order to adequately accommodate all of the necessary cross-section elements. A minimum 0.5m wide tactile buffer

(i.e. stamped concrete) would be required between the 3.0m wide cycle track and 2.0m wide sidewalk for accessibility purposes. Minimum tree corridor widths of 2.5m are required to accommodate tree planting.

[NOTES: (i) The remaining cross-sections appear to be generally consistent with the cross-sections utilized in the Lakeview Subdivision. (ii) The applicant is further advised that additional Land Dedications and Easements may be further identified through the development application review process and Lakeshore BRT project. (iii) Additional comments may be provided as a resulted of updated information.

Response: The illustrated Right-of-way have been updated and are consistent across all the submitted materials. Of note, Rangeview Road has been updated to a proposed Right-of-Way of 23.5m.

Response: The right-of-way that addresses the Rangeview Road discrepancy has been provided in **Appendix D** of BA Group's May 2025 Report. It is noted that although the width of Rangeview Road (a minor collector) was proposed as 22.25 metres to align with the original proposed road network for the Lakeview Village Street B (also a minor collector) that is parallel to Rangeview Road, the ROW for Rangeview Road has been increased to 23.05 metres.

Comment 33: City Council has endorsed the Lakeshore Connecting Communities Transportation Master Plan which sets out a long-term vision for transit and corridor improvements along Lakeshore Road from 2020 to 2041 that will support waterfront development. The Owner is also advised to review project details as there may be impacts to this site, such as future right-of-way widening and restricted access. Project details can be found at: https://www.mississauga.ca/projects-and-strategies/city-projects/lakeshore-connecting-communities.

Response: Noted.

HDR PEER REVIEW (DECEMBER 13, 2024) OF MAY 31, 2024 BA GROUP REPORT

Comment 1 – Terms of Reference: Terms of Reference: The approach for the study is not consistent with some items in the approved Pre-Study Terms of Reference Checklist, including the source data for the existing transportation conditions, the range of mode share applied and the site trip generation:

Comment 1.1 The approved Terms of Reference from April 2024 had crossed out "2022 Spectrum traffic counts" as the source data for existing transportation conditions and checked "New data collection". The analysis in the Updated Urban Transportation Considerations report currently reflects 2021 demands for existing conditions which were extracted from a 2019 TYLin report for Lakeview Village; therefore, new counts were not undertaken and utilized in this study. The use of a different set of demands can result in different travel patterns and residual capacities; for example, it is observed that the 2022 counts experience much higher westbound demands and lower eastbound demands along Lakeshore Road during the morning peak hour compared to the 2021 demands used in the analysis.

Response: The traffic analysis in BA Group's May 2025 Report has been updated to better align with the approved Pre-Study Terms of Reference Checklist and includes updated traffic counts (April 2024), along with confirmation of the analysis methodologies and assumptions for trip generation, assignment, distribution and growth rates.

Comment 1.2 The "Input Parameters and Assumptions" of the Pre-Consultation Terms of Reference Checklist notes that the analysis will consider an auto mode share that ranges from 40% to 60%. The auto mode share of 35% applied to the Synchro and Vissim analyses for Scenario 7B exceeds the range agreed to in the Terms of Reference. The previous Rangeview Estates study had assumed 50% for the auto mode share so the specified range was appropriate. Lower mode shares will be more difficult to reach, will require additional measures for transit and active transportation, and, if not realistic, will result in an underestimated impact from autos on the study area network.

Response: BA Group's May 2025 Report has been updated to include a 40% auto driver travel mode share in future scenarios. The analysis results for 35% auto driver are no longer being reported. The traffic analysis scenarios only consider the auto driver mode share of 50% being reduced to 40%.

Comment 1.3 The report notes that site trips for Rangeview Estates were estimated based on site trips estimated in the December 2023 TYLin report. This does not reflect the approved Terms of Reference which states that the ITE Trip Generation Manual will be used for site trip generation. Use of the latest ITE Trip Generation Manual may result in different numbers of trips generated by the proposed uses on site, however, as the report does not provide a detailed calculation of the trip generation and adjustments, the magnitude of the difference could not be determined.

Response: BA Group's May 2025 Report has been updated to include a separate section that clearly outlines how the ITE Trip Generation Manual data was applied for site trip generation. This section includes details on the methodology of the trip generation calculations including relevant trip generation rates or equations, internal capture and travel mode share reductions.

Comment 2 – Transit Capacity Analysis: Transit Capacity Analysis: The study should answer whether there will be sufficient capacity on the adjacent transit network to support the proposed mode splits including the reduction for the auto mode share of 35%. As identified in Scenario 7B, the auto mode share assumption of 35% is linked to a transit mode share of 45% with over 3,000 passengers per direction per hour that may be realized by the proposed Rangeview and Lakeview developments. Assuming a capacity of 50 seats per bus would result in 62 buses per hour being needed to accommodate the PM peak hour inbound transit trip projections from the Rangeview and Lakeview sites alone. We understand that the Lakeview Village development identified a potential autonomous shuttle route within the site connecting the Lakeview and Rangeview sites with the Lakeshore Road BRT, but additional measures that support the shift of the auto driver mode share from 40% to 35% have not been identified by BA Group.

The aggressive non-auto driver mode share may trigger the need for additional transit improvements. If the forecasted transit trips exceed the residual capacity of the planned Lakeshore corridor transit improvements, these impacts should be identified to the City and mitigation measures/additional improvements should be proposed such as increased frequencies, new routes, and whether the Cawthra GO Station will be required. In addition to reviewing the trips generated by both the Rangeview and Lakeview sites, the trips generated by the Rangeview site should also be separated to identify the impacts from the proposed development.

Response: BA Group's May 2025 Report has been updated to include a 40% auto driver travel mode share in future scenarios. The analysis results for 35% auto driver are no longer being reported. The traffic analysis

scenarios only consider an auto driver mode share of 50% being reduced to 40%. As per the City's direction at a January 28, 2025 meeting, as BA Group's updated traffic analysis no longer considers a 35% auto driver mode share, but applies a 40% auto driver mode share, a transit analysis is no longer required.

Comment 3 – Multi-modal Level of Service Analysis: Multi-Modal Level of Service Analysis: The report does not apply a multi- modal analysis approach for the study area and primarily focuses on the operational needs of vehicles. As a goal of the site will be to achieve a high non-auto driver mode share with low automobile dependency, a multi-modal analysis should be considered to identify the feasibility of the proposed mode shares, and if any issues are identified, what improvements are needed on the adjacent transportation network. At the current stage, the assessment should focus on multi-modal impacts to the Lakeshore Road corridor which can include a transit capacity analysis, and Fruin pedestrian level of service analysis. In subsequent stages of the application process, multi-modal conditions should also be considered internal to the site.

Response: BA Group's May 2025 updated report includes a multi-modal trip assessment that estimates the number of Rangeview and Lakeview trips by travel mode. As per the City's direction at a January 28, 2025 meeting, as BA Group's updated traffic analysis no longer considers a 35% auto driver mode share, but applies a 40% auto driver mode share, a transit analysis is no longer required. A pedestrian and sidewalk assessment can be considered at a later date if required. Instead of a Fruin analysis, it is BA Group's preference to use the Transport for London methodology which considers the desired width of a sidewalk, if a pedestrian assessment is required at a later date.

Comment 4 – Site Trips: Site Trips: The report is missing key details regarding the trips that are projected to be generated by the site, including site trip distribution, trip generation rates or formulae, internal capture, mode share adjustments, and layers for site trips in the study area. These details are needed to fully assess the assumptions of the analysis. The Rangeview Estates report currently provides the final inbound and outbound trips per use and turning movement diagrams which show combined trips for the Rangeview Estates and Lakeview Village sites. The trips generated by the Rangeview Estates site should be separated from the Lakeview Village site.

Response: BA Group's May 2025 updated report includes additional details regarding the methodologies and assumptions for site trips, trip distribution, internal trips, travel mode share adjustments. The site trip traffic volumes layers for Rangeview and Lakeview have been separated for the updated traffic analysis.

Comment 5 – Vissim Calibration / Validation: Vissim Calibration/Validation: The approved Terms of Reference for the study notes that a calibrated/validated Vissim model that is representative of existing conditions is required. This requirement does not appear to be met as existing Vissim modelling findings with calibration/validation have not been presented in the report.

Response: BA Group's VISSIM model has been updated to include existing conditions and has been calibrated/ validated as part of the updated traffic analysis and is representative of existing conditions.

Comment 6 – Vissim Assumptions: Vissim Assumptions: Assumptions applied to the Vissim models may underestimate the impacts to the auto network. This includes the following assumptions:

6.1 Transit Signal Priority: The Lakeshore Road Transportation Master Plan and Implementation Strategy, May 2019, notes that transit signal priority with 10 seconds of early and extend adjustments is proposed for the Lakeshore Road BRT. The Vissim models do not include transit signal priority which can underestimate the impact of the BRT on north-south approaches and the protected left turns from Lakeshore Road.

6.2 Heavy Vehicles: All vehicle inputs in the Vissim models apply a vehicle composition with 2% heavy vehicles and 98% automobiles. This does not reflect the assumptions applied to the Synchro analysis, which had higher percentages, and can underestimate the operational impacts on movements with higher heavy vehicle proportions.

6.3 Active Transportation Demand: High-level assumptions of 25 pedestrians per direction on crosswalks, and 100 bicycles per direction on Lakeshore Road were applied to the Vissim models. Considering the significant development proposed on the Rangeview and Lakeview sites, this may underestimate the active transportation demand at intersections along Lakeshore Road and the delays on vehicles from conflicts with pedestrians and cyclists. The estimated crosswalk demand should be linked and supported by the combined number of pedestrians generated from walk trips and transit trips. With a high-level assumption of 80% of the 5,274 transit trips identified during the PM in Scenario 7B travelling to and from the BRT stops on Lakeshore Road at the intersections with Lakefront Promenade and Haig Boulevard, over 1,000 pedestrian crossings per hour per crosswalk would result if evenly distributed.

Response:

(6.1) It is noted that Synchro has limited simulation settings dedicated to modelling BRT and transit signal priority. However, the Synchro intersection parameters have been modified at signalized intersections to better reflect the impacts of BRT on traffic operations as follows:

- Addition of fully protected east-west left-turn phases along Lakeshore Road;
- Consideration for north-south pedestrian crossings with pedestrian actuation of the traffic signal, to simulate boarding and alighting on the proposed centre median BRT platforms; and
- Increased minimum pedestrian clearance times to account for a widened pedestrian crossing distance to accommodate the dedicated BRT lanes.

Although the above-noted modifications appropriately account for BRT within the Synchro model, the Lakeshore BRT is proposed to operate with transit signal priority. The VISSIM analysis considered BRT along Lakeshore Road, inclusive of 10 seconds for early/extended transit signal priority. Transit signal priority timings require additional temporal considerations, which warrants the utilization of a stochastic model such as VISSIM. VISSIM allows for additional model parameters to be considered including the following:

- Dedicated BRT lanes within the model;
- Cycle tracks on the north and south sides of Lakeshore Road; and
- Transit signal priority at intersections.

(6.2) As part of the VISSIM model, 2% heavy vehicle volumes has been adopted for the traffic analysis. It is noted that the proposed development within both the Rangeview and Lakeview sites include mixed-use communities with multi-family residential units, with some commercial development. Given these proposed land uses, 2% heavy vehicle volumes is considered to be conservative and representative of heavy vehicle activity expected to be generated by loading and delivery activities at residential and commercial land uses.

To align with the VISSIM model, the Synchro model has been revised to include 2% trucks for all scenarios, with the exception of the existing scenario where existing truck percentages were maintained.

(6.3) Pedestrian volumes on Lakeshore Road East have been adjusted to better reflect future conditions, the following factors have been assessed for the consideration of pedestrian volume reductions:

- **Grouping**: A common behaviour where pedestrians travel in clusters related to the pedestrian phasing at crossings and other social factors.
- **Expanded Pedestrian Network**: Under future conditions, the pedestrian network will be significantly expanded to accommodate connectivity throughout the Site along internal walkways and along sidewalks adjacent to new public roads. This comprehensive pedestrian network will allow for routing within the Site and will reduce pedestrian volumes along Lakeshore Road East.
- **Transit Expansion**: Due to the density of development expected within Rangeview and Lakeview, there are plans for a future bus route internal to the Site ("the internal transit route"), in addition to the proposed BRT on Lakeshore Road. The internal transit route will provide a direct route to Long Branch GO Station, a major trip attractor of pedestrian trips. This internal bus route is expected to further contribute to a reduction in pedestrian volumes along Lakeshore Road.

Pedestrian volumes have been appropriately accounted for in both the Synchro and VISSIM models used for the traffic analysis. In consideration of the above factors, within the Synchro model, pedestrian volumes were reduced and grouped, whereas within the VISSIM model, pedestrian volumes were reduced but were grouped by default in the simulation settings. Figures that illustrate the pedestrian volumes for all traffic analysis scenarios, to and from the BRT, are provided in BA Group's Report in **Figures 38, 51, 66, 67 and 75**.

Comment 7: We cannot comment on the conclusions and recommendations of the study at this time as additional analysis will be needed to identify whether the transit trips can be accommodated by the future adjacent transit network. The auto driver mode shares applied in Scenario 7B are more aggressive than the 40% limit that was agreed to in the Terms of Reference and the Lakeview Village study but additional transit measures have not been recommended to accommodate the increased transit passenger trips and transit capacity analyses were not undertaken. Without adequate transit and active transportation facilities near the site, residents and employees will be reluctant or unable to utilize these alternative modes for their trips and the mode share splits cannot be attained.

Response: As per the City's direction at a January 28, 2025 meeting, as BA Group's May 2025 updated traffic analysis no longer considers a 35% auto driver mode share, but applies a 40% auto driver mode share, a transit analysis is no longer required. A pedestrian and sidewalk assessment can be considered at a later date if required. Instead of a Fruin analysis, it is BA Group's preference to use the Transport for London methodology which considers the desired width of a sidewalk, if a pedestrian assessment is required at a later date.

APPENDIX A – HDR PEER REVIEW COMMENTS

Comment 1: A calibrated/validated Vissim model is required that is representative of existing conditions. This comment does not appear to be addressed as existing Vissim modelling with calibration/validation has not been presented. If an existing Vissim model was carried forward from another approved study nearby, additional details should be provided in the report.

Response: BA Group's VISSIM model has been calibrated/ validated as part of the updated traffic analysis and is representative of existing conditions.

Comment 2: The report notes that the traffic analysis confirms that the future transportation network can acceptably accommodate the expected demands of the Lakeview and Rangeview sites even without the Cawthra GO Station. Currently the analysis focuses on auto operations and does not assess the existing and future utilization and capacity of the adjacent transit network. The analysis estimates that transit mode shares of up to 45% and directional transit demands of up to 3,093 passengers per hour will be required to mitigate auto impacts on the network. The feasibility of the target mode shares should be assessed, and additional transit improvements should be proposed if deficiencies are identified.

Response: As per the City's direction at a January 28, 2025 meeting, as BA Group's May 2025 updated traffic analysis no longer considers a 35% auto driver mode share, but applies a 40% auto driver mode share, a transit analysis is no longer required. A pedestrian and sidewalk assessment can be considered at a later date if required. Instead of a Fruin analysis, it is BA Group's preference to use the Transport for London methodology which considers the desired width of a sidewalk, if a pedestrian assessment is required at a later date.

Comment 3: The report identifies bike share and car share as TDM considerations for the Rangeview site. To increase adoption of these alternatives, another TDM measure that should be considered is to offer funding for 1 to 2 years' worth of bike share and car share services.

Response: Additional TDM measures that include financial contributions to bike share and car share services for 1 to 2 years, have been added to BA Group's May 2025 Report.

Comment 4: Page 64, section 6.1 notes that site trips for Rangeview Estates were estimated based on site trips estimated in the December 2023 TYLin report. This does not reflect the approved Terms of Reference which states that the ITE Trip Generation Manual will be used for site trip generation.

Response: BA Group's May 2025 Report has been updated to include a separate section that clearly outlines how the ITE Trip Generation Manual data was applied for site trip generation.

Comment 5: Please provide justification for the 2% cycle mode share that was shifted away from the auto passenger mode share and the difference in mode splits applied to Scenario 1-3B compared to Scenario 4-7B. It is observed that 0 cycling trips were assigned in Scenarios 4-7B.

Response: As the development of both Rangeview Estates & Lakeview considers cycling facilities (i.e. cycling lanes, bike parking and bike repair stations) and the City's cycling network is being expanded,

inclusive of dedicated cycling lanes along Lakeshore Road, BA Group adjusted Table 2.3 in the TYLin April 2021 report and increased the cycling mode share from 0% to 2% for all time periods and decreased the auto passenger share by 2% for all time periods.

Comment 6: Section 6.3.2.1 presents reduced auto mode shares for each scenario for both the Rangeview and Lakeview sites. It is noted that TDM strategies for other sites, such as the extent of reduced parking rates, are generally outside the reach of the applicant. The Rangeview study does not propose enhanced measures beyond those identified in the Lakeview Village study that would support further reductions to the Lakeview Village driver mode share. Additional technical justification should be provided to support the assumed 35% auto driver mode share at both the Lakeview and Rangeview sites. This may include additional transit and active transportation improvements that can be utilized by both the Rangeview and Lakeview sites, such as improved shuttle service internal to the sites, increased BRT frequencies, implementation of the Cawthra GO Station, etc.

Response: BA Group's May 2025 Report has been updated to include a 40% auto driver travel mode share in future scenarios. The analysis results for 35% auto driver are no longer being reported. The traffic analysis scenarios only consider an auto driver mode share of 50% being reduced to 40%.

Comment 7: Please provide additional justification for the auto driver mode shares applied to Scenarios 4 to 7B. It is noted that several of the proxy sites presented in Table 12 are located directly adjacent to TTC subway lines and GO train stations and may not be directly comparable to the Rangeview site which will be situated near the western terminus of the exclusive BRT lanes for the Lakeshore BRT.

Response: BA Group's May 2025 Report has been updated to include a 40% auto driver travel mode share in future scenarios. The analysis results for 35% auto driver are no longer being reported. The traffic analysis scenarios only consider an auto driver mode share of 50% being reduced to 40%.

Comment 8: Paragraph 1 notes that existing traffic volumes from the 2019 TYLin report were used for the Rangeview traffic analysis. As per the Terms of Reference, new existing count data is to be collected for the study.

Response: The traffic analysis in BA Group's May 2025 Report has been updated to include traffic counts undertaken in April 2024.

Comment 9: Please provide additional details on the future traffic growth rate discussion and methodology. The report is missing future background volumes and details regarding the adjustments listed in Section 6.3.4.1.

Response: BA Group's May 2025 Report includes additional details regarding the methodologies and assumptions for future background traffic volumes and includes traffic volume figures for future background traffic.

Comment 10: Please provide particulars of other background traffic studies, if considered.

Response: To determine future background traffic volumes, background corridor growth (with growth rates provided by the City) were considered, along with the proposed development on both the Lakeview and Serson sites. As there are expected to be changes to the future travel demand and traffic patterns along the Lakeshore Road East corridor, due to the implementation of BRT and reduced parking rates in the area, additional background traffic related to other development applications in the area, have not been added to the future background traffic volumes. All future background traffic volumes have likely been appropriately accounted for within the corridor growth and inclusion of the Lakeview and Serson sites.

Comment 11: Please review the lane configuration figures for each scenario with the improvements listed in Section 6.2. Some improvements are identified as existing configurations such as the WBR lanes at Cawthra and Dixie, and some improvements such as the signalization of Hydro Road & Lakeshore Road are missing.

Response: BA Group's May 2025 Report has been updated such that lane configuration figures for each scenario align with the proposed improvements. An updated section has also been included in BA Group's Report that outlines the proposed intersection improvements and phasing.

Comment 12: Additional details on the methodology of the trip generation calculations presented in each vehicle trips table should be provided, including relevant trip generation rates or equations, internal capture and mode share reductions.

Response: BA Group's May 2025 Report has been updated to include a separate section that clearly outlines how the ITE Trip Generation Manual data was applied for site trip generation. This section includes details on the methodology of the trip generation calculations including relevant trip generation rates or equations, internal capture and travel mode share reductions.

Comment 13: Please provide additional details and justifications regarding the estimated mode shares applied for each scenario. Currently the multi-modal travel demand tables from Table 22 to Table 30 present person trip estimates for each mode, but the report does not discuss the incremental redistribution away from the auto mode share.

Response: BA Group's May 2025 Report has been updated to include a 40% auto driver travel mode share in future scenarios. The analysis results for 35% auto driver are no longer being reported. The traffic analysis scenarios only consider an auto driver mode share of 50% being reduced to 40%. Additional information has been provided to support the shift to 40% auto driver mode.

Comment 14: The report currently only presents site volume figures for the Lakeview Village site and combined estimates with both the Lakeview Village and Rangeview Estates sites. The report should also identify a layer with only the Rangeview Estates site trips for clarity.

Response: The traffic volumes figures have been updated in BA Group's May 2025 Report that separate the Rangeview Estates vehicle trips and the Lakeview Village vehicle trips.

Comment 15 : The report presents turning movement volume forecasts for each scenario but does not identify the trip distributions. The proportion of trips assigned to the edges of the study area should be

identified and discussed. Any supporting analysis such as origin-destination queries from TTS should be noted.

Response: The BA Group May 2025 Report includes a new section that provides additional details regarding trip distribution assumptions.

Comment 16: The queueing summary is missing queues at the intersections with Cawthra and Dixie. These intersections will experience significant turning movement volume growth from the sites and should be assessed to ensure that mitigation measures are identified where needed.

Response: The queuing summary for the intersections of both Lakeshore/ Cawthra and Lakeshore/ Dixie has been updated to include all queuing data, along with a discussion regarding the need for potential mitigation measures.

Comment 17: The table summarizes turning movement GEHs for future Scenario 7B. The GEHs show that the future target and processed simulation volumes do not significantly differ, but do not ensure that the model accurately represents existing conditions. Calibration and validation efforts typically compare field data such as existing turning movement counts, travel times, speeds, and congestion against simulated conditions to ensure that the existing models reflects realistic conditions during the peak periods.

Response: As part of BA Group's May 2025 Report and updated traffic analysis, the VISSIM model has been calibrated/ validated and is representative of existing conditions.

Comment 18: The report identifies movements from the Vissim analysis that are projected to operate with high delays and queues that will extend beyond the available storage lengths. Mitigation measures should be recommended, or constraints identified for all critical movements.

Response: BA Group's May 2025 Report has been updated to include a discussion of potential mitigation measures for movements that are expected to experience high delays / queuing concerns.

Comment 19: The "Input Parameters and Assumptions" of the Pre-Consultation Terms of Reference Checklist notes that the analysis will consider an auto mode share that ranges from 40% to 60%. The auto mode share of 35% for the Synchro and Vissim analyses for Scenario 7B exceed the range agreed to in the Terms of Reference. Additional technical justification in support of 35% mode share is required.

Response: BA Group's May 2025 Report has been updated to include a 40% auto driver travel mode share in future scenarios. The analysis results for 35% auto driver are no longer being reported. The traffic analysis scenarios only consider an auto driver mode share of 50% being reduced to 40%.

Comment 20: The approved Terms of Reference from April 2024 had crossed out "2022 Spectrum traffic counts" as the source data for existing transportation conditions and checked "New data collection". The analysis in the Updated Urban Transportation Considerations report currently reflects 2021 demands for existing conditions which were extracted from a 2019 TYLin report.

Response: The traffic analysis in BA Group's May 2025 Report has been updated to include traffic counts undertaken in April 2024.

Comment 21: The Terms of Reference notes an improvement at Haig & Lakeshore to add a northbound left turn lane, with a shared through/right lane. The future Synchro and Vissim analyses assume a shared northbound left/through lane and a right turn lane.

Response: BA Group's traffic analysis has been updated to include a separate northbound left-turn lane, with a shared northbound through/ right-turn lane at the intersection of Lakeshore/ Haig.

Comment 22: The Terms of Reference notes that all in-stream and recently approved developments within 1 km of the site shall be included or BA Group shall ensure that all background developments are included within the City provided growth rates. This does not reflect the approach in the report which notes that background traffic volumes were extracted from the April 2021 TYLin report.

Response: To determine future background traffic volumes, background corridor growth (with growth rates provided by the City) were considered, along with the proposed development on both the Lakeview and Serson sites. As there are expected to be changes to the future travel demand and traffic patterns along the Lakeshore Road East corridor, due to the implementation of BRT and reduced parking rates in the area, additional background traffic related to other development applications in the area, have not been added to the future background traffic volumes. All future background traffic volumes have likely been appropriately accounted for within the corridor growth and inclusion of the Lakeview and Serson sites.

Comment 23 : The report does not apply a multi-modal analysis approach for the study area and primarily focuses on the operational needs of vehicles. As a goal of the site will be to achieve a high alternative mode split with low automobile dependency, a multi-modal analysis should be considered in future submissions to identify the facility needs to accommodate the projected pedestrian, cyclist, and transit trips.

Response: BA Group's May 2025 updated report includes a multi-modal trip assessment that estimates the number of Rangeview and Lakeview trips by travel mode. As per the City's direction at a January 28, 2025 meeting, as BA Group's updated traffic analysis no longer considers a 35% auto driver mode share, but applies a 40% auto driver mode share, a transit analysis is no longer required. A pedestrian and sidewalk assessment can be considered at a later date if required. Instead of a Fruin analysis, it is BA Group's preference to use the Transport for London methodology which considers the desired width of a sidewalk.

Comment 24 : As per the Lakeshore Road Transportation Master Plan and Implementation Strategy, May 2019, transit signal priority with 10 seconds of early and extend adjustments are proposed for the Lakeshore Road BRT. The Vissim models do not include transit signal priority which can underestimate the impact of the BRT on north-south approaches and left turns from Lakeshore Road.

Response: It is noted that Synchro has limited simulation settings dedicated to modelling BRT and transit signal priority. However, the Synchro intersection parameters have been modified at signalized intersections to better reflect the impacts of BRT on traffic operations as follows:

- Addition of fully protected east-west left-turn phases along Lakeshore Road;

- Consideration for north-south pedestrian crossings with pedestrian actuation of the traffic signal, to simulate boarding and alighting on the proposed centre median BRT platforms; and
- Increased minimum pedestrian clearance times to account for a widened pedestrian crossing distance to accommodate the dedicated BRT lanes.

Although the above-noted modifications appropriately account for BRT within the Synchro model, the Lakeshore BRT is proposed to operate with transit signal priority. The VISSIM analysis considered BRT along Lakeshore Road, inclusive of 10 seconds for early/extended transit signal priority. Transit signal priority timings require additional temporal considerations, which warrants the utilization of a stochastic model such as VISSIM. VISSIM allows for additional model parameters to be considered including the following:

- Dedicated BRT lanes within the model;
- Cycle tracks on the north and south sides of Lakeshore Road; and
- Transit signal priority at intersections.

Comment 25: Default lane change driving behaviours were adjusted from -3 m/s^2 maximum deceleration to -6 m/s^2 maximum deceleration, and from -3 m/s^2 maximum deceleration for cooperative braking to - 4 m/s^2. All driving behaviour adjustments should be noted in the report with justifications.

Response: The default lane change behaviours have been adjusted in the updated VISSIM model to represent default values.

Comment 26: All vehicle inputs in the Vissim models apply a vehicle composition with 2% heavy vehicles and 98% automobiles. This does not reflect the assumptions applied to the Synchro analysis and can underestimate the operational impacts on movements with higher heavy vehicle proportions.

Response: As part of the VISSIM model, 2% heavy vehicle volumes has been adopted for the traffic analysis. It is noted that the proposed development within both the Rangeview and Lakeview sites include mixed-use communities with multi-family residential units, with some commercial development. Given these proposed land uses, 2% heavy vehicle volumes is considered to be conservative and representative of heavy vehicle activity expected to be generated by loading and delivery activities at residential and commercial land uses. To align with the VISSIM model, the Synchro model has been revised to include 2% trucks for all scenarios, with the exception of the existing scenario where existing truck percentages were maintained.

Comment 27: High-level assumptions of 25 pedestrians per direction on crosswalks, and 100 bicycles per direction were applied to the Vissim models. Considering the significant development proposed on the Rangeview and Lakeview sites, this may underestimate the demand at intersections along Lakeshore Road and the delays on vehicles from conflicts with pedestrians.

Response: A detailed assessment of pedestrian trips (as per BA Group's multi-modal analysis) to/ from Lakeshore Road to access the future BRT Stations at both Lakefront Promenade and Haig Boulevard was undertaken. The assessment considered that 60% of pedestrians from Rangeview and Lakeview would walk to/from the intersection of Lakeshore/ Lakefront Promenade and 40% of pedestrians would walk to/from the intersection of Lakeshore/ Haig. The traffic analysis was updated to consider the impact of the transit-related pedestrians crossing at the signalized intersections of Lakeshore/ Lakefront Promenade and Lakeshore/ Haig.

Pedestrian volumes on Lakeshore Road East have been adjusted to better reflect future conditions, the following factors have been assessed for the consideration of pedestrian volume reductions:

- **Grouping**: A common behaviour where pedestrians travel in clusters related to the pedestrian phasing at crossings and other social factors.
- **Expanded Pedestrian Network**: Under future conditions, the pedestrian network will be significantly expanded to accommodate connectivity throughout the Site along internal walkways and along sidewalks adjacent to new public roads. This comprehensive pedestrian network will allow for routing within the Site and will reduce pedestrian volumes along Lakeshore Road East.
- **Transit Expansion**: Due to the density of development expected within Rangeview and Lakeview, there are plans for a future bus route internal to the Site ("the internal transit route"), in addition to the proposed BRT on Lakeshore Road. The internal transit route will provide a direct route to Long Branch GO Station, a major trip attractor of pedestrian trips. This internal bus route is expected to further contribute to a reduction in pedestrian volumes along Lakeshore Road.

Pedestrian volumes have been appropriately accounted for in both the Synchro and VISSIM models used for the traffic analysis. In consideration of the above factors, within the Synchro model, pedestrian volumes were reduced and grouped, whereas within the VISSIM model, pedestrian volumes were reduced but were grouped by default in the simulation settings. Figures that illustrate the pedestrian volumes for all traffic analysis scenarios, to and from the BRT, are provided in BA Group's Report in **Figures 38, 51, 66, 67 and 75**.

APPENDIX TRANSIT INFRASTRUCTURE

Comment 11: MiWay existing and future infrastructure existing stops:
Please be advised that there is an existing nearside transit stop #0438 with concrete bus pad and shelter located along Lakeshore Road East at East Avenue. Please reference Standard Drawing #2250.040 (which may be found uploaded in ePlans) to depict the stop infrastructure and dimensions.
Please be advised that there is an existing nearside transit stop #0439 with concrete bus pad located along Lakeshore Road East at Lakefront Promenade. Please reference Standard Drawing #2250.010 (which may be found uploaded in ePlans) to depict the stop infrastructure and dimensions.
Please be advised that there is an existing nearside transit stop #0440 with concrete bus pad, shelter and bus bay located along Lakeshore Road East at Strathy Avenue. Please reference Standard Drawing #2250.040 and #2270.060 (which may be found uploaded in ePlans) to depict the stop infrastructure and dimensions.
Please be advised that there is an existing nearside transit stop #2744 with concrete bus pad located along Lakeshore Road East at Hydro Road. Please reference Standard Drawing #2250.010 (which may be found uploaded in ePlans) to depict the stop infrastructure and dimensions.
The function of these bus stops are to be maintained and shall remain in its current location. All appropriate drawings shall be amended to clearly depict the location of this bus stop/pad and shelter, and a note be added to the plan stating that the existing bus stop is to remain in its current location. .

Response: Noted.

Comment 35: Future MiWay Service: MiWay Routes are planned to service Lakefront Promenade and Hydro Road. Associate transit infrastructure will be required

Response: Noted.

REGION OF PEEL COMMENTS (OPA) - NOVEMBER 22, 2024

PUBLIC WORKS – TRANSPORTATION

Comment 19 – Transportation Comment: The analysis included in the Urban Transportation Considerations report has now incorporated the larger development context in the Lakeshore area including the Lakeview Village unit counts and intersection design at Region Roads (Dixie Road and Cawthra Road). However, the Report should be revised to address phasing of the development. To be consistent with Lakeview Village requirements for infrastructure upgrades based on traffic volumes, the Region would support a phased approach, allowing 3,700 units (currently supported under the status quo in-effect Official Plan policies) to proceed in a first phase, followed by the remaining 1,700 units in a second phase once the Regional Road upgrades are completed to support the proposed 5,300 units total.

- Terms of reference for the revisions must be submitted to the Region for review and comment.
- The Region acknowledges that the site does not front a Regional Road, but; for acceptable function of the proposed development up to and including the first 3700 units the Region may require Intersection improvements at both Regional Road 17 (Cawthra Road) at Lakeshore Road and Regional Road 4 (Dixie Road) at Lakeshore Road.
- Phasing of the development (as a general principle) is supported by the Region's Transportation Development group.

Response: A comprehensive terms of reference for the traffic analysis was reviewed and approved by the City of Mississauga on April 4, 2024. The traffic analysis study area for BA Group's May 2025 Report includes the Regional intersections of both Lakeshore Road East / Cawthra Road and Lakeshore Road East / Dixie Road and considers the need for future upgrades at these intersections.

Comment 20 – Transportation Comment: The Public Works Design, Specifications & Procedures Manuals, and the Region of Peel's Standard Drawings can be found at the following links. Digital copies can be provided upon request.

- Linear Infrastructure – Site Plan Process: Public Works Design, Specifications & Procedures Manual - Linear Infrastructure - Site Plan Process - Revised November 2009 (peelregion.ca)
- Public Works Design, Specifications and Procedures Manual: Design, standards specification and procedures - Region of Peel (peelregion.ca)
- Public Works Design, Specifications and Procedures Manual – Linear Infrastructure: Public Works - Design, Specifications & Procedures Manual - Linear Infrastructure - CAD Submission Requirements - Capital Works - June 2015 (peelregion.ca)
- Public Works CAD Submission Requirements – Development: Microsoft Word - Development Submission Requirements Manual - Nov2017.docx (brampton.ca)
- Standard Drawings - Roads & Traffic: Roads and traffic - standards drawings - Region of Peel (peelregion.ca)

Response: Noted.

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EXECUTIVE SUMMARY

Introduction & Background

BA Group was retained by the Rangeview Landowners Group to provide transportation consulting services related to a proposed mixed-use development on a site known as Rangeview Estates (herein referred to as "the Site" and "Rangeview"), in the City of Mississauga. The Site is generally bounded by East Avenue to the west, Lakeshore Road East to the north, Hydro Road to the east and the land parcels located beyond the south side of Rangeview Road. Rangeview Landowners Group Incorporated (LOG) currently represents 9 landholders within Rangeview Estates. The LOG currently owns 21/33 (64%) privately held properties within Rangeview.

BA Group completed an updated Urban Transportation Considerations Report dated May 31, 2024, entitled Rangeview Estates, Urban Transportation Considerations, City of Mississauga, Official Plan Amendment (OPA). The May 31, 2024 BA Group Report provided an update to the development proposal in consideration of a Ministerial Zoning Order (MZO) permitting the development of 16,000 residential units on the adjacent Lakeview Village ("Lakeview") property. Since that time, comments have been received from City Traffic staff dated July 10, 2024 and through a peer review by HDR, dated July 10, 2024. Comments were also received from the Region of Peel dated November 22, 2024. This May 2025 updated Transportation Considerations Report provides an updated traffic analysis and addresses all comments provided by the City, peer reviewer and Region.

Proposed Development

The proposed development concept for Rangeview includes consideration for up to 5,300 residential units, as well as a total of 4,000 to 8,000 m^2 GFA of retail and office uses. The detailed traffic analysis for this updated study also considers the travel demands of the adjacent lands to the south and east, inclusive of Lakeview (16,000 residential units, along with 1.7 million ft^2 GFA of non-residential uses) and Serson (449,000 ft^2 GFA of non-residential uses) which has been assessed as a background development.

Area Street Network

The Site is directly adjacent to Lakeshore Road East (arterial road) with convenient road connections across the City, Peel Region and the Greater Toronto Area (GTA). The public street network surrounding Rangeview includes a hierarchy of road connections that range from arterial roads to local roads and is located approximately 2.0 kilometres south of the Queen Elizabeth Way (QEW). The approval of the Lakeview development has resulted in planned changes to the local street network that align with the future road network within OPA 125. As part of Rangeview, additional components of the OPA 125 road network are being proposed. The proposed Rangeview road network considers active transportation, ease of access & connectivity for all travel modes, "Complete Streets" and conformity with the planned Lakeview road network. The Rangeview proposal includes functional plans and cross-sections for the planned road network, inclusive of East Avenue, Lakefront Promenade, Street F (extension of Ogden Avenue from Lakeshore Road East to the property line, just south of Rangeview Road), Hydro Road, Street L, Rangeview Road and Street G.

Area Transit Network

The Site's northern boundary is adjacent to the two MiWay surface transit routes, which provide direct connections to area destinations including Dixie Outlet Mall, Port Credit and Long Branch GO stations. With a transfer at the Long Branch GO Station, the Site is connected to GO Transit (Lakeshore West Line) and TTC

bus / streetcar service in the east. The plans for a dedicated Bus Rapid Transit (BRT) service along Lakeshore Road East (adjacent to Rangeview), from East Avenue to Etobicoke Creek, are well underway with construction expected to commence in 2027.

Area Cycling Network

The existing cycling network within 500 metres of the Site area consists of multi-use trails, park trails, and signed bike routes along all sides of the Site perimeter. These cycling connections provide convenient travel opportunities for residents, employees and visitors of the surrounding area, specifically to travel using non-automobile means. The Lakeshore Connecting Communities Transportation Master Plan (TMP), proposes to incorporate uni-directional cycle tracks, separated from vehicle lanes, in each boulevard along the Lakeshore Road East corridor. Within OPA 125, as part of the planned street network, a series of “Primary Off-Road Routes” and “Primary On-Road / Boulevard Routes” are included primarily within Lakeview.

The proposed Rangeview street network will provide connectivity to the Lakeview cycling facilities, as well as to Lakeshore Road East, for travel beyond the Site. The proposed Rangeview cycling network includes two-way in-boulevard cycle tracks, where cyclists are separated from vehicles by a curb and buffer, on one side of the road along East Avenue, Lakefront Promenade, Ogden Avenue, Hydro Road and Rangeview Road. Cyclists would be expected to share the road on lower volume streets such as Street L and Street G, where there are no planned designated cycling facilities.

Area Pedestrian Network

The Site is within 500 metres of numerous parks, various restaurants and services, along the Lakeshore Road East corridor that can be reached by walking as Lakeshore Road East includes sidewalks on both sides of the road. The Rangeview proposal includes a planned street network with a high quality urban pedestrian environment with wide sidewalks on most of the proposed streets and pedestrian mews areas to generate pedestrian activity. The proposal for a new traffic signal on Lakeshore Road East at Hydro Road will provide additional protected crossing opportunities for pedestrians. The pedestrian network proposed for Rangeview will connect to the Lakeview pedestrian network, with connectivity to Lake Ontario and beyond.

Transportation Demand Management (TDM)

The TDM strategies incorporated into the development proposal will encourage people to take fewer and shorter vehicle trips in order to support transit and active transportation, as well as enhance public health and reduce harmful environmental impacts. TDM measures have been incorporated into the design and future operations of the proposed Site to include strategies such as the development of a community with a range of land uses with connectivity provided for active modes of travel, convenient connections to transit, cycling facilities & bike repair stations, on-site car/ bike/ scooter sharing facilities and a reduced parking supply for residents and visitors.

Potential for a New GO Station

As a result of the advancement of GO Transit in the Greater Toronto & Hamilton Area, there is potential to improve GO Transit in the vicinity of the Site with the addition of a new GO Station. Based on the proximity to local multi-modal connections and distance to nearby existing GO Stations on the Lakeshore West Line (approximately 2.5 km from Port Credit GO Station and approximately 2.5 km from Long Branch GO Station), a potential location for a new station would be east of Cawthra Road and north of Lakeshore Road East. A Cawthra GO Station would greatly enhance the multi-modal transportation options available to future residents and visitors to both Rangeview and Lakeview.

Travel Demand & Traffic Analysis

Since the May 31, 2024 BA Group Report, the traffic analysis has been updated to reduce the number of scenarios considered. The development statistics for both Rangeview and Lakeview and the total non-residential GFA for both Rangeview and Lakeview remain consistent with the May 31, 2024 BA Group Report. In addition to consideration for existing conditions, the updated BA Group May 2025 Report includes 5 traffic analysis scenarios (Scenarios 1, 2, 3A, 3B and 4). The updated Scenario 4 corresponds with Scenario 7A in the May 31, 2025 Report (5,300 Rangeview units and 16,000 Lakeview units). The traffic analysis scenarios are as follows:

- **Scenario 1 (2031)**: 10,000 units total between Rangeview & Lakeview (no connection of Ogden Avenue or Haig Boulevard to Lakeshore Road East);
- **Scenario 2 (2041)**: Rangeview with 3,700 units + Lakeview with 8,050 residential units (Ogden Avenue connected to Lakeshore Road East but not Haig Boulevard).
- **Scenario 3A (2041)**: 5,300 Rangeview units + 8,050 Lakeview units (Ogden Avenue and Haig Boulevard connected to Lakeshore Road East);
- **Scenario 3B (2041)**: 5,300 Rangeview units + 8,050 Lakeview units (Ogden Avenue connected to Lakeshore Road East and dual NBL on Lakeshore Road at Lakefront Promenade but no connection of Haig Boulevard); and
- **Scenario 4 (2041)**: 5,300 Rangeview units + 16,000 Lakeview units (Ogden Avenue and Haig Boulevard connected to Lakeshore Road East and dual NBL on Lakeshore Road at Lakefront Promenade).

The traffic analysis for all scenarios has been based on the updated April 2024 traffic counts. The Site traffic volume layers include considerations for both the Rangeview and Lakeview sites. To determine the background traffic volumes for this study, the Serson site was considered, along with corridor growth along Lakeshore Road East. The travel demand for both Rangeview and Lakeview have been updated in consideration of an evolving auto driver mode share that decreases from 50% to 40% by Scenario 4.

As per the Lakeview Community Partner Limited Subdivision Agreement, significant road improvements are required in the study area as part of the development of Lakeview that have been categorized as Phase 1 (Lakeview up to 8,050 residential units) and Phase 2 (Lakeview with more than 8,050 residential units). As part of the traffic analysis, BA Group has recommended additional minor road improvements to accommodate the development of the Rangeview Site. A summary of the updated traffic analysis results undertaken for Scenarios 1, 2, 3A, 3B and 4 is as follows:

Scenario 1: Rangeview + Lakeview with 10,000 Units

With a total of 10,000 residential units between Rangeview and Lakeview, an allocation of units between Rangeview and Lakeview has been assumed for the purposes of the traffic analysis only. The allocation of units constructed by Rangeview or Lakeview in each scenario is expected to evolve as the developments in the area progress through the planning approval process.

In consideration of Rangeview and Lakeview with 10,000 residential units + 0% Rangeview non-residential + 82% of Lakeview non-residential, the combined sites are expected to generate a total of 2,539 and 2,966 two-way vehicle trips, during the morning and afternoon peak period, respectively, with an assumed **auto driver mode share of 50%.** Scenario 1 assessed traffic operations conditions, in consideration of all Phase 1 road improvements, inclusive of BRT but without the connection of either Ogden Avenue or Haig Boulevard to

Lakeshore Road East. As the traffic analysis confirmed that all intersection movements within the study area are expected to operate at v/c equal to or less than 1.0, the travel demand of Scenario 1 can be acceptably accommodated within the planned transportation network.

Scenario 2: Rangeview with 3,700 Units and Lakeview with 8,050 Units

In consideration of Rangeview with 3,700 residential units + 100% development of the non-residential and Lakeview with 8,050 residential units + 100% of non-residential, the combined sites are expected to generate a total of 3,186 and 3,719 two-way vehicle trips, during the morning and afternoon peak period, respectively, with an assumed **auto driver mode share of 50%.** Scenario 2 assessed traffic operations conditions, in consideration of all Phase 1 road improvements, inclusive of BRT and the connection of Ogden Avenue to Lakeshore Road East but no connection of Haig Boulevard. As the traffic analysis confirmed that all intersection movements within the study area are expected to operate at v/c equal to or less than 1.0, the travel demand of Scenario 2 can be acceptably accommodated within the planned transportation network.

Scenario 3A: Rangeview with 5,300 Unit and Lakeview with 8,050 Units

In consideration of Rangeview with 5,300 residential units + 100% development of the non-residential and Lakeview with 8,050 residential units + 100% of non-residential, the combined sites are expected to generate a total of 3,483 and 4,007 two-way vehicle trips, during the morning and afternoon peak period, respectively, with an assumed **auto driver mode share of 50%.** Scenario 3A assessed traffic operations conditions, in consideration of all Phase 1 road improvements, inclusive of BRT and the connection of both Ogden Avenue & Haig Boulevard, to Lakeshore Road East. As the traffic analysis confirmed that all intersection movements within the study area are expected to operate at v/c equal to or less than 1.0, the travel demand of Scenario 3A can be acceptably accommodated within the planned transportation network.

Scenario 3B: Rangeview with 5,300 Unit and Lakeview with 8,050 Units

In consideration of Rangeview with 5,300 residential units + 100% development of the non-residential and Lakeview with 8,050 residential units + 100% of non-residential, the combined sites are expected to generate a total of 3,483 and 4,007 two-way vehicle trips, during the morning and afternoon peak period, respectively, with an assumed **auto driver mode share of 50%.** Scenario 3B assessed traffic operations conditions, in consideration of all Phase 1 road improvements, inclusive of BRT and the connection of Ogden Avenue at Lakeshore Road East but no connection of Haig Boulevard, with a dual northbound left-turn at Lakeshore Road East/ Lakefront Promenade. As the traffic analysis confirmed that all intersection movements within the study area are expected to operate at v/c equal to or less than 1.0, the travel demand of Scenario 3B can be acceptably accommodated within the planned transportation network.

Scenario 4: Rangeview with 5,300 Unit and Lakeview with 16,000 Units

In consideration of Rangeview with 5,300 residential units + 100% development of the non-residential and Lakeview with 16,000 residential units + 100% of non-residential, the combined sites are expected to generate a total of 3,770 and 4,459 two-way vehicle trips, during the morning and afternoon peak period, respectively, with an assumed **auto driver mode share of 40%.** Scenario 4 assessed traffic operations conditions, in consideration of all Phase 1 & 2 road improvements, inclusive of BRT, the connection of Ogden Avenue and Haig Boulevard at Lakeshore Road East, with a dual northbound left-turn at Lakeshore Road East/ Lakefront Promenade. As the traffic analysis confirmed that all intersection movements within the study area are expected to operate at v/c equal to or less than 1.0, the travel demand of Scenario 4 can be acceptably accommodated within the planned transportation network.

VISSIM Analysis

A VISSIM microsimulation analysis was undertaken at 7 intersections along Lakeshore Road East for existing conditions (auto driver mode share of 50%) and Scenario 4 (auto driver mode share of 40%), in order to confirm the results of the traffic analysis that considers Rangeview with 5,300 units and Lakeview with 16,000 units. Overall, the VISSIM analysis results generally confirm and align with the traffic analysis results undertaken with Synchro. All intersections perform under acceptable conditions, consistent with the Synchro analysis. The VISSIM analysis confirmed that Scenario 4 (full build-out with a total of 21,300 residential units) can be acceptably accommodated within the planned transportation network. The conclusions of the VISSIM analysis also confirm that monitoring and updated traffic studies are recommended, as the development of the Rangeview and Lakeview sites evolve.

A demonstration of the morning and afternoon peak hours traffic simulation for Scenario 4, can be viewed at the following links:

AM Peak: https://bit.ly/3SiKdgn

PM Peak: https://bit.ly/43Q3k71

Conclusions

The traffic analysis confirms that the future transportation network can acceptably accommodate the travel demands of the 21,300 residential units (Rangeview with 5,300 units Lakeview with 16,000 units) and 100% build-out of the non-residential GFA. The ability of the transportation network to accommodate both Rangeview and Lakeview is based upon the assumption that the auto driver mode share decreases to 40%, based on the evolving transportation context of the area.

Throughout the development of the community, it is recommended that continued efforts be made to secure a transit station on the Lakeshore West GO line north of the development. The provision of a new GO station along with BRT, a reduced parking supply at both the Rangeview and Lakeview sites, as well as the planned reduction in parking supply at the Long Branch GO Station, are expected to facilitate the reduction in the auto driver mode share to 40%.

It is recommended that traffic studies be completed as part of individual Zoning By-law Amendment applications or, in the case of multi-phase developments, at the site plan stage for each phase. In addition, a broader study should be completed as the development thresholds for the traffic analysis scenarios modelled in this report are approached.

1.0 INTRODUCTION

BA Group was retained by the Rangeview Landowners Group to provide transportation consulting services related to a proposed mixed-use development on a site known as Rangeview Estates (herein referred to as "the Site" and "Rangeview"), in the City of Mississauga. The Site is generally bounded by East Avenue to the west, Lakeshore Road East to the north, Hydro Road to the east and the land parcels located beyond the south side of Rangeview Road.

All land parcels on the south side of Rangeview Road that have frontage on Rangeview Road are included as part of the Site. Rangeview Landowners Group Incorporated (LOG) currently represents 9 landholders within Rangeview Estates. The LOG currently owns 21/33 (64%) privately held properties within Rangeview. The LOG ownership map is provided in **Appendix A**.

This Transportation Considerations Report has been prepared as part of the updated **Official Plan Amendment (OPA),** application being submitted to the City of Mississauga. The location of the Site is illustrated in **Figure 1.**

1.1 BACKGROUND

BA Group completed an updated Urban Transportation Considerations Report dated May 31, 2024, entitled *Rangeview Estates, Urban Transportation Considerations, City of Mississauga, Official Plan Amendment (OPA).* The May 31, 2024 BA Group Report provided an update to the development proposal in consideration of a Ministerial Zoning Order (MZO) permitting the development of 16,000 residential units on the adjacent Lakeview property.

Since that time, comments have been received from City Traffic staff dated July 10, 2024 and through a peer review by HDR, dated July 10, 2024. Comments were also received from the Region of Peel dated November 22, 2024. This May 2025 updated Transportation Considerations Report provides an updated traffic analysis and addresses all comments provided by the City, peer reviewer and Region.

The development proposal statistics for the Rangeview Site and proposed road network remain largely unchanged since the previous submission. Key additions to this updated report include the following:

- Traffic operations analysis undertaken with updated (April 2024) traffic counts;
- A consolidation of the traffic analysis scenarios (Existing + Scenarios 1, 2, 3A, 3B and 4);
- Traffic operations analysis for the initial development of 10,000 units (Rangeview + Lakeview) in Scenario 1, to the proposed full build-out scenario of 5,300 residential units on Rangeview and 16,000 residential units on Lakeview (Scenario 4);
- A revised evolving auto driver mode share from 50% to 40% in Scenario 4, that reflects the future evolving area transportation context;
- Additional details regarding the traffic analysis assumptions and methodology and inclusion of background traffic volume layers;
- A VISSIM analysis for the Existing + 2041 future total conditions (Scenario 4) at full-build out of Rangeview with 5,300 residential units and Lakeview with 16,000 residential units and all road improvements and connections to Lakeshore Road East in place;
- A video traffic simulation in VISSIM at full build-out of both the Rangeview and Lakeview sites for Scenario 4 during the AM and PM periods.

A demonstration of the morning and afternoon peak hours traffic simulation for Scenario 4, can be viewed at the following links:

AM Peak: https://bit.ly/3SiKdgn

PM Peak: https://bit.ly/43Q3k71

1.2 EXISTING SITE CONTEXT

The Site is currently occupied by a mix of commercial, industrial, retail and services with vehicle access provided through Lakeshore Road East, Rangeview Road, East Avenue, Lakefront Promenade and Hydro Road. The existing context of the Site is illustrated in **Figure 2**.

1.3 PROPOSED DEVELOPMENT CONCEPT

The proposed development concept includes the following key elements:

- Redevelopment of the Site as a mixed-use area that includes residential and commercial uses.
- The implementation of a road network that facilitates multi-modal connectivity and advances place-making initiatives.
- Redevelopment that is consistent, congruent and supportive of the ongoing Lakeview development that is to occur directly south of the Site, given that many of the proposed road network connections are mutually beneficial to both redevelopment proposals.
- As per Official Plan Amendment 89 (OPA 89) to the City of Mississauga Official Plan, the Site is permitted to develop 3,700 residential dwelling units. As part of this application, it is proposed to increase the development allowance for Rangeview to 5,300 residential dwelling units.
- Consideration for a recommendation that Metrolinx evaluate the potential to introduce a Cawthra Road GO Station along the Lakeshore West GO Train Line, to further facilitate higher order transit access for the Site, as well as the Lakeview development.

The development concept plan proposed for Rangeview is illustrated in **Figure 3**. Since the development proposals for the combined lands south of Lakeshore Road East, inclusive of Rangeview, Lakeview and Serson, were considered as part of the detailed traffic analysis for this study, **Table 1** includes a development summary for the combined lands. It is important to note however that this application only relates to the approvals related to Rangeview at this time. Reduced scale architectural plans of the Rangeview development proposal are included in **Appendix B**.

TABLE 1 PROPOSED DEVELOPMENT CONCEPT (COMBINED LANDS)

Land Use	Proposed Statistics
Rangeview	
Residential	3,700 to 5,300 residential units
Retail & Office (*the development proposal is able to include approx.* ***4,000 to 8,000 m²*** *of non-residential GFA*)	95,000 ft² (8,825 m²) considered in traffic analysis to be conservative
Adjacent Lands	
Lakeview	
Residential	16,000 residential units
Retail, Office, Research & Development, Hotel, Community Centre (GFA)	1.7 million ft²
Serson	
General Office/ Research & Development Centre (GFA)	449,000 ft²

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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

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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 SITE CONTEXT

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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 RANGEVIEW MASTER PLAN DEVELOPMENT CONCEPT

1.4 STUDY SCOPE

The study was completed in accordance with the City of Mississauga's Traffic Impact Study Guidelines. The Appendix *B Pre-Consultation Terms of Reference Checklist* was signed by the City with comments on April 4, 2024. This Checklist is provided in **Appendix C**. The scope of work has been further updated to align with the City, peer reviewer and Region comments, received since submission of the May 31, 2024 BA Group Report.

A summary of BA Group's review of the urban transportation elements of the development proposal includes the following:

- Review of the relevant transportation planning and policy context;
- Review of the area transportation context;
- Transportation Demand Management (TDM) strategy, inclusive of a vehicle parking strategy;
- Preliminary assessment of the viability of a Cawthra Road GO Station;
- Proposed road network & right-of-ways (ROW);
- Research and recommendations regarding a reduced auto driver mode share (40%) that is more reflective of the future evolving transportation context;
- Confirmation of the multi-modal travel demand expected to be generated by the combined sites (Rangeview + Lakeview); and
- Comprehensive traffic analysis of the existing conditions in addition to 5 traffic analysis scenarios (Scenarios 1, 2, 3A & 3B and 4) in order to consider Lakeview with up to 16,000 units, along with a reduced auto driver mode share that evolves from 50 to 40%.
- All traffic operations scenarios have been reassessed using updated turning movement counts collected in April 2024.
- The VISSIM analysis has been calibrated and updated to include existing conditions as well as Scenario 4, with an auto driver mode share of 40%.

2.0 TRANSPORTATION PLANNING & POLICY CONTEXT

Public policy with respect to mobility and development planning has changed over recent years with sustainable growth at the forefront of many policy initiatives. Provincial and municipal-wide directives set a planning framework that increasingly aims to mitigate and reduce vehicle traffic through the promotion and facilitation of non-auto trips and the improvement of public transit access and active modes of travel. Greater priority is now being placed on the movement and experience of people, as opposed to vehicle traffic and auto use.

Common themes across provincial and municipal policies and guidelines include:

Planning transit from a network perspective

Public transit is being transformed to achieve an interconnected network of high-order public transit service. Planning and funding efforts are being undertaken by all levels of government to achieve this vision.

Designing streets and public realm for people

While the efficient movement of automobiles has previously been the focus in transportation planning, this is no longer a primary focus. The enjoyment, safety and efficiency of pedestrians has become the primary focus of mobility planning at the regional and municipal levels.

Connecting and expanding cycling infrastructure

The City of Mississauga (and Peel Region) is focusing efforts on expanding its active transportation network. Plans are comprised of a primary network of multi-use trails and a secondary network of shorter local neighbourhood connections that create a continuous network of recreational facilities throughout the City.

Increasing multi-modal mobility options

In addition to public transit and active transportation, shared mobility options such as car-sharing, bike-sharing and ride-sharing, are becoming increasingly common in other parts of the GTA and help reduce the need for individuals to own a private vehicle. These services allow individuals to conveniently and affordably have access to a private vehicle when needed.

Reducing automobile reliance

Regional and municipal policies (Official Plans, Transportation Master Plans, etc.) are placing emphasis on mixed-use developments centered around transit in order to promote non-auto based travel. Transportation Demand Management strategies within new developments also facilitate the efficiency of existing and planned transportation infrastructure.

2.1 PROVINCIAL PLANNING

2.1.1 Provincial Planning Statement (PPS)

The Provincial Planning Statement (PPS), released in 2024, provides a set of adapted and 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 PPS became effective on October 20, 2024.

The PPS aims to further leverage several policies to provide a streamlined land use planning policy framework. In particular, the PPS builds upon housing-supportive polices from both former documents to provide municipalities with additional tools and flexibility to build more homes. The proposed changes to policies are related to the following 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.

Chapter 2 (Building Homes, Sustaining Strong and Competitive Communities) and Chapter 3 (Infrastructure and Facilities) of the PPS contain transportation-related policies most relevant to this application. Chapter 2 contains policies related to providing mixed housing options, accommodating multimodal access in communities, requiring transit-supportive development and prioritizing intensification in proximity to transit, planning for intensification on lands adjacent to existing and planned frequent transit corridors, and reducing greenhouse gas emissions and improving air quality through transit-supportive communities and promoting active transportation.

Chapter 3 contains several 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.

2.1.2 Metrolinx Regional Transportation Master Plan

The **Metrolinx 2041 Regional Transportation Master Plan** supports intensification in accordance with sustainable transportation objectives. Additional rapid transit options, greater pedestrian connections, and mixed-use density should be considered for the City of Toronto and the surrounding region, including the City of Mississauga.

The **Connecting the GGH: A Transportation Plan for the Greater Golden Horseshoe** (February 2022) provides a 30-year vision (i.e. to 2051) to building a more sustainable and resilient transportation system in

the Greater Golden Horseshoe (GGH) to enable transit-oriented communities. Planned rapid transit infrastructure expansion is included and outlined in greater detail in **Section 3.3.2**.

2.1.3 Bill 185: Cutting Red Tape to Build More Homes Act

On April 10, 2024, the Province of Ontario government introduced the **Cutting Red Tape to Build More Homes Act (Bill 185)**. Bill 185 introduced several changes to Province of Ontario Acts, including the Planning Act. One key change included prohibiting or limiting the ability for municipal Official Plans and Zoning By-laws to require an owner to provide parking facilities (except for bicycle parking) in Protected Major Transit Station Areas ("PMTSAs") and areas around transit stations (i.e., Major Transit Station Areas). Therefore, any minimum vehicle parking requirements within Zoning By-laws are no longer in effect nor are applicable to lands located within identified Major Transit Station Areas MTSAs or PMTSAs.

Bill 185 received Royal Assent on June 6, 2024, and is now in effect. As a result of this passing, Section 16 (22) of the Planning Act reads as follows:

> *(22) No official plan may contain any policy that has the effect of requiring an owner or occupant of a building or structure to provide and maintain parking facilities, other than parking facilities for bicycles, on land that is not part of a highway and that is located within,*
>
> *(a) a protected major transit station area identified in accordance with subsection (15) or (16);*
>
> *(b) an area delineated in the official plan of the municipality surrounding and including an existing or planned higher order transit station or stop, within which area the official plan policies identify the minimum number of residents and jobs, collectively, per hectare that are planned to be accommodated, but only if those policies are required to be included in the official plan to conform with a provincial plan or be consistent with a policy statement issued under subsection 3 (1); or*
> *(c) any other area prescribed for the purposes of this clause.*

As delineated in Peel Region's Official Plan, Schedule E – 5, Major Transit Station Areas, the Site area is located within the LBRT – 2, Haig and LBRT-2 Lakefront Promenade MTSAs.

2.2 REGIONAL PLANNING

2.2.1 Region of Peel Official Plan

The **Region of Peel Official Plan (OP)** promotes sustainable forms of transportation through Regional Intensification Corridors, which in turn support sustainable development through efficient use of land, densities supportive of transit and pedestrian mobility, and complete urban communities containing living, working and recreational opportunities. Regional Intensification Corridors are characterized by Urban Growth Centres linked by public transit, high intensity, compact urban form with an appropriate mix of uses, transit-supportive and pedestrian-oriented urban forms, and opportunities for higher order transit.

2.2.2 Peel Region Sustainable Transportation Strategy (STS)

The **Peel Region Sustainable Transportation Strategy (STS)**, approved by Peel Region Council in February 2018, is a framework outlining policies, programs and infrastructure in order to enable and grow the sustainable transportation modes in Peel Region. Most notably, the STS sets a goal for 50% of the morning peak period trips in the Region to be made by sustainable transportation modes by 2041, up from the current 37% sustainable mode share. The STS identifies sustainable transportation modes as trips made by walking, cycling, transit, and carpool as well as trips avoided through teleworking.

Over fifty actions items are identified in the STS, consisting of both short-term and long-term recommendations. The short-term priorities of the STS are supported by two accompanying five-year implementation plans, the 2018-2022 Active Transportation Implementation Plan (ATIP) and the 2018-2022 Transportation Demand Management Implementation Plans (TDMIP). Examples of short-term priorities include encouraging and supporting cycling and walking from transit hub and other community destinations as well as identifying the locations of new and upgraded walking and cycling infrastructure.

2.3 CITY OF MISSISSAUGA & LOCAL PLANNING

2.3.1.1 City of Mississauga Official Plan (OP), office consolidation July 27, 2023:

The City of Mississauga Official Plan (OP) sets the planning policy framework to guide the future growth and development of the City. It recognizes that new growth will take place primarily through infilling and redevelopment of appropriate areas that can benefit from growth and change. A key priority identified within the OP is to support a strong public transportation system in the City and address the City's long-term sustainability. General support is also indicated for providing more opportunity for transit and active transportation choices to create a more sustainable, multi-modal city.

Major Nodes are intended to be prominent centres of mixed-use activity with a variety of employment opportunities, higher-density housing, and active transportation choices that achieve a high-quality urban environment. The Site is located within the Rangeview Estates precinct of the Lakeview Waterfront Major Node Character Area identified in the City of Mississauga OP. This designation came about through Official Plan Amendment (OPA) 89 and 125 which are discussed in further detail below.

2.3.1.2 City of Mississauga Official Plan: Official Plan Amendment (OPA) 89

Official Plan Amendment (OPA) 89 to the Mississauga Official Plan was enacted and passed on July 4, 2018, through By-law 0169-2018. The purpose of OPA 89 was to add a new Major Node Character Area to the OP, the Lakeview Waterfront Major Node, and update land use designations to include residential development. As a result of OPA 89, the Site is located within the Lakeview Waterfront Major Node and further, the Rangeview lands were permitted to include 3,700 residential dwelling units.

The Lakeview Waterfront Major Node Character Area, specifically, will be designed to encourage multi-modal transportation with an emphasis on transit and active transportation to reduce traffic delays, congestion, energy consumption and pollution. The community will have a highly-connected network of streets and routes for active transportation to support walking and cycling. The community will include a mobility system that encourages all transportation modes and innovative parking solutions.

Furthermore, within the Lakeview Waterfront Major Node Character Area, the lands adjacent to Lakeshore Road East, including the Site, will become part of a higher-order transit corridor and transit-oriented community, once the enhanced transit route planned along the Lakeshore Road East is complete.

2.3.1.3 City of Mississauga Official Plan: Official Plan Amendment (OPA) 125

Official Plan Amendment (OPA) 125 to the Mississauga Official Plan was enacted and passed on November 10, 2021, through By-law 0231-2021. The purpose of OPA 125 was to revise policies pertaining to the Lakeview Waterfront Major Node Character Area reflecting planning associated with the lands to the south and east of the Site, as outlined in **Section 2.3.2**. Key within OPA 125, was a revised block structure (see **Exhibit 1** below) and a revised planned road network (see **Exhibit 2** below), notably including a southward extension of Ogden Avenue (Street F) into the Rangeview Lands and further south).

2.3.1.4 Lakeshore Connecting Communities Transportation Master Plan (TMP)

The Lakeshore Connecting Communities Transportation Master Plan (TMP), endorsed by City Council in June 2019, sets out a long-term vision for transit and corridor improvements along Lakeshore Road East from 2020 to 2041 that will support waterfront development. The TMP envisions the Lakeshore Road East corridor as an area that supports all modes of transportation, connects people to places, and moves goods to market.

Of the transit network alternatives considered in the TMP, the preferred transit solution for the 2041 horizon year is express bus / bus rapid transit (BRT) along the extent of Lakeshore Road East in Mississauga; more detail is provided within **Section 3.3.2**. In addition to provisions for rapid transit, continuous separated/protected bike lanes and sidewalks on both sides of the street are planned through the extent of the route. In January 2021, it was announced that the City of Mississauga would receive federal and provincial funding for transit infrastructure through the Investing in Canada Infrastructure Program (ICIP) to fund projects including the Lakeshore BRT. At this time, construction of the Lakeshore BRT is targeted for 2027.

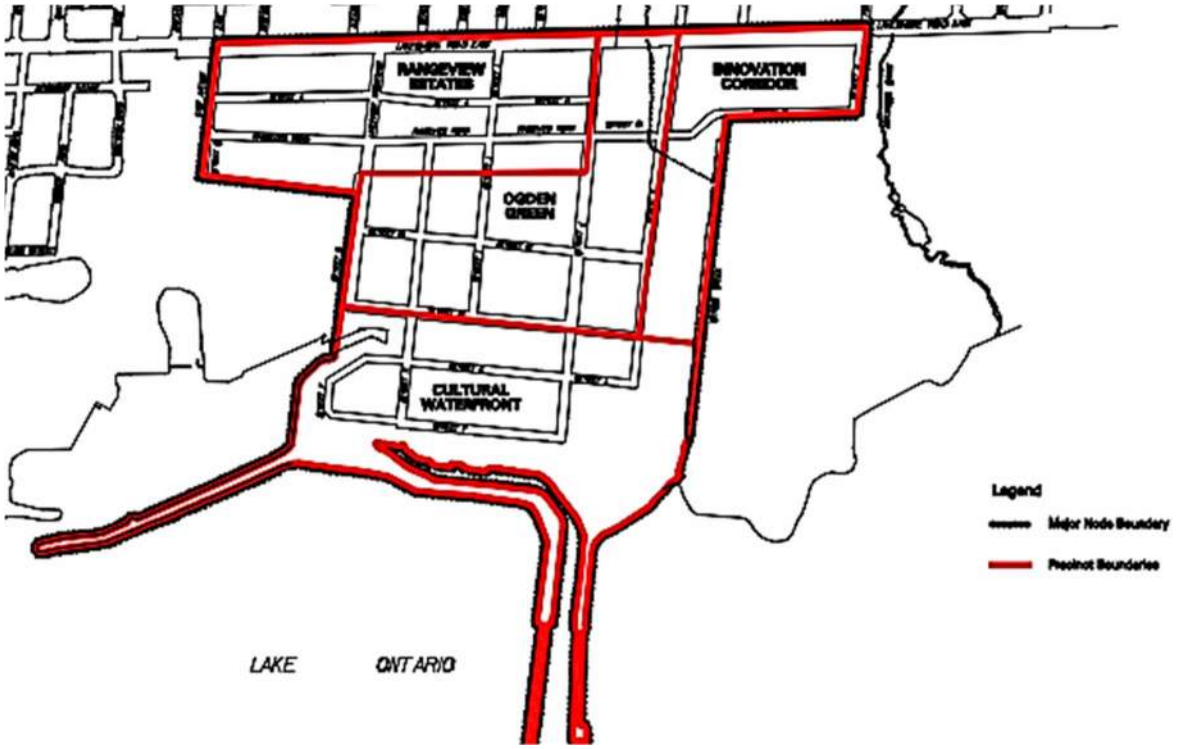


EXHIBIT 1: LAKEVIEW WATERFRONT MAJOR NODE CHARACTER AREA PRECINCTS (CITY OF MISSISSAUGA OFFICIAL PLAN: MAP 13-3-2)

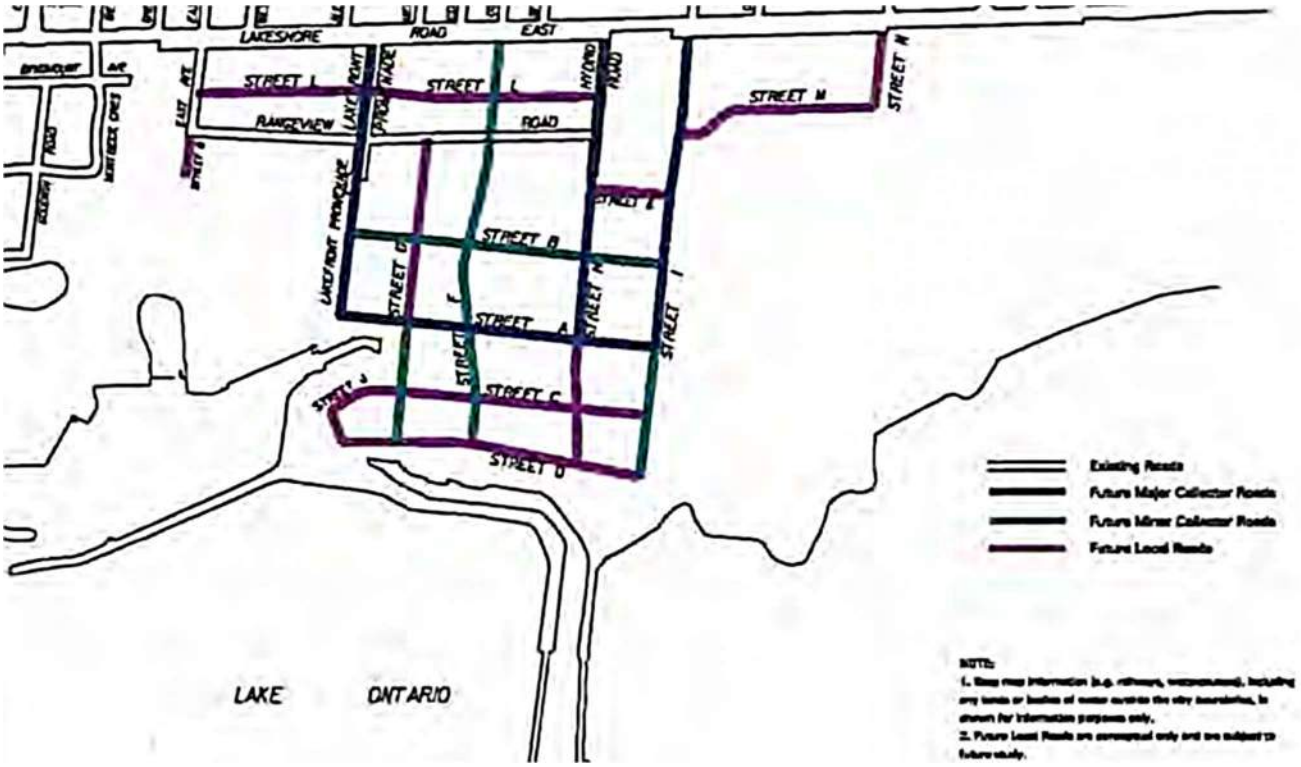


EXHIBIT 2: LAKEVIEW WATERFRONT MAJOR NODE CHARACTER AREA FUTURE ROADS (CITY OF MISSISSAUGA OFFICIAL PLAN: SECTION 13.3, FIGURE 4)

2.3.2 Lakeview Village ("Lakeview")

Lakeview Community Partners Limited together with the City, the Region, relevant external agencies, and the community undertook a multi-year process of creating the Lakeview Waterfront Development Master Plan, applicable to the lands (Lakeview) immediately south and east of Rangeview, which culminated with Council's endorsement of the Plan on November 6, 2019. Plan of subdivision (illustrated in **Exhibit 3**), rezoning and Official Plan Amendment (OPA) applications were all submitted and have since been approved; By-law 0119-2022 was passed, amending City of Mississauga Zoning By-law 0225-2007, but remains under appeal at the time of writing of this report. As described above, OPA 89 and OPA 125 include Lakeview. It is important to note that in May 2023, **a Ministerial Zoning Order (MZO) was approved that permits the development of 16,000 residential units on Lakeview.**

Lakeview is being planned as a mixed-use development. The following development statistics have been approved to date:

- 8,050 to 16,000 dwelling units (inclusive of low-rise, mid-rise, and high-rise multifamily housing)
- 191 hotel rooms
- 435,856 ft^2 recreational community centre GFA
- 745,316 ft^2 office GFA
- 745,316 ft^2 research & development centre GFA
- 202,718 ft^2 retail GFA (38,793 ft^2 retail GFA is considered to be ancillary)

From a transportation perspective, the development of Lakeview is inter-related with the proposed redevelopment of the Rangeview Site. As illustrated in the Plan of Subdivision (**Exhibit 3**), much of the street network is shared between the two sites, notably including existing and planned Major and Minor Collector Roads (i.e. Lakefront Promenade, the planned Ogden Avenue extension and Hydro Road).

The planned street network for both Rangeview and Lakeview will provide north-south connections to Lakeshore Road East, as well as key east-west connections across both sites. In addition to the shared road network, the existing residential development unit count permissions for Rangeview and Lakeview were jointly outlined in OPA 89 and updated in OPA 125, as follows:

- Rangeview (referred to as Rangeview Estates): 3,700 units.
- Lakeview Village (referred to as Ogden Green, Cultural Waterfront):

The Lakeview Waterfront Major Node Character Area, inclusive of Rangeview and Lakeview, is currently permitted to include a total of 11,750 residential units. With the Lakeview MZO,16,000 residential units have been approved for Lakeview, and 5,300 residential units are requested for Rangeview totalling 21,300 residential units.

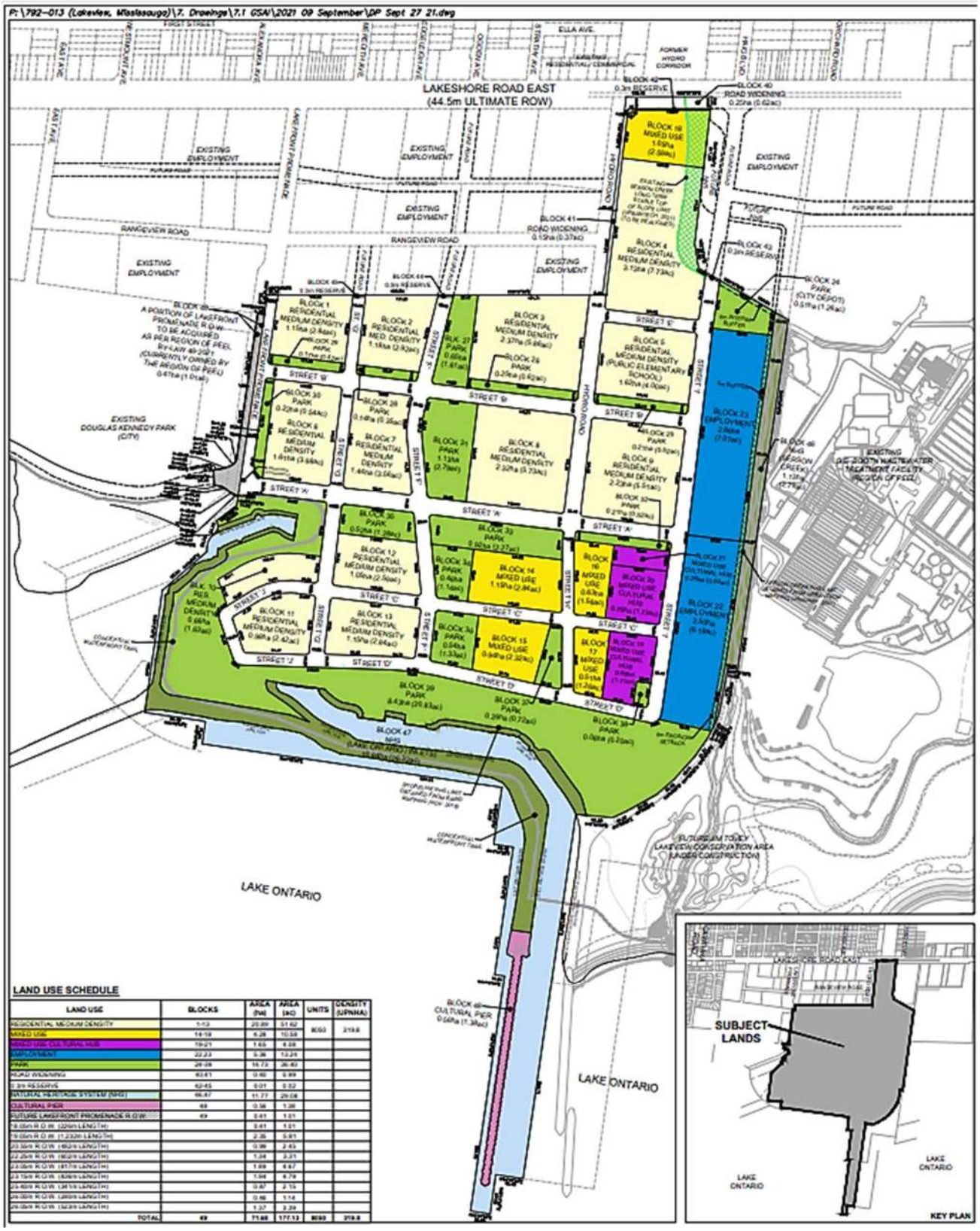


EXHIBIT 3: LAKESHORE LANDS DRAFT PLAN OF SUBDIVISION (LAKEVIEW COMMUNITY PARTNERS LIMITED / GLEN SCHNARR & ASSOCIATES INC. – SEPTEMBER 27, 2021)

By-law 0119-2022

Within Site-specific By-law 0119-2022, a number of Holding provisions were imposed on Lakeview as part of the rezoning approval which restricts the use of the lands (i.e. maximum residential development of 8,050 dwelling units) until relevant conditions are satisfied. Relevant to transportation conditions, the following are including:

- H2: maximum of 6,800 dwelling units are permitted until such time as *"submission of a transportation study and confirmation that the necessary traffic infrastructure improvements have been secured to adequately accommodate increased traffic volumes to the satisfaction of the Region of Peel ("Region") and the City."*
- H3: maximum of 7,500 dwelling units are permitted until such time as *"submission of a transportation study and confirmation that the necessary traffic infrastructure improvements have been constructed to adequately accommodate increased traffic volumes to the satisfaction of the Region and the City."*
- H6: maximum of 92,900 m^2 non-residential GFA are permitted until such time as *"submission of a satisfactory transportation study and confirmation that the necessary traffic infrastructure improvements have been constructed to adequately accommodate increased traffic volumes all to the satisfaction of the Region and the City."*

It is noted that 92,900 m^2 non-residential GFA is nearly equivalent to 1,000,000 ft^2 non-residential GFA.

3.0 TRANSPORTATION CONTEXT

3.1 AREA STREET NETWORK

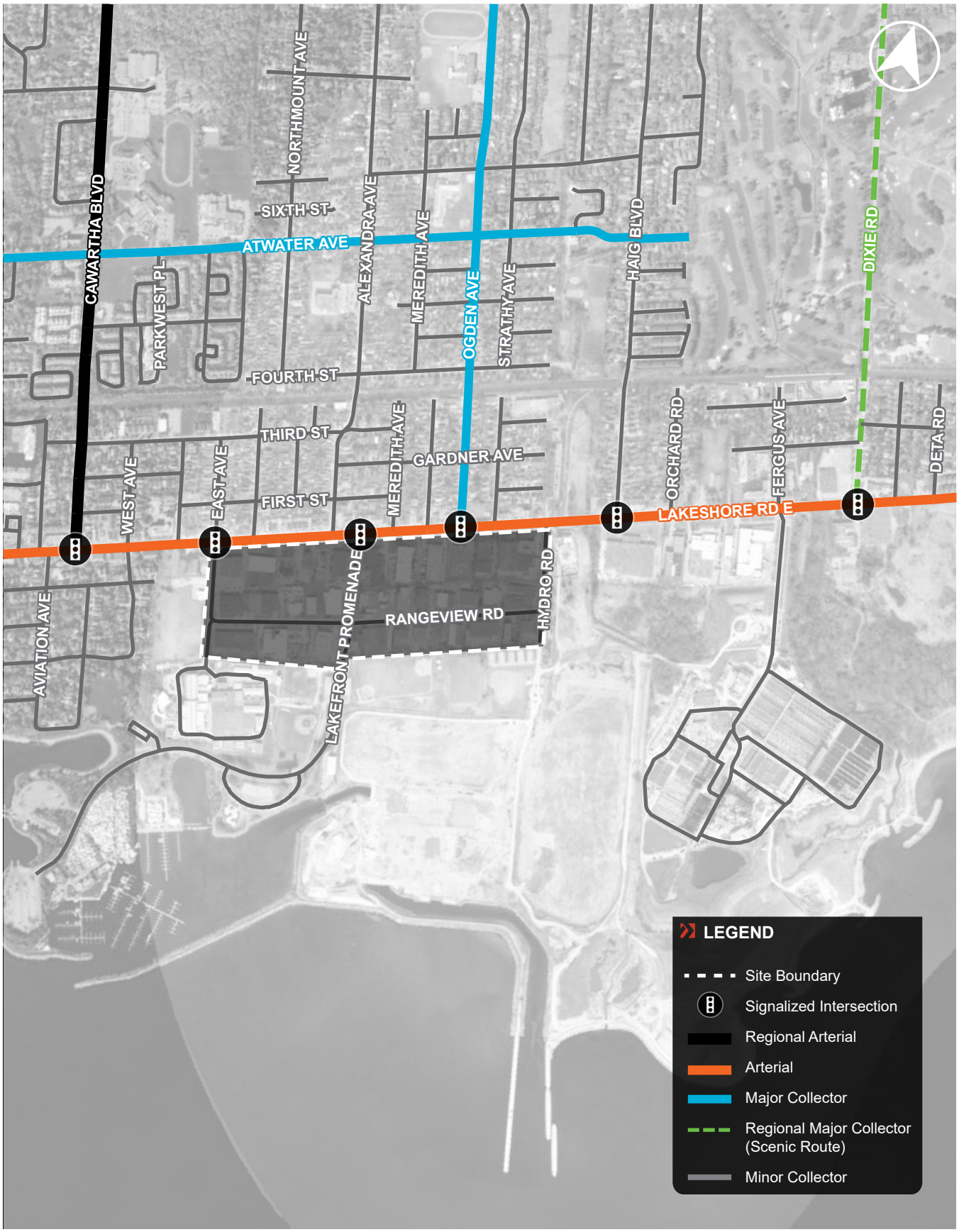
3.1.1 Existing Area Street Network

The Site is well-located relative to roadway connections provided across the City, Peel Region, and the Greater Toronto Area (GTA). The public street network surrounding the Site includes a hierarchy of road connections ranging from arterial roads to local roads. The Site is also located just over 2.0 kilometres from the Queen Elizabeth Way (QEW).

The existing area road network is illustrated in **Figure 4** and a detailed description of the area road network is provided in **Table 2**. Additionally, various local roads north of Lakeshore Road East, provide connections adjacent to the Site (i.e. to Lakeshore Road East). These local roads include the north-south roads, Westmount Avenue, Alexandra Avenue, Meredith Avenue, Edgeleigh Avenue and Strathy Avenue.

TABLE 2 EXISTING AREA STREET NETWORK

Type		Street Name	Description
Regional Arterial	N-S	Cawthra Road	A regional arterial road, generally running in a north-south direction from Lakeshore Road East in the south to the Queen Elizabeth Way (QEW) / Highway 403 interchange in the north. Near the Site area, the roadway has a four-lane cross section, two lanes in each direction, and left turn lanes at major intersections. The posted speed limit is 50 km/h.
		Dixie Road	A regional arterial road, generally running in a north-south direction from Lakeshore Road East in the south, providing a connection to the Queen Elizabeth Way (QEW), after which it continues north beyond the City limits. Near the Site area, the roadway has a three-lane cross section, one lane in each direction, including a centre two-way left turn lane. The posted speed limit is 50 km/h.
Major Arterial	E-W	Lakeshore Road East	A major arterial road, generally running in an east-west direction from Front Street in the west (where it continues west as Lakeshore Road West) to the City limits in the east (where it continues as Lake Shore Boulevard through the City of Toronto). Near the Site area, the roadway has a five-lane cross section, two lanes in each direction, including a centre two-way left turn lane. There are left turn lanes at major intersection and the posted speed limit is 50 km/h.
Major Collector	N-S	Ogden Avenue	A major collector road, generally running in a north-south direction from Lakeshore Road East in the south to South Service Road in the north. Near the Site area, the roadway has a two-lane cross section, one lane in each direction. The assumed speed limit is 50 km/h.
Minor Collector	N-S	Haig Boulevard	A minor collector road, generally running in a north-south direction from Lakeshore Road East in the south to South Service Road in the north. Near the Site area, the roadway has a two-lane cross section with one lane in each direction. The assumed speed limit is 50 km/h.
Local Road	N-S	Hydro Road	A local road, generally running in a north-south direction from Lakeshore Road East in the north to Lakeview Promenade (i.e. Lake Ontario) in the south. The roadway has a two-lane cross section with one lane in each direction. The assumed speed limit is 50 km/h.
		East Avenue	A local road, generally running in a north-south direction from Third Street in the north to the Lakeview Water Treatment Plant in the south. The roadway has a two-lane cross section with one lane in each direction. The assumed speed limit is 50 km/h.
		Lakefront Promenade	A local road, generally running in a north-south direction from Lakeshore Road East in the north to the Lakefront Promenade Marina in the south. The roadway has a two-lane cross section with one lane in each direction. The assumed speed limit is 50 km/h, however, south of Rangeview Road, the speed limit reduces to 25 km/h.
	E-W	Rangeview Road	A local road, generally running in an east-west direction from East Avenue in the west to Hydro Road in the east. The roadway has a two-lane cross section with one lane in each direction. The assumed speed limit is 50 km/h.



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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 4 EXISTING AREA ROAD NETWORK

3.1.2 Ultimate Planned Street Network

As outlined in **Section 2.3**, the advancement of the Lakeview development has resulted in planned changes to the local street network, including within the Rangeview Site, that are reflected in OPA 125. As part of the proposed OPA, details pertaining to the street network within the Rangeview Site are being advanced. Further, the approved Lakeshore Connecting Communities TMP includes planned changes to Lakeshore Road East, including within the vicinity of the Site, which have been considered as part of the comprehensive traffic analysis for this report. **Figure 5** illustrates the planned street network, including planned and proposed changes derived from each of the three above-noted processes.

3.1.2.1 Lakeshore Connecting Communities Transportation Master Plan

As outlined in **Section 2.3**, the Lakeshore Connecting Communities TMP, a Bus Rapid Transit (BRT) facility with a dedicated right-of-way, is planned with a construction commencement date of 2027 on Lakeshore Road East, in the vicinity of the Site. Exhibit 5 includes a roll plan excerpt for the right-of-way adjacent to the Site.

Key elements of the planned changes to the Lakeshore Road East right-of-way include:

- Two vehicle travel lanes in each direction, including left-turn lanes at signalized intersections (East Avenue, Lakefront Promenade, Ogden Avenue and Hydro Road);
- Minor side streets to have right-in/ right-out access;
- Dedicated bus-only lanes in the centre of the right-of-way;
- Express bus stop located at Lakefront Promenade;
- Protected cycling lanes (both sides) & pedestrian crossings; and
- Sidewalks & paved/planted furnishing zones.

3.1.2.2 Planned Area Street Network: Inspiration Lakeview/ Lakeview Village

As outlined in **Section 2.3**, a new street network is planned for the entirety of the OPA 125 lands, which includes Rangeview and Lakeview. Within **Table 3**, details pertaining to the proposed new streets (within Lakeview) and adjustments to existing streets are outlined. The names of the proposed streets are listed in **Table 3** as referred to by the Inspiration Lakeview project materials.

Notably, some existing streets are planned to have a modified classification. Lakefront Promenade, north of the planned Street L, is to be converted from a local road to a Major Collector Road. Hydro Road, north of the planned Street L, is to be converted from a local road to a Major Collector Road.

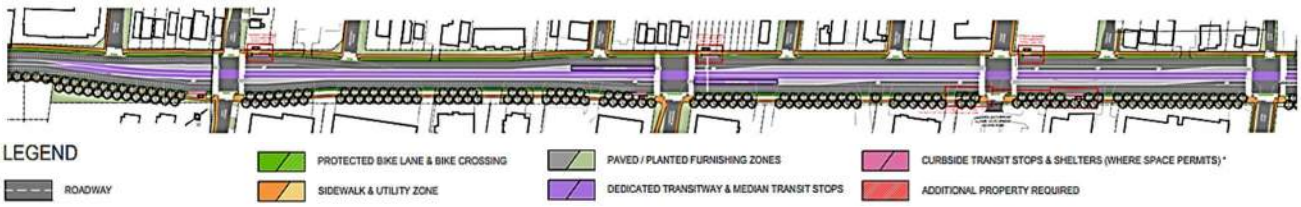
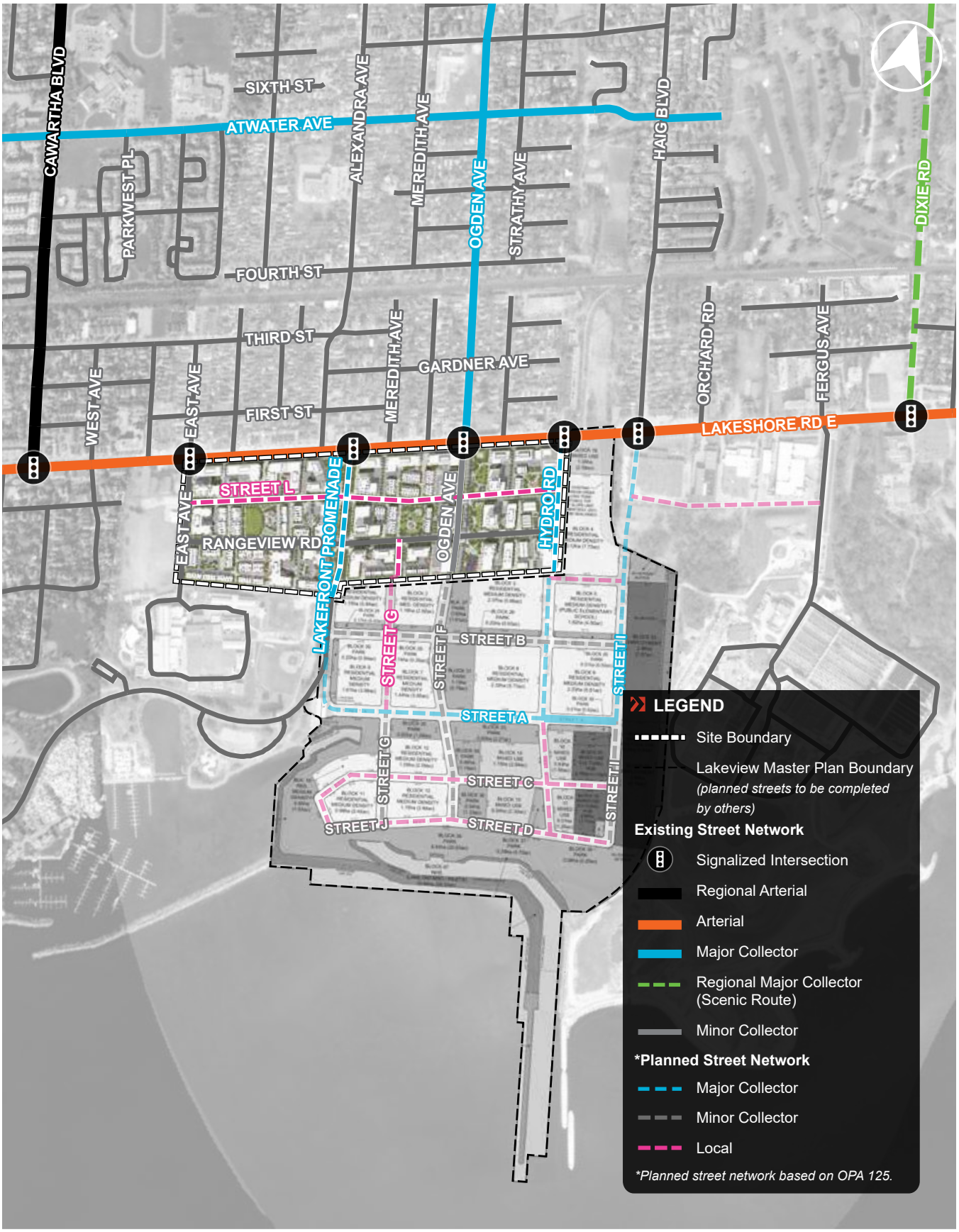


EXHIBIT 4: LAKESHORE ROAD EAST – ROLL PLAN EXCERPT (LAKESHORE CONNECTING COMMUNITIES TRANSPORTATION MASTER PLAN: CITY OF MISSISSAUGA / HDR)

EXHIBIT 5: PLANNED RANGEVIEW ROAD NETWORK CONNECTING TO LAKEVIEW VILLAGE ROAD NETWORK



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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 5 FUTURE AREA ROAD NETWORK

TABLE 3 OPA 125/ LAKEVIEW VILLAGE STREET NETWORK DETAILS

Street[1]	Right-of-Way Width (m)[2]	Road Classification	Pavement Width (m)	Dual Cycle Tracks	Sidewalks (2.0m)	Layby Parking
Lakefront Promenade	26.0	Major Collector	6.7	West boulevard	Both sides	--
Street A	26.05	Major Collector (Hydro Road to Street K)	6.7	South boulevard	Both sides	South side
	23.15	Minor Collector (Street I to Hydro Road)	6.7	South boulevard	Both sides	North side
Street B	22.25	Minor Collector	6.6	North boulevard	South side	Both sides
Street C	19.05	Local Road	6.6	--	Both sides	South side
Street D	20.55	Local Road	6.6	South boulevard	North side	North side
Street E	19.05	Local Road	6.6	--	Both sides	South side
Street F (Ogden Avenue	23.05	Minor Collector	6.6	East boulevard	Both sides	East side
Street G	23.05	Minor Collector (Street A to Street D)	6.6	West boulevard	Both sides	East side
	19.05	Local Road (Property Line to Street A)	6.6	--	Both sides	West side
Hydro Road (Street H)	25.4	Major Collector (Lakeshore Road East to Street A)	6.7	East boulevard	Both sides	East side
	18.05	Local Road (south of Street A)	6.6	--	Both sides	East side
Street I	23.15	Minor Collector	6.7	East boulevard	Both sides	West side
Street J	19.05	Local Road (west of Street G)	6.6	--	Both sides	Inside curve

Notes:
1. Refer to **Figure 5** for location of streets.
2. Source: Inspiration Lakeview Village draft plan of subdivision materials (The Municipal Infrastructure Group Ltd.)

3.1.3 Proposed New Street Network (Rangeview Lands)

Within Rangeview, it is proposed to advance upgrades to the local street network that reflect the planned road network contained within OPA 125. Within this section, greater detail is provided pertaining to proposed changes to the local street network within Rangeview. The names of the proposed streets are as identified in OPA 125. **Exhibit 6** illustrates how the planned Rangeview road network will connect to the planned Lakeview road network. The functional road plan is also provided in **Appendix D.**

Key Street Design Objectives

Consideration for all road users:
Enhancements to the existing street network elements, will support the movement for all users (vehicles, pedestrians, cyclists) and be designed in a way to minimize road conflicts and encourage alternative modes of travel and active transportation.

Ease of access:
The new street network will facilitate convenient connections from the proposed development to / from the broader area network. The proposed street design is intended to service and support pedestrian and cycling permeability and maintain vehicle capacity at all times of the day.

Complete Streets:
The improved and proposed roads within the Site have been designed with the policies of "Complete Streets" at the forefront. The City of Mississauga is undertaking the "Changing Lanes" project (scheduled to be complete in 2023) which will update, develop, and implement new tools to ensure that streets are safe and convenient for all users. It will deliver a "Complete Streets" Guide for streets in Mississauga and represent an updated approach to street planning and design for the City.

Conformity with Lakeview street design:
Given that many of the streets in the local area located south of Lakeshore Road East are shared between Lakeview and the Rangeview, and that the approvals process is substantially advanced for the former, the proposed street network for the latter is proposed to reflect many of the design conditions (e.g. rights-of-way, etc.) planned for Lakeview. The objective is for the streets to have a consistent design both in terms of transportation elements and ultimately, urban design.

Intersections south of Lakeshore Road East:
All intersections south of Lakeshore Road East (excluding driveways) are proposed to be unsignalized with all-way stop-control, with all vehicle movements permitted. All street descriptions below and the traffic analysis reflect this condition. As development progresses and updated traffic counts become available, the all-way stop control intersections could be reviewed to determine if any intersection warrants traffic signals. All intersections along the north-south streets between Lakeshore Road East and Rangeview Road could be converted to signalized intersections.

East Avenue

East Avenue is an existing local public street running from Lakeshore Road East in the north to Lakeview Water Treatment Plant in the south. It is the western boundary of Rangeview. The functional plan and proposed cross-section for East Avenue are provided in **Figure 6**.

Cross Section:
East Avenue will have a 23.05 metre right-of-way (ROW) consisting of the following:

- One 3.3 metre travel lane in each direction (6.6 m roadway) and 2.2 metre lay-by on the east side.
- On the east side of the roadway, a 3.0 metre two-way, protected cycle track is provided.

- The boulevard on each side of the roadway will contain 2.0 metre sidewalks and 2.5 metre planting zones.
- Appropriate buffers are provided between ROW elements.

Intersections:
East Avenue will have intersections with Lakeshore Road East, the proposed Street L, and Rangeview Road.

- The intersection with Lakeshore Road East retains the existing traffic signal location and will continue to be a signalized intersection with all vehicle movements permitted. The proposed configuration of East Avenue at this intersection will remain similar (i.e. no turning lanes). All pedestrian movements will be facilitated with crosswalks and appropriate connections will be provided between the East Avenue and Lakeshore Road East cycling facilities, to be confirmed as part of the Lakeshore Connecting Communities TMP.
- The intersection with Street L will be unsignalized with all-way stop-control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks.
- The intersection with Rangeview Road will be unsignalized with all-way stop-control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks and appropriate connections will be provided between the East Avenue and Rangeview Road cycling facilities.

Lakefront Promenade

Lakefront Promenade is an existing north-south public street running from Lakeshore Road East in the north to the Lakefront Promenade Marina in the south. The functional plan and proposed cross-section for Lakefront Promenade are provided in **Figure 7**.

Cross-Section:
Lakefront Promenade will be a major collector with a 30.45 metre right-of-way (ROW) south of Lakefront Promenade consisting of the following:

- One 3.35 metre travel lane (6.7 metre roadway) in each direction.
- On the west side of the roadway, a 3.0 metre two-way, protected cycle track is provided.
- The boulevard on each side of the roadway will contain 2.0 metre sidewalks, planting zones ranging from 3.7 to 6.18 metres, and 2.9 metre bioswale plant zones.
- Appropriate buffers are provided between ROW elements.

Intersections:
Lakefront Promenade will have intersections with Lakeshore Road East, the proposed Street L, and Rangeview Road.

- The intersection with Lakeshore Road East retains the existing traffic signal location and will continue to be a signalized intersection with all vehicle movements permitted. The roadway will be expanded at this intersection with dedicated left and right-turn lanes. All pedestrian movements will be facilitated with crosswalks and appropriate connections will be provided between the Lakefront Promenade and Lakeshore Road East cycling facilities, to be confirmed as part of the Lakeshore Connecting Communities TMP.

- The intersection with Street L will be unsignalized with all-way stop control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks.
- The intersection with Rangeview Road will be unsignalized with all-way stop control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks and appropriate connection will be provided between the Lakefront Promenade and Rangeview Road cycling facilities.

Street F (Ogden Avenue Extension from Lakeshore Road East to Rangeview Road)

Street F is the proposed southerly minor collector extension of Ogden Avenue, from north of Lakeshore Road East, which will eventually connect to the property line, just south of Rangeview Road. The functional plan and proposed cross-section for Ogden Avenue are provided in **Figure 8**.

Cross Section:
Ogden Avenue will have a 23.05 metre right-of-way (ROW) south of Lakeshore Road East consisting of the following:

- One 3.3 metre travel lane in each direction and 2.2 metre layby on the east side. In total, where layby is provided, an 8.8 metre roadway will be provided.
- On the east side of the roadway, a 3.0 metre two-way, protected cycle track is provided.
- The boulevard on each side of the roadway will contain 2.0 metre sidewalks and 2.5 metre planting zones.
- Appropriate buffers are provided between ROW elements.

Intersections:
Ogden Avenue as a minor collector will have intersections with Lakeshore Road East, the proposed Street L, and Rangeview Road.

- The intersection with Lakeshore Road East retains the existing traffic signal location (currently a driveway for 1036 Lakeshore Road East on the south side) and will continue to be a signalized intersection with all vehicle movements permitted. The roadway will be expanded at this intersection with dedicated left-turn, through and right-turn lanes. All pedestrian movements will be facilitated with crosswalks and appropriate connections will be provided between the Ogden Avenue and Lakeshore Road East cycling facilities, to be confirmed as part of the Lakeshore Connecting Communities TMP.
- The intersection with Street L will be unsignalized with all-way stop control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks.
- The intersection with Rangeview Road will be unsignalized with all-way stop control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks and appropriate connection will be provided between the Ogden Avenue and Rangeview Road cycling facilities.

Hydro Road

Hydro Road is an existing north-south public street running from Lakeshore Road East in the north to the Waterfront Trail in the south. The functional plan and proposed cross-section for Hydro Road are provided in **Figure 9**.

Cross Section:
Hydro Road as a major collector will have a 25.4 metre right-of-way (ROW) consisting of the following:

- One 3.35 metre travel lane in each direction (6.7 metre roadway) and 2.2 metre layby (which will serve as a bio-retention area) on the east side.
- On the east side of the roadway, a 3.0 metre two-way, protected cycle track is provided.
- The boulevard on each side of the roadway will contain 2.0 metre sidewalks. On the west side, there will be a 5.0 metre bioswale planting zone and on the east side, there will be a 2.5 metre planting zone.
- Appropriate buffers are provided between ROW elements.

Intersections:
Hydro Road will have intersections with Lakeshore Road East, the proposed Street L, and Rangeview Road.

- The intersection with Lakeshore Road East is unsignalized but is proposed to be a signalized intersection with all vehicle movements permitted. The proposed configuration of Hydro Road at this intersection will remain similar (i.e. no turning lanes). All pedestrian movements will be facilitated with crosswalks and appropriate connections will be provided between the Hydro Road and Lakeshore Road East cycling facilities, to be confirmed as part of the Lakeshore Connecting Communities TMP.
- The intersection with Street L will be unsignalized with all-way stop control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks.
- The intersection with Rangeview Road will be unsignalized with all-way stop control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks and appropriate connection will be provided between the Hydro Road and Rangeview Road cycling facilities.

Street L

Street L is not an existing street. It is proposed to operate in an east-west direction from East Avenue in the west to Hydro Road to the east, to the north of, and parallel to Rangeview Road. The functional plan and proposed cross-section for Street L are provided in **Figure 10**.

Cross Section:
Street L will have a 19.05 metre right-of-way (ROW) consisting of the following:

- One 3.75 metre travel lane in each direction. In total, a 7.5 metre roadway will be provided.
- The boulevard on each side of the roadway will contain 2.0 metre sidewalks and tree planting zones ranging from 2.5 to 4.05 metres.
- Appropriate buffers are provided between ROW elements.

Intersections:
Street L will have intersections with East Avenue, Lakefront Promenade, Ogden Avenue and Hydro Road. All intersections with Street L will be unsignalized with all-way stop control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks.

Rangeview Road

Rangeview Road is an existing east-west public street running from East Avenue in the west to Hydro Road to the east. The functional plan and proposed cross-section for Rangeview Road are provided in **Figure 11**.

Cross Section:
Rangeview Road as a local road will have a 23.05 metre right-of-way (ROW) consisting of the following:

- One 3.30 metre travel lane in each direction (6.6 metre roadway) and 2.2 metre layby on the south side (which will serve as a bio-retention area).
- On the north side of the roadway, a 3.0 metre two-way, protected cycle track is provided.
- The boulevard on each side of the roadway will contain 2.0 metre sidewalks and minimum 2.55 metre planting zones.
- Appropriate buffers are provided between ROW elements.

Intersections:
Rangeview Road will have intersections with East Avenue, Lakefront Promenade, Ogden Avenue and Hydro Road. All intersections with Rangeview Road will be unsignalized with all-way stop control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks and appropriate connections will be provided between the Rangeview Road and north-south street cycling facilities.

Street G

Street G is not an existing street. It is proposed to operate in a north-south direction from Rangeview Road in the north to the south (within Lakeview) near Lake Ontario. Notably, Street G is named Street H within OPA 125. The functional plan and proposed cross-section for Street G are provided in **Figure 12**.

Cross Section:
Street G as a local road will have a 19.05m right-of-way (ROW) consisting of the following:

- One 3.3 metre travel lane in each direction (6.6 metre roadway) and 2.2 metre layby on the west side.
- The boulevard on each side of the roadway will contain 2.0 metre sidewalks and 2.5 metre planting zones.
- Appropriate buffers are provided between ROW elements.

Intersection:
Street G will have an intersection within Rangeview at Rangeview Road (it has other intersections within Lakeview). The intersection with Rangeview Road will be unsignalized with all-way stop control, with all vehicle movements permitted. All pedestrian movements will be facilitated with crosswalks.

3.1.3.1 Summary of Rangeview Proposed Street Network

A summary of the proposed street network for Rangeview is provided in **Table 4**.

TABLE 4 PROPOSED RANGEVIEW STREET NETWORK – DESIGN SUMMARY

Street[1]	Right-of-Way Width (m)	Road Classification	Pavement Width (m)	Dual Cycle Tracks	Sidewalks (2.0m)	Layby Parking
East Avenue	23.05	Local	6.6	East boulevard	Both sides	East side
Lakefront Promenade	30.45	Major Collector	6.7	West boulevard	Both sides	--
Street F (Ogden Avenue Extension from Lakeshore Road East to the property line, just south of Rangeview Road)	23.05	Minor Collector	6.6	East boulevard	Both sides	East side
Hydro Road	25.40	Major Collector	6.7	East boulevard	Both sides	East side
Street L	19.05	Local	7.5	--	Both sides	--
Rangeview Road	23.05	Local	6.6	North boulevard	Both sides	South side
Street G	19.05	Local	6.6	--	Both sides	West side

Notes:
1. Refer to **Figure 5** and **Appendix D** for location of streets.

3.1.4 Interim Access to Properties along Lakeshore Road East

As Rangeview Estates is comprised of several landowners, interim phasing has been considered to allow each existing parcel to develop independently at different periods of the development approvals process. It is particularly important to establish a functional road network where the proposed interim phase creates a partial road network that provides each landowner with temporary access to their property so that development can occur without impacts to an adjacent parcel. This approach is key for those parcels that are located mid-block along Lakeshore Road East.

Access to individual properties would be accommodated through a combination of consolidated existing driveways on Lakeshore Road East, East Avenue, Street L and internal “hammerhead” turns. An illustration of the proposed temporary access for properties along Lakeshore Road East is provided in **Appendix E.**

When an individual parcel plans to develop, the public road and/or parkland associated with that parcel, as defined in the Rangeview DMP, will be conveyed in order to ensure that the overall vision demonstrated in the Rangeview DMP can be achieved. Interim access configurations will be considered on a site-by-site basis where needed in cases where the full road network cannot be delivered as part of a project.

The existing roads within Rangeview Estates (East Avenue, Rangeview Road, Lakefront Promenade and Hydro Road) will be improved over time as part of servicing-related road reconstruction, with interim cross-sections considered in cases where the ultimate right-of-way has not yet been acquired. Interim cross-sections will include consideration for the public realm, pedestrians, cycling facilities and traffic operations improvements.

Until the entire ultimate Street L is constructed, temporary property access is proposed for the following properties as noted below:

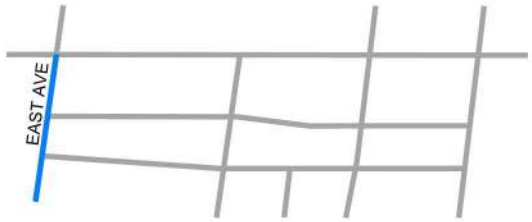
- 830 & 832 Lakeshore – new driveway access on the east side of East Avenue;
- 848 to 872 & 880 Lakeshore – consolidated existing driveway on Lakeshore Road East connects to Street L with connection to the internal driveway and hammerhead turn;
- 974 & 1000 to 1006 Lakeshore – consolidated existing driveway on Lakeshore Road East connects to Street L with connection to the internal driveway and hammerhead turn; and 1050 Lakeshore – consolidated existing driveway on Lakeshore Road East connects to Street L with connection to the internal driveway and hammerhead turn.
- 1050 Lakeshore – consolidated existing driveway on Lakeshore Road East connects to Street L with connection to the internal driveway and hammerhead turn.

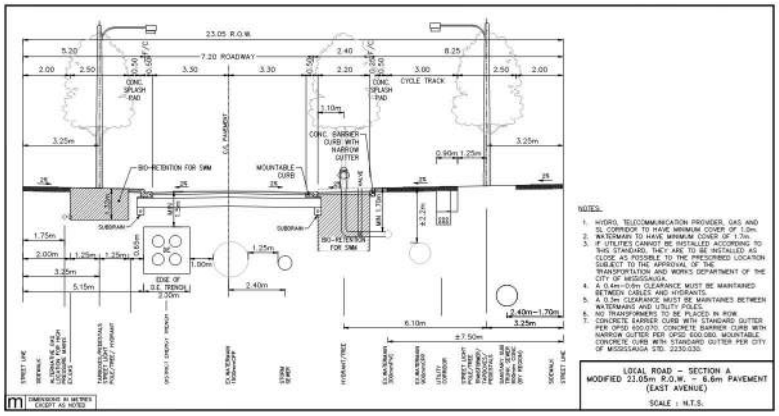
Driveways constructed onto Lakeshore Road East would be shared and designed for future conversion to pedestrian walkways, with the driveways onto Lakeshore Road East closed once access via Street L to a north-south street is available. Access to ramps, loading areas and drop-offs would be from the partially constructed Street L, at the rear of the properties. Access for each development will be confirmed through future development applications.

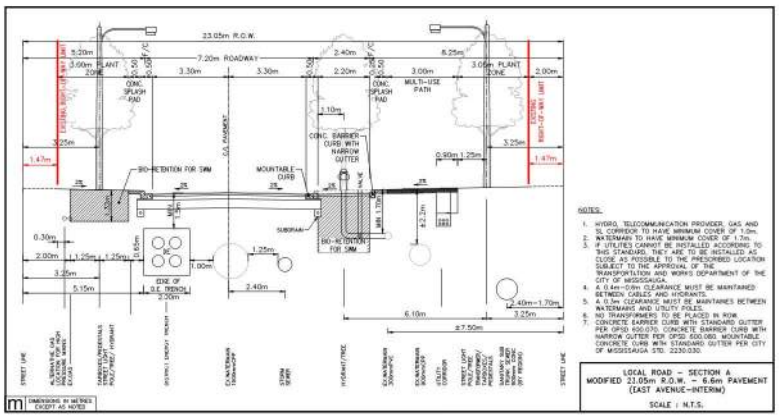
3.1.5 Interim Cross-Sections for East Avenue and Rangeview Road

As the property required for the full right-of-way widths for the ultimate planned construction of East Avenue and Rangeview Road are not currently available and may not be available for several years, interim cross-sections have been developed for East Avenue (**Figure 6**) and Rangeview Road (**Figure 11**)

The interim cross-sections have been designed in consideration of Complete Streets and include active transportation facilities.







23.05m MINOR COLLECTOR

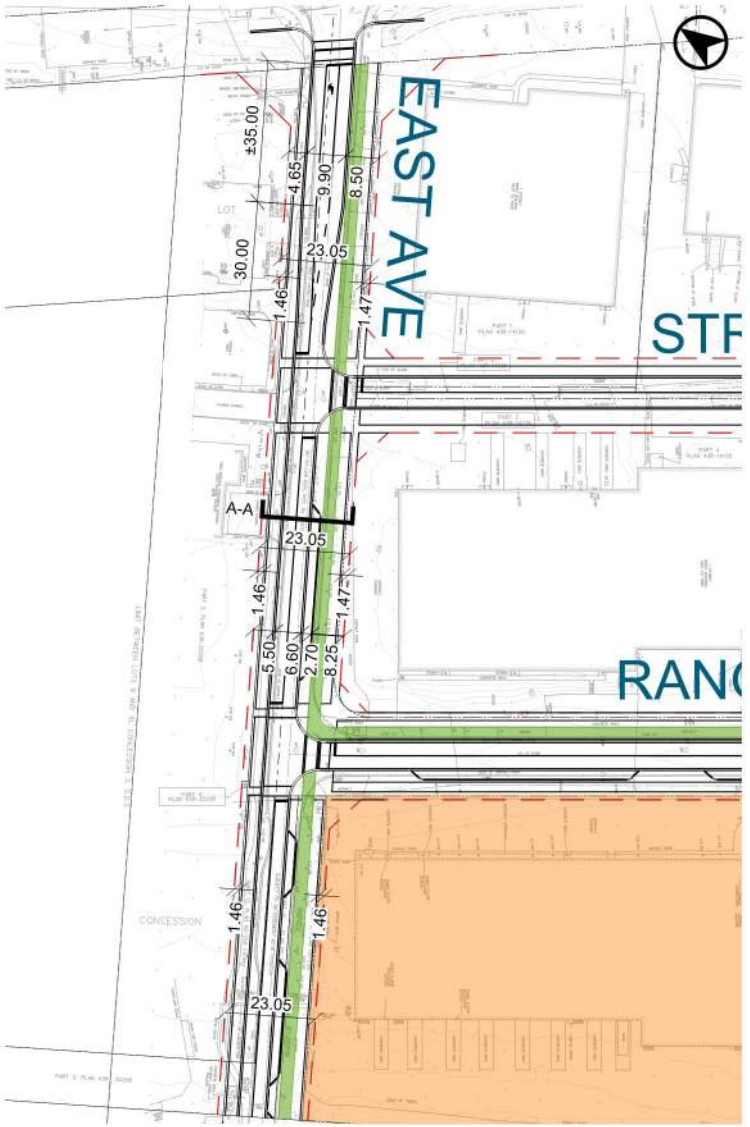
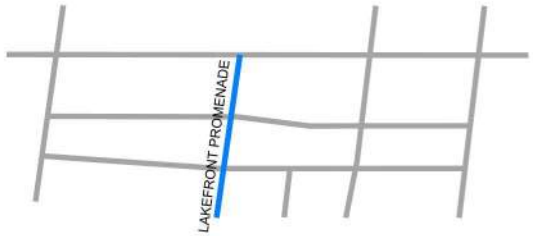
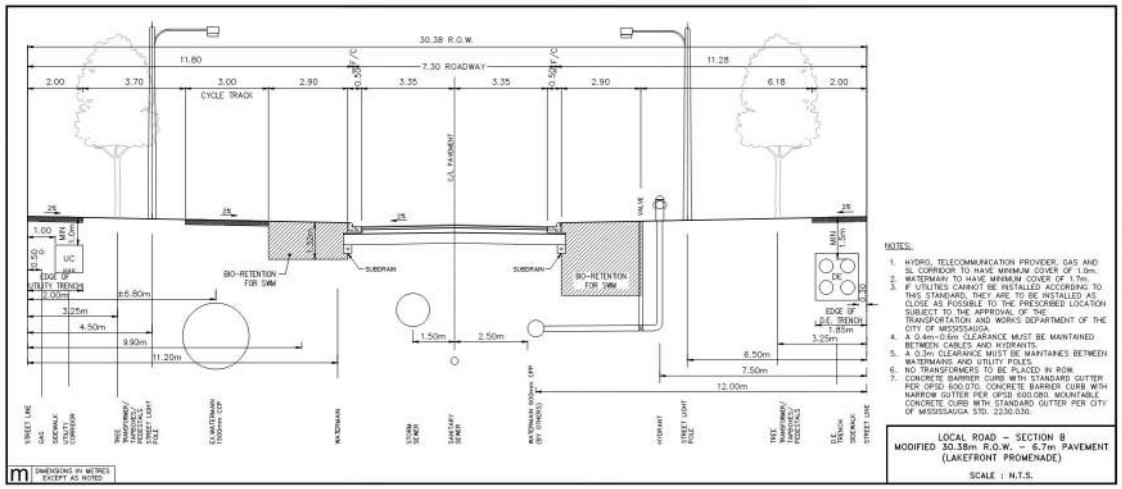


FIGURE 6 EAST AVENUE - FUNCTIONAL PLAN & CROSS-SECTIONS





NOTES:

1. HYDRO, TELECOMMUNICATION PROVIDER, GAS AND SL CORRIDOR TO HAVE MINIMUM COVER OF 1.0m.
2. WATERMAIN TO HAVE MINIMUM COVER OF 1.7m.
3. IF UTILITIES CANNOT BE INSTALLED ACCORDING TO THIS STANDARD, THEY ARE TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE PRESCRIBED LOCATION SUBJECT TO THE APPROVAL OF THE TRANSPORTATION AND WORKS DEPARTMENT OF THE CITY OF MISSISSAUGA.
4. A 0.4m-0.6m CLEARANCE MUST BE MAINTAINED BETWEEN CABLES AND HYDRANTS.
5. A 0.3m CLEARANCE MUST BE MAINTAINES BETWEEN WATERMAINS AND UTILITY POLES.
6. NO TRANSFORMERS TO BE PLACED IN ROW.
7. CONCRETE BARRIER CURB WITH STANDARD GUTTER PER OPSD 600.070. CONCRETE BARRIER CURB WITH NARROW GUTTER PER OPSD 600.080. MOUNTABLE CONCRETE CURB WITH STANDARD GUTTER PER CITY OF MISSISSAUGA STD. 2230.030.

LOCAL ROAD – SECTION B
MODIFIED 30.38m R.O.W. – 6.7m PAVEMENT
(LAKEFRONT PROMENADE)

SCALE : N.T.S.

30.45m MAJOR COLLECTOR

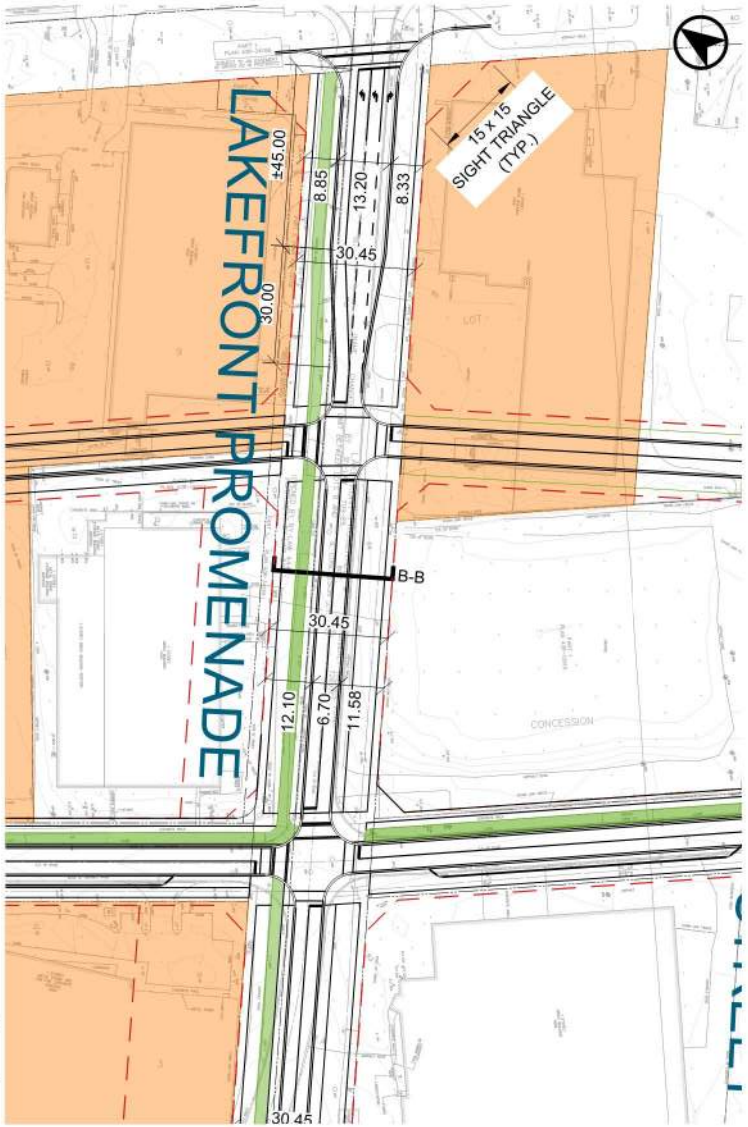


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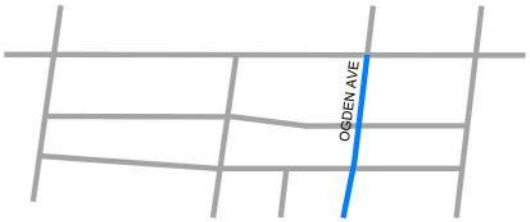
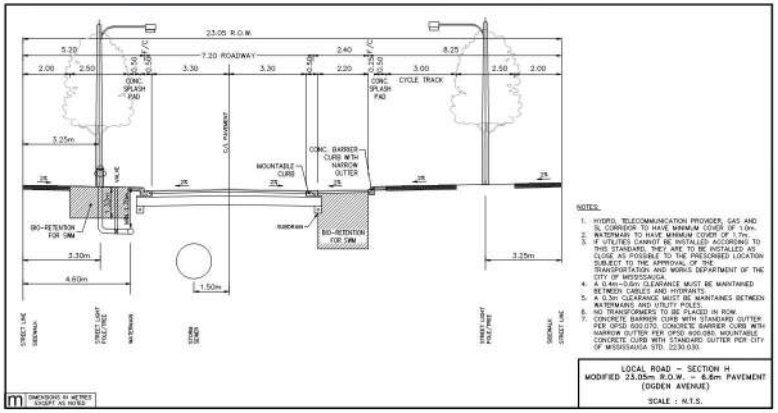
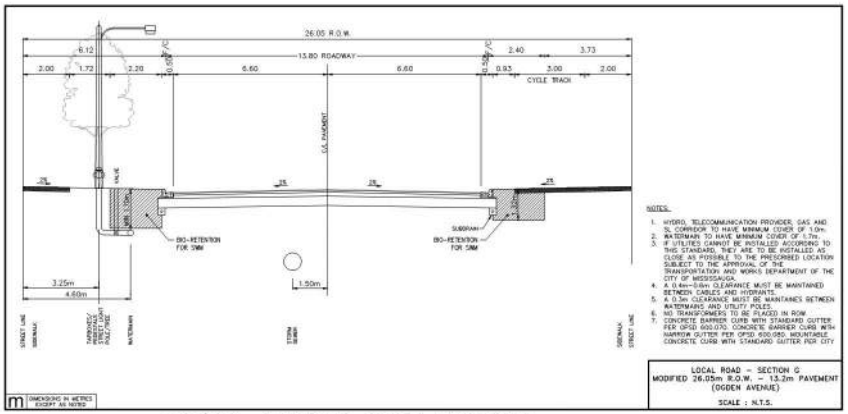
FIGURE 7 LAKEFRONT PROMENADE - FUNCTIONAL PLAN & CROSS-SECTIONS







23.05m MINOR COLLECTOR

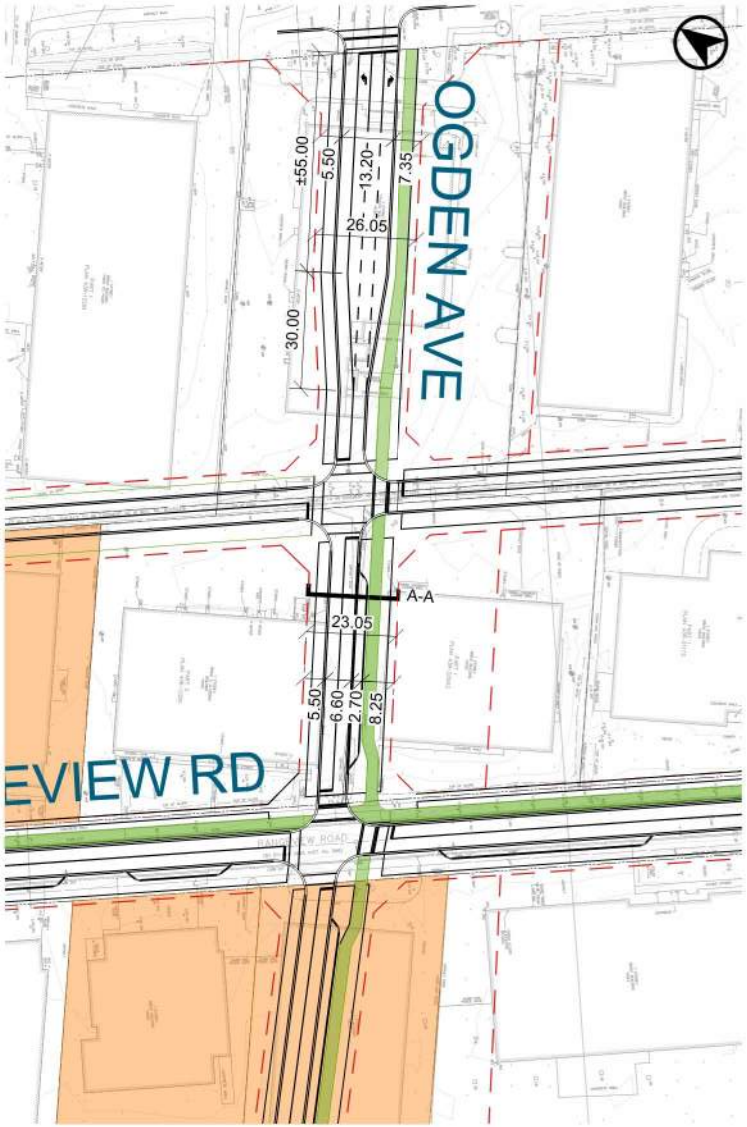
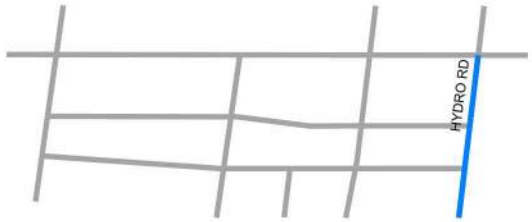
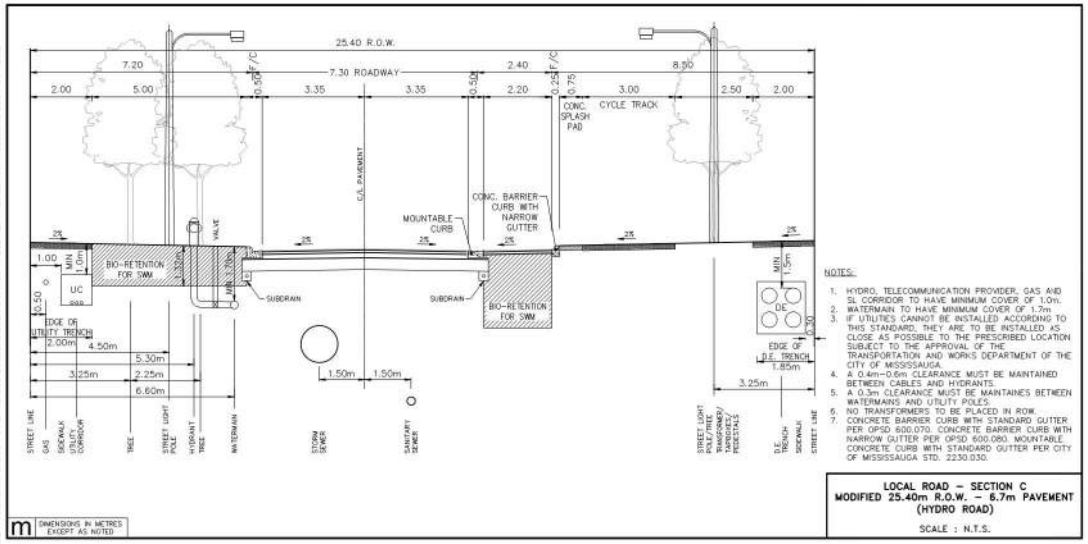


FIGURE 8 PROPOSED OGDEN AVENUE EXTENSION - FUNCTIONAL PLAN & CROSS-SECTIONS





25.4m MAJOR COLLECTOR

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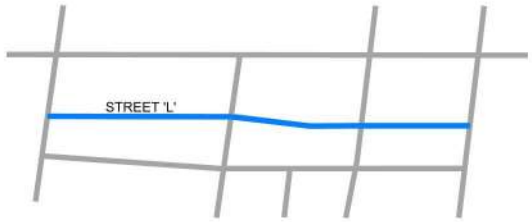
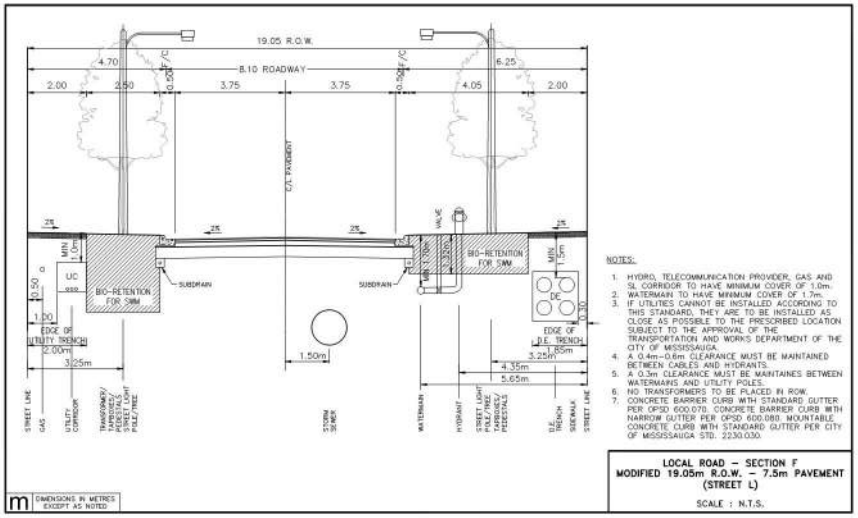
FIGURE 9 HYDRO ROAD - FUNCTIONAL PLAN & CROSS-SECTIONS





19.05m LOCAL ROAD

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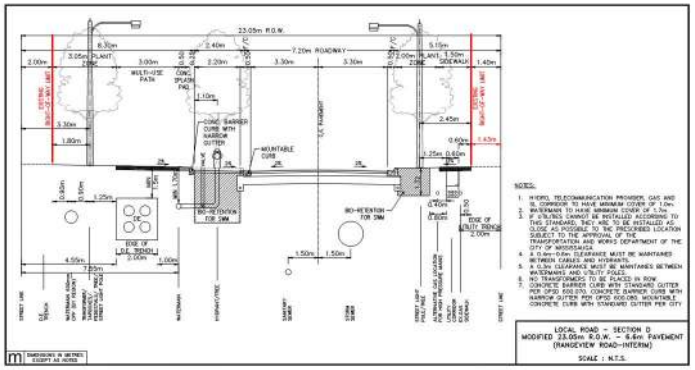
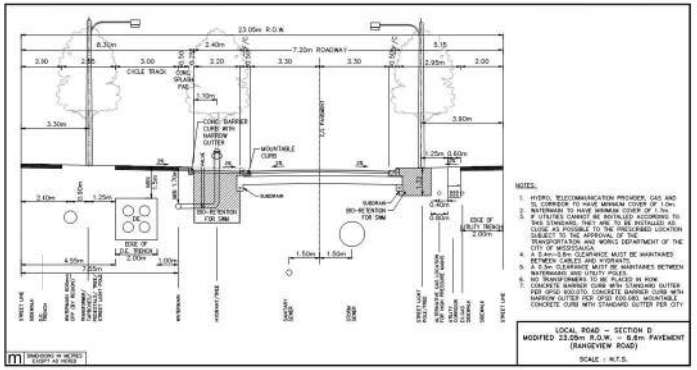
FIGURE 10 PROPOSED STREET 'L' - FUNCTIONAL PLAN & CROSS-SECTIONS





22.25m MINOR COLLECTOR

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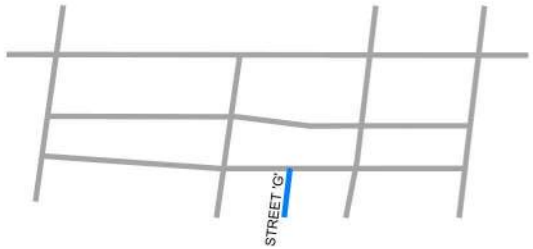
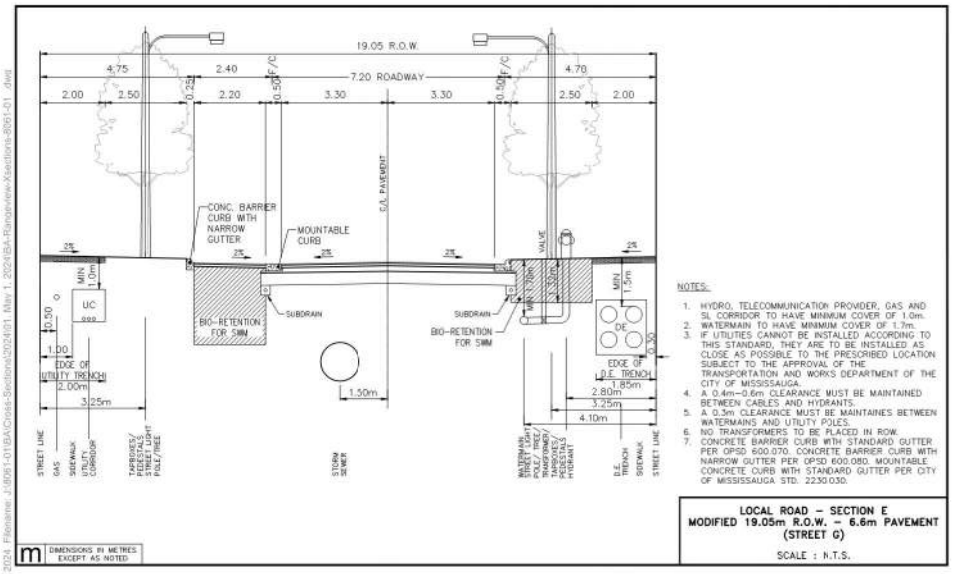
FIGURE 11 RANGEVIEW ROAD - FUNCTIONAL PLAN & CROSS-SECTIONS





19.05m LOCAL ROAD

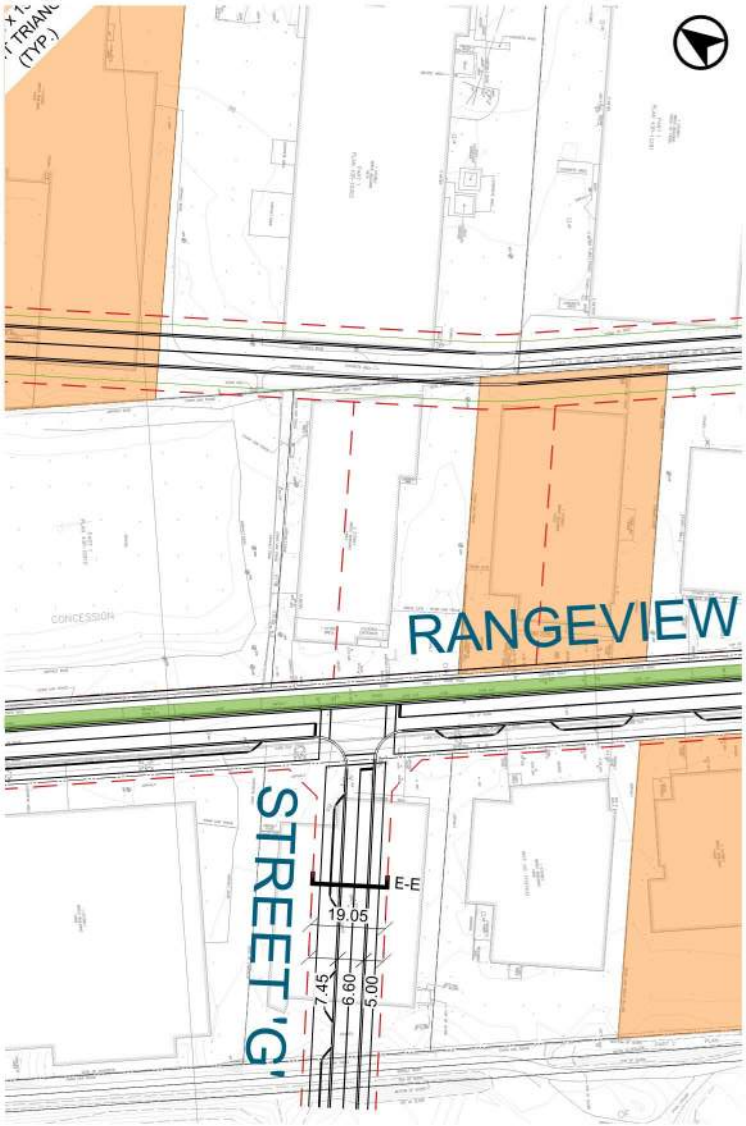


FIGURE 12 PROPOSED STREET 'G' EXTENSION - FUNCTIONAL PLAN & CROSS-SECTIONS

3.2 PROPOSED ROAD & INTERSECTION IMPROVEMENTS

In addition to the new roads previously noted, significant road improvements are planned within the study area to accommodate the proposed Rangeview and Lakeview sites.

As per the Lakeview Community Partner Limited Subdivision Agreement (Schedules E and F), the proponent of the Lakeview development and City and Region staff have agreed on road improvements necessary to accommodate the development of the Lakeview Site. Road improvements required by the City are summarized in **Table 5** and **Table 6**. The planned improvements as per the Lakeview Community Partners Limited Subdivision Agreement, as well as the additional road improvements recommended by BA Group, are summarized in **Table 7.**

All Phase 1 road improvements were considered in BA Group's traffic analysis for Scenarios 1, 2, 3A and 3B, while the Phase 2 road improvements were considered for Scenario 4. It is noted that based on BA Group's traffic analysis results, some of the Phase 2 road improvements are recommended as part of the Phase 1 improvements to be in place as part of the traffic analysis Scenario 1 (total of 10,000 residential units between Rangeview and Lakeview).

TABLE 5 PHASE 1: MUNICIPAL REQUIRED ROAD IMPROVEMENTS

Location	Description of Road Improvement	Timing of Road Improvement	Source
Phase 1: Region's Required Transportation Improvements (Schedule E)			
Lakeshore Road / Cawthra Road	Westbound right-turn lane	Up to and including the first 8,050 units	Lakeview Subdivision Agreement, **Schedule E**, Region of Peel Requirements
Lakeshore Road / Dixie Road	Westbound right turn-lane	Up to and including the first 8,050 units	Lakeview Subdivision Agreement, **Schedule E**, Region of Peel Requirements
Phase 1: Additional Road Improvements Required by City (Schedule F-1)			
Lakeshore Road / Lakefront Promenade	Eastbound right-turn lane	Up to and including the first 8,050 units	Lakeview Subdivision Agreement, **Schedule F-1**
Lakeshore Road / Jim Tovey Boulevard *(formerly Hydro Road)*	Eastbound right-turn lane	Up to and including the first 8,050 units	Lakeview Subdivision Agreement, **Schedule F-1**
Lakeshore Road / East Avenue *(already exists)*	Eastbound right-turn lane	Up to and including the first 8,050 units	Lakeview Community Partners Limited Subdivision Agreement, **Schedule F-1**

TABLE 6 PHASE 2: MUNICIPAL REQUIRED ROAD IMPROVEMENTS

Location	Description of Road Improvement	Timing of Road Improvement	Source
Phase 2: City's Required Transportation Improvements (Schedule F)			
Ogden Avenue	Extension from Lakeshore Road to Street F (Cove View)	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Haig Boulevard	Lakeshore Road to Street I (Illumination Way)	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Lakeshore Bus Rapid Transit Study	Area A from East Avenue to Etobicoke Creek	Greater than 8,050 units and 139,355 m2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Lakeshore Road East / East Avenue	Eastbound right-turn lane	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Lakeshore Road East / Haig Boulevard	Eastbound right-turn lane	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Lakeshore Road / Ogden Avenue	Configured to include a dedicated northbound left-turn lane and a shared through/right lane	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Lakeshore Road / Haig Boulevard	Northbound lanes configured to include a dedicated left-turn lane and a shared through/right lane	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Lakeshore Road /Dixie Road	Southbound lanes reconfigured to include a dedicated right-turn lane and a shared left/through lane	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Lakeshore Road / Cawthra Road	Dual eastbound left-turn lanes	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Lakeshore Road / Ogden Avenue	Eastbound right-turn lane	Greater than 8,050 units and 139,355 m2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Rangeview Road / Cove View (Street F)	Eastbound left-turn lane	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Lakefront Promenade / Rangeview Road	New traffic signal	Greater than 8,050 units and 139,355 m^2 non-residential	Lakeview Subdivision Agreement, **Schedule F**, City Requirements

Location	Description of Road Improvement	Timing of Road Improvement	Source
		GFA (exclusive of elementary school)	
Lakefront Promenade / Rangeview Road	Northbound left-turn lane	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements
Lakefront Promenade / Rangeview Road	Southbound left-turn lane	Greater than 8,050 units and 139,355 m^2 non-residential GFA (exclusive of elementary school)	Lakeview Subdivision Agreement, **Schedule F**, City Requirements

TABLE 7 BA GROUP RECOMMENDED ROAD IMPROVEMENTS

Location	Description of Road Improvement	Timing of Road Improvement	Notes
Phase 1: Additional Road Improvements Proposed (as per BA Group Report)			
Lakeshore Road/ Hydro Road	New traffic signal, EBR lane, NBL dedicated lane, restripe EBL/WBL	BA Group Scenario 1	Not included in Lakeview Subdivision Agreement
Lakeshore Road / Ogden Avenue	Eastbound right-turn lane	BA Group Scenario 2 with connection of Ogden	Moved from the Lakeview Subdivision Agreement Phase 2 road improvements
Lakeshore Road / Ogden Avenue	Northbound lanes reconfigured to include a dedicated northbound left-turn lane, and shared through / right-turn lane.	BA Group Scenario 2 with connection of Ogden	Moved from the Lakeview Subdivision Agreement Phase 2 road improvements
Lakeshore Bus Rapid Transit Study	Area A from East Avenue to Etobicoke Creek	BA Group Scenario 1	Moved from the Lakeview Subdivision Agreement Phase 2 road improvements
Lakeshore Road / Lakefront Promenade	Dual northbound left-turn lanes	BA Group Scenarios 3B (Phase 1) & Scenario 4 (Phase 2)	Not included in Lakeview Subdivision Agreement
Lakeshore Road East / Haig Boulevard	Westbound left-turn lane	Scenario 3A (Phase 1) and Scenario 4 (Phase 2) (connection of Haig Boulevard)	Not included in Lakeview Subdivision Agreement
Phase 2 - Additional Road Improvements Proposed (as per BA Group Report)			
Lakeshore Road / Ogden Avenue	Northbound lanes reconfigured to include a dedicated northbound left-turn lane, through lane and a dedicated right-turn lane.	BA Group Scenario 4	Revised from Lakeview Subdivision Agreement Phase 2 to a dedicated northbound left-turn lane, through lane and

Location	Description of Road Improvement	Timing of Road Improvement	Notes
			a dedicated right-turn lane.
Lakeshore Road / Lakefront Promenade	Dual northbound left-turn lanes	BA Group Scenarios 3B (Phase 1) & Scenario 4 (Phase 2)	Not included in Lakeview Subdivision Agreement. Also noted as required for Scenario 3B (Phase 1).
East Avenue	Reconstruction of road with new pavement, bike lanes, sidewalks and landscaping	Interim improvements as part of undergound works. Final improvements once ROW is secured.	--
Rangeview Road	Reconstruction of road with new pavement, bike lanes, sidewalks and landscaping	Interim improvements as part of undergound works. Final improvements once ROW is secured.	--
Lakefront Promenade	Reconstruction of road with new pavement, bike lanes, sidewalks and landscaping	Final improvements as part of undergound works	--
Hydro Road	Reconstruction of road with new pavement, bike lanes, sidewalks and landscaping	Interim improvements as part of undergound works. Final improvements once ROW is secured.	--
Lakeshore Road East / Haig Boulevard	Westbound left-turn lane	Scenario 3A (Phase 1) and Scenario 4 (Phase 2) with connection of Haig Boulevard	Not included in Lakeview Subdivision Agreement

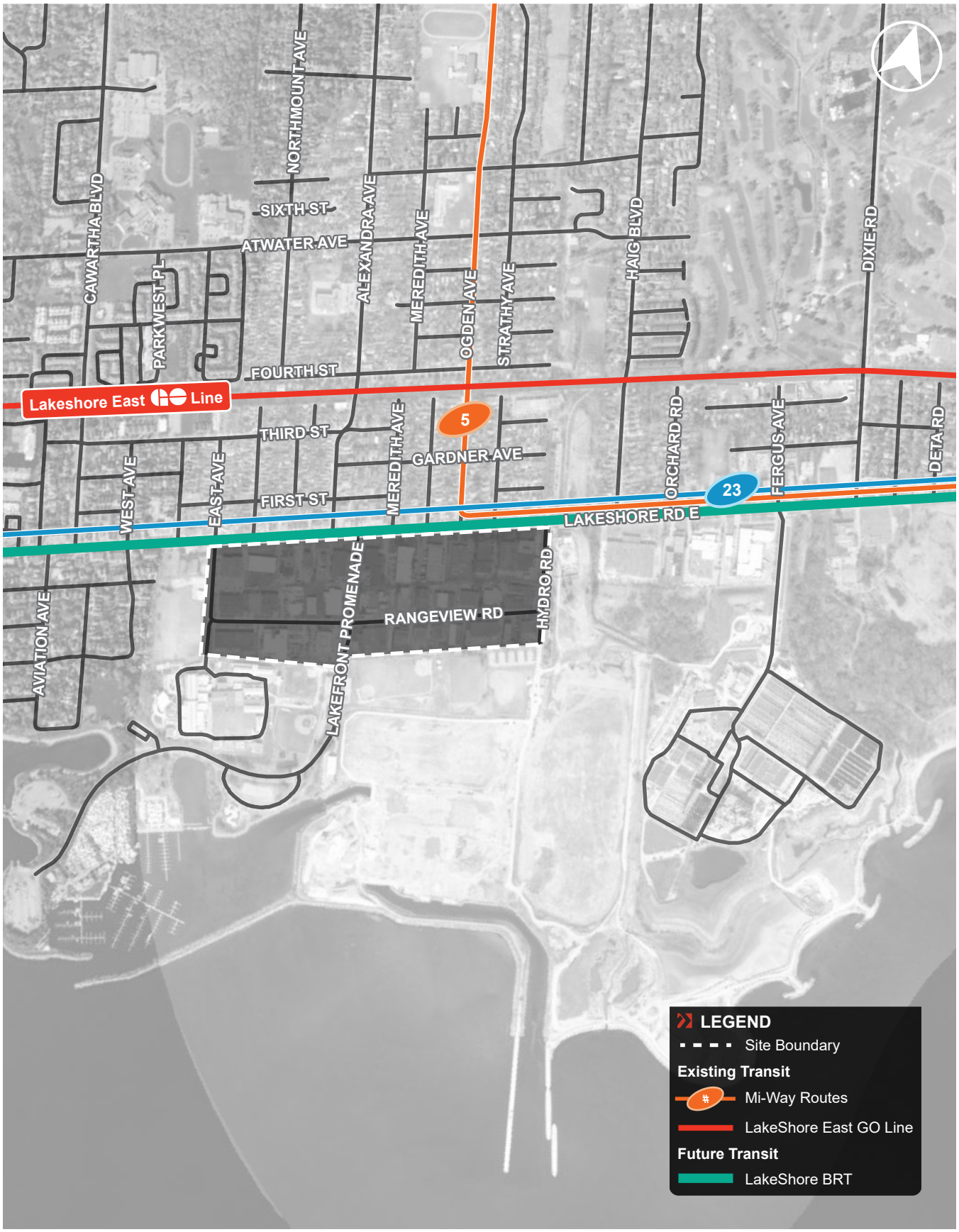
3.3 AREA TRANSIT NETWORK

3.3.1 Existing Public Transit Network

The Site's northern boundary is located immediately adjacent to the two MiWay surface transit routes which provide direct connections to area destinations including Dixie Outlet Mall, Port Credit, and Long Branch GO station. With a transfer at the Long Branch GO Station, the Site is connected to GO Transit (Lakeshore West Line) and TTC bus / streetcar service in the east. Details regarding the area's existing transit options are provided in **Table 8** and illustrated in **Figure 13**.

TABLE 8 AREA TRANSIT NETWORK

Number / Name of Service Line		Closest Stop Location	Description
Bus	23 Lakeshore (MiWay)	Several stops along Lakeshore Road East	Route 23 Lakeshore is a local bus route operating primarily along Lakeshore Road East / West, on all days, between the Clarkson GO Station and Long Branch GO Station. Route 23 runs every 17-21 minutes during weekday peak periods. This route connects with numerous other GO Transit, MiWay, and TTC routes.
	5 Dixie (MiWay)		Route 5 Dixie is a local bus route operating primarily along Dixie Road, on all days, between Cardiff Boulevard / Khalsa Drive and the Long Branch GO Station. Route 5 runs every 7-12 minutes during weekday peak periods. This route connects with numerous other GO Transit, MiWay, and TTC routes.



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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 13 EXISTING AND FUTURE AREA TRANSIT NETWORK

3.3.2 Planned Public Transit Network

3.3.2.1 Lakeshore Connecting Communities Bus Rapid Transit (BRT)

As described in **Section 2.3**, The Lakeshore Connecting Communities TMP sets out a long-term vision for transit and corridor improvements along Lakeshore Road East from 2020 to 2041 that will support waterfront development.

Of the transit network alternatives considered in the TMP, the preferred transit solution for the 2041 horizon year is express bus / bus rapid transit (BRT) along the extent of Lakeshore Road East in Mississauga (illustrated in **Exhibit 5**). Between East Avenue and Etobicoke Creek (and thus adjacent to the Rangeview Lands), a dedicated right-of-way BRT service is planned within the centre of the Lakeshore Road East ROW. The Lakeshore BRT is planned to commence construction in 2027.

The preferred transit solution beyond the 2041 horizon year is an extension of the Toronto Transit Commission (TTC) Waterfront West LRT (or “streetcar”) this is the recommended “ultimate solution.” The streetcar would be extended from Long Branch GO Station to Mississauga Road following a similar alignment (i.e. dedicated ROW to East Avenue; operating in mixed traffic west of East Avenue).

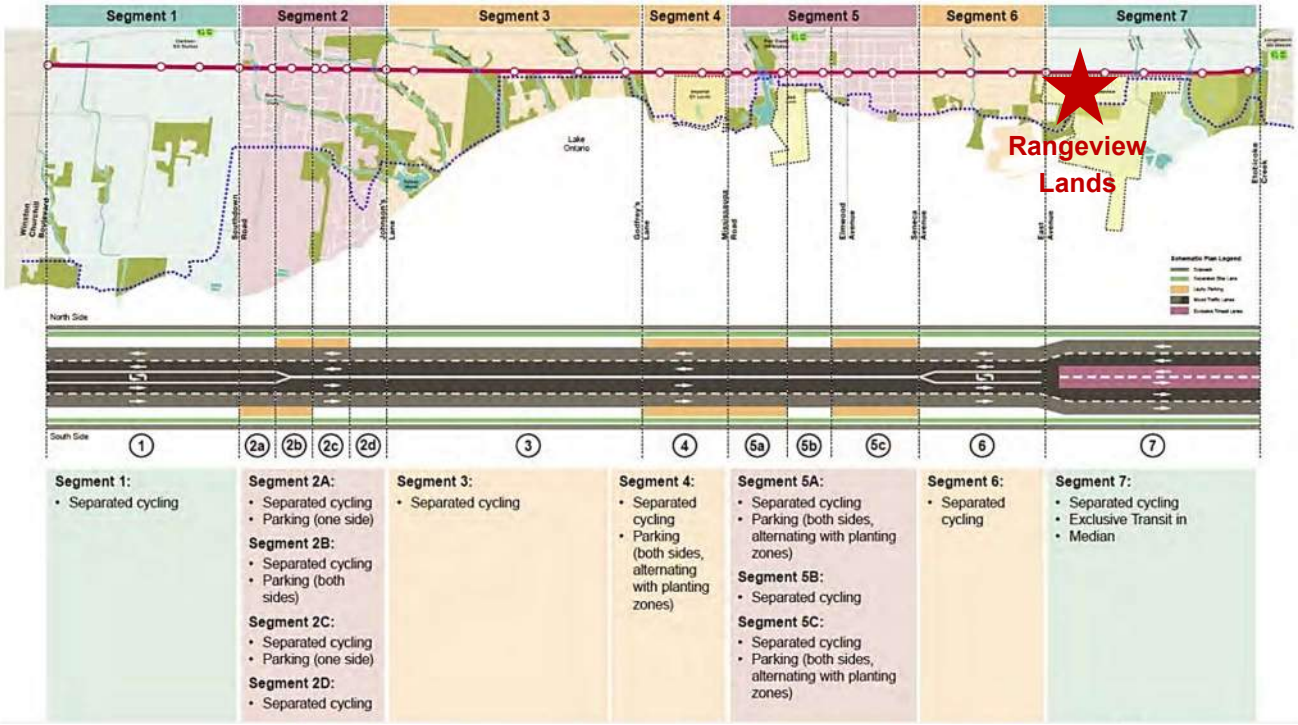


EXHIBIT 6: LAKESHORE BRT PREFERRED RIGHT-OF-WAY (LAKESHORE CONNECTING COMMUNITIES TRANSPORTATION MASTER PLAN: CITY OF MISSISSAUGA / HDR)

EXHIBIT 7: LAKEVIEW CHARACTER NODE LONG-TERM TRANSIT NETWORK (CITY OF MISSISSAUGA OFFICIAL PLAN: PART OF SCHEDULE 6 FROM OPA 89)

3.3.2.2 Official Plan Transit Network

As part of OPA 89, transit provisions south of Lakeshore Road East were identified, as illustrated below in **Exhibit 6**.

A route that passes through Rangeview, including Lakefront Promenade and Hydro Road, is identified as a "Future Enhanced Transit Route."

3.4 AREA CYCLING NETWORK

3.4.1 Existing Area Cycling Network

The existing cycling network within 500 metres of the Site area consists of multi-use trails, park trails, and signed bike routes along all sides of the Site perimeter. These cycling connections provide convenient travel opportunities for residents, employees and visitors of the surrounding area, specifically to travel using non-automobile means. The existing and future area cycling network is described in **Table 9** and is illustrated in **Figure 14**.

TABLE 9 AREA CYCLING INFRASTRUCTURE

	Route	Type of Cycling Infrastructure	Description
North-South	Ogden Avenue	Signed Bike Route	Signed bike route, shared between cyclists and motorists, which travels along Ogden Avenue from Lakeshore Road East to near South Service Road. Via the Ogden-Isley Pedestrian Bridge, the route continues north via Stanfield Road, accessing The Queensway, Dundas Street East, Bloor Street, Burnhamthorpe Road East, and Eastgate Parkway.
East-West	Waterfront Trail	Park Trail	Park trail that travels along the waterfront, generally south of Lakeshore Road East, providing an east-west connection from Winston Churchill Boulevard, near the City's west limits, to the City of Toronto, beyond the City's east limits.

3.4.2 Planned Area Cycling Network

3.4.2.1 Lakeshore Connecting Communities TMP

The Lakeshore Connecting Communities Transportation Master Plan (TMP), introduced in **Section 2.3**, proposes to incorporate uni-directional cycle tracks in each boulevard, separated from vehicle lanes, along the Lakeshore Road East corridor. The Site area is located in Segment 7 of the study corridor and the preferred ROW alternative is to construct separated 2.0 metre bike lanes along both sides of the Lakeshore corridor with a 0.5 metre buffer from the vehicle travel lane. It is noted that the City of Mississauga Cycling Master Plan 2018 also includes this route.

3.4.2.2 City of Mississauga OPA 125

As part of OPA 125, cycling route provisions south of Lakeshore Road East were identified, as illustrated in **Exhibit 7**. Within OPA 125, a series of 'Primary Off-Road Routes' and 'Primary On-Road / Boulevard Routes' (i.e. cycle tracks where cyclists are separated from vehicles by a curb and buffer) are illustrated primarily within Lakeview as part of the street network planned for the latter.

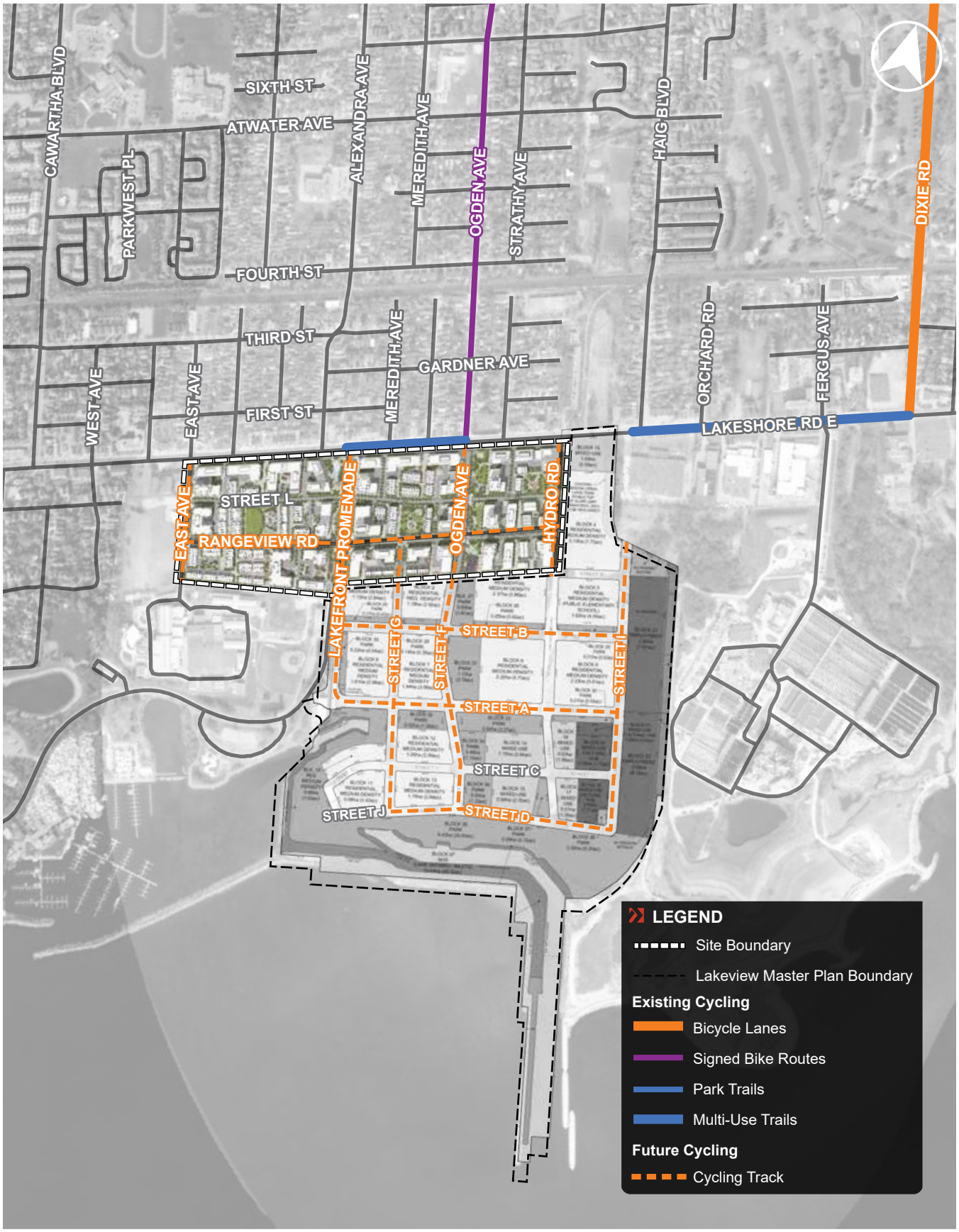
3.4.2.3 Rangeview Cycling Network

The proposed Rangeview street network will provide connectivity to the Lakeview cycling facilities, as well as to Lakeshore Road East, for travel beyond the Site. The proposed Rangeview cycling network includes two-way in-boulevard cycle tracks, where cyclists are separated from vehicles by a curb and buffer, on one side of the road along East Avenue, Lakefront Promenade, Ogden Avenue, Hydro Road and Rangeview Road.

Cyclists would be expected to share the road on lower volume streets such as Street L and Street G, where there are no planned designated cycling facilities.

A summary of the proposed cycling facilities in Rangeview is as follows:

- East Avenue: in-boulevard two-way cycle track (east side)
- Lakefront Promenade: in-boulevard two-way cycle track (west side)
- Ogden Avenue: in-boulevard two-way cycle track (east side)
- Hydro Road: in-boulevard two-way cycle track (east side)
- Rangeview Road: in-boulevard two-way cycle track (north side)
- Street L: shared on-road lanes (no designated cycling facility)
- Street G: shared on-road lanes (no designated cycling facility)



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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 14 EXISTING AND FUTURE AREA CYCLING NETWORK

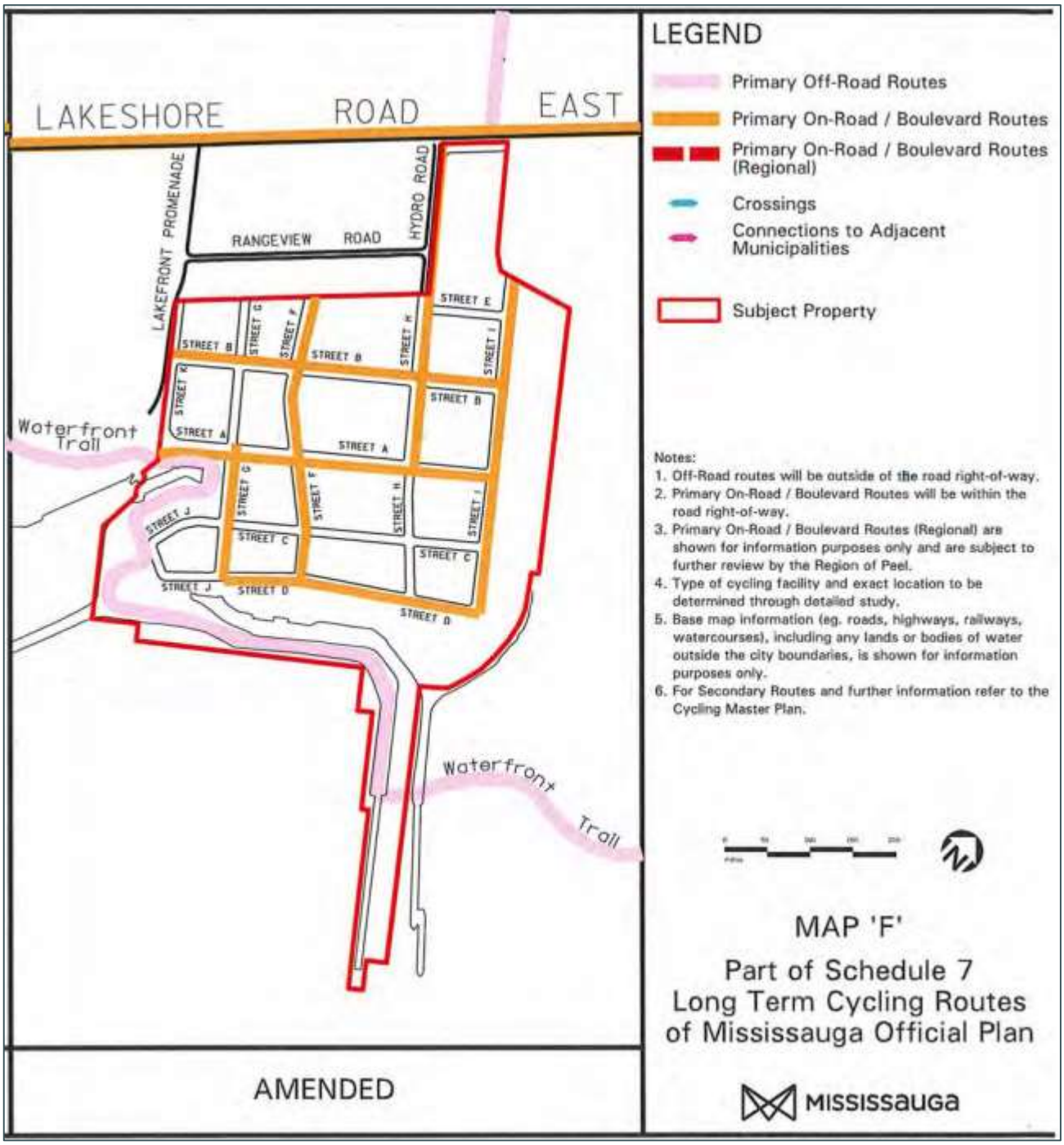

EXHIBIT 8: LAKEVIEW VILLAGE CHARACTER NODE LONG-TERM CYCLING ROUTES (CITY OF MISSISSAUGA OFFICIAL PLAN: PART OF SCHEDULE 7 FROM OPA 125)

3.5 AREA PEDESTRIAN NETWORK

3.5.1 Existing Pedestrian Network

Within a 500-metre radius of the Site, numerous parks, such as the Douglas Kennedy Park and volleyball courts, can be accessed as well as various amenities along the Lakeshore corridor such as a dentist, pharmacy, convenience store, health centre, fast food outlets and restaurants, among other retail services. The Site is also within walking distance of a plaza which includes a drug store, Canada Post outlet, and multiple eateries, the Lakeside Montessori School, and various places of worship. The remainder of the Site area includes commercial buildings and warehouses oriented towards automobile repair services, industrial manufacturing and self-storage.

In the vicinity of the Site, the existing pedestrian environment facilitates pedestrian movements with efficient connections. Lakeshore Road East has sidewalks on both sides of the roadway, although the sidewalks along the south side are directly adjacent to vehicle travel lanes. There is opportunity to improve the pedestrian facilities along the local roads within and bounding the Site, including Rangeview Road, Hydro Road, Lakefront Promenade, and East Avenue, as each of these roads only have sidewalk facilities on one side of the roadway. Moreover, signalized intersections and marked pedestrian crossings are provided along Lakeshore Road East at East Avenue and Lakefront Promenade, but not at Hydro Road. All sidewalks within and bounding the Site have curb cuts at intersections.

3.5.2 Planned Pedestrian Network

The Site includes a proposed street network that will develop an urban pedestrian environment with wider sidewalk widths on most of the proposed streets and pedestrian mews areas to generate pedestrian activity. Further detail pertaining to the planned street network including detailed design and cross-sections is included in **Section 3.1.3**.

Moreover, the planned Lakeview development, introduced in **Section 2.3**, will also provide a high quality, fine-grain pedestrian environment to the south of the Site.

The proposal for a new traffic signal on Lakeshore Road East at Hydro Road will provide additional protected crossing opportunities for pedestrians. The pedestrian network proposed for Rangeview will connect to Lakeview's pedestrian network, with connectivity to Lake Ontario and beyond.

4.0 OPPORTUNITY: CAWTHRA GO TRANSIT STATION

Given the evolution and advancement of GO Transit in the Greater Toronto & Hamilton Area, there is potential to improve GO Transit in the vicinity of the Site with the addition of a new GO Station. Based on the proximity to local multi-modal connections and equidistance between nearby existing GO Stations on the Lakeshore West Line (approximately 2.5 km from Port Credit GO Station and approximately 2.5 km from Long Branch GO Station), a reasonable location for a new station would be east of Cawthra Road and north of Lakeshore Road East.

Within this section, a summary of ongoing GO Transit network and station planning is provided as context for the concept to introduce a GO Station to the local area which could be named Cawthra GO Station. The relevance of a potential Cawthra GO Station is that it would greatly enhance the multi-modal transportation options available to future residents and visitors to both Rangeview and Lakeview.

It is important to note however that as outlined in **Section 7.0** the traffic analysis undertaken for this report confirms that the future transportation network, even **without** a new GO Station in the area, can acceptably accommodate the expected travel demands of the Rangeview Site with 5,300 residential units, along with the travel demand generated by Lakeview and Serson.

4.1 CAWTHRA GO STATION HISTORY

Between 2013 and 2015, Metrolinx undertook a study to identify new stations to add to the regional rail network. At this time, a “Cawthra Road GO Station” was on a list of approximately 120 “possible stations” that were analyzed. Possible Stations were scored based on three criteria: 1) transportation connectivity; 2) plans and land use; and 3) technical (construction & design). By March 2015, the list was reduced to 50 stations and Cawthra Road GO Station was no longer in consideration.

4.2 GO TRANSIT EXPANSION / ELECTRIFICATION UPDATE

Metrolinx is undertaking a “GO Expansion” project (formerly “Regional Express Rail”) to convert most existing rail lines (including Lakeshore West) to electric trains. The project will enable all-day, two-way service with 15-minute headways or better. A key benefit of electrification is quicker acceleration/deceleration which unlocks the potential to add more stations to electrified lines. In February 2022, Metrolinx and Infrastructure Ontario announced “Onxpress Transportation Partners” (consortium including Aecon, FCC Construcción S.A., (FCC), Deutsche Bahn, and Alstom) as the winning proponent of the program. Onxpress won the bid due to a proposal with service levels exceeding the 2018 Metrolinx Business Case Analysis, including:

- During weekday daytime periods, between 8-18 trains per hour (or 3-8 minute headways) on the busiest routes, like Lakeshore West; and
- During evenings and weekends, most stations will have 6-15 minute headways.

Construction is expected to begin in 2023, with incremental improvements to service beginning in 2025-2026.

4.3 EXISTING DEMAND FOR A CAWTHRA GO STATION

Of the three criteria utilized by Metrolinx to assess new stations from 2013-2015, a potential Cawthra GO Station merits new assessment based on two: “Transportation Connectivity” and “Plans and Land Use”.

4.3.1.1 Transportation Connectivity

As is outlined in this report in **Section 2.3** and Section **3.3.2**, a BRT in a dedicated right-of-way within Lakeshore Road East adjacent to the Site is expected to be substantially completed by 2027. There is potential for the BRT and the parallel GO Transit line to be complimentary and together, to influence travel behaviour and reduce vehicle trips.

4.3.1.2 Plans and Land Use

As is outlined in **Section 2.3**, the Lakeview Waterfront Major Node Character Area in the City of Mississauga Official Plan was recently amended in November 2021 (OPA 125). Current development provisions include 11,750 residential units, 750,000 SF office GFA, 750,000 SF research & development GFA, 165,000 SF retail GFA, 850 student elementary school, 39 student daycare, approved “as-of-right.” There is substantial ridership potential if a GO Station was located in proximity to this area.

5.0 TRANSPORTATION DEMAND MANAGEMENT PLAN

The 2020 Ontario Provincial Policy Statement (PPS) and the City of Mississauga Official Plan encourage Transportation Demand Management (TDM) as a strategy and embrace a range of TDM measures. TDM strategies will be incorporated into the Site to align with operational and functional needs including consideration for broader area infrastructure requirements.

As per the Region of Peel Sustainable Transportation Strategy, 2018-2022, TDM is: “Transportation demand management (TDM) measures encourage people to take fewer and shorter vehicle trips to support transit and active transportation choices, enhance public health and reduce harmful environmental impacts.”

The City of Mississauga Official Plan includes the following policies regarding TDM:

- 8.1.8: “To better utilize existing infrastructure, Mississauga will encourage the application of transportation demand management (TDM) techniques, such as car-pooling, alternative work arrangements and shared parking.”
- 8.4.7(f): “coordinating parking initiatives with transportation demand management (TDM) programs in order to effectively link transit planning, parking and other related issues in a comprehensive manner”.
- 8.5.2: “Mississauga will work with other levels of government, agencies and the private sector to encourage TDM measures.”
- 8.5.7: “Prior to approval of development applications, particularly those that will generate significant employment opportunities, a TDM plan may be required …”

5.1 OBJECTIVE & GOALS

Transportation Demand Management (TDM) strategies have been developed for the proposed development to guide the provision of viable alternative personal transportation options beyond the single occupant, private automobile. The overarching goals of the TDM strategy are to:

- Significantly reduce the number of private automobile-based trips made to/from the Site;
- Promote the use of more active and sustainable modes of transportation;
- Increase travel efficiency and transit linkages;
- Emphasize internal trips by non-auto modes of travel; and
- Reduce climate change emissions, air quality and overall health.

To achieve the objective and goals, a series of mobility strategies and corresponding TDM measures are outlined and have been incorporated into the design and future operations of the proposed Site.

5.2 STRATEGIES

TDM strategies include the application of various site design elements and operational policies that have the goal of redistributing and reducing the travel demand of a project, specifically that of single occupancy private vehicles. The proposed TDM objectives can be achieved by influencing mobility choice and patterns through the following site plan strategies:

- Create a Complete Connected Community
- Enhance the Public Realm and Pedestrian Mobility
- Facilitate and Increase Transit Use
- Encourage Cycling Use
- Provide Last-Mile solutions (micro-mobility)
- Low Minimum Parking Requirements
- Encourage Reduced Auto Ownership and Use

Several of TDM strategies identified above (i.e. public transit fare integration and the implementation of a bike share and/or scooter share network) require additional support at the Municipal, Regional, and / or Provincial levels to truly enable a shift in travel behaviour for residents, visitors and employees of the Site.

This comprehensive framework has been developed to serve as a guideline for the implementation of effective TDM strategies at the master plan level and will continue to be refined through the site design stage and in its operations following the full redevelopment of the property.

5.3 PROPOSED TDM MEASURES

5.3.1 Create a Complete Connected Community

The proposed development incorporates a mix of mutually supportive land uses, inclusive of residential and retail, located adjacent to significant employment land uses within Lakeview, that are integrated by a new street network that has been designed to facilitate and encourage transit and active modes of travel throughout the Site.

The provision of mutually supportive land uses fosters a relationship across the Site that allows each use to serve and support one another. This represents a substantial shift from the existing building form to a more walkable, urban, mixed-use neighbourhood. This dynamic combination of uses encourages the "internalization" of site trips, both within the Site and within the neighbourhood; there will be many trips that could be made within walking / cycling distance. The need for residents, employees, and visitors to make trips outside of the Site and surrounding area to address daily needs will be reduced, thereby, reducing the need for trips to be made utilizing automobiles.

Furthermore, the design of the street network takes into account the needs of all modes of travel and ensures the development of a complete network. The proposed street network creates fine-grain street and block connections, creating a level of porosity across the Site that will enable efficient pedestrian and active travel.

Numerous park / open spaces are also proposed throughout the site which will improve the at-grade permeability of the area and integrate the Site with the local pedestrian system.

Finally, the proposed density, mix of uses, and enhanced street network provides opportunities to support micro mobility options that provide strong non-auto connections to the surrounding area.

TDM Considerations

- Complimentary mix of land uses will result in the internalization of daily trips within the Site and neighbourhood that can be made by foot / bike, reducing the need for a personal automobile;
- Design of a fine-grained, permeable street network that supports all modes of travel; and
- Proposed density and mix of land uses provide greater opportunities to support local area transit services and other micro-mobility options that encourage non-auto modes of travel to the surrounding area.

5.3.2 Enhance Public Realm and Pedestrian Mobility

The Site, in its current orientation, was designed to prioritize the movement of vehicles with an emphasis on large surface parking lots serving automobile-oriented retail and automotive uses. For the most part, the surrounding streets are less desirable places to walk with limited pedestrian crossing opportunities and sidewalks generally only on one side of the road.

The proposed plan contains elements that aim to emphasize the pedestrian realm. Enhanced pedestrian facilities (wide sidewalks, attractive boulevards) and off-street connections through the Site will make walking a more attractive option.

Streetscape improvements will improve pedestrian comfort; these could include (but are not limited to) expanding sidewalk widths, increasing crossing opportunities, and providing street furniture and landscaping.

Convenient and direct pedestrian connections to area transit stops will be prioritized in the development of the Master Plan to ensure that public transit remains the preferable mode for trips that are to be made outside the local neighbourhood.

As much as possible, access to loading and parking facilities will be strategically located and consolidated in the site plan to minimize interference with the vibrant pedestrian realm.

Ultimately, each of these measures that will be integrated into Site plan designs will increase and facilitate pedestrian activity emanating from the Site.

TDM Considerations

- Streetscape improvements will improve pedestrian comfort.
- The proposed street network and development blocks have been designed keeping in mind the need for direct and convenient pedestrian connections throughout the Site.
- Access to loading and parking facilities will be minimized and strategically located in the Site Plan to minimize interference with the vibrant pedestrian realm.

5.3.3 Facilitate and Increase Transit Use

The northern boundary of the Site is adjacent to the planned Lakeshore BRT which will facilitate access across the extent of Mississauga's waterfront and several GO Stations. Given the size of the Site, providing strong active linkages and other last-mile solutions are essential to connect residents and visitors across the site to the area transit network. The proposed street and active network for the Site were designed to facilitate transit access for all users by emphasizing the public realm and creating direct pedestrian connections. The integration of local transit from the onset of development is a high priority for the Site in order to encourage residents and visitors to utilize transit as a primary mode of travel and build travel behaviours that are supportive of the TDM Plan.

To this end, transit incentives (i.e. pre-loaded PRESTO cards) will be offered to first-time occupants of residential units to persuade them to use public transit for a period of time and establish this modal choice as a habit.

Notwithstanding that the Site is located along the Lakeshore Road East corridor and therefore in proximity to the TTC at Long Branch Station, there is currently no fare integration between these transit agencies (i.e. MiWay and TTC). In order to encourage transit as a viable (and affordable) mode choice, Peel Region, the City of Mississauga and the City of Toronto should consider possible fare integration to promote transit use.

Lastly, as outlined in **Section 4.0**, the opportunity to locate a new GO Station east of Cawthra Road along the Lakeshore West GO Transit rail line should be considered.

TDM Considerations

- Facilitate connections to and from public transit (along the Lakeshore Road East corridor) from the on-set of development to achieve desired modal shift.
- Provide a well-connected pedestrian network facilitating transit access for all users.
- Provide pre-loaded PRESTO cards to all first-time occupants of residential units.
- Encourage Peel Region, the City of Mississauga, and City of Toronto to consider possible fare integration opportunities to promote regional transit use.

5.3.4 Encourage Cycling Usage

To encourage cycling as a viable mode of travel for residents and visitors of the proposed development, significant infrastructure investments have been considered (cycling lanes, bicycle parking, bicycle repair facilities).

Most of the proposed street network will include two-way, in-boulevard cycle tracks (see **Section 3.1.3**) and connect to an external street (Lakeshore Road East) that is planned to be a cycling corridor as part of the Lakeshore Connecting Communities BRT (see **Section 3.4.2**).

Each development block is intended to include secure bicycle parking for residents and employees and at-grade or below grade bicycle parking for visitors. Bicycle parking provisions will be consistent with the minimum bicycle parking requirements of Zoning By-law 0225-2007 which were recently updated in 2022 as a result of the *Parking Regulations Study*.

Bicycle repair facilities may be provided within each development's bicycle parking facility. With cycling uptake expected to be high, providing infrastructure to assist with quick and easy bicycle repairs would add convenience for prospective cyclists.

Additional TDM measures that include financial contributions to bike share stations will also be considered for the Site.

TDM Considerations

- Two-way, in-boulevard cycle tracks are provided along internal streets that will connect to the planned regional cycling network.
- Secure bicycle parking will be provided for residents and at-grade bicycle parking for visitors throughout the Site.
- Bicycle repair facilities will also be integrated into each development block in order to facilitate quick and easy bicycle repairs.
- Consideration for financial contributions to Bike Share Stations.

5.3.5 Micro-Mobility

In order to shift travel behaviour towards more sustainable modes of travel, the provision of convenient first-mile / last-mile trip connections to public transit or local amenities are required. These solutions help fill gaps in the area transportation network that otherwise would result in people opting for a private vehicle (i.e. needing to walk over a kilometre to a transit stop).

Bicycle and scooter sharing form part of the overall Mobility Strategy to maximize connections to transit and encourage sustainable local travel. This type of shared system, if deployed, would provide excellent opportunities to connect area residents to future rapid transit along Lakeshore Road East (and a potential Cawthra GO Station). Longer distance cycling trips to destinations like Long Branch GO station would be achievable with the planned implementation of a continuous cycling corridor on Lakeshore Road East connecting the site with the train station.

The City of Mississauga is currently undertaking an "E-Scooter Pilot" including "*studying how a shared program of publicly available bicycles, pedal-assist bicycles (e-bikes) or electric scooters (e-scooters) could be used for travel in Mississauga*." In December 2020, City Council approved the implementation of an interim e-scooter strategy intended to operate within the five-year e-scooter pilot program launched by the Province of Ontario. In Mississauga, e-scooters are permitted to operate on public roadways with a posted speed limit of 50km/h or less and on cycling infrastructure, but not within parks or off-road trails.

The provision of micro mobility solutions (including bike share, scooter share, bicycle parking) should be strategically located throughout the Site within smaller hub areas to ensure proximate access for residents and visitors.

TDM Considerations

- Reduced resident parking ratios that are reflective of contemporary parking policy in Canada, good transportation planning, and the good transit afforded to the Site (planned Lakeshore BRT).
- Provision of a shared pool of visitor parking will help maximize efficiency of parking across the Site.

5.3.6 Reduced Parking Provisions

An effective TDM measure that can be applied to the proposed development is the constraint of on-site vehicular parking supply. Appropriate vehicle parking management and the provision of an extensive suite of TDM measures are mutually supportive. If vehicle parking is oversupplied across the Site, residents and visitors would have less incentive to utilize the alternative, non-auto options that are available to them due to the site's favourable location and that are enhanced as part of this project. Likewise, a modest parking supply without appropriate TDM measures would negatively affect local traffic and place undue parking demand on the surrounding area.

As outlined in **Section 2.1.3**, Bill 185 introduced legalisation to amend the Planning Act making vehicle parking requirements as stipulated in municipal Official Plans or Zoning By-laws null and void in in Protected Major Transit Station Areas (PMTSAs) and Major Transit Station Areas (MTSAs). As per the Region of Peel Official Plan, the Site is located within the Lakeview Waterfront MTSA. Henceforth, the Site does not have any applicable vehicle parking standards and is therefore well positioned to utilize a reduced parking supply as an effective TDM measure.

A reduced parking supply will be pursued as part of future applications reflecting contemporary advancements in parking policy across Canada and reflecting good transportation planning as part of this TDM Plan.

The adoption of shared parking spaces between non-residential uses (residential visitors, commercial, retail, etc.) to maximize efficiency based on typical parking utilization patterns will also be advanced.

TDM Consideration

- Support the provision of bicycle and/or scooter sharing on-site to connect residents / visitors to local transit or area amenities.

5.3.7 Encourage Reduced Auto Ownership & Use

The provision of car-sharing programs is an important TDM measure because it allows residents to use automobiles as needed without requiring them to own a vehicle. By nature, this means that they make less vehicular trips, directly reducing the amount of vehicular travel emanating from the Site.

While there are currently minimal car-sharing services provided in Mississauga, should these services become available, the Site would be an excellent candidate for these services.

Car-share vehicles on-site will be supported, affording an attractive alternative to vehicle ownership for future residents.

TDM Considerations

- Supporting the provision of car-share vehicles on-site to facilitate vehicle trips, as needed, as an alternative to car ownership.

6.0 MULTI-MODAL TRAVEL DEMAND FORECASTING

6.1 TRAFFIC ANALYSIS SCENARIOS

The scenarios for the updated traffic analysis are summarized in **Table 10** and include the planned road improvements for Phases 1 and 2, as per the July 2024 Lakeview Community Partners Subdivision Agreement, as well as additional road improvements recommended by BA Group, as outlined in **Section 3.2** . The traffic analysis considers a total of up to 21,300 residential units (Rangeview with 5,300 units and Lakeview with 16,000 units) and an evolving auto driver mode share that decreases from 55% (existing) to 40% by 2041 at full build-out in Scenario 4.

For Scenario 1, it is noted that the allocation of proposed residential units between Rangeview and Lakeview (total of 10,000 units) has been assumed for the purposes of traffic operations only. The allocation of units constructed by Rangeview or Lakeview in each scenario is expected to evolve throughout the development process.

The details of the multi-modal travel demand assessment for each scenario are provided in the following sections. Within the updated traffic analysis, the horizon of 2031 was considered for Scenario 1, while Scenarios 2, 3A, 3B and 4 considered the 2041 horizon.

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

TABLE 10 TRAFFIC ANALYSIS SCENARIOS

Development	Existing	Scenario 1 (2031): No Ogden No Haig	Scenario 2 (2041): Ogden connected to Lakeshore Road (no Haig)	Scenario 3A (2041): Ogden + Haig connected to Lakeshore Road	Scenario 3B (2041): Ogden+ Dual NBL turns at Lakefront Promenade / Lakeshore Road (Haig not connected)	Scenario 4 (2041): Ogden & Haig connected + dual NBL at Lakefront Promenade
Road Improvements	**--**	All Phase 1 Road Improvements + BRT				All Phase 2 Road Improvements
Auto Driver Mode Share	**55%**	**50%**				**40%**
Rangeview	**--**	10,000 units[1] + 1.4M ft^2 non-residential	3,700 units + 100% non-residential	5,300 units + 100% non-residential		5,300 units + 100% non-residential
Lakeview	**--**		8,050 units + 1.7M ft^2 non-residential	8,050 units + 1.7M ft^2 non-residential	8,050 units + 1.7M ft^2 non-residential	16,000 units + 1.7M ft^2 non-residential
Total	**--**	**10,000 units**	**11,750 units**	**13,350 units**	**13,350 units**	**21,300 units**

Notes:

1. It should be noted that the allocation of proposed residential units between Rangeview and Lakeview has been assumed for the purposes of traffic operations only. The allocation of units constructed by Rangeview or Lakeview in each scenario, may be subject to change.
2. Traffic counts for base year collected in April 2024.

6.2 TRAVEL MODE SHARES

The existing area travel mode share of does not consider the implementation of the BRT along Lakeshore Road East, while the future area travel mode share considers the implementation of BRT, as summarized in **Table 12** and **Table 13,** respectively. It is noted that with the implementation of the BRT, the auto driver mode share is expected to decrease from 60% (AM peak)/ 61% (PM peak) to 50%, during both peak periods of the day.

Although the future travel mode share for cycling is stated as 0% in **Table 11**, for the purpose of the travel demand assessment, the future cycling travel mode share was adjusted to 2% to account for cycling trips that would likely be generated by the sites being considered as summarized in **Table 12**. As part of this adjustment, the auto passenger travel mode share was reduced by 2% for each time period. The updated future area travel mode share that includes the BA Group adjustments is provided in **Table 13**.

TABLE 11 AREA TRAVEL MODE SHARE (BEFORE BRT)

Mode of Travel	Lakeview		Port Credit		Average	
	AM	PM	AM	PM	AM	PM
Transit	11%	21%	28%	33%	20%	27%
Auto Driver	**59%**	**61%**	**61%**	**61%**	**60%**	**61%**
Auto Passenger	27%	14%	6%	4%	16%	9%
Walk	3%	4%	5%	2%	4%	3%
Cycle	0%	0%	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Notes:

1. Source: TYLin April 2021 report, Table 3.1, Page 17.

TABLE 12 AREA TRAVEL MODE SHARE (WITH BRT)

Mode of Travel	2016 TTS Average		50% Auto Driver		Difference	
	AM	PM	AM	PM	AM	PM
Transit	20%	27%	25%	35%	5%	8%
Auto Driver	**60%**	**61%**	**50%**	**50%**	**-10%**	**-11%**
Auto Passenger	16%	9%	20%	11%	4%	2%
Walk	4%	3%	5%	4%	1%	1%
Cycle	0%	0%	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**	**0%**	**0%**

Note:

1. Source: TYLin April 2021 report, Table 2.3, Page 87.

TABLE 13 BA GROUP ADJUSTED AREA TRAVEL MODE SHARE (WITH BRT)

Mode of Travel	2016 TTS Average		50% Auto Driver		Difference	
	AM	PM	AM	PM	AM	PM
Transit	20%	27%	25%	35%	5%	8%
Auto Driver	**60%**	**61%**	**50%**	**50%**	**-10%**	**-11%**
Auto Passenger	14%	7%	18%	9%	4%	2%
Walk	4%	3%	5%	4%	1%	1%
Cycle	2%	2%	2%	2%	2%	2%
Total	**100%**	**100%**	**100%**	**100%**	**0%**	**0%**

Note:
1. BA Group adjusted Table 2.3 in the TYLin April 2021 report and increased the cycling mode share to 2% for all time periods and decreased the auto passenger share by 2% for all time periods.

It is important to note that there is a strong correlation between the supply of parking and auto driver mode share. Studies that support how parking supply reduces auto driver mode share were undertaken by BA in the Yonge and Eglinton area of Toronto and are provided in **Appendix F**. Given Bill 185's amendment to eliminate parking requirements in Protected Major Transit Station Areas (PMTSAs), it should be expected that new developments in the future Lakeshore BRT areas will consider reduced parking rates that are expected to result in reduced auto driver mode shares.

As discussed in **Section 2.1.3** the recent passing of *Bill 185: Cutting Red Tape to Build More Homes Act* amends the planning act to prohibit the ability for municipal Official Plans or Zoning By-laws to requires the provision of vehicle parking. Section 16 (22) of the Planning Act reads as follows:

> *(22) No official plan may contain any policy that has the effect of requiring an owner or occupant of a building or structure to provide and maintain parking facilities, other than parking facilities for bicycles, on land that is not part of a highway and that is located within,*
>
> *(a) a protected major transit station area identified in accordance with subsection (15) or (16);*
>
> *(b) an area delineated in the official plan of the municipality surrounding and including an existing or planned higher order transit station or stop, within which area the official plan policies identify the minimum number of residents and jobs, collectively, per hectare that are planned to be accommodated, but only if those policies are required to be included in the official plan to conform with a provincial plan or be consistent with a policy statement issued under subsection 3 (1); or*

Given the recent passing of Bill 185 Zoning By-law, prescribed vehicle parking rates are no longer applicable to the Site.

Numerous studies have documented the relationship between the supply of vehicle parking and auto driver mode share. In areas where the supply of vehicle parking is high, trip makers are more likely to opt for private auto as the preferred mode of travel. As the supply of vehicle parking is reduced, private auto mode share decreases. It is therefore expected that the recent Bill 185 amendment to the planning act prohibiting Zoning By-law vehicle parking requirements, will reduce auto driver mode shares within MTSAs, inclusive of the area surrounding the Rangeview and Lakeview sites.

The Region of Peel's Transportation Master plan sets out a target to achieve a 55% sustainable mode share in Mississauga by 2041. However, as this target represents a City-wide average, the sustainable mode share within higher order transit corridors is expected to be greater than 55%, with a correspondingly lower auto driver mode share. It is therefore reasonable to expect that the auto driver mode share in the Lakeview area could be a low as 40%.

The existing travel mode shares of comparable areas, based on home-based trips including apartment and townhouse dwelling types, are summarized in **Table 14**. Using 2016 TTS data, the travel mode shares within areas of Mississauga and Toronto, in addition to four comparable Toronto neighbourhoods, were determined. The zones used to delineate the comparable areas are summarized in **Appendix F.**

At the request of City Staff, BA Group also assessed the existing travel mode share of Liberty Village as a proxy for the Site. Liberty Village's travel mode share patterns were assessed using 2016 TTS data (TTS Zone 89). As summarized in **Table 14,** the auto driver share is 38% in the AM and 33% in the PM. These auto driver mode shares generally align with the proposed travel mode share for Rangeview and Lakeview of 40% that is being considered within Scenario 4 of this report (Rangeview with 5,300 units and Lakeview with 16,000 units).

TABLE 14 TRAVEL MODE SHARE COMPARISON BY AREA

Mode	Municipality / Area					
	Peel Region	City of Toronto	Yonge-Eglinton (Toronto)	North York Centre (Toronto)	Kipling / Six Point / Islington (Toronto)	Liberty Village (Toronto)
AM Peak Home-based Trips						
Auto Driver	**57%**	**35%**	**24%**	**31%**	**35%**	**38%**
Auto Passenger	16%	9%	2%	7%	7%	8%
Transit	17%	39%	57%	52%	50%	38%
Active Transportation	10%	17%	17%	10%	8%	16%
PM Peak Home-based Trips						
Auto Driver	**65%**	**37%**	**25%**	**34%**	**41%**	**33%**
Auto Passenger	14%	9%	5%	9%	8%	9%
Transit	17%	38%	54%	48%	46%	36%
Active Transportation	4%	16%	16%	9%	5%	22%

Notes:
1. Mode share based on home-based trip made from apartment and townhouse dwelling types.

6.3 STUDY AREA INTERSECTIONS

The study area for the updated traffic analysis has been expanded to include the additional unsignalized intersections along Lakeshore Road East requested by the City, as well as the additional intersections that are internal to the Rangeview Site. The study area and the results of the traffic analysis have been reported for the following intersections:

6.3.1 External Study Area Intersections

Signalized Intersections (Lakeshore Road East)

- Lakeshore Road East & East Avenue
- Lakeshore Road East & Lakefront Promenade
- Lakeshore Road East & Ogden Avenue
- Lakeshore Road East & Hydro Road
- Lakeshore Road East & Haig Boulevard
- Lakeshore Road East & Cawthra Road
- Lakeshore Road East & Dixie Road

Unsignalized Intersections (Lakeshore Road East)

- Lakeshore Road East & West Avenue
- Lakeshore Road East & Greaves Avenue
- Lakeshore Road East & Westmount Avenue
- Lakeshore Road East & Alexandra Avenue
- Lakeshore Road East & Meredith Avenue
- Lakeshore Road East & Edgeleigh Avenue
- Lakeshore Road East & Strathy Avenue
- Lakeshore Road East & Orchard Road
- Lakeshore Road East & Fergus Avenue

6.3.2 Internal Intersections (Rangeview Site)

Unsignalized Intersections

- Rangeview Road & East Avenue
- Rangeview Road & Lakefront Promenade
- Rangeview Road & Ogden Avenue
- Rangeview Road & Hydro Road
- Street L & East Avenue
- Street L & Lakefront Promenade
- Street L & Ogden Avenue
- Street L & Hydro Road
- Rangeview Road & Street G

6.4 EXISTING TRAFFIC VOLUMES

The traffic analysis undertaken for all scenarios considered in this report were based on updated traffic volumes collected by Spectrum Data, on behalf of BA Group in April of 2024. A summary of the traffic data collected by Spectrum is provided in **Table 15.** All raw traffic data is provided in **Appendix G.** As part of this report update, the existing conditions have been assessed with the April 2024 traffic volumes.

TABLE 15 EXISTING TRAFFIC DATA SOURCES

Intersection	Count Date	Source	Time Periods
External Intersections	Wednesday, April 10, 2024	Spectrum Traffic Data Inc.	**Weekday:** 7:00 to 9:00 a.m. 4:00 to 6:00 p.m. .
Lakeshore Road East / Cawthra Road			
Lakeshore Road East / West Avenue			
Lakeshore Road East / Greaves Avenue			
Lakeshore Road East / East Avenue			
Lakeshore Road East / Westmount Avenue			
Lakeshore Road East / Alexandra Avenue			
Lakeshore Road East / Lakefront Promenade			
Lakeshore Road East / Meredith Avenue			
Lakeshore Road East / Edgeleigh Avenue			
Lakeshore Road East / Ogden Avenue			
Lakeshore Road East /Strathy Avenue			
Lakeshore Road East / Hydro Road			
Lakeshore Road East / Haig Boulevard			
Lakeshore Road East / Orchard Road			
Lakeshore Road East / Dixie Road			
Internal Intersections			
Rangeview Road / East Avenue			
Rangeview Road / Lakefront Promenade			
Rangeview Road / Hydro Road			

The existing lane configuration and traffic control is provided in **Figure 15**. Existing, balanced baseline area traffic volumes for the weekday morning and afternoon peak traffic hours for the External Study Area intersections (Lakeshore Road), are summarized in **Figure 16.** Existing, balanced baseline area traffic volumes for the weekday morning and afternoon peak traffic hours for the Internal Study Area intersections (internal to the Rangeview Site), are summarized in **Figure 17.**

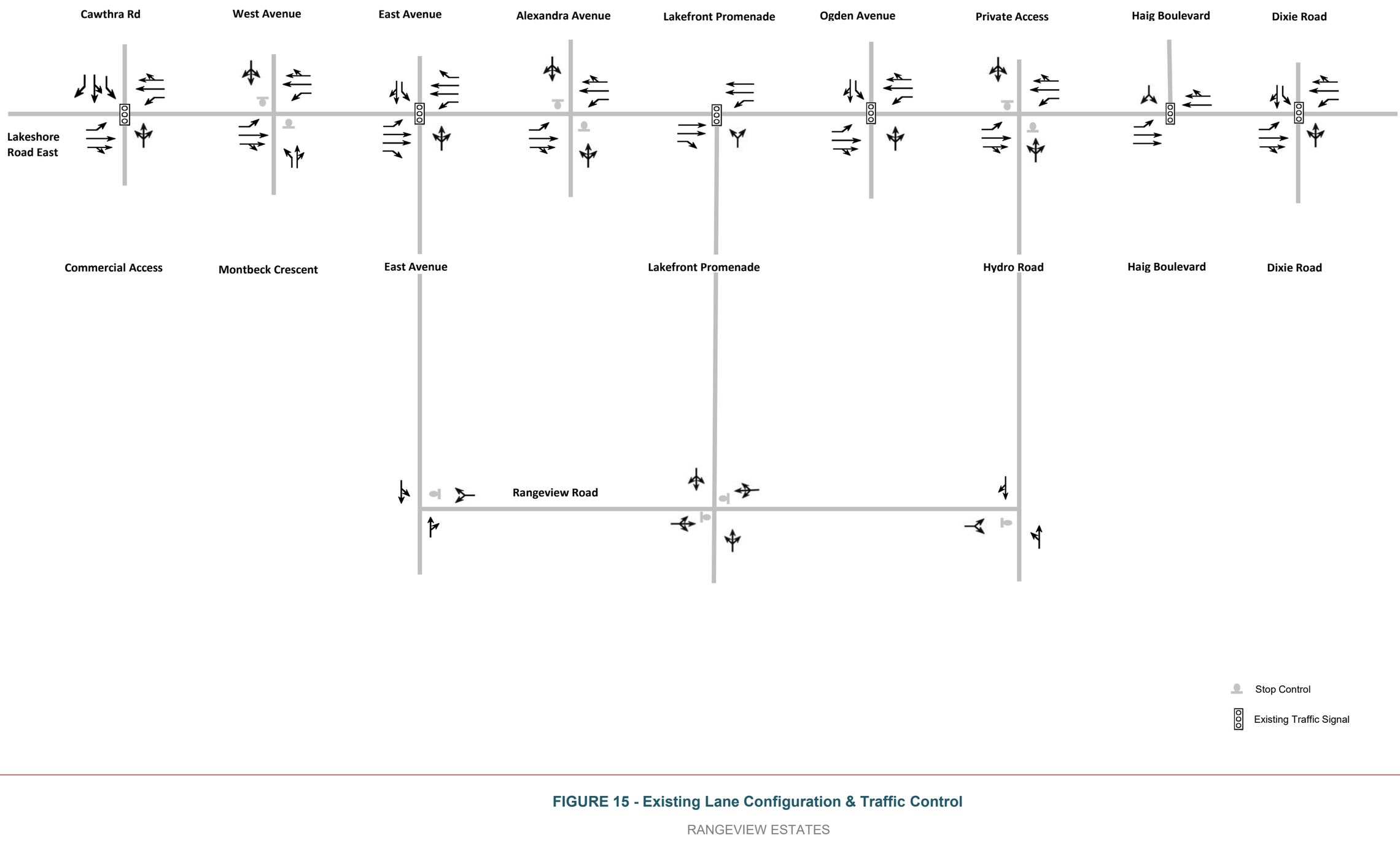

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FIGURE 15 - Existing Lane Configuration & Traffic Control

RANGEVIEW ESTATES

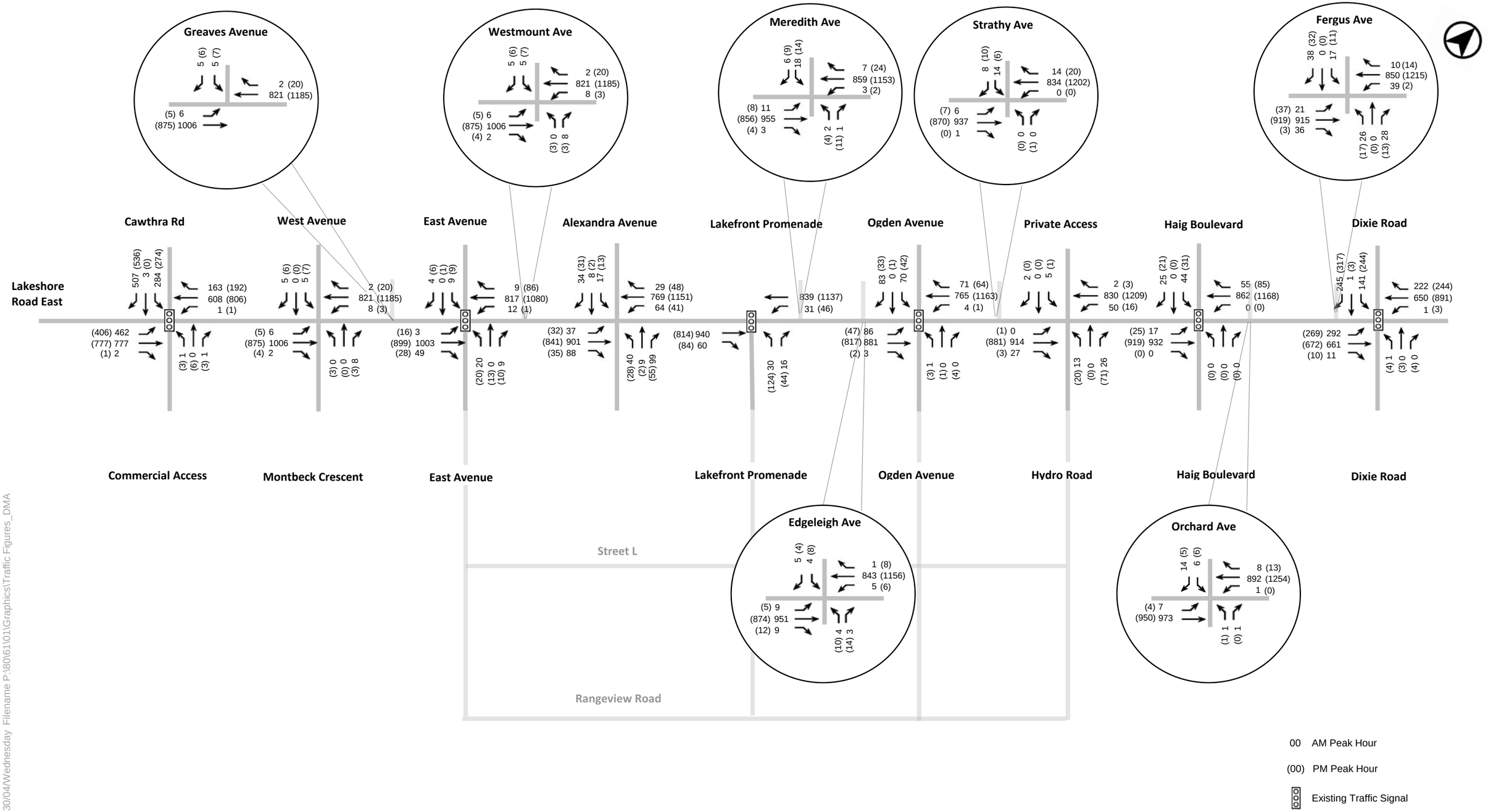

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FIGURE 16 - Existing Traffic Volumes (External Intersections)

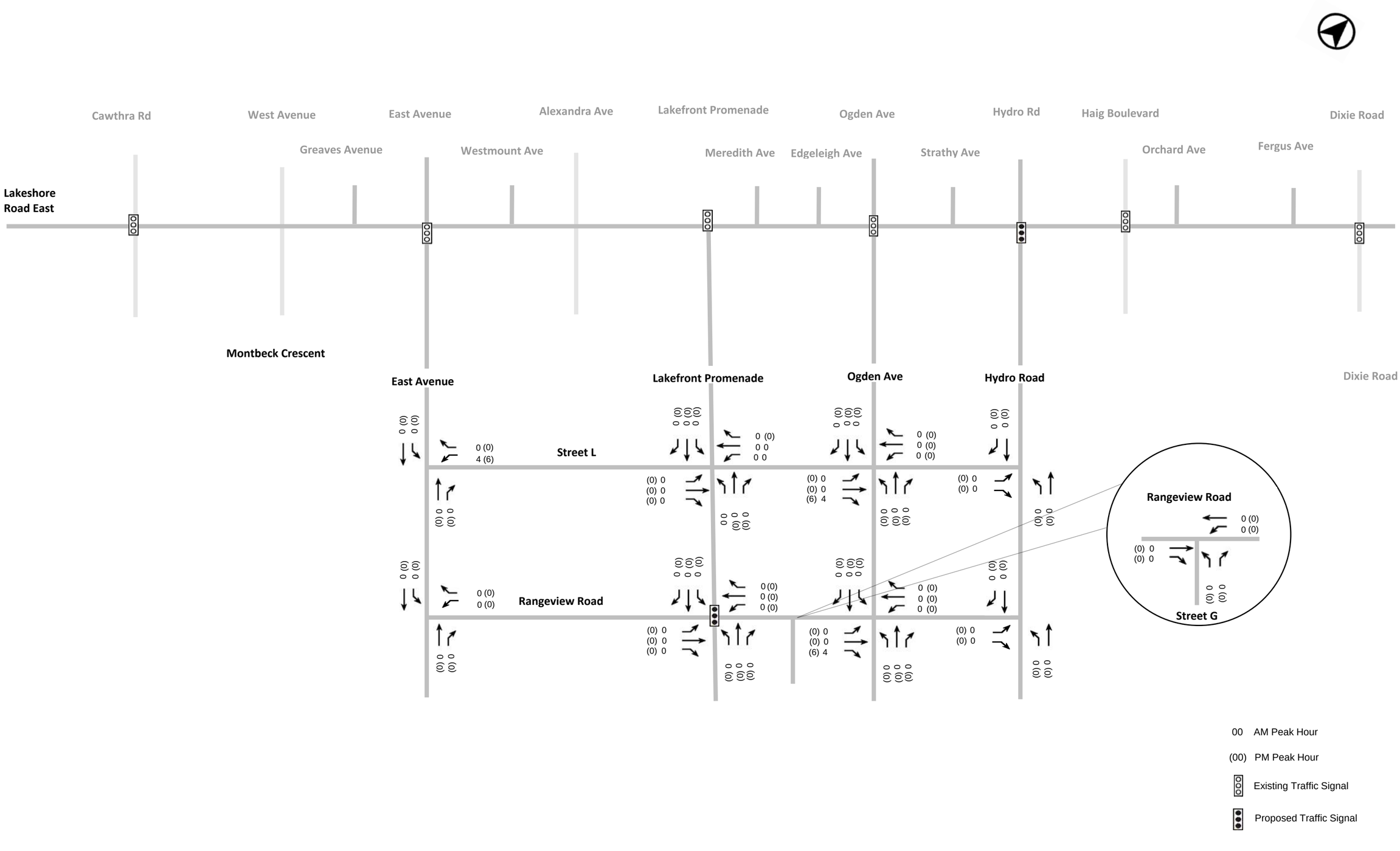

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FIGURE 17 - Existing Traffic Volumes (Internal Intersections)

6.5 BACKGROUND TRAFFIC VOLUMES

6.5.1 Corridor Growth Rates

The background corridor growth rates considered for the updated traffic analysis listed below were provided by the City in May 2024. The growth rates have been based on the City's travel demand model and supporting traffic count data. The rates have been compounded annually from existing to 2041. These growth rates do not include traffic volume growth related to the Rangeview and Lakeview sites. More details regarding corridor growth is provided in **Appendix H**.

- AM Peak: 0% eastbound and 1.0% westbound
- PM Peak: 1.5% eastbound and 0.5% westbound

6.5.2 Background Developments

The background development considered for BA Group's traffic analysis is listed as follows:

- **Serson**: General Office/ Research & Development Centre (449,000 ft^2 GFA)

For the purpose of this analysis, Lakeview was considered as part of the Site traffic. The traffic operations impact of other background developments within the study area, have been assumed to be accounted for within the background corridor growth.

Consistent with the May 31, 2024 BA Group Report, it is noted that without the connection of Haig Boulevard to Lakeshore Road East, it was assumed that the Serson site would not be developed. For this reason, the Serson site has only been considered in Scenarios 3A and 4.

The vehicle trips generated by Serson within Scenarios 3A and 4 are summarized in **Table 16** and **Table 17**.

TABLE 16 SERSON VEHICLE TRIPS: SCENARIOS 3A

Land Use	% Non-res / GFA	AM Peak			PM Peak		
		Inbound	Outbound	2-way	Inbound	Outbound	2-way
Serson							
Office Trip Rate[1]	100% (224,500 ft^2)	0.61	0.10	0.72	0.13	0.64	0.77
Office Vehicle Trips		138	23	161	29	144	173
Research Trip Rate[1]	100% (224,500 ft^2)	0.25	0.08	0.34	0.07	0.37	0.43
Research Vehicle Trips		57	19	76	15	82	97
Total Vehicle Trips		**195**	**42**	**237**	**44**	**226**	**270**

Notes:

1. Source: ITE rates consistent with the TYLin April 2021 report, Appendix C-E Trip Generation Summary Serson North page, 151.
2. Assumed auto driver mode share of 50%.

TABLE 17 SERSON VEHICLE TRIPS: SCENARIO 4

Land Use	% Non-res / GFA	AM Peak			PM Peak		
		Inbound	Outbound	2-way	Inbound	Outbound	2-way
Serson							
Office Trip Rate[1]	100% (224,500 ft^2)	0.52	0.08	0.60	0.11	0.53	0.63
Office Vehicle Trips		116	19	135	24	118	142
Research Trip Rate[1]	100% (224,500 ft^2)	0.21	0.07	0.29	0.05	0.30	0.36
Research Vehicle Trips		48	16	64	12	68	80
Total Vehicle Trips		**164**	**35**	**199**	**36**	**186**	**222**

Notes:

1. Source: ITE rates consistent with the TYLin April 2021 report, Appendix C-E Trip Generation Summary – Serson North page, 151.
2. Assumed auto driver mode share of 40%.

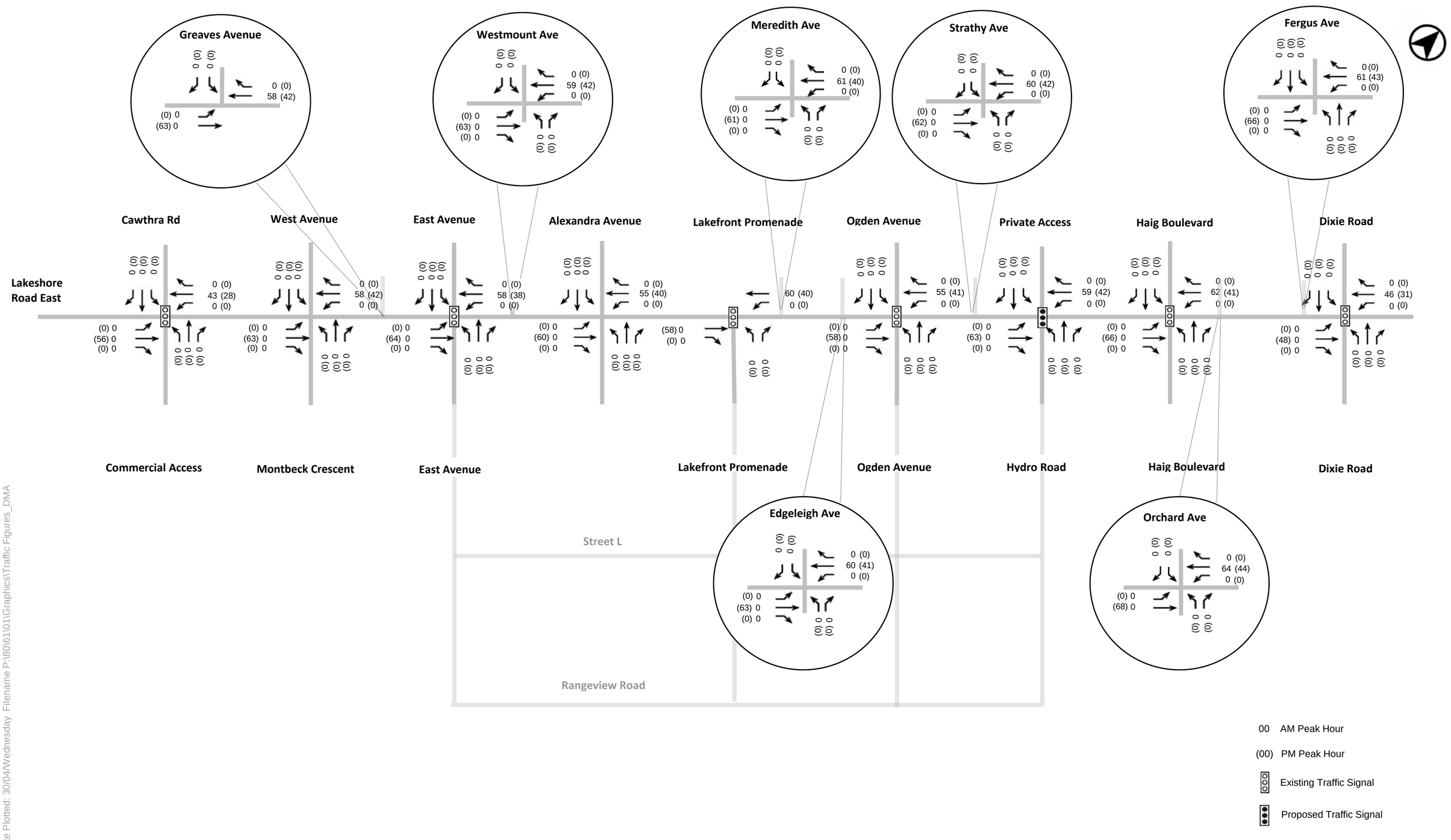

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FIGURE 18 - 2031 Background Corridor Growth

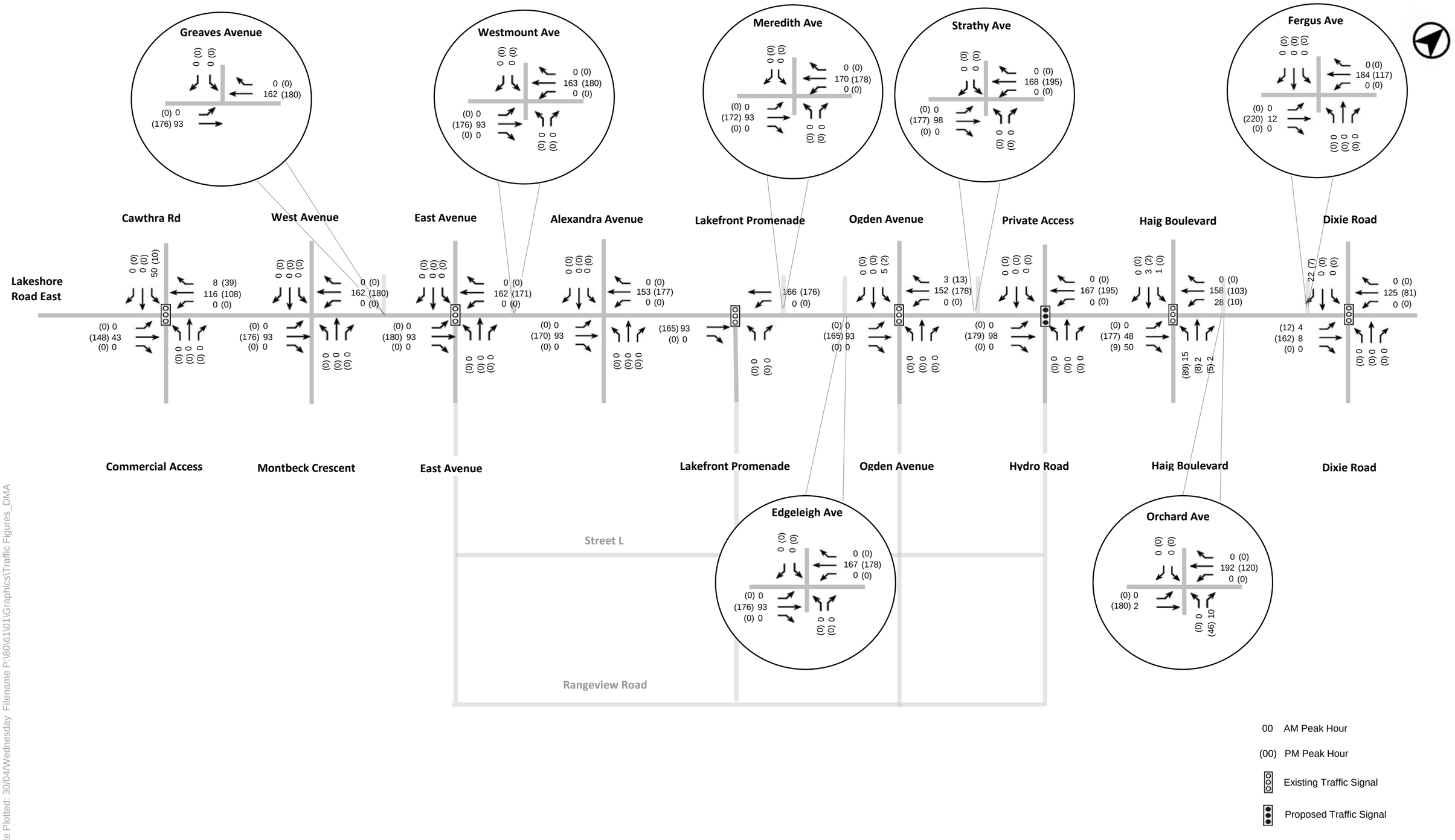

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FIGURE 19 - 2041 Background Corridor Growth

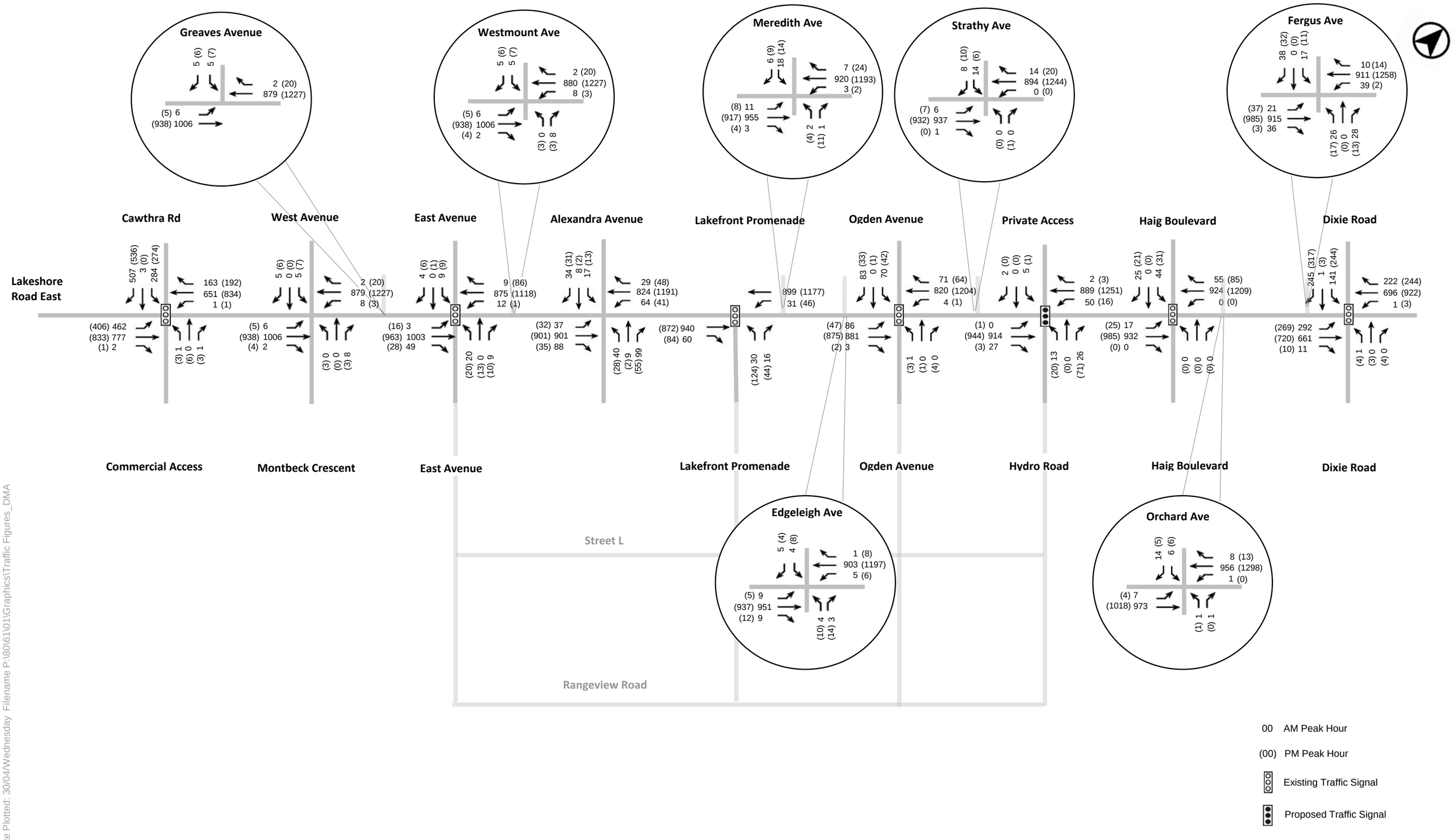

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FIGURE 20 - Future Background Traffic Volumes – Scenario 1 (External Intersections)

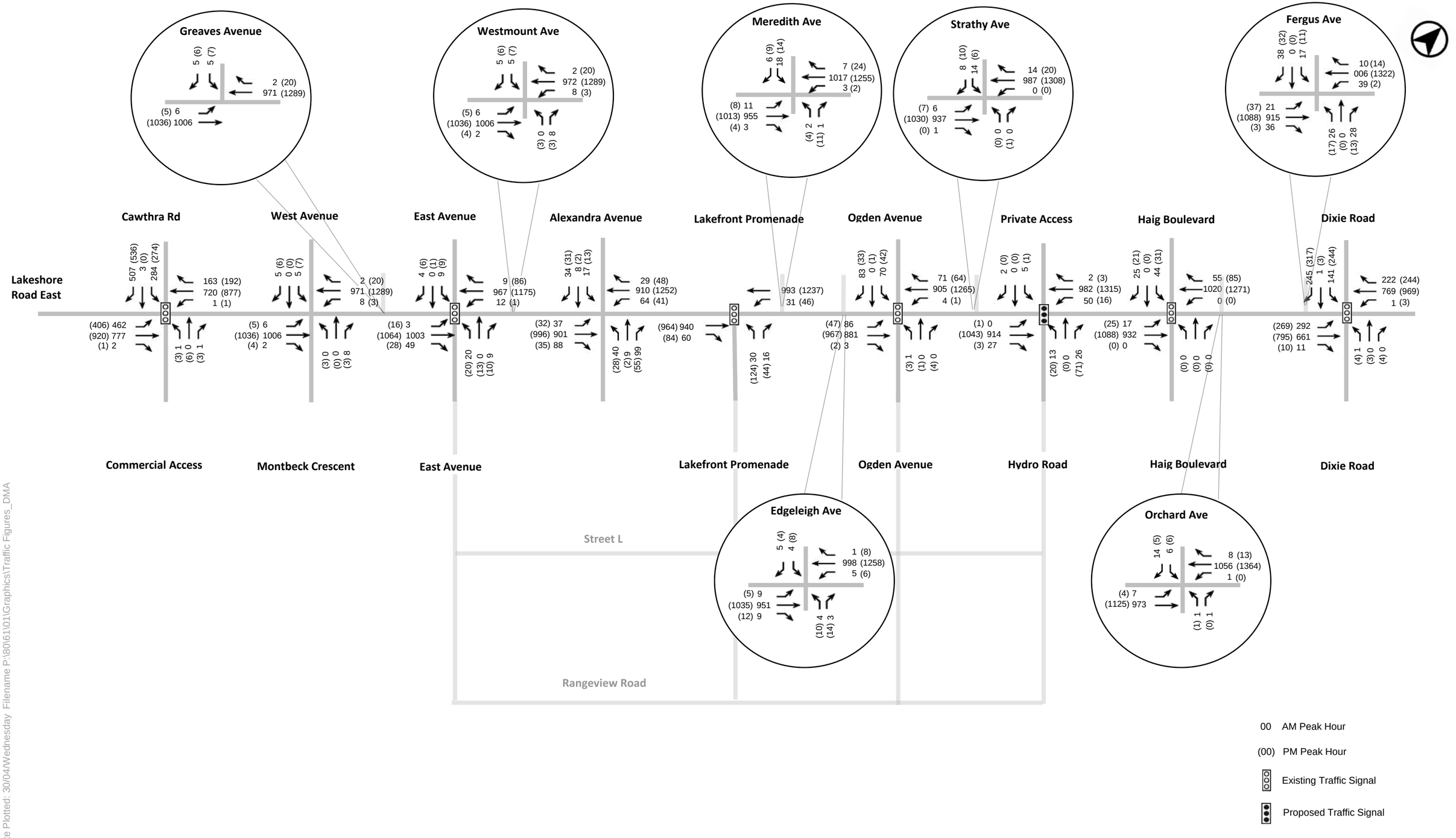

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FIGURE 21 - Future Background Traffic Volumes – Scenario 2 (External Intersections)

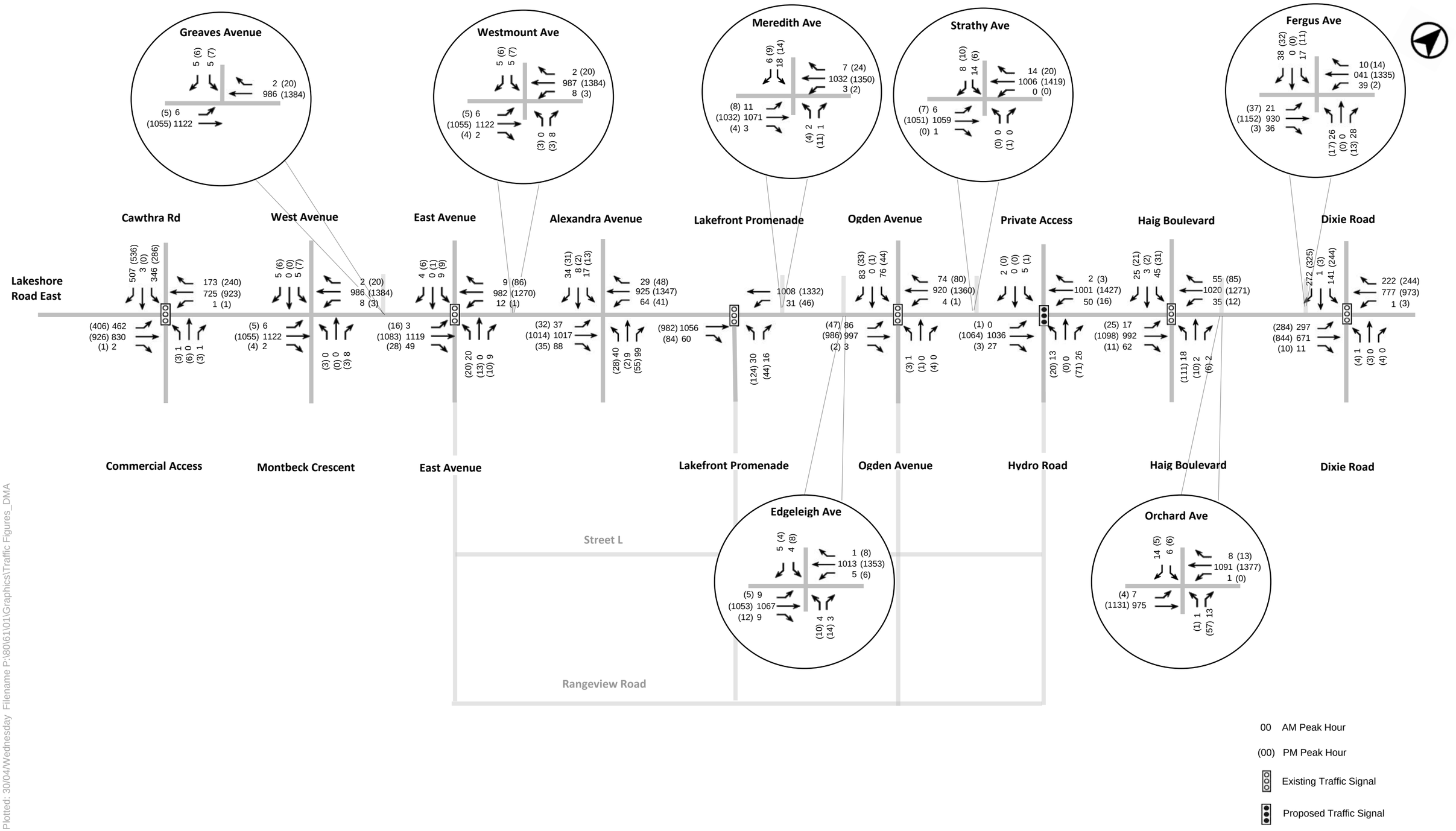

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FIGURE 22 - Future Background Traffic Volumes – Scenario 3A (External Intersections)

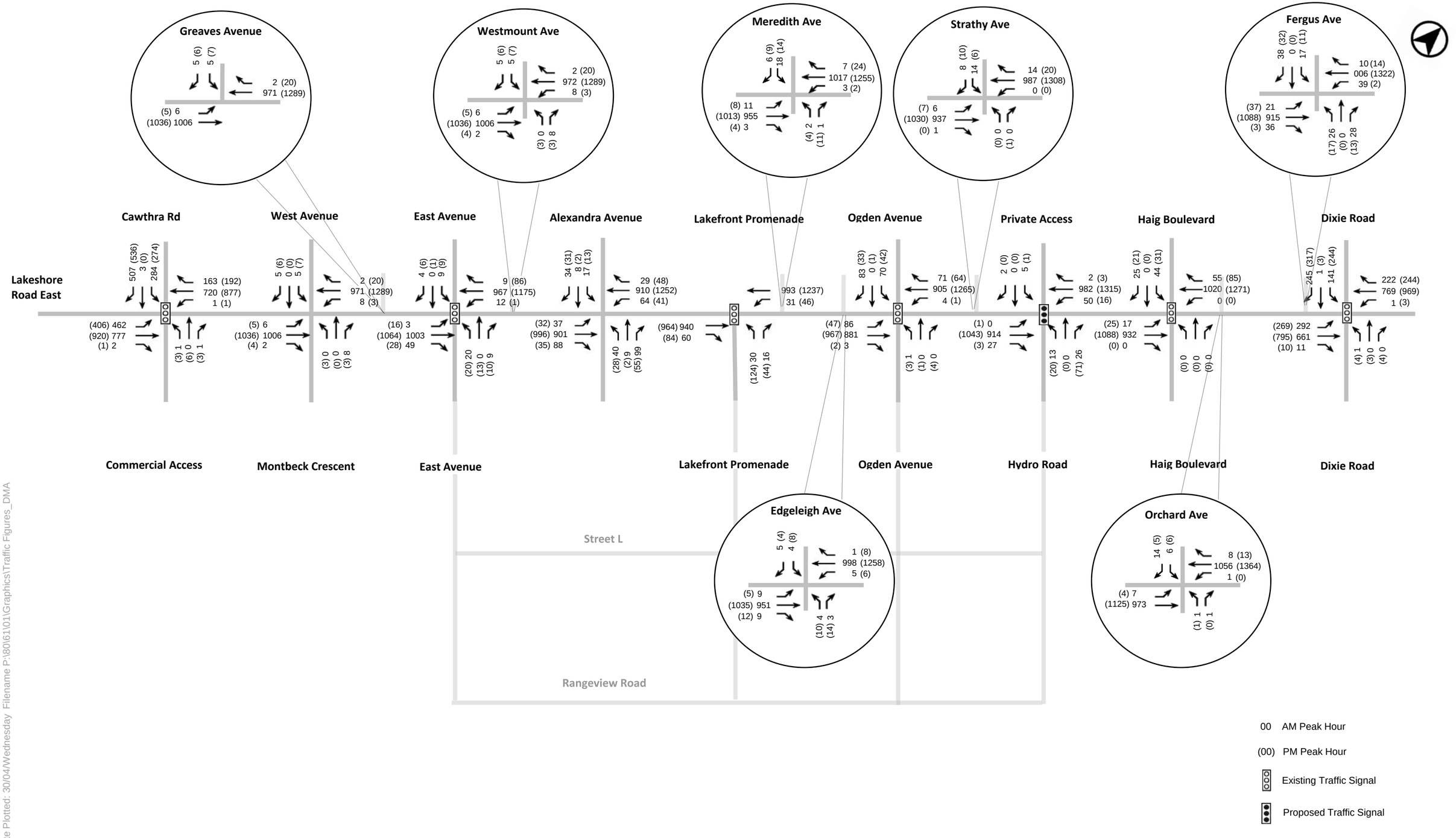

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FIGURE 23 - Future Background Traffic Volumes – Scenario 3B (External Intersections)

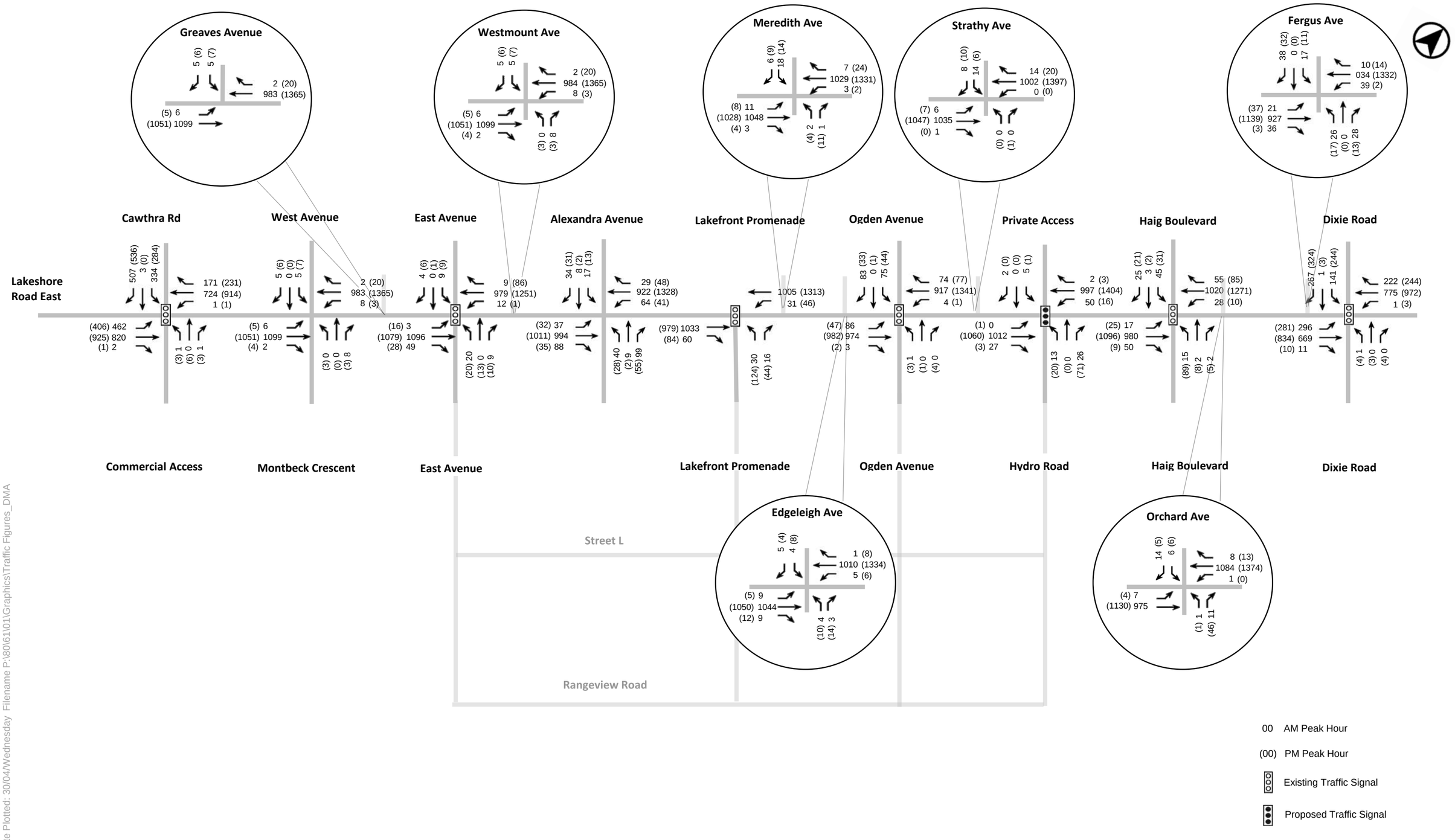

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FIGURE 24 - Future Background Traffic Volumes – Scenario 4 (External Intersections)

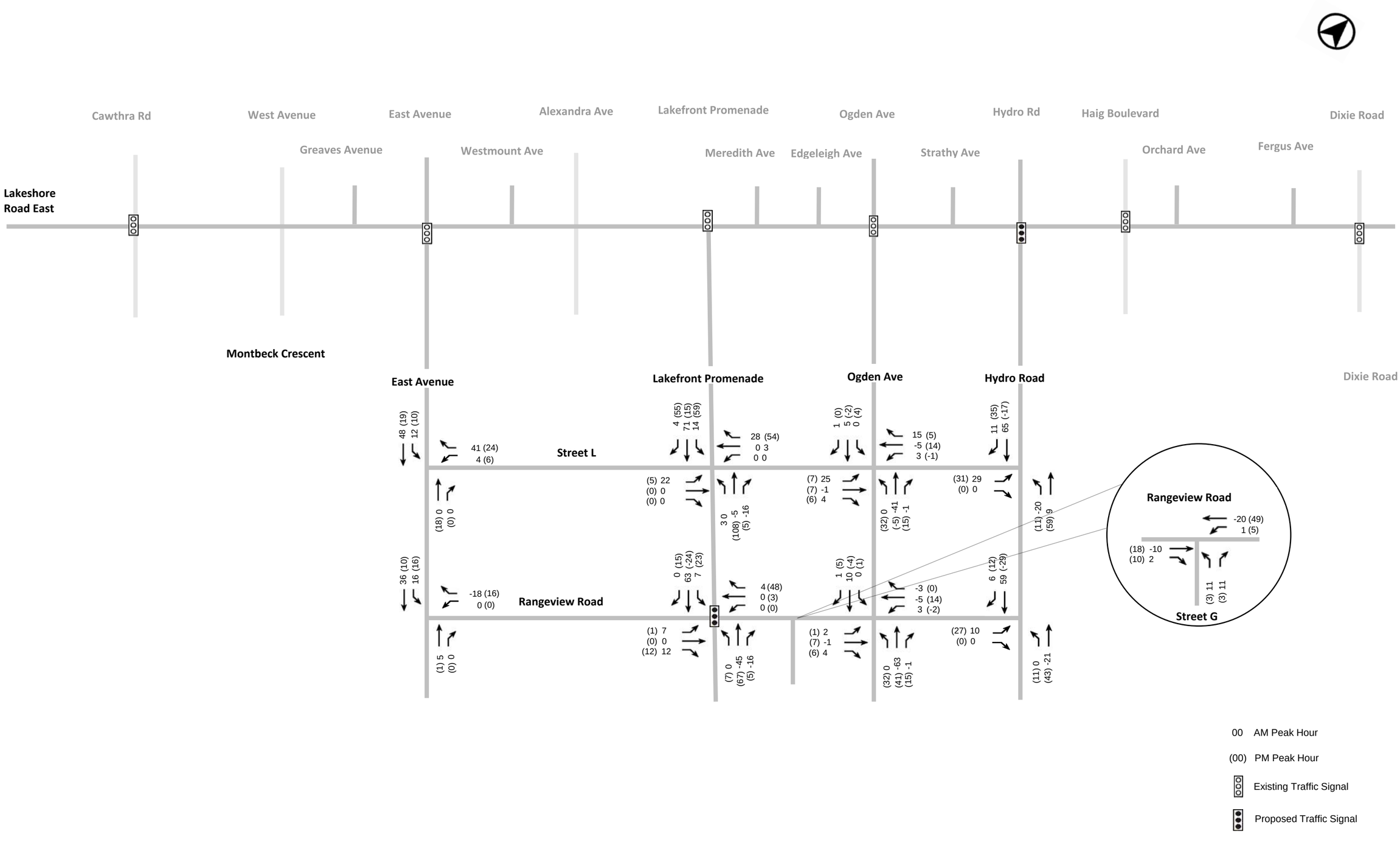

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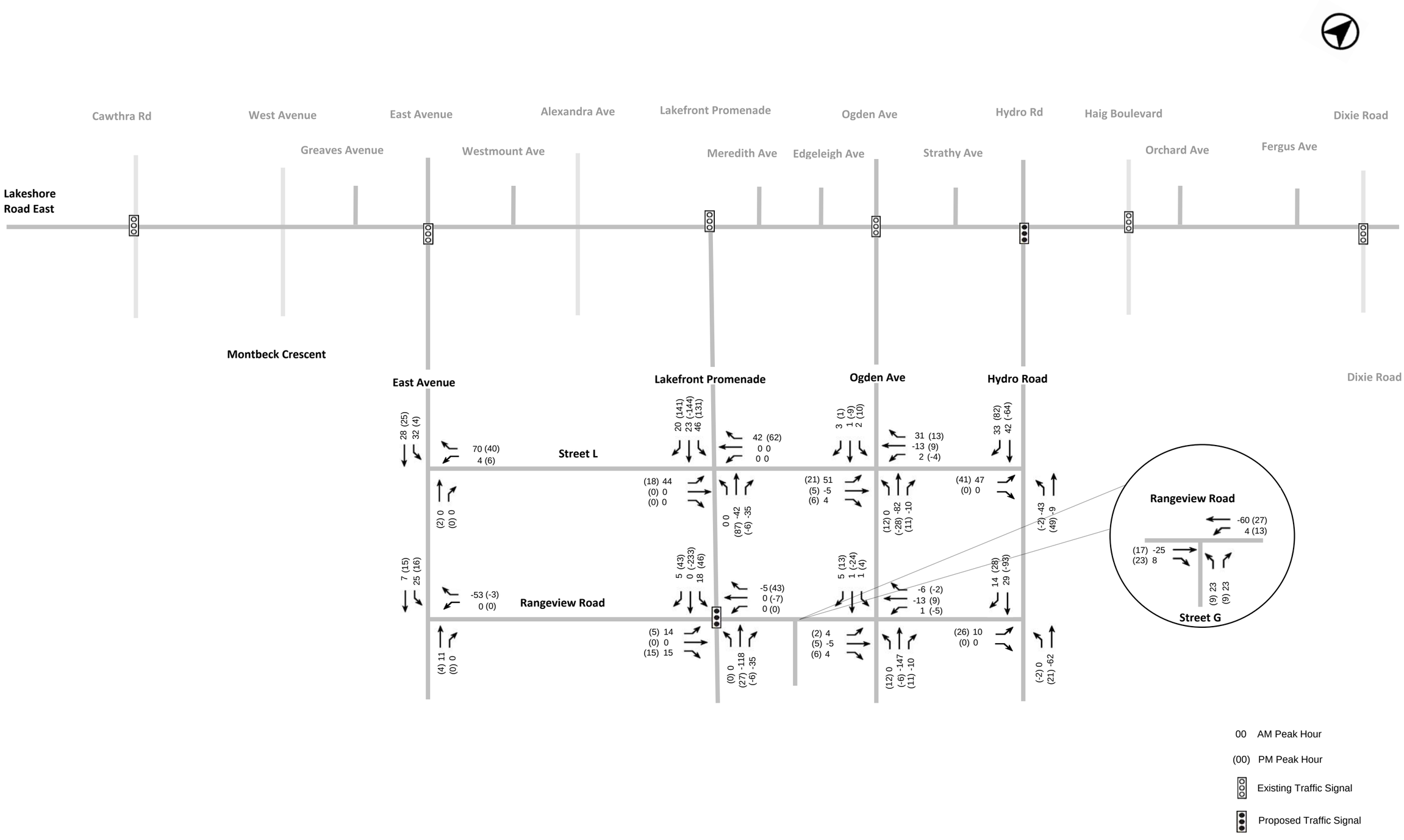
FIGURE 25 - Future Background Traffic Volumes – Scenario 1 (Internal Intersections)



00 AM Peak Hour

(00) PM Peak Hour

Existing Traffic Signal

Proposed Traffic Signal

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FIGURE 26 - Future Background Traffic Volumes – Scenario 2 (Internal Intersections)

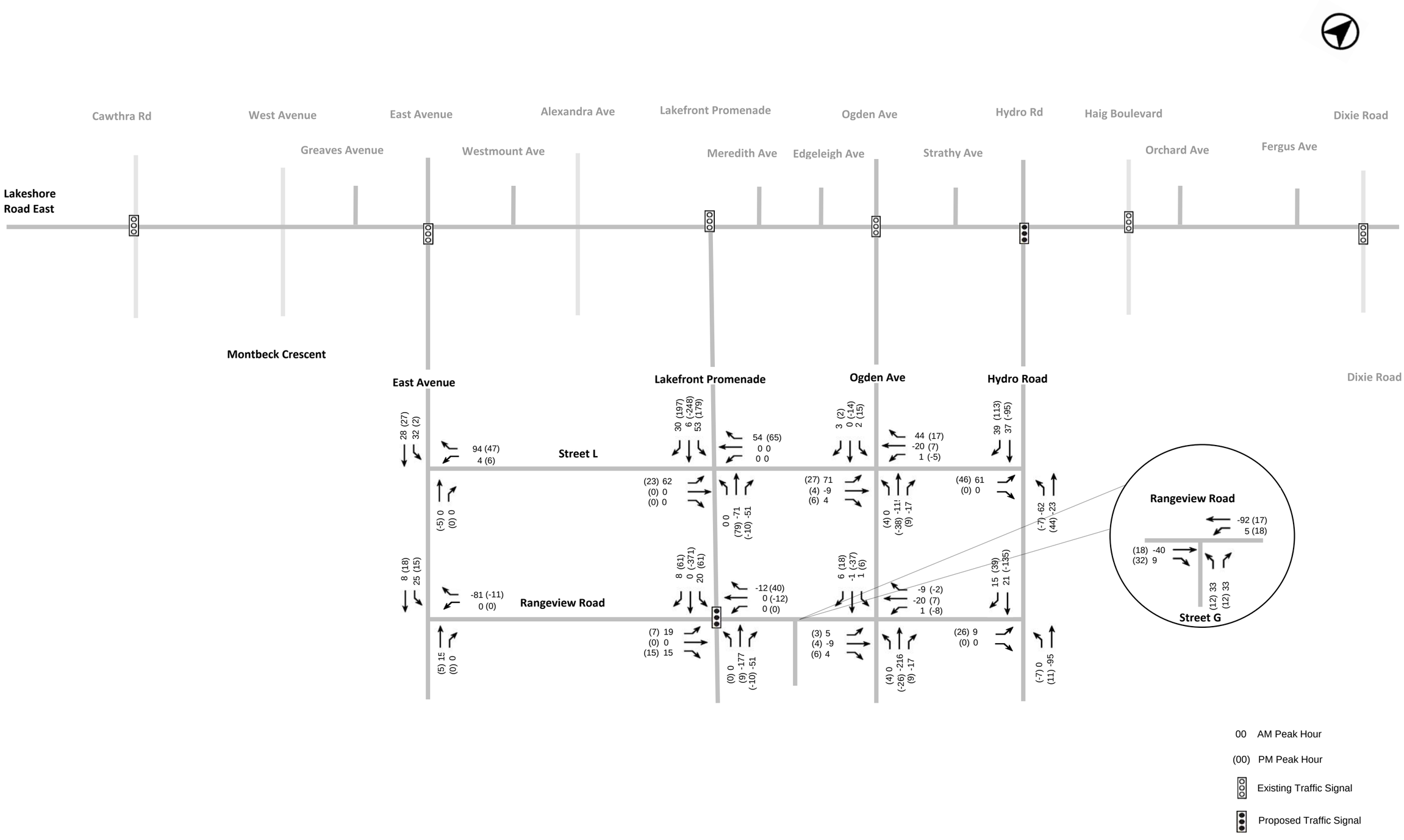

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FIGURE 27 - Future Background Traffic Volumes – Scenario 3A (Internal Intersections)

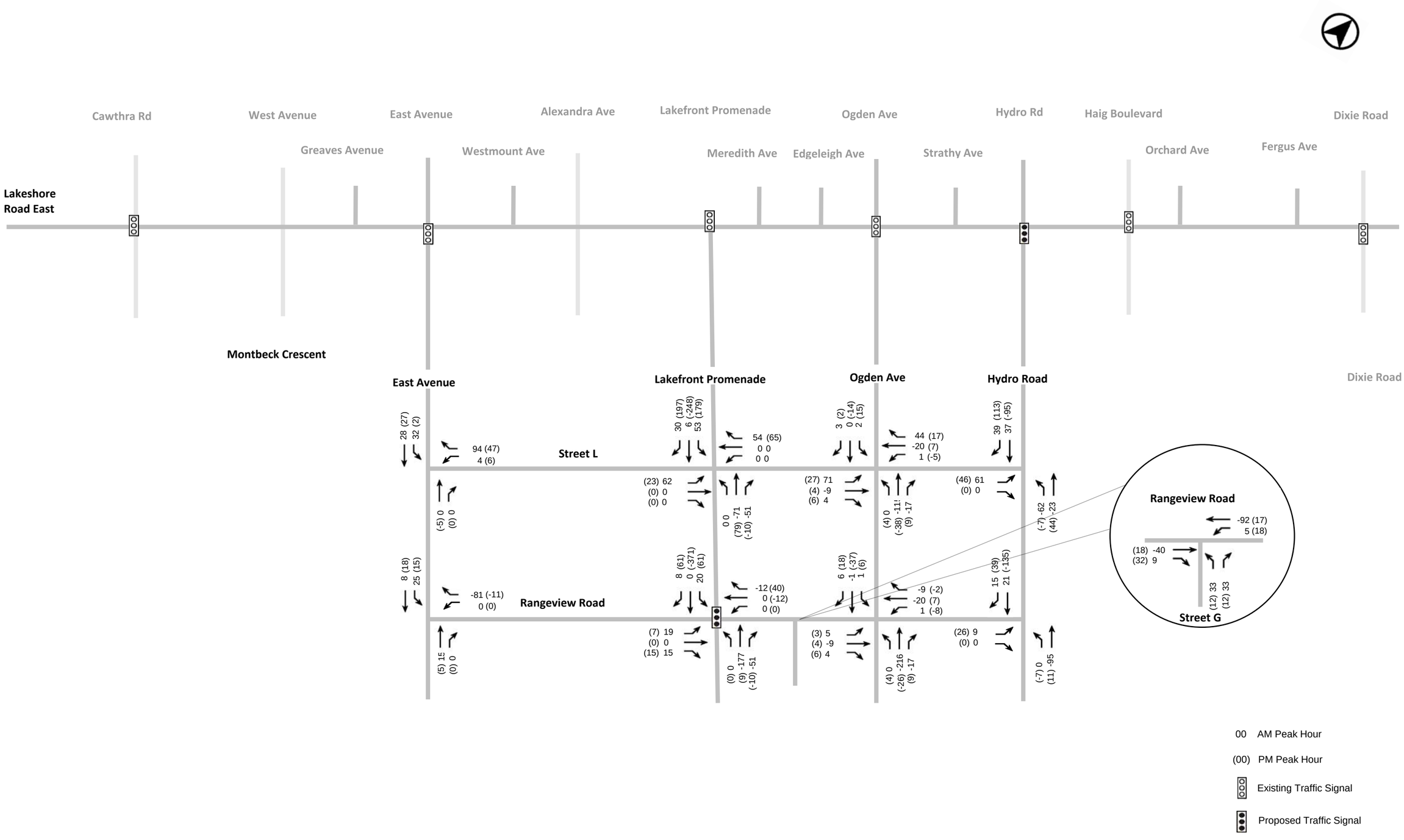

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FIGURE 28 - Future Background Traffic Volumes – Scenario 3B (Internal Intersections)

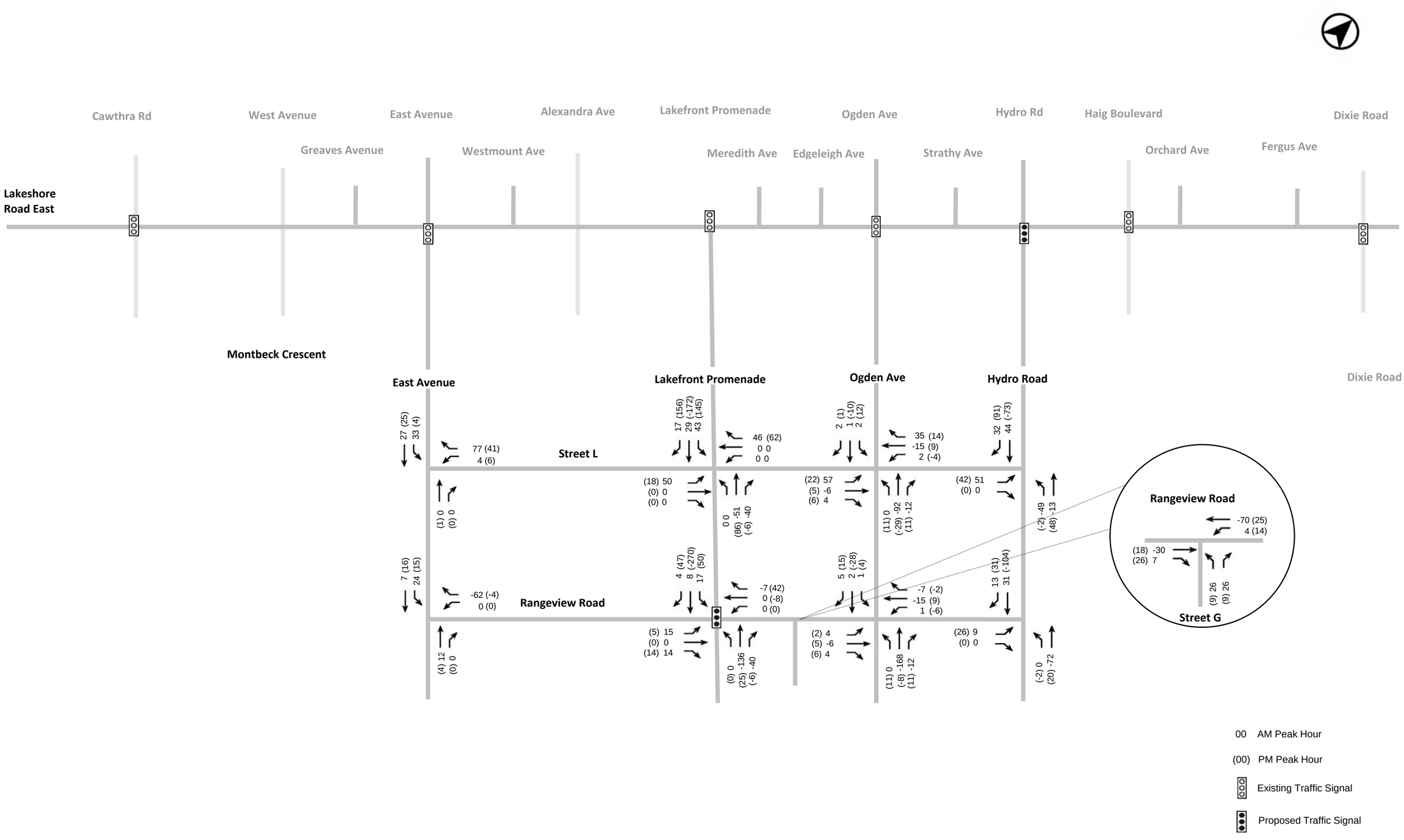

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FIGURE 29 - Future Background Traffic Volumes – Scenario 4 (Internal Intersections)

6.6 SITE TRAFFIC VOLUMES

6.6.1 Existing Site Traffic Removal

The Site is currently occupied by a mix of commercial, industrial and retail, which are to be removed to facilitate the development of the Site. As part of the removal of the existing developments, the Site traffic associated with the existing development will be removed. The existing Site traffic to be removed is determined by the turning movement counts collected in April 2024. **Figure 30** illustrates the existing Site traffic to be removed.

6.6.2 Vehicle Trip Generation

Once the number of vehicle trips was determined, the future travel mode shares (inclusive of consideration for BRT) as per **Table 13**, were applied to each scenario to establish the multi-modal travel demand.

To align with the December 2023 TYLin Report, the Lakeview background non-residential GFA was decreased from 2.1 to 1.7 million ft^2. It is noted that the travel demand for the BA Group traffic analysis continues to include a non-residential GFA of 1.7 million ft^2, inclusive of the proposed office, recreational community centre, retail and hotel. As per TYLin's discussions with City Staff, it was agreed that the recreational community centre would likely be an off-peak generator, hence the traffic analysis is conservative as the travel demand for all proposed non-residential uses has been considered. It should be noted that the as part of the phasing of the Site, a non-residential GFA of 1.4 million ft^2 was considered for Scenario 1 while 1.7 million ft^2 was considered for the remaining scenarios.

The methodology for the updated analysis in determining the auto driver trip rate remains consistent with the May 31, 2024 BA Group Report but only a 40% auto driver mode share was considered at full build-out (Scenario 4). Vehicle trip rates for Rangeview and Lakeview are provided in **Table 18** for 50% auto driver mode share and **Table 19** for 40% auto driver mode share.

TABLE 18 VEHICLE TRIP RATES – 50% AUTO DRIVER MODE SHARE

Land Use	Number of Units / % Non-residential	AM Peak			PM Peak		
		Inbound	Outbound	2-way	Inbound	Outbound	2-way
Rangeview[1]							
Residential	5,300	0.02	0.17	0.19	0.12	0.05	0.17
Office	100% (47,500 ft^2)	0.70	0.08	0.78	0.02	0.47	0.48
Retail	100% (47,500 ft^2)	1.29	0.84	2.12	1.91	1.76	3.67
Lakeview [2]							
Residential	8,050	0.02	0.14	0.15	0.14	0.06	0.20
Non-Res	100% (1.7 ft^2)	0.47	0.18	0.65	0.23	0.54	0.77

Notes:
1. Source: ITE rates consistent with the TYLin October 2023 report.

TABLE 19 VEHICLE TRIP RATES – 40% AUTO DRIVER MODE SHARE

Land Use	Number of Units / % Non-residential	AM Peak			PM Peak		
		Inbound	Outbound	2-way	Inbound	Outbound	2-way
Rangeview[1]							
Residential	5,300	0.02	0.13	0.15	0.10	0.04	0.14
Office	100% (47,500 ft^2)	0.56	0.07	0.62	0.01	0.37	0.39
Retail	100% (47,500 ft^2)	1.03	0.67	1.70	1.53	1.41	2.93
Lakeview [2]							
Residential	16,000	0.01	0.11	0.12	0.11	0.05	0.16
Non-Res	100% (1.7 M ft^2)	0.38	0.15	0.52	0.18	0.44	0.62

Notes:

1. Source: ITE rates consistent with the TYLin October 2023 report.

6.6.3 Trip Assignment & Distribution

The trip assignment and distribution remain consistent with the May 31, 2024 BA Group Report which were adopted from the 2021 TYLin Lakeview Report *(Table 3-1 – 2016 TTS Data Distribution Summary)*. The trip distribution direction of approach is summarized in **Table 20**. Application of the adopted trip distribution applied to the local road network is summarized in **Table 21**.

TABLE 20 TRIP DISTRIBUTION DIRECTION OF APPROACH

Direction To/From	Weekday AM		Weekday PM	
	In	Out	In	Out
East	22%	52%	55%	24%
West	74%	39%	41%	72%
North	4%	9%	4%	4%
Total	**100%**	**100%**	**100%**	**100%**

Notes:

1. 2016 TTS Data Distribution Summary (TAZ: 3642, 3643, 3875, 3876)

TABLE 21 TRIP DISTRIBUTION DIRECTION OF APPROACH

Gateway	Weekday AM		Weekday PM	
	In	Out	In	Out
North Leg of Lakeshore Road East / Dixie	17%	13%	24%	8%
East Leg of Lakeshore Road East / Dixie Rd	5%	30%	9%	26.5%
North of Leg Lakeshore Road East / Cawthra Road	38%	30%	35%	26.5%
West Leg of Lakeshore Road East / Cawthra Road	33%	13%	17%	25%
North leg of Lakeshore Road East / Ogden Avenue	4%	9%	9%	9%
North leg of Lakeshore Road East / Haig Boulevard	3%	5%	6%	5%
Total	**100%**	**100%**	**100%**	**100%**

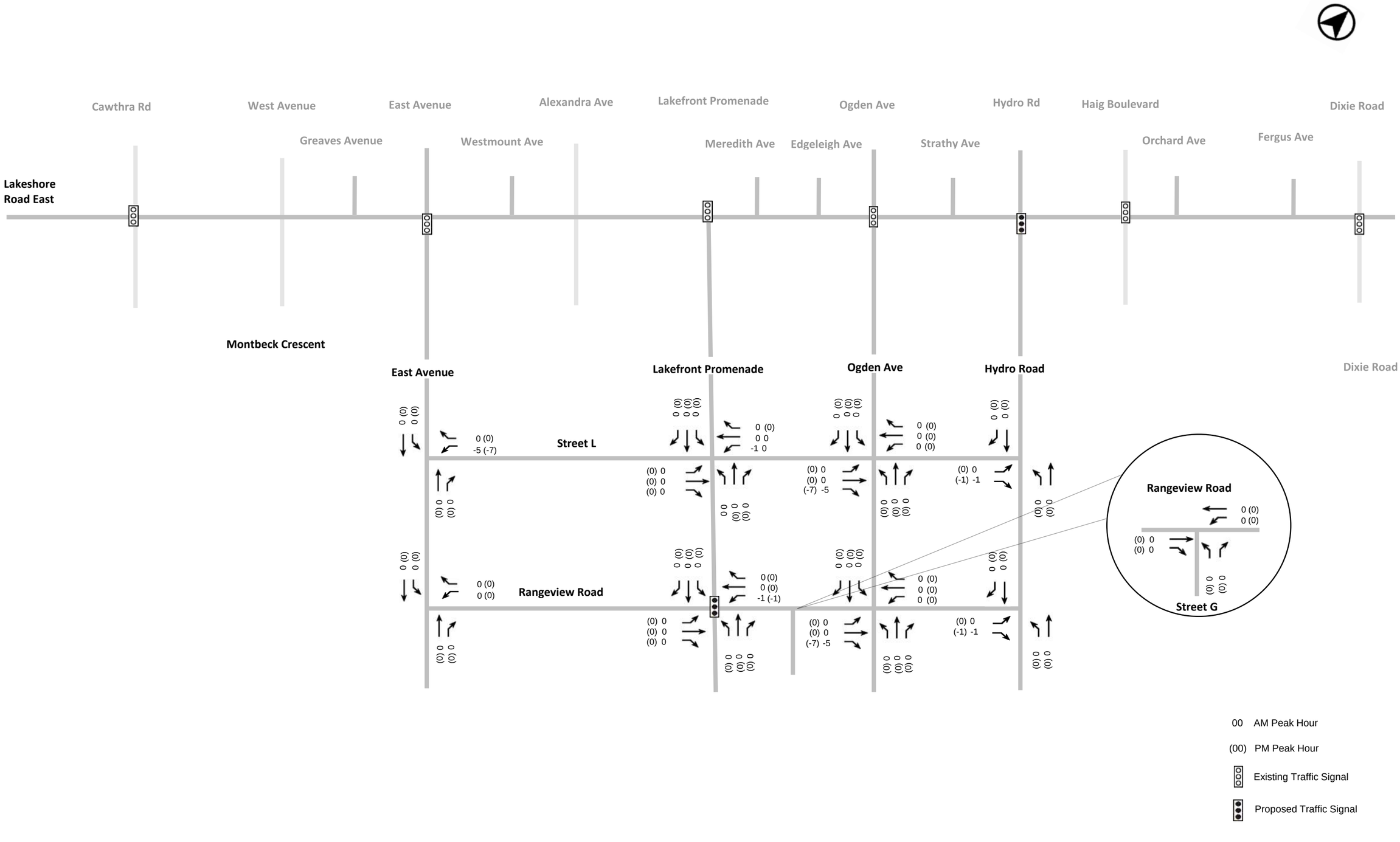

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FIGURE 30 - Existing Site Traffic Removal Volumes

6.7 MULTI-MODAL TRAVEL DEMAND BY SCENARIO

The following sections provide the vehicle trips expected to be generated by the developments being considered for Rangeview and Lakeview for Scenarios 1, 2, 3A, 3B and 4. The vehicle trips have been used to calculate the multi-modal travel demand for each scenario, inclusive of auto driver, auto passenger, transit, walking and cycling.

The trip generation methodology determined the number of auto driver trips, which were then used to derive the person trips using the applicable travel mode share. This methodology is appropriate and is frequently utilized on other urban transportation assessments across the City.

6.7.1 Travel Demand: Scenario 1 – Rangeview & Lakeview 10,000 Units

- **Scenario 1** considers that neither Ogden Avenue nor Haig Boulevard is connected to Lakeshore Road and the auto driver travel mode share is 50%.

For Scenario 1, it is noted that the allocation of proposed residential units between Rangeview (2,500 units) and Lakeview (7,500 units) has been assumed for the purposes of traffic operations only. Traffic operations results are contingent only on the total unit counts proposed as part of each scenario. The allocation of units constructed by Rangeview or Lakeview in each scenario is expected to evolve as development of the sites progresses. As summarized in **Table 22**, in consideration of Rangeview with 2,500 residential units and Lakeview with 7,500 residential units + 82% development of the non-residential, the combined sites are expected to generate a total of 2,593 and 2,966 two-way vehicle trips during the morning and afternoon peak period, respectively.

TABLE 22 VEHICLE TRIPS: SCENARIO 1 – RANGEVIEW & LAKEVIEW 10,000UNITS

Land Use	Number of Units % Non-residential	AM Peak			PM Peak		
		Inbound	Outbound	2-way	Inbound	Outbound	2-way
Rangeview							
Residential	2,500	56	413	469	293	112	405
Office	0%	0	0	0	0	0	0
Retail	0%	0	0	0	0	0	0
Rangeview Vehicle Trips	**--**	**56**	**413**	**469**	**293**	**112**	**405**
Lakeview							
Residential	7,500	139	1,020	1,160	1,044	434	1,478
Non- Resident	82%	657	254	911	319	763	1,082
Lakeview Vehicle Trips	**--**	**796**	**1,274**	**2,071**	**1,363**	**1,197**	**2,560**
All Sites Combined							
TOTAL VEHICLE TRIPS	**--**	**852**	**1,687**	**2,539**	**1,657**	**1,309**	**2,966**

Notes:

1. 82% of the total Lakeview Village non-residential development of 1.4 million ft^2 in Scenario 1 and 1.7 million ft^2 in Scenarios 2 – 4.

The Scenario 1 lane configuration and traffic control is provided in **Figure 31**. Given the extent of the study area, traffic volumes are illustrated in separate internal and external figures. Figures that illustrate the Scenario 1 traffic volumes are provided as follows:

- **Figure 32:** Site Traffic Volumes – Scenario 1 (2031): Rangeview Site (2,500 units) – Internal
- **Figure 33:** Site Traffic Volumes – Scenario 1 (2031): Rangeview Site (2,500 units) – External
- **Figure 34:** Site Traffic Volumes – Scenario 1 (2031): Lakeview Site (7,500 Units) – Internal
- **Figure 35:** Site Traffic Volumes – Scenario 1 (2031): Lakeview Site (7,500 Units) – External
- **Figure 36**: Site Traffic Volumes – Scenario 1 (2031): Rangeview + Lakeview (10,000 Units) – Internal
- **Figure 37:** Site Traffic Volumes – Scenario 1 (2031): Rangeview + Lakeview (10,000 Units) – External

As summarized in **Table 23**, Scenario 1 is expected to generate 1,270 and 2,076 two-way transit trips, during the morning and afternoon peak period respectively. There are expected to be 914 and 534 two-way auto passenger trips, during the morning and afternoon peak period respectively and 254 and 237 two-way walking trips, during the morning and afternoon peak period respectively. With the adjusted travel mode shares for cycling trips, there are expected to be 102 and 119 two-way cycling trips, during the morning and afternoon peak period respectively.

An assessment of pedestrian trip volumes made to the future Lakeshore Road BRT has also been undertaken. Pedestrian volumes have been adjusted to account for "grouping", a common behaviour where pedestrians travel in clusters related to the pedestrian phasing at crossings and other social factors. Scenario 1 pedestrian volumes related to the future Lakeshore Road BRT, are illustrated in **Figure 38**.

TABLE 23 MULTI-MODAL TRAVEL DEMAND: SCENARIO 1

Travel Mode	AM Peak			PM Peak		
	Inbound	Outbound	2-way	Inbound	Outbound	2-way
Transit	426	844	1,270	1,160	916	2,076
Auto Driver	852	1,687	2,539	1,657	1,309	2,966
Auto Passenger	307	607	914	298	236	534
Walk	85	169	254	133	105	237
Cycle	34	67	102	66	52	119
Total Vehicle Trips	**1,704**	**3,374**	**5,078**	**3,313**	**2,618**	**5,931**

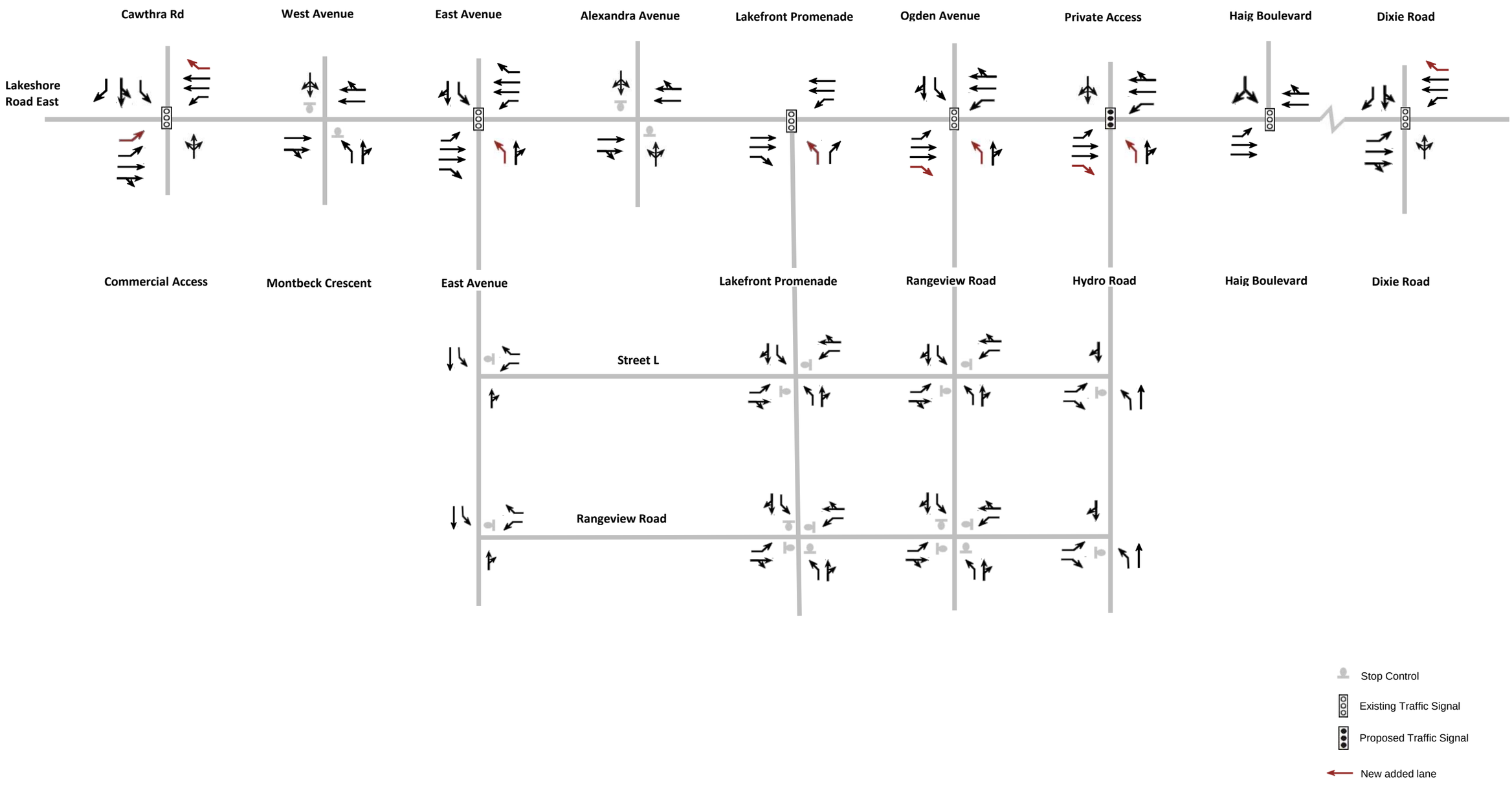

FIGURE 31 - 2031 Lane Configuration & Traffic Control – Scenario 1

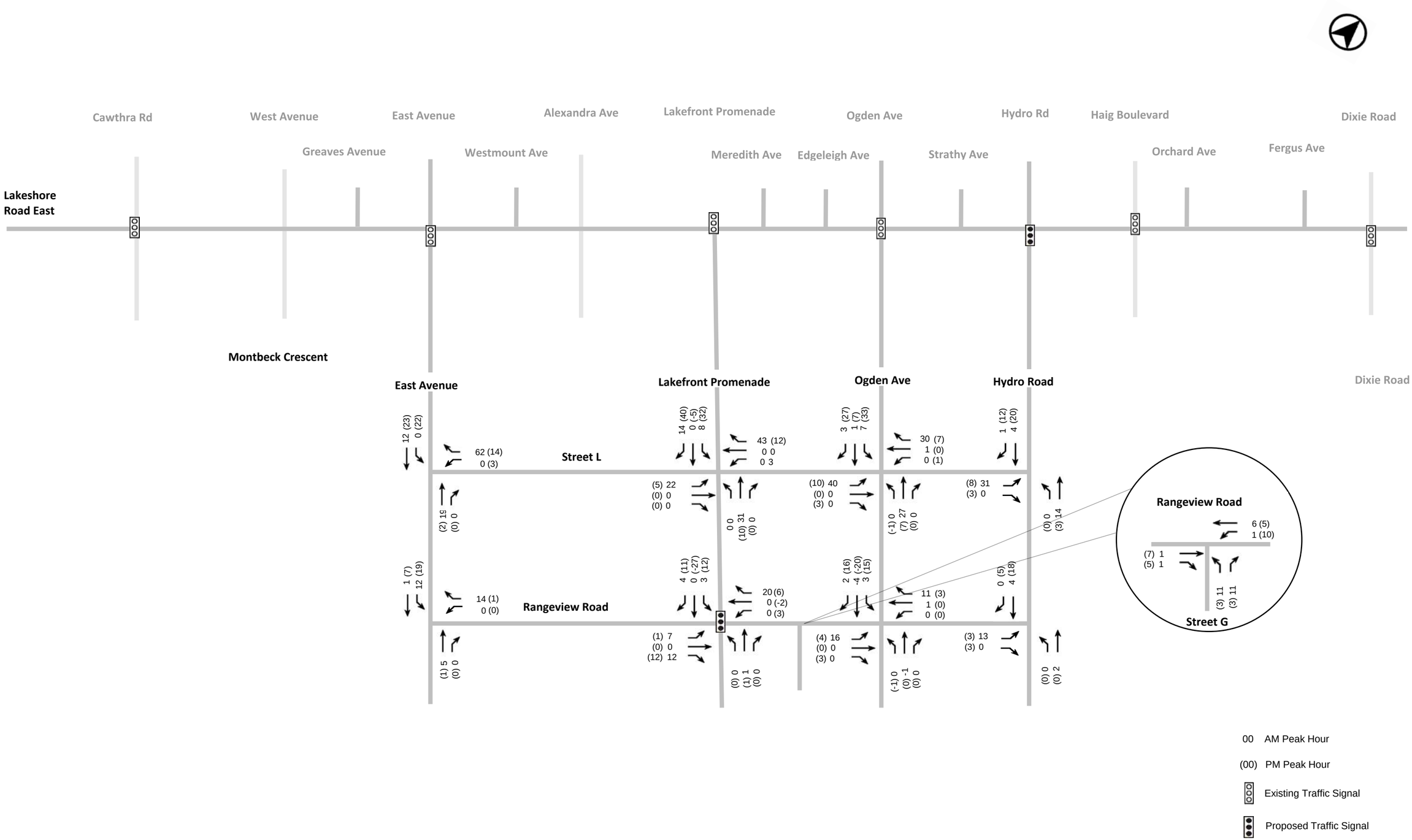

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FIGURE 32 - Site Traffic Volumes – Scenario 1 (2031) Rangeview Site (2,500 units) – Internal

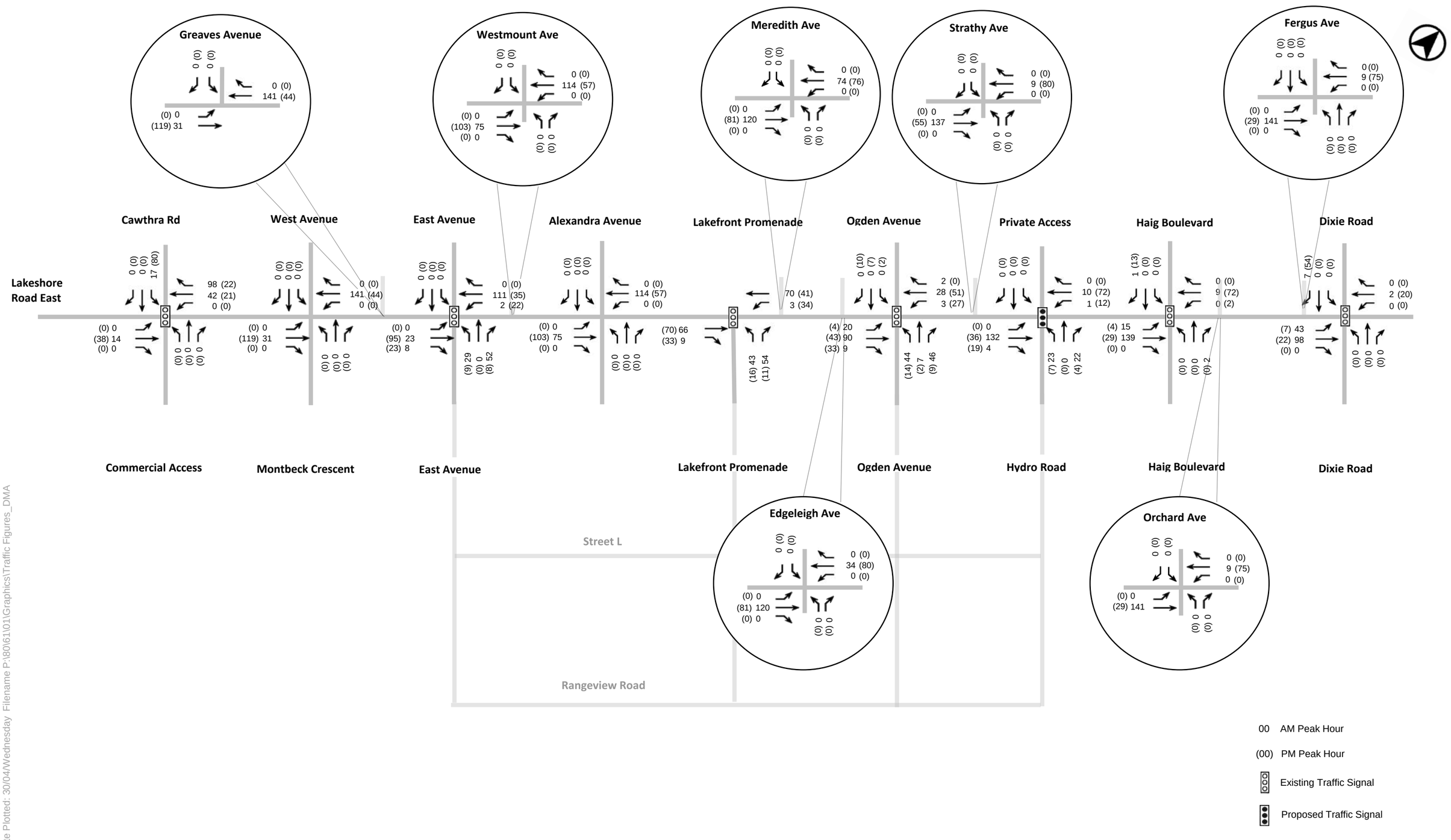

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FIGURE 33 - Site Traffic Volumes – Scenario 1 (2031) Rangeview Site (2,500 units) – External

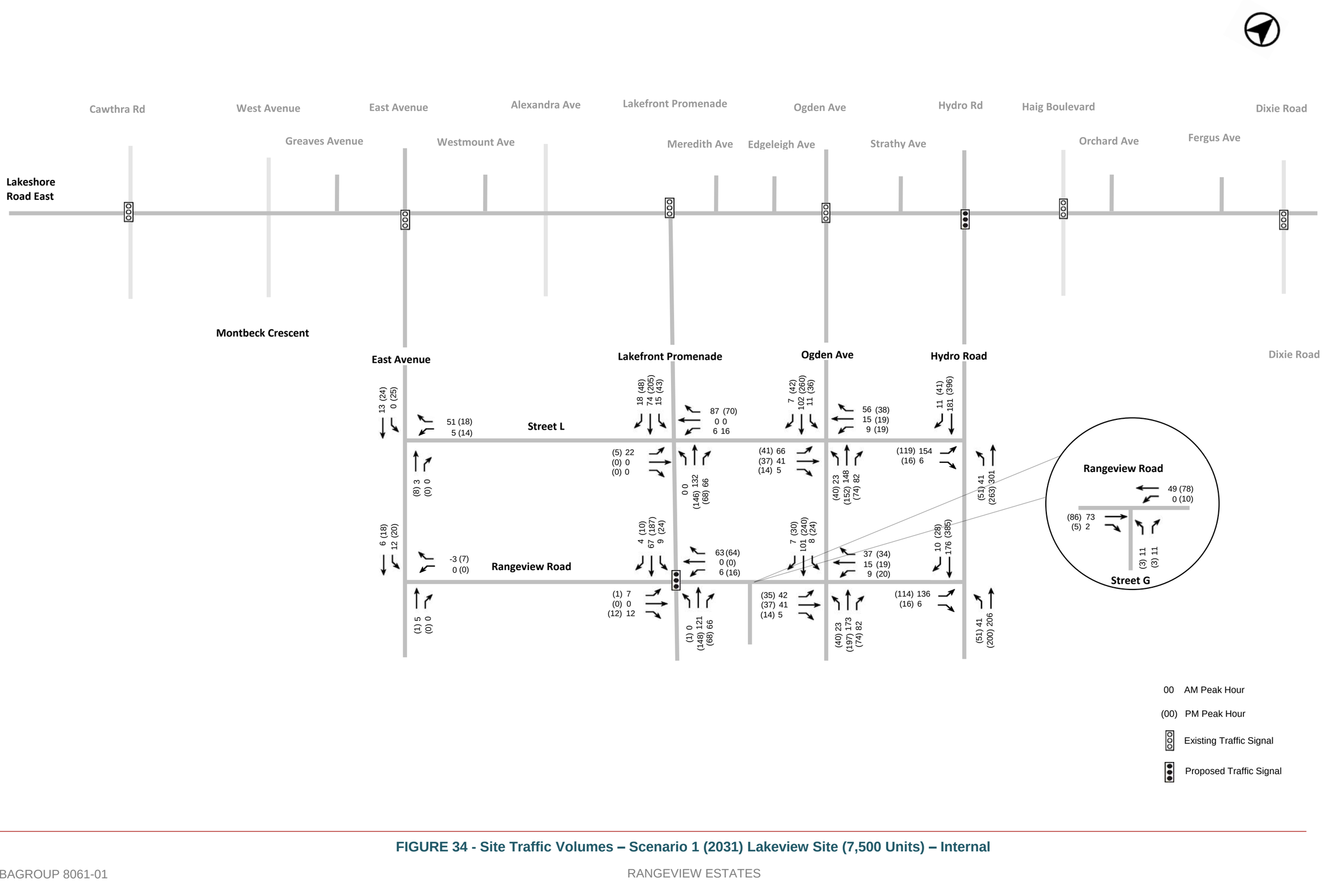

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FIGURE 34 - Site Traffic Volumes – Scenario 1 (2031) Lakeview Site (7,500 Units) – Internal

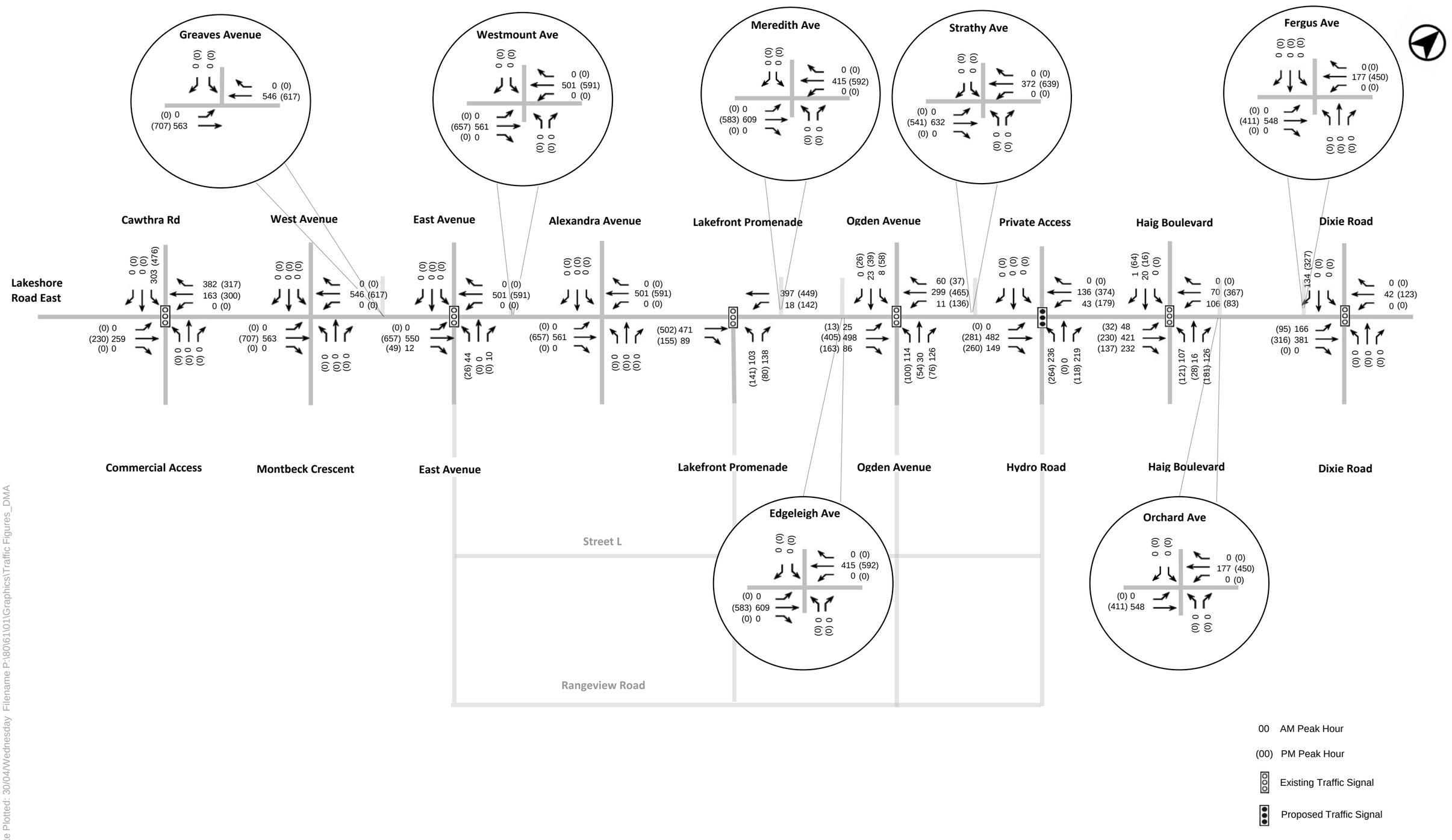

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FIGURE 35 - Site Traffic Volumes – Scenario 1 (2031) Lakeview Site (7,500 Units) – External

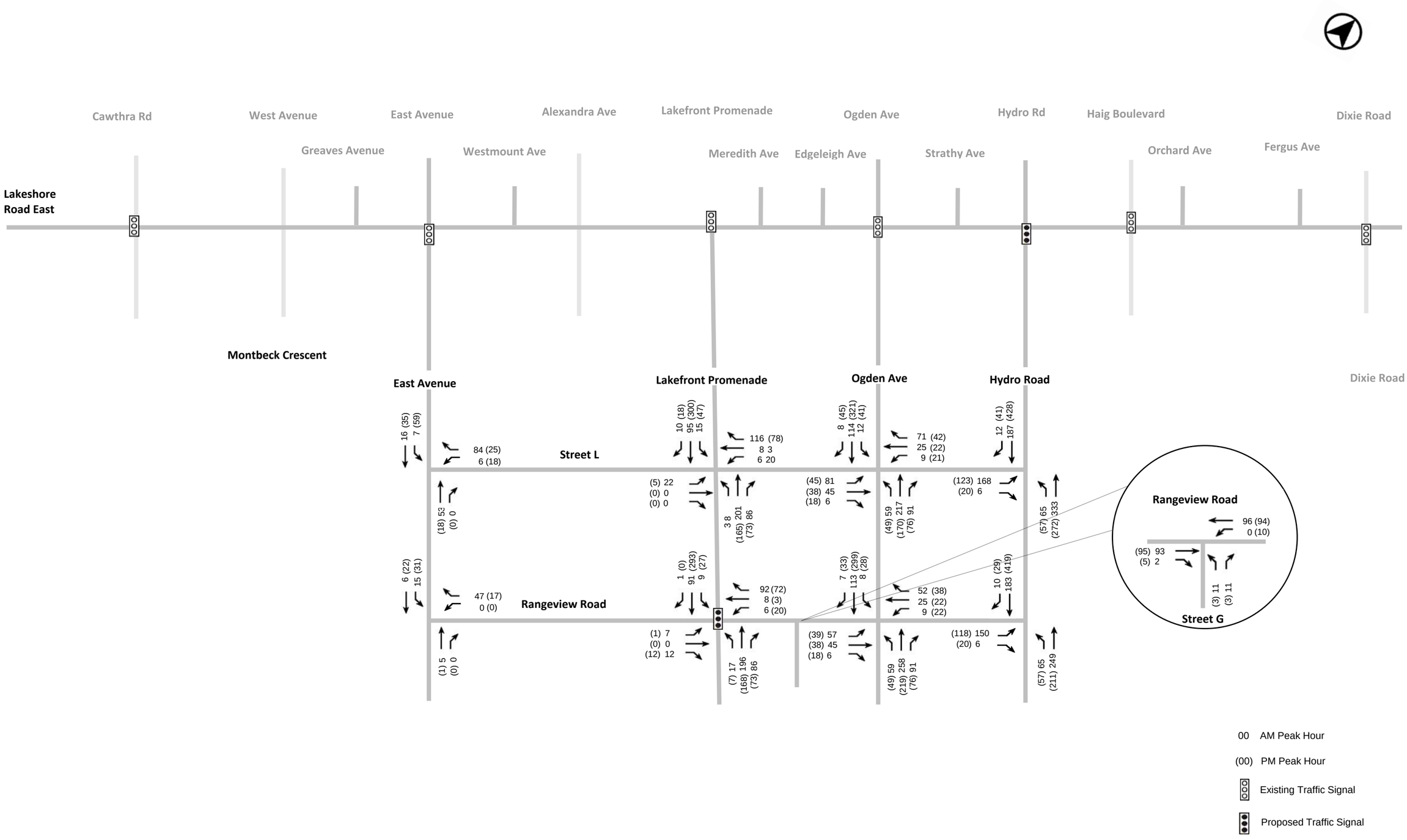

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FIGURE 36 - Site Traffic Volumes – Scenario 1 (2031) Rangeview + Lakeview (10,000 Units) – Internal

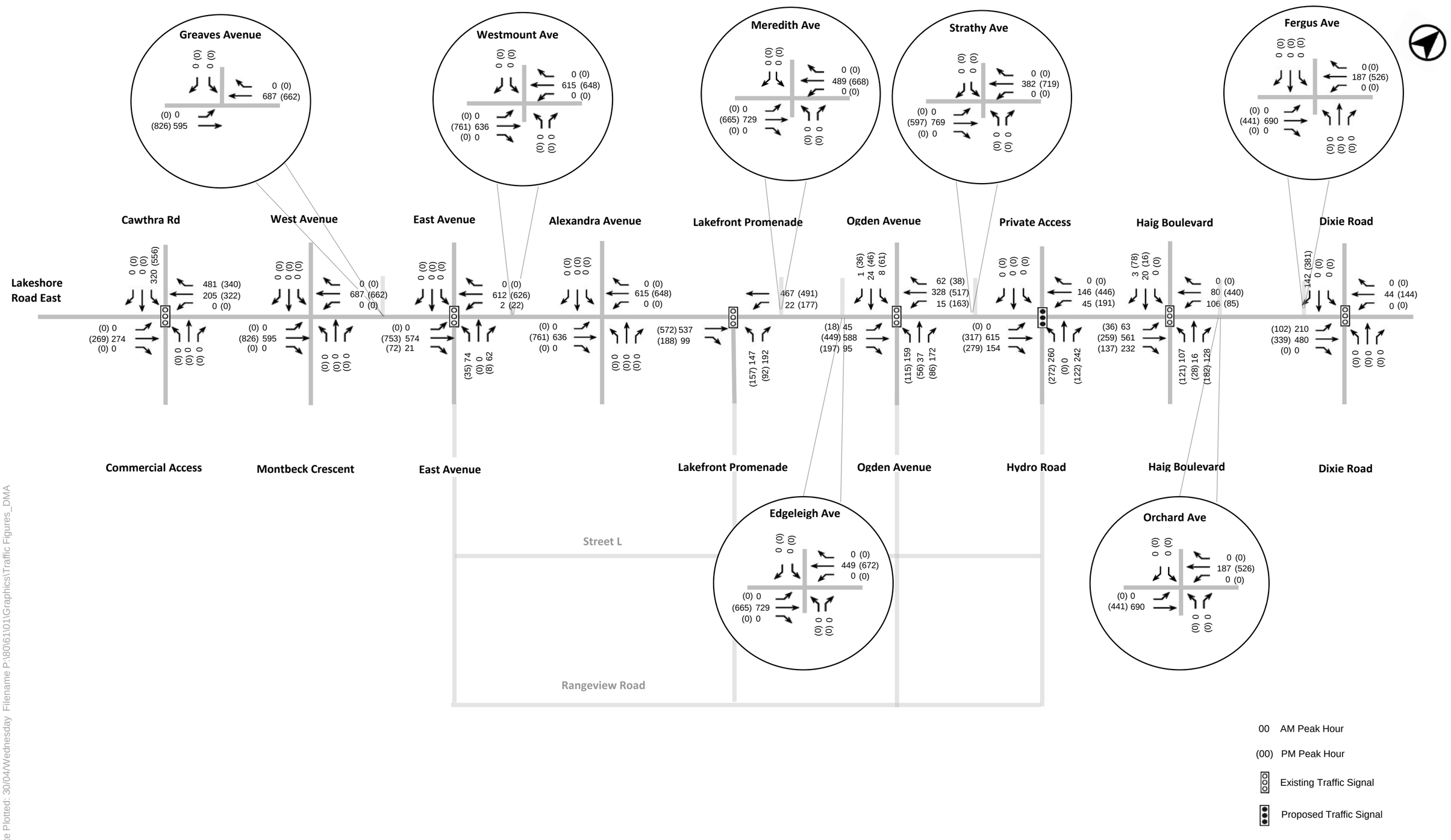

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FIGURE 37 - Site Traffic Volumes – Scenario 1 (2031) Rangeview + Lakeview (10,000 Units) – External

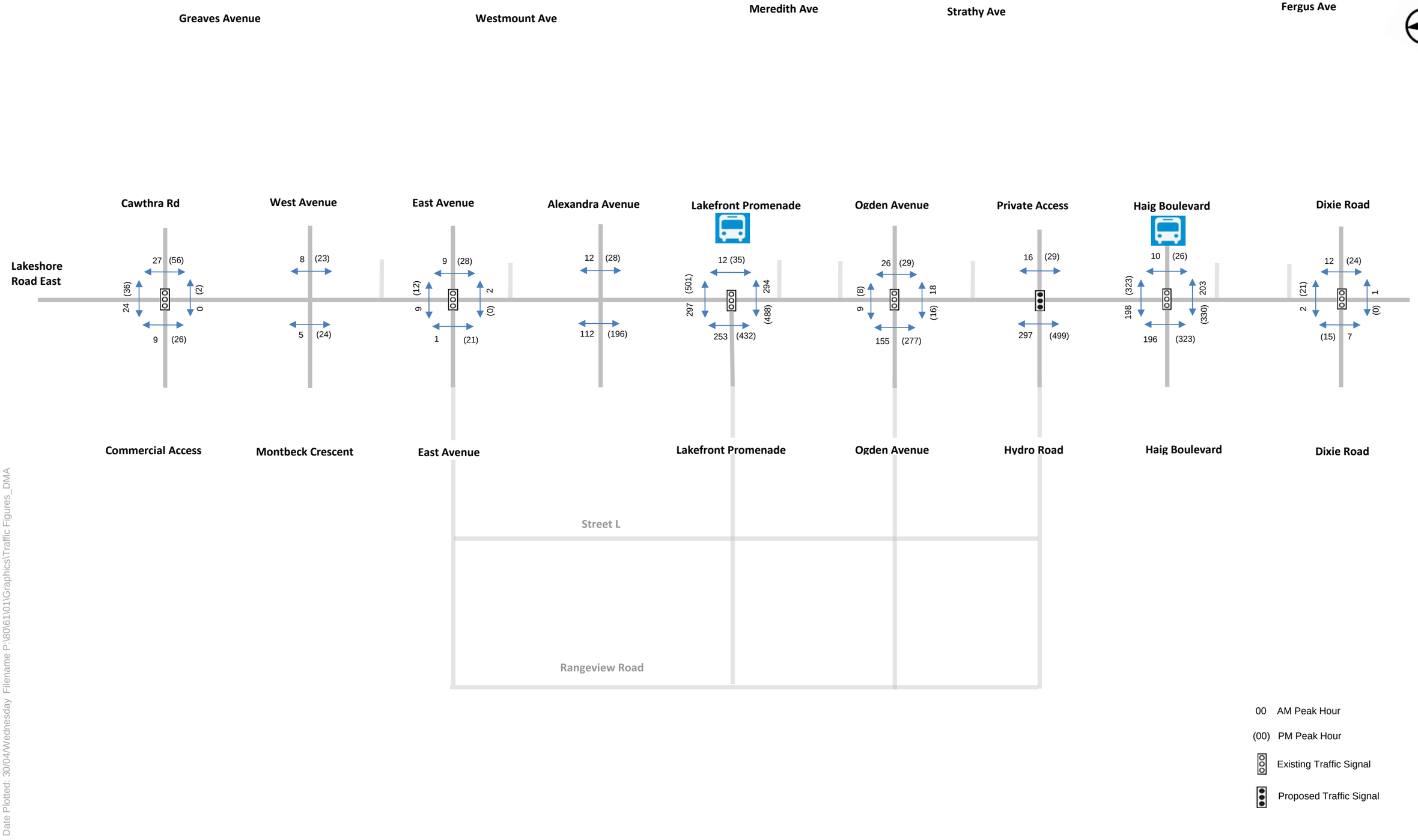

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FIGURE 38 - Pedestrian Site Traffic Volumes to Future BRT – Scenario 1 (2031)

6.7.2 Travel Demand: Scenario 2 – 3,700 Rangeview & 8,050 Lakeview Units

- **Scenario 2** considers that Ogden Avenue is connected to Lakeshore Road (not Haig Boulevard) and the auto driver travel mode share is 50%.

As summarized in **Table 24**, in consideration of Rangeview with 3,700 residential units + 100% development of the non-residential and Lakeview with 8,050 residential units + 100% development of the non-residential, the combined sites are expected to generate a total of 3,186 and 3,719 two-way vehicle trips during the morning and afternoon peak period, respectively.

TABLE 24 VEHICLE TRIPS: SCENARIO 2 – 3,700 RANGEVIEW & 8,050 LAKEVIEW UNITS

Land Use	Number of Units / % Non-residential	AM Peak			PM Peak		
		Inbound	Outbound	2-way	Inbound	Outbound	2-way
Rangeview							
Residential	3,700	83	611	694	449	172	621
Office	100%	33	4	37	1	22	23
Retail	100%	64	40	104	91	84	174
Rangeview Vehicle Trips	**--**	**179**	**656**	**835**	**540**	**278**	**818**
Lakeview							
Residential	8,050	150	1,095	1,245	1,121	466	1,587
Non- Residential	100%	798	309	1,106	388	926	1,314
Lakeview Vehicle Trips	**--**	**947**	**1,404**	**2,351**	**1,508**	**1,392**	**2,900**
All Sites Combined							
TOTAL VEHICLE TRIPS	**--**	**1,127**	**2,059**	**3,186**	**2,048**	**1,670**	**3,719**

The Scenario 2 lane configuration and traffic control is provided in **Figure 39**. Given the extent of the study area, traffic volumes are depicted in separate internal and external figures. Figures that illustrate the Scenario 2 traffic volumes are provided as follows:

- **Figure 40:** Site Traffic Volumes – Scenario 2 (2041): Rangeview (3,700 units) – Internal
- **Figure 41:** Site Traffic Volumes – Scenario 2 (2041): Rangeview (3,700 units) – External
- **Figure 42:** Site Traffic Volumes – Scenario 2 (2041): Lakeview (8,050 Units) – Internal
- **Figure 43:** Site Traffic Volumes – Scenario 2 (2041): Lakeview (8,050 Units) – External
- **Figure 44:** Site Traffic Volumes – Scenario 2 (2041): Rangeview + Lakeview (11,750 Units) – Internal
- **Figure 45:** Site Traffic Volumes – Scenario 2 (2041): Rangeview + Lakeview (11,750 Units) – External

As summarized in **Table 25,** Scenario 2 (3,700 Rangeview units + 8,050 Lakeview units) is expected to generate 1,593 and 2,603 two-way transit trips, during the morning and afternoon peak period respectively. There are expected to be 1,147 and 669 two-way auto passenger trips, during the morning and afternoon peak period respectively and 319 and 298 two-way walking trips, during the morning and afternoon peak period respectively. With the adjusted travel mode shares for cycling trips, there are expected to be 127 and 149 two-way cycling trips, during the morning and afternoon peak period respectively.

An assessment of pedestrian trip volumes made to the future Lakeshore Road BRT has been conducted. Pedestrian volumes have been adjusted to account for *Grouping*, a common behaviour where pedestrians travel in clusters related to the pedestrian phasing at crossing and other social factors. Scenario 2 pedestrian volumes to the future Lakeshore Road BRT are depicted in **Figure 46.**

TABLE 25 MULTI-MODAL TRAVEL DEMAND: SCENARIO 2

Travel Mode	AM Peak			PM Peak		
	Inbound	Outbound	2-way	Inbound	Outbound	2-way
Transit	563	1,030	1,593	1,434	1,169	2,603
Auto Driver	1,127	2,059	3,186	2,048	1,670	3,719
Auto Passenger	406	741	1,147	369	301	669
Walk	113	206	319	164	134	298
Cycle	45	82	127	82	67	149
Total	**2,253**	**4,119**	**6,372**	**4,097**	**3,341**	**7,438**

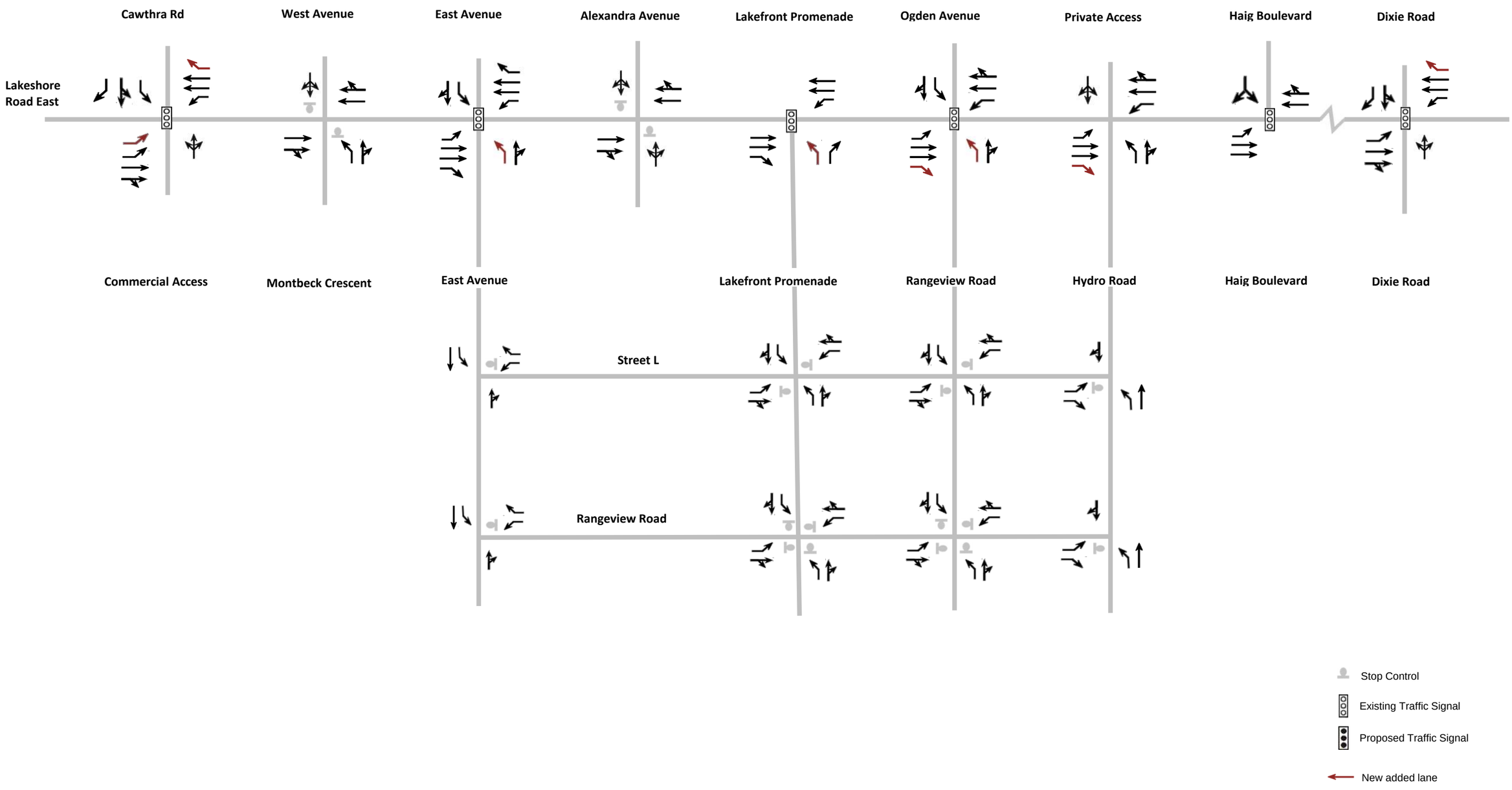

FIGURE 39 - 2041 Lane Configuration & Traffic Control – Scenario 2

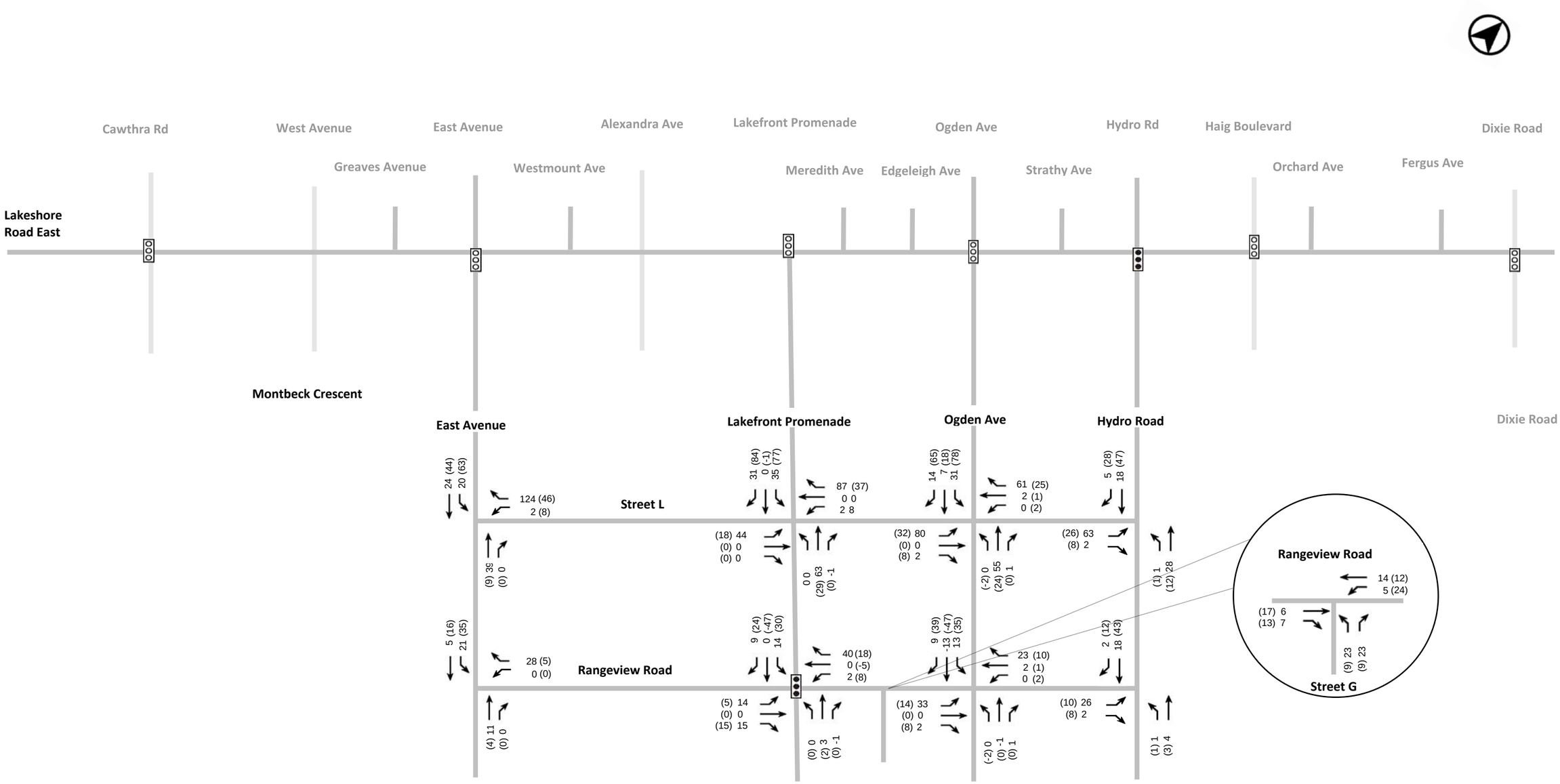

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FIGURE 40 - Site Traffic Volumes – Scenario 2 (2041) Rangeview (3,700 units) – Internal

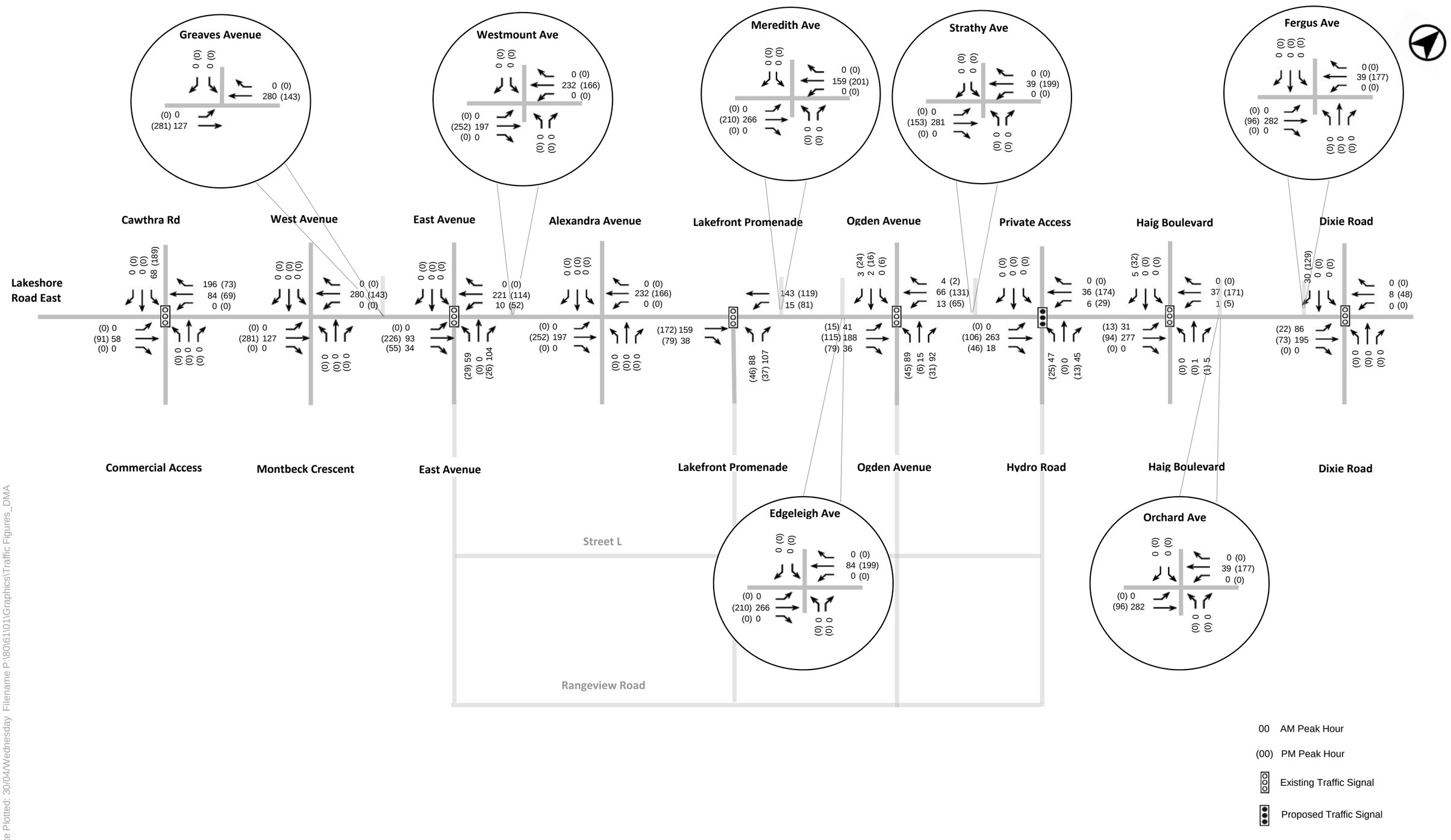

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FIGURE 41 - Site Traffic Volumes – Scenario 2 (2041) Rangeview (3,700 units) – External

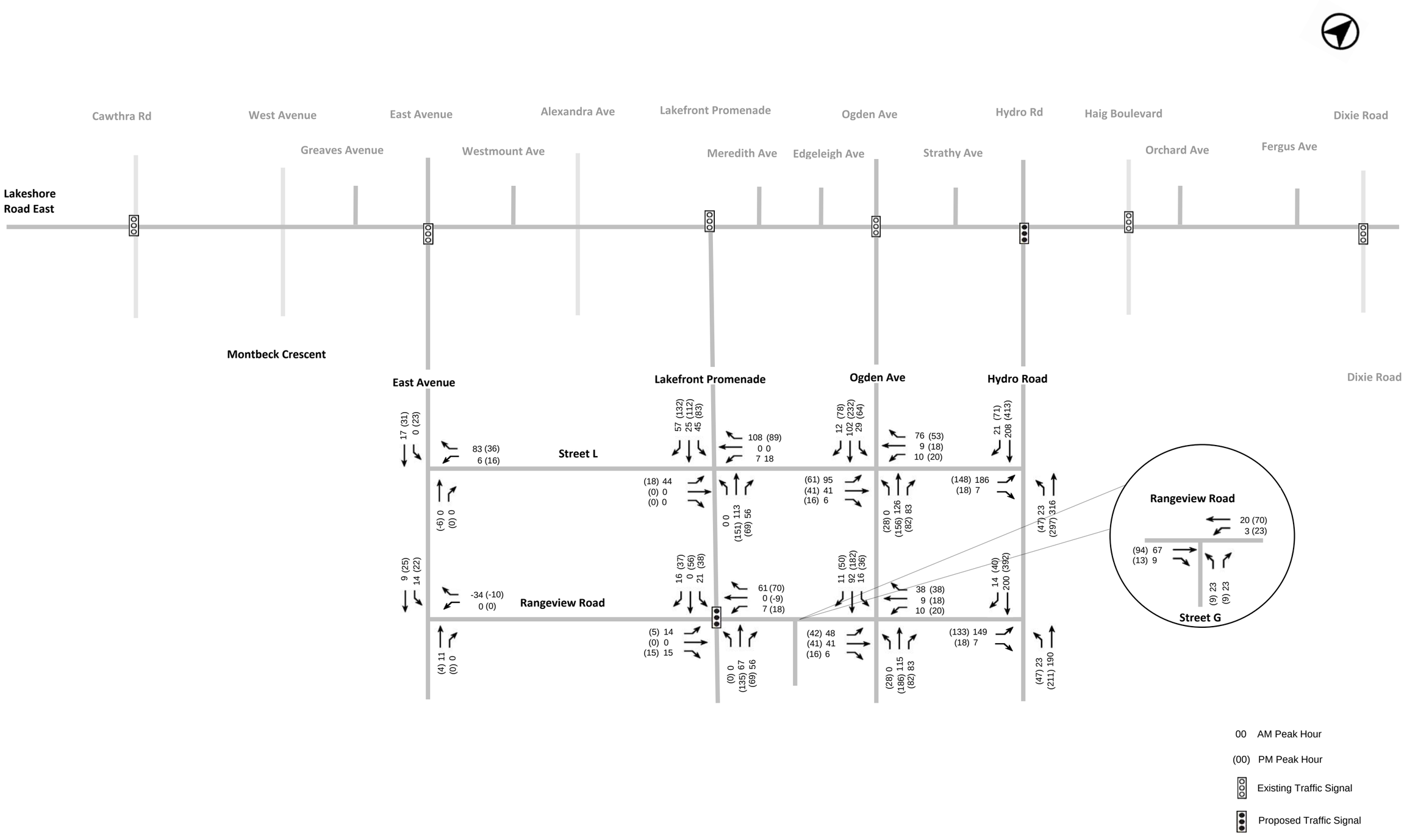

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FIGURE 42 - Site Traffic Volumes – Scenario 2 (2041) Lakeview (8,050 Units) – Internal

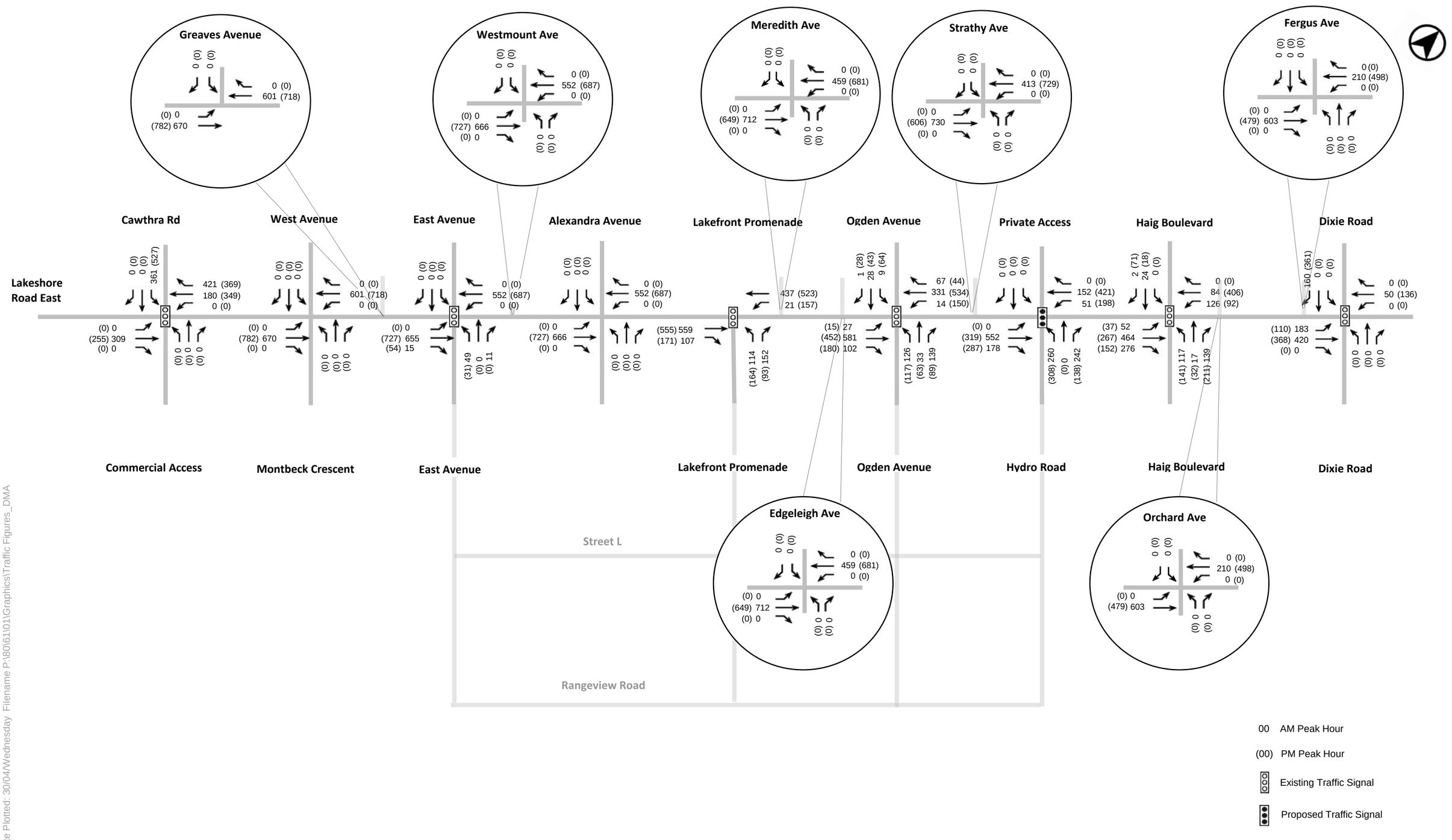

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FIGURE 43 - Site Traffic Volumes – Scenario 2 (2041) Lakeview (8,050 Units) – External

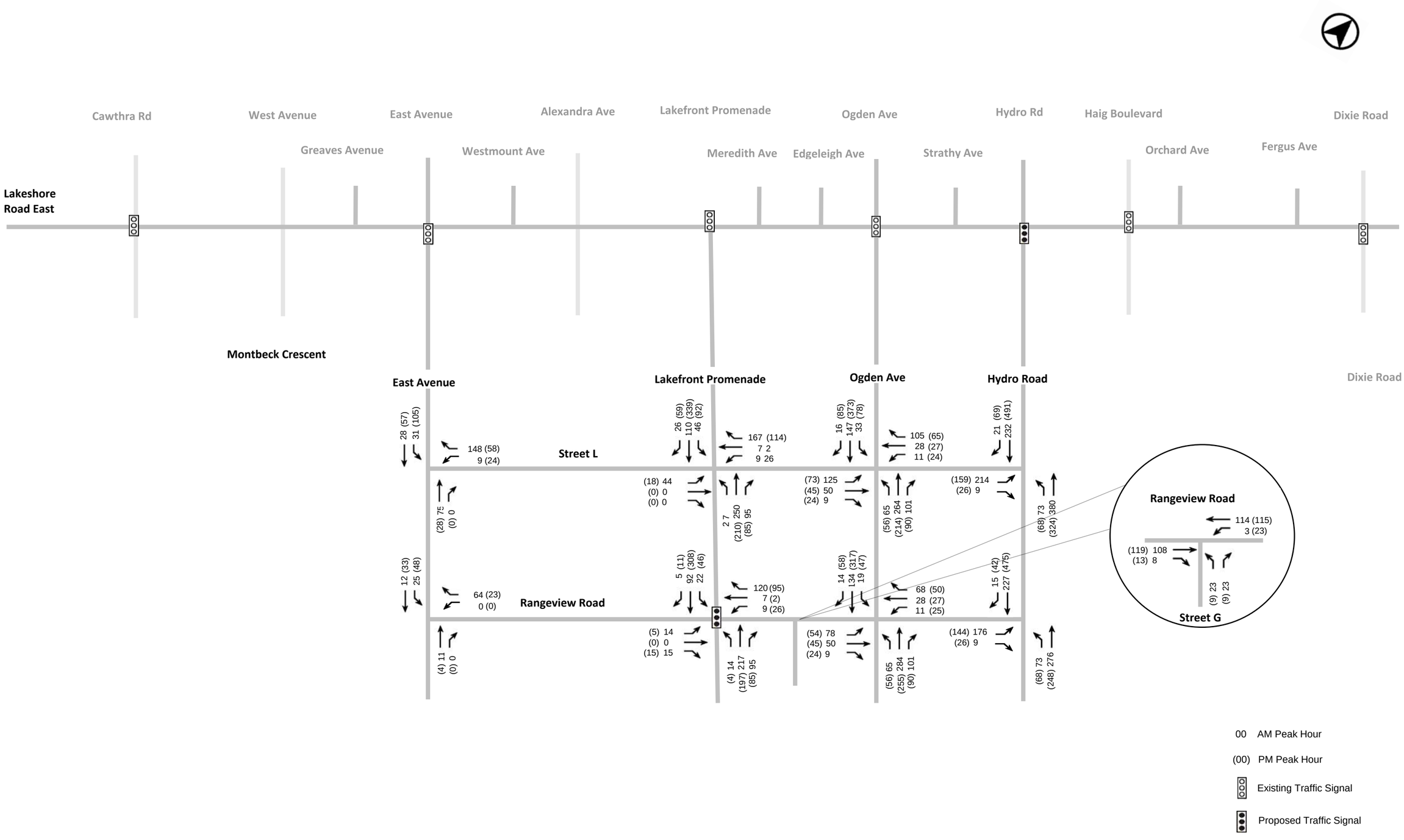

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FIGURE 44 - Site Traffic Volumes – Scenario 2 (2041) Rangeview + Lakeview (11,750 Units) – Internal

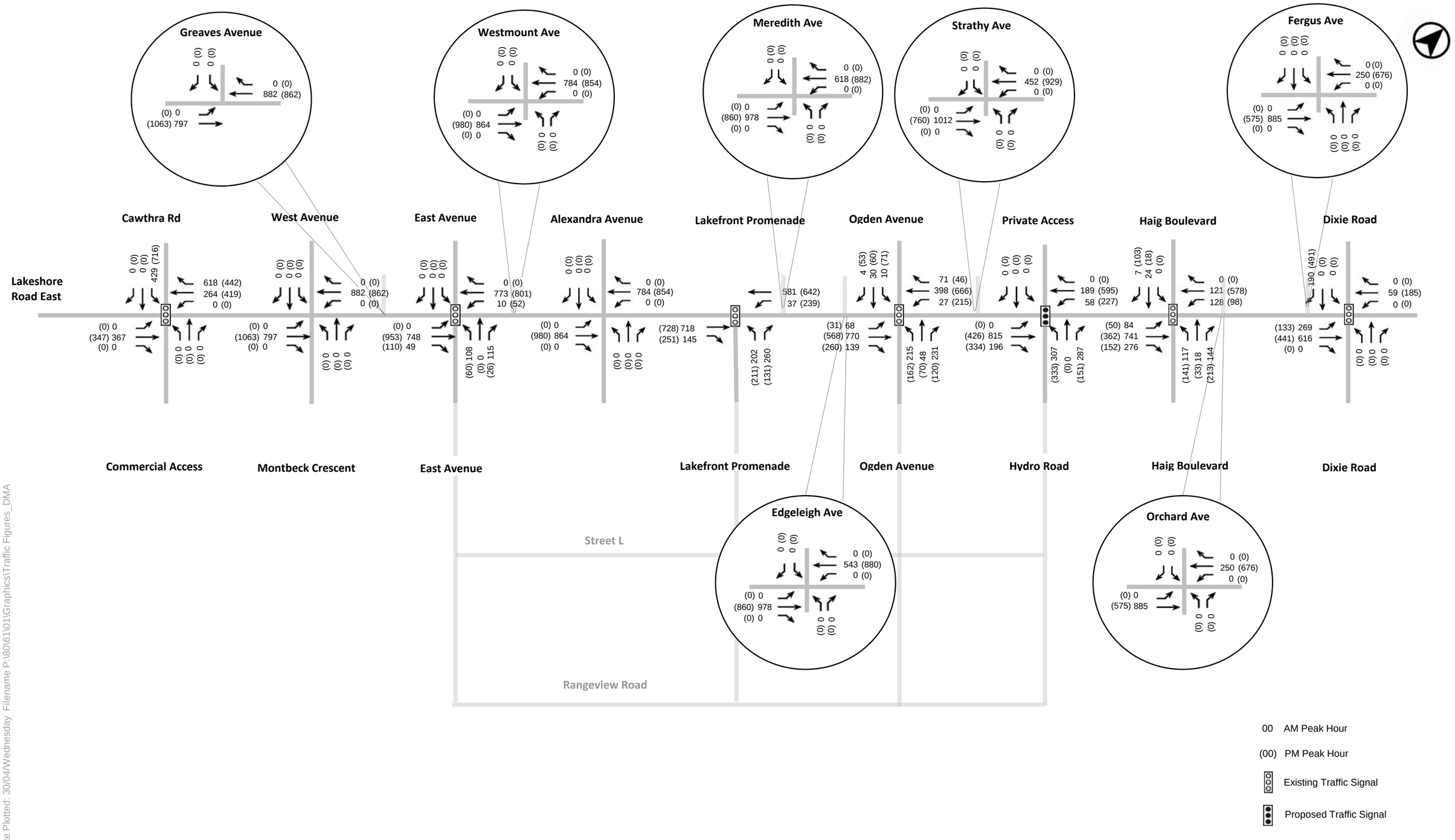

FIGURE 45 - Site Traffic Volumes – Scenario 2 (2041) Rangeview + Lakeview (11,750 Units) – External

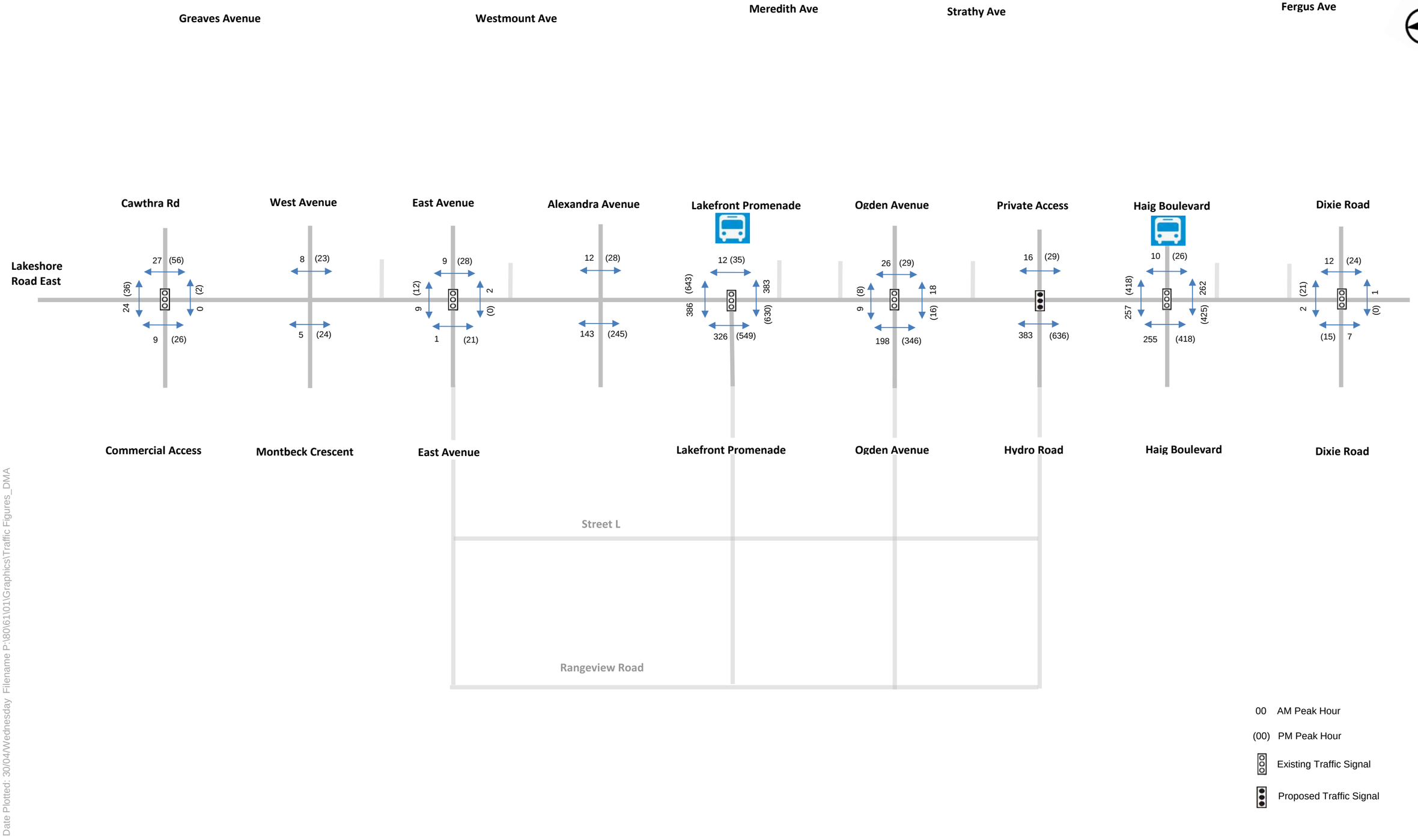

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FIGURE 46 - Pedestrian Site Traffic Volumes to Future BRT – Scenario 2 (2041)

6.7.3 Travel Demand: Scenario 3A/ 3B – 5,300 Rangeview & 8,050 Lakeview Units

- **Scenario 3A** considers that Ogden Avenue + Haig Boulevard are connected to Lakeshore Road and the auto driver travel mode share is 50% (Serson is 100% developed in Scenario 3A).
- **Scenario 3B** considers that Ogden Avenue is connected to Lakeshore Road (not Haig Boulevard connected) to Lakeshore + dual northbound left-turn lanes at Lakeshore Road/ Lakefront Promenade and the auto driver travel mode share is 50% (Serson not developed in Scenario 3B).

Scenario 3B includes the implementation of a dual northbound left-turn on Lakefront Promenade at Lakeshore Road East. As the traffic analysis determined that additional capacity would be required for northbound left-turning vehicles leaving both the Rangeview and Lakeview sites, to travel westbound along Lakeshore Road East, the dual left-turn lane option, ***without*** the connection of Haig Boulevard, was deemed to be beneficial from a phasing and traffic operations perspective.

As summarized in **Table 26**, in consideration of Rangeview with 5,300 residential units + 100% development of the non-residential and Lakeview with 8,050 residential units + 100% development of the non-residential lands developed, the combined sites are expected to generate a total of 3,483 and 4,007 two-way vehicle trips, during the morning and afternoon peak period, respectively.

It is noted that in order to confirm the future non-auto travel demand for the development sites south of Lakeshore Road East, the Rangeview, Lakeview and Serson (Scenarios 3A & 4 only) sites have been included in the multi-modal travel demand.

TABLE 26 VEHICLE TRIPS: SCENARIO 3A– 5,300 RANGEVIEW & 8,050 LAKEVIEW UNITS

Land Use	Number of Units / % Non-residential	AM Peak			PM Peak		
		Inbound	Outbound	2-way	Inbound	Outbound	2-way
Rangeview							
Residential	5,300	118	876	995	656	253	909
Office	100%	33	4	37	1	22	23
Retail	100%	61	40	101	91	84	174
Rangeview Vehicle Trips	**--**	**213**	**920**	**1,132**	**748**	**359**	**1,106**
Lakeview							
Residential	8,050	150	1,095	1,245	1,121	466	1,587
Non- Residential	100%	798	309	1,106	388	926	1,314
Lakeview Vehicle Trips	**--**	**947**	**1,404**	**2,351**	**1,508**	**1,392**	**2,900**
Lakeview + Rangeview							
TOTAL VEHICLE TRIPS	**--**	**1,160**	**2,324**	**3,483**	**2,256**	**1,751**	**4,007**
With Serson as Background Development							
Serson	**100%**	**195**	**42**	**237**	**44**	**226**	**270**
TOTAL VEHICLE TRIPS WITH SERSON	**--**	**1,355**	**2,366**	**3,720**	**2,300**	**1,977**	**4,277**

The Scenario 3A and Scenario 3B lane configuration and traffic control is provided in **Figure 47** and **Figure 48** and, respectively.

Figures that illustrate the **Scenario 3A** traffic volumes are provided as follows:

- **Figure 49:** Site Traffic Volumes – Scenario 3A (2041): Rangeview (5,300 units) – Internal
- **Figure 50:** Site Traffic Volumes – Scenario 3A (2041): Rangeview (5,300 units) – External
- **Figure 51:** Site Traffic Volumes – Scenario 3A (2041): Lakeview (8,050 Units) – Internal
- **Figure 52:** Site Traffic Volumes – Scenario 3A (2041): Lakeview (8,050 Units) – External
- **Figure 53:** Site Traffic Volumes – Scenario 3A (2041): Rangeview + Lakeview (13,350 Units) – Internal
- **Figure 54:** Site Traffic Volumes – Scenario 3A (2041): Rangeview + Lakeview (13,350 Units) – External

Figures that illustrate the **Scenario 3B** traffic volumes are provided as follows:

- **Figure 55:** Site Traffic Volumes – Scenario 3B (2041): Rangeview (5,300 units) – Internal
- **Figure 56:** Site Traffic Volumes – Scenario 3B (2041): Rangeview (5,300 units) – External
- **Figure 57:** Site Traffic Volumes – Scenario 3B (2041): Lakeview (8,050 Units) – Internal
- **Figure 58:** Site Traffic Volumes – Scenario 3B (2041): Lakeview (8,050 Units) – External
- **Figure 59:** Site Traffic Volumes – Scenario 3B (2041): Rangeview + Lakeview (13,350 Units) – Internal
- **Figure 60:** Site Traffic Volumes – Scenario 3B (2041): Rangeview + Lakeview (13,350 Units) – External

As summarized in **Table 27**, Scenario 3A (5,300 Rangeview units + 8,050 Lakeview units + 100% Serson) is expected to generate 1,860 and 2,994 two-way transit trips, during the morning and afternoon peak period respectively. There are expected to be 1,339 and 770 two-way auto passenger trips, during the morning and afternoon peak period respectively and 372 and 342 two-way walking trips, during the morning and afternoon peak period respectively. With the adjusted travel mode shares for cycling trips, there are expected to be 149 and 171 two-way cycling trips, during the morning and afternoon peak period respectively.

As summarized in **Table 28**, Scenario 3B (5,300 Rangeview units + 8,050 Lakeview units + No Serson) is expected to generate 1,742 and 2,805 two-way transit trips, during the morning and afternoon peak period respectively. There are expected to be 1,254 and 721 two-way auto passenger trips, during the morning and afternoon peak period respectively and 348 and 321 two-way walking trips, during the morning and afternoon peak period respectively. With the adjusted travel mode shares for cycling trips, there are expected to be 139 and 160 two-way cycling trips, during the morning and afternoon peak period respectively.

An assessment of pedestrian trip volumes made to the future Lakeshore Road BRT has also been undertaken. Pedestrian volumes have been adjusted to account for *Grouping*, a common behaviour where pedestrians travel in clusters related to the pedestrian phasing at crossing and other social factors. Scenarios 3A and 3B pedestrian volumes to the future Lakeshore Road BRT are illustrated in **Figure 61** and **Figure 62**.

TABLE 27 MULTI-MODAL TRAVEL DEMAND: SCENARIO 3A (WITH SERSON)

Travel Mode	AM Peak			PM Peak		
	Inbound	Outbound	2-way	Inbound	Outbound	2-way
Transit	677	1,183	1,860	1,610	1,384	2,994
Auto Driver	1,355	2,366	3,720	2,300	1,977	4,277
Auto Passenger	488	852	1,339	414	356	770
Walk	135	237	372	184	158	342
Cycle	54	95	149	92	79	171
Total	**2,709**	**4,731**	**7,440**	**4,600**	**3,954**	**8,554**

TABLE 28 MULTI-MODAL TRAVEL DEMAND: SCENARIO 3B (WITHOUT SERSON)

Travel Mode	AM Peak			PM Peak		
	Inbound	Outbound	2-way	Inbound	Outbound	2-way
Transit	580	1,162	1,742	1,579	1,226	2,805
Auto Driver	1,160	2,324	3,483	2,256	1,751	4,007
Auto Passenger	417	836	1,254	406	315	721
Walk	116	232	348	180	140	321
Cycle	46	93	139	90	70	160
Total	**2,319**	**4,647**	**6,966**	**4,512**	**3,502**	**8,014**

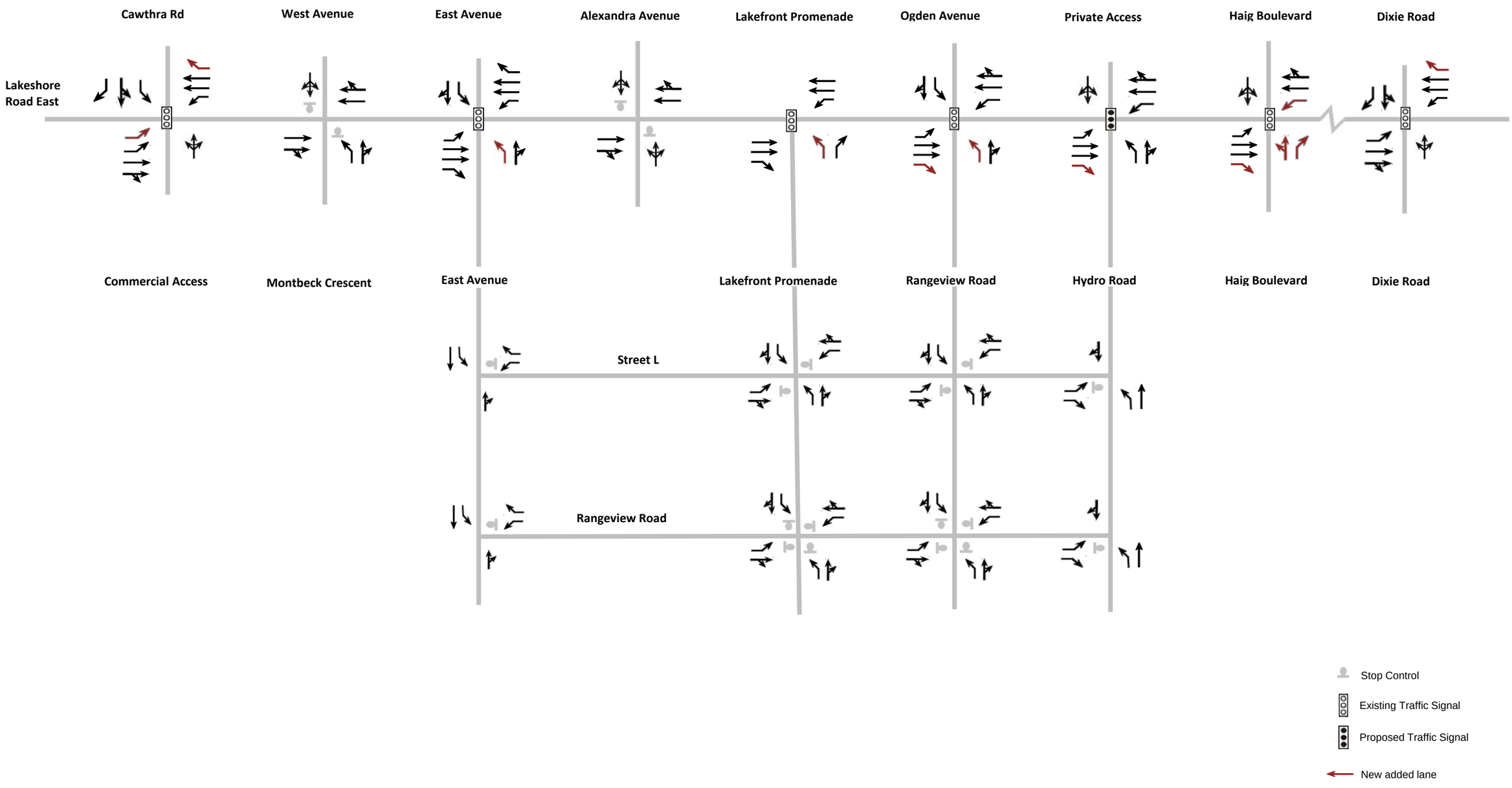

FIGURE 47 - 2041 Lane Configuration & Traffic Control – Scenario 3A

RANGEVIEW ESTATES

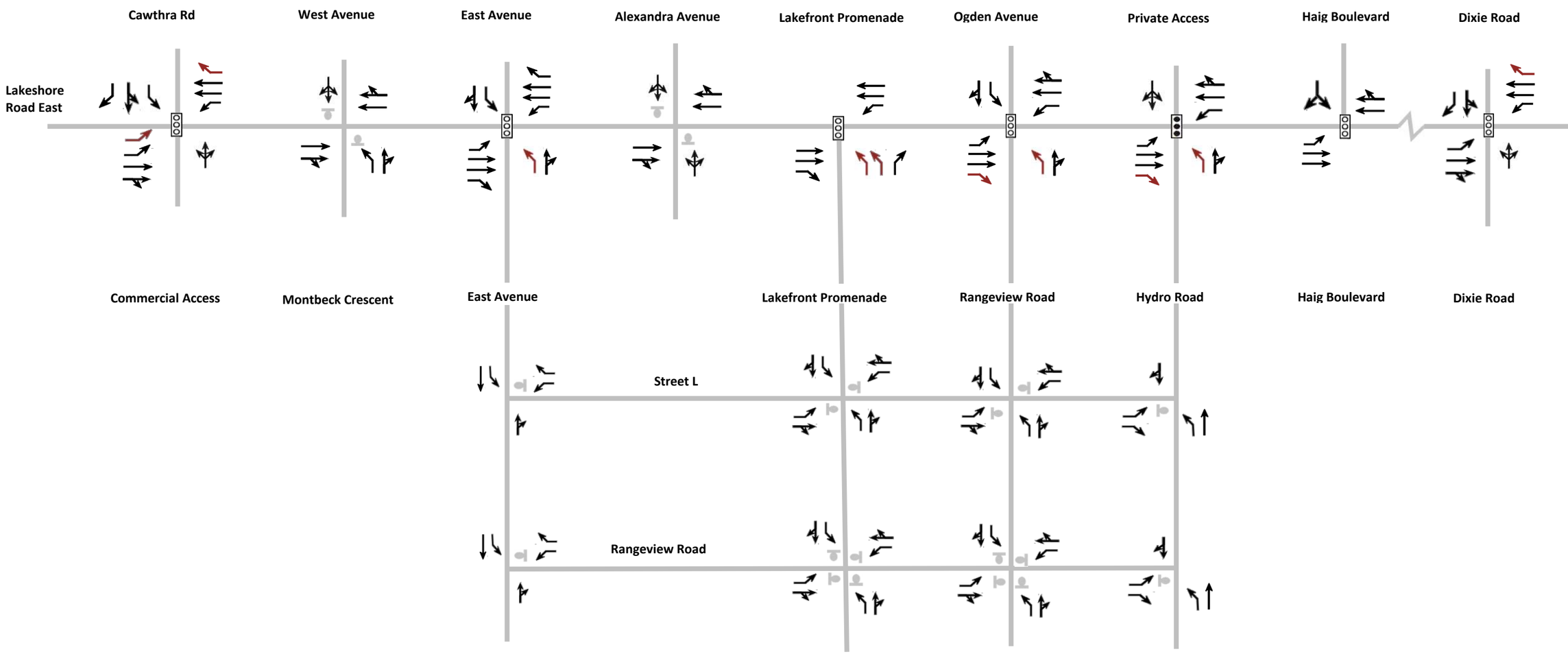

FIGURE 48 - 2041 Lane Configuration & Traffic Control – Scenario 3B

RANGEVIEW ESTATES

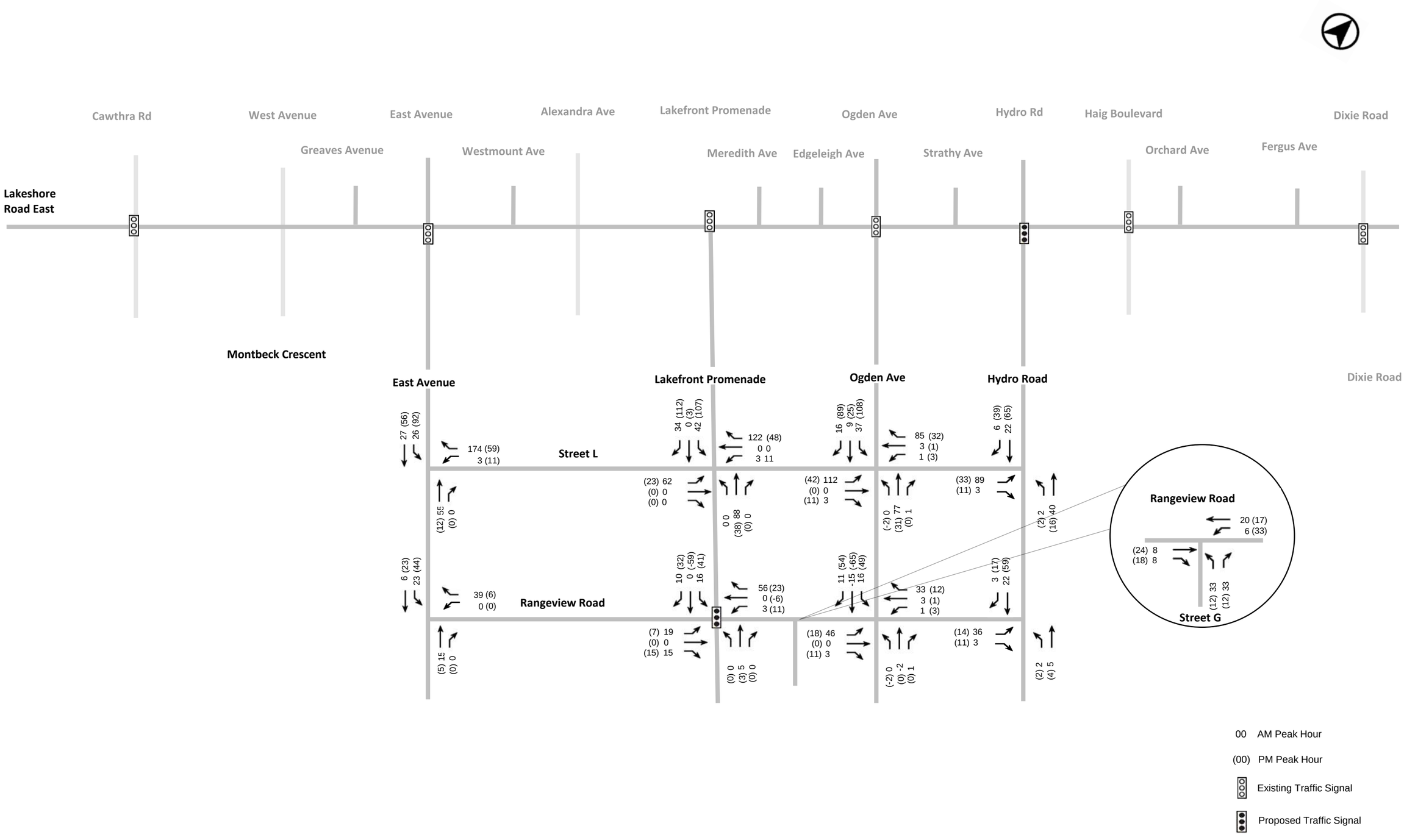

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FIGURE 49 - Site Traffic Volumes – Scenario 3A (2041) Rangeview (5,300 units) – Internal

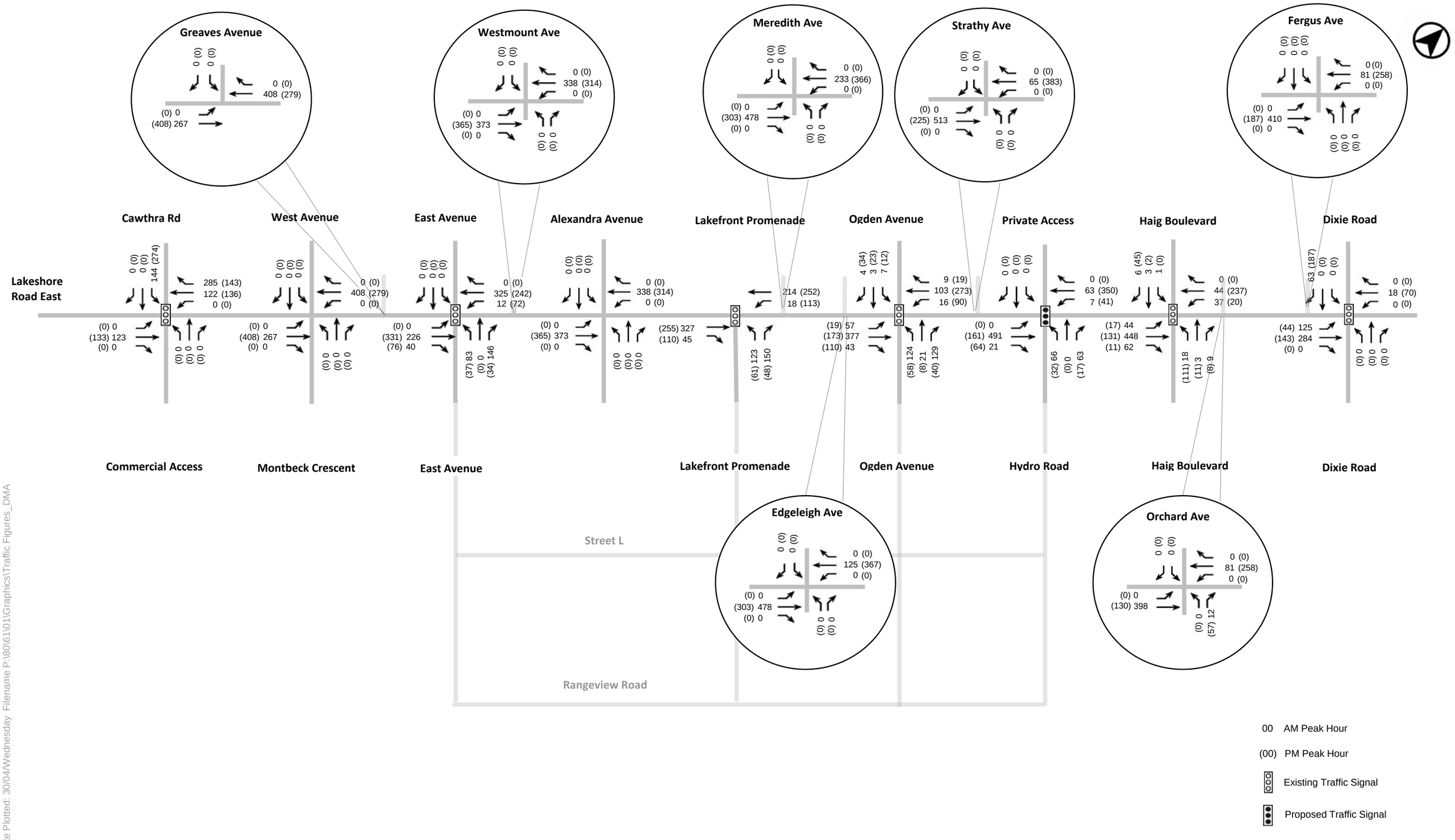

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FIGURE 50 - Site Traffic Volumes – Scenario 3A (2041) Rangeview (5,300 units) – External

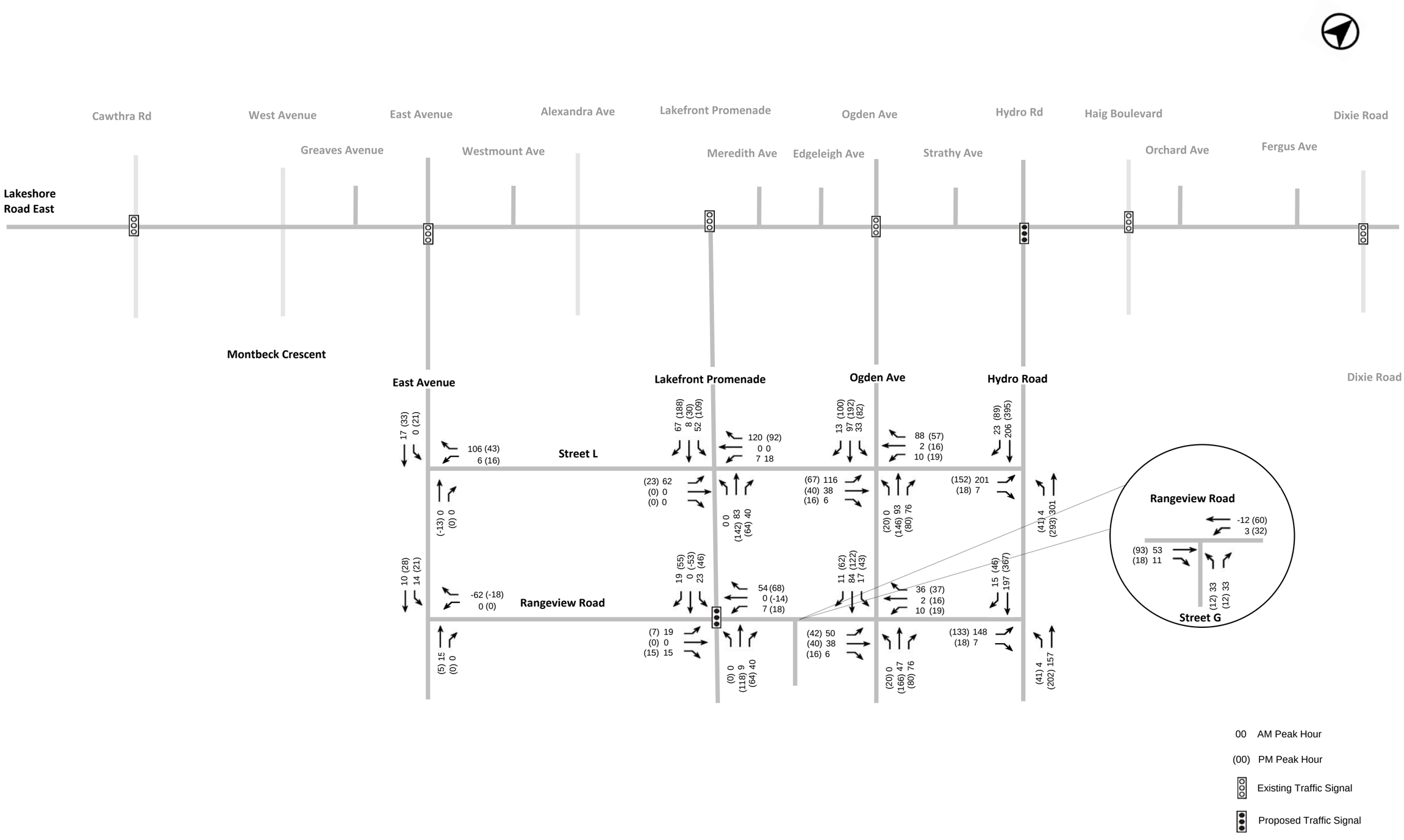

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FIGURE 51 - Site Traffic Volumes – Scenario 3A (2041) Lakeview (8,050 Units) – Internal

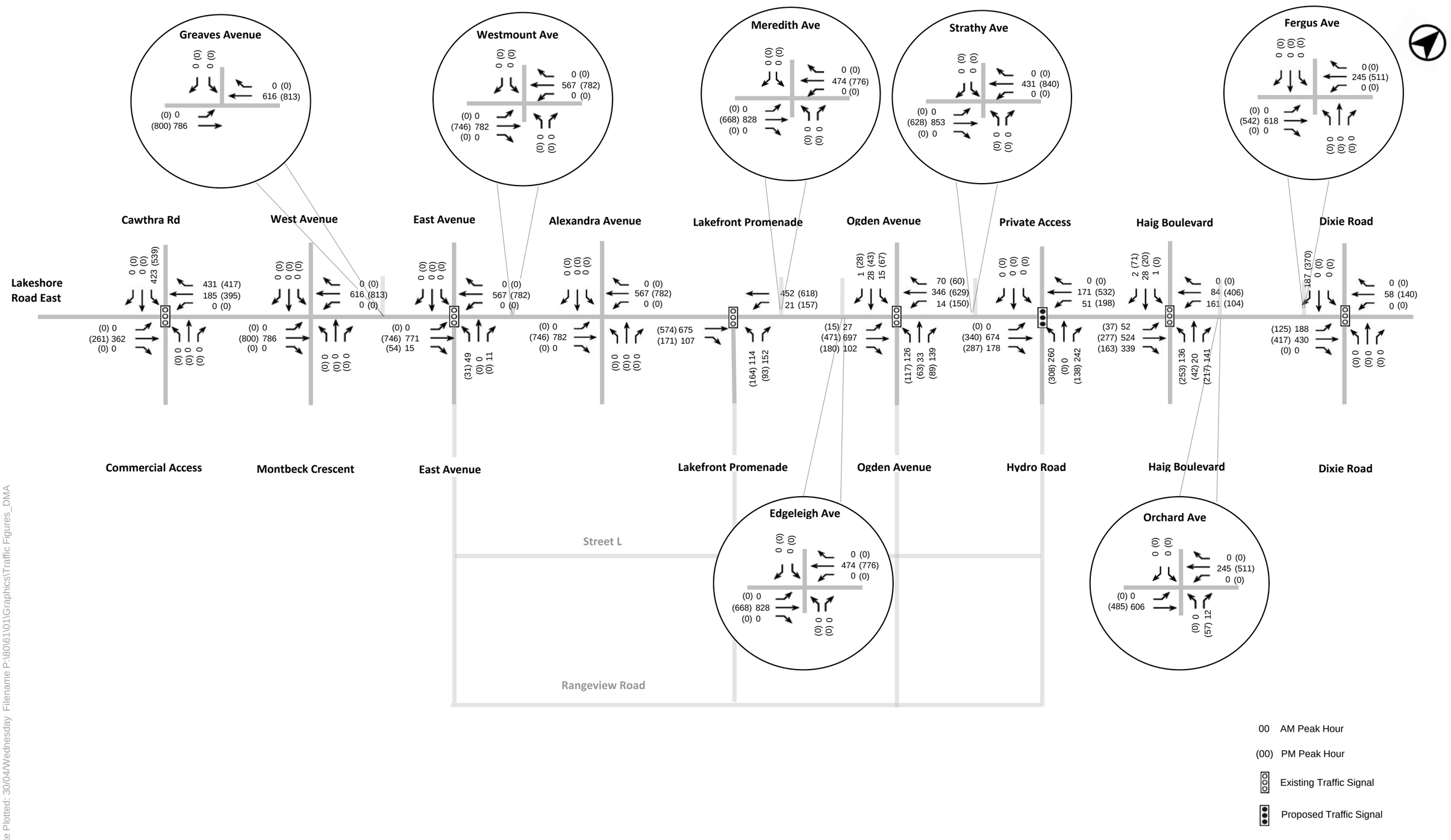

FIGURE 52 - Site Traffic Volumes – Scenario 3A (2041) Lakeview (8,050 Units) – External

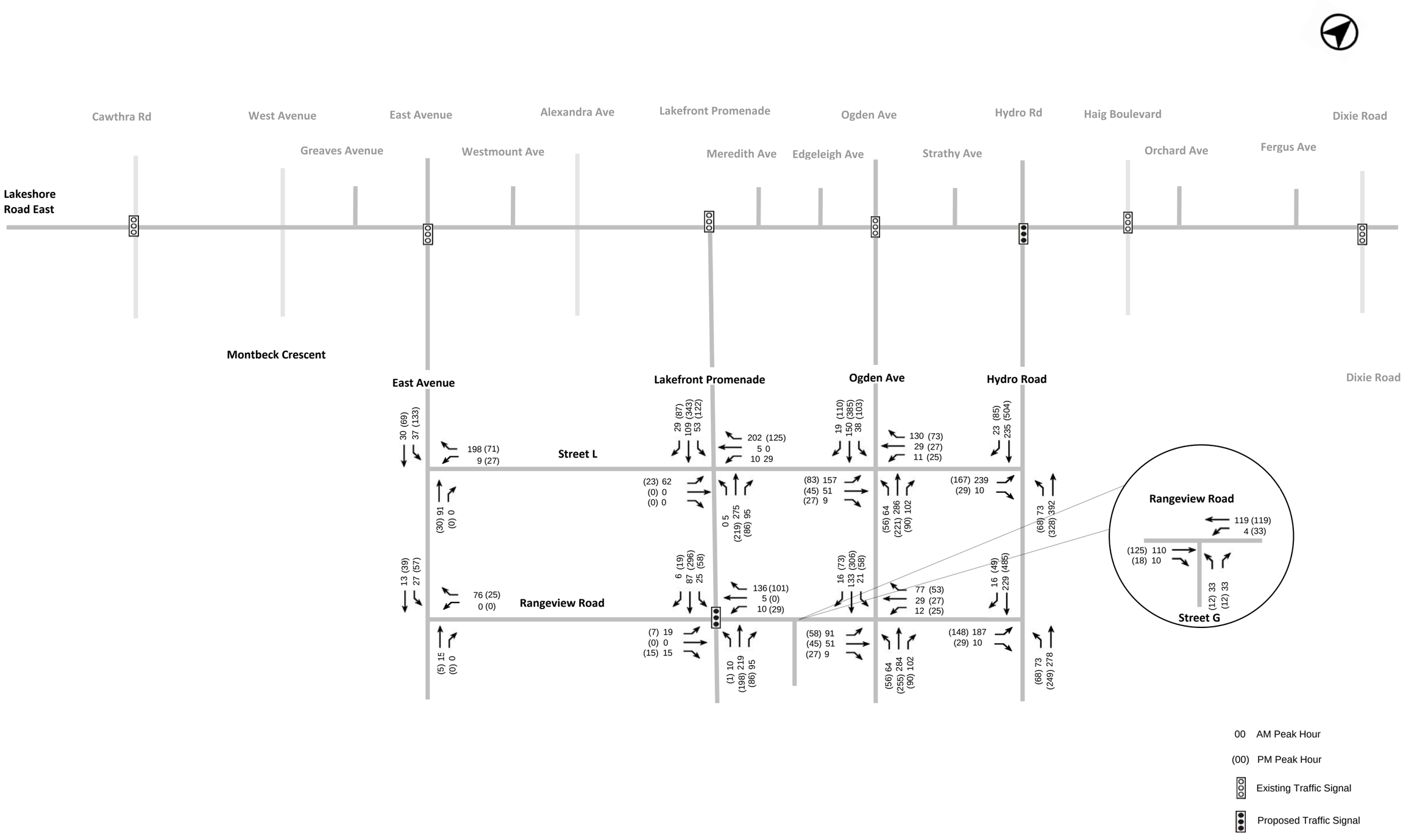

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FIGURE 53 - Site Traffic Volumes – Scenario 3A (2041) Rangeview + Lakeview (13,350 Units) – Internal

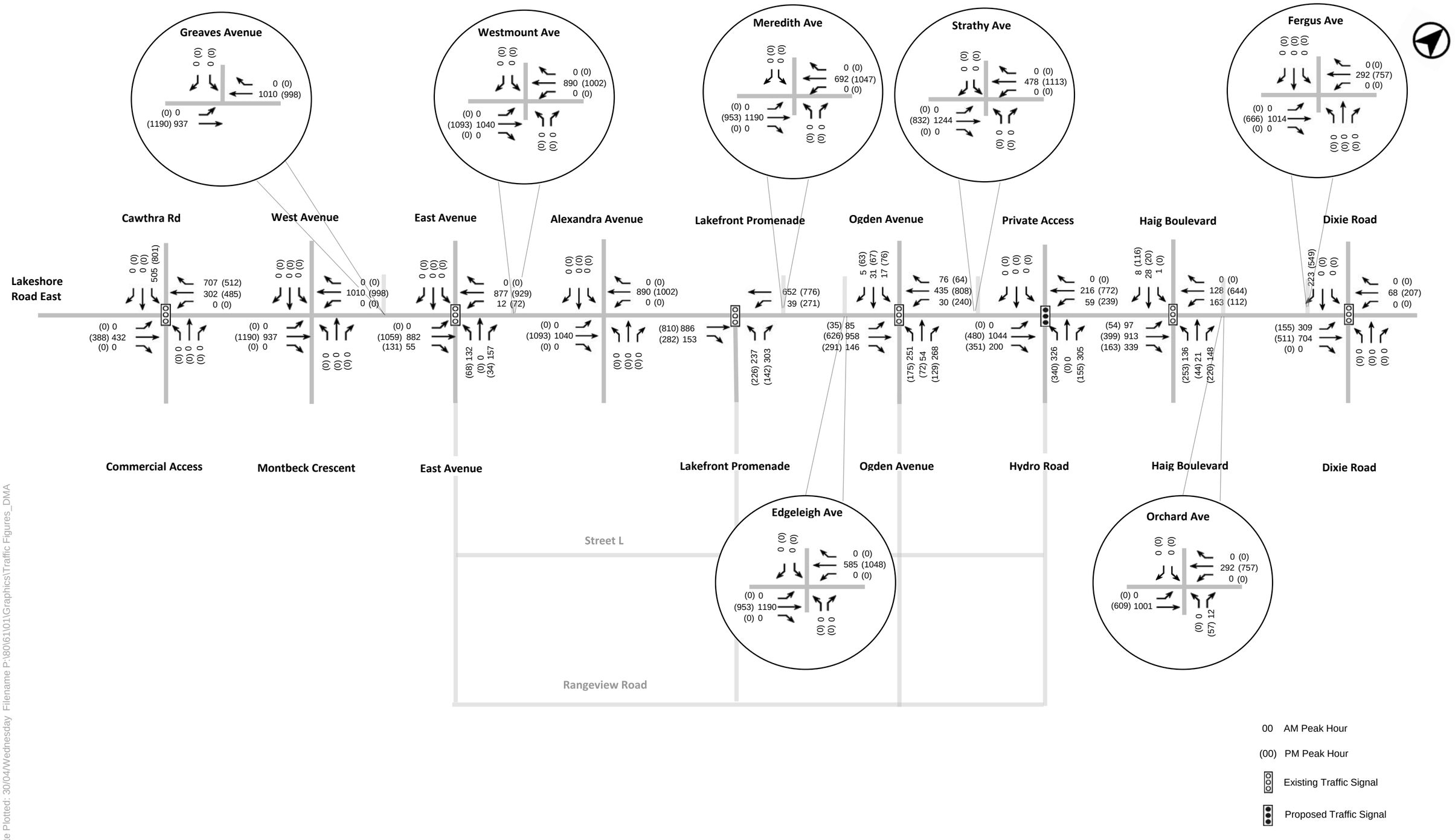

FIGURE 54 - Site Traffic Volumes – Scenario 3A (2041) Rangeview + Lakeview (13,350 Units) – External

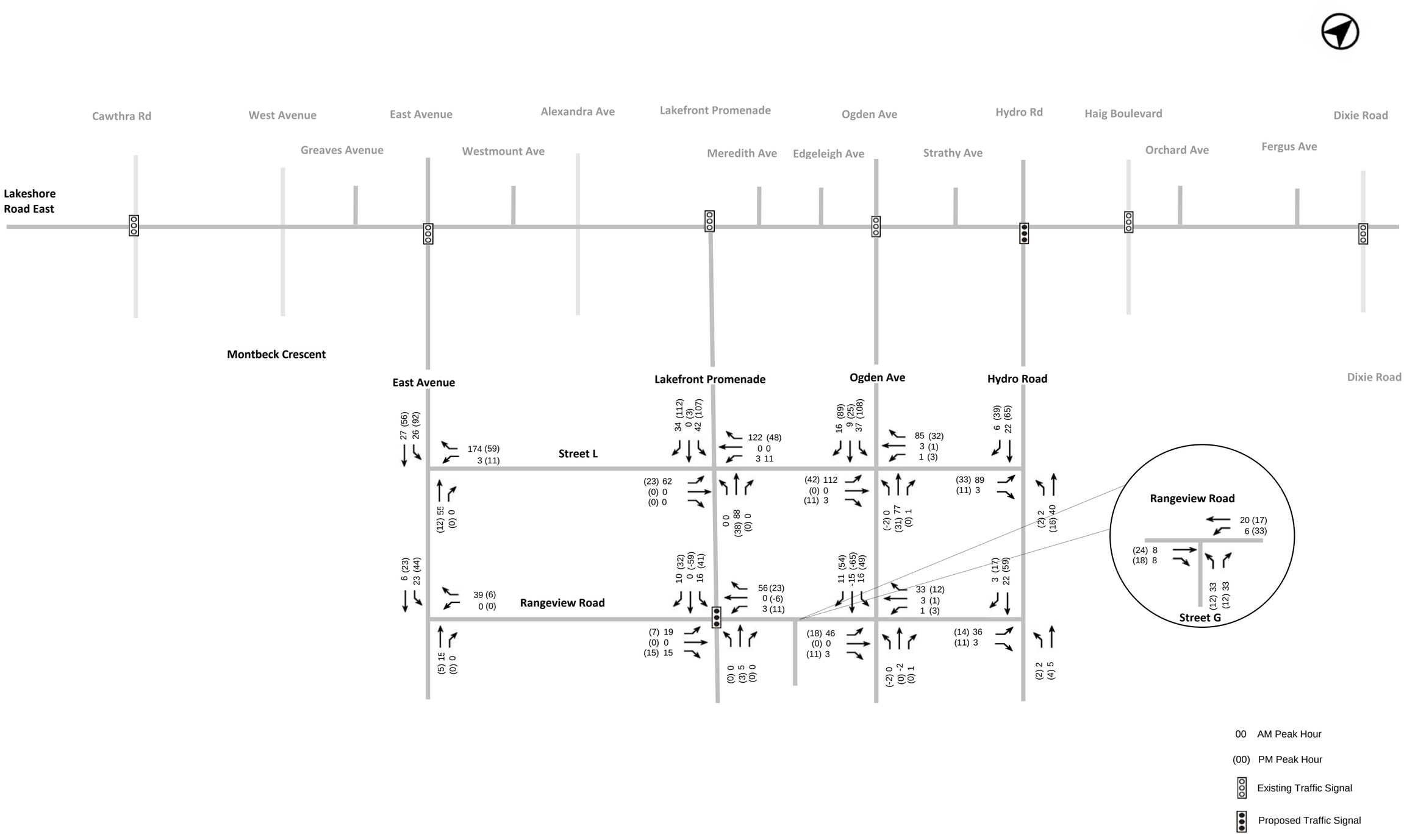

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FIGURE 55 - Site Traffic Volumes – Scenario 3B (2041) Rangeview (5,300 units) – Internal

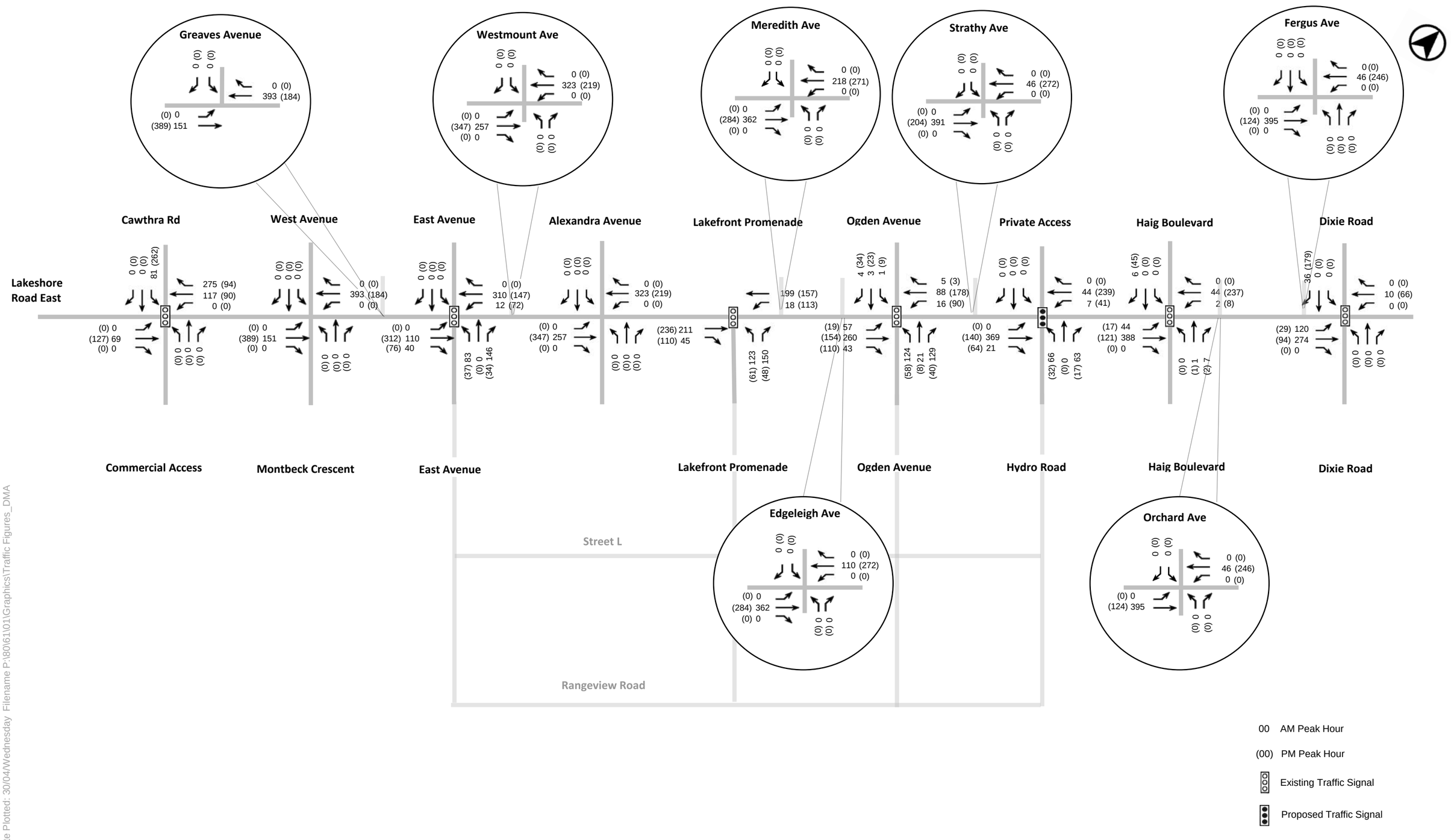

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FIGURE 56 - Site Traffic Volumes – Scenario 3B (2041) Rangeview (5,300 units) – External

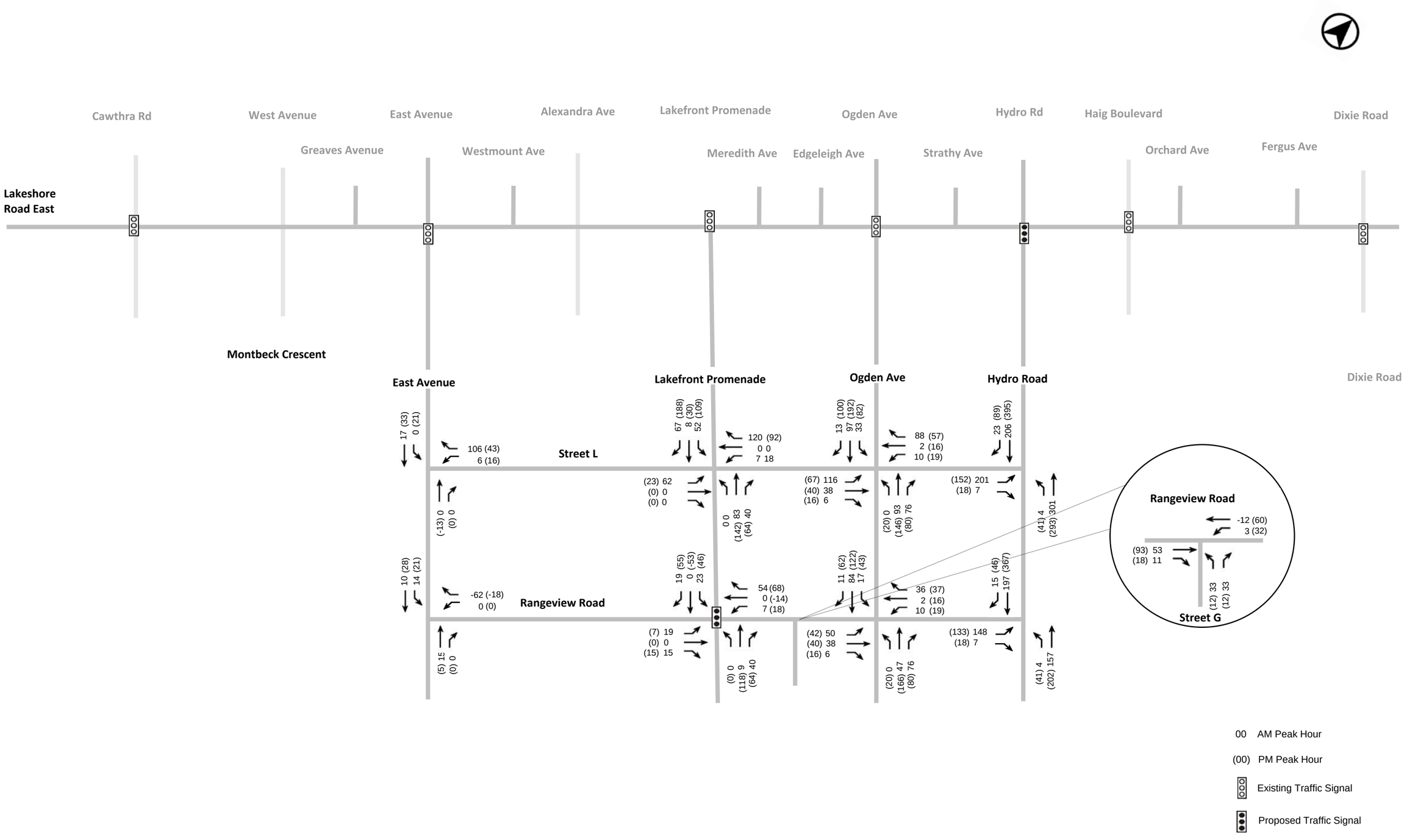

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FIGURE 57 - Site Traffic Volumes – Scenario 3B (2041) Lakeview (8,050 Units) – Internal

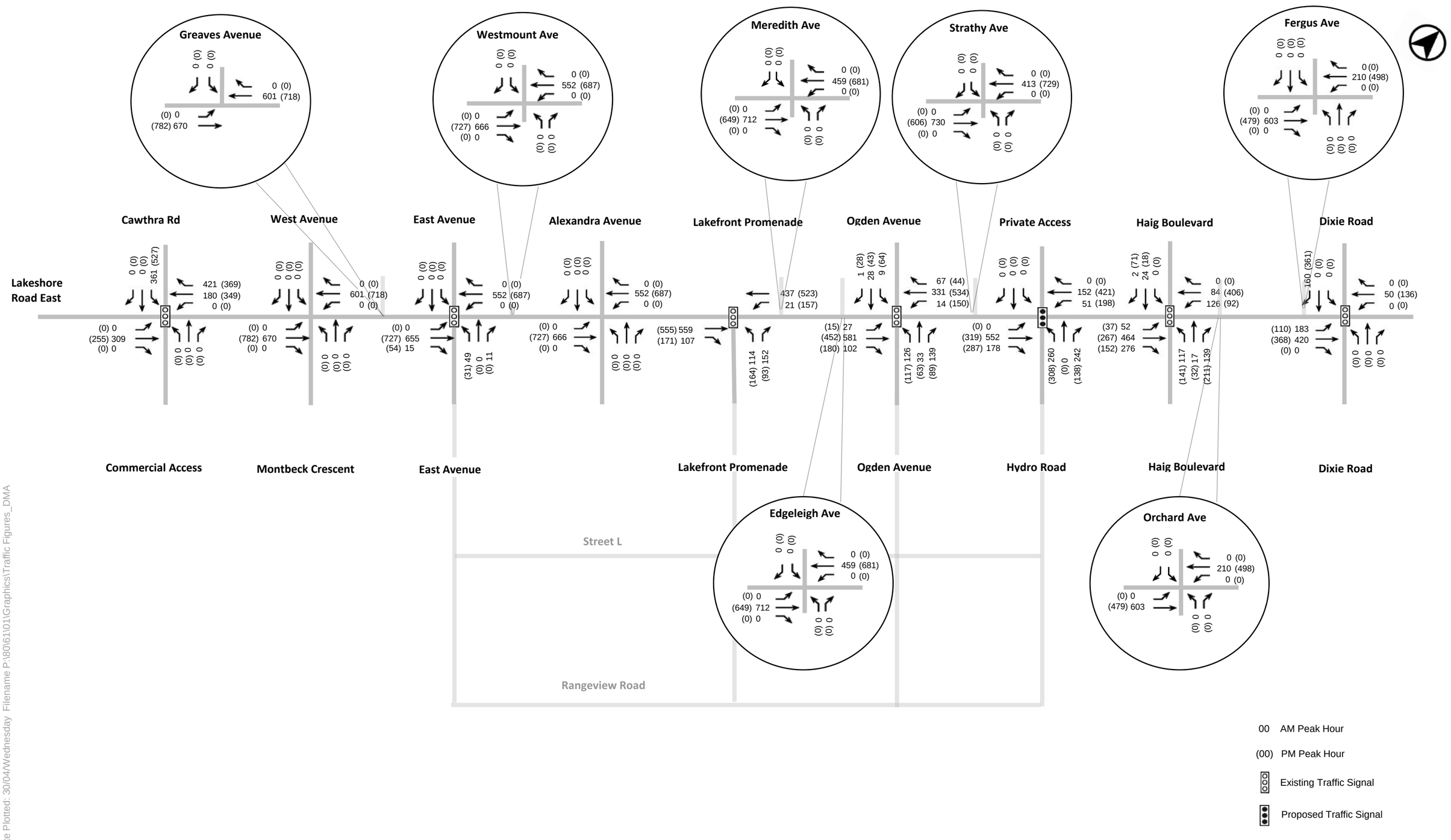

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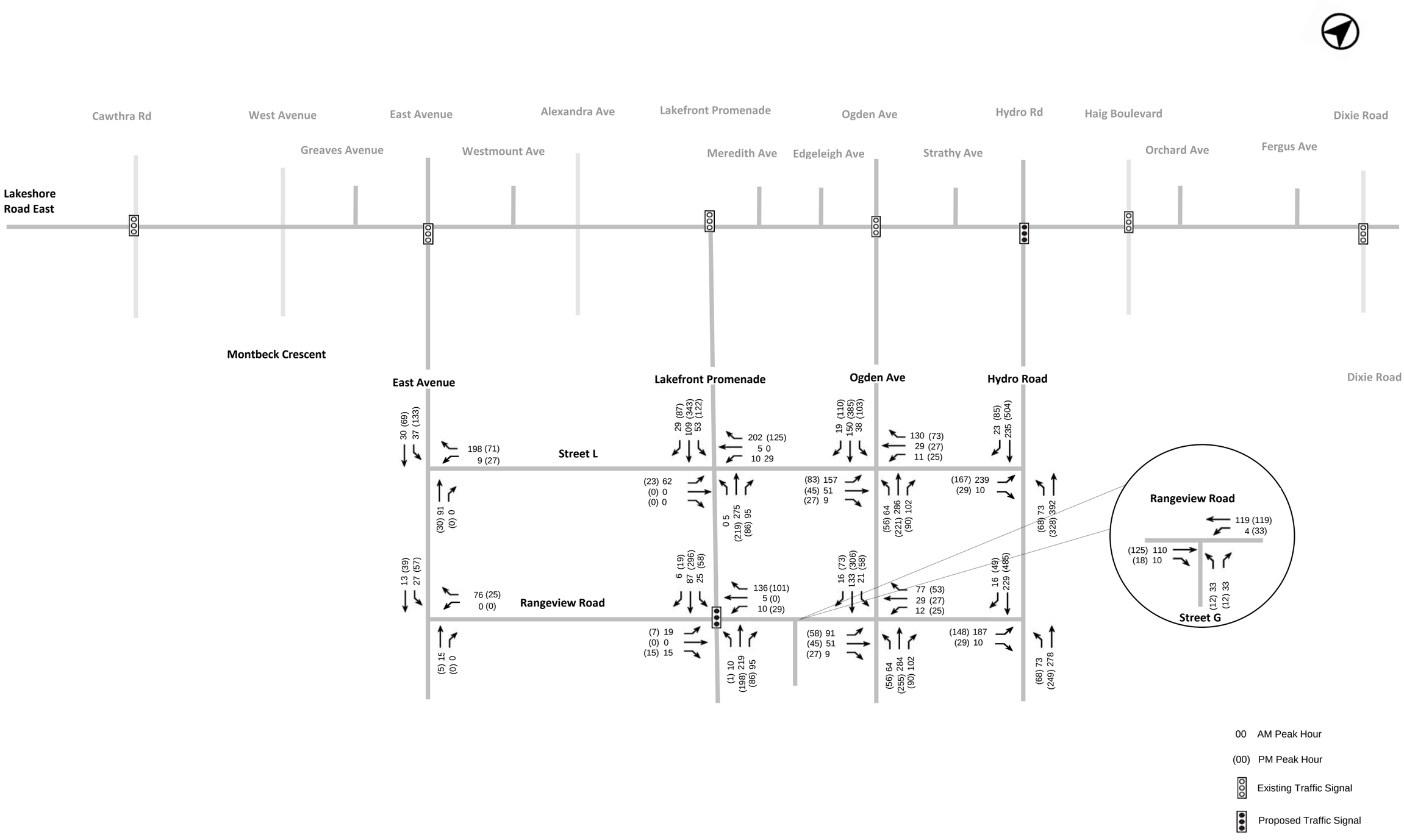
FIGURE 58 - Site Traffic Volumes – Scenario 3B (2041) Lakeview (8,050 Units) – External



00 AM Peak Hour

(00) PM Peak Hour

Existing Traffic Signal

Proposed Traffic Signal

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FIGURE 59 - Site Traffic Volumes – Scenario 3B (2041) Rangeview + Lakeview (13,350 Units) – Internal

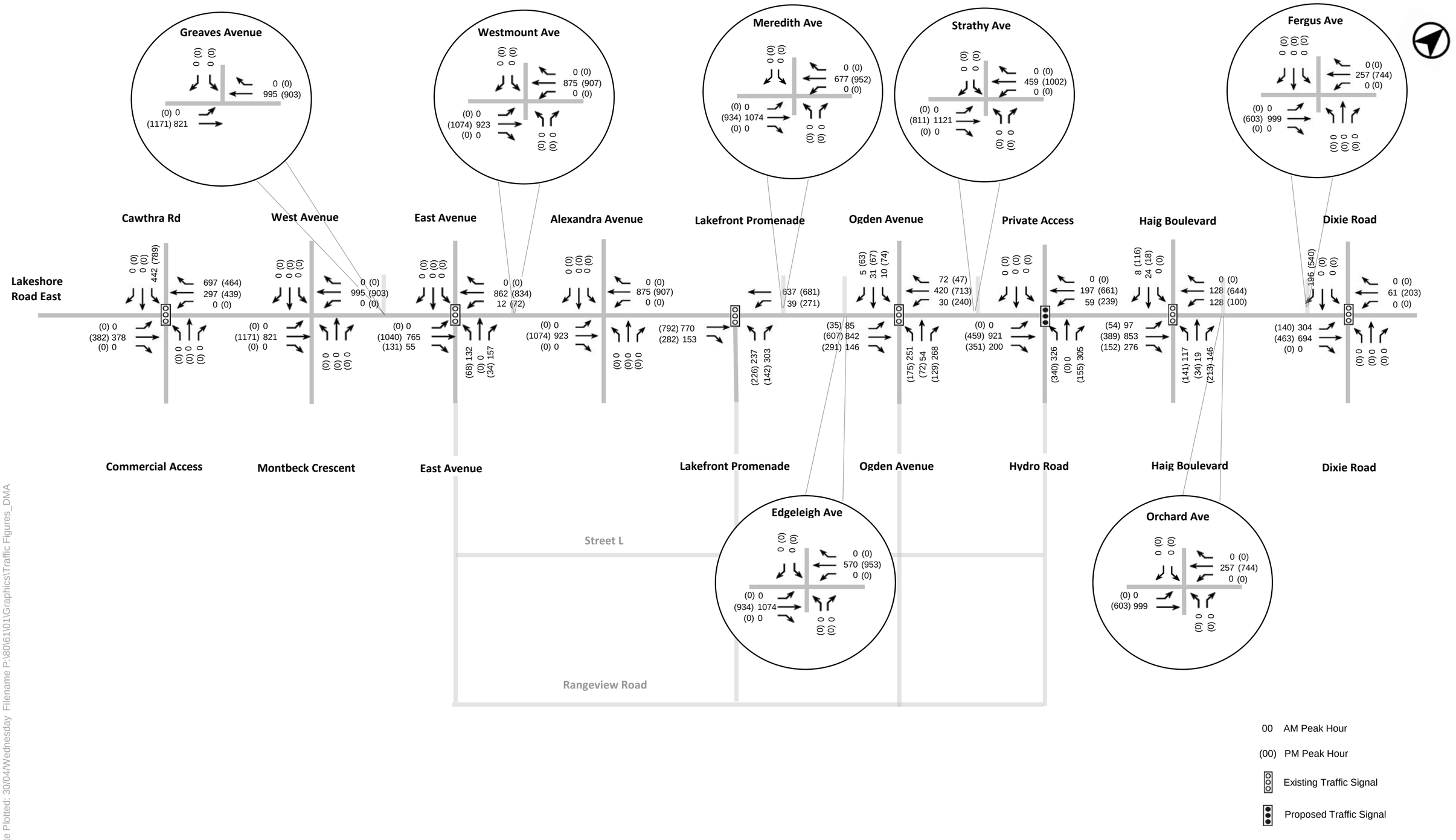

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FIGURE 60 - Site Traffic Volumes – Scenario 3B (2041) Rangeview + Lakeview (13,350 Units) – External

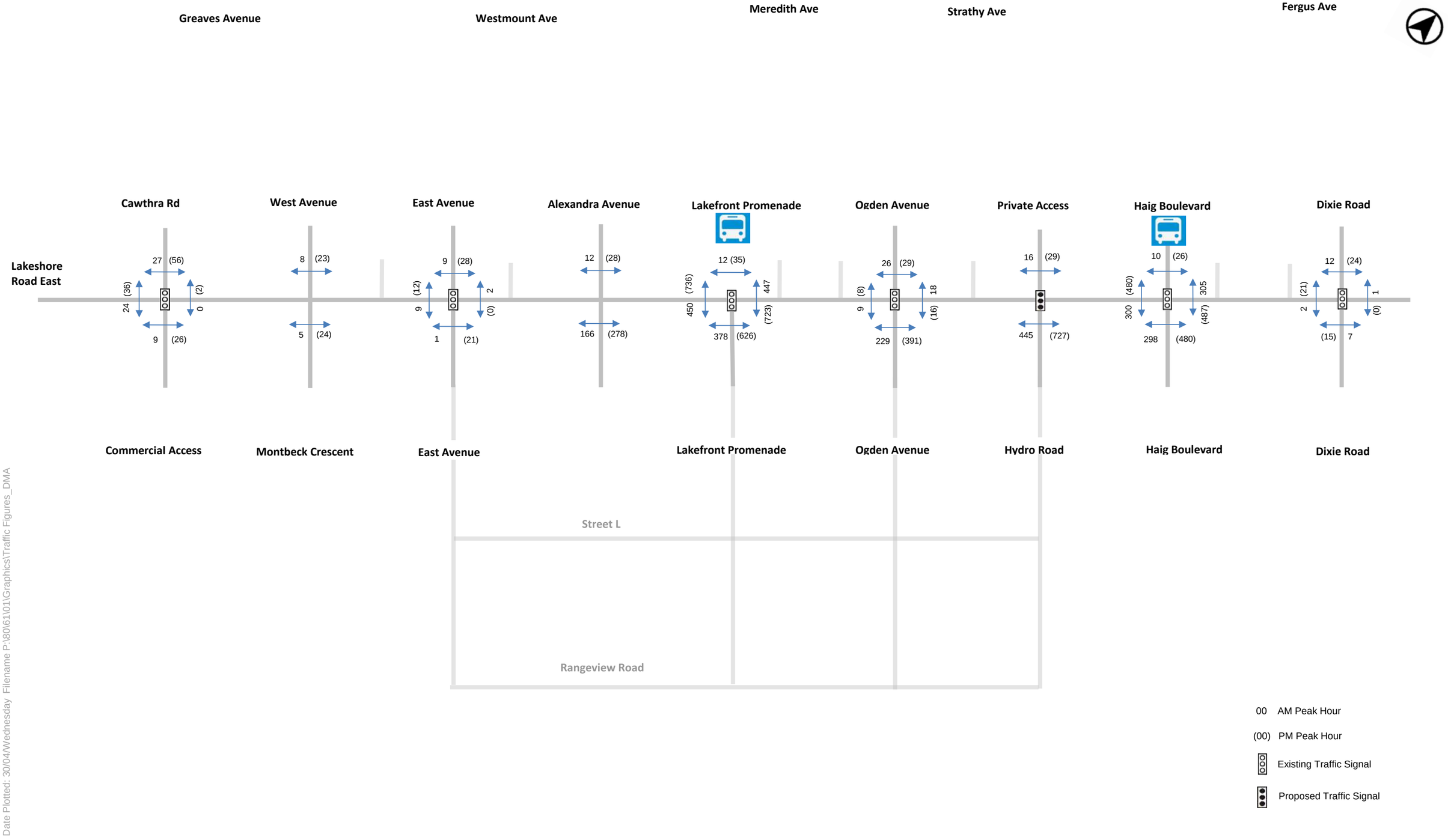

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FIGURE 61 - Pedestrian Site Traffic Volumes to Future BRT – Scenario 3A (2041)

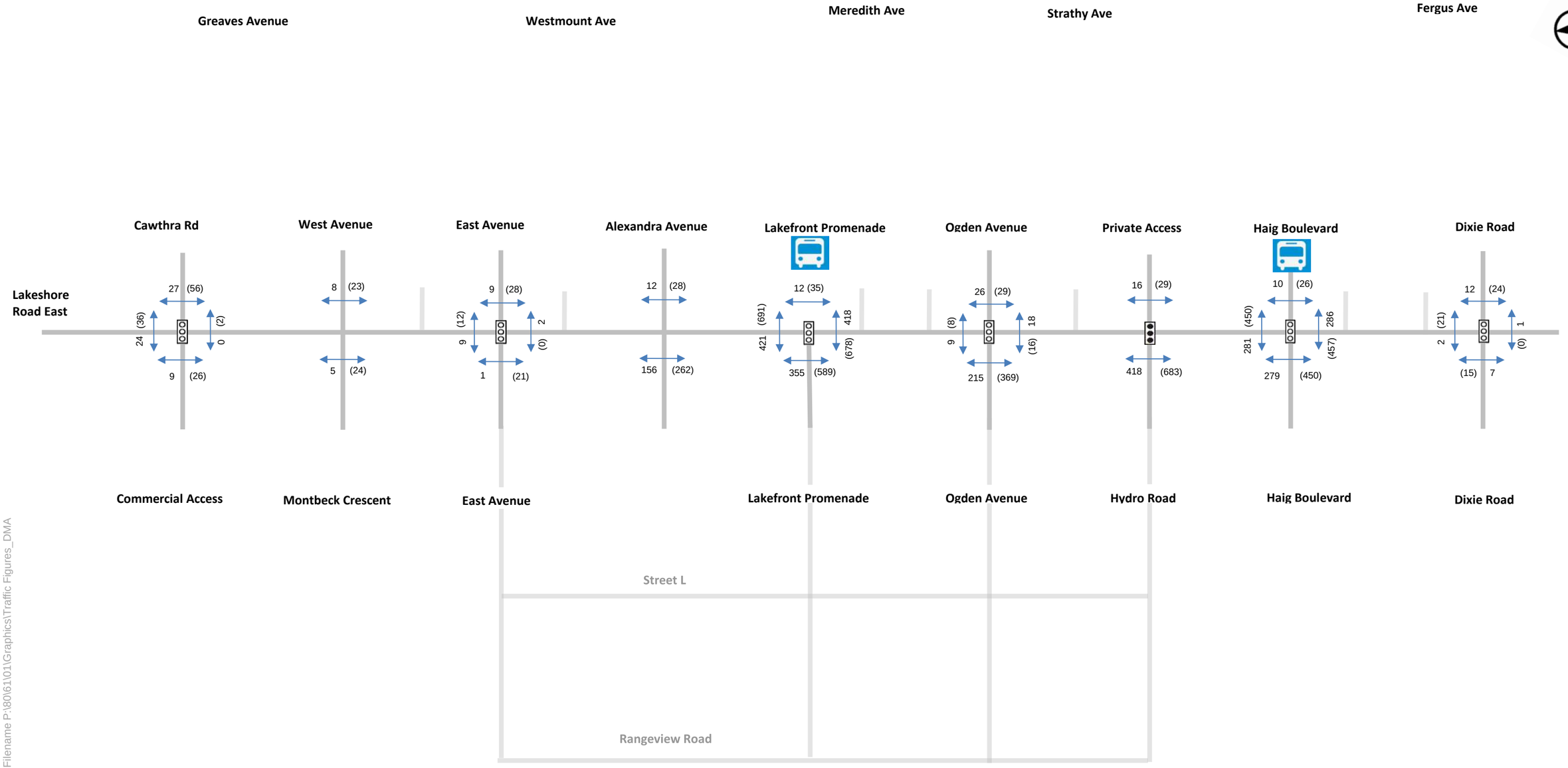

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FIGURE 62 - Pedestrian Site Traffic Volumes to Future BRT – Scenario 3B (2041)

6.7.4 Travel Demand: Scenario 4 – 5,300 Rangeview & 16,000 Lakeview Units

- **Scenario 4** considers that both Ogden Avenue + Haig Boulevard are connected to Lakeshore Road with dual northbound left-turning lanes at Lakeshore Road / Lakefront Promenade and the auto driver travel mode share is 40%.

As summarized in **Table 29**, in consideration of Rangeview with 5,300 residential units + 100% development of the non-residential and Lakeview with 16,000 residential units + 100% development of the non-residential lands developed, the combined sites are expected to generate a total of 3,770 and 4,459 two-way vehicle trips, during the morning and afternoon peak period, respectively.

It is noted that in order to confirm the future non-auto travel demand for the development sites south of Lakeshore Road East, the Rangeview, Lakeview and Serson (Scenarios 3A & 4 only) sites have been included in the multi-modal travel demand.

TABLE 29 VEHICLE TRIPS: SCENARIO 4 – 5,300 RANGEVIEW & 16,000 LAKEVIEW UNITS

Land Use	Number of Units / % Non-residential	AM Peak			PM Peak		
		Inbound	Outbound	2-way	Inbound	Outbound	2-way
Rangeview							
Residential	5,300	95	701	796	525	202	727
Office	100%	26	3	30	1	18	18
Retail	100%	49	32	81	72	67	139
Rangeview Vehicle Trips	**--**	**170**	**736**	**906**	**598**	**287**	**885**
Lakeview							
Residential	16,000	238	1,741	1,979	1,782	741	2,523
Non- Residential	100%	638	247	885	310	741	1,051
Lakeview Vehicle Trips	**--**	**876**	**1,988**	**2,864**	**2,092**	**1,482**	**3,574**
All Sites Combined							
TOTAL VEHICLE TRIPS	**--**	**1,046**	**2,724**	**3,770**	**2,690**	**1,769**	**4,459**
With Serson as Background Development							
Serson	**100%**	**164**	**35**	**199**	**36**	**186**	**222**
TOTAL VEHICLE TRIPS WITH SERSON	**--**	**1,210**	**2,759**	**3,969**	**2,726**	**1,955**	**4,681**

The Scenario 4 lane configuration and traffic control is provided in **Figure 63**. Figures that illustrate the Scenario 4 traffic volumes are provided as follows:

- **Figure 64:** Site Traffic Volumes – Scenario 4 (2041): Rangeview (5,300 Units) – Internal
- **Figure 65:** Site Traffic Volumes – Scenario 4 (2041): Rangeview (5,300 Units) – External
- **Figure 66:** Site Traffic Volumes – Scenario 4 (2041): Lakeview (16,000 Units) – Internal
- **Figure 67:** Site Traffic Volumes – Scenario 4 (2041): Lakeview (16,000 Units) – External

- **Figure 68:** Site Traffic Volumes – Scenario 4: 2041 Rangeview + Lakeview (21,300 Units) – Internal
- **Figure 69:** Site Traffic Volumes – Scenario 4: 2041 Rangeview + Lakeview (21,300 Units) – External

As summarized in **Table 30**, Scenario 4 (5,300 Rangeview units + 16,000 Lakeview units + 100% Serson) is expected to generate 2,977 and 4,915 two-way transit trips, during the morning and afternoon peak period respectively. There are expected to be 2,143 and 1,264 two-way auto passenger trips, during the morning and afternoon peak period respectively and 595 and 562 two-way walking trips, during the morning and afternoon peak period respectively. With the adjusted travel mode shares for cycling trips, there are expected to be 238 and 281 two-way cycling trips, during the morning and afternoon peak period respectively.

An assessment of pedestrian trip volumes made to the future Lakeshore Road BRT has been conducted. Pedestrian volumes have been adjusted to account for *Grouping*, a common behaviour where pedestrians travel in clusters related to the pedestrian phasing at crossing and other social factors. Scenario 4 pedestrian volumes to the future Lakeshore Road BRT are depicted in **Figure 70**.

TABLE 30 MULTI-MODAL TRAVEL DEMAND: SCENARIO 4

Travel Mode	AM Peak			PM Peak		
	Inbound	Outbound	2-way	Inbound	Outbound	2-way
Transit	908	2,069	2,977	2,862	2,053	4,915
Auto Driver	1,210	2,759	3,969	2,726	1,955	4,681
Auto Passenger	653	1,490	2,143	736	528	1,264
Walk	182	414	595	327	235	562
Cycle	73	166	238	164	117	281
Total	**3,025**	**6,897**	**9,922**	**6,815**	**4,888**	**11,703**

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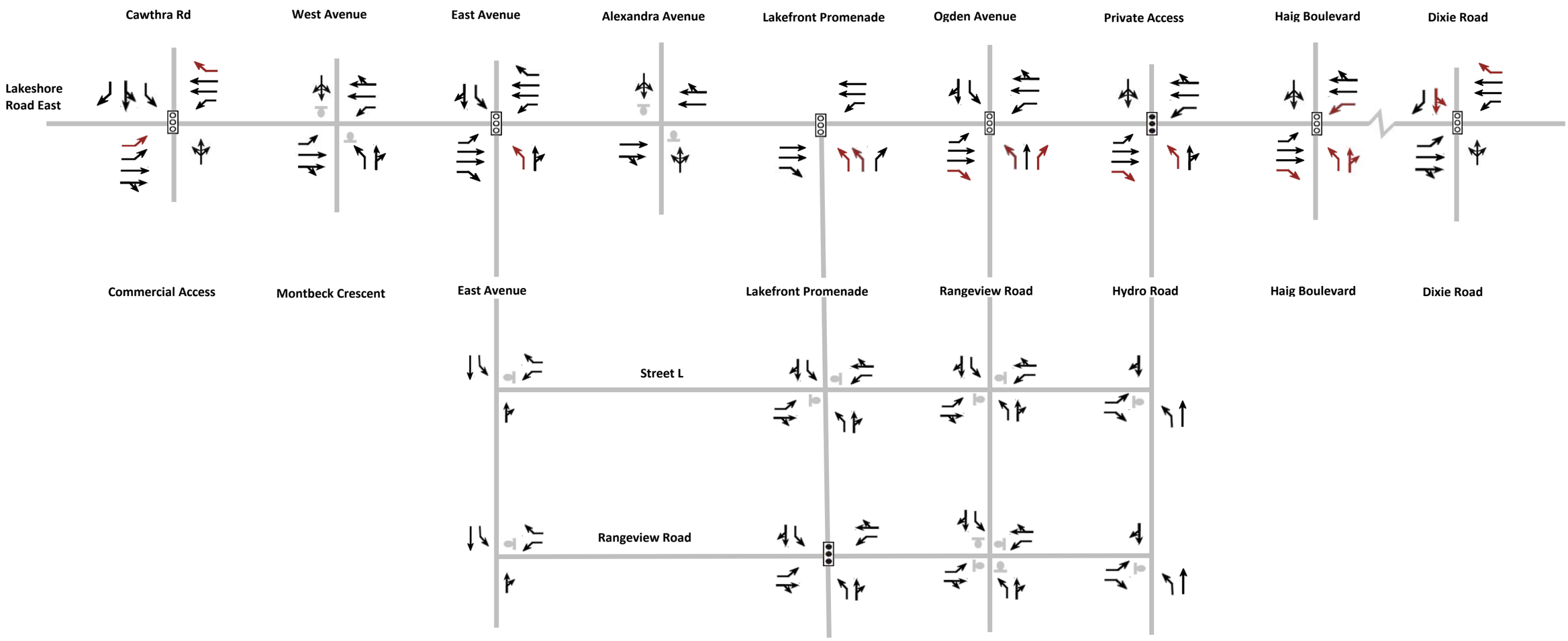

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FIGURE 63 - 2041 Lane Configuration & Traffic Control – Scenario 4

RANGEVIEW ESTATES

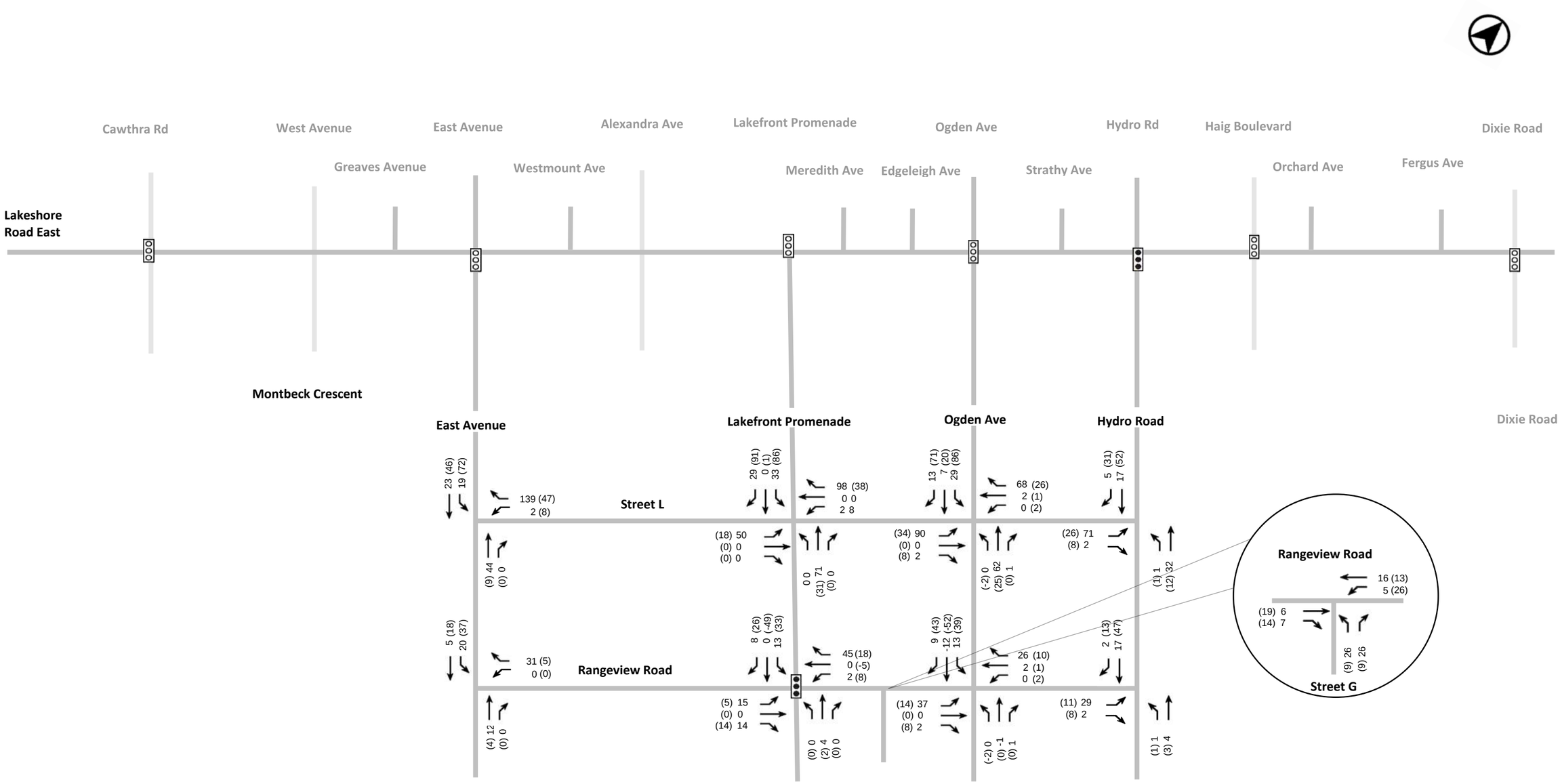

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FIGURE 64 - Site Traffic Volumes – Scenario 4 (2041) Rangeview (5,300 Units) – Internal

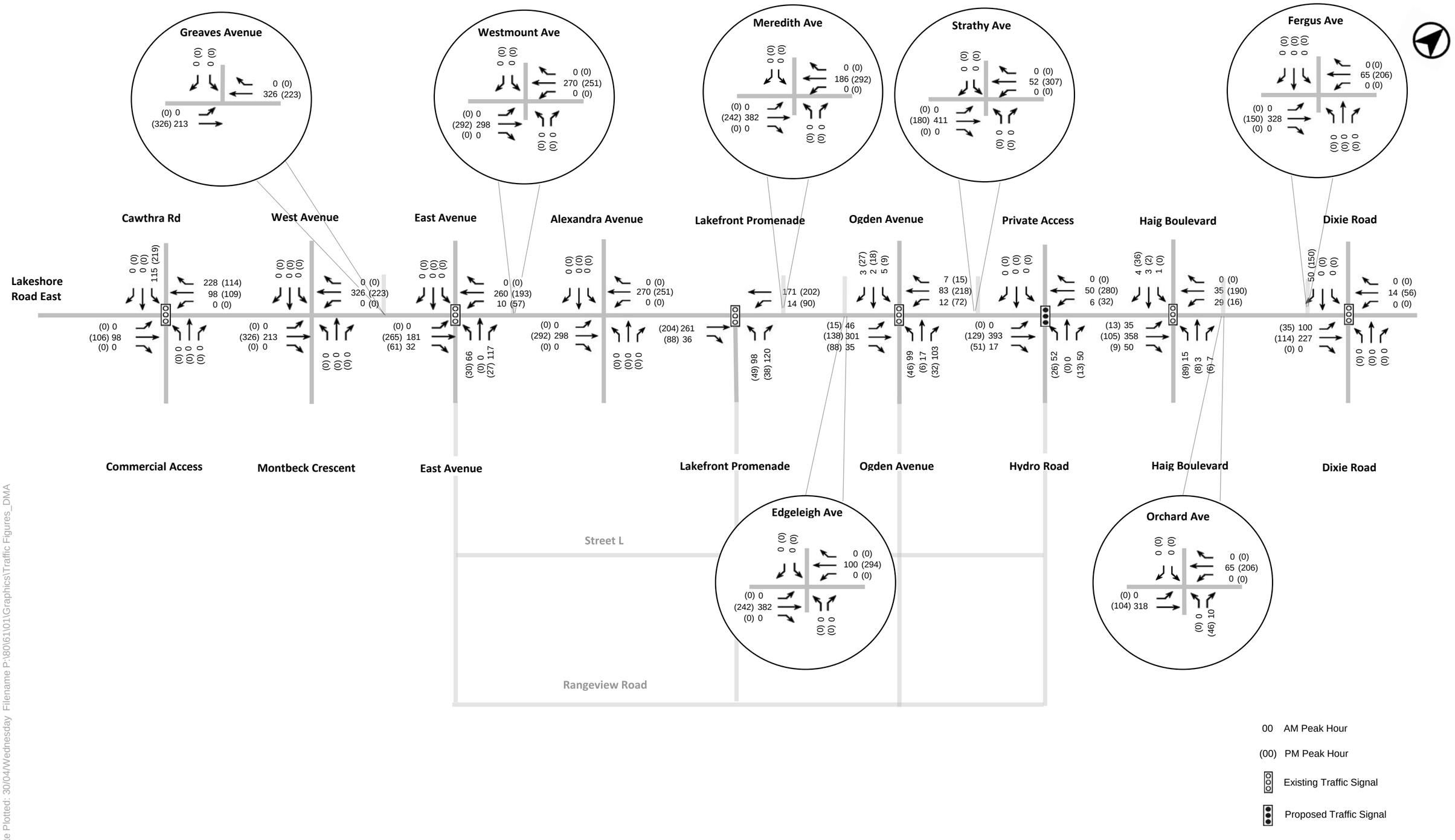

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FIGURE 65 - Site Traffic Volumes – Scenario 4 (2041) Rangeview (5,300 Units) – External

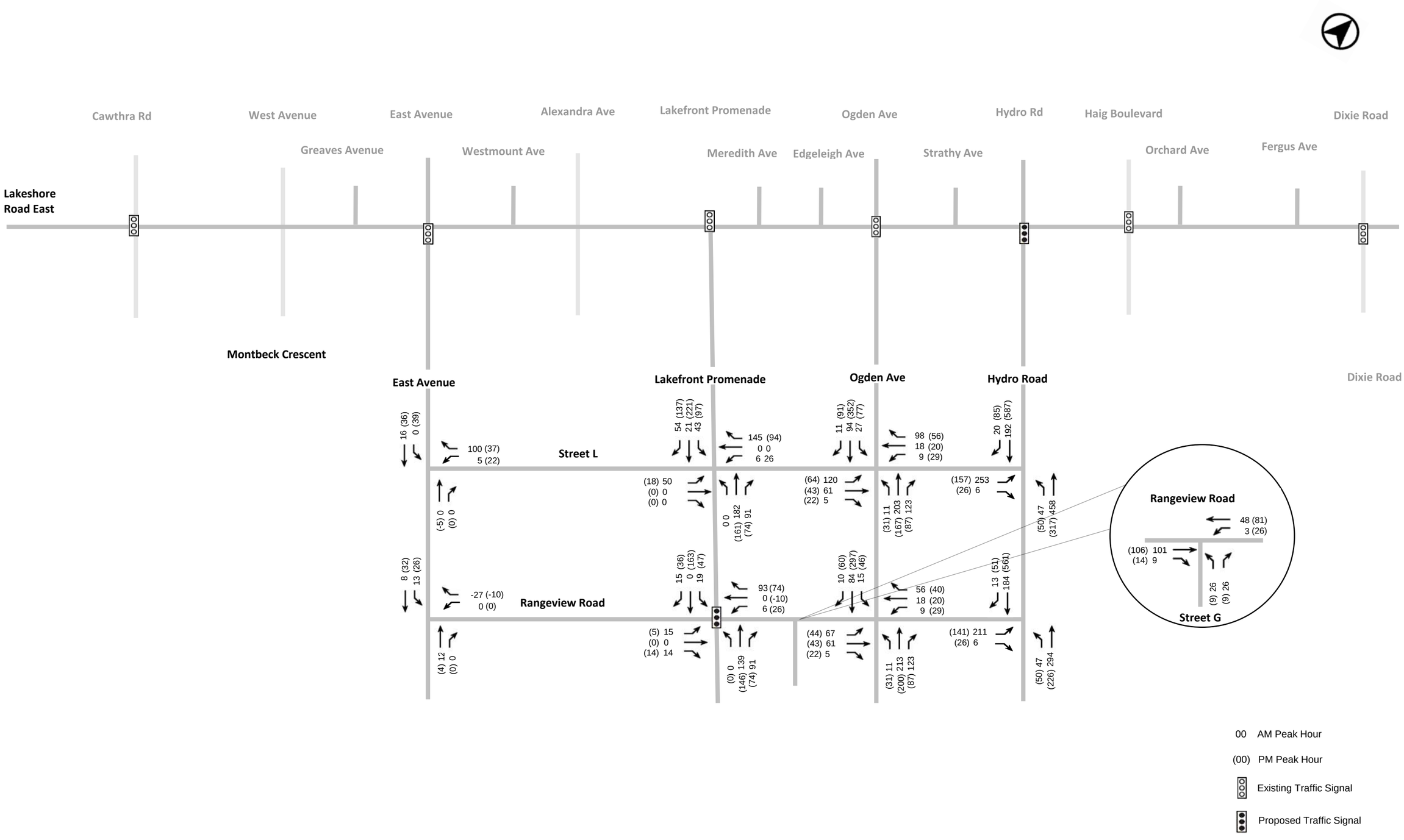

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FIGURE 66 - Site Traffic Volumes – Scenario 4 (2041) Lakeview (16,000 Units) – Internal

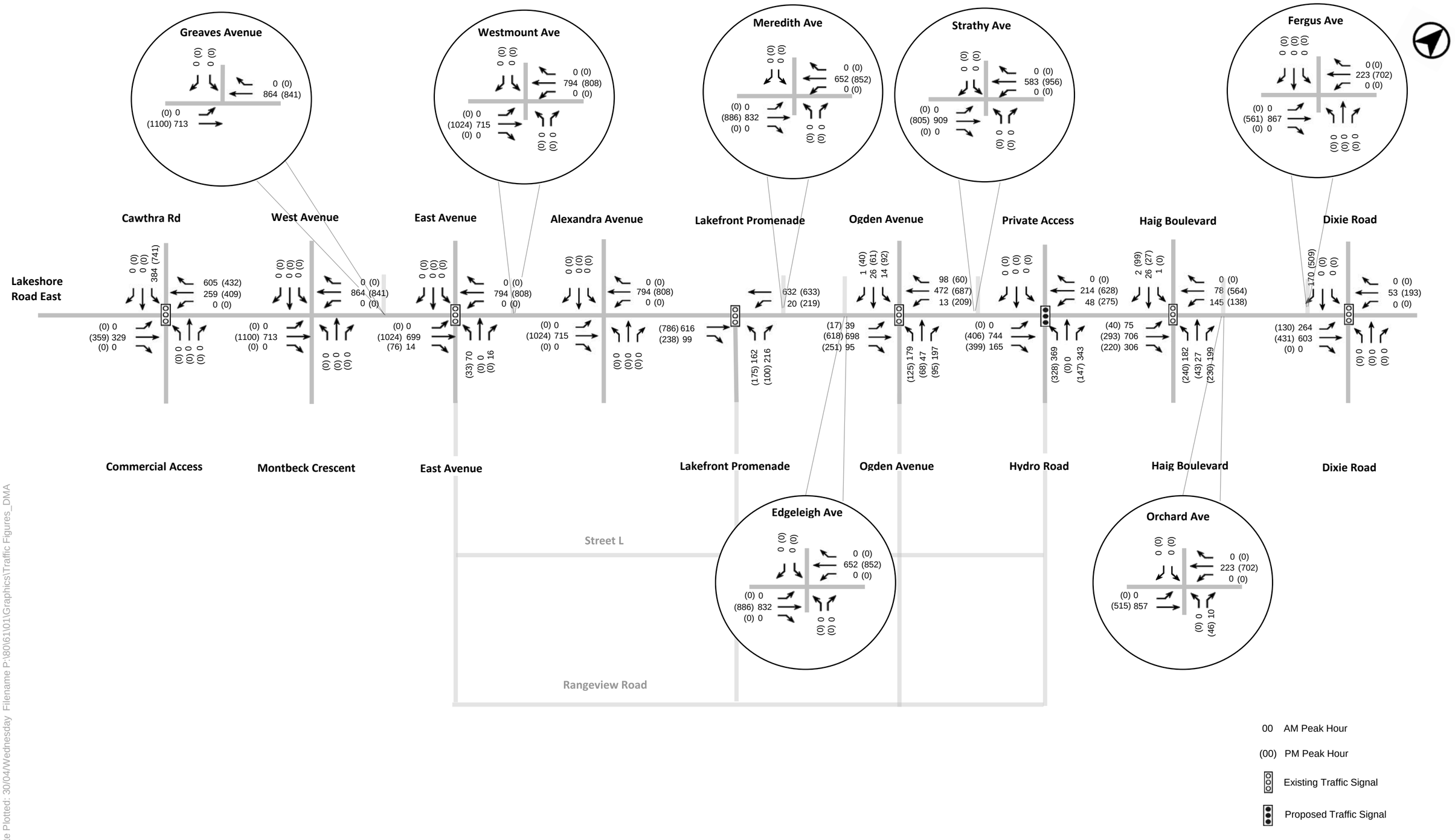

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FIGURE 67 - Site Traffic Volumes – Scenario 4 (2041) Lakeview (16,000 Units) – External

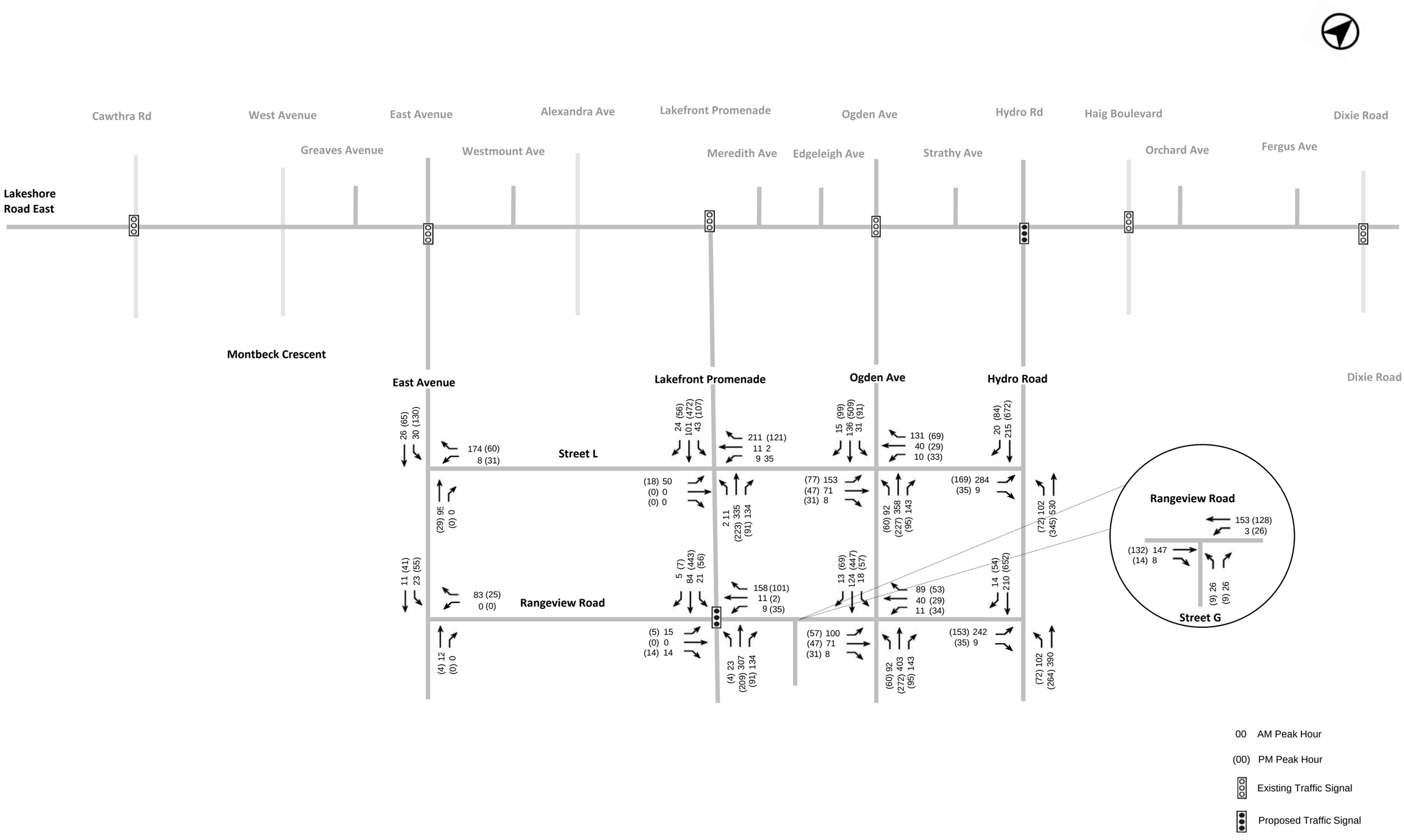

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FIGURE 68 - Site Traffic Volumes – Scenario 4 2041 Rangeview + Lakeview (21,300 Units) - Internal

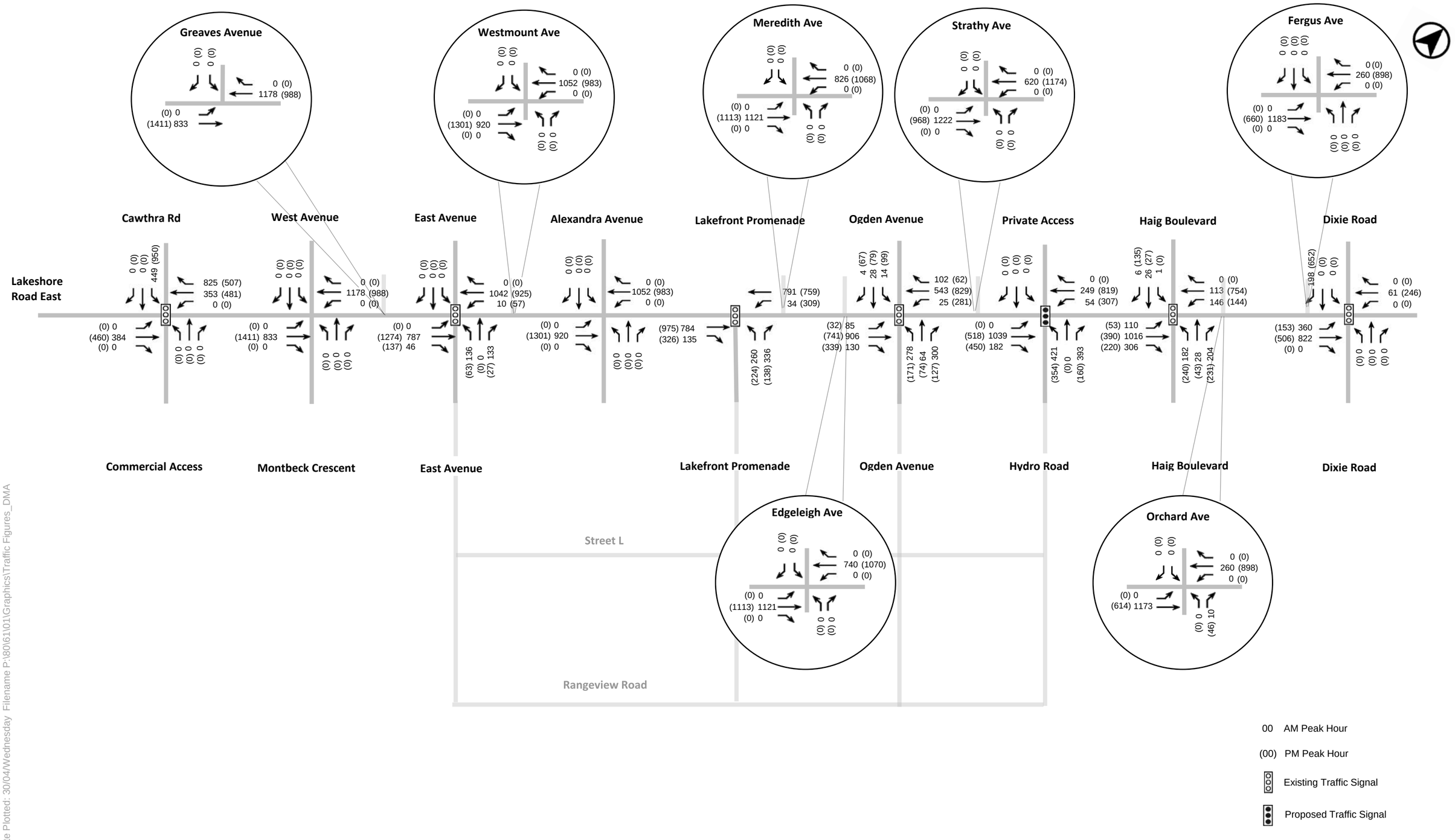

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FIGURE 69 - Site Traffic Volumes – Scenario 4 2041 Rangeview + Lakeview (21,300 Units) - External

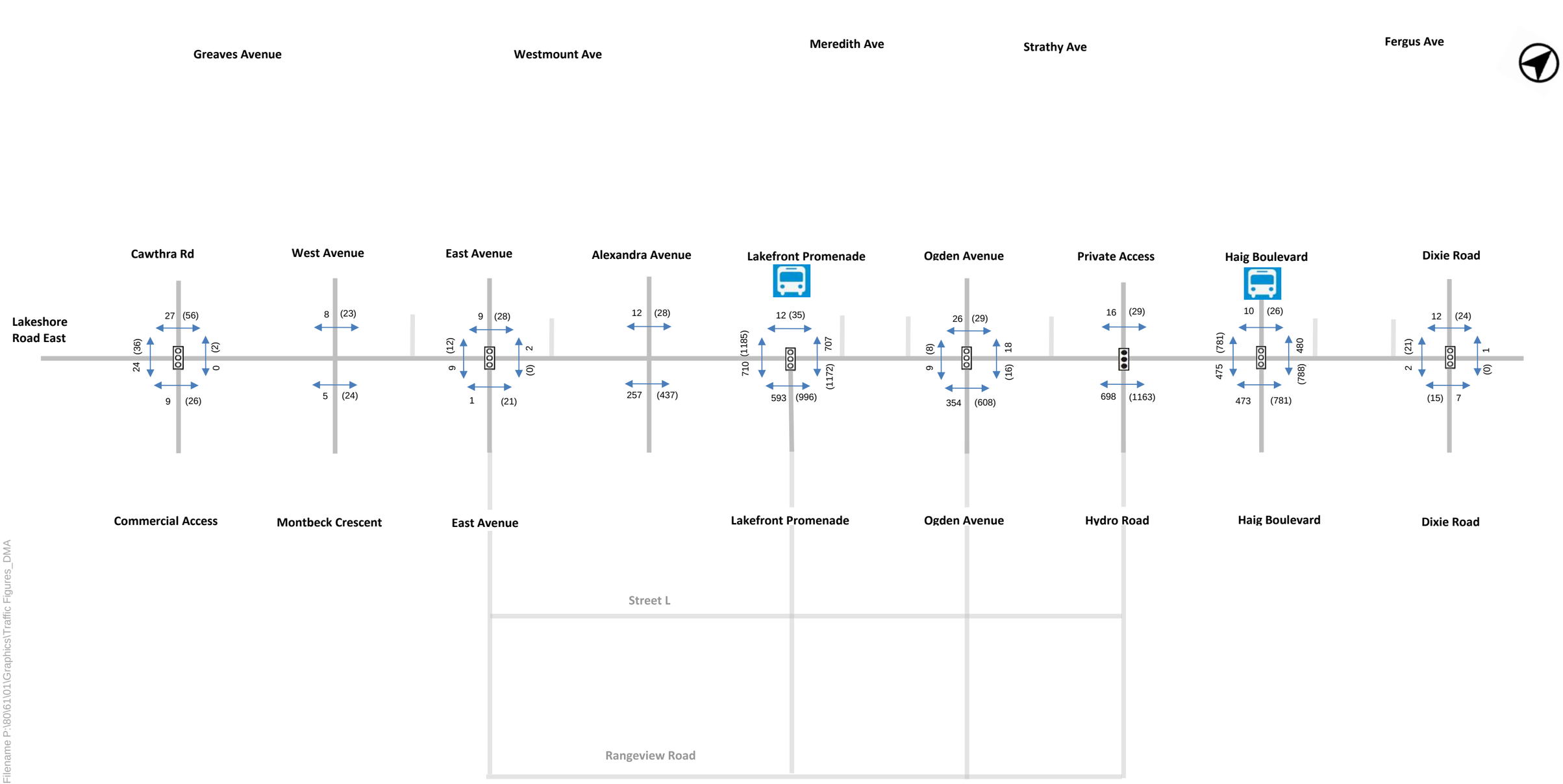

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FIGURE 70 - Pedestrian Site Traffic Volumes to Future BRT – Scenario 4 (2041)

6.8 FUTURE TOTAL TRAFFIC VOLUMES

The future total scenario represents the total traffic volumes at various build-out scenarios. The future total traffic volumes are inclusive of the summation of the following traffic volumes:

- Existing Traffic Volumes (Collected Wednesday, April 10, 2024)
- Background Traffic Volumes
    - Corridor Growth Traffic Volumes
    - Removal of Corridor Traffic Volumes (Scenario 4 only)
    - Background Development Traffic Volumes (Serson added to Scenarios 3A & 4)
- Site Traffic Volumes
    - Rangeview Site Traffic Volumes
    - Lakeview Site Traffic Volumes
    - Rangeview + Lakeview Site Traffic Volumes

As outlined in **Section 6.7** Site Traffic Volumes were assessed under development build-out Scenarios 1, 2, 3A, 3B and 4. As the Rangeview and Lakeview sites increase units through the respective build-out scenarios, subsequent future total volumes will increase. As previously noted, internal and external traffic volumes have been illustrated separately. As per reviewing agency comments received as part of the May 31, 2024 BA Group Report, traffic volumes generated by Rangeview and Lakeview have been illustrated in separate figures to allow the volumes to be reviewed individually for each site. The lane configuration figures have been updated to reflect the planned road network.

6.8.1 Future Total: Scenario 1 – Rangeview & Lakeview 10,000 Units

Future Total Scenario 1 considers that neither Ogden Avenue nor Haig Boulevard is connected to Lakeshore Road and the auto driver mode share is 50%. The future total Scenario 1 traffic volumes are inclusive of the following traffic volumes layers:

- Existing Traffic Volumes
- Future Background Traffic Volumes – Scenario 1
- Site Traffic Volumes – Scenario 1 (2031): Rangeview + Lakeview (10,000 Units)

Future Total Scenario 1 traffic volumes are illustrated in **Figure 71** and **Figure 72** for the internal and external study area intersections, respectively.

6.8.2 Future Total Scenario 2 – 3,700 Rangeview & 8,050 Lakeview Units

Future Total Scenario 2 considers that Ogden Avenue is connected to Lakeshore Road (but not Haig Boulevard) and the auto driver travel mode share is 50%.The future total Scenario 2 traffic volumes are inclusive of the following traffic volumes layers:

- Existing Traffic Volumes
- Future Background Traffic Volumes – Scenario 2
- Site Traffic Volumes – Scenario 2 (2041): Rangeview + Lakeview (11,750 Units)

Future Total Scenario 2 traffic volumes are illustrated in **Figure 73** and **Figure 74** for the internal and external study area intersections, respectively.

6.8.3 Future Total Scenario 3A/3B – 5,300 Rangeview & 8,050 Lakeview Units

Future Total Scenario 3A considers that Ogden Avenue + Haig Boulevard are connected to Lakeshore Road and the auto driver travel mode share is 50%. The future total Scenario 3A traffic volumes are inclusive of the following traffic volumes layers:

- Existing Traffic Volumes
- Future Background Traffic Volumes – Scenario 3A (includes 100% Serson)
- Site Traffic Volumes – Scenario 3A (2041): Rangeview + Lakeview (13,350 Units)

Future Total Scenario 3A traffic volumes are illustrated in **Figure 75** and **Figure 76** for the internal and external study area intersections, respectively.

Future Total Scenario 3B considers that Ogden Avenue is connected to Lakeshore Road (Haig Boulevard not connected) to Lakeshore + dual northbound left-turn lanes at Lakeshore Road/ Lakefront Promenade and the auto driver travel mode share is 50%. The future total Scenario 3B traffic volumes are inclusive of the following traffic volumes layers:

- Existing Traffic Volumes
- Future Background Traffic Volumes – Scenario 3B (no Serson development)
- Site Traffic Volumes – Scenario 3B (2041): Rangeview + Lakeview (13,350 Units)

Future Total Scenario 3B traffic volumes are illustrated in **Figure 77** and **Figure 78** for the internal and study area intersections, respectively.

6.8.4 Future Total Scenario 4 – 5,300 Rangeview + 16,000 Lakeview Units

Future Total Scenario 4 considers that both Ogden Avenue + Haig Boulevard are connected to Lakeshore Road with dual northbound left-turning lanes at Lakeshore Road / Lakefront Promenade and the auto driver travel mode share is 40%. The future total Scenario 4 traffic volumes are inclusive of the following traffic volumes layers:

- Existing Traffic Volumes
- Future Background Traffic Volumes – Scenario 4 (includes 100% Serson)
- Site Traffic Volumes – Scenario 4 (2041): Rangeview + Lakeview (21,300 Units)

Future Total Scenario 4 traffic volumes are illustrated in **Figure 80** and **Figure 81** for the internal and external study area intersections, respectively.

6.8.4.1 Removal of Corridor Traffic Volumes – Scenario 4

A key component of the updated traffic analysis included a background travel demand assessment, with a corridor reduction exercise that estimated how the planned BRT along Lakeshore Road East would be expected to reduce traffic volumes. As part of this exercise, a total of 200 vehicles per hour were removed from the through traffic volumes along Lakeshore Road East, in the peak direction only, for the morning peak hour and 300 vehicles per hour were removed from through traffic volumes along Lakeshore Road East, in both directions, during the afternoon peak hour. The traffic volumes were then balanced and diverted as appropriate, depending on the road network being included for each scenario, thus the diversion and balancing undertaken differs by scenario.

The future eastern terminus of the Lakeshore BRT is the Long Branch GO Station, a key transit connection to GO rail and other transit services. The implementation of the BRT will influence the travel mode of both existing and future trips on Lakeshore Road East. Under existing conditions, transit services on Lakeshore Road East are subject to the same travel constraints as private autos. However, under future conditions, as a result of dedicated BRT lanes and transit signal priority, the BRT will provide faster and more reliable travel along Lakeshore Road East, when compared to travel by private auto. It is expected that the implementation of the BRT will encourage transit-based trips along the corridor and to/from the Long Branch GO Station.

Furthermore, station upgrades as part of Metrolinx's *Station Access Plan,* are planned to further reduce the travel mode share of auto trips to/from the Long Branch GO Station. As outlined in the *Station Access Plan,* the Long Branch GO Station currently provides 280 unreserved spaces but parking is currently at capacity, with average weekday parking utilization rates at or above 95%. As part of the 2041 planned improvements, the total parking supply is planned to be reduced by approximately 40% from 280 to 160 spaces, with 85% of future spaces to be reserved for carpooling. On this basis, background traffic on Lakeshore Road East should be adjusted to reflect both the future BRT, as well as the future reduced parking supply at the Long Branch GO Station.

To better reflect the future transportation context along Lakeshore Road East, particularly the implementation of the Lakeshore BRT and the future reduced parking supply at Long Branch GO Station, **the background traffic for BA Group's traffic analysis has been adjusted in Scenario 4 only** in both the VISSIM and Synchro models as follows:

- AM Peak: 200 vehicles per hour in the peak direction only (eastbound)
- PM Peak: 300 vehicles per hour in both directions

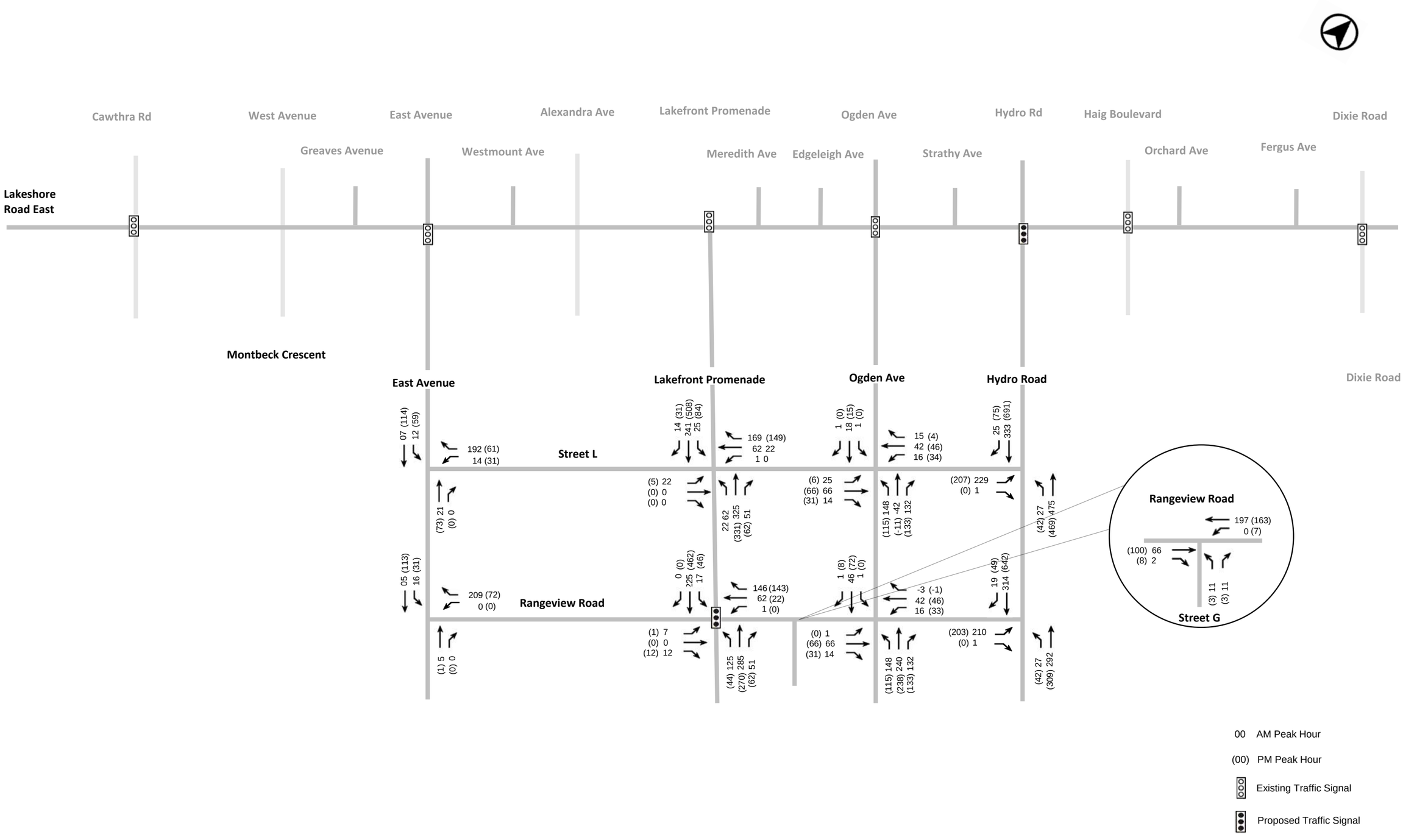

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FIGURE 71 - Future Total Traffic Volumes – Scenario 1 (2031) (10,000 Units) – Internal

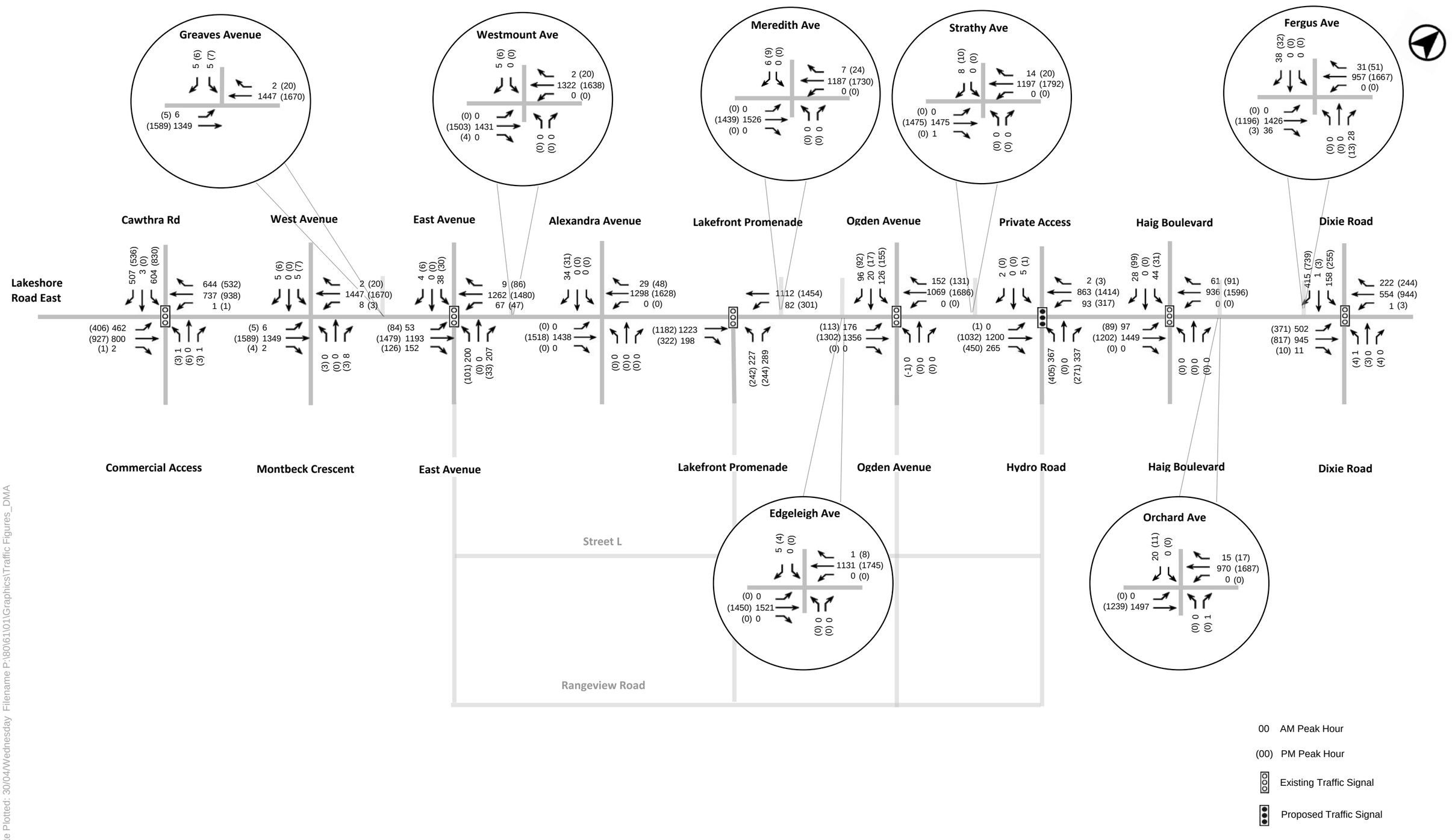

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FIGURE 72 - Future Total Traffic Volumes – Scenario 1 (2031) (10,000 Units) – External

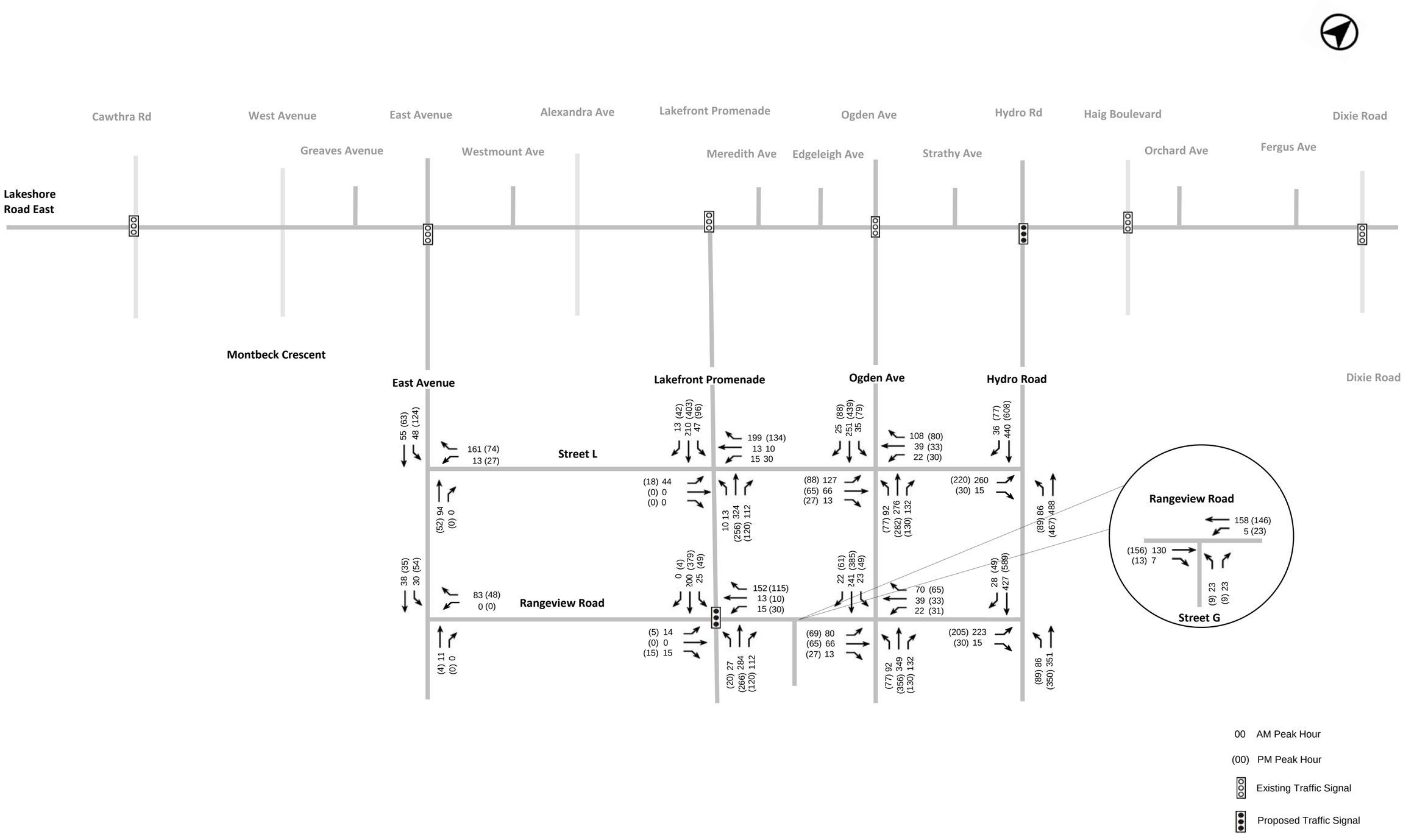

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FIGURE 73 - Future Total Traffic Volumes – Scenario 2 (2041) (11,750 Units) – Internal

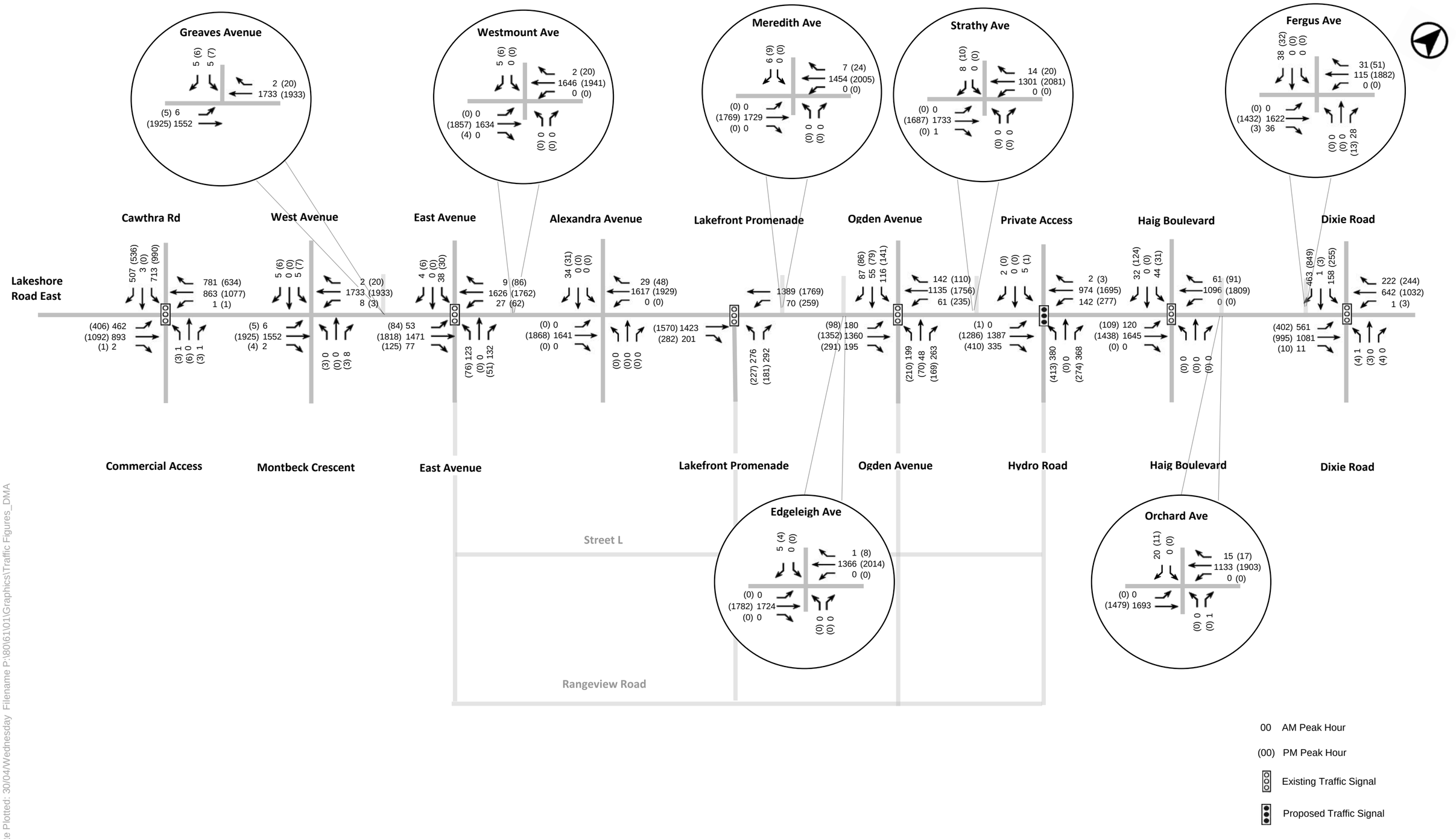

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FIGURE 74 - Future Total Traffic Volumes – Scenario 2 (2041) (11,750 Units) - External

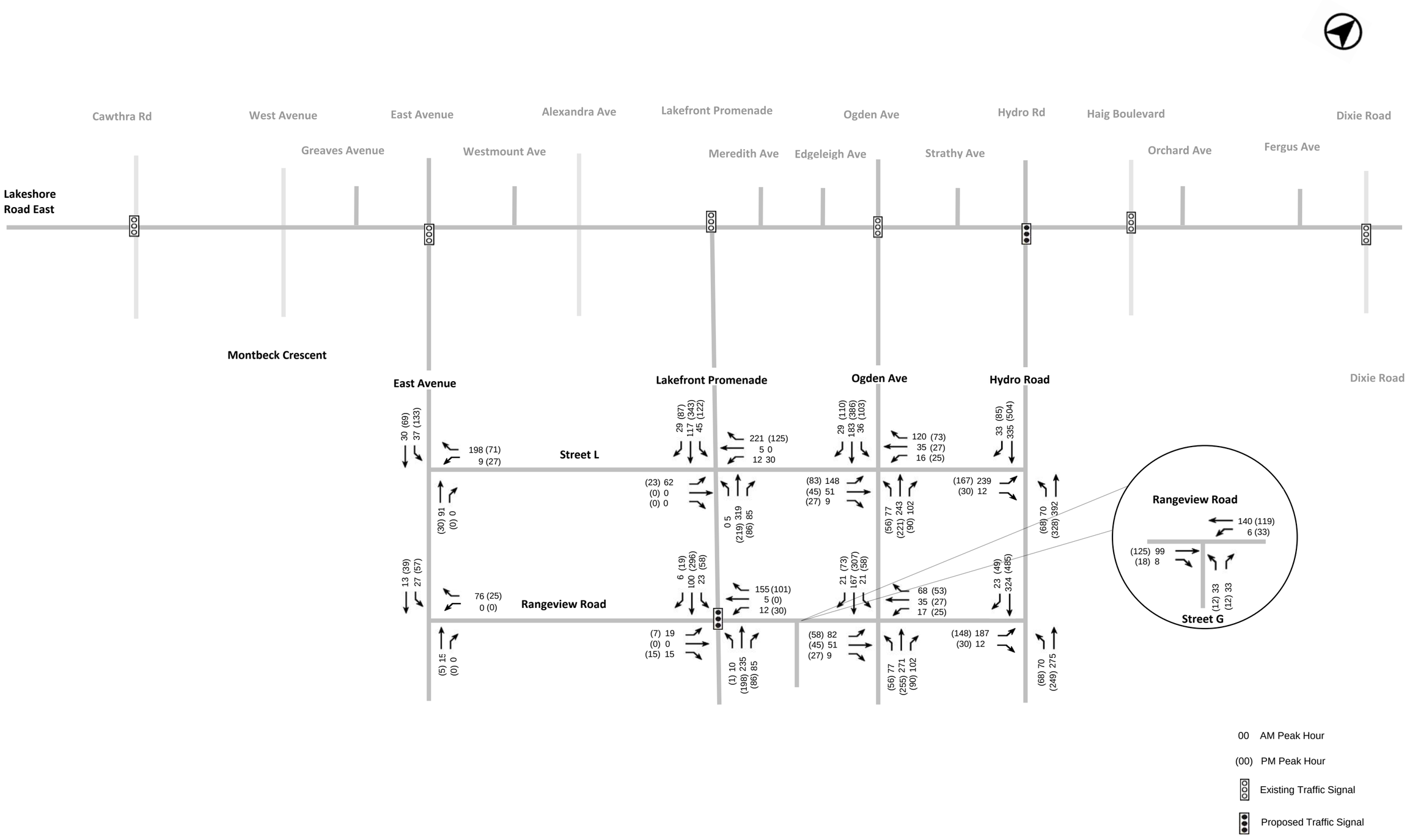

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FIGURE 75 - Future Total Traffic Volumes – Scenario 3A (2041) (13,350 Units) - Internal

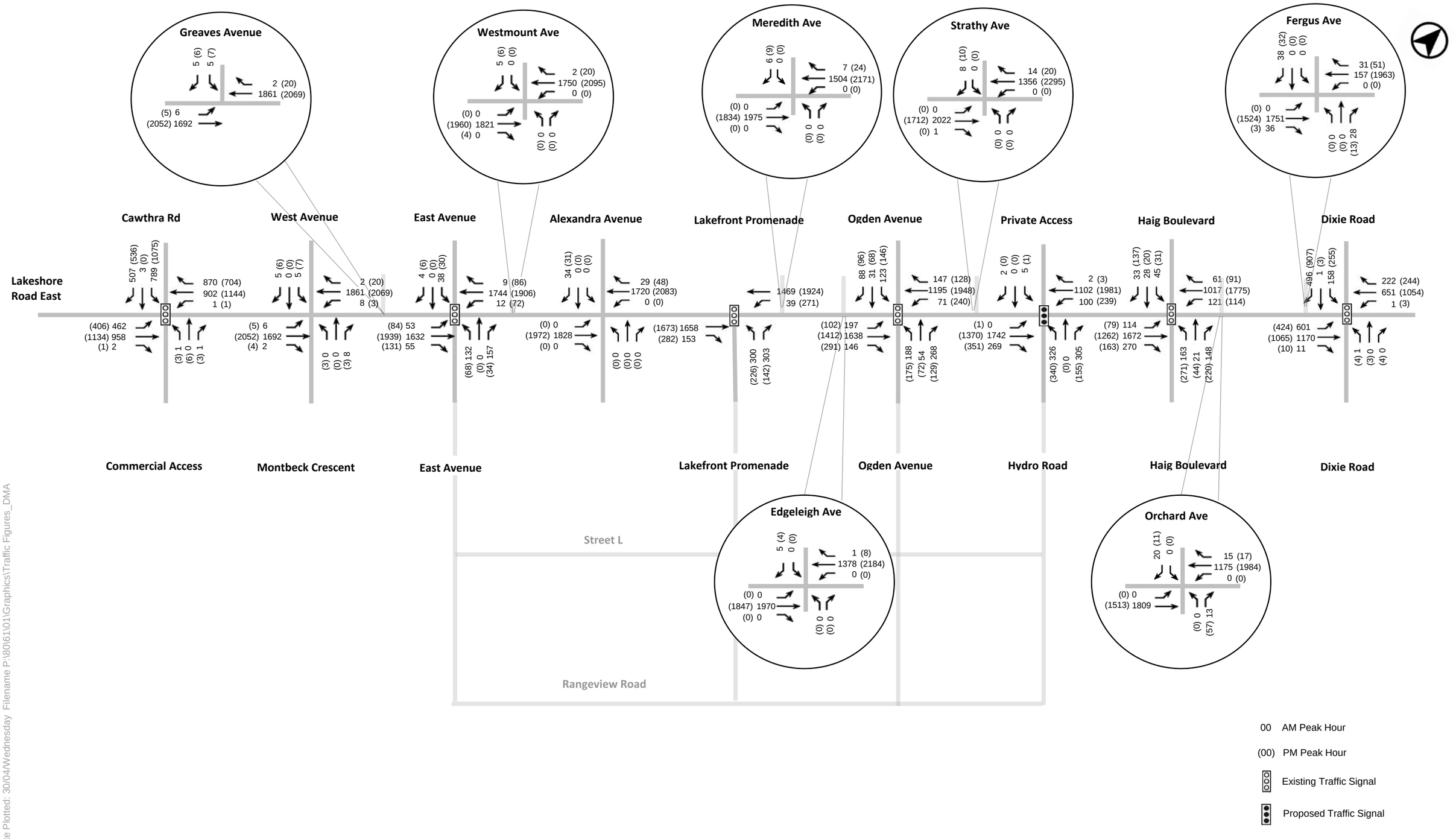

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FIGURE 76 - Future Total Traffic Volumes – Scenario 3A (2041) (13,350 Units) - External

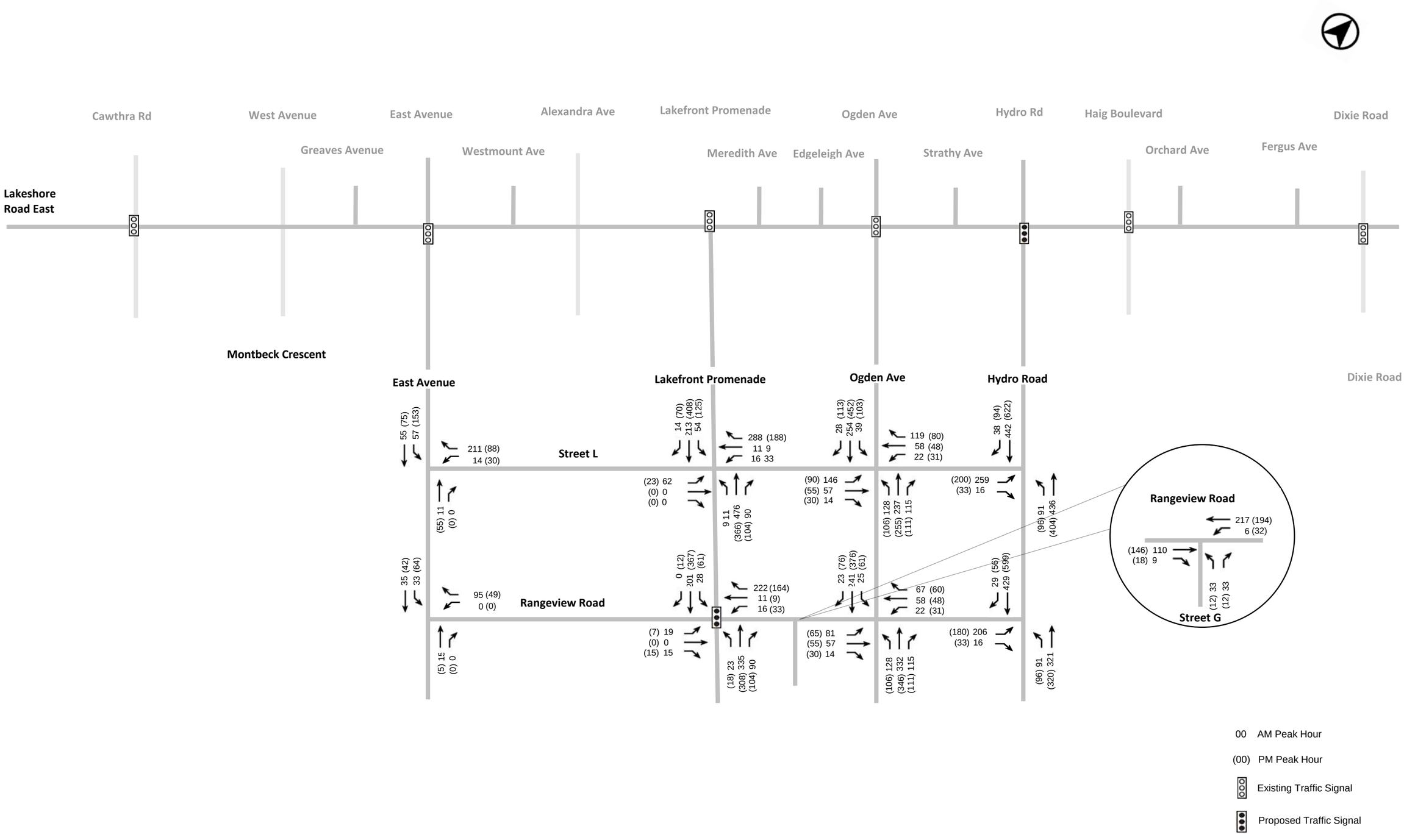

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FIGURE 77 - Future Total Traffic Volumes – Scenario 3B (2041) (13,350 Units) - Internal

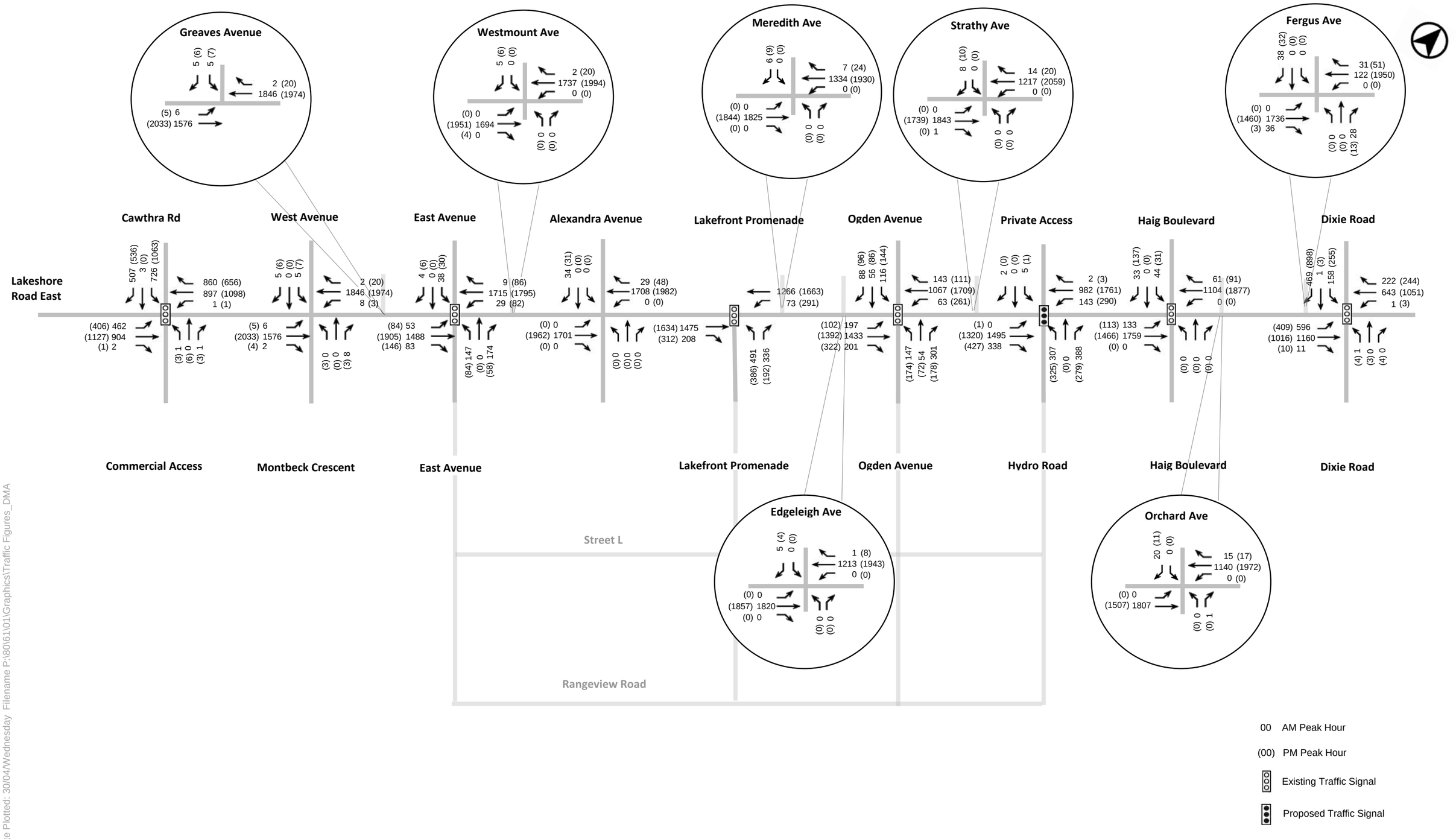

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FIGURE 78 - Future Total Traffic Volumes – Scenario 3B (2041) (13,350 Units) - External

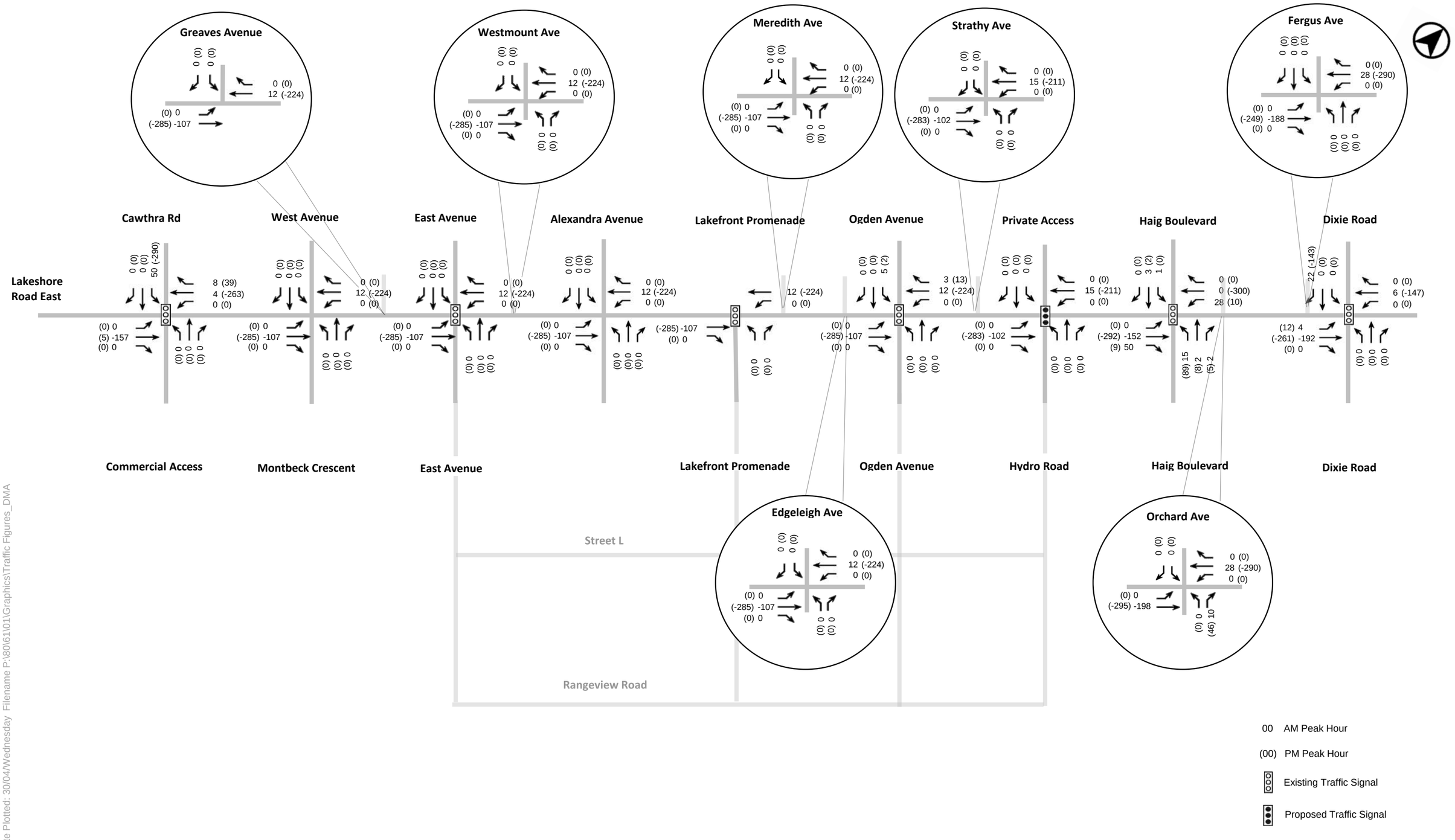

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FIGURE 79 - Background Traffic Removal (Scenario 4 Only)

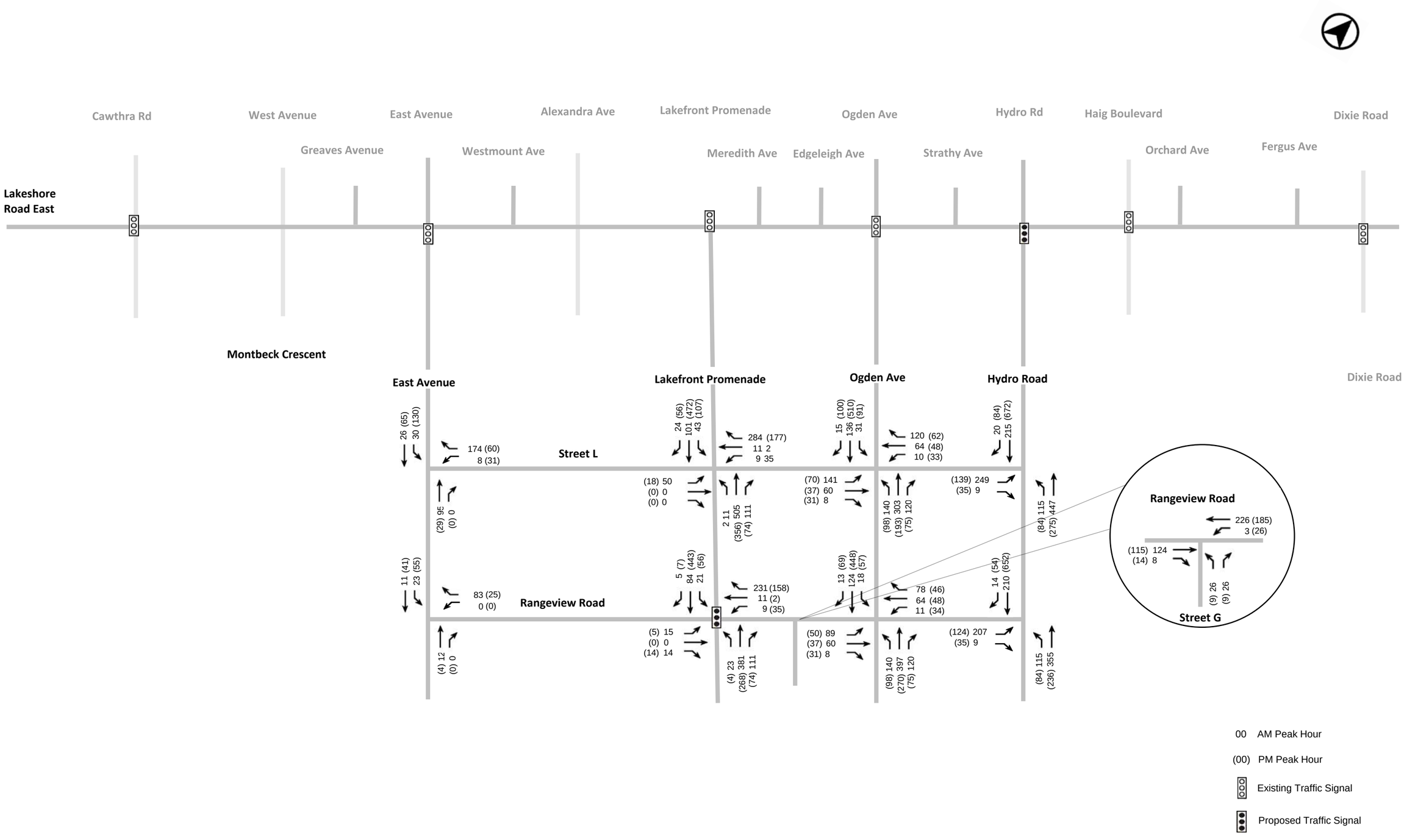

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FIGURE 80 - Future Total Traffic Volumes – Scenario 4 (2041) (21,300 Units) – Internal

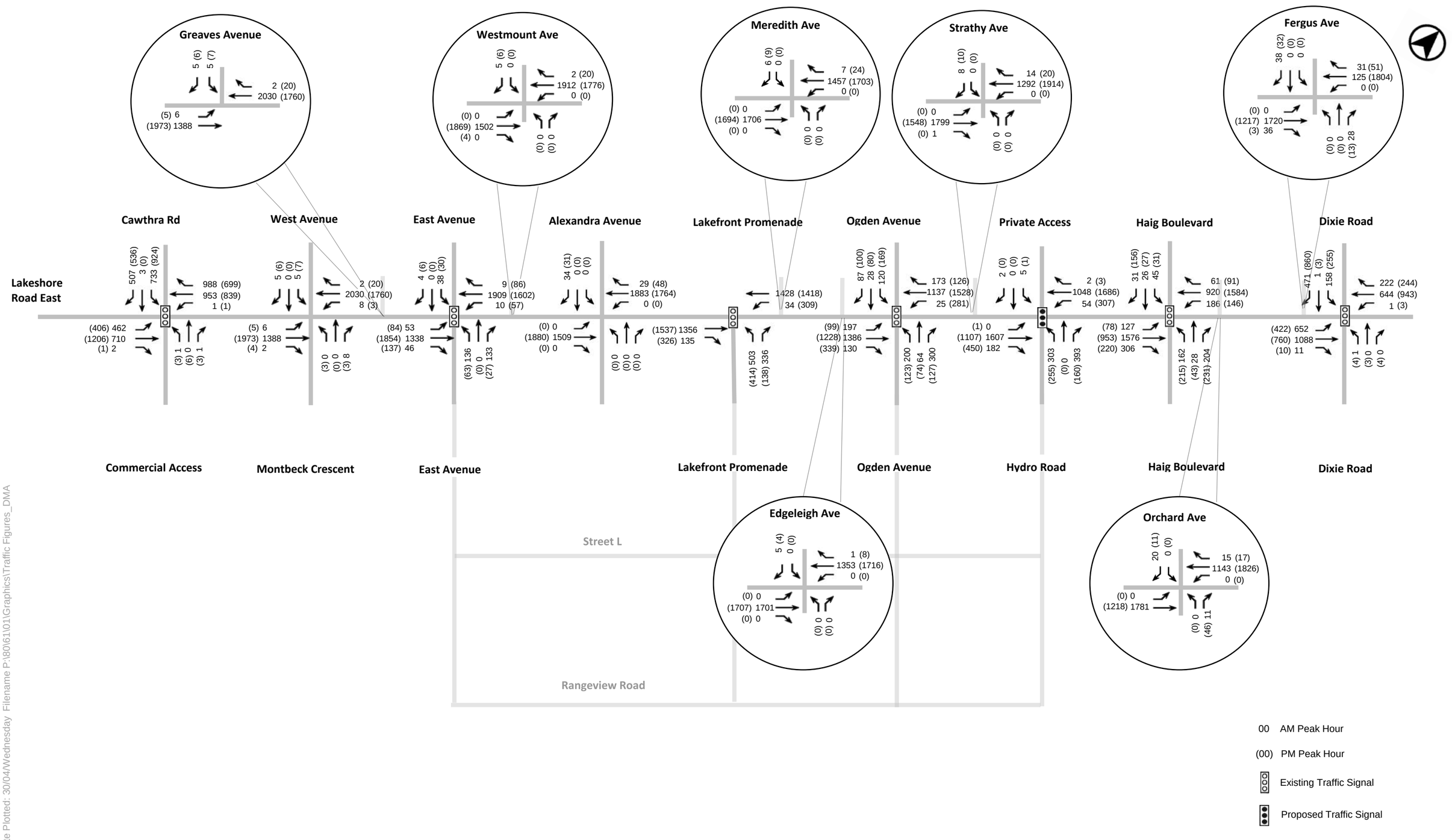

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FIGURE 81 - Future Total Traffic Volumes – Scenario 4 (2041) (21,300 Units) - External

7.0 TRAFFIC ANALYSIS

7.1 APPROACH AND METHODOLOGY

The approach and methodology utilized for this traffic analysis update generally aligns with the May 31, 2024 BA Group Report. The report scenarios have however been consolidated to traffic analysis Scenarios 1, 2, 3A, 3B and 4.

7.1.1 Time Periods Assessed

The updated traffic analysis continues to evaluate both the weekday morning peak and afternoon peak hours.

7.1.2 Signalized Intersections

The traffic operations analysis was undertaken at the area intersections using standard capacity analysis procedures. The analysis undertaken at intersections operating under traffic signal control was completed using the methodologies and procedures outlined in the Highway Capacity Manual (HCM) 2000 and using Synchro 11.0 software. The Synchro detailed capacity analysis outputs are included in **Appendix J.** The product of the signalized intersection evaluation is an intersection performance index (volume to capacity ratio or v/c), where a v/c index of 1.00 indicates 'at or near capacity' conditions. HCM level of service (LOS) criteria for signalized intersections are as follows:

- LOS A: Control Delay ≤ 10s
- LOS B: 10s < Control Delay ≤ 20s
- LOS C: 20s < Control Delay ≤ 35s
- LOS D: 35s < Control Delay ≤ 55s
- LOS E: 55s < Control Delay ≤ 80s
- LOS F: Control Delay > 80s

7.1.3 Unsignalized Intersections

The unsignalized intersection analysis was completed using standard capacity procedures for intersections operating under "two-way" and "all-way" stop control and in accordance with the methodologies outlined in the Highway Capacity Manual 2000 (HCM2000). The Synchro detailed capacity analysis outputs are included in **Appendix J.** The product of this analysis is a level of service (LOS) designation, ranging from LOS of A to F; which provides a relative indication of the level of delay experienced by motorists completing a turning manoeuvre at an intersection. LOS A represents conditions under which motorists would experience little delay and LOS F reflects conditions where more extended delays can be expected. HCM level of service (LOS) criteria for unsignalized intersections is as follows:

- LOS A: Control Delay ≤ 10s
- LOS B: 10s < Control Delay ≤ 15s
- LOS C: 15s < Control Delay ≤ 25s
- LOS D: 25s < Control Delay ≤ 35s
- LOS E: 35s < Control Delay ≤ 50s
- LOS F: Control Delay > 50s

7.1.4 Network-Wide Parameters

Key analysis parameters were assumed based on default parameters summarized as follows:

Lane Widths

The analysis for this study considered 3.7 metre wide through lanes and 3.5 metre wide turning lanes.

Traffic Signal Timings

Traffic signal timings incorporated into the analysis were based upon information provided by the City and Region dated April 2024. Although the traffic signal timings were optimized for each scenario analyzed for this study, cycle lengths were maintained at 130 seconds and 140 seconds, for the AM Peak and PM Peak period, respectively.

Base Saturation Flow Rates

The Synchro default saturation flow rate of 1,900 vehicles per hour was adopted for the analysis for this study.

Heavy Vehicle Assumptions

It is noted that the proposed development within both the Rangeview and Lakeview sites include mixed-use communities with multi-family residential units, with some commercial development. Given these proposed land uses, 2% heavy vehicle volumes is considered to be conservative and representative of heavy vehicle activity expected to be generated by loading and delivery activities at residential and commercial land uses. To align with the VISSIM model (2% trucks), the Synchro model has been revised to include 2% trucks for all scenarios, with the exception of the existing scenario where existing truck percentages were maintained.

Lost Time Adjustments

The lost time adjustment factor of -1.0 seconds (i.e. a total loss time per phase equal to the amber plus all-red time minus 1 second) was adopted by BA Group for the traffic analysis in this study. This differs slightly from the TYLin approach where a lost time adjustment was set to 0.

Peak Hour Factors

A peak hour factor (phf) of 1.0 was adopted by BA Group for the traffic analysis in this study. This differs slightly from the TYLin approach where a peak hour factor (PHF) was determined by the turning movement count for each individual intersection.

Transit Signal Priority

It is noted that Synchro has limited simulation settings dedicated to modelling BRT. However, the Synchro intersection parameters have been modified at signalized intersections to better reflect the impacts of BRT on traffic operations as follows:

- Addition of fully protected east-west left-turn phases along Lakeshore Road;
- Consideration for north-south pedestrian crossings with pedestrian actuation of the traffic signal, to simulate boarding and alighting on the proposed centre median BRT platforms; and

- Increased minimum pedestrian clearance times to account for a widened pedestrian crossing distance to accommodate the dedicated BRT lanes.

Although the above-noted modifications appropriately account for BRT within the Synchro model, the Lakeshore BRT is proposed to operate with transit signal priority, hence the VISSIM analysis considered BRT along Lakeshore Road. Transit signal priority timings require additional temporal considerations, which warrants the utilization of a stochastic model such as VISSIM. The creation of a VISSIM model for the traffic analysis allowed for additional model parameters to be considered including the following:

- Dedicated BRT lanes within the model;
- Cycle tracks on the north and south sides of Lakeshore Road; and
- Transit signal priority at intersections.

7.2 EXISTING CONDITIONS

As part of the updated traffic analysis, an update to the turning movement counts and traffic signal timings was undertaken for the existing conditions. It is noted that the model parameters remain consistent with the May 31, 2024 BA Group Report expect where otherwise stated. All existing signalized intersection movements within the study area are operating at v/c equal to or less than 1.0. Most queues can be accommodated within the existing study area intersections. Summary results of the existing traffic operation are included in **Table 31**.

TABLE 31 EXISTING SIGNALIZED INTERSECTION CAPACITY & QUEUING ASSESSMENT

Movement	Storage Length (m)	Existing Conditions				
		V/C	Delay (Sec)	LOS	50th Queue Length (m)	95th Queue Length (m)
Lakeshore Road East & Cawthra Road						
EBL	70	0.90 (0.82)	49.7 (42.6)	D (D)	99.4 (75)	139.3 (108)
EBT	265	0.39 (0.34)	12.2 (11.1)	B (B)	50.4 (43)	61.0 (53)
WBL	60	0.00 (0.00)	28.7 (23.6)	C (C)	0.2 (0)	1.7 (2)
WBT	330	0.78 (0.72)	44.3 (36.3)	D (D)	103.4 (111)	134.4 (151)
NBT	70	0.00 (0.26)	63.0 (65.4)	E (E)	0.0 (2)	0.0 (9)
SBL	15	0.42 (0.39)	42.9 (44.7)	D (D)	37.6 (32)	67.1 (60)
SBT	115	0.36 (0.30)	37.0 (37.0)	D (D)	38.5 (32)	68.5 (60)
SBR	250	0.65 (0.65)	20.7 (24.6)	C (C)	86.8 (91)	111.3 (111)
OVERALL	--	**0.80 (0.80)**	**31.6 (29.1)**	**C (C)**	--	--
East Avenue & Lakeshore Road East						
EBL	72	0.01 (0.04)	1.6 (2.1)	A (A)	0.1 (1)	0.4 (2)
EBT	330	0.38 (0.34)	3.2 (3.4)	A (A)	25.7 (23)	54.1 (53)
WBL	45	0.03 (0.00)	2.4 (4.0)	A (A)	0.3 (0)	2.3 (m0.2)
WBT	50	0.30 (0.39)	3.7 (5.9)	A (A)	17.9 (46)	55.6 (87)
WBR	340	0.01 (0.07)	1.7 (5.9)	A (A)	0.0 (3)	m0.2 (11)
NBT	20	0.02 (0.38)	64.4 (65.5)	E (E)	0.0 (10)	3.6 (24)
SBL	40	0.17 (0.10)	66.3 (62.3)	E (E)	2.5 (3)	8.8 (9)

Movement	Storage Length (m)	Existing Conditions				
		V/C	Delay (Sec)	LOS	50th Queue Length (m)	95th Queue Length (m)
SBT	180	0.00 (0.01)	64.2 (61.6)	E (E)	0.0 (0)	0.0 (5)
OVERALL	--	**0.36 (0.38)**	**4.7 (6.4)**	**A (A)**	--	--
Lakefront Promenade & Lakeshore Road East						
EBT	340	0.36 (0.35)	3.4 (6.5)	A (A)	30.0 (28)	37.6 (40)
EBR	25	0.05 (0.08)	2.7 (5.1)	A (A)	1.4 (2)	4.1 (6)
WBL	35	0.08 (0.10)	1.9 (4.4)	A (A)	1.0 (3)	2.9 (7)
WBT	240	0.31 (0.44)	2.1 (6.0)	A (A)	20.8 (56)	32.8 (88)
NBL	70	0.36 (0.69)	65.5 (64.8)	E (E)	9.1 (47)	22.3 (70)
OVERALL	--	**0.36 (0.49)**	**4.3 (10.5)**	**A (B)**	--	--
Ogden Avenue & Lakeshore Road East						
EBL	28	0.18 (0.16)	3.6 (3.5)	A (A)	4.4 (3)	9.7 (3)
EBT	240	0.34 (0.31)	6.7 (7.2)	A (A)	57.8 (60)	96.0 (96)
WBL	25	0.01 (0.00)	4.2 (3.5)	A (A)	0.1 (0)	1.0 (0)
WBT	85	0.35 (0.49)	6.7 (6.9)	A (A)	29.8 (52)	61.7 (102)
NBT	200	0.02 (0.13)	66.9 (69.6)	E (E)	0.3 (1)	2.3 (7)
SBL	50	0.45 (0.33)	60.8 (60.5)	E (E)	20.8 (13)	34.4 (24)
SBT	210	0.05 (0.03)	56.6 (57.6)	E (E)	0.0 (0)	0.0 (11)
OVERALL	--	**0.36 (0.47)**	**10.6 (9.0)**	**B (A)**	--	--
Lakeshore Road East & Haig Boulevard						
EBL	50	0.04 (0.08)	2.0 (2.5)	A (A)	0.6 (1)	2.1 (2)
EBT	165	0.34 (0.32)	2.6 (2.3)	A (A)	24.9 (21)	39.5 (33)
WBT	600	0.37 (0.47)	4.4 (5.1)	A (A)	24.3 (57)	58.5 (81)
SBL	100	0.43 (0.30)	59.1 (58.6)	E (E)	13.1 (8)	28.1 (22)
OVERALL	--	**0.38 (0.46)**	**5.5 (5.1)**	**A (A)**	--	--
Dixie Road & Lakeshore Road East						
EBL	165	0.52 (0.64)	6.0 (14.6)	A (B)	20.1 (27)	38.1 (49)
EBT	600	0.28 (0.31)	6.6 (11.0)	A (B)	27.1 (40)	56.1 (75)
WBL	25	0.00 (0.01)	7.9 (13.6)	A (B)	0.1 (0)	0.6 (2)
WBT	460	0.31 (0.48)	11.1 (20.6)	B (C)	42.1 (83)	69.5 (142)
WBR	30	0.20 (0.27)	10.3 (17.9)	B (B)	10.5 (22)	29.0 (56)
NBT	100	0.01 (0.02)	50.3 (41.4)	D (D)	0.3 (2)	1.9 (6)
SBT	310	0.70 (0.81)	66.3 (64.5)	E (E)	41.5 (72)	62.1 (97)
SBR	85	0.52 (0.57)	46.5 (37.8)	D (D)	39.3 (66)	58.2 (70)
OVERALL	--	**0.56 (0.69)**	**16.4 (23.5)**	**B (C)**	--	--

7.3 SCENARIO 1: RANGEVIEW + LAKEVIEW (10,000 UNITS)

Scenario 1 (2031) considers that both Ogden Avenue and Haig Boulevard are NOT connected to Lakeshore Road East but all Phase 1 road improvements + BRT are in place.

In consideration of Rangeview and Lakeview with 10,000 residential units + 82% development of the Lakeview non-residential, the combined sites are expected to generate a total of 2,539 and 2,966 two-way vehicle trips, during the morning and afternoon peak period, respectively. The estimated auto driver travel mode share is 50%.

7.3.1 Capacity Analysis (External Intersections)

A summary of the capacity analysis for the external intersections is provided in **Table 32** for signalized intersections and **Table 33** for unsignalized intersections. All intersection movements operate at a v/c equal to or less than 1.0.

7.3.2 Capacity Analysis (Internal Intersections)

A summary of the capacity analysis for internal intersections is provided in **Table 34**. All intersection movements operate at a v/c equal to or less than 1.0.

7.3.3 Queueing (External Intersections)

A summary of queuing results for signalized internal intersections is provided in **Table 35**. Existing queue storage capacity is exceeded for one or multiple movements at the following intersections at the 95th percentile. It is noted however that some queuing concerns are already present under existing conditions.

- Lakeshore Road East & Cawthra Road
- East Avenue & Lakeshore Road East
- Lakefront Promenade & Lakeshore Road East
- Hydro Road & Lakeshore Road East
- Dixie Road & Lakeshore Road East

7.3.4 Queueing (Internal Intersections)

A summary of the queuing results for unsignalized intersections is provided in **Table 37**. It should be noted that the functional design of the internal intersections is preliminary and as such, tentative 15 metre storage lengths are proposed. The storage lengths are representative of the minimum requirement length required to accommodate typical (50th percentile) queuing demand. As summarized in **Table 37**, all expected queueing can be sufficiently accommodated at the 95th percentile.

7.4 SCENARIO 2: 3,700 RANGEVIEW + 8,050 LAKEVIEW UNITS

Scenario 2 (2041) considers that Ogden Avenue is connected to Lakeshore Road East but Haig Boulevard is not connected. All Phase 1 road improvements + BRT are in place.

In consideration of Rangeview with 3,700 residential units + 100% development of the non-residential and Lakeview with 8,050 residential units + 100% development of the non-residential, the combined sites are expected to generate a total of 3,186 and 3,719 two-way vehicle trips during the morning and afternoon peak period, respectively. The estimated auto driver travel mode share is 50%.

7.4.1 Capacity Analysis (External Intersections)

A summary of the capacity analysis for external intersections is provided in **Table 32** for signalized intersections and **Table 33** for unsignalized intersections. All intersection movements operate at a v/c equal to or less than 1.0, with the exception of the following movements identified with a v/c less than but approaching 1.0:

- Lakeshore Road East & Cawthra Road: westbound through
- Lakeshore Road East & Ogden Avenue: westbound through
- Lakeshore Road East & Hydro Road: northbound left turn
- Lakeshore Road East & Dixie Road: southbound right turn

Of the movements identified above, none exceed a v/c value of 1.0 and only the southbound right-turn at the intersection of Lakeshore Road East and Dixie Road is equal to 1.0. Therefore, while traffic conditions at external intersections are busy under Scenario 2, traffic continues to be accommodated by the road network. It is recommended that traffic operations be monitored at the above-noted movements as the development of the Rangeview and Lakeview sites progresses.

7.4.2 Capacity Analysis (Internal Intersections)

A summary of the capacity analysis for internal intersections is provided in **Table 34** for unsignalized intersections. All intersection movements operate at a v/c equal to or less than 1.0, with the exception of the following movements that have been identified as critical with a v/c above 1.0:

- Hydro Road & Street L: eastbound left turn
- Hydro Road & Rangeview Road: eastbound left turn

It should be noted that the above-noted v/c movements identified as critical, are addressed in the future by the full build-out of the road network within Scenario 4. On this basis, it recommended that monitoring be undertaken during the interim condition, with an emphasis on the timing of the planned road improvements. Furthermore, as the development of the blocks is further refined, provisions should be made to ensure that the timing of the road improvements align with the requirements of the travel demands of both Rangeview and Lakeview.

7.4.3 Queueing (External Intersections)

A summary of queuing results for signalized internal intersections is provided in **Table 35**. Existing queue storage capacity is exceeded for one or multiple movements at the following intersections, at the 95th percentile. It is noted that some of the queuing concerns are already present under existing conditions.

- Lakeshore Road East & Cawthra Road
- East Avenue & Lakeshore Road East
- Lakefront Promenade & Lakeshore Road East
- Ogden Avenue & Lakeshore Road East
- Hydro Road & Lakeshore Road East
- Dixie Road & Lakeshore Road East

7.4.4 Queueing (Internal Intersections)

A summary of the queuing results for unsignalized intersections is provided in **Table 37**. It should be noted that tentative storage lengths of 15 metres are initially proposed for dedicated turning lanes until updated traffic studies confirm future storage needs. The storage lengths are representative of the minimum requirements to accommodate typical (50th percentile) queuing demand. As summarized in **Table 37**, all expected queueing can be sufficiently accommodated at the 95th percentile.

7.5 SCENARIO 3A: 5,300 RANGEVIEW + 8,050 LAKEVIEW UNITS

Scenario 3A (2041) considers that both Ogden Avenue and Haig Boulevard are connected to Lakeshore Road East. All Phase 1 road improvements + BRT are in place.

In consideration of Rangeview with 5,300 residential units + 100% development of the non-residential and Lakeview with 8,050 residential units + 100% development of the non-residential and 100%, the combined sites are expected to generate a total of 3,483 and 4,006 two-way vehicle trips, during the morning and afternoon peak period, respectively. The estimated auto driver travel mode share is 50%.

7.5.1 Capacity Analysis (External Intersections)

A summary of the capacity analysis for external intersection is provided in **Table 32** for signalized intersections and **Table 33** for unsignalized intersections. All intersection movements operate at a v/c equal to or less than 1.0, with the exception of the following intersections, with movements that have been identified as critical with a v/c less than but approaching 1.0:

- Lakeshore Road East & Cawthra Road: westbound through
- Lakefront Promenade & Lakeshore Road East: eastbound through
- Ogden Avenue & Lakeshore Road East: westbound through
- Lakeshore Road East & Haig Boulevard: westbound through, northbound left turn
- Dixie Road & Lakeshore Road East: westbound through, southbound right turn

Of the movements identified above, none exceed a v/c value of 1.0 and only the southbound right turn at the intersection of Lakeshore Road East and Dixie Road and Lakeshore Road East & Haig Boulevard overall is equal to 1.0. Therefore, while traffic conditions at external intersections are busy under Scenario 3A, traffic continues to be accommodated by the road network. It is recommended that traffic operations be monitored at the above-noted movements as the development of the Rangeview and Lakeview sites progresses.

7.5.2 Capacity Analysis (Internal Intersections)

A summary of the capacity analysis for internal intersections is provided in **Table 34**. All intersection movements operate at a v/c equal to or less than 1.0.

7.5.3 Queueing (External Intersections)

A summary of queuing results for signalized internal intersections is provided in **Table 35**. Existing queue storage capacity is exceeded for one or movements at the following intersections at the 95th percentile. It is noted that some queuing concerns are already present under existing conditions.

- Lakeshore Road East & Cawthra Road
- East Avenue & Lakeshore Road East
- Lakefront Promenade & Lakeshore Road East
- Ogden Avenue & Lakeshore Road East
- Hydro Road & Lakeshore Road East
- Lakeshore Road East & Haig Boulevard
- Dixie Road & Lakeshore Road East

7.5.4 Queueing (Internal Intersections)

A summary of the queuing results for unsignalized intersections is provided in **Table 37**. It should be noted that tentative storage lengths of 15 metres are initially proposed for dedicated turning lanes until updated traffic studies confirm future storage needs. The storage lengths are representative of the minimum requirements to accommodate typical (50th percentile) queuing demand. As summarized in **Table 37**, all expected queueing can be sufficiently accommodated at the 95th percentile.

7.6 SCENARIO 3B: 5,300 RANGEVIEW + 8,050 LAKEVIEW UNITS

Scenario 3B (2041) considers that only Ogden Avenue is connected to Lakeshore Road East and Haig Boulevard is not connected. All Phase 1 road improvements + BRT are in place + dual northbound left-turning lanes at Lakeshore Road/ Lakefront Promenade.

In consideration of Rangeview with 5,300 residential units + 100% development of the non-residential and Lakeview with 8,050 residential units + 100% development of the non-residential, the combined sites are expected to generate a total of 3,483 and 4,006 two-way vehicle trips, during the morning and afternoon peak period, respectively. The estimated auto driver travel mode share is 50%.

7.6.1 Capacity Analysis (External Intersections)

A summary of the capacity analysis for external intersections is provided in **Table 32** for signalized intersections and **Table 33** for unsignalized intersections. All intersection movements operate at a v/c equal to or less than 1.0, with the exception of the following intersections with movements that have been identified as critical with a v/c less than but approaching 1.0:

- Lakeshore Road East & Cawthra Road: westbound through
- Ogden Avenue & Lakeshore Road East: westbound through
- Dixie Road & Lakeshore Road East: westbound through, southbound right turn

Of the movements identified above, none exceed a v/c value of 1.0 and only the southbound right turn at the intersection of Lakeshore Road East and Dixie Road and Lakeshore Road East & Haig Boulevard overall is equal to 1.0. Therefore, while traffic conditions at external intersections are busy under Scenario 3A, traffic continues to be accommodated by the road network. It is recommended that traffic operations be monitored at the above-noted intersection movements as the development of the Rangeview and Lakeview sites progresses.

7.6.2 Capacity Analysis (Internal Intersections)

A summary of the capacity analysis for internal intersections is provided in **Table 34**. All intersections movements operate at a v/c equal to or less than 1.0, with the exception of the following intersections with movements that have been identified as critical with a v/c above 1.0:

- Ogden Avenue & Street L: eastbound left turn
- Hydro Road & Street L: eastbound left turn
- Hydro Road & Rangeview Road: southbound through-right

It should be noted that of the above-noted v/c movements identified as critical, all intersection concerns are addressed by the full build-out of the road network within Scenario 4. On this basis, it recommended that monitoring be undertaken during the interim condition, with an emphasis on the timing of the planned road improvements. Furthermore, as the development of the blocks is further refined, provisions should be made to ensure that the timing of the road improvements align with the travel demands of both Rangeview and Lakeview.

7.6.3 Queueing (External Intersections)

A summary of queuing results for signalized internal intersections is provided in **Table 35**. Existing queue storage capacity is exceeded for one or multiple movements at the following intersections at the 95th percentile. It is noted that some queuing concerns are already present under existing conditions.

- Lakeshore Road East & Cawthra Road
- East Avenue & Lakeshore Road East
- Lakefront Promenade & Lakeshore Road East
- Ogden Avenue & Lakeshore Road East
- Hydro Road & Lakeshore Road East
- Dixie Road & Lakeshore Road East

7.6.4 Queueing (Internal Intersections)

A summary of the queuing results for unsignalized intersections is provided in **Table 37**. It should be noted that tentative storage lengths of 15 metres are initially proposed for dedicated turning lanes until updated traffic studies confirm future storage needs. The storage lengths are representative of the minimum requirements to accommodate typical (50th percentile) queuing demand. As summarized in **Table 37**, all expected queueing can be sufficiently accommodated at the 95th percentile.

7.7 SCENARIO 4: 5,300 RANGEVIEW + 16,000 LAKEVIEW UNITS

Scenario 4 (2041) considers that both Ogden Avenue and Haig Boulevard are connected to Lakeshore Road East. All Phase 2 road improvements + BRT are in place + dual northbound left-turning lanes at Lakeshore Road/ Lakefront Promenade.

In consideration of Rangeview with 5,300 residential units + 100% development of the non-residential and Lakeview with 16,000 residential units + 100% development of the non-residential, the combined sites are expected to generate a total of 3,770 and 4,459 two-way vehicle trips, during the morning and afternoon peak period, respectively. The estimated auto driver travel mode share is 40%.

7.7.1 Capacity Analysis (External Intersections)

A summary of the capacity analysis for external intersections is provided in **Table 32** for signalized intersections and **Table 33** for unsignalized intersections. All intersection movements operate at a v/c equal to or less than 1.0.

7.7.2 Capacity Analysis (Internal Intersections)

A summary of the capacity analysis for internal intersections is provided in **Table 34**. All intersection movements operate at a v/c equal to or less than 1.0.

7.7.3 Queueing (External Intersections)

A summary of queuing results for signalized internal intersections is provided in **Table 35**. Existing queue storage capacity is exceeded for one or multiple movements at the following below intersections at the 95th percentile. It is noted that some queuing concerns are already present under existing conditions.

- Cawthra Road & Lakeshore Road East
- East Avenue & Lakeshore Road East
- Lakefront Promenade & Lakeshore Road East
- Ogden Avenue & Lakeshore Road East
- Hydro Road & Lakeshore Road East
- Dixie Road & Lakeshore Road East

7.7.4 Queueing (Internal Intersections)

A summary of the queuing results for unsignalized intersections is provided in **Table 37**. It should be noted that tentative storage lengths of 15 metres are initially proposed for dedicated turning lanes until updated traffic studies confirm future storage needs. The storage lengths are representative of the minimum requirements to accommodate typical (50th percentile) queuing demand. As summarized in **Table 37**, all expected queueing can be sufficiently accommodated at the 95th percentile.

7.8 TRAFFIC ANALYSIS RESULTS

7.8.1 Capacity Analysis External Intersections

Table 32 provides a summary of the external signalized intersection capacity results for Scenarios 1, 2, 3A, 3B and 4.

TABLE 32 EXTERNAL SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Ogden + dual left turn at Lakefront Promenade No Haig			Ogden + Haig + dual left turn at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
Lakeshore Road East & Cawthra Road															
EBL	0.78 (0.80)	61.3 (65.9)	E (E)	0.81 (0.85)	64.2 (72.8)	E (E)	0.81 (0.85)	64.2 (72.8)	E (E)	0.88 (0.89)	74.1 (77.8)	E (E)	0.88 (0.89)	74.1 (77.8)	E (E)
EBT	0.45 (0.53)	23.3 (25.3)	C (C)	0.51 (0.63)	24.9 (28.1)	C (C)	0.54 (0.62)	25.7 (26.2)	C (C)	0.51 (0.66)	24.3 (29.5)	C (C)	0.40 (0.70)	22.4 (30.8)	C (C)
WBL	0.01 (0.01)	44.8 (41.3)	D (D)	0.01 (0.01)	41.6 (43.1)	D (D)	0.01 (0.01)	50.8 (44.2)	D (D)	0.01 (0.01)	51.9 (50.4)	D (D)	0.00 (0.01)	45.4 (46.1)	D (D)
WBT	0.72 (0.85)	41.5 (53.8)	D (D)	0.83 (0.96)	50.4 (62.9)	D (E)	0.87 (0.96)	53.5 (60.4)	D (E)	0.81 (0.99)	47.0 (70.9)	D (E)	0.86 (0.75)	55.3 (48.9)	E (D)
WBR	0.58 (0.47)	16.4 (15.2)	B (B)	0.69 (0.55)	21.4 (11.0)	C (B)	0.77 (0.62)	20.7 (7.2)	C (A)	0.75 (0.57)	25.6 (9.4)	C (A)	0.87 (0.61)	27.3 (11.9)	C (B)
NBT	0.00 (0.28)	68.0 (72.3)	E (E)	0.00 (0.28)	68.0 (72.3)	E (E)	0.00 (0.28)	68.0 (72.3)	E (E)	0.00 (0.28)	68.0 (72.3)	E (E)	0.00 (0.28)	68.0 (72.3)	E (E)
SBL	0.49 (0.68)	33.8 (39.8)	C (D)	0.56 (0.78)	34.8 (44.0)	C (D)	0.62 (0.90)	36.6 (58.0)	D (E)	0.58 (0.82)	36.1 (46.3)	D (D)	0.58 (0.71)	36.2 (39.8)	D (D)
SBT	0.44 (0.60)	28.6 (31.7)	C (C)	0.50 (0.68)	29.2 (34.0)	C (C)	0.55 (0.78)	30.4 (40.9)	C (D)	0.52 (0.72)	30.1 (35.1)	C (D)	0.52 (0.63)	30.3 (31.4)	C (C)
SBR	0.51 (0.57)	16.4 (19.0)	B (B)	0.51 (0.57)	16.5 (19.3)	B (B)	0.51 (0.59)	16.5 (21.4)	B (C)	0.53 (0.57)	18.3 (19.1)	B (B)	0.53 (0.57)	18.3 (19.1)	B (B)
OVERALL	**0.68 (0.77)**	**30.6 (35.7)**	**C (D)**	**0.77 (0.87)**	**34.0 (38.9)**	**C (D)**	**0.82 (0.93)**	**34.6 (39.7)**	**C (D)**	**0.80 (0.90)**	**35.3 (41.5)**	**D (D)**	**0.88 (0.77)**	**37.6 (35.1)**	**D (D)**

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Ogden + dual left turn at Lakefront Promenade No Haig			Ogden + Haig + dual left turn at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
East Avenue & Lakeshore Road East															
EBL	0.45 (0.52)	64.7 (70.6)	E (E)	0.45 (0.51)	65.0 (66.2)	E (E)	0.45 (0.51)	63.4 (64.2)	E (E)	0.45 (0.42)	64.4 (57.6)	E (E)	0.44 (0.42)	61.7 (59.8)	E (E)
EBT	0.55 (0.60)	14.8 (10.0)	B (B)	0.58 (0.71)	12.5 (13.5)	B (B)	0.64 (0.76)	14.5 (16.8)	B (B)	0.60 (0.80)	15.0 (23.5)	B (C)	0.52 (0.72)	14.6 (12.9)	B (B)
EBR	0.13 (0.11)	9.0 (4.1)	A (A)	0.05 (0.10)	12.3 (6.1)	B (A)	0.04 (0.11)	18.7 (7.2)	B (A)	0.06 (0.13)	13.6 (12.0)	B (B)	0.03 (0.12)	37.1 (5.8)	D (A)
WBL	0.52 (0.46)	66.4 (62.4)	E (E)	0.35 (0.49)	63.6 (59.0)	E (E)	0.24 (0.46)	66.4 (60.5)	E (E)	0.36 (0.42)	61.0 (53.7)	E (D)	0.31 (0.39)	64.7 (58.0)	E (E)
WBT	0.58 (0.62)	14.8 (14.6)	B (B)	0.66 (0.72)	15.1 (14.9)	B (B)	0.72 (0.76)	16.2 (12.2)	B (B)	0.72 (0.76)	23.9 (19.2)	C (B)	0.79 (0.65)	22.5 (13.4)	C (B)
WBR	0.01 (0.07)	10.2 (8.1)	B (A)	0.01 (0.07)	7.0 (10.2)	A (B)	0.01 (0.07)	7.3 (7.0)	A (A)	0.01 (0.07)	7.9 (13.8)	A (B)	0.01 (0.07)	7.6 (10.2)	A (B)
NBL	0.78 (0.63)	66.1 (65.9)	E (E)	0.66 (0.55)	66.2 (64.1)	E (E)	0.68 (0.58)	66.5 (68.7)	E (E)	0.70 (0.58)	66.6 (64.9)	E (E)	0.69 (0.56)	66.4 (68.2)	E (E)
NBT	0.27 (0.02)	48.0 (54.1)	D (D)	0.21 (0.03)	54.4 (56.7)	D (E)	0.36 (0.02)	55.3 (58.7)	E (E)	0.38 (0.04)	54.4 (56.1)	D (E)	0.17 (0.02)	52.9 (59.1)	D (E)
SBL	0.27 (0.18)	48.5 (55.6)	D (E)	0.28 (0.22)	55.6 (58.6)	E (E)	0.31 (0.26)	55.4 (61.0)	E (E)	0.31 (0.21)	54.2 (57.9)	D (E)	0.26 (0.27)	54.2 (61.6)	D (E)
SBT	0.00 (0.00)	45.0 (53.9)	D (D)	0.00 (0.00)	52.4 (56.5)	D (E)	0.00 (0.00)	51.6 (58.5)	D (E)	0.00 (0.00)	50.3 (55.8)	D (E)	0.00 (0.00)	51.3 (59.0)	D (E)
OVERALL	**0.62 (0.61)**	**22.5 (16.5)**	**C (B)**	**0.65 (0.69)**	**18.7 (17.4)**	**B (B)**	**0.70 (0.72)**	**20.0 (17.4)**	**C (B)**	**0.70 (0.72)**	**24.4 (23.9)**	**C (C)**	**0.75 (0.68)**	**23.5 (16.1)**	**C (B)**
Lakefront Promenade & Lakeshore Road East															
EBT	0.60 (0.77)	8.9 (21.0)	A (C)	0.71 (0.89)	13.3 (23.0)	B (C)	0.84 (0.96)	19.7 (31.8)	B (C)	0.69 (0.87)	10.8 (19.6)	B (B)	0.65 (0.84)	8.9 (19.9)	A (B)
EBR	0.40 (0.71)	7.0 (23.1)	A (C)	0.44 (0.66)	9.8 (18.9)	A (B)	0.36 (0.69)	12.3 (22.4)	B (C)	0.44 (0.67)	9.1 (18.9)	A (B)	0.35 (0.88)	6.7 (38.3)	A (D)
WBL	0.52 (0.86)	91.4 (87.9)	F (F)	0.47 (0.87)	67.4 (85.9)	E (F)	0.30 (0.89)	70.1 (83.0)	E (F)	0.41 (0.84)	62.5 (78.5)	E (E)	0.18 (0.87)	58.1 (89.1)	E (F)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Ogden + dual left turn at Lakefront Promenade No Haig			Ogden + Haig + dual left turn at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
WBT	0.44 (0.59)	3.1 (7.9)	A (A)	0.57 (0.70)	7.7 (7.2)	A (A)	0.61 (0.77)	9.2 (11.5)	A (B)	0.48 (0.61)	4.9 (4.0)	A (A)	0.54 (0.52)	5.8 (4.3)	A (A)
NBL	0.84 (0.88)	72.8 (78.0)	E (E)	0.89 (0.90)	77.3 (84.1)	E (F)	0.93 (0.90)	83.9 (85.1)	F (F)	0.79 (0.72)	61.7 (60.8)	E (E)	0.79 (0.74)	60.7 (60.7)	E (E)
NBR	0.66 (0.39)	46.1 (26.8)	D (C)	0.65 (0.33)	44.0 (30.6)	D (C)	0.69 (0.26)	45.5 (29.0)	D (C)	0.80 (0.36)	56.8 (33.7)	E (C)	0.81 (0.26)	57.0 (31.1)	E (C)
OVERALL	**0.68 (0.83)**	**17.3 (25.8)**	**B (C)**	**0.77 (0.90)**	**19.3 (23.6)**	**B (C)**	**0.87 (0.95)**	**22.9 (28.2)**	**C (C)**	**0.77 (0.85)**	**20.3 (21.7)**	**C (C)**	**0.75 (0.86)**	**19.3 (25.6)**	**B (C)**
Ogden Avenue & Lakeshore Road East															
EBL	0.68 (0.50)	56.8 (50.9)	E (D)	0.70 (0.52)	68.7 (54.1)	E (D)	0.72 (0.56)	65.1 (58.3)	E (E)	0.70 (0.43)	72.8 (49.2)	E (D)	0.62 (0.48)	67.0 (46.8)	E (D)
EBT	0.46 (0.44)	4.9 (1.8)	A (A)	0.67 (0.80)	19.5 (30.0)	B (C)	0.82 (0.78)	24.2 (22.5)	C (C)	0.77 (0.89)	24.8 (37.7)	C (D)	0.65 (0.74)	15.6 (30.0)	B (C)
EBR	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.33 (0.54)	18.5 (30.8)	B (C)	0.23 (0.61)	21.6 (23.2)	C (C)	0.38 (0.59)	21.0 (34.4)	C (C)	0.22 (0.71)	14.8 (35.0)	B (D)
WBL	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.49 (0.76)	69.7 (75.4)	E (E)	0.48 (0.80)	66.9 (78.8)	E (E)	0.51 (0.68)	65.1 (68.0)	E (E)	0.32 (0.71)	67.0 (65.2)	E (E)
WBT	0.55 (0.77)	15.4 (11.4)	B (B)	0.74 (0.98)	34.5 (33.2)	C (C)	0.80 (0.98)	32.9 (25.9)	C (C)	0.80 (0.99)	46.1 (38.3)	D (D)	0.83 (0.82)	41.4 (20.3)	D (C)
NBL	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.72 (0.91)	55.6 (87.0)	E (F)	0.65 (0.87)	52.7 (83.6)	D (F)	0.44 (0.84)	41.2 (80.1)	D (F)	0.67 (0.75)	52.6 (71.5)	D (E)
NBT	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.75 (0.43)	67.7 (46.2)	E (D)	0.78 (0.44)	69.0 (49.3)	E (D)	0.84 (0.71)	69.6 (66.1)	E (E)	0.21 (0.31)	51.4 (56.3)	D (E)
NBR	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.72 (0.08)	66.0 (54.2)	E (D)
SBL	0.67 (0.93)	69.4 (113.2)	E (F)	0.69 (0.78)	59.4 (75.1)	E (E)	0.81 (0.85)	76.0 (85.1)	E (F)	0.69 (0.91)	53.8 (94.5)	D (F)	0.40 (0.70)	47.6 (62.6)	D (E)
SBT	0.21 (0.20)	60.3 (61.7)	E (E)	0.39 (0.45)	55.5 (53.1)	E (D)	0.17 (0.35)	51.4 (48.2)	D (D)	0.29 (0.53)	47.6 (55.5)	D (E)	0.17 (0.65)	52.5 (65.2)	D (E)
OVERALL	**0.62 (0.79)**	**17.0 (15.2)**	**B (B)**	**0.75 (0.98)**	**35.9 (39.8)**	**D (D)**	**0.82 (0.97)**	**36.7 (33.7)**	**D (C)**	**0.79 (0.96)**	**40.8 (45.2)**	**D (D)**	**0.77 (0.81)**	**35.9 (34.5)**	**D (C)**

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Ogden + dual left turn at Lakefront Promenade No Haig			Ogden + Haig + dual left turn at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
Hydro Road & Lakeshore Road East															
EBL	0.00 (0.04)	0.0 (66.5)	0.00 (E)	0.00 0.04)	0.0 (70.6)	0.00 (E)	0.00 (0.04)	0.0 (69.1)	0.00 (E)	0.00 (0.04)	0.0 (81.2)	0.00 (F)	0.00 (0.04)	0.0 (76.6)	0.00 (E)
EBT	0.70 (0.78)	28.3 (48.6)	C (D)	0.80 (0.88)	22.3 (32.1)	C (C)	0.93 (0.85)	22.2 (32.8)	C (C)	0.78 (0.82)	15.6 (20.1)	B (C)	0.76 (0.68)	14.2 (17.1)	B (B)
EBR	0.45 (0.76)	26.7 (61.9)	C (E)	0.60 (0.75)	16.9 (31.3)	B (C)	0.46 (0.65)	11.0 (29.9)	B (C)	0.59 (0.72)	8.2 (19.4)	A (B)	0.36 (0.81)	5.6 (27.8)	A (C)
WBL	0.58 (0.91)	76.1 (91.9)	E (F)	0.74 (0.91)	80.9 (93.2)	F (F)	0.59 (0.82)	74.2 (80.1)	E (F)	0.73 (0.90)	80.2 (90.9)	F (F)	0.50 (0.83)	76.2 (76.9)	E (E)
WBT	0.39 (0.71)	9.0 (26.3)	A (C)	0.43 (0.83)	10.2 (28.6)	B (C)	0.47 (0.92)	11.8 (21.5)	B (C)	0.40 (0.80)	3.1 (14.1)	A (B)	0.43 (0.72)	8.0 (13.0)	A (B)
NBL	0.87 (0.93)	61.9 (71.4)	E (E)	0.89 (0.96)	66.5 (80.8)	E (F)	0.84 (0.88)	63.1 (68.6)	E (E)	0.87 (0.90)	70.4 (75.1)	E (E)	0.88 (0.82)	71.5 (67.7)	E (E)
NBT	0.49 (0.17)	39.8 (34.7)	D (C)	0.54 (0.17)	41.4 (35.5)	D (D)	0.45 (0.10)	42.3 (37.7)	D (D)	0.81 (0.24)	60.3 (41.3)	E (D)	0.83 (0.10)	63.6 (43.4)	E (D)
SBT	0.00 (0.00)	33.0 (32.7)	C (C)	0.00 (0.00)	33.6 (33.5)	C (C)	0.00 (0.00)	36.5 (36.6)	D (D)	0.01 (0.01)	39.0 (38.6)	D (D)	0.01 (0.00)	39.4 (42.3)	D (D)
OVERALL	**0.75 (0.87)**	**29.5 (47.0)**	**C (D)**	**0.83 (0.93)**	**27.5 (39.4)**	**C (D)**	**0.87 (0.93)**	**24.8 (33.0)**	**C (C)**	**0.81 (0.88)**	**23.5 (27.7)**	**C (C)**	**0.79 (0.82)**	**23.2 (25.5)**	**C (C)**
Lakeshore Road East & Haig Boulevard															
EBL	0.56 (0.53)	56.5 (68.2)	E (E)	0.61 (0.54)	54.2 (67.5)	D (E)	0.61 (0.50)	71.6 (73.5)	E (E)	0.63 (0.44)	55.8 (49.6)	E (D)	0.65 (0.81)	67.9 (106.7)	E (F)
EBT	0.48 (0.41)	1.9 (0.5)	A (A)	0.54 (0.49)	2.3 (0.6)	A (A)	0.83 (0.73)	12.9 (18.5)	B (B)	0.58 (0.50)	2.7 (4.5)	A (A)	0.84 (0.58)	19.4 (16.2)	B (B)
EBR	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.46 (0.28)	10.4 (18.4)	B (B)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.59 (0.43)	14.8 (15.5)	B (B)
WBL	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.55 (0.57)	58.9 (57.0)	E (E)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.68 (0.69)	61.3 (66.1)	E (E)
WBT	0.39 (0.68)	7.7 (8.7)	A (A)	0.46 (0.80)	8.9 (12.2)	A (B)	0.52 (0.97)	14.5 (45.1)	B (D)	0.47 (0.86)	9.3 (22.9)	A (C)	0.49 (0.88)	14.2 (28.6)	B (C)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Ogden + dual left turn at Lakefront Promenade No Haig			Ogden + Haig + dual left turn at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
NBL	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.80 (0.96)	72.5 (90.4)	E (F)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.82 (0.96)	75.5 (96.8)	E (F)
NBT	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.38 (0.37)	49.8 (40.9)	D (D)	0.00 (0.00)	0.0 (0.0)	0.00 (0)	0.41 (0.39)	49.3 (40.1)	D (D)
SBT	0.06 (0.32)	63.3 (62.2)	E (E)	0.06 (0.48)	61.9 (62.8)	E (E)	0.43 (0.69)	50.8 (69.9)	D (E)	0.06 (0.38)	61.3 (62.1)	E (E)	0.52 (0.45)	52.3 (41.3)	D (D)
OVERALL	**0.48 (0.64)**	**7.9 (9.6)**	**A (A)**	**0.53 (0.74)**	**8.4 (11.4)**	**A (B)**	**0.79 (1.00)**	**21.9 (40.7)**	**C (D)**	**0.56 (0.77)**	**8.8 (18.2)**	**A (B)**	**0.81 (0.92)**	**26.7 (33.2)**	**C (C)**
Dixie Road & Lakeshore Road East															
EBL	0.86 (0.70)	38.6 (28.5)	D (C)	0.87 (0.73)	37.5 (28.8)	D (C)	0.88 (0.69)	31.7 (37.1)	C (D)	0.88 (0.66)	42.1 (33.5)	D (C)	0.87 (0.71)	28.5 (32.7)	C (C)
EBT	0.39 (0.36)	6.5 (19.8)	A (B)	0.43 (0.44)	5.4 (23.1)	A (C)	0.47 (0.47)	16.2 (28.1)	B (C)	0.46 (0.45)	5.0 (18.0)	A (B)	0.43 (0.34)	16.6 (24.8)	B (C)
WBL	0.04 (0.12)	68.4 (70.3)	E (E)	0.04 (0.12)	68.4 (70.3)	E (E)	0.04 (0.12)	68.4 (70.3)	E (E)	0.04 (0.12)	68.4 (70.3)	E (E)	0.04 (0.12)	68.4 (70.3)	E (E)
WBT	0.41 (0.75)	32.5 (44.1)	C (D)	0.51 (0.84)	37.1 (49.4)	D (D)	0.54 (0.96)	39.6 (66.6)	D (E)	0.53 (0.97)	39.1 (68.0)	D (E)	0.61 (0.83)	45.3 (50.9)	D (D)
WBR	0.26 (0.34)	30.8 (35.2)	C (D)	0.28 (0.35)	33.8 (36.3)	C (D)	0.29 (0.38)	35.7 (40.6)	D (D)	0.28 (0.38)	35.4 (40.9)	D (D)	0.31 (0.37)	40.4 (39.1)	D (D)
NBT	0.01 (0.02)	49.3 (42.0)	D (D)	0.01 (0.02)	49.3 (42.0)	D (D)	0.01 (0.02)	49.3 (42.0)	D (D)	0.01 (0.02)	49.3 (42.0)	D (D)	0.01 (0.02)	49.3 (42.0)	D (D)
SBT	0.72 (0.83)	66.8 (68.9)	E (E)	0.72 (0.83)	66.8 (68.9)	E (E)	0.72 (0.83)	66.8 (68.9)	E (E)	0.72 (0.83)	66.8 (68.9)	E (E)	0.72 (0.83)	66.8 (68.9)	E (E)
SBR	0.51 (0.91)	23.8 (43.1)	C (D)	0.55 (1.00)	22.3 (63.9)	C (E)	0.57 (1.00)	21.4 (60.8)	C (E)	0.54 (0.99)	20.9 (56.5)	C (E)	0.50 (0.97)	17.0 (53.1)	B (D)
OVERALL	**0.64 (0.84)**	**25.2 (37.5)**	**C (D)**	**0.70 (0.94)**	**25.3 (44.0)**	**C (D)**	**0.72 (0.99)**	**28.2 (50.2)**	**C (D)**	**0.72 (0.98)**	**25.9 (46.9)**	**C (D)**	**0.75 (0.92)**	**28.8 (44.0)**	**C (D)**

Notes:
1. XX (XX) –Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).
2. Control delay calculated in seconds.

Table 33 provides a summary of the external unsignalized intersection capacity results for Scenarios 1 ,2, 3A, 3B and 4.

TABLE 33 EXTERNAL UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Dual left at Lakefront Promenade/No Haig			Dual left at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
Montbeck Crescent/West Avenue & Lakeshore Road East															
EBL	0.01 (0.01)	12.2 (14.4)	B (B)	0.02 (0.02)	14.2 (17.3)	B (C)	0.02 (0.02)	15.5 (19.4)	C (C)	0.02 (0.02)	15.3 (17.7)	C (C)	0.02 (0.01)	17.4 (15.2)	C (C)
EBT	0.53 (0.64)	0.0 (0.0)	A (A)	0.61 (0.75)	0.0 (0.0)	A (A)	0.66 (0.80)	0.0 (0.0)	A (A)	0.62 (0.80)	0.0 (0.0)	A (A)	0.54 (0.77)	0.0 (0.0)	A (A)
EBTR	0.27 (0.32)	0.0 (0.0)	A (A)	0.31 (0.38)	0.0 (0.0)	A (A)	0.33 (0.40)	0.0 (0.0)	A (A)	0.31 (0.40)	0.0 (0.0)	A (A)	0.27 (0.39)	0.0 (0.0)	A (A)
WBL	0.01 (0.01)	11.7 (14.0)	B (B)	0.02 (0.01)	13.1 (17.4)	B (C)	0.02 (0.01)	14.4 (19.3)	B (C)	0.02 (0.01)	13.3 (19.0)	B (C)	0.02 (0.01)	12.1 (17.9)	B (C)
WBT	0.58 (0.66)	0.0 (0.0)	A (A)	0.68 (0.76)	0.0 (0.0)	A (A)	0.73 (0.81)	0.0 (0.0)	A (A)	0.72 (0.77)	0.0 (0.0)	A (A)	0.80 (0.69)	0.0 (0.0)	A (A)
WBTR	0.29 (0.34)	0.0 (0.0)	A (A)	0.34 (0.39)	0.0 (0.0)	A (A)	0.37 (0.42)	0.0 (0.0)	A (A)	0.36 (0.40)	0.0 (0.0)	A (A)	0.40 (0.36)	0.0 (0.0)	A (A)
NBL	0.00 (0.03)	0.0 (36.1)	A (E)	0.02 (0.04)	0.0 (55.9)	A (F)	0.04 (0.05)	0.0 (70.3)	A (F)	0.05 (0.05)	0.0 (67.0)	A (F)	0.04 (0.04)	0.0 (57.9)	A (F)
NBTR	0.01 (0.01)	11.1 (12.3)	B (B)	0.01 (0.01)	11.7 (13.1)	B (B)	0.02 (0.01)	12.1 (14.0)	B (B)	0.01 (0.01)	11.8 (13.5)	B (B)	0.01 (0.01)	11.8 (12.2)	B (B)
SBLTR	0.04 (0.07)	18.6 (25.1)	C (D)	0.05 (0.09)	23.0 (32.6)	C (D)	0.05 (0.11)	25.9 (39.4)	D (E)	0.05 (0.09)	25.3 (33.1)	D (D)	0.07 (0.07)	30.1 (27.0)	D (D)
Lakeshore Road East & Greaves Avenue															
EBL	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Dual left at Lakefront Promenade/No Haig			Dual left at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
EBT	0.41 (0.51)	0.0 (0.0)	A (A)	0.47 (0.60)	0.0 (0.0)	A (A)	0.51 (0.64)	0.0 (0.0)	A (A)	0.47 (0.64)	0.0 (0.0)	A (A)	0.42 (0.62)	0.0 (0.0)	A (A)
EBT	0.41 (0.51)	0.0 (0.0)	A (A)	0.47 (0.60)	0.0 (0.0)	A (A)	0.51 (0.64)	0.0 (0.0)	A (A)	0.47 (0.64)	0.0 (0.0)	A (A)	0.42 (0.62)	0.0 (0.0)	A (A)
WBT	0.58 (0.61)	0.0 (0.0)	A (A)	0.68 (0.70)	0.0 (0.0)	A (A)	0.73 (0.75)	0.0 (0.0)	A (A)	0.72 (0.72)	0.0 (0.0)	A (A)	0.80 (0.63)	0.0 (0.0)	A (A)
WBTR	0.30 (0.33)	0.0 (0.0)	A (A)	0.35 (0.38)	0.0 (0.0)	A (A)	0.37 (0.40)	0.0 (0.0)	A (A)	0.37 (0.39)	0.0 (0.0)	A (A)	0.41 (0.34)	0.0 (0.0)	A (A)
SBR	0.01 (0.02)	10.3 (10.5)	B (B)	0.01 (0.02)	10.2 (10.1)	B (B)	0.01 (0.02)	10.0 (10.5)	B (B)	0.01 (0.02)	10.0 (10.5)	B (B)	0.01 (0.02)	10.8 (10.4)	B (B)
Lakeshore Road East & Westmount Avenue															
EBT	0.43 (0.45)	0.0 (0.0)	A (A)	0.48 (0.55)	0.0 (0.0)	A (A)	0.54 (0.58)	0.0 (0.0)	A (A)	0.50 (0.57)	0.0 (0.0)	A (A)	0.44 (0.55)	0.0 (0.0)	A (A)
EBT	0.43 (0.45)	0.0 (0.0)	A (A)	0.48 (0.55)	0.0 (0.0)	A (A)	0.54 (0.58)	0.0 (0.0)	A (A)	0.50 (0.57)	0.0 (0.0)	A (A)	0.44 (0.55)	0.0 (0.0)	A (A)
WBT	0.53 (0.65)	0.0 (0.0)	A (A)	0.65 (0.76)	0.0 (0.0)	A (A)	0.69 (0.82)	0.0 (0.0)	A (A)	0.68 (0.78)	0.0 (0.0)	A (A)	0.75 (0.70)	0.0 (0.0)	A (A)
WBTR	0.27 (0.34)	0.0 (0.0)	A (A)	0.32 (0.39)	0.0 (0.0)	A (A)	0.34 (0.42)	0.0 (0.0)	A (A)	0.34 (0.40)	0.0 (0.0)	A (A)	0.38 (0.36)	0.0 (0.0)	A (A)
SBR	0.01 (0.01)	11.3 (11.2)	B (B)	0.01 (0.01)	11.2 (10.4)	B (B)	0.01 (0.01)	10.9 (10.8)	B (B)	0.01 (0.01)	13.4 (13.5)	B (B)	0.01 (0.01)	13.6 (13.6)	B (B)
Alexandra Avenue & Lakeshore Road East															
EBL	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)
EBT	0.57 (0.61)	0.0 (0.0)	A (A)	0.64 (0.73)	0.0 (0.0)	A (A)	0.72 (0.77)	0.0 (0.0)	A (A)	0.67 (0.77)	0.0 (0.0)	A (A)	0.59 (0.74)	0.0 (0.0)	A (A)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Dual left at Lakefront Promenade/No Haig			Dual left at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
EBTR	0.29 (0.30)	0.0 (0.0)	A (A)	0.32 (0.37)	0.0 (0.0)	A (A)	0.36 (0.39)	0.0 (0.0)	A (A)	0.33 (0.38)	0.0 (0.0)	A (A)	0.30 (0.37)	0.0 (0.0)	A (A)
WBL	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)
WBT	0.52 (0.64)	0.0 (0.0)	A (A)	0.63 (0.76)	0.0 (0.0)	A (A)	0.67 (0.82)	0.0 (0.0)	A (A)	0.67 (0.78)	0.0 (0.0)	A (A)	0.74 (0.69)	0.0 (0.0)	A (A)
WBTR	0.28 (0.35)	0.0 (0.0)	A (A)	0.33 (0.41)	0.0 (0.0)	A (A)	0.35 (0.44)	0.0 (0.0)	A (A)	0.35 (0.42)	0.0 (0.0)	A (A)	0.39 (0.37)	0.0 (0.0)	A (A)
NBLTR	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)
SBLTR	0.06 (0.06)	11.7 (11.9)	B (B)	0.06 (0.05)	11.8 (11.5)	B (B)	0.06 (0.05)	11.6 (10.7)	B (B)	0.08 (0.08)	14.2 (15.0)	B (C)	0.08 (0.08)	14.6 (14.7)	B (B)
Lakeshore Road East & Meredith Avenue															
EBT	0.46 (0.43)	0.0 (0.0)	A (A)	0.51 (0.52)	0.0 (0.0)	A (A)	0.58 (0.54)	0.0 (0.0)	A (A)	0.54 (0.54)	0.0 (0.0)	A (A)	0.50 (0.50)	0.0 (0.0)	A (A)
EBT	0.46 (0.43)	0.0 (0.0)	A (A)	0.51 (0.52)	0.0 (0.0)	A (A)	0.58 (0.54)	0.0 (0.0)	A (A)	0.54 (0.54)	0.0 (0.0)	A (A)	0.50 (0.50)	0.0 (0.0)	A (A)
WBT	0.47 (0.69)	0.0 (0.0)	A (A)	0.57 (0.79)	0.0 (0.0)	A (A)	0.59 (0.85)	0.0 (0.0)	A (A)	0.52 (0.76)	0.0 (0.0)	A (A)	0.57 (0.67)	0.0 (0.0)	A (A)
WBTR	0.24 (0.36)	0.0 (0.0)	A (A)	0.29 (0.41)	0.0 (0.0)	A (A)	0.30 (0.44)	0.0 (0.0)	A (A)	0.27 (0.39)	0.0 (0.0)	A (A)	0.29 (0.35)	0.0 (0.0)	A (A)
SBR	0.01 (0.01)	9.7 (10.5)	A (B)	0.01 (0.02)	9.7 (12.1)	A (B)	0.01 (0.02)	9.9 (13.2)	A (B)	0.01 (0.02)	9.7 (11.9)	A (B)	0.01 (0.01)	9.9 (10.6)	A (B)
Lakeshore Road E & Edgeleigh Avenue															
EBT	0.46 (0.43)	0.0 (0.0)	A (A)	0.51 (0.52)	0.0 (0.0)	A (A)	0.58 (0.54)	0.0 (0.0)	A (A)	0.54 (0.55)	0.0 (0.0)	A (A)	0.50 (0.50)	0.0 (0.0)	A (A)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Dual left at Lakefront Promenade/No Haig			Dual left at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
EBT	0.46 (0.43)	0.0 (0.0)	A (A)	0.51 (0.52)	0.0 (0.0)	A (A)	0.58 (0.54)	0.0 (0.0)	A (A)	0.54 (0.55)	0.0 (0.0)	A (A)	0.50 (0.50)	0.0 (0.0)	A (A)
WBT	0.47 (0.69)	0.0 (0.0)	A (A)	0.54 (0.79)	0.0 (0.0)	A (A)	0.54 (0.86)	0.0 (0.0)	A (A)	0.48 (0.76)	0.0 (0.0)	A (A)	0.53 (0.67)	0.0 (0.0)	A (A)
WBTR	0.24 (0.36)	0.0 (0.0)	A (A)	0.27 (0.40)	0.0 (0.0)	A (A)	0.27 (0.43)	0.0 (0.0)	A (A)	0.24 (0.39)	0.0 (0.0)	A (A)	0.27 (0.34)	0.0 (0.0)	A (A)
SBR	0.01 (0.01)	9.7 (10.5)	A (B)	0.01 (0.01)	9.8 (12.2)	A (B)	0.01 (0.01)	10.0 (13.4)	A (B)	0.01 (0.01)	9.8 (12.0)	A (B)	0.01 (0.01)	10.0 (10.6)	B (B)
Lakeshore Road East & Strathy Avenue															
EBT	0.44 (0.44)	0.0 (0.0)	A (A)	0.51 (0.50)	0.0 (0.0)	A (A)	0.59 (0.50)	0.0 (0.0)	A (A)	0.54 (0.51)	0.0 (0.0)	A (A)	0.53 (0.46)	0.0 (0.0)	A (A)
EBT	0.44 (0.44)	0.0 (0.0)	A (A)	0.51 (0.50)	0.0 (0.0)	A (A)	0.59 (0.50)	0.0 (0.0)	A (A)	0.54 (0.51)	0.0 (0.0)	A (A)	0.53 (0.46)	0.0 (0.0)	A (A)
WBT	0.47 (0.71)	0.0 (0.0)	A (A)	0.51 (0.82)	0.0 (0.0)	A (A)	0.53 (0.90)	0.0 (0.0)	A (A)	0.48 (0.81)	0.0 (0.0)	A (A)	0.51 (0.75)	0.0 (0.0)	A (A)
WBTR	0.24 (0.37)	0.0 (0.0)	A (A)	0.26 (0.42)	0.0 (0.0)	A (A)	0.27 (0.46)	0.0 (0.0)	A (A)	0.25 (0.42)	0.0 (0.0)	A (A)	0.26 (0.39)	0.0 (0.0)	A (A)
SBR	0.01 (0.01)	11.2 (10.4)	B (B)	0.01 (0.02)	11.3 (10.9)	B (B)	0.01 (0.02)	11.2 (13.1)	B (B)	0.01 (0.02)	11.2 (10.7)	B (B)	0.01 (0.01)	11.4 (10.3)	B (B)
Lakeshore Road East & Orchard Road															
EBT	0.45 (0.37)	0.0 (0.0)	A (A)	0.50 (0.43)	0.0 (0.0)	A (A)	0.53 (0.45)	0.0 (0.0)	A (A)	0.53 (0.44)	0.0 (0.0)	A (A)	0.52 (0.36)	0.0 (0.0)	A (A)
EBT	0.45 (0.37)	0.0 (0.0)	A (A)	0.50 (0.43)	0.0 (0.0)	A (A)	0.53 (0.45)	0.0 (0.0)	A (A)	0.53 (0.44)	0.0 (0.0)	A (A)	0.52 (0.36)	0.0 (0.0)	A (A)
WBT	0.38 (0.67)	0.0 (0.0)	A (A)	0.44 (0.75)	0.0 (0.0)	A (A)	0.46 (0.78)	0.0 (0.0)	A (A)	0.45 (0.77)	0.0 (0.0)	A (A)	0.45 (0.72)	0.0 (0.0)	A (A)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Dual left at Lakefront Promenade/No Haig			Dual left at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
WBTR	0.20 (0.34)	0.0 (0.0)	A (A)	0.23 (0.38)	0.0 (0.0)	A (A)	0.24 (0.40)	0.0 (0.0)	A (A)	0.23 (0.40)	0.0 (0.0)	A (A)	0.23 (0.37)	0.0 (0.0)	A (A)
SBR	0.04 (0.04)	12.8 (18.5)	B (C)	0.05 (0.05)	13.9 (20.8)	B (C)	0.05 (0.05)	14.2 (21.9)	B (C)	0.05 (0.05)	13.9 (21.7)	B (C)	0.05 (0.04)	13.9 (19.9)	B (C)
Lakeshore Road East & Fergus Avenue															
EBT	0.43 (0.35)	0.0 (0.0)	A (A)	0.48 (0.42)	0.0 (0.0)	A (A)	0.52 (0.45)	0.0 (0.0)	A (A)	0.51 (0.43)	0.0 (0.0)	A (A)	0.51 (0.36)	0.0 (0.0)	A (A)
EBT	0.43 (0.35)	0.0 (0.0)	A (A)	0.48 (0.42)	0.0 (0.0)	A (A)	0.52 (0.45)	0.0 (0.0)	A (A)	0.51 (0.43)	0.0 (0.0)	A (A)	0.51 (0.36)	0.0 (0.0)	A (A)
WBT	0.38 (0.66)	0.0 (0.0)	A (A)	0.44 (0.74)	0.0 (0.0)	A (A)	0.45 (0.77)	0.0 (0.0)	A (A)	0.44 (0.76)	0.0 (0.0)	A (A)	0.44 (0.71)	0.0 (0.0)	A (A)
WBTR	0.21 (0.36)	0.0 (0.0)	A (A)	0.24 (0.40)	0.0 (0.0)	A (A)	0.25 (0.41)	0.0 (0.0)	A (A)	0.24 (0.41)	0.0 (0.0)	A (A)	0.24 (0.38)	0.0 (0.0)	A (A)
SBR	0.05 (0.06)	10.4 (11.8)	B (B)	0.06 (0.06)	10.6 (12.3)	B (B)	0.06 (0.06)	10.7 (12.2)	B (B)	0.06 (0.06)	10.6 (12.1)	B (B)	0.05 (0.06)	10.4 (12.4)	B (B)

Notes:
1. XX (XX) –Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).
2. Control delay calculated in seconds.

7.8.2 Capacity Analysis Internal Intersections

Table 34 provides a summary of the internal unsignalized intersection capacity results for Scenarios 1, 2, 3A, 3B and 4.

TABLE 34 INTERNAL UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Ogden + dual left at Lakefront Promenade No Haig			Ogden + Haig + dual left at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
East Avenue & Street L															
WBL	0.03 (0.05)	11.7 (11.1)	B (B)	0.02 (0.05)	10.1 (11.4)	B (B)	0.01 (0.05)	9.7 (11.5)	A (B)	0.02 (0.06)	10.4 (12.3)	B (B)	0.01 (0.05)	9.6 (11.4)	A (B)
WBR	0.27 (0.07)	11.0 (8.9)	B (A)	0.17 (0.07)	9.5 (8.8)	A (A)	0.20 (0.07)	9.7 (8.7)	A (A)	0.22 (0.09)	9.9 (8.9)	A (A)	0.18 (0.06)	9.6 (8.7)	A (A)
NBTR	0.13 (0.04)	0.0 (0.0)	A (A)	0.06 (0.03)	0.0 (0.0)	A (A)	0.05 (0.02)	0.0 (0.0)	A (A)	0.06 (0.03)	0.0 (0.0)	A (A)	0.06 (0.02)	0.0 (0.0)	A (A)
SBL	0.01 (0.05)	7.7 (7.5)	A (A)	0.03 (0.08)	7.5 (7.5)	A (A)	0.02 (0.08)	7.5 (7.5)	A (A)	0.04 (0.10)	7.5 (7.6)	A (A)	0.02 (0.08)	7.5 (7.5)	A (A)
SBT	0.12 (0.06)	0.0 (0.0)	A (A)	0.03 (0.04)	0.0 (0.0)	A (A)	0.02 (0.04)	0.0 (0.0)	A (A)	0.03 (0.04)	0.0 (0.0)	A (A)	0.02 (0.04)	0.0 (0.0)	A (A)
Lakefront Promenade & Street L															
EBL	0.23 (0.09)	39.7 (47.0)	E (E)	0.25 (0.12)	31.4 (31.2)	D (D)	0.30 (0.13)	30.0 (28.0)	D (D)	0.76 (0.26)	129.6 (60.2)	F (F)	0.53 (0.18)	80.6 (49.3)	F (E)
EBTR	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.09)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)
WBL	0.00 (0.00)	17.4 (0.0)	C (A)	0.04 (0.13)	16.2 (23.0)	C (C)	0.03 (0.12)	14.0 (20.6)	B (C)	0.06 (0.19)	19.7 (30.9)	C (D)	0.02 (0.13)	16.9 (28.1)	C (D)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Ogden + dual left at Lakefront Promenade No Haig			Ogden + Haig + dual left at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
WBTR	0.48 (0.35)	18.5 (15.9)	C (C)	0.33 (0.23)	13.5 (12.4)	B (B)	0.34 (0.16)	13.0 (10.5)	B (B)	0.55 (0.35)	19.6 (14.6)	C (B)	0.58 (0.34)	21.0 (14.8)	C (B)
NBL	0.05 (0.02)	7.9 (8.6)	A (A)	0.01 (0.01)	7.7 (8.3)	A (A)	0.00 (0.00)	7.5 (0.0)	A (A)	0.01 (0.01)	7.7 (8.3)	A (A)	0.01 (0.00)	7.5 (8.5)	A (A)
NBTR	0.23 (0.23)	0.0 (0.0)	A (A)	0.26 (0.22)	0.0 (0.0)	A (A)	0.24 (0.18)	0.0 (0.0)	A (A)	0.33 (0.28)	0.0 (0.0)	A (A)	0.36 (0.25)	0.0 (0.0)	A (A)
SBL	0.02 (0.08)	8.1 (8.4)	A (A)	0.04 (0.08)	8.3 (8.3)	A (A)	0.04 (0.10)	8.2 (8.2)	A (A)	0.05 (0.11)	8.8 (8.7)	A (A)	0.05 (0.09)	9.0 (8.5)	A (A)
SBTR	0.15 (0.33)	0.0 (0.0)	A (A)	0.13 (0.26)	0.0 (0.0)	A (A)	0.09 (0.25)	0.0 (0.0)	A (A)	0.13 (0.28)	0.0 (0.0)	A (A)	0.07 (0.31)	0.0 (0.0)	A (A)
Ogden Avenue & Street L															
EBL	0.05 (0.01)	12.6 (11.1)	B (B)	0.73 (0.78)	67.4 (103.4)	F (F)	0.68 (0.57)	51.2 (58.4)	F (F)	1.04 (1.14)	150.7 (240.1)	F (F)	0.95 (0.72)	121.7 (106.8)	F (F)
EBTR	0.16 (0.16)	13.6 (11.9)	B (B)	0.29 (0.46)	23.5 (37.2)	C (E)	0.18 (0.28)	18.0 (24.2)	C (C)	0.27 (0.47)	23.8 (40.9)	C (E)	0.26 (0.30)	23.3 (27.5)	C (D)
WBL	0.04 (0.07)	13.7 (13.1)	B (B)	0.12 (0.30)	26.6 (54.9)	D (F)	0.06 (0.16)	19.2 (33.2)	C (D)	0.12 (0.36)	28.0 (69.8)	D (F)	0.05 (0.29)	24.4 (48.6)	C (E)
WBTR	0.11 (0.09)	11.9 (11.8)	B (B)	0.30 (0.32)	15.7 (19.8)	C (C)	0.27 (0.24)	13.6 (16.2)	B (C)	0.40 (0.47)	18.6 (29.5)	C (D)	0.42 (0.40)	19.2 (26.1)	C (D)
NBL	0.10 (0.07)	7.5 (7.4)	A (A)	0.07 (0.07)	8.0 (8.7)	A (A)	0.06 (0.05)	7.8 (8.6)	A (A)	0.10 (0.11)	8.1 (9.0)	A (A)	0.10 (0.10)	7.8 (9.1)	A (A)
NBTR	0.08 (0.08)	0.0 (0.0)	A (A)	0.24 (0.24)	0.0 (0.0)	A (A)	0.20 (0.18)	0.0 (0.0)	A (A)	0.21 (0.22)	0.0 (0.0)	A (A)	0.25 (0.16)	0.0 (0.0)	A (A)
SBL	0.00 (0.00)	7.5 (0.0)	A (A)	0.03 (0.07)	8.2 (8.4)	A (A)	0.03 (0.08)	8.1 (8.1)	A (A)	0.03 (0.09)	8.1 (8.3)	A (A)	0.03 (0.07)	8.3 (8.0)	A (A)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Ogden + dual left at Lakefront Promenade No Haig			Ogden + Haig + dual left at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
SBTR	0.01 (0.01)	0.0 (0.0)	A (A)	0.16 (0.31)	0.0 (0.0)	A (A)	0.12 (0.29)	0.0 (0.0)	A (A)	0.17 (0.33)	0.0 (0.0)	A (A)	0.09 (0.36)	0.0 (0.0)	A (A)
Hydro Road & Street L															
EBL	0.77 (1.24)	46.5 (199.4)	E (F)	1.23 (1.35)	184.9 (248.0)	F (F)	0.80 (0.68)	52.4 (45.3)	F (E)	1.17 (1.20)	159.5 (189.0)	F (F)	0.88 (0.71)	67.7 (58.8)	F (F)
EBR	0.00 (0.00)	10.2 (0.0)	B (A)	0.02 (0.06)	11.1 (13.2)	B (B)	0.02 (0.06)	10.3 (12.1)	B (B)	0.03 (0.07)	11.2 (13.5)	B (B)	0.01 (0.08)	9.5 (14.1)	A (B)
NBL	0.02 (0.05)	8.1 (9.5)	A (A)	0.08 (0.10)	8.6 (9.4)	A (A)	0.06 (0.07)	8.2 (8.9)	A (A)	0.08 (0.11)	8.6 (9.6)	A (A)	0.09 (0.10)	8.0 (9.7)	A (A)
NBT	0.29 (0.28)	0.0 (0.0)	A (A)	0.29 (0.27)	0.0 (0.0)	A (A)	0.23 (0.19)	0.0 (0.0)	A (A)	0.26 (0.24)	0.0 (0.0)	A (A)	0.26 (0.16)	0.0 (0.0)	A (A)
SBTR	0.21 (0.46)	0.0 (0.0)	A (A)	0.28 (0.40)	0.0 (0.0)	A (A)	0.22 (0.35)	0.0 (0.0)	A (A)	0.28 (0.42)	0.0 (0.0)	A (A)	0.14 (0.44)	0.0 (0.0)	A (A)
East Avenue & Rangeview Road															
WBL	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	A (A)
WBR	0.20 (0.07)	9.2 (8.6)	A (A)	0.08 (0.04)	8.6 (8.5)	A (A)	0.07 (0.02)	8.6 (8.4)	A (A)	0.09 (0.05)	8.7 (8.5)	A (A)	0.08 (0.02)	8.7 (8.4)	A (A)
NBTR	0.00 (0.00)	0.0 (0.0)	A (A)	0.01 (0.00)	0.0 (0.0)	A (A)	0.01 (0.00)	0.0 (0.0)	A (A)	0.01 (0.00)	0.0 (0.0)	A (A)	0.01 (0.00)	0.0 (0.0)	A (A)
SBL	0.01 (0.02)	7.2 (7.3)	A (A)	0.02 (0.03)	7.3 (7.3)	A (A)	0.02 (0.04)	7.3 (7.3)	A (A)	0.02 (0.04)	7.3 (7.3)	A (A)	0.01 (0.03)	7.3 (7.3)	A (A)
SBT	0.12 (0.06)	0.0 (0.0)	A (A)	0.02 (0.02)	0.0 (0.0)	A (A)	0.01 (0.02)	0.0 (0.0)	A (A)	0.02 (0.04)	1.9 (2.7)	A (A)	0.01 (0.02)	0.0 (0.0)	A (A)
Ogden Avenue & Rangeview Road															
EBL	0.00 (0.00)	8.2 (7.8)	A (A)	0.17 (0.15)	10.7 (11.2)	B (B)	0.16 (0.12)	9.9 (10.0)	A (B)	0.17 (0.14)	10.8 (11.1)	B (B)	0.18 (0.11)	10.8 (10.5)	B (B)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units			Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units			Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units			Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units		
	No Ogden No Haig			Ogden connected No Haig			Ogden + Haig connected			Ogden + dual left at Lakefront Promenade No Haig			Ogden + Haig + dual left at Lakefront Promenade		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
EBTR	0.13 (0.16)	8.4 (8.7)	A (A)	0.15 (0.19)	9.8 (10.7)	A (B)	0.10 (0.13)	8.8 (9.3)	A (A)	0.13 (0.17)	9.7 (10.5)	A (B)	0.13 (0.13)	9.5 (9.8)	A (A)
WBL	0.03 (0.06)	8.4 (8.8)	A (A)	0.05 (0.07)	9.7 (10.4)	A (B)	0.03 (0.05)	9.0 (9.5)	A (A)	0.05 (0.07)	9.7 (10.4)	A (B)	0.02 (0.07)	9.3 (10.2)	A (B)
WBTR	0.08 (0.08)	8.2 (8.4)	A (A)	0.20 (0.19)	10.0 (10.6)	B (B)	0.17 (0.14)	9.0 (9.2)	A (A)	0.23 (0.21)	10.4 (10.9)	B (B)	0.26 (0.18)	10.5 (10.2)	B (B)
NBL	0.24 (0.18)	9.0 (8.7)	A (A)	0.16 (0.14)	9.4 (9.6)	A (A)	0.13 (0.10)	8.8 (8.8)	A (A)	0.23 (0.20)	10.1 (10.2)	B (B)	0.24 (0.18)	10.0 (9.8)	B (A)
NBTR	0.48 (0.50)	10.9 (11.6)	B (B)	0.76 (0.81)	22.9 (28.8)	C (D)	0.56 (0.54)	13.8 (13.8)	B (B)	0.71 (0.77)	20.3 (25.2)	C (D)	0.80 (0.57)	25.9 (15.2)	D (C)
SBL	0.00 (0.00)	7.8 (7.3)	A (A)	0.04 (0.09)	8.8 (9.3)	A (A)	0.04 (0.10)	8.4 (8.8)	A (A)	0.05 (0.12)	8.9 (9.5)	A (A)	0.03 (0.10)	8.9 (9.0)	A (A)
SBTR	0.07 (0.12)	7.6 (8.0)	A (A)	0.45 (0.77)	12.8 (25.4)	B (D)	0.30 (0.59)	10.0 (15.3)	B (C)	0.45 (0.78)	13.0 (26.0)	B (D)	0.24 (0.84)	10.0 (30.7)	B (D)
Hydro Road & Rangeview Road															
EBL	0.51 (0.86)	22.4 (71.1)	C (F)	0.85 (1.02)	65.8 (118.4)	F (F)	0.52 (0.51)	25.7 (29.5)	D (D)	0.77 (0.38)	52.8 (14.1)	F (B)	0.64 (0.57)	34.1 (41.4)	D (E)
EBR	0.00 (0.00)	10.0 (0.0)	B (A)	0.02 (0.06)	11.0 (12.8)	B (B)	0.02 (0.05)	10.2 (11.7)	B (B)	0.03 (0.06)	11.0 (8.7)	B (A)	0.01 (0.08)	9.4 (13.6)	A (B)
NBL	0.02 (0.05)	8.0 (9.2)	A (A)	0.08 (0.09)	8.5 (9.2)	A (A)	0.06 (0.07)	8.2 (8.7)	A (A)	0.08 (0.18)	8.5 (9.8)	A (A)	0.09 (0.09)	7.9 (9.5)	A (A)
NBT	0.17 (0.18)	0.0 (0.0)	A (A)	0.21 (0.21)	0.0 (0.0)	A (A)	0.16 (0.15)	0.0 (0.0)	A (A)	0.19 (0.54)	0.0 (14.9)	A (B)	0.21 (0.14)	0.0 (0.0)	A (A)
SBTR	0.20 (0.41)	0.0 (0.0)	A (A)	0.27 (0.38)	0.0 (0.0)	A (A)	0.20 (0.31)	0.0 (0.0)	A (A)	0.27 (1.04)	0.0 (70.1)	A (F)	0.13 (0.42)	0.0 (0.0)	A (A)

Notes:
1. XX (XX) –Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

7.8.3 Queuing Assessment External Intersections

Table 35 provides a summary of the internal signalized intersection queuing results for Scenarios 1, 2, 3A, 3B and 4.

TABLE 35 EXTERNAL SIGNALIZED INTERSECTION QUEUING SUMMARY – KEY MOVEMENTS

Movement	Storage Length (m)	Scenario 1: Rangeview & Lakeview: 10,000 units		Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units		Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units	
		No Ogden No Haig		Ogden connected No Haig		Ogden + Haig connected		Ogden + dual left at Lakefront Promenade No Haig		Ogden + Haig + dual left at Lakefront Promenade	
		50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue
Lakeshore Road East & Cawthra Road											
EBL	70	66.1 (59)	85.2 (78)	66.8 (60)	86.8 (#85.5)	66.8 (60)	86.8 (#85.5)	68.6 (61)	#96.7 (#89.3)	68.6 (61)	#96.7 (#89.3)
EBT	265	71.6 (91)	87.7 (110)	83.7 (114)	101.7 (136)	92.1 (115)	110.9 (137)	83.7 (121)	101.3 (145)	61.3 (134)	76.1 (159)
WBL	60	0.1 (0)	m0.2 (m0.3)	0.2 (0)	m0.2 (m0.4)	0.1 (0)	m0.2 (m0.4)	0.1 (0)	m0.2 (m0.4)	0.1 (0)	m0.3 (m0.3)
WBT	330	86.8 (147)	84.5 (127)	128.3 (175)	119.5 (#176.6)	106.6 (158)	134.0 (#183.3)	73.8 (141)	125.4 (#199.6)	95.7 (124)	134.3 (105)
WBR	70	90.2 (67)	84.1 (42)	159.4 (30)	178.2 (72)	125.9 (0)	215.5 (112)	204.4 (0)	209.4 (105)	48.4 (11)	#266.8 (92)
NBT	15	0.0 (3)	0.0 (10)	0.0 (3)	0.0 (10)	0.0 (3)	0.0 (10)	0.0 (3)	0.0 (10)	0.0 (3)	0.0 (10)
SBL	115	68.8 (103)	112.4 (164)	82.6 (125)	133.1 (#212.6)	94.3 (147)	150.6 (#252.0)	85.7 (137)	138.0 (#233.0)	86.8 (112)	139.2 (#181.3)
SBT	250	69.4 (103)	113.2 (162)	83.2 (124)	133.5 (#208.5)	94.7 (145)	150.7 (#248.8)	86.2 (136)	137.7 (#229.4)	87.3 (111)	139.4 (176)
SBR	250	74.4 (86)	102.6 (121)	76.0 (88)	106.7 (123)	76.0 (93)	106.7 (130)	81.9 (88)	115.1 (123)	82.4 (88)	115.6 (123)
East Avenue & Lakeshore Road East											
EBL	72	12.9 (23)	28.6 (m35.8)	13.4 (22)	m27.5 (m33.5)	13.4 (22)	m26.1 (m31.0)	13.3 (22)	m28.1 (m32.0)	15.4 (21)	m27.0 (m33.7)

Movement	Storage Length (m)	Scenario 1: Rangeview & Lakeview: 10,000 units		Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units		Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units	
		No Ogden No Haig		Ogden connected No Haig		Ogden + Haig connected		Ogden + dual left at Lakefront Promenade No Haig		Ogden + Haig + dual left at Lakefront Promenade	
		50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue
EBT	330	98.8 (124)	190.8 (230)	113.2 (152)	231.7 (296)	114.8 (269)	263.4 (317)	118.1 (270)	240.4 (328)	102.3 (139)	211.1 (303)
EBR	45	9.8 (3)	22.7 (m17.0)	2.6 (5)	10.2 (m15.0)	0.6 (8)	m5.6 (m15.4)	3.8 (11)	11.6 (m21.9)	1.1 (6)	m5.6 (m15.6)
WBL	50	19.2 (15)	m34.9 (m26.9)	8.1 (0)	m13.6 (m26.7)	3.5 (21)	m5.7 (m28.8)	8.3 (21)	m14.8 (m42.8)	2.6 (16)	m4.8 (m29.7)
WBT	340	96.3 (121)	114.9 (147)	138.1 (133)	185.8 (163)	147.3 (101)	197.8 (211)	235.5 (156)	198.2 (163)	204.1 (160)	241.8 (149)
WBR	20	0.0 (2)	m0.0 (m2.8)	0.0 (3)	m0.0 (m3.0)	0.0 (1)	m0.0 (m2.6)	0.0 (2)	m0.0 (m7.6)	0.0 (1)	m0.0 (m8.2)
NBL	40	59.1 (30)	82.6 (48)	34.5 (21)	54.1 (38)	37.1 (19)	57.2 (35)	41.2 (24)	62.0 (40)	38.2 (18)	58.4 (33)
NBT	180	12.2 (0)	34.8 (0)	8.1 (0)	27.1 (0)	17.8 (0)	39.3 (0)	20.3 (0)	42.7 (9)	5.7 (0)	24.1 (0)
SBL	45	9.5 (8)	19.4 (18)	10.1 (8)	20.9 (18)	10.1 (8)	20.9 (18)	10.0 (8)	20.7 (18)	10.0 (8)	20.5 (19)
SBT	245	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Lakefront Promenade & Lakeshore Road East											
EBT	340	37.1 (127)	51.7 (83)	36.3 (192)	78.8 (153)	239.5 (71)	#217.1 (#292.0)	39.5 (42)	81.7 (161)	43.8 (142)	49.1 (105)
EBR	25	1.9 (37)	11.2 (#77.2)	2.4 (10)	20.0 (42)	15.3 (10)	21.3 (m#45.9)	1.7 (12)	20.2 (m52.0)	2.0 (48)	7.1 (#108.2)
WBL	35	25.8 (96)	44.6 (#135.3)	21.4 (81)	m30.0 (m89.0)	12.1 (84)	m16.5 (m90.4)	22.1 (90)	m31.3 (m100.1)	9.8 (93)	m13.9 (m#142.3)
WBT	240	13.8 (29)	19.4 (82)	49.2 (56)	81.1 (m74.6)	46.6 (84)	81.8 (m103.3)	40.6 (39)	40.3 (m51.9)	61.8 (38)	68.6 (45)
NBL	70x2	67.1 (68)	92.8 (#107.5)	76.3 (63)	#110.0 (#108.0)	83.0 (63)	#134.1 (#108.3)	70.8 (56)	89.9 (71)	72.5 (60)	90.3 (76)

Movement	Storage Length (m)	Scenario 1: Rangeview & Lakeview: 10,000 units		Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units		Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units	
		No Ogden No Haig		Ogden connected No Haig		Ogden + Haig connected		Ogden + dual left at Lakefront Promenade No Haig		Ogden + Haig + dual left at Lakefront Promenade	
		50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue
NBR	200	68.7 (40)	85.4 (57)	63.2 (32)	84.1 (49)	66.5 (24)	88.6 (39)	79.5 (36)	#120.8 (54)	79.7 (24)	#118.8 (40)
Ogden Avenue & Lakeshore Road East											
EBL	28	53.1 (34)	78.4 (m49.5)	0.0 (30)	m77.5 (m37.6)	57.5 (32)	m74.2 (m36.3)	57.3 (30)	m#115.9 (m38.9)	56.6 (29)	m#92.1 (m38.1)
EBT	240	58.6 (11)	103.0 (33)	82.8 (97)	127.2 (#181.3)	108.2 (84)	#287.5 (102)	84.7 (117)	161.2 (#251.5)	64.6 (86)	162.1 (129)
EBR	25	0.0 (0)	0.0 (0)	5.9 (24)	m23.0 (m38.4)	4.6 (28)	m13.6 (m34.8)	3.2 (32)	m26.8 (m47.8)	0.0 (30)	m15.4 (m#68.7)
WBL	85	0.0 (0)	0.0 (0)	17.3 (70)	m29.5 (m94.3)	20.1 (71)	m36.1 (m90.6)	18.0 (0)	m#42.7 (m108.7)	7.1 (83)	m15.6 (118)
WBT	200	120.1 (66)	102.3 (71)	196.8 (282)	225.9 (m#344.0)	208.1 (224)	#246.1 (#422.8)	189.3 (241)	210.0 (#337.3)	204.4 (153)	225.6 (155)
NBL	50	0.0 (0)	0.0 (0)	46.5 (52)	67.9 (71)	46.4 (50)	62.9 (74)	31.4 (43)	47.2 (60)	47.9 (31)	67.4 (47)
NBT	210	0.0 (0)	0.0 (0)	48.6 (37)	77.9 (59)	54.5 (35)	84.2 (56)	75.0 (46)	105.8 (73)	16.5 (20)	28.2 (34)
NBR	30	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	44.7 (0)	73.9 (9)
SBL	70	35.9 (~49.0)	57.8 (#76.1)	25.8 (40)	#47.1 (61)	29.1 (41)	#53.0 (64)	24.3 (35)	#47.0 (#59.9)	27.4 (43)	42.0 (63)
SBT	160	5.5 (5)	25.2 (24)	22.7 (33)	40.9 (53)	7.8 (29)	24.0 (47)	21.6 (38)	39.0 (60)	7.1 (38)	23.1 (62)
Hydro Road & Lakeshore Road East											
EBL	25	0.0 (0)	0.0 (m0.6)	0.0 (0)	0.0 (m0.1)	0.0 (0)	0.0 (m0.2)	0.0 (0)	0.0 (m0.2)	0.0 (0)	0.0 (m0.2)
EBT	200	123.2 (117)	158.4 (m148.0)	157.9 (149)	122.6 (89)	170.5 (160)	#325.3 (156)	64.4 (53)	55.7 (68)	149.4 (60)	72.2 (54)
EBR	50	23.3 (67)	59.1 (m#117.3)	13.3 (29)	25.6 (#100.6)	10.0 (32)	m17.6 (#82.6)	5.3 (37)	10.9 (m46.1)	3.0 (40)	8.9 (#125.1)

Movement	Storage Length (m)	Scenario 1: Rangeview & Lakeview: 10,000 units		Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units		Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units	
		No Ogden No Haig		Ogden connected No Haig		Ogden + Haig connected		Ogden + dual left at Lakefront Promenade No Haig		Ogden + Haig + dual left at Lakefront Promenade	
		50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue
WBL	25	26.3 (92)	41.7 (#153.1)	33.0 (86)	#67.9 (m#128.9)	30.9 (74)	51.0 (m78.3)	34.1 (80)	#91.0 (m#127.1)	16.7 (95)	m31.6 (m#139.4)
WBT	165	14.5 (136)	71.2 (121)	16.0 (138)	72.0 (130)	42.5 (98)	93.1 (m#138.1)	9.2 (60)	22.2 (64)	34.2 (90)	51.0 (m98.5)
NBL	85	101.8 (112)	136.0 (#173.0)	102.6 (118)	#151.9 (#185.0)	89.5 (93)	118.6 (#136.6)	83.7 (90)	#129.9 (#141.4)	82.7 (71)	#126.9 (98)
NBT	210	47.3 (0)	74.6 (1)	52.2 (0)	85.1 (18)	37.9 (0)	63.1 (0)	83.5 (7)	125.0 (32)	85.6 (0)	127.1 (0)
SBT	50	0.0 (0)	0.0 (2)	0.0 (0)	0.0 (2)	0.0 (0)	0.0 (2)	0.0 (0)	0.0 (2)	0.0 (0)	0.0 (2)
Lakeshore Road East & Haig Boulevard											
EBL	50	30.9 (28)	m48.0 (m40.9)	35.5 (33)	m48.7 (m43.6)	34.8 (24)	m42.6 (m31.6)	38.3 (34)	m54.0 (m48.4)	37.5 (24)	m54.0 (m#51.1)
EBT	165	29.7 (3)	27.3 (7)	22.7 (4)	37.7 (11)	50.5 (46)	67.2 (71)	24.2 (41)	55.2 (67)	62.5 (35)	98.5 (45)
EBR	50	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	8.3 (5)	m14.8 (m14.2)	0.0 (0)	0.0 (0)	12.5 (16)	m37.4 (21)
WBL	100	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	35.4 (33)	#94.1 (m34.3)	0.0 (0)	0.0 (0)	55.4 (43)	#119.9 (m49.8)
WBT	600	49.6 (68)	49.4 (110)	54.4 (94)	69.4 (m161.4)	63.0 (246)	86.4 (m#362.5)	54.6 (172)	76.4 (m220.1)	55.2 (177)	78.8 (m190.4)
NBL	45	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	45.7 (67)	67.3 (#89.6)	0.0 (0)	0.0 (0)	45.3 (61)	68.6 (#114.1)
NBT	210	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	22.0 (18)	42.0 (42)	0.0 (0)	0.0 (0)	17.1 (17)	43.4 (48)
SBT	325	0.0 (7)	0.0 (29)	0.0 (13)	0.6 (36)	23.3 (27)	39.5 (52)	0.0 (8)	13.8 (32)	22.8 (28)	40.2 (56)
Dixie Road & Lakeshore Road East											
EBL	165	123.5 (100)	189.2 (148)	103.2 (112)	205.4 (158)	149.8 (128)	214.8 (#169.7)	126.4 (102)	223.4 (161)	164.5 (116)	#244.3 (158)

Movement	Storage Length (m)	Scenario 1: Rangeview & Lakeview: 10,000 units		Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units		Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units	
		No Ogden No Haig		Ogden connected No Haig		Ogden + Haig connected		Ogden + dual left at Lakefront Promenade No Haig		Ogden + Haig + dual left at Lakefront Promenade	
		50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue
EBT	600	13.4 (103)	122.8 (144)	5.4 (144)	141.1 (171)	116.3 (128)	206.2 (192)	4.3 (121)	137.7 (136)	96.6 (95)	186.5 (135)
WBL	25	0.3 (1)	2.3 (4)	0.3 (1)	2.3 (4)	0.3 (1)	2.3 (4)	0.3 (1)	2.3 (4)	0.3 (1)	2.3 (4)
WBT	460	62.4 (132)	96.3 (#182.8)	77.6 (153)	117.7 (#193.3)	82.1 (159)	119.7 (#204.7)	80.6 (~171.7)	117.1 (#215.6)	85.4 (141)	117.1 (#180.6)
WBR	30	18.8 (26)	49.9 (57)	19.6 (27)	52.2 (54)	20.5 (27)	52.2 (55)	20.4 (28)	51.6 (57)	21.7 (28)	51.6 (57)
NBT	100	0.3 (2)	1.9 (7)	0.3 (2)	1.9 (7)	0.3 (2)	1.9 (7)	0.3 (2)	1.9 (7)	0.3 (2)	1.9 (7)
SBT	310	44.5 (72)	66.0 (101)	44.5 (72)	66.0 (101)	44.5 (72)	66.0 (101)	44.5 (72)	66.0 (101)	44.5 (72)	66.0 (101)
SBR	85	66.5 (159)	65.5 (194)	73.3 (192)	68.0 (#320.3)	76.2 (219)	75.2 (#353.1)	70.4 (200)	71.4 (#337.4)	63.7 (181)	71.6 (#314.1)
Lakefront Promenade & Rangeview Road											
EBL	15	1.0 (0)	4.3 (2)	2.1 (1)	7.2 (4)	2.9 (1)	8.7 (5)	2.9 (1)	8.6 (5)	2.3 (1)	7.3 (4)
EBT	0	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
WBL	15	0.2 (0)	1.4 (0)	2.2 (5)	7.3 (12)	1.8 (5)	6.3 (12)	2.4 (5)	7.4 (12)	1.3 (5)	5.1 (13)
WBT	0	9.7 (3)	28.3 (20)	2.0 (2)	18.2 (16)	0.7 (0)	16.9 (0)	1.6 (1)	20.1 (18)	1.6 (0)	20.5 (17)
NBL	15	4.5 (1)	13.2 (5)	0.7 (1)	3.1 (2)	0.3 (0)	1.6 (0)	0.6 (1)	3.0 (2)	0.6 (0)	3.0 (1)
NBT	0	12.0 (10)	29.1 (24)	11.3 (11)	27.9 (25)	8.8 (7)	21.0 (16)	13.5 (13)	34.1 (30)	16.3 (11)	41.9 (23)
SBL	15	0.6 (1)	2.9 (5)	0.7 (1)	3.0 (5)	0.6 (2)	2.7 (5)	0.8 (2)	3.5 (6)	0.6 (2)	3.0 (5)

Movement	Storage Length (m)	Scenario 1: Rangeview & Lakeview: 10,000 units		Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units		Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units		Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units	
		No Ogden No Haig		Ogden connected No Haig		Ogden + Haig connected		Ogden + dual left at Lakefront Promenade No Haig		Ogden + Haig + dual left at Lakefront Promenade	
		50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue	50th Queue	95th Queue
SBT	0	7.9 (17)	20.1 (39)	5.7 (13)	14.8 (27)	2.8 (10)	8.0 (20)	6.0 (13)	16.2 (29)	2.3 (16)	7.9 (34)

Notes:
1. XX (XX) –Weekday Morning Peak Hour (Weekday Afternoon Peak Hour)

Table 36 provides a summary of the external unsignalized intersection queuing results for traffic operations scenas 1, 2, 3A, 3B and 4.

TABLE 36 EXTERNAL UNSIGNALIZED INTERSECTION QUEUING SUMMARY (KEY MOVEMENTS)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units	Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units	Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units
	No Ogden No Haig	Ogden connected No Haig	Ogden + Haig connected	Dual left at Lakefront Promenade/No Haig	Dual left at Lakefront Promenade
	95th Queue	95th Queue	95th Queue	95th Queue	95th Queue
Montbeck Crescent /West Avenue & Lakeshore Road East					
EBL	0.3 (0.3)	0.4 (0.4)	0.4 (0.5)	0.4 (0.4)	0.5 (0.3)
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBL	0.4 (0.2)	0.4 (0.2)	0.5 (0.3)	0.4 (0.3)	0.4 (0.3)
WBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
NBL	0.0 (0.6)	0.0 (1.0)	0.0 (1.3)	0.0 (1.2)	0.0 (1.0)
NBTR	0.3 (0.1)	0.4 (0.2)	0.4 (0.2)	0.4 (0.2)	0.4 (0.1)
SBLTR	0.9 (1.7)	1.2 (2.3)	1.4 (2.9)	1.3 (2.4)	1.7 (1.9)
Lakeshore Road East & Greaves Avenue					
EBL	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBR	0.2 (0.5)	0.2 (0.4)	0.2 (0.5)	0.2 (0.5)	0.3 (0.5)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units	Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units	Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units
	No Ogden No Haig	Ogden connected No Haig	Ogden + Haig connected	Dual left at Lakefront Promenade/No Haig	Dual left at Lakefront Promenade
	95th Queue	95th Queue	95th Queue	95th Queue	95th Queue
Lakeshore Road East & Westmount Avenue					
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBR	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.3 (0.3)	0.3 (0.3)
Alexandra Avenue & Lakeshore Road East					
EBL	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBL	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
NBLTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBLTR	1.5 (1.4)	1.5 (1.3)	1.5 (1.2)	2.1 (2.1)	2.2 (2.0)
Lakeshore Road East & Meredith Avenue					
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units	Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units	Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units
	No Ogden No Haig	Ogden connected No Haig	Ogden + Haig connected	Dual left at Lakefront Promenade/No Haig	Dual left at Lakefront Promenade
	95th Queue	95th Queue	95th Queue	95th Queue	95th Queue
WBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBR	0.2 (0.3)	0.2 (0.4)	0.2 (0.5)	0.2 (0.4)	0.2 (0.3)
Lakeshore Road East & Edgeleigh Avenue					
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBR	0.1 (0.1)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.1)
Lakeshore Road East & Strathy Avenue					
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBR	0.3 (0.4)	0.3 (0.4)	0.3 (0.5)	0.3 (0.4)	0.3 (0.4)
Lakeshore Road East & Orchard Road					
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Movement	Scenario 1: Rangeview & Lakeview: 10,000 units	Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units	Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units
	No Ogden No Haig	Ogden connected No Haig	Ogden + Haig connected	Dual left at Lakefront Promenade/No Haig	Dual left at Lakefront Promenade
	95th Queue	95th Queue	95th Queue	95th Queue	95th Queue
SBR	1.0 (1.0)	1.2 (1.2)	1.2 (1.2)	1.2 (1.2)	1.2 (1.1)
Lakeshore Road E & Fergus Avenue					
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
EBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBT	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBTR	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBR	1.4 (1.5)	1.4 (1.5)	1.4 (1.5)	1.4 (1.5)	1.4 (1.6)

Notes:
1. XX (XX) –Weekday Morning Peak Hour (Weekday Afternoon Peak Hour

7.8.4 Queuing Assessment Internal Intersections

Table 37 provides a summary of the internal unsignalized intersection queuing results for Scenarios 1, 2, 3A, 3B and 4.

TABLE 37 INTERNAL UNSIGNALIZED INTERSECTION QUEUING SUMMARY (KEY MOVEMENTS)

Movement	Storage Length (m)	Scenario 1: Rangeview & Lakeview: 10,000 units	Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units	Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units
		No Ogden No Haig	Ogden connected No Haig	Ogden + Haig connected	Ogden + dual left at Lakefront Promenade No Haig	Ogden + Haig + dual left at Lakefront Promenade
		95th Queue	95th Queue	95th Queue	95th Queue	95th Queue
East Avenue & Street L						
WBL	15	0.6 (1.3)	0.4 (1.2)	0.3 (1.2)	0.5 (1.5)	0.2 (1.3)
WBR	15	8.7 (1.8)	4.8 (1.9)	6.1 (1.7)	6.8 (2.3)	5.3 (1.5)
NBTR	--	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBL	15	0.3 (1.4)	0.8 (2.1)	0.6 (2.2)	1.0 (2.6)	0.5 (2.1)
SBT	15	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Lakefront Promenade & Street L						
EBL	15	6.6 (2.2)	7.4 (3.1)	9.7 (3.5)	30.0 (7.6)	19.1 (5.0)
EBTR	--	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBL	15	0.1 (0.0)	1.1 (3.5)	0.7 (3.1)	1.6 (5.5)	0.5 (3.5)
WBTR	--	20.3 (12.3)	11.8 (7.0)	11.8 (4.6)	26.7 (12.3)	28.8 (12.2)
NBL	15	1.3 (0.5)	0.2 (0.2)	0.1 (0.0)	0.2 (0.2)	0.2 (0.0)
NBTR	--	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBL	15	0.5 (2.0)	1.0 (2.1)	1.0 (2.6)	1.4 (3.1)	1.1 (2.5)
SBTR	--	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Movement	Storage Length (m)	Scenario 1: Rangeview & Lakeview: 10,000 units	Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units	Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units
		No Ogden No Haig	Ogden connected No Haig	Ogden + Haig connected	Ogden + dual left at Lakefront Promenade No Haig	Ogden + Haig + dual left at Lakefront Promenade
		95th Queue	95th Queue	95th Queue	95th Queue	95th Queue
Ogden Avenue & Street L						
EBL	15	1.2 (0.2)	36.5 (35.0)	34.4 (23.2)	62.3 (52.5)	54.9 (29.8)
EBTR	--	4.5 (4.5)	9.3 (17.5)	5.1 (8.8)	8.5 (17.7)	8.0 (9.7)
WBL	15	0.9 (1.8)	3.1 (9.0)	1.5 (4.5)	3.3 (11.4)	1.3 (8.8)
WBTR	--	3.0 (2.3)	10.2 (10.7)	8.7 (7.3)	15.3 (18.9)	16.5 (14.4)
NBL	15	2.6 (1.9)	1.8 (1.9)	1.4 (1.3)	2.7 (2.8)	2.6 (2.7)
NBTR	--	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBL	15	0.0 (0.0)	0.8 (1.8)	0.7 (2.2)	0.8 (2.3)	0.7 (1.8)
SBTR	--	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Hydro Road & Street L						
EBL	15	47.9 (94.0)	107.2 (107.0)	51.9 (34.8)	99.8 (88.0)	62.7 (36.0)
EBR	15	0.0 (0.0)	0.6 (1.6)	0.4 (1.4)	0.7 (1.9)	0.3 (2.1)
NBL	15	0.5 (1.2)	2.1 (2.6)	1.5 (1.8)	2.2 (2.9)	2.3 (2.6)
NBT	15	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBTR	--	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
East Avenue & Rangeview Road						
WBL	15	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
WBR	15	6.0 (1.7)	2.0 (1.1)	1.8 (0.6)	2.3 (1.1)	2.0 (0.6)
NBTR	--	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Movement	Storage Length (m)	Scenario 1: Rangeview & Lakeview: 10,000 units	Scenario 2: Rangeview: 3,700 units Lakeview: 8,050 units	Scenario 3A: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 3B: Rangeview: 5,300 units Lakeview: 8,050 units	Scenario 4: Rangeview: 5,300 units Lakeview: 16,000 units
		No Ogden No Haig	Ogden connected No Haig	Ogden + Haig connected	Ogden + dual left at Lakefront Promenade No Haig	Ogden + Haig + dual left at Lakefront Promenade
		95th Queue	95th Queue	95th Queue	95th Queue	95th Queue
SBL	15	0.2 (0.5)	0.5 (0.8)	0.4 (0.9)	0.5 (1.0)	0.3 (0.8)
SBT	15	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.5 (1.0)	0.0 (0.0)
Hydro Road & Rangeview Road						
EBL	15	23.8 (55.1)	56.5 (72.2)	23.2 (21.6)	46.2 (56.2)	33.3 (25.0)
EBR	15	0.0 (0.0)	0.6 (1.6)	0.4 (1.3)	0.6 (1.8)	0.3 (2.0)
NBL	15	0.5 (1.1)	2.0 (2.5)	1.5 (1.7)	2.1 (2.6)	2.2 (2.5)
NBT	15	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
SBTR	--	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Notes:
1. XX (XX) –Weekday Morning Peak Hour (Weekday Afternoon Peak Hour)

7.9 TRAFFIC ANALYSIS SUMMARY

The updated traffic analysis assumed an auto driver mode share of 50% for Scenarios 1, 2, 3A and 3B and a 40% auto driver mode share for Scenario 4. The reduced auto driver mode share is reasonable, given the evolving transportation context of the study area. A summary of the results of the traffic analysis for each scenario is included in **Table 38** and identifies intersection movements at or near critical, or where extended queues are expected at the 50th percentile.

As shown in the traffic analysis summary, all v/c's in all scenarios are expected to operate at 1.0 or less. The queuing assessment confirms that the 50th percentile queues could exceed the available storage for some movements at external intersections. It is noted however that this type of queuing is typical in a busy urban environment, especially during peak periods of travel. It is recommended that the external intersections be monitored as development progresses, in order to determine if there are queuing concerns that need to be addressed in the future.

TABLE 38 TRAFFIC ANALYSIS SUMMARY

Intersection Operation	Existing	Scenario 1 (2031): 10,000 Units No Ogden No Haig	Scenario 2 (2041): 11,750 Units Ogden connected to Lakeshore Road (no Haig)	Scenario 3A (2041): 13,350 Units Ogden + Haig connected to Lakeshore Road	Scenario 3B (2041): 13,350 Units Ogden+ Dual NBL turns at Lakefront Promenade / Lakeshore Road (Haig not connected)	Scenario 4 (2041): 21,300 Units Ogden & Haig connected + dual NBL at Lakefront Promenade
Volume to Capacity (v/c)						
Signalized Intersections [1]	All movements ≤ 1.0	All movements ≤ 1.0	All movements ≤ 1.0	All movements ≤ 1.0	All movements ≤ 1.0	All movements ≤ 1.0
Unsignalized Intersections[1]	All movements ≤ 1.0	All movements ≤ 1.0	All movements ≤ 1.0	All movements ≤ 1.0	All movements ≤ 1.0	All movements ≤ 1.0
Queuing Results						
External Intersections: ***Movements where the 50th percentile queue could exceed available storage.***	• **Lakeshore & Cawthra**: EBR, AM & PM SBL, AM & PM	• **Lakeshore & Cawthra:** WBR AM • **Lakefront Promenade & Lakeshore:** WBL AM & PM • **Lakeshore & Hydro Road:** WBL, AM & PM NBL, AM & PM • **Lakeshore & Dixie:** SBR, PM	• **Lakeshore & Cawthra:** WBR, AM SBL, AM • **Lakeshore & Ogden:** SBL, PM • **Lakeshore & Hydro:** EBL, AM & PM WBL, AM & PM NBL, AM & PM • **Lakeshore & Dixie:** SBR, AM & PM	• **Lakeshore & Cawthra:** WBR, AM • **Lakeshore & Hydro:** WBL, AM & PM NBL, AM & PM , • **Lakeshore & Haig:** NBL, AM & PM • **Lakeshore & Dixie:** SBR, AM & PM	• **Lakeshore & Cawthra:** WBR, AM & PM • **Lakeshore & Lakefront Promenade:** WBL, PM • **Lakeshore & Hydro:** WBL, AM & PM NBL, PM • **Lakeshore & Haig:** NBL, AM & PM • **Lakeshore & Dixie:** SBR, AM & PM	• **Lakeshore & Hydro:** WBL, PM • **Lakeshore & Ogden:** WBT, AM • **Lakeshore & Dixie:** SBR, PM
Internal Intersections Queuing 50th Percentile[2]	--	--	--	--	--	--

Notes:

1. All movements operate with a v/c less than or equal to 1.0
2. Additional queuing concerns could arise at internal intersections, given that queue lengths for dedicated turning lanes were assessed with a tentative 15 metre storage length.

8.0 TRAFFIC CONTROL AND LANE CONFIGURATIONS

As per the modelling methodology outlined in the Terms of Reference and agreed to by all parties, an aggregate approach that considers the combined Site traffic for both the Rangeview and Lakeview sites has been undertaken as part of the traffic analysis. This approach allows for the reallocation of traffic volumes across the Site as residential densities are further refined and determined in future block and phasing plans.

Any determination of lane configuration and intersection control improvements reflect the existing block and phasing plan, which remains preliminary and will be finalized in future applications. The proposed lane configurations and traffic control have been determined on an overall basis (Rangeview + Lakeview) and appropriately reflect the OPA stage in the development process.

As the location and schedule of the phased development within both the Rangeview and Lakeview sites is currently unknown, it is challenging to accurately determine the assignment of internal traffic volumes prior to full build-out. However, as individual applications are submitted and traffic studies are updated, better information will become available regarding the location and phasing of both the Rangeview and Lakeview developments. When the traffic control and lane configurations are assessed in the future, the results will be considered relative to finalization of a block plan.

The future lane configuration and traffic control for the external intersections (Rangeview points of access along Lakeshore Road East) and internal intersections will be considered separately for the Rangeview and Lakeview sites at a later time, through future traffic impact study updates, when the timing and phasing of the development for each block can be confirmed.

It is noted that it will be important to implement a traffic monitoring program to assess the operation of the external and internal intersections, to confirm the appropriate lane configurations and traffic control.

For the above-noted reasons, a preliminary assessment of the external and internal intersections has been undertaken to consider the appropriate lane configuration and traffic control, **for Scenario 4 only** (2041 full build-out of Rangeview and Lakeview). The detailed assessments are reviewed in the next sections and include the following for both external and internal intersections:

- Proposed lane configuration, including recommendations for dedicated turning lanes;
- Assessment for all-way stop control (internal intersections only); and
- Assessment for a traffic signal (where it is determined that all-way stop control may need to be upgraded to a traffic signal).

8.1 EXTERNAL INTERSECTIONS

A more detailed assessment of the following external intersections along Lakeshore Road has been undertaken in regard to lane configuration and traffic control for Scenario 4 only:

- Lakeshore Road East & East Avenue
- Lakeshore Road East & Lakefront Promenade
- Lakeshore Road East & Ogden Avenue
- Lakeshore Road East & Hydro Road
- Lakeshore Road & Haig Avenue

8.1.1 Lakeshore Road East & East Avenue

The existing lane configuration at the signalized intersection of Lakeshore Road East at East Avenue already includes a dedicated eastbound right-turning lane and a dedicated westbound left-turning lane (future fully protected left-turn phase). No changes are proposed to the lane configurations on the east, west and north approaches of the intersection. The traffic analysis confirmed that the south approach on Rangeview Road should include a dedicated northbound left-turn lane (tentative minimum storage length of 40 metres), with a combined through/right-turn lane. As the intersection of Lakeshore Road East at East Avenue is already signalized, assessments for future traffic control were not undertaken.

8.1.2 Lakeshore Road East & Lakefront Promenade

The existing lane configuration at the signalized t-intersection of Lakeshore Road East at Lakefront Promenade, already includes a dedicated eastbound right-turning lane and a dedicated westbound left-turning lane (future fully protected left-turn phase). No changes are proposed to the lane configurations on the west approach of the intersection. The traffic analysis confirmed that the eastbound right-turn lane should be increased to a tentative minimum storage length of 200 metres and the south approach on Lakefront Promenade should include dual northbound left-turn lanes (tentative minimum storage length of 70 metres), with a combined through/right turn lane. As the intersection of Lakeshore Road East at Lakefront Promenade is already signalized, assessments for future traffic control were not undertaken.

8.1.3 Lakeshore Road East & Ogden Avenue

The existing lane configuration at the signalized intersection of Lakeshore Road East at Ogden Avenue, already includes a dedicated westbound left-turning lane (future fully protected left-turn phase). The traffic analysis confirmed that an eastbound right-turn lane should be constructed (tentative minimum storage length of 25 metres) and that the north approach on Ogden Avenue should include a dedicated northbound left-turning lane (tentative minimum storage length of 50 metres), a separate northbound through lane, with a dedicated right-turn lane (tentative minimum storage length of 30 metres). As the intersection of Lakeshore Road East at Ogden Avenue is already signalized, assessments for future traffic control were not undertaken.

8.1.4 Lakeshore Road East & Hydro Road

Proposed Lane Configuration

The existing lane configuration at the unsignalized intersection of Lakeshore Road East at Hydro Road, already includes a dedicated westbound left-turning lane (future fully protected left-turn phase) and a private driveway on the north approach. The traffic analysis confirmed that an eastbound right-turn lane should be constructed (tentative minimum storage length of 50 metres) and that the south approach on Hydro Road should include a dedicated northbound left-turning lane (tentative minimum storage length of 85 metres), with a combined northbound through/right-turn lane.

Traffic Signal Warrant Assessment

The results of the traffic signal warrant assessment for the 4-legged intersection at Lakeshore Road East and Hydro Road at full build-out in Scenario 4, is summarized in **Table 39**. The traffic signal warrant analysis demonstrates that the Lakeshore Road East / Hydro Road intersection meets **179% of the 150%** requirement in Scenario 4 at full-build-out of both Rangeview and Lakeview. As a traffic signal is **clearly warranted** at the intersection of Lakeshore Road East / Hydro Road, it is recommended that the intersection be monitored as development progresses such that the installation of the traffic signal could be installed when required.

TABLE 39 TRAFFIC SIGNAL WARRANTS: LAKESHORE ROAD/ HYDRO ROAD

Justification	Description	Minimum Requirement 2 or More Lanes Highways [Restricted Flow] 4-legged	Compliance		
			Sectional		Entire % (≥150)[1]
		Base	Actual Traffic Volumes	% of Required	
Scenario 4 (2041): Lakeshore Road & Hydro Road					
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	900	1892	210%	**179%**
	B. Vehicle volume, along minor streets (average hour)	170	280	165%	
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	900	1612	179%	
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)- left + highest through +peds	75[5]	191	255%	

Notes:

1. As both roads are future roads (future AM & PM peak volumes only), the warrant should be met with 150%.
2. 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
3. Section 2B assumes 100 pedestrians crossing Lakeshore Road East in each peak period.
4. Relevant OTM excerpts are provided in **Appendix K**
5. OTM Book 12 (Table 21) has been corrected as per MTO direction, to include a threshold volume of 75 for 2B for 2 or more lane highways.

8.1.5 Lakeshore Road East & Haig Boulevard

Proposed Lane Configuration

The existing lane configuration at the signalized t-intersection of Lakeshore Road East at Haig Boulevard, already includes a dedicated eastbound left-turning lane (future fully protected left-turn phase). With the development of Rangeview and Lakeview, the intersection of Lakeshore Road East at Haig Boulevard is proposed to become a 4-legged intersection with the addition of the south leg.

The traffic analysis confirmed that a westbound left-turn lane should be constructed (tentative minimum storage length of 100 metres) and that the south approach on Haig Boulevard should include a dedicated northbound left-turn lane (tentative minimum storage length of 45 metres), with a combined northbound through/right-turn lane. As the intersection of Lakeshore Road East at Haig Boulevard is already signalized, assessments for future traffic control were not undertaken.

8.2 INTERNAL INTERSECTIONS

It should be noted that the functional design of the internal intersections are preliminary, queue storage lengths may be change based on future updated traffic studies. The minimum storage length requirements were based on the expected 50th percentile queue results.

A more detailed assessment of the following internal intersections has been undertaken in regard to lane configuration and traffic control for Scenario 4 only:

- East Avenue & Street L
- East Avenue & Rangeview Road
- Lakefront Promenade & Street L
- Lakefront Promenade & Rangeview Road
- Ogden Avenue & Street L
- Ogden Avenue & Rangeview Road
- Hydro Road & Street L
- Hydro Road & Rangeview Road
- Rangeview Road & Street G

8.2.1 East Avenue & Street L

Proposed Lane Configuration

The traffic analysis confirmed that a dedicated southbound left-turn lane (tentative minimum storage length of 15 metres) should be constructed on the north approach of the intersection, with a dedicated westbound left-turn lane (tentative minimum storage length of 15 metres) on the east approach of the intersection. The northbound approach is recommended to be a shared through/right-turn lane.

All-way Stop Control Assessment

A warrant assessment for all-way stop control was completed for the future internal intersection of East Avenue at Street L, based on the Ontario Traffic Manual (OTM) Book 5 for a 3-legged intersection. Since East

Avenue is proposed to be a **Local** road, the minimum warrants for all-way stop control were considered as summarized in **Table 40.**

Although the intersection of East Avenue at Street L **does not meet** the warrants for all-way stop control, it is important to note that all-way stop control would provide a protected crossing for pedestrians and cyclists along East Avenue. For this reason, it is recommended that the intersection **initially operates with stop control only on Street L** but be monitored as development progresses such that the installation of all-way stop control could be considered if appropriate and if there are no southbound queuing concerns that would impact the intersection with Lakeshore Road East.

TABLE 40 ALL-WAY STOP CONTROL WARRANT: EAST AVENUE/ STREET L

Warrant	OTM Book 5 Minimum Requirement[1]	Predicted Average Hourly Volume	Warrants Met?
Total Vehicle Volume (average hourly - all approaches for each of 8 hours of the day)	200 vehicles/hour	162 vehicles/hour	**No**
Combined Vehicle + Pedestrian Volume on the Minor Street (average hourly for 8 hours of the day)	75 units	81 units[2]	**Yes**
Vehicle Volume Split (major road/minor road)	75%/25%	58%/42%	**Yes**
All-way stop control is close to being warranted			

Notes:
1. OTM Book 5 minimum warrants for local roads.
2. A pedestrian crossing volume of 25 pedestrians per hour (crossing East Avenue) was assumed.
3. Predicted average hourly volume calculation: (AM + PM)/4 (OTM Book 12).

8.2.2 East Avenue & Rangeview Road

Proposed Lane Configuration

The traffic analysis confirmed that a dedicated southbound left-turn lane (tentative minimum storage length of 15 metres) should be constructed on the north approach of the intersection, with a dedicated westbound left-turn lane (tentative minimum storage length of 15 metres) on the east approach of the intersection. The northbound approach is recommended to be a shared through/right-turn lane.

All-way Stop Control Assessment

A warrant assessment for all-way stop control was completed for the future internal intersection of East Avenue at Rangeview Road, based on the Ontario Traffic Manual (OTM) Book 5 for a 3-legged intersection. Since East Avenue is proposed to be a **Local** road, the minimum warrants for all-way stop control were considered as summarized in **Table 41.**

Although the intersection of East Avenue at Rangeview Road **does not meet** the warrants for all-way stop control, it is important to note that all-way stop control would provide a protected crossing for pedestrians and cyclists along East Avenue. For this reason, it is recommended that the intersection **initially operates with**

stop control only on Rangeview Road but be monitored as development progresses such that the installation of all-way stop control could be considered if appropriate.

TABLE 41 ALL-WAY STOP CONTROL WARRANT: EAST AVENUE/ RANGEVIEW ROAD

Warrant	OTM Book 5 Minimum Requirement[1]	Predicted Average Hourly Volume	Warrants Met?
Total Vehicle Volume (average hourly - all approaches for each of 8 hours of the day)	200 vehicles/hour	64 vehicles/hour	**No**
Combined Vehicle + Pedestrian Volume on the Minor Street (average hourly for 8 hours of the day)	75 units	40 units[2]	**No**
Vehicle Volume Split (major road/minor road)	75%/25%	57%/43%	**Yes**
All-way stop control is not warranted			

Notes:
1. OTM Book 5 minimum warrants for local roads.
2. A pedestrian crossing volume of 25 pedestrians per hour (crossing East Avenue) was assumed.
3. Predicted average hourly volume calculation: (AM + PM)/4 (OTM Book 12).

8.2.3 Lakefront Promenade & Street L

Proposed Lane Configuration

The traffic analysis confirmed that dedicated left-turning lanes (tentative minimum storage length of 15 metres) are required on all approaches of the intersection, with a combined through/right-turn lane all approaches of the intersection.

All-way Stop Control Assessment

A warrant assessment for all-way stop control was completed for the future internal intersection of Lakefront Promenade and Street L, based on the Ontario Traffic Manual (OTM) Book 5 for a 4-legged intersection. Since Lakefront Promenade is proposed to be a **Major Collector**, the minimum warrants for all-way stop control were considered as summarized in **Table 42**.

Although the intersection of Lakefront Promenade and Street L is **close but does not meet** the warrants for all-way stop control, it is important to note that all-way stop control would provide a protected crossing for pedestrians and cyclists along Lakefront Promenade. For this reason, it is recommended that the intersection **initially operates with stop control only on Street L** but be monitored as development progresses such that the installation of all-way stop control could be considered if appropriate and if there are no southbound queuing concerns that would impact the intersection with Lakeshore Road East.

TABLE 42 ALL-WAY STOP CONTROL WARRANT: LAKEFRONT PROMENADE/ STREET L

Warrant	OTM Book 5 Minimum Requirement[1]	Predicted Average Hourly Volume	Warrants Met?
Total Vehicle Volume (average hourly - all approaches for each of 8 hours of the day)	375 vehicles/hour	662 vehicles/hour	**Yes**
Combined Vehicle + Pedestrian Volume on the Minor Street (average hourly for 8 hours of the day)	150 units	197 units[2]	**Yes**
Vehicle Volume Split (major road/minor road)	70%/30%	78%/22%	**No**
All-way stop control is close to being warranted			

Notes:
1. OTM Book 5 minimum warrants for collector roads.
2. A pedestrian crossing volume of 100 pedestrians per hour (crossing Lakefront Promenade) was assumed.
3. Predicted average hourly volume calculation: (AM + PM)/4 (OTM Book 12).

8.2.4 Lakefront Promenade & Rangeview Road

Proposed Lane Configuration

The traffic analysis confirmed that dedicated left-turning lanes (tentative minimum storage length of 15 metres) are required on all approaches of the intersection, with a combined through/right-turn lane all approaches of the intersection.

All-way Stop Control Assessment

A warrant assessment for all-way stop control was completed for the future internal intersection of Lakefront Promenade and Rangeview Road, based on the Ontario Traffic Manual (OTM) Book 5 for a 4-legged intersection. Since Lakefront Promenade is proposed to be a **Major Collector**, the minimum warrants for all-way stop control were considered as summarized in **Table 43.**

Although the intersection of Lakefront Promenade and Rangeview is **very close but does not meet** the warrants for all-way stop control, it is important to note that all-way stop control would provide a protected crossing for pedestrians and cyclists along Lakefront Promenade. For this reason, it is recommended that the intersection **initially operates with all-way stop control** and continue to be monitored to determine if a traffic signal is required.

TABLE 43 ALL-WAY STOP CONTROL WARRANT: LAKEFRONT PROMENADE/ RANGEVIEW ROAD

Warrant	OTM Book 5 Minimum Requirement[1]	Predicted Average Hourly Volume	Warrants Met?
Total Vehicle Volume (average hourly - all approaches for each of 8 hours of the day)	375 vehicles/hour	493 vehicles/hour	**Yes**
Combined Vehicle + Pedestrian Volume on the Minor Street (average hourly for 8 hours of the day)	150 units	174 units[2]	**Yes**
Vehicle Volume Split (major road/minor road)	70%/30%	75%/25%	**No**
All-way stop control is close to being warranted			

Notes:
1. OTM Book 5 minimum warrants for collector roads.
2. A pedestrian crossing volume of 100 pedestrians per hour (crossing Lakefront Promenade) was assumed.
3. Predicted average hourly volume calculation: (AM + PM)/4 (OTM Book 12).

Traffic Signal Warrant Assessment

The results of the traffic signal warrant assessment for the new 4-legged intersection at Lakefront Promenade and Rangeview Road at full build-out in Scenario 4, is summarized in **Table 44**.

The traffic signal warrant analysis demonstrates that the Lakefront Promenade / Rangeview Road intersection meets **68% of the 150%** requirement in Scenario 4 at full-build-out of both Rangeview and Lakeview.

Although a traffic signal is **not technically warranted** at the intersection of Lakefront Promenade / Rangeview Road, it is recommended that the intersection be monitored as development progresses such that the installation of traffic signal could be considered when appropriate. All-way stop control should be installed as an interim measure at the intersection of Lakefront Promenade and Rangeview Road, until monitoring of traffic volumes and updated traffic studies indicate that a traffic signal is required.

TABLE 44 TRAFFIC SIGNAL WARRANTS: LAKEFRONT PROM/RANGEVIEW ROAD

Justification	Description	Minimum Requirement 1 Lane Highways [Restricted Flow] 4-legged	Compliance		
			Sectional		Entire % (≥150)[1]
		Base	Actual Traffic Volumes	% of Required	
Scenario 4 (2041): Lakefront Promenade & Rangeview Road					
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	720	493	**68%**	**68%**
	B. Vehicle volume, along minor streets (average hour)	170	124	**73%**	
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	720	369	**51%**	
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)- left + highest through +peds	75	66	**87%**	

Notes:
1. As both roads are future roads (future AM & PM peak volumes only), the warrant should be met with 150%.
2. 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
3. Section 2B assumes 100 pedestrians crossing Lakefront Promenade in each peak period.
4. Relevant OTM excerpts are provided in **Appendix K.**

8.2.5 Rangeview Road & Street G

Proposed Lane Configuration

The traffic analysis confirmed that a combined left/through/right-lane configuration is appropriate for all approaches of this t-intersection.

All-way Stop Control Assessment

A warrant assessment for all-way stop control was completed for the future internal intersection of Rangeview Road at Street G, based on the Ontario Traffic Manual (OTM) Book 5 for a 3-legged intersection. Since Rangeview Road is proposed to be a **Local** road, the minimum warrants for all-way stop control were considered as summarized in **Table 45.**

Although the intersection of Rangeview Road & Street G **does not meet** the warrants for all-way stop control, it is important to note that all-way stop control would provide a protected crossing for pedestrians and cyclists along Rangeview Road. For this reason, it is recommended that the intersection **initially operates with stop control only on Street G** but be monitored as development progresses such that the installation of all-way stop control could be considered if appropriate.

TABLE 45 ALL-WAY STOP CONTROL WARRANT: RANGEVIEW ROAD & STREET G

Warrant	OTM Book 5 Minimum Requirement[1]	Predicted Average Hourly Volume	Warrants Met?
Total Vehicle Volume (average hourly - all approaches for each of 8 hours of the day)	200 vehicles/hour	193 vehicles/hour	**No**
Combined Vehicle + Pedestrian Volume on the Minor Street (average hourly for 8 hours of the day)	75 units	200 units[2]	**Yes**
Vehicle Volume Split (major road/minor road)	75%/25%	91%/9%	**No**
All-way stop control is not warranted			

Notes:
1. OTM Book 5 minimum warrants for local roads.
2. A pedestrian crossing volume of 50 pedestrians per hour (crossing Rangeview Road) was assumed.
3. Predicted average hourly volume calculation: (AM + PM)/4 (OTM Book 12).

8.2.6 Ogden Avenue & Street L

Proposed Lane Configuration

The traffic analysis confirmed that dedicated left-turn lanes (tentative minimum storage length of 15 metres) are required on all approaches of the intersection, with a combined through/right-turn lane on all approaches of the intersection.

All-way Stop Control Assessment

A warrant assessment for all-way stop control was completed for the future internal intersection of Ogden Avenue and Street L, based on the Ontario Traffic Manual (OTM) Book 5 for a 4-legged intersection. Since Ogden Avenue is proposed to be a **Major Collector**, the minimum warrants for all-way stop control were considered as summarized in **Table 46.**

Although the intersection of Ogden Avenue and Street L is **close but does not meet** the warrants for all-way stop control, it is important to note that all-way stop control would provide a protected crossing for pedestrians and cyclists along Ogden Avenue. For this reason, it is recommended that the intersection **initially operates with stop control only on Street L** but be monitored as development progresses such that the installation of all-way stop control could be considered if appropriate and if there are no southbound queuing concerns that would impact the intersection with Lakeshore Road East.

TABLE 46 ALL-WAY STOP CONTROL WARRANT: OGDEN AVENUE/ STREET L

Warrant	OTM Book 5 Minimum Requirement[1]	Predicted Average Hourly Volume	Warrants Met?
Total Vehicle Volume (average hourly - all approaches for each of 8 hours of the day)	375 vehicles/hour	624 vehicles/hour	**Yes**
Combined Vehicle + Pedestrian Volume on the Minor Street (average hourly for 8 hours of the day)	150 units	221 units[2]	**Yes**
Vehicle Volume Split (major road/minor road)	70%/30%	73%27/%	**No**
All-way stop control is close to being warranted			

Notes:
1. OTM Book 5 minimum warrants for collector roads.
2. A pedestrian crossing volume of 100 pedestrians per hour (crossing Ogden Avenue) was assumed.
3. Predicted average hourly volume calculation: (AM + PM)/4 (OTM Book 12).

Traffic Signal Warrant Assessment

The results of the traffic signal warrant assessment for the new 4-legged intersection at Ogden Avenue and Street L at full build-out in Scenario 4, is summarized in **Table 47**. The traffic signal warrant analysis

demonstrates that the Lakefront Promenade / Rangeview Road intersection meets **87% of the 150%** requirement in Scenario 4 at full-build-out.

Although a traffic signal is **not technically warranted** at the intersection of Ogden Avenue and Street L, it is recommended that the intersection be monitored as development progresses such that the installation of traffic signal could be considered when appropriate. It is likely that all-way stop control would be installed as an interim measure at the intersection of Ogden Avenue and Street L, until monitoring of traffic volumes and updated traffic studies indicate that a traffic signal is required.

TABLE 47 TRAFFIC SIGNAL WARRANTS: OGDEN AVENUE/STREET L

Justification	Description	Minimum Requirement 1 Lane Highways [Restricted Flow] 4-legged	Compliance		
			Sectional		Entire % (≥150)[1]
		Base	Actual Traffic Volumes	% of Required	
Scenario 4 (2041): Ogden Avenue & Street L					
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	720	624	**87%**	**87%**
	B. Vehicle volume, along minor streets (average hour)	170	171	**101%**	
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	720	453	**63%**	
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)- left + highest through +peds	75	142	**189%**	

Notes:
1. As both roads are future roads (future AM & PM peak volumes only), the warrant should be met with 150%.
2. 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
3. Section 2B assumes 100 pedestrians crossing Ogden Avenue in each peak period.
4. Relevant OTM excerpts are provided in **Appendix K**.

8.2.7 Ogden Avenue & Rangeview Road

Proposed Lane Configuration

The traffic analysis confirmed that dedicated left-turn lanes (tentative minimum storage length of 15 metres) are required on all approaches of the intersection, with a combined through/right-turn lane on all approaches of the intersection.

All-way Stop Control Assessment

A warrant assessment for all-way stop control was completed for the future internal intersection of Ogden Avenue and Rangeview Road, based on the Ontario Traffic Manual (OTM) Book 5 for a 4-legged intersection. Since Ogden Avenue is proposed to be a **Major Collector**, the minimum warrants for all-way stop control were considered as summarized in **Table 48.**

Although the intersection of Ogden Avenue and Rangeview is **very close but does not meet** the warrants for all-way stop control, it is important to note that all-way stop control would provide a protected crossing for pedestrians and cyclists along Ogden Avenue. For this reason, it is recommended that the intersection **initially operate with all-way stop control** and continue to be monitored to determine if a traffic signal is required.

TABLE 48 ALL-WAY STOP CONTROL WARRANT: OGDEN AVENUE/ RANGEVIEW ROAD

Warrant	OTM Book 5 Minimum Requirement[1]	Predicted Average Hourly Volume	Warrants Met?
Total Vehicle Volume (average hourly - all approaches for each of 8 hours of the day)	375 vehicles/hour	600 vehicles/hour	**Yes**
Combined Vehicle + Pedestrian Volume on the Minor Street (average hourly for 8 hours of the day)	150 units	193 units[2]	**Yes**
Vehicle Volume Split (major road/minor road)	70%/30%	76%/24%	**No**
All-way stop control is close to being warranted			

Notes:
1. OTM Book 5 minimum warrants for collector roads.
2. A pedestrian crossing volume of 100 pedestrians per hour (crossing Ogden Avenue) was assumed.
3. Predicted average hourly volume calculation: (AM + PM)/4 (OTM Book 12)

Traffic Signal Warrant Assessment

The results of the traffic signal warrant assessment for the new 4-legged intersection at Ogden Avenue and Rangeview Road at full build-out in Scenario 4, is summarized in **Table 49.** The traffic signal warrant analysis demonstrates that the Ogden Avenue / Rangeview Road intersection meets **83% of the 150%** requirement in Scenario 4 at full-build-out of both Ogden Avenue and Rangeview Road.

Although a traffic signal is **not technically warranted** at the intersection of Ogden Avenue and Rangeview Road, it is recommended that the intersection be monitored as development progresses such that the

installation of traffic signal could be considered when appropriate. It is recommended that all-way stop control be installed as an interim measure at the intersection of Ogden Avenue and Rangeview Road, until monitoring of traffic volumes and updated traffic studies indicate that a traffic signal is required.

TABLE 49 TRAFFIC SIGNAL WARRANTS: OGDEN AVENUE/RANGEVIEW ROAD

Justification	Description	Minimum Requirement 1 Lane Highways [Restricted Flow] 4-legged	Compliance		
			Sectional		Entire % (≥150)[1]
		Base	Actual Traffic Volumes	% of Required	
Scenario 4 (2041): Ogden Avenue & Rangeview Road					
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	720	600	83%	**83%**
	B. Vehicle volume, along minor streets (average hour)	170	143	84%	
2. Delay to Cross Traffic	A. Vehicle volume, major street (average hour)	720	457	64%	
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)- left + highest through +peds	75	128	171%	

Notes:
1. As both roads are future roads (future AM & PM peak volumes only), the warrant should be met with 150%.
2. 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
3. Section 2B assumes 100 pedestrians crossing Ogden Avenue in each peak period.
4. Relevant OTM excerpts are provided in **Appendix K**.

8.2.8 Hydro Road (Coveview) & Street L

Proposed Lane Configuration

The traffic analysis confirmed that a dedicated northbound left-turn lane (tentative minimum storage length of 15 metres) is required along Hydro Road, with a dedicated left-turn lane (tentative minimum length of 15 metres) on the west approach of the t-intersection.

All-way Stop Control Assessment

A warrant assessment for all-way stop control was completed for the future internal intersection of Hydro Road at Street L, based on the Ontario Traffic Manual (OTM) Book 5 for a 3-legged intersection. Since Hydro Road is proposed to be a **Major Collector**, the minimum warrants for all-way stop control were considered as summarized in **Table 50.**

Although the intersection of Hydro Road at Street L is **does not meet the warrants** for all-way stop control, it is important to note that all-way stop control would provide a protected crossing for pedestrians and cyclists along Ogden Avenue. For this reason, it is recommended that the intersection **initially operate with stop control only on Street L** but be monitored as development progresses such that the installation of all-way stop control could be considered if appropriate and if there are no southbound queuing concerns that would impact the intersection with Lakeshore Road East.

TABLE 50 ALL-WAY STOP CONTROL WARRANT: HYDRO ROAD/ STREET L

Warrant	OTM Book 5 Minimum Requirement[1]	Predicted Average Hourly Volume	Warrants Met?
Total Vehicle Volume (average hourly - all approaches for each of 8 hours of the day)	375 vehicles/hour	586 vehicles/hour	**Yes**
Combined Vehicle + Pedestrian Volume on the Minor Street (average hourly for 8 hours of the day)	150 units	121 units[2]	**No**
Vehicle Volume Split (major road/minor road)	75%/25%	82%/18%	**No**
All-way stop control is not warranted			

Notes:
1. OTM Book 5 minimum warrants for collector roads.
2. A pedestrian crossing volume of 25 pedestrians per hour (crossing Hydro Road) was assumed.
3. Predicted average hourly volume calculation: (AM + PM)/4 (OTM Book 12).

8.2.9 Hydro Road (Coveview) & Rangeview Road

Proposed Lane Configuration

The traffic analysis confirmed that a dedicated northbound left-turn lane (tentative minimum storage length of 15 metres) is required along Hydro Road, with a dedicated left-turn lane (tentative minimum length of 15 metres) on the west approach of the t-intersection.

All-way Stop Control Assessment

A warrant assessment for all-way stop control was completed for the future internal intersection of Hydro Road at Rangeview Road, based on the Ontario Traffic Manual (OTM) Book 5 for a 3-legged intersection. Since Hydro Road is proposed to be a **Major Collector**, the minimum warrants for all-way stop control were considered as summarized in **Table 51.**

Although the intersection of Hydro Road at Rangeview Road **does not meet** the warrants for all-way stop control, it is important to note that all-way stop control would provide a protected crossing for pedestrians and cyclists along Hydro Road. For this reason, it is recommended that the intersection **initially operate with stop control only on Rangeview Road** but be monitored as development progresses such that the installation of all-way stop control could be considered if appropriate.

TABLE 51 ALL-WAY STOP CONTROL WARRANT: HYDRO ROAD/ RANGEVIEW ROAD

Warrant	OTM Book 5 Minimum Requirement[1]	Predicted Average Hourly Volume	Warrants Met?
Total Vehicle Volume (average hourly - all approaches for each of 8 hours of the day)	375 vehicles/hour	524 vehicles/hour	**Yes**
Combined Vehicle + Pedestrian Volume on the Minor Street (average hourly for 8 hours of the day)	150 units	106 units[2]	**No**
Vehicle Volume Split (major road/minor road)	75%/25%	82%/18%	**No**
All-way stop control is not warranted			

Notes:
1. OTM Book 5 minimum warrants for collector roads.
2. A pedestrian crossing volume of 25 pedestrians per hour (crossing Hydro Road) was assumed.
3. Predicted average hourly volume calculation: (AM + PM)/4 (OTM Book 12).

9.0 VISSIM TRAFFIC ANALYSIS

A VISSIM traffic analysis was undertaken by BA Group as part of the updated report in order to confirm and validate the Synchro results of the traffic analysis within this report. It is noted that as Synchro generally evaluates study area intersections in isolation, the VISSIM results differ slightly as offsets and traffic flow between intersections have been considered.

9.1 VISSIM MODEL PARAMETERS

9.1.1 Overview of Study Area

A VISSIM microsimulation analysis has been undertaken for existing conditions and the updated Scenario 4 (Rangeview with 5,300 units and Lakeview with 16,000 units). The study area includes a portion of the Lakeshore Road East corridor from Cawthra Road in the west to Dixie Road in the east. Along the Lakeshore Road East corridor, the following 7 intersections were included in the VISSIM analysis:

1. Lakeshore Road East & Cawthra Road
2. Lakeshore Road East & East Avenue
3. Lakeshore Road East & Lakefront Promenade
4. Lakeshore Road East & Hydro Road
5. Lakeshore Road East & Ogden Avenue
6. Lakeshore Road East & Haig Boulevard
7. Lakeshore Road East & Dixie Road

9.1.2 Model Development

9.1.2.1 Scope and Parameters

A list of assumptions considered for the VISSIM model is as follows:

The VISSIM analysis scenarios are outlined below and summarized in **Table 52**. These are the same scenarios that were analyzed within Synchro, as described in **Section 7.0**.

- Existing Conditions: 55% auto driver mode share; and
- Scenario 4 (2041): 40% auto driver mode share (Rangeview with 5,300 units and Lakeview with 16,000 units).

TABLE 52 VISSIM ANALYSIS SCENARIOS

Development	MODELLED WITH VISSIM	
	Existing Conditions	Scenario 4 (2041): All road improvements and connections in place 40% auto driver mode share
Rangeview + Lakeview + Serson	N/A	5,300 Rangeview units + 100% non-residential 16,000 Lakeview units + 1.7 M ft^2 non-residential 100%
Total	**--**	**21,300 units**

- **Study Periods:** AM and PM peak hour.
- **Traffic Volumes:** converted into static traffic volumes (same traffic volumes as used for the scenarios noted above in the Synchro model).
- **Traffic Signal Timings:** Same traffic signal timings as used in Synchro for the scenarios noted above and optimized accordingly, to mitigate corridor congestion due to queues spilling back along the corridor.

9.1.2.2 Unbalanced Traffic Volumes

As part of the updated traffic analysis, an update to the turning movement counts and traffic signal timings was undertaken for the existing conditions, including within the VISSIM model. In order to address the volume balancing issue and to replicate the VISSIM model as close as possible to the Synchro analysis model, BA Group's VISSIM model placed midblock driveways ("dummy intersections") that subtract or add vehicles as required within the midblock to maintain the projected volumes at each intersection. This balancing approach was necessary to allow a comparison between the VISSIM analysis with the Synchro results at the intersection level.

9.1.2.3 Coding

The specific parameters and the range of values assigned within the VISSIM traffic simulation model are as follows:

- Desired and Reduced Speeds
    - Right-Turns: 15 to 20 km/h
    - Left-Turns: 20 to 25 km/h
- Maximum and Desired Acceleration
    - Maximum auto acceleration: 3.5 m/s^2
    - Desired auto acceleration: 3.5 m/s^2
    - Maximum auto deceleration: -4 m/s^2
    - Desired auto deceleration: -2.75 m/s^2
- Wiedemann 74 Driving Behaviour Parameters
    - Average Standstill Distance: 2 m
    - Additive Safety Distance Parameter: 2.33 m
    - Multiplicative Safety Distance Parameter: 3.33 m

9.1.3 Outputs and Assessment Measures

9.1.3.1 Delay

Within VISSIM, delay is measured as the difference in travel time between a vehicle completing a movement through an intersection unimpeded (aside from a reduced turning speed) versus the average travel time experienced by a vehicle completing the same movement within the simulation.

Simulated vehicle travel times were obtained by including vehicle detectors within the model, upstream and downstream of all intersections on all approaches. Simulation travel time per movement is the time elapsed between when a vehicle crosses the upstream detector on the approach leg and the downstream detector on the departure leg. The reported delay time per movement is calculated as the difference between the unimpeded travel time and the average travel time of all vehicles making the specified movement within the simulated hour, across all simulations runs.

9.1.3.2 Vehicle Queue Lengths

Queue lengths were calculated in VISSIM based on sample measurements taken at each intersection approach in 15-second intervals. Queue definition parameters within the model is set as follows:

- Queue start speed threshold = < 5 km/h
- Queue end speed threshold = > 10 km/h
- Maximum queue headway = 20 m
- Maximum queue length = 500 m

The reporting of the queue lengths provides the 50th, 85th and 95th percentile maximum queues. It is important to note that these percentile queues are not equivalent to the Synchro results, but rather represent

the percentile of the maximum queue of the 15-second interval **within** the 5 simulation runs. It should be noted that the method in which VISSIM defines the queue, allows for the full impact of shockwaves to be captured in the queuing analysis, such that queues may be longer than the values presented within the Synchro analysis.

9.1.3.3 GEH

The GEH measure is a tool used to evaluate the fit between the simulated and observed flows within the VISSIM model. As outlined in the Ministry Transportation Ontario (MTO) simulation guidelines, a GEH value of less than 5.0 is desirable.

As such, GEH values were calculated by comparing turning movements as produced from the VISSIM model with the projected traffic volumes for each scenario. All GEH values are lower than 5.0 for all movements within the study area, indicating that the VISSIM model accurately reflects the data collected in the field. The detailed VISSIM outputs are available upon request.

9.2 UPDATED VISSIM RESULTS

9.2.1 Existing conditions Calibration and Validation

As requested by the City, a calibration and validation of the existing VISSIM model has been undertaken to reflect travel behaviour in the study area as best as possible.

9.2.1.1 Validation: GEH values

A comparison of projected traffic volumes for each scenario, morning and afternoon peak hour, versus the VISSIM modelled volumes were used to calculate the GEH values. As shown **Table 55,** as none of the GEH values are greater than the recommended maximum of 5.0, the fit between the simulated and observed flows within the VISSIM model is appropriate.

TABLE 53 EXISTING VOLUME COMPARISON INPUT VS. MODELLED

Movement	Existing Conditions – AM Peak Hour			Existing Conditions - PM Peak Hour		
	Modelled Volume	Input Volume	GEH	Modelled Volume	Input Volume	GEH
Lakeshore Road & Cawthra Road						
NBL	1	1	0.4	3	3	0.0
NBT	0	0	0.0	7	6	0.4
NBR	2	1	0.7	5	3	1.0
WBL	3	1	1.6	8	1	3.4
WBT	578	608	1.2	825	806	0.7
WBR	151	163	1.0	196	192	0.3
SBL	292	284	0.5	284	274	0.6
SBT	3	3	0.1	0	0	0.0
SBR	502	507	0.2	532	536	0.2
EBL	469	462	0.3	415	406	0.5

Movement	Existing Conditions – AM Peak Hour			Existing Conditions - PM Peak Hour		
	Modelled Volume	Input Volume	GEH	Modelled Volume	Input Volume	GEH
EBT	784	777	0.3	780	777	0.1
EBR	1	2	0.5	1	1	0.2
Lakeshore Road & East Avenue						
NBL	20	20	0.0	21	20	0.3
NBT	0	0	0.0	10	13	0.8
NBR	9	9	0.0	10	10	0.1
WBL	13	12	0.3	0	1	0.7
WBT	780	817	1.3	1117	1080	1.1
WBR	8	9	0.3	94	86	0.9
SBL	8	9	0.3	8	9	0.4
SBT	0	0	0.0	1	1	0.4
SBR	4	4	0.0	6	6	0.2
EBL	3	3	0.2	19	16	0.7
EBT	1005	1003	0.1	920	899	0.7
EBR	53	49	0.6	31	28	0.6
Lakeshore Road & Lakefront Promenade						
NBL	26	30	0.8	121	124	0.3
NBR	15	16	0.4	46	44	0.3
WBL	31	31	0.0	48	46	0.3
WBT	806	839	1.2	1151	1137	0.4
EBT	948	940	0.3	832	814	0.6
EBR	64	60	0.5	93	84	1.0
Lakeshore Road & Ogden Road						
NBL	1	1	0.0	4	3	0.4
NBT	0	0	0.0	0	1	1.0
NBR	0	0	0.0	6	4	0.8
WBL	4	4	0.2	1	1	0.2
WBT	760	765	0.2	1160	1163	0.1
WBR	71	71	0.0	66	64	0.3
SBL	68	70	0.2	39	42	0.5
SBT	0	0	0.0	1	1	0.2
SBR	77	83	0.6	32	33	0.2
EBL	80	86	0.7	45	47	0.3
EBT	849	881	1.1	802	817	0.5
EBR	3	3	0.0	2	2	0.3
Lakeshore Road & Hydro Road						
NBL	14	13	0.2	16	20	0.8
NBT	0	0	0.0	0	0	0.0
NBR	25	26	0.3	65	71	0.7
WBL	44	50	0.9	18	16	0.4
WBT	823	830	0.3	1188	1209	0.6

Movement	Existing Conditions – AM Peak Hour			Existing Conditions - PM Peak Hour		
	Modelled Volume	Input Volume	GEH	Modelled Volume	Input Volume	GEH
WBR	0	2	1.7	2	3	0.4
SBL	5	5	0.2	1	1	0.2
SBT	0	0	0.0	0	0	0.0
SBR	2	2	0.3	0	0	0.0
EBL	0	0	0.0	3	1	1.2
EBT	917	914	0.1	896	881	0.5
EBR	29	27	0.3	9	3	2.3
Lakeshore Ave & Haigh Boulevard						
WBT	846	862	0.5	1184	1168	0.5
WBR	52	55	0.4	84	85	0.1
SBL	42	44	0.3	30	31	0.3
SBR	26	25	0.1	22	21	0.2
EBL	17	17	0.0	24	25	0.2
EBT	933	932	0.0	937	919	0.6
Lakeshore Road & Dixie Road						
NBL	1	1	0.2	4	4	0.0
NBT	0	0	0.0	3	3	0.0
NBR	0	0	0.0	4	4	0.0
WBL	0	1	0.7	1	3	1.2
WBT	653	650	0.1	887	891	0.1
WBR	219	222	0.2	246	244	0.1
SBL	138	141	0.2	246	244	0.1
SBT	2	1	0.7	3	3	0.2
SBR	247	245	0.1	314	317	0.2
EBL	276	292	0.9	263	269	0.4
EBT	701	661	1.5	688	672	0.6
EBR	11	11	0.1	7	10	0.9

9.2.1.2 Calibration: Corridor Travel Times

A calibration of the existing model was undertaken using API travel time from the existing traffic from Cawthra Avenue to Dixie Road, for both directions during morning and afternoon peak hour. In order to reflect existing conditions, traffic signal timings offsets have been adjusted to match travel time in between intersections, as well to match the overall corridor travel time. **Table 54** show the comparison in between API data vs Simulation results. Detailed analysis of the travel time calibration is provided in **Appendix L**.

TABLE 54 TRAVEL TIME CALIBRATION

Corridor Segment	Analysis Period	Direction	Google API Range (s)	VISSIM Simulation Output Range (s)
Lakeshore Rd between Lorne Park Road & Hurontario Street	AM Peak	EB	155-207-323	155-235-420
		WB	157-221-358	152-244-449
	PM Peak	EB	158-226-377	154-235-420
		WB	185-273-462	157-275-491

9.2.2 Scenario 4 (2041): Rangeview with 5,300 Residential Units and 16,000 Lakeview Residential Units

9.2.2.1 Scenario 4: GEH Values

A comparison of projected traffic volumes for each scenario versus the VISSIM modelled volumes were used to calculate the GEH values. As shown **Table 55,** since none of the GEH values are greater than the recommended maximum of 5.0, the fit between the simulated and observed flows within the VISSIM model is appropriate.

TABLE 55 VISSIM SCENARIO 4: VOLUME COMPARISON INPUT VS. MODELLED 2041

Scenario 4	Future Total AM Peak Hour Rangeview with 5,300 units Lakeview with 16,000 units Total = 21,300 Units 40% auto driver share			Future Total PM Peak Hour Rangeview with 5,300 units Lakeview with 16,000 units Total = 21,300 Units 40% auto driver share		
Movement	**Modelled Volume**	**Input Volume**	**GEH**	**Modelled Volume**	**Input Volume**	**GEH**
Lakeshore Road & Cawthra Road						
NBL	2	1	0.8	3	3	0.1
NBT	0	0	0.0	6	6	0.0
NBR	1	1	0.2	3	3	0.1
WBL	1	1	0.2	1	1	0.2
WBT	930	953	0.8	847	840	0.3
WBR	932	989	1.8	674	700	1.0
SBL	728	733	0.2	905	925	0.6
SBT	2	3	0.4	0	0	0.0
SBR	505	507	0.1	543	536	0.3
EBL	459	462	0.1	404	406	0.1
EBT	684	710	1.0	1177	1206	0.9
EBR	2	2	0.0	1	1	0.4
Lakeshore Road & East Avenue						
NBL	138	137	0.1	61	63	0.2
NBT	0	0	0.0	0	0	0.0
NBR	139	133	0.5	27	27	0.0
WBL	7	10	1.2	52	58	0.8
WBT	1843	1910	1.5	1595	1603	0.2
WBR	11	9	0.6	90	86	0.5
SBL	35	38	0.5	27	30	0.6
SBT	0	0	0.0	0	0	0.0
SBR	4	4	0.1	7	6	0.3
EBL	44	53	1.3	76	84	0.9
EBT	1315	1338	0.6	1835	1854	0.4
EBR	46	46	0.1	137	137	0.0
Lakeshore Road & Lakefront Promenade						
NBL	461	504	2.0	405	414	0.5

Scenario 4	Future Total AM Peak Hour Rangeview with 5,300 units Lakeview with 16,000 units Total = 21,300 Units 40% auto driver share			Future Total PM Peak Hour Rangeview with 5,300 units Lakeview with 16,000 units Total = 21,300 Units 40% auto driver share		
Movement	**Modelled Volume**	**Input Volume**	**GEH**	**Modelled Volume**	**Input Volume**	**GEH**
NBR	317	337	1.1	136	139	0.2
WBL	36	35	0.2	308	310	0.1
WBT	1397	1428	0.8	1385	1419	0.9
EBT	1348	1357	0.2	1543	1538	0.1
EBR	134	136	0.2	315	327	0.6
Lakeshore Road & Ogden Road						
NBL	187	201	1.0	118	124	0.5
NBT	65	64	0.1	70	75	0.6
NBR	298	300	0.2	134	127	0.6
WBL	20	26	1.2	242	281	2.4
WBT	1153	1138	0.4	1480	1529	1.3
WBR	170	174	0.3	113	127	1.3
SBL	128	121	0.6	173	170	0.3
SBT	30	29	0.2	85	81	0.5
SBR	90	87	0.3	104	100	0.4
EBL	175	197	1.6	91	100	0.9
EBT	1327	1386	1.6	1228	1228	0.0
EBR	131	130	0.1	344	340	0.3
Lakeshore Road & Hydro Road						
NBL	305.8	304	0.1	268	255	0.8
NBT	0	0	0.0	0	0	0.0
NBR	380	394	0.7	160	161	0.0
WBL	55	54	0.1	285	308	1.3
WBT	1031	1049	0.5	1583	1687	2.6
WBR	2	2	0.1	2	3	0.9
SBL	4	5	0.4	1	1	0.4
SBT	0	0	0.0	0	0	0.0
SBR	1	2	1.2	0	0	0.0
EBL	0	0	0.0	1	1	0.2
EBT	1537	1607	1.8	1068	1107	1.2
EBR	186.8	183	0.3	462	450	0.5
Lakeshore Road & Haig Boulevard						
NBL	152	162	0.8	200	216	1.1
NBT	29	28	0.1	50	44	0.9
NBR	204	205	0.1	221	232	0.7
WBL	177	187	0.7	130	147	1.4
WBT	905	920	0.5	1527	1585	1.5
WBR	59	61	0.3	86	91	0.6

Scenario 4	Future Total AM Peak Hour Rangeview with 5,300 units Lakeview with 16,000 units Total = 21,300 Units 40% auto driver share			Future Total PM Peak Hour Rangeview with 5,300 units Lakeview with 16,000 units Total = 21,300 Units 40% auto driver share		
Movement	**Modelled Volume**	**Input Volume**	**GEH**	**Modelled Volume**	**Input Volume**	**GEH**
SBL	47	45	0.3	35	31	0.6
SBT	30	26	0.8	25	27	0.4
SBR	35	32	0.5	173	156	1.3
EBL	114	127	1.2	71	79	0.8
EBT	1490	1577	2.2	936	954	0.6
EBR	294	306	0.7	216	220	0.2
Lakeshore Road & Dixie Road						
NBL	1	1	0.0	4	4	0.2
NBT	0	0	0.0	3	3	0.1
NBR	0	0	0.0	4	4	0.2
WBL	0.4	1	0.7	1	3	1.1
WBT	640	644	0.2	932	944	0.4
WBR	242	222	1.3	255	244	0.7
SBL	151	158	0.6	245	255	0.6
SBT	1	1	0.2	2	3	0.5
SBR	466	472	0.3	843	860	0.6
EBL	611	653	1.7	410	422	0.6
EBT	1067	1089	0.7	801	761	1.4
EBR	10.8	11	0.1	8	10	0.7

9.2.2.2 Intersection Capacity Summary

A summary of the VISSIM model results for delay and LOS at each intersection is provided in **Table 56**. The VISSIM results are as expected and align sufficiently with the results of the Synchro traffic analysis. The VISSIM analysis confirms that in Scenario 4, the intersections within the study area work acceptably, with the following exceptions:

- The eastbound left-turn / eastbound through at Cawthra Road operates with a LOS F, during the afternoon peak period due to high volumes.
- At the intersection of Dixie Road, many movements operate with a LOS F, during both the morning and afternoon peak periods due to heavy volumes.
- All eastbound left-turn / westbound left-turn movements at intersections along Lakeshore Road East are expected to experience poor levels of service with increased delays as a direct result of the implementation of the fully protected left-turn phasing required to accommodate the BRT.
- It should be noted that LOS F for left-turning movements is to be expected because of the implementation of fully protected left-turn phases for the BRT, with a 140 second cycle length.

TABLE 56 VISSIM SCENARIO 4: SIGNALIZED INTERSECTIONS DELAY AND LOS

Scenario 4	Future Total AM Peak Hour		Future Total PM Peak Hour	
Movement	**Delay (s)**	**LOS**	**Delay (s)**	**LOS**
Lakeshore Road & Cawthra Road				
NBL	66	E	75	E
NBT	-	-	78	E
NBR	6	A	24	C
WBL	12	B	63	E
WBT	31	C	41	D
WBR	13	B	9	A
SBL	47	D	48	D
SBT	66	E	-	-
SBR	11	B	13	B
EBL	77	E	82	F
EBT	11	B	21	C
EBR	13	B	0	A
Lakeshore Road & East Avenue				
NBL	55	E	53	D
NBT	-	-	-	-
NBR	14	B	34	C
WBL	64	E	86	F
WBT	19	B	19	B
WBR	3	A	5	A
SBL	54	D	66	E
SBT	-	-	-	-
SBR	24	C	13	B
EBL	98	F	98	F
EBT	19	B	20	C
EBR	9	A	13	B
Lakeshore Road & Lakefront Promenade				
NBL	68	E	63	E
NBT	-	-	-	-
NBR	60	E	17	B
WBL	73	E	65	E
WBT	10	B	13	B
WBR	-	-	-	-
SBL	-	-	-	-
SBT	-	-	-	-
SBR	-	-	-	-
EBL	-	-	-	-
EBT	13	B	12	B
EBR	5	A	16	B

Scenario 4	Future Total AM Peak Hour		Future Total PM Peak Hour	
Movement	**Delay (s)**	**LOS**	**Delay (s)**	**LOS**
Lakeshore Road & Ogden Road				
NBL	39	D	49	D
NBT	42	D	42	D
NBR	31	C	12	B
WBL	75	E	119	F
WBT	20	C	15	B
WBR	19	B	13	B
SBL	51	D	56	E
SBT	43	D	46	D
SBR	17	B	28	C
EBL	83	F	88	F
EBT	29	C	28	C
EBR	4	A	10	B
Lakeshore Road & Hydro Road				
NBL	59	E	53	D
NBT	-	-	-	-
NBR	48	D	15	B
WBL	85	F	102	F
WBT	5	A	18	B
WBR	9	A	7	A
SBL	41	D	79	E
SBT	-	-	-	-
SBR	9	A	-	-
EBL	-	-	58	E
EBT	35	D	28	C
EBR	19	B	18	B
Lakeshore Road & Haig Boulevard				
NBL	48	D	86	F
NBT	57	E	70	E
NBR	34	C	53	D
WBL	82	F	87	F
WBT	21	C	35	D
WBR	17	B	32	C
SBL	40	D	59	E
SBT	38	D	54	D
SBR	34	C	57	E
EBL	94	F	161	F
EBT	30	C	10	B
EBR	23	C	9	A
Lakeshore Road & Dixie Road				
NBL	51	D	40	D

Scenario 4	Future Total AM Peak Hour		Future Total PM Peak Hour	
Movement	Delay (s)	LOS	Delay (s)	LOS
NBT	-	-	54	D
NBR	-	-	3	A
WBL	39	D	147	F
WBT	59	E	84	F
WBR	37	D	68	E
SBL	56	E	57	E
SBT	5	A	35	D
SBR	5	A	30	C
EBL	45	D	61	E
EBT	9	A	14	B
EBR	7	A	12	B

9.2.2.3 Intersection Queuing Summary

The VISSIM model queuing results is provided **Table 57** and is summarized as follows:

- Due to high volumes, northbound queues leaving the Site at both Lakefront Promenade and Hydro Road may extend beyond the available storage. Northbound queues at the remainder of streets leaving the Site may be lengthy but can be accommodated within the planned available storage.
- During the AM peak hour along Lakeshore Road East, some queuing is expected to occur for westbound vehicles at Cawthra Road, eastbound vehicles at Haig Boulevard and northbound vehicles at Hydro Road.
- During the PM peak hour along Lakeshore Road East, some queuing is expected to occur for westbound and southbound vehicles at Cawthra Road, eastbound vehicles at East Avenue and southbound vehicles at Dixie Road.
- The northbound left-turning volumes at Lakefront Promenade at Lakeshore Road East are expected to be high and queueing should be monitored.
- High volumes of traffic are expected along Lakeshore Road East during the peak periods of the day which could create potential east-west queuing concerns at Cawthra Road, East Avenue (eastbound only), Lakefront Promenade (eastbound only), Haig Boulevard (eastbound only) and Hydro Road (eastbound only).

TABLE 57 VISSIM SCENARIO 4: SIGNALIZED INTERSECTIONS QUEUEING SUMMARY

Scenario 4	Queuing Space (metres)	Future Total Morning Peak Hour			Future Total Afternoon Peak Hour		
Movement		50th percentile	85th percentile	95th percentile	50th percentile	85th percentile	95th percentile
Lakeshore Road & Cawthra Road							
NB	15	0	0	1	0	5	9
WB	330	51	123	228	51	116	169
SB	250	42	79	95	54	99	124
EB	265	43	87	122	45	99	145
Lakeshore Road & East Avenue							
NB	180	14	32	46	7	18	28
WB	340	42	135	177	3	23	37
SB	245	0	9	15	0	2	4
EB	330	22	115	149	19	59	73
WBL	50	0	0	7	29	56	93
EBL	70	0	0	5	29	121	173
EBR	45	-	-	-	120	217	258
WBR	20	-	-	-	41	69	94
Lakeshore Road & Lakefront Promenade							
NB	200	141	223	278	34	97	161
WB	240	20	136	177	23	62	89
EB	340	65	172	206	155	208	222
WBL	35	4	17	24	99	156	195
EBR	25	-	-	-	2	52	125
Lakeshore Road & Ogden Road							
NB	210	23	47	65	26	54	84
WB	200	47	126	173	27	125	178
SB	160	12	30	40	4	8	12
EB	240	170	312	343	54	101	141
WBL	85	0	10	13	65	115	165
EBL	30	39	124	163	6	15	19
EBR	25	0	6	9	38	73	113
Lakeshore Road & Hydro Road							
NB	210	72	155	202	128	254	315
WB	165	0	21	31	24	62	85
SB	50	0	0	8	24	39	54
EB	200	112	214	249	9	17	30
WBL	25	10	19	26	33	77	101
EBL	25	0	0	0	0	0	3
EBR	50	-	-	-	52	98	138
Lakeshore Road & Haig Boulevard							
NB	210	20	43	59	38	80	95
WB	600	41	96	123	152	270	429
SB	325	10	23	33	33	63	81
EB	165	147	266	328	5	25	38

Scenario 4	Queuing Space (metres)	Future Total Morning Peak Hour			Future Total Afternoon Peak Hour		
Movement		50th percentile	85th percentile	95th percentile	50th percentile	85th percentile	95th percentile
WBL	100	0	0	6	19	46	64
EBL	50	0	0	6	13	26	38
EBR	50	-	-	-	0	7	17
Lakeshore Road & Dixie Road							
NB	100	0	0	3	0	0	6
WB	460	51	101	133	88	147	176
SB	310	18	38	50	56	159	208
EB	600	79	141	174	24	37	45

9.2.3 VISSIM Summary

The VISSIM analysis completed by BA Group confirms the results of the traffic analysis undertaken with Synchro by both TYLin and BA Group. The VISSIM microsimulation analysis included 7 intersections along the Lakeshore Road East corridor. A comparison of projected traffic volumes for each scenario versus the VISSIM modelled volumes were used to calculate the GEH values for Scenario 4. As none of the GEH values were greater than the recommended maximum of 5.0, the fit between the simulated and observed flows within the VISSIM model is appropriate.

9.2.4 Conclusions

The VISSIM analysis confirms that the future transportation network, with BRT along Lakeshore Road East, can acceptably accommodate the travel demands of the 21,300 residential units (5,300 units on Rangeview and 16,000 units on Lakeview) and 100% build-out of the non-residential GFA.

In order to confirm the ability of the area transportation network to acceptably accommodate the proposed development, it is recommended that a comprehensive traffic analysis update be undertaken for the Lakeview site to develop beyond 8,050 units. An updated traffic study would ideally be completed for increments of 2,000 units, up to 16,000 units on Lakeview.

10.0 ACCESS MANAGEMENT

The proposed road network includes an access arrangement that aligns with the City's Official Plan policy objectives and industry standards. The proposed points of access along Lakeshore Road East remain consistent with existing conditions as no new points of access are proposed for the ultimate conditions. The Official Plan sets out access policy objectives related to road classification. As per section 9.5.2.4 of the Official Plan, the following vehicle accesses guidelines are outlined:

> *Where direct vehicular access to development is not permitted from major roads, buildings should be designed with front doors of individual units oriented towards the major road with vehicular access provided from a side street, service road or rear laneways.*

The location of driveways along the proposed future internal public roads will need to be confirmed at a later stage of the planning process. It is however noted that driveway access points are preferred to be located along local roads when possible, to foster a streetscape that is friendly to all modes of travel.

In regard to the spacing of signalized intersections, the City's TIS Guidelines defer to OTM Book 12. As per section 3.7 *Signal Spacing* it recommended that 215 metres be maintained between signalized intersections. The proposed traffic signal at intersection of Lakefront Promenade / Rangeview Road is approximately 190 metres away from the existing traffic signal on Lakeshore Road East. While this condition is not quite satisfied, the queueing analysis confirmed that queues are not expected to extend to Lakeshore Road East from Rangeview Road.

The adequacy of spacing provided between unsignalized intersections was evaluated using the *TAC Geometric Design Guide for Canadian Roads*. As per section 9.4.2 of the Guidelines, the spacing of intersections is dependent on road classification. A summary of the proposed distance and TAC recommended spacing is provided in **Table 58**. Overall, the Guideline recommends a minimum spacing of 60 metres between intersections along collector and local road types. This condition is satisfied for the spacing of all proposed internal intersections.

As discussed in **Section 3.1.4** and consistent with the May 31, 2024, BA Group Report, as part of the development phasing, interim access on Lakeshore Road East may be required in order to maintain access to properties fronting onto Lakeshore Road East. In advance of the construction of Street L, three temporary points of access have been proposed in approximately the same location as the existing site driveways. The temporary accesses will consolidate existing site driveways serving multiple properties along Lakeshore Road East. Upon the completion of Street L, the temporary accesses on Lakeshore Road will be closed and vehicle access will be provided along Street L.

TABLE 58 PROPOSED RANGEVIEW STREET NETWORK – INTERSECTION SPACING

Street[1]	Road Classification	Intersection	Distance to Nearest Intersection (m)	TAC Recommended Minimum Spacing (m)[1]
East Avenue	Local	Lakeshore Road to Street L	75	60
		Street L to Rangeview Road	65	60
Lakefront Promenade	Major Collector	Lakeshore Road to Street L	85	60
		Street L to Rangeview Road	85	60
Ogden Avenue	Minor Collector	Lakeshore Road to Street L	65	60
		Street L to Rangeview Road	65	60
Hydro Road	Major Collector	Lakeshore Road to Street L	65	60
		Street L to Rangeview Road	65	60
Street L	Local	East Avenue to Lakefront Promenade	350	60
		Lakefront Promenade to Ogden Avenue	245	60
		Ogden Avenue to Hydro Road	200	60
Rangeview Road	Local	East Avenue to Lakefront Promenade	340	60
		Lakefront Promenade to Street G	110	60
		Street G to Ogden Avenue	115	60
		Ogden Avenue to Hydro Road	195	60

Notes:
1. As per TAC Geometric Design Guide for Canadian Roads, Chapter 9 – Intersections

The proposed access arrangement for the Rangeview Site is appropriate and generally meets the objectives and guidelines as outlined by the City's Official Plan, OTM Book 12 and TAC. The internal road network provides appropriate local road frontages to accommodate accesses. The location of driveways along the new internal public road network will be confirmed at a later stage of the planning process.

11.0 RECOMMENDATIONS

Based on the results of the traffic analysis undertaken for Scenarios 1, 2, 3A, 3B and 4, a number of recommendations are being made in order to support the future development of the Site.

Traffic Analysis Results

The results of the traffic analysis for Scenarios 1, 2, 3A, 3B and 4 indicate that, with the expected reduction in auto driver travel mode from 50% to 40%, the future transportation network will be able to accommodate the travel demand of both the Rangeview and Lakeview sites.

It was confirmed by the traffic analysis for Scenarios 1, 2, 3A, 3B and 4, that all v/c's in all scenarios are expected to operate at 1.0 or less. The queuing assessment confirmed that the 50th percentile queues could exceed the available storage for some movements at external intersections. It is noted however that this type of queuing is typical in a busy urban environment, especially during peak periods of travel. It is recommended that the external intersections be monitored as development progresses in order to determine if there are queuing concerns that need to be addressed.

Recommendation: It is recommended that the study area intersections be monitored for potential queuing concerns as the development of both the Rangeview and Lakeview sites progress.

Proposed Road Improvements

The road improvements that are planned within the study area, as per the Lakeview Community Partner Limited Subdivision Agreement (Schedules E and F), as well as the additional road improvements recommended by BA Group, will be critical to address the travel demand of the Sites.

As part of the traffic operations assessment, BA Group has reviewed improvements to the road network outlined in the Lakeview Community Partner Subdivision Agreement in conjunction with the future BRT on Lakeshore Road. BA Group has reviewed the road improvement proposed in conjunction with the build-out of Rangeview and Lakeview sites. It was determined that while the proposed road improvements are sufficient to accommodate both the Rangeview and Lakeview developments, additional considerations should be made regarding the timing of construction.

Recommendation: BA Group has proposed the following revisions to the phasing of road improvements included within the Lakeview Subdivision Agreement. The updates to the proposed phasing remain preliminary and are expected to be further refined in subsequent updated traffic impact studies.

Phase 1 - BA Group Recommended Road Improvements:

- Lakeshore Road/ Hydro Road: New traffic signal, EBR lane, NBL dedicated lane, restripe EBL/WBL
- Lakeshore Road / Ogden Avenue: Eastbound right-turn lane
- Lakeshore Road / Ogden Avenue: Northbound lanes reconfigured to include a dedicated northbound left-turn lane and shared through and right-turn lane.
- Lakeshore Bus Rapid Transit Study: Area A from East Avenue to Etobicoke Creek
- Lakeshore Road / Lakefront Promenade: Dual northbound left-turn lanes

Phase 2 - BA Group Recommended Road Improvements:

- Lakeshore Road / Ogden Avenue: Northbound lanes reconfigured to include a dedicated northbound left-turn lane, through lane and a dedicated right-turn lane.
- Lakeshore Road / Lakefront Promenade: Dual northbound left-turn lanes
- East Avenue: Reconstruction of road with new pavement, bike lanes, sidewalks and landscaping
- Rangeview Road: Reconstruction of road with new pavement, bike lanes, sidewalks and landscaping
- Lakefront Promenade: Reconstruction of road with new pavement, bike lanes, sidewalks and landscaping
- Hydro Road: Reconstruction of road with new pavement, bike lanes, sidewalks and landscaping
- Lakeshore Road / Hydro Road: dedicated WBL lane on Lakeshore, existing 2-way left turn lane, restriped with traffic signal
- Lakeshore Road / Hydro Road: Configured to include a dedicated northbound left-turn lane and a shared through/right lane, NB approach needs to be widened.
- Lakeshore Road East / Haig Boulevard: Westbound left-turn lane

Recommendation: While it was determined that the proposed road network improvements are expected to be adequate to accommodate the future Site traffic, the timing of the planned road network improvements may need to be updated based on the phasing of the developments and updates to the travel demand.

Future Monitoring

Given the scale of the development and the current stage in the planning process, future monitoring of study area intersections should be undertaken, as the development of both the Rangeview and Lakeview sites progress. As the block plan evolves in subsequent planning stages, traffic volumes may be redistributed across the Site internal road network. Continued monitoring of all development scenarios is recommended to reflect updates to the block phasing of the development proposals.

Recommendation: It is recommended that traffic studies be completed as part of individual Zoning By-law Amendment applications or, in the case of multi-phase developments, at the site plan stage for each phase. In addition, a broader study should be completed as the development thresholds for the traffic analysis scenarios modelled in this report are approached.

Furthermore, the anticipated completion of the Lakeshore BRT is a key component to reducing the auto driver mode share of the Site and adjacent lands. The implementation of the Lakeshore BRT has been considered in all development scenarios and will be critical to reduce the auto driver mode share in the area and the ability of the transportation network to accommodate the travel demands of both the Rangeview and Lakeview sites.

Recommendation: Once BRT is operational and traffic patterns have been established, the area travel mode shares should be assessed and applied to updated traffic studies for both the Rangeview and Lakeview sites.