420 - 468 SOUTH SERVICE ROAD EAST
PROPOSED MIXED USE DEVELOPMENT

Urban Transportation Considerations
Town of Oakville

Prepared For: South Service Holding Corp.

October 2025

BA Group

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1.0 INTRODUCTION

BA Group has been retained by South Service Holding Corp. (the "**Applicant**") to provide transportation consulting services related to an **Official Plan Amendment (OPA)** and **Zoning By-law Amendment (ZBA)** application to permit the redevelopment of the former GE Lands, municipally known as 420-468 South Service Road East, in the Town of Oakville (the "**Site**"). The Site location is illustrated in **Figure 1.**

Existing Site Context

The Site is located in Midtown Oakville, on the east side of Trafalgar Road, between the Queen Elizabeth Way (QEW) / Highway 403 corridor (referred to herein as the "**QEW**") and the Metrolinx / CN rail corridor, and west of the existing Royal Windsor interchange with the QEW.

The Site is bounded by South Service Road East to the north, the Metrolinx / CN rail corridor to the south, and other industrial uses to the west and east. Vehicle access is currently provided via South Service Road to the north and Davis Road to the west. The Site has an approximate area of 11 ha (110,889 m^2), with an approximate frontage of 374 metres along South Service Road East. The Site was formerly occupied by the GE Lighting Lamp Plant, which was closed in 2010.

The Site remained vacant until earlier in 2024, when temporary land use approvals were granted for an outdoor storage use. A concept plan for the temporary outdoor storage use is provided in **Appendix A**. The outdoor storage includes the following three separate areas:

- An area dedicated to the deployment of prefabricated metal shipping containers (2.5 m wide by 6.1 m long), placed side-by-side and back-to-back to form individual outdoor storage units, forming double-sided rows;
- An area that would accommodate the outdoor storage of passenger-sized vehicles; and
- An area that would accommodate the outdoor storage of larger vehicles such as recreational vehicles (RV's), single unit trucks, personal trailers such as boats trailers or general-purpose trailers.

Access to the Site for the temporary uses is provided via three driveways:

- Two driveways along South Service Road at existing driveway locations, generally located to the west and east of the planned temporary uses.
- An emergency access driveway that is closed during normal operations, at the east end of Davis Road, where Davis Road terminates at the western Site boundary. This does not change the existing conditions on Davis Road.

There is also a small passenger vehicle parking area (15 customer parking spaces that meet the Town of Oakville's Zoning Bylaw dimensions), near the entrance via the western Site access driveway on South Service Road. All areas for the temporary uses that accommodate vehicle maneuvering will be appropriately "hardscaped" to align with the Town of Oakville Zoning Bylaw requirements. The general storage area is an existing hard-surfaced area. Access to the Site will be provided 24 hours a day via the gate-controlled points of entry.

The Site is currently surrounded by a range of uses including existing small scale industrial buildings, an existing hotel and two office buildings. The temporary uses, as noted above, include access from an existing public street system that relies upon the following:

- South Service Road East as its primary point of access to / from Trafalgar Road to the west and Royal Windsor Drive to the east;
- Connections to the QEW via Royal Windsor Drive and other public streets that surround the Ford Assembly Plant to the northeast; and
- Chartwell Road to the east that includes an at-grade crossing of the Metrolinx/CN rail corridor and connects to Cornwall Road to the south.

1.1 Midtown Oakville

The Site is located in an area that has been identified for intensification by the Town of Oakville through the Midtown Oakville Growth Area Review. The plan includes a series of new, proposed public streets and multi-modal transportation infrastructure that connects Midtown Oakville to north of the QEW corridor, south of the rail corridor, east-west across Trafalgar Road and east to the proposed improved Royal Windsor interchange with the QEW. The Town of Oakville has outlined a number of transportation goals and policies as part of the Midtown Oakville plan that are discussed in detail in **Section 3.2**. The location of Midtown Oakville is illustrated in **Figure 2.**

1.2 Background

An OPA application was submitted in November 2024 for a mixed-use master planned community on the Site. BA Group prepared a comprehensive report titled "*420-468 South Service Road East, Proposed Mixed-Use Development, Urban Transportation Considerations*" dated November 2024 as part of this application. Since that time, comments have been received from the Town, members of the public and other stakeholders, in regard to the proposed development. The Site Master Plan has been updated in consideration of these comments.

Key changes to the development proposal since the November 2024 application include the following:

- The new proposal includes a revised landscape and parks concept that links all four blocks on the Site with a series of interconnected green spaces. The green space is distributed across all four blocks instead of being focused within a single block.
- The addition of two mixed-use buildings to Block 3.
- A revised local street network that builds upon and extends the street network shown in the Midtown Oakville Official Plan Amendment (OPA 70) – the 2024 Draft Midtown Oakville OPA. The Draft Midtown Oakville OPA illustrates a new north-street local street (Local Street A) along the western border of the Site that connects between South Service Road East and Davis Road. The revised plan extends this north-south road southward from Davis Road to connect to Cross Avenue. The extension of this local street will provide improved connectivity for all modes of travel and better serve the access and circulation needs of the revised development proposal.
- The addition of two active-only crossings of the planned new north-south overpass/underpass road that crosses the QEW and the Metrolinx/CN rail corridor (herein referred to as the "N-S Arterial Street"). On the north side of the Site, the active-only crossing will be in the form of an underpass under the N-S Arterial Street. On the south side, the active-only crossing will be in the form of an overpass over the N-S Arterial Street.

A comparison between the November 2024 and the current (revised) development proposal is provided in **Table 1**. The November 2024 Site Master Plan is illustrated in **Figure 3.**

Table 1 Comparison of Current Proposal and November 2024 Submission

Land Use	November 2024 Development Proposal	Current Development Proposal	Net Change
Block 1			
Residential	2,746 units	2,220 units	**-526 units**
Retail	2,175 m²	1,503 m²	**-672 m²**
Block 2			
Residential	2,584 units	2,156 units	**-428 units**
Retail	1,362 m²	1,514 m²	**+152 m²**
Block 3			
Residential	0	1,305 units	**+1,305 units**
Retail	0	3,293 m²	**+3,293 m²**
Block 4			
Residential	1,624 units	1,264 units	**-360 units**
Retail	2,312 m²	2,808 m²	**+496 m²**
Total Site			
Residential	**6,954 units**	**6,945 units**	**-9 units**
Retail	**5,849 m²**	**9,118 m²**	**+ 3,339 m²**

1.3 Proposed Site Master Plan

The proposed mixed-use development ("Development Proposal" or "Site Master Plan" or the "Site") includes four blocks with a total of 6,945 residential units and 9,118 m² GFA of retail space. The detailed development statistics being proposed for the Site are summarized in **Table 2**. The current development proposal is illustrated in **Figure 4.** Reduced scale architectural ground floor and parking level plans are provided in **Appendix B**.

The new public street network proposed for the Site will provide access for all modes of travel and generally aligns with the proposed transportation network within the Draft Midtown Oakville OPA, with the exception of the extension of Local Street A between Davis Road and Cross Avenue. The proposed changes do not impact, and in fact enhance, the functionality of the Midtown OPA transportation network. The remainder of the proposed new street network remains consistent with the Draft Midtown Oakville OPA, including the extension of Davis Road and Cross Avenue through the Site, and the creation of a new north-south grade separated arterial street (the N-

S Arterial Street) with a flyover across the QEW corridor and a “rail-over-road” underpass across the Metrolinx / CN rail corridor to the south.

Pedestrian access and circulation will be provided throughout all four development blocks, with connectivity to the surrounding street network. This ensures direct and convenient access to and from all new public streets, as well as to planned transit service on the N-S Arterial Street and Cross Avenue that will connect to the Oakville GO Transit hub. The development blocks will also include private pedestrian linkages throughout for each residential building and non-residential retail spaces within the Site. The retail spaces will be located at-grade, along the frontage of the east-west collector street (Davis Road), through the centre of the mixed-use development. This is consistent with the uses anticipated along “Primary” and “Secondary” main streets in the Midtown area.

Cycling infrastructure is also planned for the Site, including dedicated bicycle parking rooms for long-term bicycle uses (i.e. resident and employee bike parking), with a mix of internal and external bicycle parking for short-term bicycle uses (i.e., resident visitor and non-residential visitor bicycle parking). The provision of convenient and direct connections for cycling facilities planned within the new public streets in Midtown, will link the Site to the multi-modal transportation network being created throughout Midtown Oakville and the broader Town of Oakville.

Vehicle parking will be provided within below-grade parking facilities for each residential block. A series of at-grade facilities for pick-up and drop-off, service vehicle loading areas and emergency vehicle access, will also be provided to ensure the Site will be appropriately serviced and connected to the planned public transportation systems within Midtown Oakville.

Table 2 Summary of Current Development Proposal

Land Use / Type		Block 1	Block 2	Block 3	Block 4	Total
Residential (units)		2,220	2,156	1,305	1,264	**6,945 units**
Retail (GFA)		1,503 m²	1,514 m²	3,293 m²	2,808 m²	**9,118 m²**
Vehicle Parking (spaces)	Resident	1,110	1,078	653	632	**3,473 spaces**
	Non-Resident Visitor	333	324	196	190	**1,043 spaces**
	Non-Resident Retail	16	17	36	31	**100 spaces**
	Total	**1,459**	**1,419**	**885**	**853**	**4,616 spaces**
Bicycle Parking (spaces)	Resident Long-Term	1,110	1,078	653	632	**3,473 spaces**
	Resident Short-Term	222	216	131	127	**696 spaces**
	Non-Resident	2	2	4	3	**11 spaces**
	Total	**1,334**	**1,296**	**788**	**762**	**4,180 spaces**
Loading Facilities		5	5	5	4	**19 spaces**

Notes:

1. Site statistics based on site plans prepared by Graziani + Corazza Architects, dated October 22, 2025.

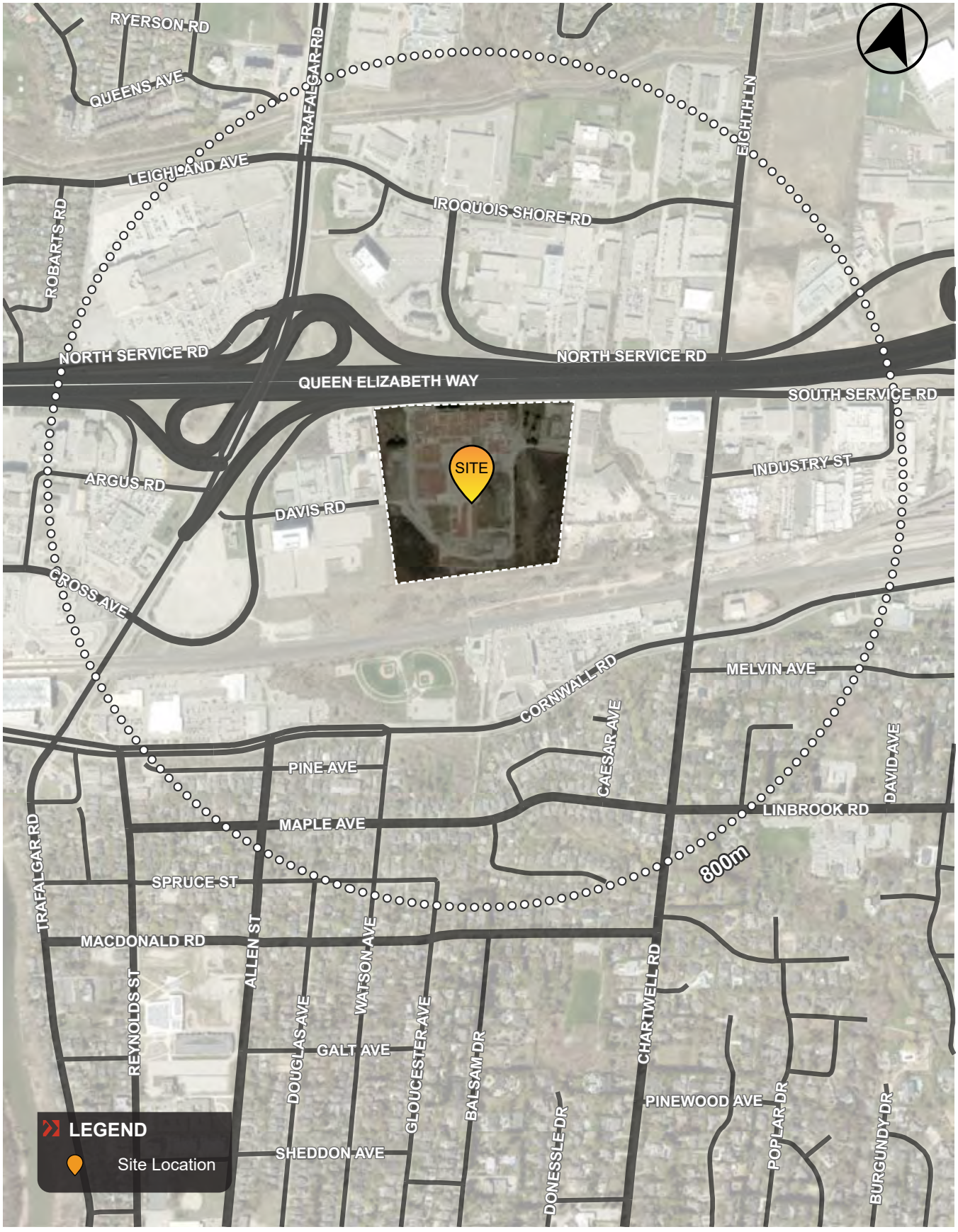

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FIGURE 1 SITE LOCATION

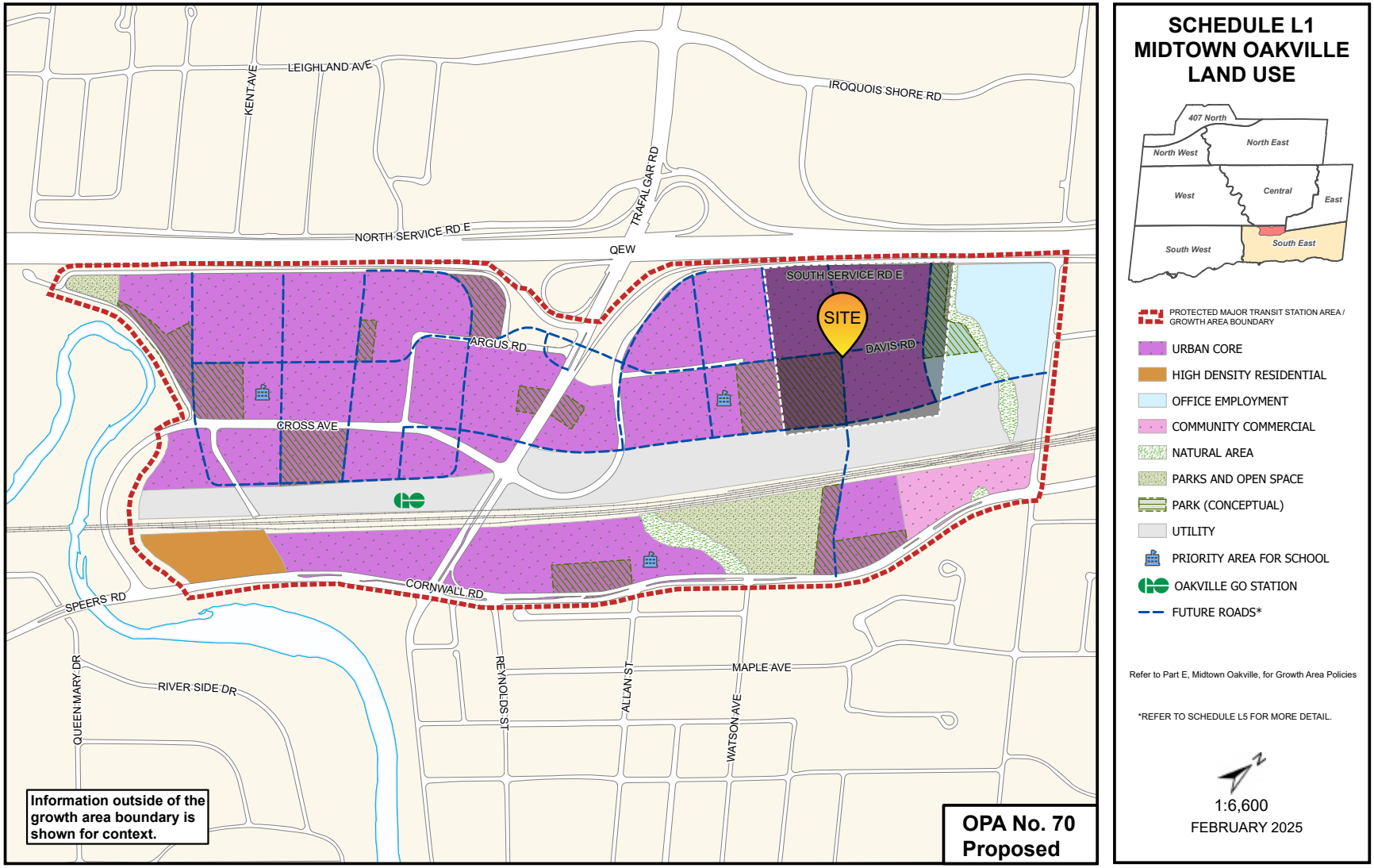

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FIGURE 2 MIDTOWN OAKVILLE CONTEXT

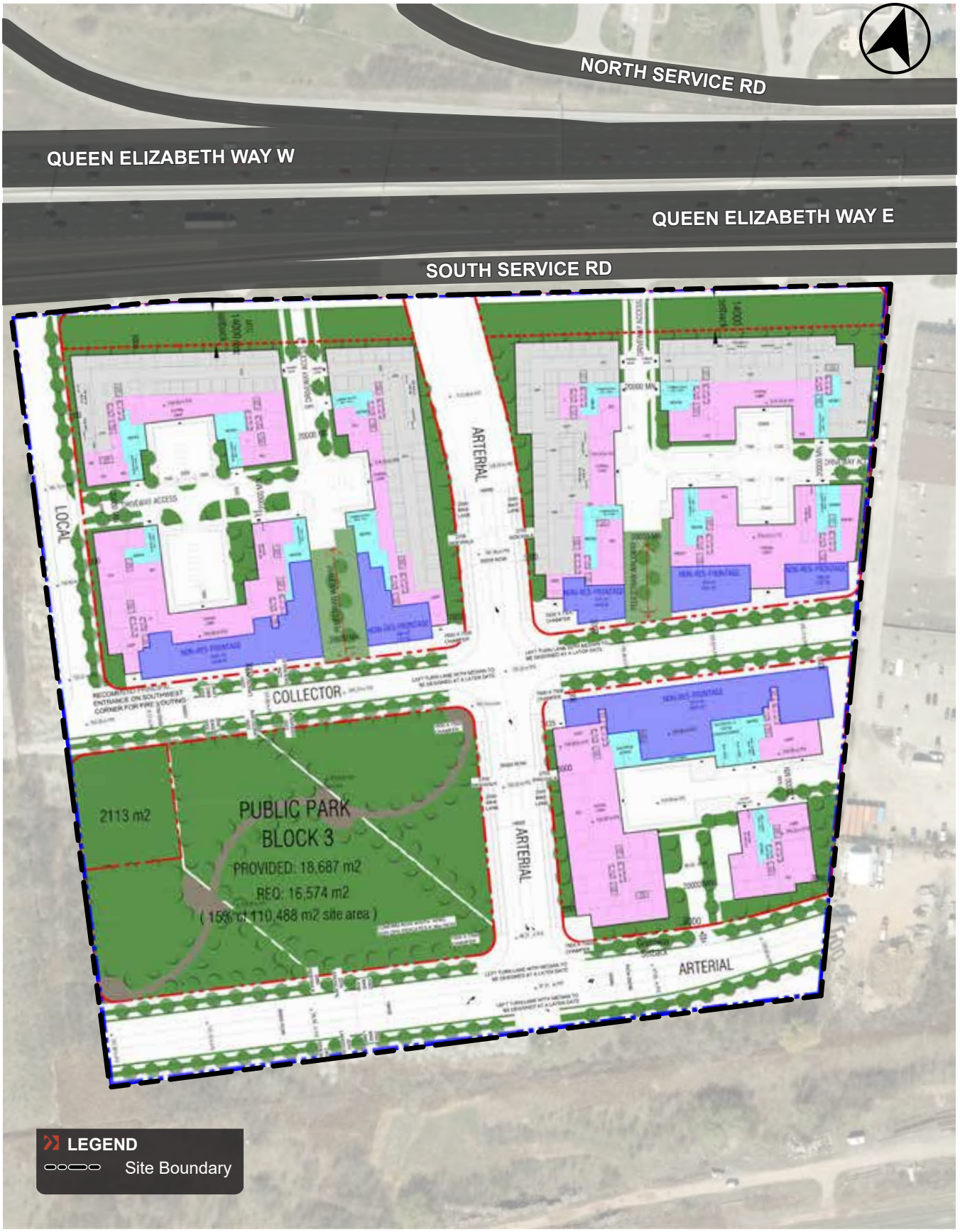

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FIGURE 3 PREVIOUS DEVELOPMENT PROPOSAL

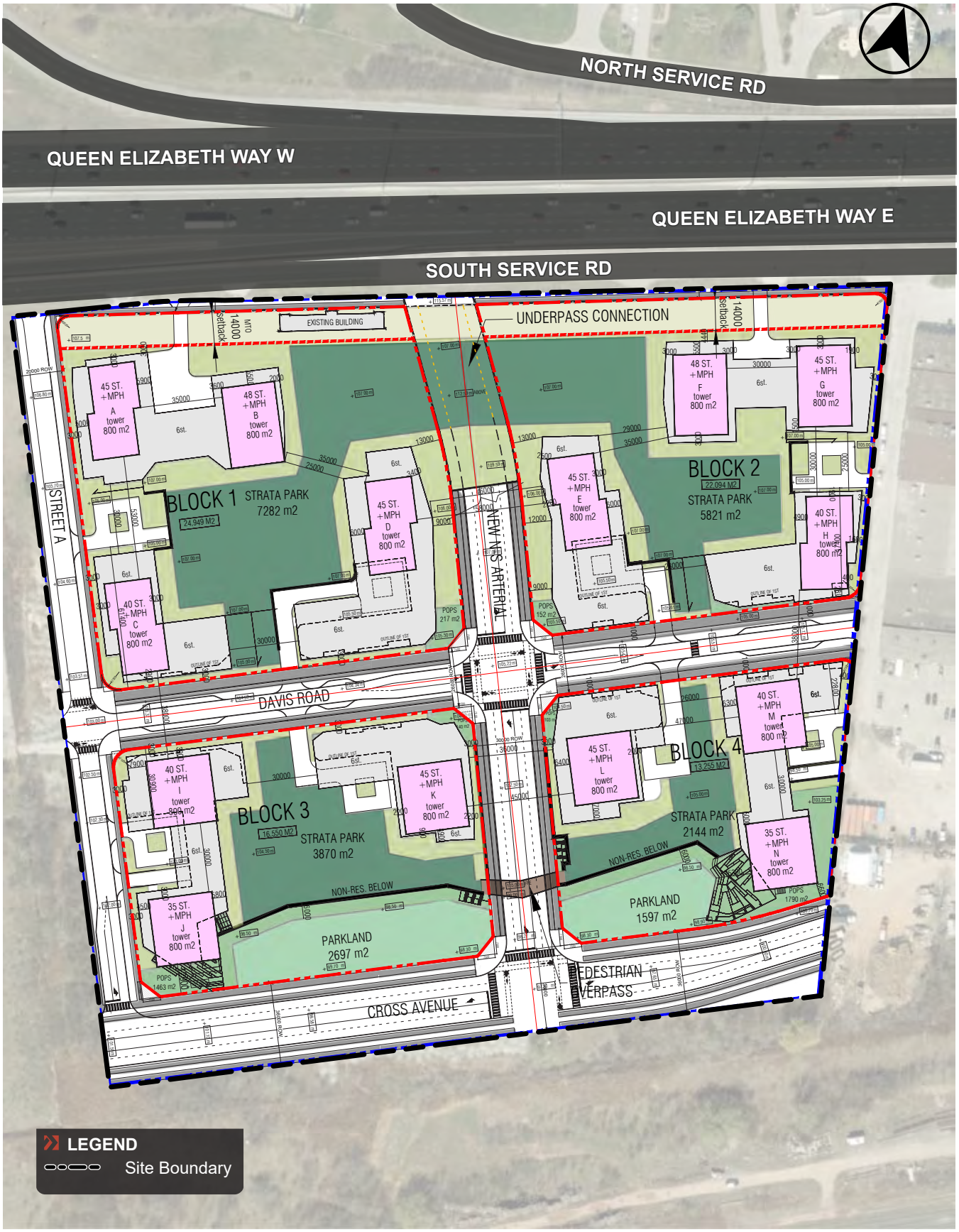

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FIGURE 4 CURRENT DEVELOPMENT PROPOSAL

1.4 Study Scope

The scope of work for this report is described below. The September 18, 2024 Terms of Reference that was submitted to the Town of Oakville, Halton Region and MTO, are provided in **Appendix C,** inclusive of the comments received from the Town.

Transportation Context

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

Development Proposal

- A summary of the proposed development (the "Site Master Plan").
- An overview of the Site and the area-wide transportation network that facilitates a shift towards non-automobile travel for future residents and visitors, while still being able to meet the practical and operational needs of the Site.
- A review of the transportation elements of the proposed Site Master Plan that includes vehicle access and circulation, loading and parking facilities.

Transportation Demand Management Framework

- An overview of potential Transportation Demand Management (TDM) measures and initiatives that are being considered to encourage future residents and visitors to use more active and sustainable modes of transportation.

Site Master Plan

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

Multimodal Travel Demand Forecasting

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

Traffic Operations Review

- A review of traffic operations at intersections in the area, under existing and future conditions, including an assessment of the operational impacts of the proposed development.
- An assessment of any mitigative measures to accommodate the development traffic.

The findings of this review are summarized in the following sections.

2.0 SUMMARY & CONCLUSIONS

BA Group has been retained by South Service Holding Corp. (the "**Applicant**") to provide transportation consulting services related to an **Official Plan Amendment (OPA)** and a **Zoning By-law Amendment (ZBA)** application, to permit the redevelopment of the former GE Lands, municipally known as 420-468 South Service Road East, in the Town of Oakville (the "**Site**").

The Site is located in Midtown Oakville, on the east side of Trafalgar Road, between the Queen Elizabeth Way (QEW) / Highway 403 (the "**QEW**") and the Metrolinx / CN rail corridor and west of the existing Royal Windsor interchange with the QEW. The Site is bounded by South Service Road East to the north, the Metrolinx / CN rail corridor to the south, and other industrial uses to the west and east. Vehicle access is currently provided via South Service Road to the north and Davis Road to the west. The Site has an approximate area of 11 ha (110,889 m^2), with an approximate frontage of 374 metres along South Service Road East. The Site was formerly occupied by the GE Lighting Lamp Plant, which was closed in 2010.

The proposed mixed-use development ("Site Master Plan") includes four blocks with a total of 6,945 residential units and 9,118 m^2 GFA of retail space.

Vehicle parking will be provided within below-grade parking facilities for each residential block. A series of at-grade facilities for pick-up and drop-off, service vehicle loading areas and emergency vehicle access will also be provided to ensure that all aspects of the mixed-use intensification will be appropriately served and connected to the planned public transportation systems within Midtown Oakville.

A total of 4,616 vehicle parking spaces, 4,180 bicycle parking spaces and 19 loading spaces are proposed to support the transportation-related aspects of the Site.

Key findings are summarized as follows:

Planning Context

1. The Site development incorporates the policy direction of the following provincial and regional policy documents: Ontario's Five Year Climate Change Action Plan (2016), Provincial Policy Statement (2025), A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020), *Connecting the GGH: A Transportation Plan for the GGH (2022), 2041 Metrolinx Regional Transportation Plan (2018),* and *Ontario Bill 185 (2024).*
2. The Site development incorporates the policy direction of the following local area policy documents: *Livable Oakville – Growth Areas – Midtown Oakville, Trafalgar Environmental Assessment (2015), Midtown Oakville Environmental Assessment (2014),* and *Midtown Oakville Draft Official Plan Amendment (2024)*.
3. The Site is situated within an area that has been identified for intensification by the Town of Oakville with their Midtown plan and includes a series of new, proposed public streets and multi-modal transportation infrastructure.
4. The Site is located in the Midtown Oakville Protected Major Transit Station Area as outlined in the Oakville Official Plan.

Area Context

5. The Site is well served today by Oakville Transit and regional rail services through GO Transit and VIA. The Site is located within the Midtown Oakville Growth Area, one of the most transit-accessible locations within the Town of Oakville. Under future conditions, the subject Site is adjacent to the planned Trafalgar Road Rapid Transit (BRT) which will connect Uptown Oakville and Midtown Oakville to the Oakville GO Station.

6. Through the 2014 Midtown Oakville Environmental Assessment Study (Midtown EA), and further through the 2024 Draft Midtown Oakville OPA, the Town of Oakville has established a proposed street system to support intensification within the Midtown area of the Town. This proposed street system includes several future arterials, collectors, and local roads to support the transportation needs within the Midtown Oakville Urban Growth Centre.

7. Several additional active transportation connections within and beyond Midtown Oakville are proposed as part of the Midtown Oakville EA and the Draft Midtown Oakville OPA which will assist in improving connectively within and beyond Midtown and have the added benefit of improving active transportation linkages to the Oakville GO Transit hub and related transit opportunities.

Vehicle Parking Considerations

8. The Province of Ontario recently passed (June 6, 2024) Bill 185, which amends the Planning Act of Ontario. Application of Bill 185 and the provisions which amend the Planning Act result in parking requirements of zero parking spaces per unit for both the resident parking and visitor parking components, as well as the non-residential land use components of the development proposal.

9. Notwithstanding the requirements of the Town of Oakville Zoning Bylaw 2014-014 and Bill 185, a practical parking demand exists that will need to be accommodated for the Site, in order to be marketable and to function appropriately within Midtown Oakville. It is proposed that the parking supply for the Site aligns with the following parking rates:

    - Resident parking: minimum of 0.50 spaces per unit
    - Resident visitor parking: minimum of 0.15 spaces per unit
    - Non-resident (retail) parking: minimum of 1.08 spaces per 100 m^2 of GFA[1]

10. The current proposal includes a total of 4,616 parking spaces for the Site, inclusive of 3,473 resident spaces, 1,043 resident visitor parking spaces and 100 non-resident (retail) spaces.

Bicycle Parking Considerations

11. Application of Zoning By-law 2014-014 minimum bicycle parking requirements results in a total of 431 bicycle parking spaces, including 420 spaces for residents and resident visitors and 11 spaces for retail use.

[1] 1.08 spaces per 100 m^2 of GFA correlates to approximately 1 space per 1,000 ft^2 of GFA.

12. The proposed development includes the provision of a total of 4,180 bicycle parking spaces, inclusive of 3,473 spaces for residents, 696 spaces for residential visitors and 11 spaces for retail use.

Loading Considerations

13. The Town of Oakville's Zoning By-law 2014-014 does not include a requirement for a minimum number of loading spaces.

14. The current proposal incorporates a total of 19 residential loading spaces for the proposed development. The proposed loading spaces will meet the dimensional requirements of Zoning By-law 2014-014.

15. The proposed loading supply strategy has been evaluated against the practical, functional, and policy requirements associated with the various types of loading operations that would be experienced on a daily basis.

Transportation Demand Management

16. A TDM strategy has been developed to ensure that the proposed development sets a sustainable precedent in urban development (e.g. increase vehicle occupancy and reduced vehicle kilometres travelled) and encourages the use of alternative travel modes.

17. TDM measures proposed as part of the development include, but are not limited to:

    - Provision of a reduced resident parking supply;
    - Provision of unbundled parking from unit cost;
    - Provision of convenient pick-up and drop-off facilities within and around the development blocks to facilitate passenger pick-up and drop-off via shared use mobility services, short-term small scale residential deliveries;
    - Consideration to provide car share spaces on the Site;
    - Provision of a bicycle parking supply that meets the Zoning By-law standards and consideration for a range of facility types (i.e. cargo bicycle parking);
    - Consideration to provide bike share stations on the Site;
    - Provision of bicycle repair stations;
    - Consideration to provide private or shared micromobility devices; and;
    - Provision of direct pedestrian and cycling connections to building entrances, bicycle parking facilities, nearby transit stops, and the external / public network.

Transportation Impact Assessment

18. The traffic operations analysis has been undertaken for the weekday morning and afternoon peak hours, for the following scenarios. Considering the significant traffic volumes derived from MTO and Town corridor growth rates, this study considers two scenarios: 1) corridor growth volumes included in the analysis and 2) corridor growth volumes excluded from the analysis for the future background and future total scenarios.

    - Existing traffic (2024) – traffic activity levels under current conditions;
    - Future background conditions (2044) – traffic activity levels 20 years into the future, which includes allowances for the build-out of Midtown Oakville and assumes that the complete road network proposed by the Midtown Oakville EA and OPA is operational (**corridor growth volumes excluded**).
    - Future background conditions (2044) – traffic activity levels 20 years into the future, which includes allowances for the build-out of Midtown Oakville with **corridor growth included** and assumes that the complete road network proposed by the Midtown Oakville EA and OPA is operational.
    - Future total conditions (2044) – traffic activity levels 20 years into the future, with the Site fully developed and occupied, with projected Site generated traffic added to the future road network. (**corridor growth volumes excluded**).
    - Future total conditions (2044) – traffic activity levels 20 years into the future, with the site fully developed and occupied, with projected Site generated traffic added to the future road network and the **inclusion of allowances for corridor growth.**

19. The Site is expected to generate **1,740 and 1,860 two-way gross vehicle trips** during the morning and afternoon peak hours, respectively. With consideration for internal Site trip interactions, the Site is expected to generate **1,700 and 1,670 two-way primary vehicle trips**, during the morning and afternoon peak hours, respectively, inclusive of residential and retail trips.

20. Under future total conditions **without corridor growth**, signalized intersections along Trafalgar Road generally will operate at busy but acceptable conditions in the weekday peak hours, with overall v/c ratios ranging from 0.74 to 1.04. Under future total conditions **with the corridor growth** assumptions requested by the Town and MTO for the relevant corridors, intersections along Trafalgar Road will operate at over-capacity conditions, with overall v/c ratios ranging from 1.16 to 1.76. Site-related impacts on critical movements at these intersections are minimal, given the future area road network that will support Site residents and visitors, including the N-S Arterial Street and the future full interchange east of the Site.

21. Other study area signalized intersections (including the future intersections of the N-S Arterial Street with Davis Road and Cross Avenue) will operate well at overall v/c of 0.21 to 0.65 in future total conditions **without corridor growth**. **With the corridor growth** assumptions, these intersections will operate well at overall v/c of 0.21 to 0.80 in future total conditions.

22. Most unsignalized intersections operate well in any future conditions. The southbound movements at the future Cross Avenue Extension / South Service Road may operate at delays of up to 60 seconds **without the corridor growth** assumptions, and up to 95 seconds **with the corridor growth** assumptions. Should delays at this intersection persist, drivers are afforded alternative routes via the proposed road network (i.e. Local Street A and Local Street B) to complete a southbound left turn onto Cross Avenue. No further mitigation measures are recommended at this time.

23. In general, the 95th percentile queues at the study area intersections can be contained without existing storage lanes or adjacent through lanes. For critical movements at study area intersections (where queues exceed storage), Site-related impact is mostly negligible or minimal on these movements. No further mitigation measures are recommended at this time.

24. The Site-related traffic impacts will generally have only a moderate impact on study area intersections. Where intersections are expected to operate at, or above theoretical capacity, the potential congestion will largely be related to background development traffic and general corridor growth elsewhere in Midtown and the rest of Oakville.

25. With the full build-out of the Midtown Oakville area, the road network will continue to operate under very busy conditions, with some intersections operating at, or above, their theoretical capacity. This is reflective of a busy urban centre where the majority of mobility needs will be met by non-auto means including transit (particularly GO, BRT and other bus transit) and active modes (walking and cycling and other micro-mobility), while a smaller proportion of travel needs will continue to be met via private automobile.

26. The planned introduction of significant new road infrastructure in Midtown Oakville, including through the Site, will help support increased traffic volumes to / from Midtown and help to better distribute traffic to / from the surrounding road network.

27. The Site's TDM Plan seeks to encourage and enable travel by non-auto means, while accommodating the smaller proportion of people that own and use a private automobile. TDM strategies that encourage non-auto travel include limiting the Site's parking supply, provision of high quality bicycle parking, a full suite of TDM measures and the creation of a dense, mixed-use and walkable community within the Site and Midtown Oakville. Most importantly, the Site's proximity to frequent higher-order transit, including GO, the future Trafalgar BRT and other bus services operated by Oakville Transit, will allow residents, employees and visitors of the Site to access local and regional destinations without use of a car.

The proposed development is appropriate and can be accommodated on the future area road network, in consideration of the future transit of Midtown Oakville, the upgraded road network planned in the area and the transit and active oriented nature of the proposed TDM Plan.

3.0 PLANNING CONTEXT

3.1 Provincial and Regional Policy Framework and Directives

There are several provincial and regional transportation-related policy documents that pertain to the Site. The key transportation details of these policy documents are reviewed in the following sections. The proposed development of the Site incorporates the policy direction of these documents by incorporating a mix of uses, greater density and reduced parking standards based on the Site's proximity to existing and planned transit corridors and the implementation of Transportation Demand Management (TDM) strategies as part of the development.

3.1.1 Ontario's Five-Year Climate Change Action Plan (2016)

Ontario's Five-Year Climate Change Action Plan was announced in June 2016 (the "Ontario CC Action Plan"). The Ontario CC Action Plan emphasizes the importance of addressing climate change at the municipal level. Some of the key transportation and land-use planning actions outlined in the Ontario CC Action Plan are as follows:

- ***Reduce single-passenger vehicle trips*:** Ontario will provide grants to municipalities and large private employers to implement Transportation Demand Management (TDM) strategies. The plans will be designed to facilitate an increase in walking, cycling, carpooling, telecommuting and flexible work schedules, to reduce overall fossil fuel consumption, traffic congestion and transportation emissions.
- ***Support cycling and walking*:** Commuter cycling networks will be established across Ontario that target routes with high numbers of commuting trips, such as between residential communities, major transit stations and employment areas. There will be more cycling facilities in urban areas, including grade-separated routes and traffic signals for cyclists. There will be more bicycle parking at transit stations and at provincially owned, publicly accessible facilities. Ontario will revise provincial road and highway standards to require that commuter cycling infrastructure be considered for all road and highway construction projects where it is safe and feasible. Ontario will do the same for major transit corridors.
- ***Eliminate minimum parking requirements***: Minimum parking requirements will be eliminated over the next five years for municipal zoning by-laws, especially in transit corridors and other high-density, highly walkable communities. As minimum parking requirements are a barrier to the creation of complete, compact and mixed-use communities, zoning by-laws will instead encourage sustainable travel, cycling lanes, wide sidewalks and enhanced tree canopies.

3.1.2 Provincial Planning Statement (2024)

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 and promotes efficient development patterns that optimize the use of land, resources and public investment in infrastructure and public service facilities, for the next 25 years.

According to the PPS, efficient development patterns promote a mix of housing, including affordable housing, employment, recreation, parks and open spaces and safe and efficient transportation choices, that maximize the use of existing and planned infrastructure and increase the use and connectivity of multi-modal transportation system elements.

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 five 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.

There are a number of important transportation-related directives relevant to the development of the Site that include the following:

- Provide a density and mix of land uses to minimize the duration and number of vehicle trips and encourage the use of transit and active transportation.
- Make efficient use of existing and planned infrastructure, including through the use of TDM strategies.
- Improve the connectivity of transportation systems for all modes of travel.
- Provide transportation systems that are appropriate for projected needs which consider safety and are energy efficient and facilitate the movement of people and goods.
- Support the development of viable choices and plans for public transit and other alternative transportation modes, including commuter rail and bus.
- Prioritize growth in strategic growth areas.
- Promote development and intensification within Major transit station areas ("MTSAs"), such as the Midtown Oakville MTSA where the Site is located.
- Developments within MTSAs will be transit supportive, with a compact mixed-use development that includes a high level of residential and employment density, in proximity to transit stations and corridors.
- Developments within MTSAs will be supported, where appropriate, by providing alternative development standards, such as the elimination of parking requirements (as per Bill 185).

The location of the Site demonstrates the characteristics of an area within a Major Transit Station Area (MTSA). The PPS 2024 defines the MTSAs as the area within a 500 to 800-metre radius of a transit station (i.e. a 10-minute walking distance). It is important to note that the Site is within the Midtown Oakville MTSA.

3.1.3 Connecting the GGH: A Transportation Plan for the GGH (2022)

Connecting the GGH: A Transportation Plan for the Greater Golden Horseshoe, February 2022 (the "GGH Transportation Plan"), provides a 30-year vision for mobility across the GGH region. It identifies several actions, that include the following seven goals:

1. Fight gridlock;
2. Improve transit connectivity;
3. Provide users more choices;
4. Keep goods moving;
5. Safe and inclusive transportation system;
6. To be future ready; and
7. Address connections beyond the GGH.

3.1.4 2041 Metrolinx Regional Transportation Plan (2018)

The *Metrolinx 2041 Regional Transportation Plan* (the "2041 RTP") was adopted in 2018 as an update to The Big Move (2008) and provides a framework to create an integrated, multi-modal and regional transportation system that supports the growth of healthy, complete and sustainable communities.

The 2041 RTP includes strategies that integrate land use and transportation planning to identify areas for investment and build new connections. Strategy 4.8 specifically addresses parking management and encourages the province to adopt a region-wide policy that "*provides guidelines and encourages best practice in parking management*." The strategy states that "*zoning standards should be reviewed, with the expectation that minimum parking requirements will be reduced, particularly in transit-supportive neighbourhoods*", such as the Site area. The 2041 RTP also includes the importance of TDM strategies in land use planning and development in order to prioritize cycling, walking and transit use.

The 2041 RTP also identifies Midtown Oakville as a Mobility Hub, for which an additional framework was developed to help guide development in these areas.

As noted within the 2041 RTP, Mobility Hubs are Major Transit Station Areas (MTSAs) at key intersection points on the Frequent Rapid Transit Network, which are intended to create strong transit connections and integrate multiple modes of transportation. The *2011 Metrolinx Mobility Hub Guidelines*, currently under review to reflect updated Provincial policy and the 2041 RTP, build upon the strategies presented by Metrolinx to provide a framework that facilitates development at Mobility Hubs across the GTHA.

This framework is intended to ensure the areas surrounding key transit stations support more intense development and accommodate strong pedestrian, cycling and transit facilities and connections. The Guidelines recommend minimizing auto-use through the implementation of parking maximums in order to limit excess parking supply and suggests reviewing and possibly removing minimum parking standards in areas that have high accessibility to rapid transit stations.

3.1.5 Ontario Bill 185 (2024)

On April 10, 2024, the Province of Ontario government introduced "Bill 185: Cutting Red Tape to Build More Homes Act, 2024". This provincial Bill introduced a number of changes to Province of Ontario Acts, including the Planning Act. A key change was to prohibit and/or limit the ability for municipal official plans and zoning by-laws to require that an owner provide parking facilities (other than for bicycle parking) in Protected Major Transit Station Areas (PMTSA) and areas around transit stations. As a result, any minimum parking requirements (except for bicycle parking) within existing Zoning By-laws, are no longer in effect and are therefore not applicable to lands located within identified MTSAs or PMTSAs. **Bill 185 received Royal Assent on June 6, 2024 and is now in force and effect.**

The Site is located within the Midtown Oakville Protected Major Transit Station Area as outlined in the Oakville Official Plan and the delineated MTSAs and PMTSAs have been approved by Region of Halton. As such, minimum vehicle parking requirements will no longer be applicable to the Site and the area immediately surrounding the Site.

3.2 Local Area Policy Framework and Directives

There are a number of local area policies and strategic frameworks that need to be considered in the context of the development of the Site. The key transportation details of relevant policy documents are reviewed within the following sections.

3.2.1 Oakville Transportation Master Plan

On October 6, 2025, Oakville Town Council adopted the Town of Oakville 2025 Transportation Master Plan (TMP). The focus of the TMP is provide a multi-modal transportation network, with a focus active transportation and transit, in order to provide a range of travel options to manage growth and mitigate congestion in the Town.

> *"The TMP will focus on building walkable, cycle and transit friendly neighbourhoods integrated with accessible transportation choices for all residents. The TMP will recommend a comprehensive, updated set of guidelines to enhance the Town's transportation system to address the needs of all stakeholders and establish a path forward for all modes of transportation to support Oakville's vision to be a vibrant and livable community for all."*

The 2025 Oakville TMP recommended street network is illustrated in **Figure 8** (Figure 7-2 in the TMP). Note that the TMP road network includes the extension of Cross Avenue from west of Trafalgar Road to the Royal Windsor Drive interchange at the QEW and the connection of Argus Road to Davis Road, below Trafalgar Road.

3.2.2 Oakville Transit Five-Year Business Plan (2025-2029)

Oakville Town Council has recently approved Oakville Transit's 5-Year Business plan. The plan maps out Oakville Transit's plans from 2025 to 2029. There are a number of planned changes to Oakville Transit's bus network, including changes to routes that serve the Oakville GO Station Bus Hub. The changes will be done in phases between 2025 and 2029.

3.2.3 Livable Oakville "Midtown Oakville" (Office Consolidation Aug 2021)

The Mid-Town Oakville District is envisioned as a higher density, transit-supportive, mixed-use area and as a strategic location to accommodate both population and employment growth. This district will include gateway features, urban park with pedestrian midblock connections and establish a mix of commercial and residential uses.

Livable Oakville describes the Mid-Town and its attributes as follows… *"The Oakville GO/VIA Station is the Town's primary hub for current and planned transit and is a major transit station. Rail and bus connections currently service the area and major improvements to the local and inter-regional transit network are planned. In addition to improvements to the local bus network, there will be express commuter rail service and bus rapid transit corridors along Trafalgar Road and Highway 403. The bus rapid transit systems will originate in Midtown Oakville and connect with the broader Greater Toronto and Hamilton Area transportation network."*

Within Livable Oakville, Part E – Growth Areas, Mid-Town Oakville, there are a number of relevant policies that support the intensification of the Mid-Town area and that speak directly to the mobility needs and requirements,

supporting land use policies (internalization of trip making), and phasing necessary to fulfill those goals and objectives. These characteristics are consistent with the objective of reducing the reliance on the private automobile to support that intensification.

Policy 20.1 states that:

- *Midtown Oakville will be a vibrant, transit-supportive, mixed use urban community and employment area.*

Policy 20.2.1 states that:

- *To create transit-supportive development by*

    a) *ensuring the entire area is developed as a pedestrian-oriented environment focused on access to, and from, transit;*

    b) *improving internal road circulation and connections to, and through, Midtown Oakville for public transit, pedestrians, cyclists and vehicles; and,*

    c) *promoting a compact urban form with higher density and higher intensity land uses.*

Policy 20.4.1 states that:

- *Development shall promote safe, convenient and attractive pedestrian access to transit stops or stations. Barriers, such as boundary fences, shall be discouraged.*

The in-force transportation network included within Liveable Oakville (updated in 2021) is included in **Figure 10**.

3.2.4 Trafalgar Environmental Assessment (2015)

The Trafalgar Road (Regional Road 3) Improvements Class Environmental Assessment Study ("Trafalgar EA"), from Cornwall Road to Highway 407, was completed in May 2015. The study recommended widening Trafalgar Road from 4 to 6 lanes, with plans to convert the curb lanes into high-occupancy vehicle (HOV) or bus rapid transit (BRT) lanes once the road widening is completed (2032 timeline).

In the vicinity of Midtown Oakville, the Midtown Oakville EA, recommended that the Trafalgar BRT route be diverted to a new north-south street that crosses over the QEW, east of Trafalgar Road. The BRT route would leave the Trafalgar Road corridor north of the QEW ramps, divert onto the new north-south street crossing the QEW, east of Trafalgar Road and travel on a realigned Cross Avenue to connect to the Oakville GO Station hub.

Trafalgar Road currently includes a 6-lane cross-section, in addition to dedicated left-turn lanes within the study area. It is noted that for the future conditions traffic analysis, the eastbound channelized right-turn at the intersection of Trafalgar Road and Cornwall Road has been removed in order to align with the preferred design.

3.2.5 Midtown Oakville Environmental Assessment (2014)

The Town of Oakville approved a Class Environmental Assessment ("Midtown Oakville EA") in 2014 for Midtown Oakville to guide the development of the transportation and municipal stormwater infrastructure required to support the planned growth in the area. The Midtown Oakville EA identified key modifications to the existing and future road network needed to accommodate this growth. The preliminary road network "The Preferred Concept" recommended within the 2014 Midtown EA is illustrated in **Figure 9** (Figure ES-3 from the Midtown EA).

Additional strategic transportation plans and technical studies have also completed, including the Halton Region Transportation Master Plan, the Town of Oakville Transportation Master Plan – Switching Gears, the Midtown

Parking Strategy and Designing Midtown Oakville. As a result, the Town proposed an Official Plan Amendment (OPA) to incorporate the findings of these studies into the Official Plan to ensure that policies and schedules align with the most current source documents.

3.2.6 Draft Midtown Oakville Official Plan Amendment (2024)

The Town of Oakville adopted the 2024 Midtown Oakville Official Plan Amendment (OPA 70) ("Draft Midtown Oakville OPA") at its February 18, 2025 Planning and Development Council meeting. The OPA will be sent to the Ministry of Municipal Affairs and Housing for final review and approval. While the OPA is under review by Ministry, the Town will continue public consultation regarding Midtown policy implementation tools. The future transportation network included within the Midtown OPA (Schedule L-5), is illustrated in **Figure 11.** Additional details regarding the future Midtown Oakville transportation network are provided in **Section 4.1.1.4.**

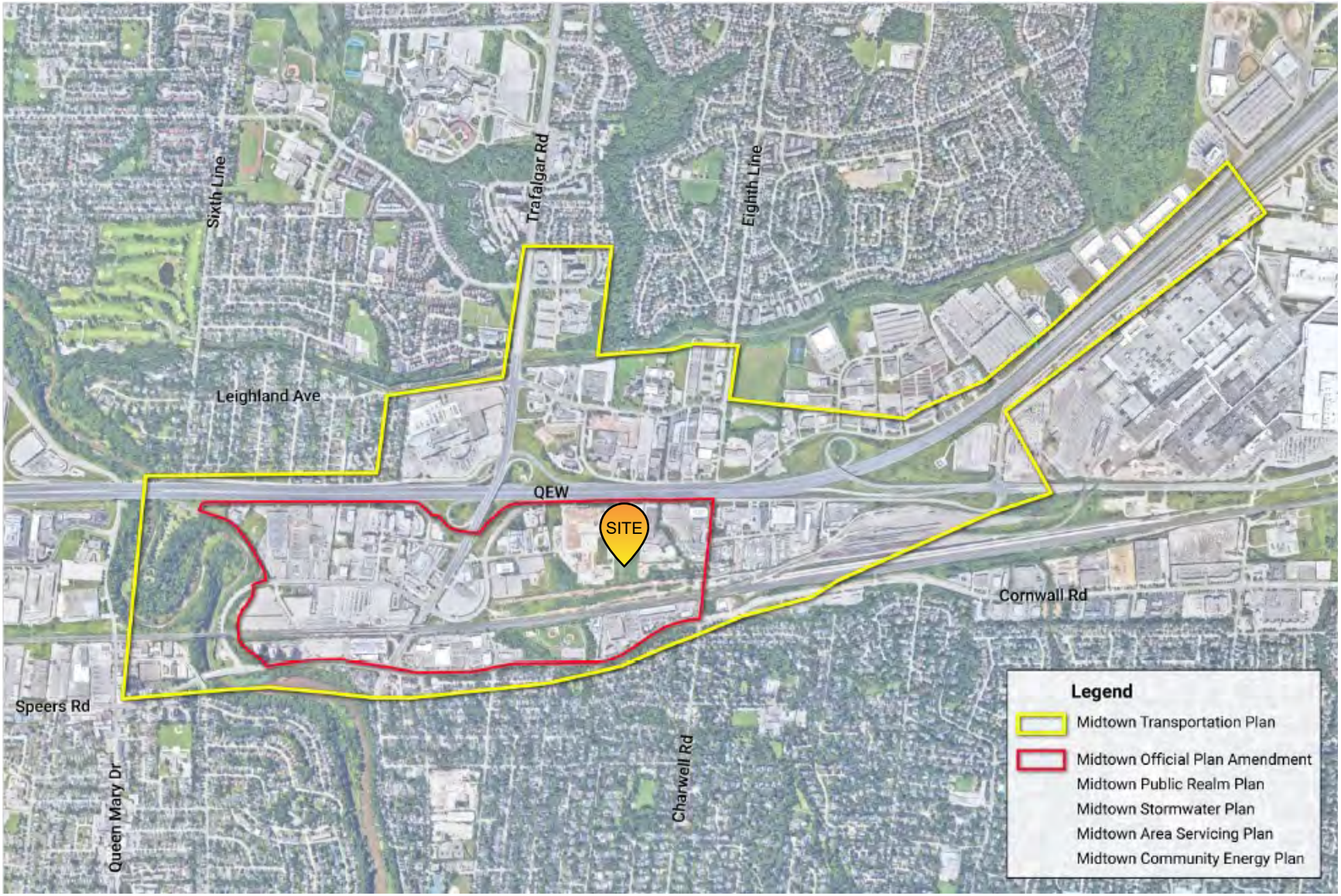

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FIGURE 5 MIDTOWN IMPLEMENTATION STUDY AREA

4.0 AREA TRANSPORTATION CONTEXT

4.1 Area Road Network

4.1.1 Existing Road Network

An overview of the surrounding public area road network is summarized below. The existing area road network is illustrated in **Figure 6.** The existing lane configuration and traffic control is illustrated in **Figure 7.**

Table 3 Existing Area Street Network

Roadway	Direction	Cross-Section	Speed Limit	Description
Highways				
Queen Elizabeth Way	East-West	8-lane	110 km/h	The Queen Elizabeth Way (QEW / Highway 403) is a 400-series highway linking Toronto and Fort Erie. In the Site vicinity, the QEW has a six-lane cross section including a High occupancy vehicle (HOV) in each direction. The nearest on/off ramp is located at Trafalgar Road.
Arterial				
Trafalgar Road (Halton Region Road 3)	North-South	6-lane	50 km/h	Trafalgar Road (Halton Region Road 3) is an urban major arterial road from Cornwall Road northwards and an urban minor arterial road southward from Cornwall Road. The roadway consists of a six-lane cross-section from Cornwall Road northwards and tapers down to a two-lane cross-section southward. Pedestrian facilities are provided along both sides of the road in the study area.
Cornwall Road	East-West	4-lane	60 km/h	Cornwall Road is a multi-purpose arterial road and consists of a six-lane cross-section at the intersection of Trafalgar Road and tapers down to a four-lane cross-section eastward and westward. It provides access to the Oakville GO station and surrounding retail plazas. Pedestrian facilities are provided along both sides of the road in the study area.
Chartwell Road	North-South	2-lane	50 km/h	Chartwell Road is a two-lane north-south local street north of Cornwall Road that provides additional access to the existing built lands in Midtown Oakville and connects South Service Road East to Cornwall Road. There are no existing pedestrian facilities along Chartwell Road.

Roadway	Direction	Cross-Section	Speed Limit	Description
Local				
South Service Road East	East-West	2-lane	50 km/h	South Service Road East is the extension of Cross Avenue, east of Trafalgar Road. It reflects a four lane cross section (five lanes at Trafalgar Road) and extends as a four lane street east and north to just north of Davis Road, where it narrows to a two lane street. It continues as a two lane street easterly, to where South Service Road intersects with Royal Windsor Drive. It continues north of Royal Windsor Drive as The Canadian Road where it runs adjacent to the Ford Assembly Plant and intersects with Ford Drive. South Service Road West exists on the west side of Trafalgar Road and provides a load street function, configured as a two lane street. South Service Road is discontinuous across the Trafalgar Road corridor. There are no pedestrian facilities along South Service Road, except for the west/north side of South Service Road, from Davis Road to Trafalgar Road.
Davis Road	East-West	2-lane	50 km/h	Davis Road is a two-lane east-west local street that intersects with South Service Road East. Davis Road terminates as a cul-de-sac west of its intersection with South Service Road East. Davis Road currently terminates at the fence line that demarks the west limit of the Site. It does not have a typical cul-de-sac terminus. There are pedestrian facilities along the southern side of the segment of Davis Road east of South Service Road East.

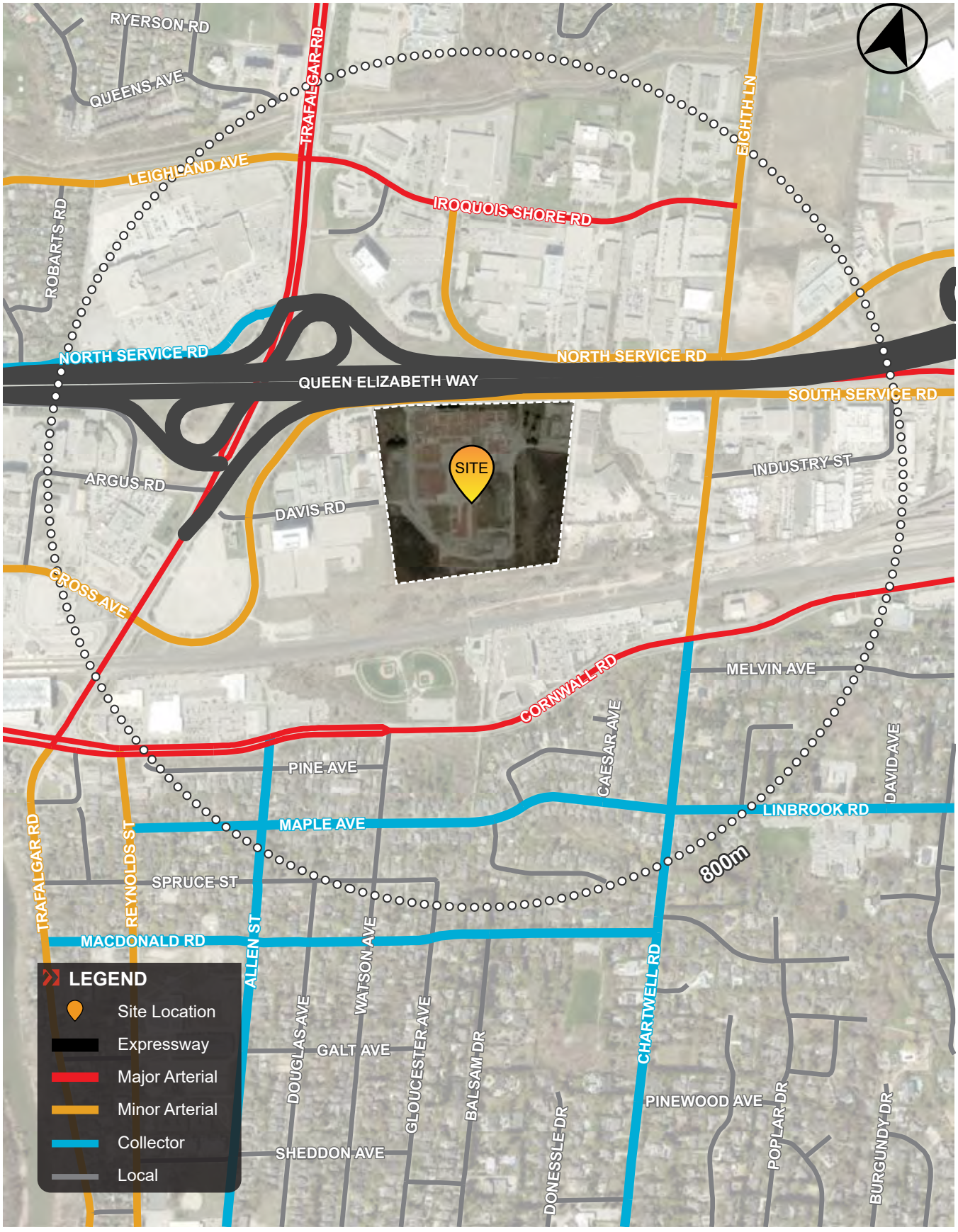

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FIGURE 6 EXISTING STREET NETWORK

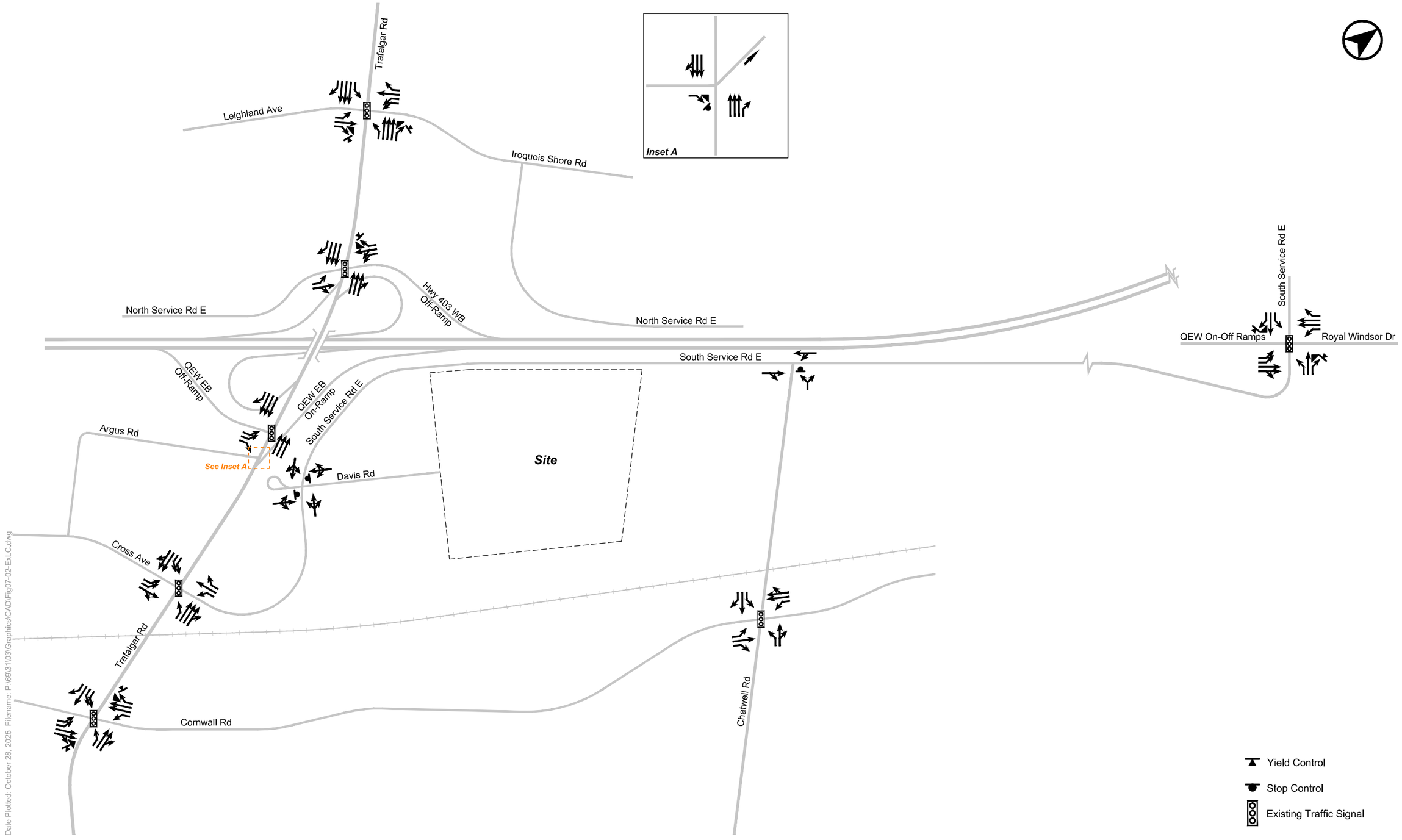


FIGURE 7 EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

4.1.1.1 Future Road Network

Through the 2014 Midtown Oakville Environmental Assessment Study (Midtown EA) (Preliminary Preferred Concept for Road Network from EA Figure ES-3 provided in **Figure 9**), and further through the 2024 Draft Midtown Oakville OPA, the Town of Oakville has established a proposed street system that supports intensification within the Midtown area.

4.1.1.2 Oakville Transportation Master Plan

The Town is currently updating their 2018 Transportation Master Plan and 2017 Active Transportation Master Plan to create a comprehensive Oakville Transportation Master Plan, with expected completion in 2025. The focus of the TMP is provide a multi-modal transportation network, with a focus active transportation and transit, in order to provide a range of travel options to manage growth and mitigate congestion in the Town.

The Draft Oakville TMP recommended street network is illustrated in **Figure 8** (Figure 7-2 in the TMP). It is noted that the TMP road network includes the extension of Cross Avenue from west of Trafalgar Road to the Royal Windsor Drive interchange at the QEW and the connection of Argus Road to Davis Road, below Trafalgar Road.

4.1.1.3 Midtown Oakville Environmental Assessment (2014)

The Town of Oakville approved a Class Environmental Assessment ("Midtown Oakville EA") in 2014 for Midtown Oakville to guide the development of the transportation and municipal stormwater infrastructure required to support the planned growth in the area. The Midtown Oakville EA identified key modifications to the existing and future road network needed to accommodate this growth. The preliminary road network "The Preferred Concept" recommended within the 2014 Midtown EA is illustrated in **Figure 9** (Figure ES-3 from the Midtown EA).

4.1.1.4 Draft Midtown Oakville OP Street Network

The "in-force" OPA (Livable Oakville) transportation network is illustrated in **Figure 10** (Schedule L3). The proposed Draft Midtown Oakville OPA transportation network is illustrated in **Figure 11** (Schedule L5). The Draft Midtown Oakville OPA includes the following changes from the prevailing Livable Oakville OPA:

- **The elimination of an off-ramp from the eastbound QEW** that was proposed to pass beneath Trafalgar Road, with a connection to Cross Avenue;
- A future **active transportation grade separated crossing of Trafalgar Road**, between Argus Road and Cross Avenue;
- The **N-S Arterial Street**, east of Trafalgar Road, with connectivity between north of the QEW to Cornwall Road in the south. The N-S Arterial Street is planned to include a bridge across the QEW and a below-grade structure at the CN/GO Rail corridor. The N-S Arterial Street will include pedestrian and cyclist facilities, serve as the Trafalgar Road BRT route across the QEW corridor and provide an important new vehicle route to and from the Midtown Oakville area, connecting it to the surrounding Oakville area;
- The **realignment of Cross Avenue** as it crosses Trafalgar Road, intersects the new N-S Arterial Street at-grade and extends eastwards to connect with Chartwell Road. Cross Avenue assumes a relatively east-west alignment through Midtown Oakville, along the southern limit of the developable area within Midtown, east of Trafalgar Road;
- The **realignment of South Service Road**, east of Trafalgar Road, that intersects with both Cross Avenue and Davis Road and continues eastward to Chartwell Road;

- The **extension of Argus Road** from west of Trafalgar Road, below Trafalgar Road, with a **connection to Davis Road**. Davis Road continues eastward to a new north-south local road (between South Service Road and Cross Avenue). An at-grade intersection will be formed at Davis Road and the N-S Arterial Street.
- A **finer grained collector and local street system** that provides a more efficient framework for development blocks. Several new north-south local streets are proposed that connect South Service Road East (both east and west of Trafalgar Road) to Cross Avenue.

Providing these Midtown streets is essential to support transportation needs within the Midtown Oakville Urban Growth Centre. This area would accommodate the densest development planned within the Town of Oakville by creating the following:

- A structure of development blocks;
- Opportunities for direct vehicle access; and
- Opportunities to substantially improve the multi-modal network afforded the planned intensification within Midtown.

4.1.1.5 Broader Midtown Oakville Street Network

The broader Midtown Oakville street network includes considerations for both the Draft Midtown Oakville OPA transportation network, as well as the Midtown EA. In addition to the proposed network included within the Draft Midtown Oakville OPA, the broader Midtown Oakville street network includes the following:

- Cross Avenue extends from Trafalgar Road to Royal Windsor Drive, connecting with the enhanced QEW interchange.
- A direct route from eastbound QEW to Midtown Oakville is provided via a new off-ramp to Cross Avenue at the Royal Windsor Drive interchange. A new westbound QEW off-ramp at Royal Windsor Drive will offer an alternative route to Midtown Oakville and surrounding areas. The new QEW ramps at Royal Windsor Drive will accommodate the additional travel demand from Midtown Oakville's planned intensification and offer relief to the existing Trafalgar Road interchange.

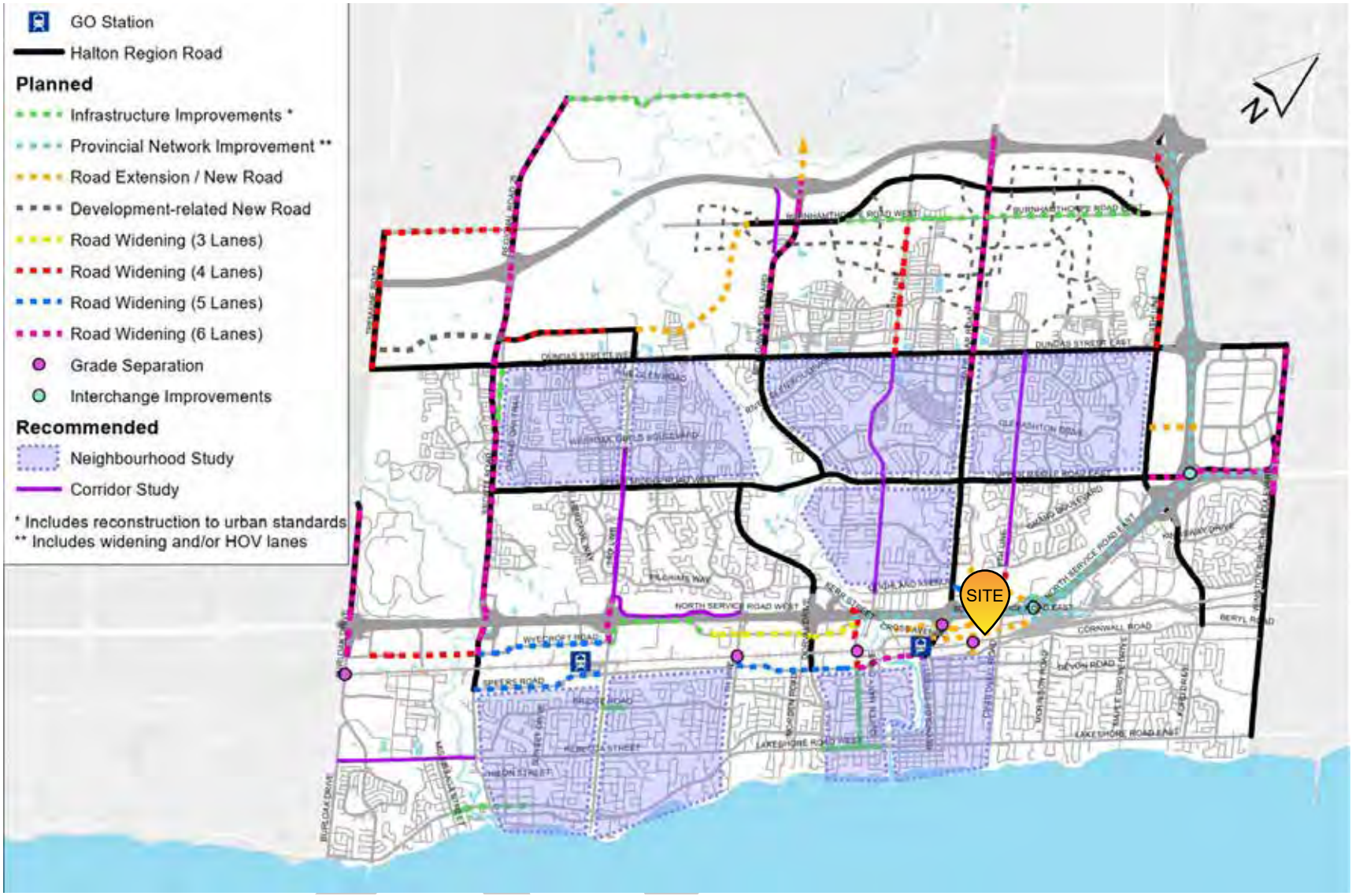
The routing options provided by the planned Midtown Oakville street system will be essential for all modes of travel between future development blocks, external point of access and egress related to Midtown Oakville and the Protected Major Transit Station Area (PMTSA) (the Oakville GO Station Hub), that includes Metrolinx's GO Rail and GO Bus stations and the Oakville Transit Terminal.

It is important to note that the **traffic analysis undertaken for this report considered the broader Midtown Oakville street network**. Given the long-term perspective of the Midtown OPA approval review and the long-term future study horizon (2044), the QEW ramp network improvements have been assumed to be in place as part of the future conditions for the traffic analysis within this report. Similarly, the planned full local, collector and arterial street network has been assumed to be in place for the traffic analysis, in order to assess the long-term travel demand impacts for the area.

Although the Midtown Oakville EA notes that the planned roadway improvements will provide relief to the existing and future traffic operations, it is recognized that capacity constraints will continue to remain the overall vehicle transportation network.

The planned Midtown Oakville street network that was presented in the Midtown Implementation Program PIC Panels in 2025 is illustrated in **Figure 12**. The adopted broader street network for this report, inclusive of the Royal Windsor Drive interchange at the QEW, is illustrated in **Figure 13.**

The future lane configurations and traffic control considered for the traffic analysis undertaken for this report, are illustrated in **Figure 14.**



Source: Oakville Transportation Master Plan Draft, April 2025

FIGURE 8 DRAFT OAKVILLE TMP RECOMMENDED STREET NETWORK

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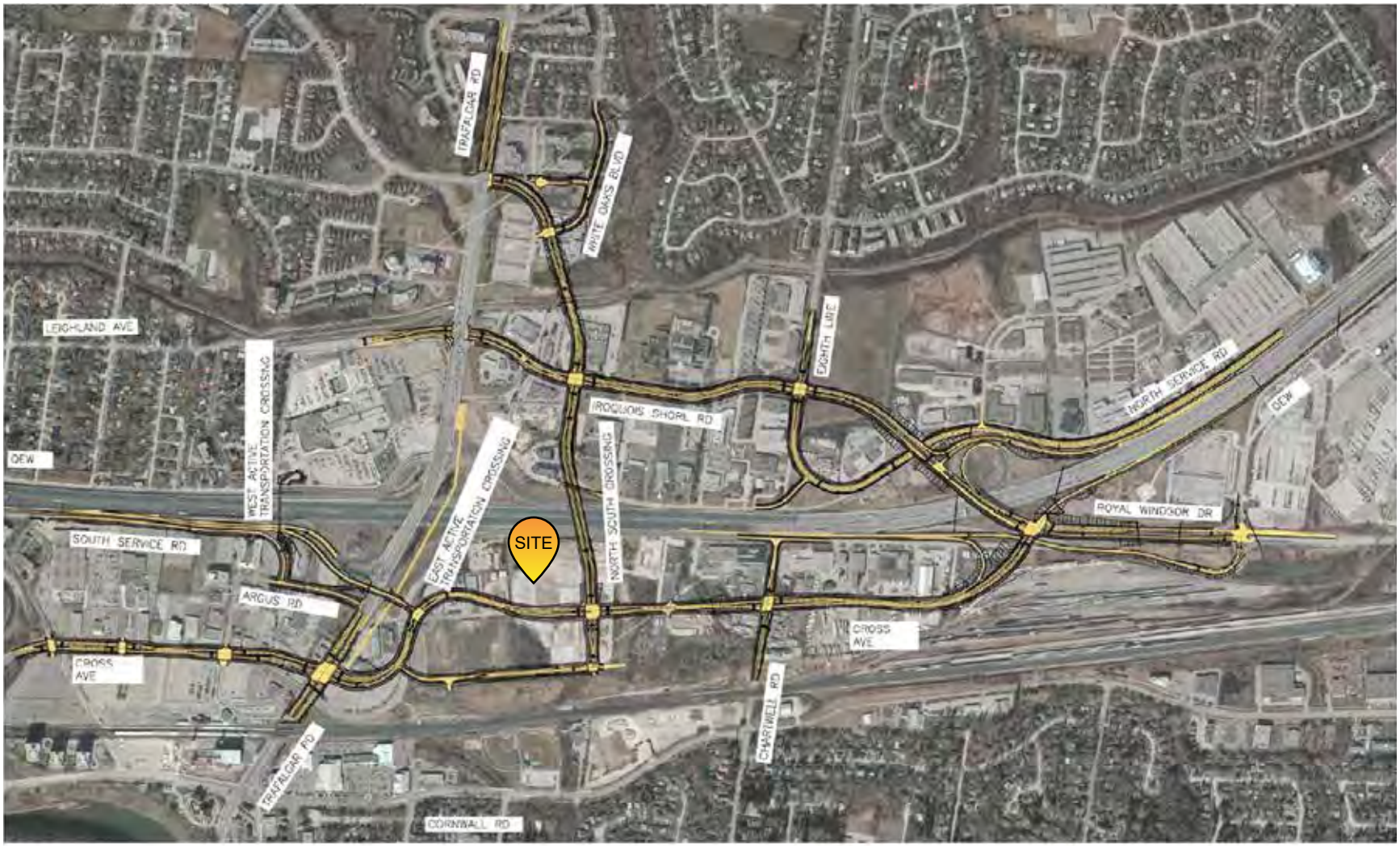

Source: Background on Mid Town Oakville Road Network

FIGURE 9 MIDTOWN OAKVILLE EA PRELIMINARY PREFERRED ROAD NETWORK

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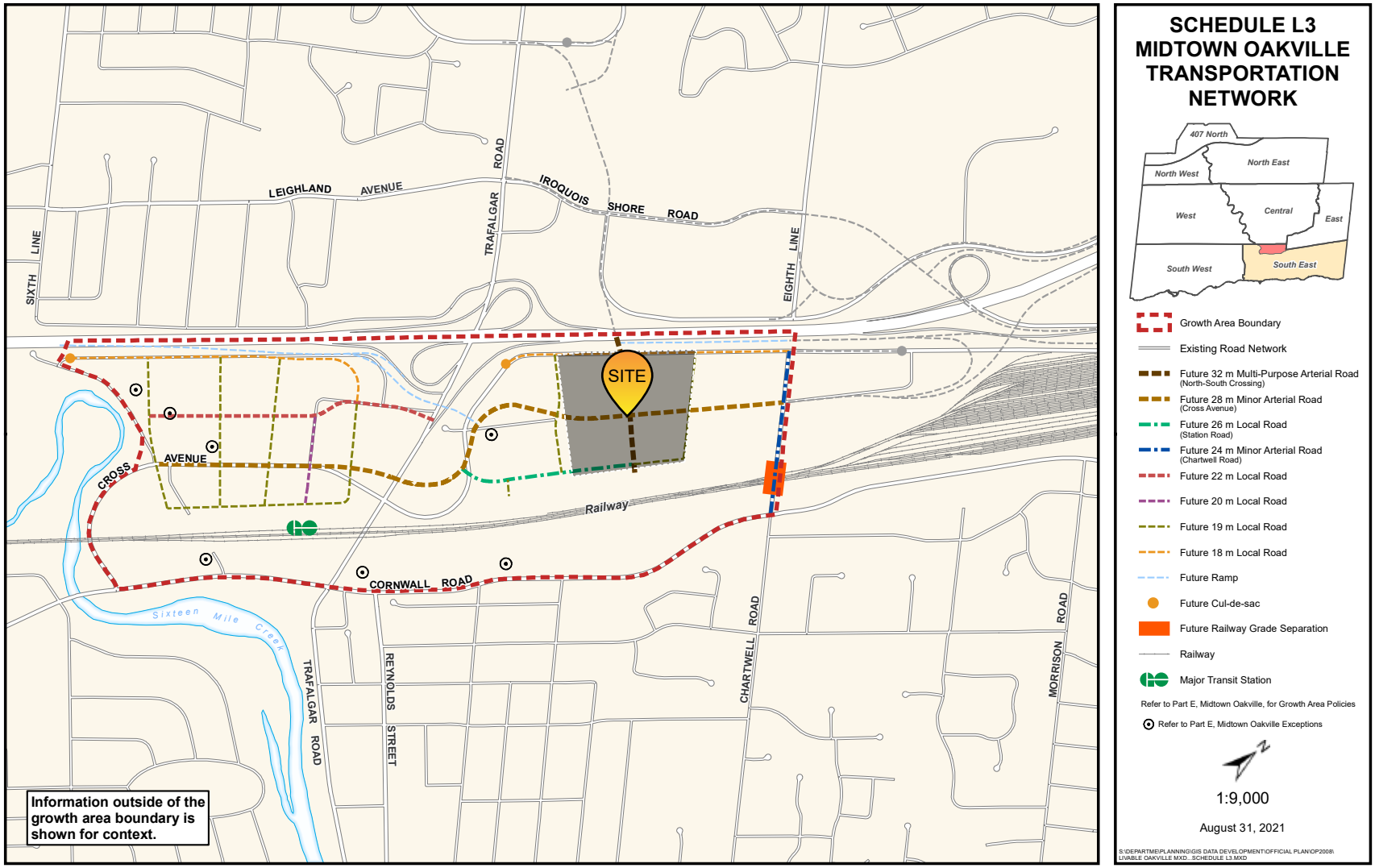

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FIGURE 10 IN-FORCE TRANSPORTATION NETWORK (LIVABLE OAKVILLE)

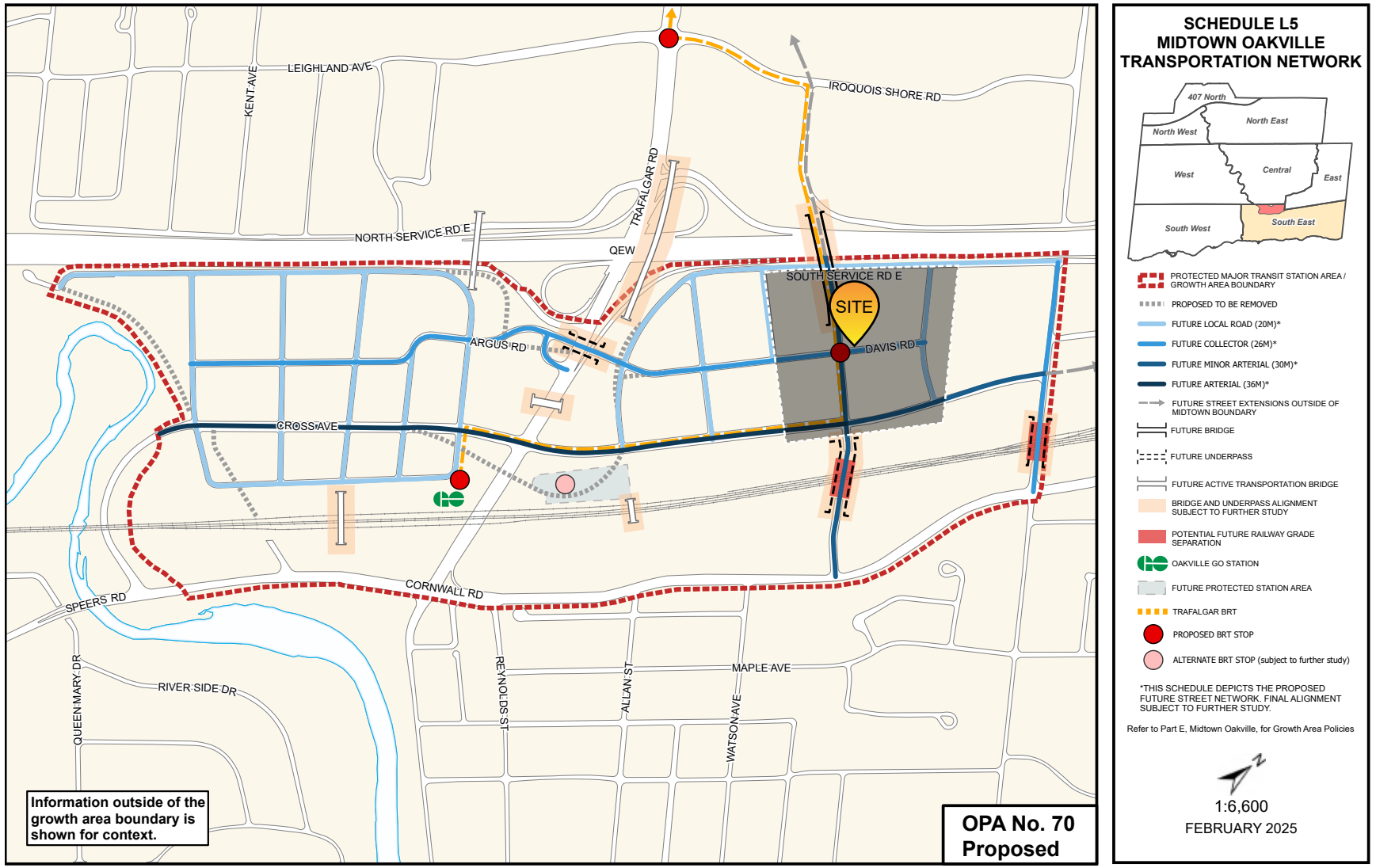

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FIGURE 11 MIDTOWN OAKVILLE OPA PROPOSED TRANSPORTATION NETWORK (SCHEDULE L5)

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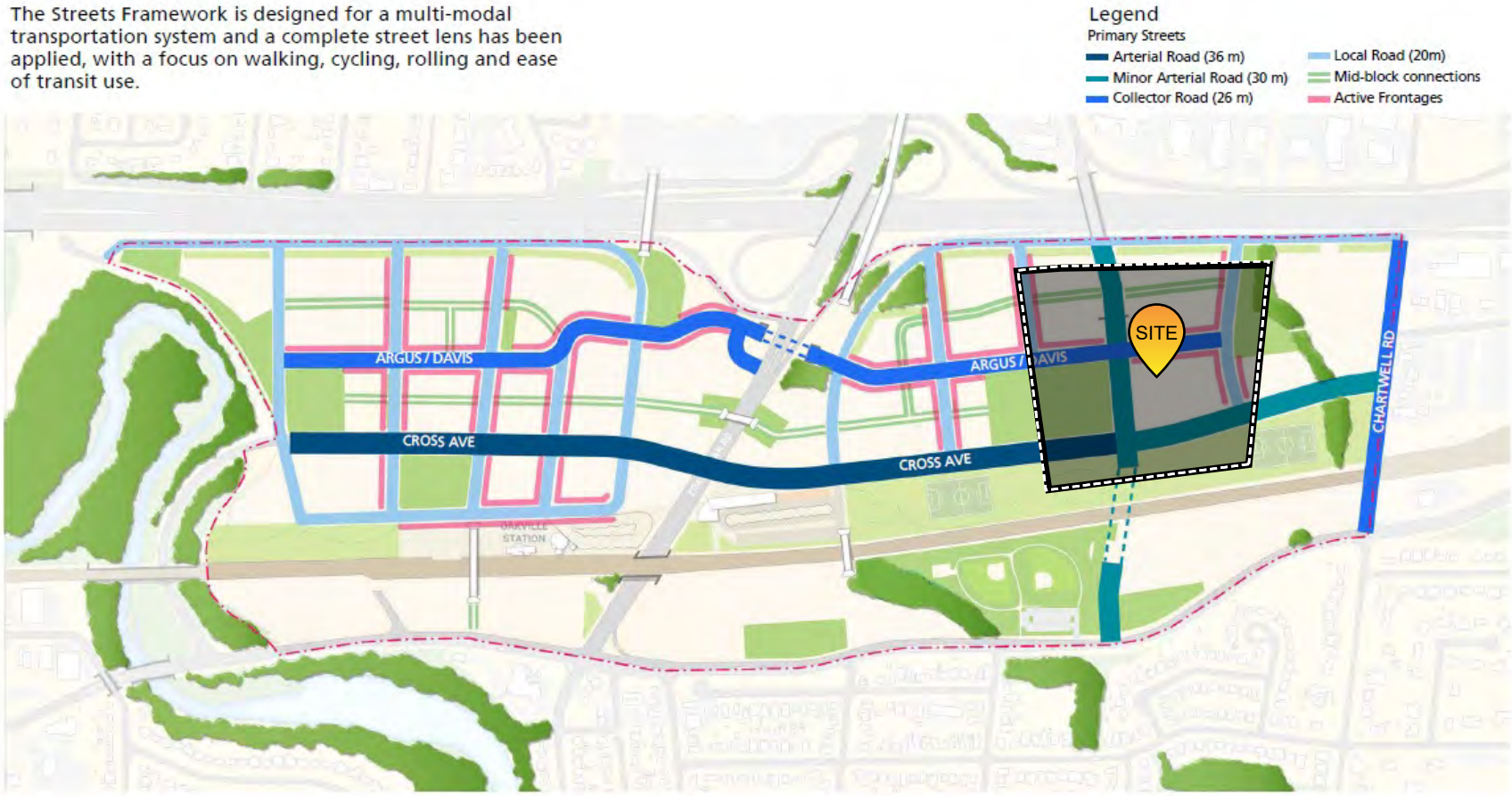
MOBILITY

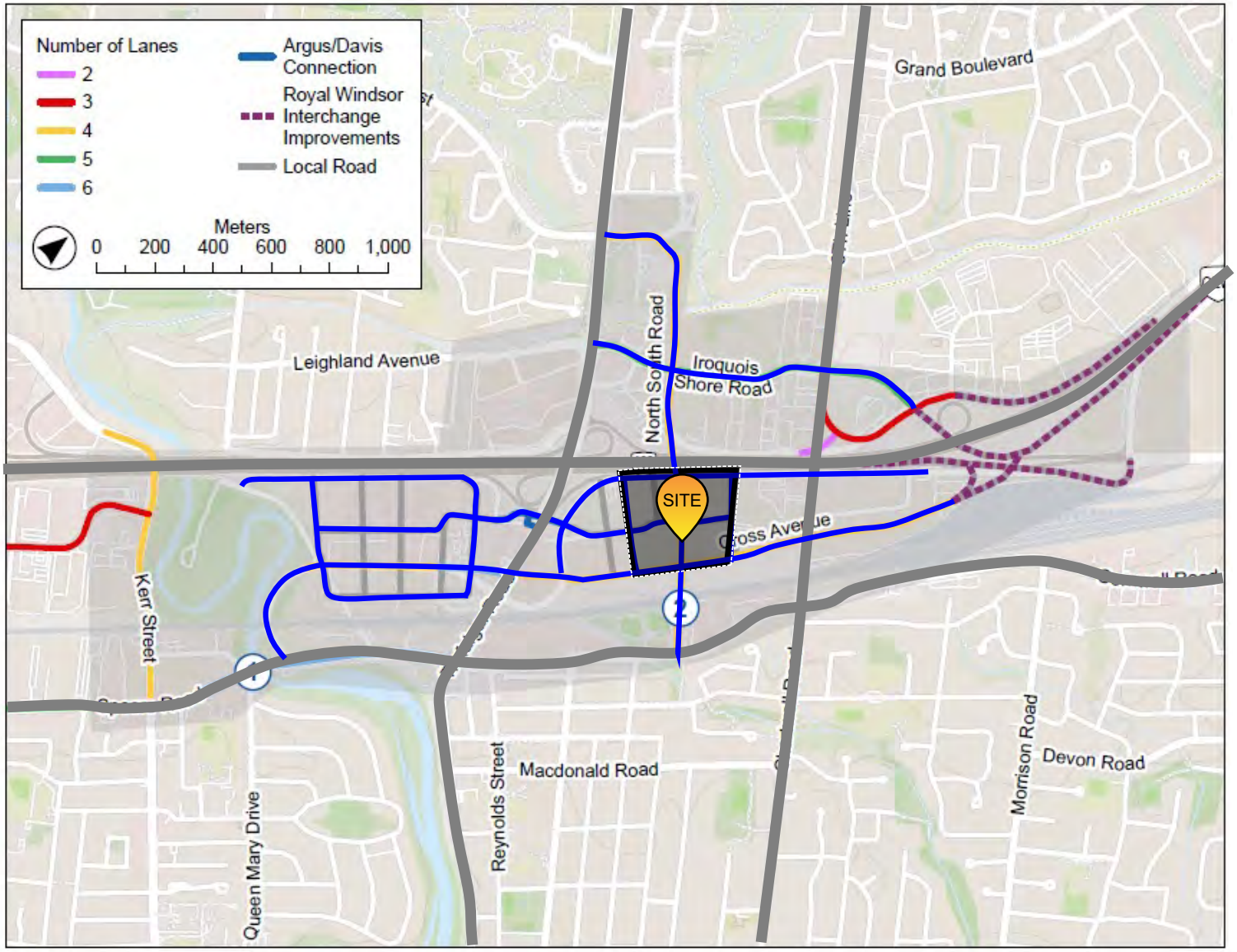
STREETS FRAMEWORK

The Streets Framework is designed for a multi-modal transportation system and a complete street lens has been applied, with a focus on walking, cycling, rolling and ease of transit use.



Source: Midtown Implementation Program PIC Panels, 2025

FIGURE 12 PLANNED MIDTOWN OAKVILLE STREET NETWORK



Source: Midtown Implementation Program PIC Panels, 2025

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FIGURE 13 BROADER PLANNED STREET NETWORK FOR MIDTOWN OAKVILLE

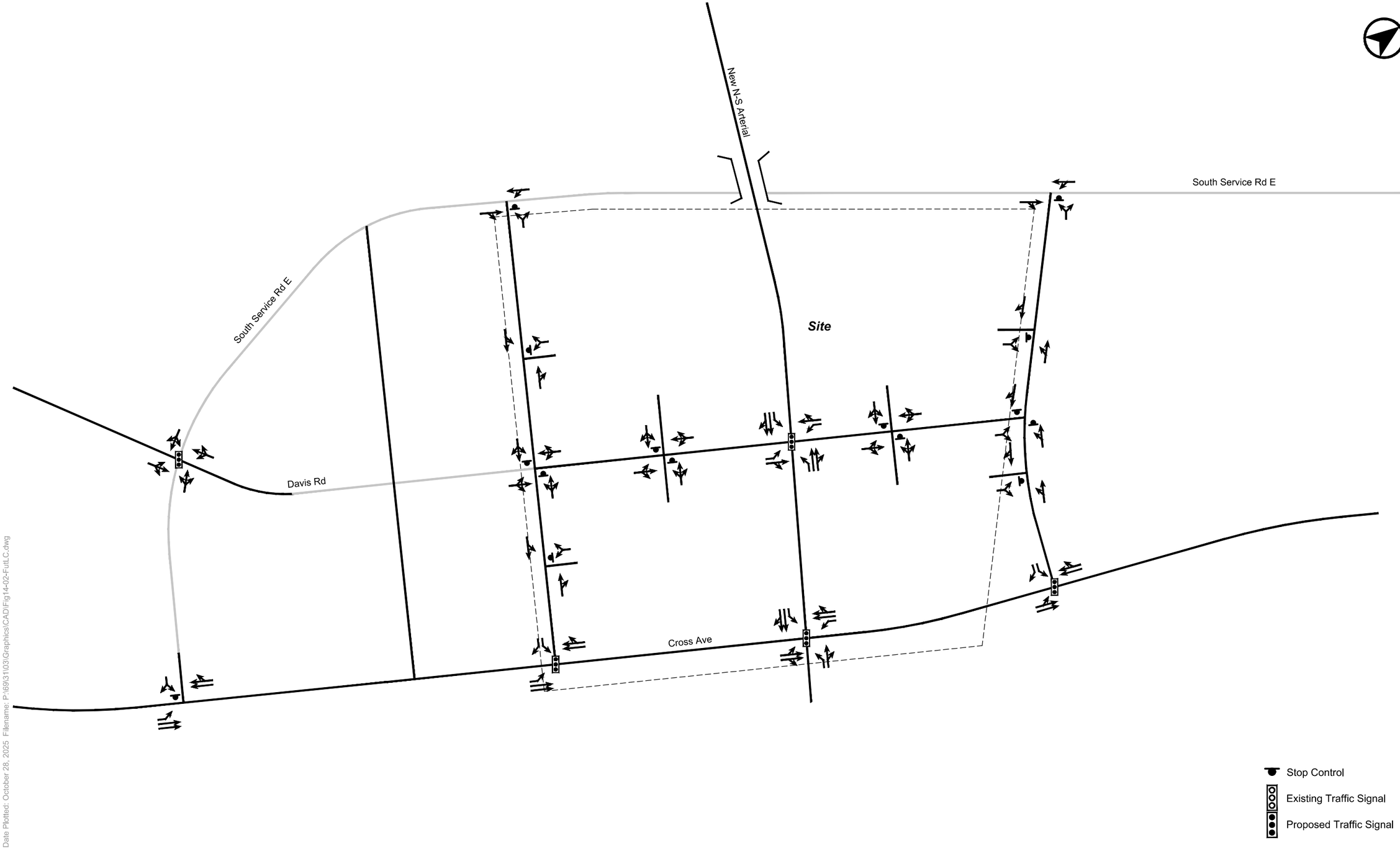

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FIGURE 14A FUTURE LANE CONFIGURATION AND TRAFFIC CONTROL "INTERNAL NETWORK"

420 - 468 SOUTH SERVICE ROAD EAST

4.1.1.6 Review of Key Midtown Area Street Segments

The following section reviews the functional street design for the proposed street network, immediately adjacent to or within the Site. The right-of-way (ROW) widths of the proposed streets are consistent with the Draft Midtown Oakville OPA.

The proposed public area road network is summarized in Table 4**.** The functional plans and the cross-sections of the proposed public streets within the Site are provided in **Appendix D.**

Table 4 Future Area Road Network – Draft Midtown Oakville OPA (2024)

Roadway	Segment	Road Classification	Right-of-Way Width	Direction
Cross Avenue Extension	Lyons Lane to Chartwell Road	Arterial	30 to 36 metres[1]	East-West
New N-S Arterial	Iroquois Shore Road to Cornwall Road	Minor Arterial	30 metres	North-South
Argus Road - Davis Road Extension	Argus Road / Davis Road to future Local Street B	Collector	26 metres	East-West
Chartwell Road	Cornwall Road to South Service Road East	Collector	26 metres	North-South
South Service Road East	Cross Avenue to Chartwell Road	Local	20 metres	East-West
Local Street A	South Service Road East to Cross Avenue	Local	20 metres	North-South
Local Street B	South Service Road East to Cross Avenue	Local	20 metres	North-South

Notes:
1. ROW dimensions at Trafalgar Road will be wider to account for planned turning lanes and to retain key pedestrian/cycling/landscaping elements.

Cross Avenue Extension

The Midtown street network includes the realignment and extension of Cross Avenue between Argus Road and Chartwell Road, continuing eastward to Royal Windsor Drive as per the Midtown EA. The realigned Cross Avenue is planned to cross Trafalgar Road and run parallel to the existing rail corridor to connect with Chartwell Road (and beyond) on the eastern border of the Midtown Oakville boundary. The Cross Avenue Extension is proposed to be an arterial street with a 36-metre right-of-way (ROW) from the western border of the Midtown Oakville boundary to the New N-S Arterial, where it would transition to a 30-metre ROW, east of the N-S Arterial Street.

The entire length of Cross Avenue is planned to include bicycle facilities. Cross Avenue will serve as a portion of the Trafalgar BRT Route that connects the eastern area of Midtown Oakville to the Oakville GO Station.

Cross Avenue is located along the southern edge of the Site, south of Blocks 3 and 4. Cross Avenue will intersect the future N-S Arterial Street in the centre of the Site, Local Street A on the western border of the Site and Local Street B on the eastern border of the Site.

For Cross Avenue, separate mid-block cross-sections are provided for the 36-metre segment west of the proposed N-S Arterial and the 30-metre segment east of the N-S Arterial.

Cross Avenue West of the N-S Minor Arterial Street: 36-metre mid-block ROW

Boulevards along the 36-metre segment of Cross Avenue are envisioned to be approximately 8.7 m wide and would accommodate the following components:

- 0.5 metre offset between the ROW limit and the public sidewalk (this could be hardscaped or softscaped depending on the adjacent use or surface treatment);
- 2.95 metre public sidewalk (3.45 metres when offset to ROW is included);
- 2.25 metre landscaping area;
- 2.0 metre uni-directional cycle track on each side of the ROW; and
- 1.0 metre buffer (including the 0.2 metre top of curb allowance) between the face of curb and cycle track.

The roadway portion of the 36 metre Cross Avenue ROW would include 5-lanes, arranged as follows:

- Four lanes, two curb lanes being 3.5 metres wide which would accommodate the BRT operations and two lanes adjacent to the median being 3.0 metres wide, in either direction; and
- One 5.0 metre median lane which would accommodate a centre left-turn lane and median adjacent to the turn lane.

At key intersections, transition segments of the cross-section would be finalized as more detail is advanced around the Midtown Oakville overall street network in general, specifically around key intersections, and with respect to the operational characteristics of the Trafalgar Road BRT corridor and its relationship with the Oakville GO Station facilities.

Cross Avenue East of the N-S Minor Arterial Street – 30 m mid-block ROW

Boulevards along the 30-metre segment is envisioned to be approximately 8.2-metres in width and would accommodate the following components:

- 0.5 metre offset between the ROW limit and the public sidewalk (this could be hardscaped or softscaped depending on the adjacent use or surface treatment);
- 2.45 metre public sidewalk (2.95 metres when offset to ROW is included);
- 2.25 metre landscaping area;
- 2.0 metre uni-directional cycle track on each side of the ROW; and
- 1.0 metre buffer (including the 0.2-metre top of curb allowance) between the face of curb and cycle track.

The roadway portion of the 30 m Cross Avenue ROW would be made up of 5-lanes, arranged as follows:

- Four lanes, two curb lanes being 3.5 metres wide and two lanes adjacent to the median being 3.0 metres wide, in either direction; and
- One 5.0 metre median lane which would accommodate a centre left-turn lane and median adjacent to the turn lane.

There would be no BRT lanes in this segment of the Cross Avenue alignment.

Future "N-S" Arterial

A new north-south minor arterial street (N-S Arterial) located east of Trafalgar Road, linking Midtown Oakville with the existing (and modified) street network north of the QEW corridor. The future N-S Arterial Street connects Iroquois Shore Road to Cornwall Road. The cross section of the future north-south minor arterial street is envisioned to be a 30-metre right-of-way with four lanes of traffic, two of which would be BRT lanes, and future bicycle lanes within the boulevard. The new N-S Arterial will serve as the Trafalgar Road BRT Route across the QEW corridor.

The N-S Arterial Street will bisect the Site between Blocks 1 & 4 and Blocks 2 & 3. The street will also intersect with the future Davis Road extension (Collector) at the center of the Site and with Cross Avenue (Arterial).

Boulevards along the N-S Arterial are envisioned to be approximately 6.1 metres in width and would consist of the following elements:

- 0.5 metre offset between the ROW limit and the public sidewalk (this could be hardscaped or softscaped depending on the adjacent use or surface treatment);
- 2.7 metre wide public sidewalks (3.2 metres when offset to ROW is included);
- 0.3 metre buffer between the sidewalk and the uni-directional cycle track;
- 2.0 metre two-way uni-directional cycle track on each side of the ROW;
- 0.6 metre buffer (including the 0.2-metre top of curb allowance) between the face of curb and cycle track.

The roadway portion of the 30 metre N-S Arterial ROW would be made up of 5-lanes, arranged as follows:

- Four lanes, two curb lanes being 3.5-metres wide which would accommodate the BRT operations and two lanes adjacent to the median being 3.0-metres wide, in either direction; and,
- One 4.8 m median lane which would accommodate a centre left-turn lane and median island adjacent to the turn lane.

Davis Road Extension

The Midtown EA Street network includes the extension of Davis Road eastward connecting to Local Street A and terminating at Local Street B, at the east limits of the Site. To the west of the Site, Davis Road will become Argus Road at its intersection with South Service Road, forming a four-way intersection. Argus Road will extend further west, beneath the Trafalgar Road corridor, and link the east and west sides of Midtown Oakville. The Davis Road Extension is proposed to be a collector road with a 26 metre right-of-way, with future cycling facilities.

Davis Road will bisect the Site between Blocks 1 & 2 and Blocks 3 & 4. Davis Road will intersect with two future local streets and the N-S Arterial Street at the center of the Site. Site driveway connections are proposed along Davis Road, with a 4-legged intersection formed for access driveways for Blocks 1 & 3 (between Local Street A

and the N-S Arterial Street) and a 4-legged intersection formed for access driveways for Blocks 2 & 4 (between N-S Arterial Street Local Street B).

Davis Road will serve as a Primary Main Street, where the non-residential (retail) land uses would be located, consistent with the policies of the 2024 Draft Midtown Oakville OPA.

The northern boulevard along Davis Road is envisioned to be approximately 10.00 m in width and would consist of the following elements:

- 0.50 metre offset between the ROW limit and the public sidewalk (this could be hardscaped or softscaped depending on the adjacent use or surface treatment);
- 4.15 metre wide public sidewalks (4.65 metres when offset to ROW is included);
- 0.35 metre buffer between the sidewalk and the uni-directional cycle track;
- 1.50 metre uni-directional cycle track on each side of the ROW;
- 3.30 metre landscaped area (which could be “interrupted” to accommodate strategically located layby parking); and
- 0.20 metre top of curb allowance.

The southern boulevard along Davis Road shares the same elements but has a reduced sidewalk width of 3.15 metres totaling a 9.00 metre boulevard width.

The roadway portion of the 26 metre Davis Road ROW would be made up of two 3.5 metre wide curb lanes. At the intersection with the N-S Arterial, a reduced boulevard is proposed to accommodate a 3.0 metre left turn lane.

South Service Road East Realignment (east of Trafalgar Road)

The Midtown EA Street network contemplates the minor realignment of South Service Road East in selected locations to accommodate the broader planned street network within the Midtown. A small segment, just east of Trafalgar Road, will be eliminated and replaced by the Cross Avenue Extension, east of Trafalgar Road. South Service Road East will form a “T” intersection (with a possible south leg for access to an extended Oakville GO Station) with Cross Avenue and follow an alignment north from Cross Avenue very close to the existing South Service Road alignment, save for a small realignment segment where South Service Road / Davis Road / Argus Road are planned to intersect, forming a four-way intersection. From the proposed South Service Road / Davis Road / Argus Road intersection, South Service Road essentially retains its current alignment with the planned 20 metre ROW.

South Service Road E is envisioned to have a 20 m right-of-way with future bicycle lanes within the 2024 Draft Midtown Oakville OPA.

Within the Site boundaries, the realigned South Service Road E will intersect with two new local streets; the Future “Street A” and Future “Street B” In addition, the proposed N-S Arterial will travel over the existing South Service Road East alignment as a grade-separated overpass. South Service Road East will be subject to a potential Ministry of Transportation, Ontario (MTO) typical 14 metre setback requirement, should the MTO need to expand the QEW corridor for any future corridor expansion requirements.

The boulevards currently proposed along South Service Road East are 5.75 metres in width and consist of the following elements:

- 0.5 metre offset between the ROW limit and the public sidewalk (this could be hardscaped or softscaped depending on the adjacent use or surface treatment);
- 2.00 metre wide public sidewalks (2.5 m when offset to ROW is included);
- 3.25 metre landscaped area inclusive of the 0.2 m top of curb allowance.

The roadway portion of the 20 metre South Service Road ROW would be made up two 3.25 metre wide lanes and a 2.00 metre parking zone.

A dedicated bicycle lane is not currently proposed within the cross section but this cycling infrastructure can be accommodated with a revised non-symmetrical cross section that would favour the boulevard adjacent to planned development while maintaining the roadway width.

Future "East" Local Street (Local Street B)

A new future north-south local road, connecting South Service Road East to the future Cross Avenue extension (Arterial) will be implemented. The cross-section of Local Street B is envisioned to have a 20 metre right-of-way without formal bicycle lanes. The Local Street B ROW is located outside of the Site, on the eastern boundary of Block 2 while the alignment of the Local Street B veers away (to the east) from the eastern boundary of Block 4. Local Street B intersects with the future Davis Road extension (Collector) as a "T" intersection and Cross Avenue at a T-intersection.

Boulevards along Local Street B are 5.75 metres in width, and would consist of the following elements:

- 0.50 metre offset between the ROW limit and the public sidewalk (this could be hardscaped or softscaped depending on the adjacent use or surface treatment);
- 2.00 metre wide public sidewalks (2.50 metres when offset to ROW is included);
- 3.25 metre landscaped area inclusive of the 0.20 metre top of curb allowance.

The roadway portion of the 20 metre Local Street B ROW would be made up two 3.25 metre wide lanes and a 2.00 metre parking zone.

Future "West" Local Street (Local Street A)

A future north-south local street with a 20 metre right of way without formal cycling facilities connecting South Service Road East to the future Davis Road extension (Collector) will also be provided. Local Street A is located within the Site on the western boundary of Blocks 1 & 3 and includes proposes a total of two Site driveways (one for Block 1 and one for Block 3).

Boulevards along Local Street A are 5.75 m in width, and would consist of the following elements:

- 0.50 metre offset between the ROW limit and the public sidewalk (this could be hardscaped or softscaped depending on the adjacent use or surface treatment);
- 2.00 metre wide public sidewalks (2.50 m when offset to ROW is included);
- 3.25 m landscaped area inclusive of the 0.20 m top of curb allowance.

The roadway portion of the 20 metre Local Street A ROW would be made up two 3.25 metre wide lanes and a 2.00 metre parking zone.

4.2 Area Transit Network

4.2.1 Existing Transit Network

The Site is well served today by Oakville Transit and regional rail services through GO Transit and VIA, in the vicinity of the Site, including the Lakeshore West GO Rail line and 16 local bus services. The Site is located within the Midtown Oakville Growth Area, one of the most transit-accessible locations within the Town of Oakville. The nearby Oakville GO Station, and the adjacent Oakville GO Bus Terminal are located at the intersection of Cross Avenue and Argus Road. The existing area transit context is illustrated in **Figure 15.**

Oakville Transit provides door-to-door paratransit service called “care-A-van” for persons with disabilities. Service is provided by low-floor, fully accessible 26-foot buses with ramps. The ramp is deployed on the right side of the vehicle and drivers exit the vehicle to escort the customer to/from the nearest accessible public entrance. The accessible vehicle must remain visible to the driver at all times. The vehicle may occupy a drive aisle during the loading/ unloading process.

A summary of the transit routes operating within the vicinity of the Site, including transit lines, service frequencies and a brief description of each route is provided in **Table 5**.

Table 5 Existing Transit Services

Route	Headways (Peak Period)	Closest Stop Location	Route Description
GO Regional Rail & Bus			
Lakeshore West GO Rail Line	6 – 15 min.	Oakville GO Station (1.3 km / 18 min. walk)	The rail line operates east-west, with its eastern terminus at Union Station and its western terminus in Oakville, Burlington, or Hamilton, depending on the time of day. It runs generally parallel with the Gardiner Expressway, Lakeshore Boulevard West and the QEW.
GO Bus Route 22 – Milton/Oakville	60 – 62 min.	Oakville GO Bus Terminal (1.1 km / 15 min. walk)	The bus route operates generally north-south, connecting Milton GO Station to Oakville GO Station. It runs along Trafalgar Road, with stops at Sheridan College and Highway 407 between the terminals. The route only operates Monday to Friday.
GO Bus Route 56/56B – Oshawa/Oakville	25 – 35 min.	Oakville GO Bus Terminal (1.1 km / 15 min. walk)	The bus route operates generally east-west, with its eastern terminus at Durham College Oshawa GO and its western terminus at Oakville GO. The route runs north-south on Trafalgar Road, then east-west along the 403 and 407. The route only operates Monday to Friday.
Oakville Transit			
Route 1 – Trafalgar	60 min.	Trafalgar Road / South Service Road E (950 m / 13 min. walk)	The bus route operates north-south along Trafalgar Road, with its northern terminus at Trafalgar/407 GO Carpool and its southern terminus at Oakville GO. Major stops include Sheridan College and the Uptown Core. This route operates on weekdays.

Route	Headways (Peak Period)	Closest Stop Location	Route Description
Route 4 – Speers/Cornwall	18 – 23 min.	Cornwall Road / Chartwell Road (850 m / 10 min. walk)	The bus route operates east-west, generally along Cornwall Road, Speers Road, and Royal Windsor Drive, connecting the eastern terminus Clarkson GO, Oakville GO, and the western terminus Bronte GO. This route provides a direct connection to MiWay routes via Clarkson GO.
Route 5 – Dundas	14 -15 min.	Trafalgar Road / South Service Road E (950 m / 13 min. walk)	The bus route operates north-south on Trafalgar Road, and east-west on Dundas St West. The route connects the Dundas @ Highway 407 Park & Ride to Oakville GO, with key stops along the route including Sheridan College and Uptown Core.
Route 10 – West Industrial	30 min.	Oakville GO Bus Terminal (1.1 km / 15 min. walk)	Route 10 only operates in peak directions during rush hour on weekdays. The bus route operates circuitously, heading west towards Bronte GO via South Service Road West and Speers Road before heading back east towards Oakville GO via North Service Road West.
Route 11 – Linbrook	60 min.	Oakville GO Bus Terminal (1.1 km / 15 min. walk)	The bus route operates east-west, with the western terminus at Oakville GO and the eastern terminus at Clarkson GO. The route services the communities south of Cornwall Road, operating along Linbrook Road and Davis Road before arriving at Clarkson GO. The route provides a direct connection to MiWay routes via Clarkson GO, and only runs during the weekdays.
Route 13 – Westoak Trails	25 – 30 min.	Trafalgar Road / South Service Road E (950 m / 13 min. walk)	The bus route connects the western terminus Bronte GO with the eastern terminus Oakville GO through the communities along Upper Middle Road West.
Route 14/14A – Lakeshore West	15 min. (including both 14 and 14A departures)	Oakville GO Bus Terminal (1.1 km / 15 min. walk)	The bus route runs generally east-west, generally along Rebecca Street, Lakeshore Road East, and Burloak Drive. The route connects the western terminus Appleby GO, South Oakville Centre, and the eastern terminus Oakville GO.
Route 15 – Bridge	30 – 40 min.	Oakville GO Bus Terminal (1.1 km / 15 min. walk)	The route operates east-west, generally via Wildwood Drive and Bridge Road, connecting the western terminus at South Oakville Centre to the eastern terminus at Oakville GO.
Route 18 – Glen Abbey South	30 min.	Oakville GO Bus Terminal (1.1 km / 15 min. walk)	The route operates east-west, generally via Kerr Street, North Service Road West, and through the neighbourhood of Glen Abbey, connecting the western terminus of South Oakville Centre to the eastern terminus of Oakville GO.
Route 19 – River Oaks	30 min.	Oakville GO Bus Terminal (1.1 km / 15 min. walk)	The route operates north-south, initially via Trafalgar Road before servicing River Oaks, the community directly west of Trafalgar Road. The northern terminus is Uptown Core, and its southern terminus is Oakville GO.
Route 20 – Northridge	30 min.	Trafalgar Road / South Service Road E (950 m / 13 min. walk)	The route operates north-south, initially via Trafalgar Road before servicing Northridge, the community directly east of Trafalgar Road. The northern terminus is Uptown Core, and its southern terminus is Oakville GO.

Route	Headways (Peak Period)	Closest Stop Location	Route Description
Route 24 – South Common	20 min.	Trafalgar Road / South Service Road E (950 m / 13 min. walk)	The route operates north-south on Trafalgar Road and east-west on Dundas Street East, connecting the eastern terminus of Oakville GO to the western terminus of South Common. Key stops include Sheridan College and Uptown Core.
Route 26 - Falgarwood	On-Demand Service since July 2, 2025	Curbside on-demand service	Service to/from Falgarwood and Oakville GO and Upper Oakville Shopping Centre.
Route 28 – Glen Abbey North	30 min.	Oakville GO Bus Terminal (1.1 km / 15 min. walk)	The route operates east-west between Oakville GO and Bronte GO, servicing the community of Glen Abbey, south of the intersection of Third Line and Upper Middle Road West.
Route 120 – East Industrial	30 min.	Trafalgar Road / South Service Road E (950 m / 13 min. walk)	The route operates east-west, connecting the western terminus of Oakville GO to the eastern terminus, Laird & Ridgeway in Mississauga. The route majorly runs along North Service Road East, Upper Middle Road East, and Winston Park Drive between the terminals. Laird & Ridgeway provides connections to GO Regional Bus Service, as well as MiWay. The route only operates during weekday peak-hours.
Route 190 – River Oaks Express	30 min.	Trafalgar Road / South Service Road E (950 m / 13 min. walk)	The route operates north-south, serving the community of River Oaks to Oakville GO. The route only operates in peak direction and during weekday peak-hours.

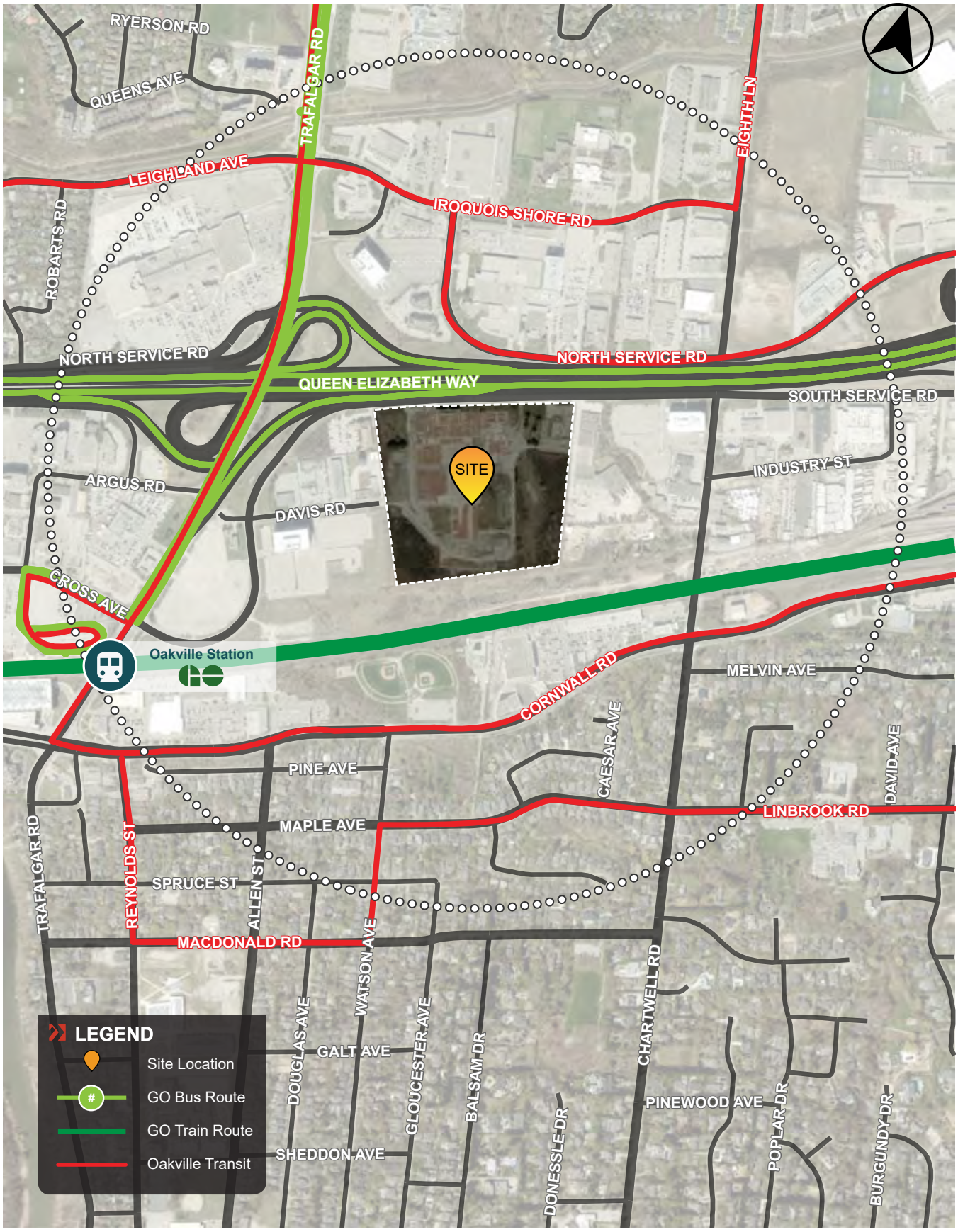

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FIGURE 15 EXISTING TRANSIT NETWORK

4.2.2 Future Transit Network

The future transit network is illustrated in **Figure 16.**

4.2.2.1 Oakville Transit Five-Year Business Plan (2025-2029)

Oakville Town Council has recently approved Oakville Transit's 5-Year Business plan. The plan maps out Oakville Transit's plans from 2025 to 2029. There are a number of planned changes to Oakville Transit's bus network, including changes to routes that serve the Oakville GO Station Bus Hub. The changes will be done in phases between 2025 and 2029.

4.2.2.2 Lakeshore West GO Line Service Expansion

The Lakeshore West line is an existing GO Rail line that currently provides two-way, all-day service 7 days a week between Toronto and Aldershot. It also provides weekday rush-hour service from Hamilton to Toronto in the morning and back in the afternoon. Limited service is also provided along this line to Niagara Falls and stops between Hamilton and Niagara Falls. Metrolinx has proposed expanded service to include 15-minute service or better frequencies, both-ways, throughout the day between Toronto and Aldershot, in addition to a 7-day a week, hourly service between Toronto and Hamilton. Oakville Transit will look to expand the hours of service and increase frequency of service to facilitate efficient and reliable connectivity with the rail line.

4.2.2.3 Trafalgar Road Rapid Transit – BRT

In both Halton Region's and Metrolinx's Transportation Master Plans, Trafalgar Road has been identified as a rapid transit corridor to feature an exclusive BRT service between Midtown Oakville and Highway 407. The idea behind BRT is to provide a dedicated lane for buses, allowing for faster, more reliable and more frequent transit service. The Trafalgar Road BRT will form a critical link for businesses and residents along the Trafalgar corridor. The system also includes a major connection at the existing Uptown Oakville transit hub and will provide connections with the future Dundas Street BRT, as well as the future Highway 407 Transitway, and improved GO Rail services.

The Draft Official Plan Amendment for Midtown Oakville proposes a BRT stop at the future intersection of Davis Road and Future north-south minor arterial road, which is currently within the project limits. This would give residents of the Site and visitors to the Site direct access to the proposed BRT, creating seamless access to Oakville GO as well as rapid transit service to the rest of the Town of Oakville.

4.2.2.4 Dundas Street Rapid Transit – BRT

Dundas Street is a major east-west corridor in the GTHA, linking Toronto, Mississauga and Halton Region. A 48-kilometre exclusive BRT service has been proposed on Dundas Street from Highway 6 in the City of Hamilton to Kipling Transit Hub in Toronto. Rapid transit connections will be provided at the Bloor-Danforth Subway in Toronto, the Milton GO Rail line, and the proposed Hurontario LRT in Brampton/Mississauga. Within the Town of Oakville, access to the Dundas Street BRT will be provided along various stops within the Town, as well as a major connection at the Uptown Oakville Transit Hub (Trafalgar Road / Dundas Street – Upper Middle Road intersection) including to the Trafalgar Road BRT service.

4.2.2.5 Oakville Mobility Hub

With the Big Move, Metrolinx established goals to implement Transit Mobility Hubs throughout the GTHA. Metrolinx defines a mobility hub as a place with significant amounts/connections to existing and/or planned transit. Through the Big Move, Midtown Oakville was identified as a major mobility hub which will act as a node for many incoming transit projects. Oakville Mobility Hun is defined as a Protected Major Transit Station Area (PMTSA).

4.2.2.6 Relevant Literature Review – Commuter Rail Station / Network

Historically, North American commuter networks have experienced low population density within the station catchment areas. Given that heavy rail often has large catchment areas, it should be acknowledged that the feasibility of access via active transportation may be limited for riders on the periphery. The intensification of the station area with increased density mitigates this problem by increasing the share of riders who live within a distance reachable by active transportation.

From a transportation perspective, trips made via higher-order transit typically consist of three distinct trip legs,

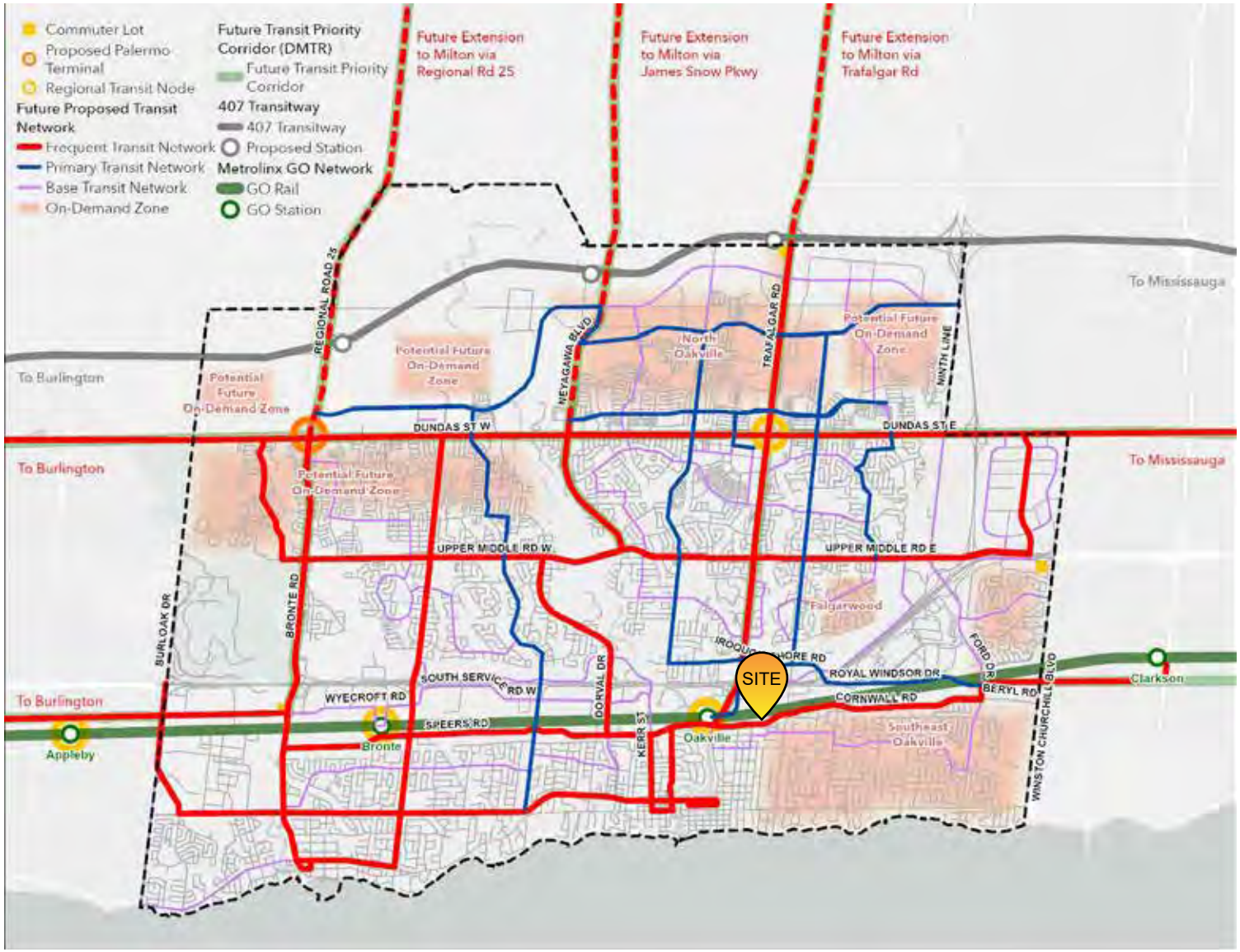
- The initial trip from origin to station;
- The station to station trip; and
- The station to destination trip.

Throughout the GO network, this typically involves an initial private automobile trip to a GO station, a GO Train trip to the CBD, and a final trip from the CBD station to the destination typically made via active or feeder transportation. Unlike the final CBD station to destination to trip which is well served by feeder connections the initial origin to home station generally has fewer feeder transit options and active transport can be limited by access distance.

For the above reasons, there is a heavy reliance on private auto as the access mode to GO stations. However, as stated above, the expansion of parking facilities on the GO network is financially unsustainable and many station areas are land constrained. This operational problem has been well documented and has been studied by academics, transit authorities, and NGOs. Notable studies include [Chan & Farber], [Graystone & Mitra], [Shantz & Casello], and [Skidmore]. These studies have highlighted a variety of different aspects to mitigate auto dependency on the first mile. Frequently discussed factors include:

- Enhancing active transportation facilities
- Enhancing feeder transportation connectivity
- Reducing free parking and expanding paid parking (Metrolinx's long-term vision is to reduce overall parking and increase the paid / carpool parking component of the future parking supply)
- Promoting density around the station area

The above strategies aim to enhance the urban environment such that sustainable modes of travel become more attractive, and the dependency on auto ownership is reduced. The lands in PMTSA are positioned to benefit from the implementation of these strategies.



Source: Oakville Transportation Master Plan Draft, April 2025

FIGURE 16 FUTURE RECOMMENDED TRANSIT NETWORK

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4.2.3 Transit Reach Assessment

4.2.3.1 Existing Transit Travel Reach

In order to understand the changing transportation context, transit service area analyses for the existing and future transit network was conducted using Geographic Information Systems (GIS). These analyses look at the service area of a transit network that a visitor of the Site area has access to in a given time range. This type of analysis is useful in understanding the transit accessibility and can also be used to quantify the impact of transit service changes.

A 15, 30 and 45 minute transit reach from the Site during the weekday morning travel period was analysed for existing conditions as is illustrated in **Figure 17** and **Figure 18**. Transit travel times include walking time to and from transit stops, as well as the transit schedules during peak hour (i.e. service frequency and wait times), all of which are based upon existing transit service.

4.2.3.2 Future Transit Travel Reach

A review of projected transit travel times assumed the various public transit network improvements included in Section **4.2.1** and Section **4.2.3** is illustrated in **Figure 19** and **Figure 20**. A comparison of areas that are reachable is provided in **Table 6** below.

Table 6 Existing and Future Transit Service Area Analysis Comparisons

Transit Scenario	15 minute reach	30 minute reach	45 minute reach
Existing Conditions (Travel Away From Site)	• North along Trafalgar Rd to before Upper Middle Rd; • South along Trafalgar Rd, and Kerr St to before Rebecca St / Randall St (north of Lakeshore Rd W); • East along Cornwall Rd to before Eighth Line / Chartwell Rd; and • West along Cornwall Rd / Speers Rd to just past Dorval Dr.	• North along Trafalgar Rd just past Dundas St E up to Threshing Mill Blvd, and north past Upper Middle Rd between Third Line and Joshua Creek Dr; • South along Trafalgar Rd, Reynolds St, and Kerr St to the waterfront; • East along Upper Middle Rd to before Ninth Line / Ford Dr, and east along Lakeshore West GO Line to Port Credit GO Station; and • West along Upper Middle Rd W to past Third Line, and west along Speers Rd and Wyecroft Rd to Bronte Rd.	• North along Trafalgar Rd to beyond Hwy 407 before Lower Baseline E; • South along Trafalgar Rd, Third Line, Reynolds St, and Kerr St to the waterfront; • East along Dundas St E to Winston Churchill Blvd, and east along Lakeshore West GO Line to Mimico GO Station; and • West along Dundas St W to Bronte Rd, west along Lakeshore Rd to Burloak Dr, and west along Lakeshore West GO Line to Burlington GO Station.

Transit Scenario	15 minute reach	30 minute reach	45 minute reach
Existing Conditions (Travel Towards Site)	• North along Trafalgar Rd to before Upper Middle Rd; • South along Trafalgar Rd, and Kerr St to before Rebecca St / Randall St (north of Lakeshore Rd W); • East along Cornwall Rd to before Eighth Line / Chartwell Rd; and West along Cornwall Rd / Speers Rd to past Morden Rd (west of Dorval Dr).	• North along Trafalgar Rd just past Dundas St E up to Threshing Mill Blvd; • South along Trafalgar Rd, Reynolds St, and Kerr St to the waterfront; • East along Upper Middle Rd E to Hwy 403, and east along Lakeshore West GO Line to Clarkson GO Station; and West along Upper Middle Rd W to past Third Line, and along Lakeshore West GO Line to Walkers Line (halfway to Burlington GO Station).	• North along Trafalgar Rd to beyond Hwy 407 before Lower Base Line E; • South along Trafalgar, Third Line, Reynolds St, and Kerr St to the waterfront; • East along Dundas St E to Winston Churchill Blvd, and east along Lakeshore West GO Line to Long Branch GO Station; and West along Dundas St W to Bronte Rd, and west along Lakeshore West GO Line to Aldershot GO Station
Future Conditions (Travel Away From Site) *with the addition of GO Expansion /RER, Trafalgar BRT, Dundas BRT, etc.*	• North along Trafalgar Rd to before Oak Park Blvd / Postridge Dr (south of Dundas St E) via future Trafalgar BRT; • South along Trafalgar Rd, and Kerr St to before Rebecca St / Randall St (north of Lakeshore Rd W); • East along Lakeshore West GO Line to Clarkson GO Station; and West along Lakeshore West GO Line to Bronte GO Station.	• North along Trafalgar Rd to Hwy 407 (via future Trafalgar BRT), and north along Erin Mills Pkwy to past Dundas St W; • South along Trafalgar Rd, Reynolds St, Kerr St, and Appleby Line to the waterfront, and south along Southdown Rd to Lakeshore Rd W; • East along Dundas St W Pkwy (via future Dundas BRT) to beyond Erin Mills, and east along Lakeshore West GO Line to Mimico Go Station; and West along Upper Middle Rd W to past Third Line, and along Lakeshore West Go Line to Burlington GO Station.	• North along Trafalgar Rd to Lower Baseline E (via future Trafalgar BRT), north along Erin Mills Pkwy and Mississauga Rd to past Eglinton Ave W, and north along Hurontario St (via future Hazel McCallion LRT) to Hwy 403; • South along Trafalgar Rd, Reynolds St, Kerr St, and Appleby Line to the waterfront; • East along Dundas St E to past Dixie Rd (via future Dundas BRT), and east along Lakeshore West GO Line (and via Waterfront Reset LRT from Long Branch GO) to Union Station; and West along Dundas St to Walkers Line (via future Dundas BRT), and along Lakeshore West Go Line to past Aldershot GO Station.
Future Conditions (Travel Towards Site) *with the addition of GO Expansion /RER, Trafalgar BRT, Dundas BRT, etc.*	• North along Trafalgar Rd to before Oak Park Blvd / Postridge Dr (south of Dundas St E) via future Trafalgar BRT; • South along Trafalgar Rd, and Kerr St to before Rebecca St / Randall St (north of Lakeshore Rd W); • East along Lakeshore West GO Line to Clarkson GO Station; and West along Lakeshore West GO Line to Bronte GO Station.	• North along Trafalgar Rd to beyond Hwy 407 (via future Trafalgar BRT), and north along Erin Mills Pkwy to past Dundas St W; • South along Trafalgar Rd, Reynolds St, and Kerr St to the waterfront; • East along Dundas St W Pkwy (via future Dundas BRT) to beyond Erin Mills, and east along Lakeshore West GO Line to Mimico GO Station; and West along Upper Middle Rd W to Bronte Rd, and along Lakeshore West GO Line to Burlington GO Station.	• North along Trafalgar Rd to Lower Baseline E (via future Trafalgar BRT), north along Winston Churchill Blvd and Erin Mills Pkwy to just before Eglinton Ave W, and north along Hurontario St (via future Hazel McCallion LRT) to Hwy 403; • South along Trafalgar Rd, Reynolds St, Kerr St, and Appleby Line to the waterfront; • East along Dundas St E to Hurontario St (via future Dundas BRT), and east along Lakeshore West GO Line (and via Waterfront Reset LRT from Long Branch GO) to Union Station; and West along Dundas St to Cedar Springs Rd / Brant St (via future Dundas BRT), and along Lakeshore West Go Line to Hwy 6 (past Aldershot GO Station).

Notable findings include:

- Within 15 minutes, under existing conditions, a small area is accessible for travel towards and away midtown Oakville, primarily along Trafalgar Rd and Kerr St (for southbound travel). Under future conditions, namely the implementation of the Trafalgar BRT, travel northwards along Trafalgar Rd extends to just short of Dundas St E. Future GO improvements also greatly increase access east-west from midtown Oakville along the Lakeshore West GO Line.
- Within 30 minutes, north-south travel away and towards midtown Oakville reaches northwards just past Dundas St E and southwards to the waterfront via Trafalgar Rd. East-west travel is centralized along Upper Middle Rd. Travel away from the Site eastward along the Lakeshore West GO Line reaches Port Credit GO Station, whereas travel towards the Site westward extends from Appleby GO Station. Under future conditions, with the implementation of the Trafalgar BRT, access northbound along Trafalgar Rd reaches to past Highway 407 for both travel directions. In addition, the Trafalgar BRT provides improved access to other transit services. In combination with the future Dundas BRT, improved access along Dundas further increases north-south reach along Winston Churchill Blvd and Erin Mills Pkwy. Future GO infrastructure and electrification projects improve east travel to Mimico GO Station (travel away) and west travel to Burlington GO Station (both directions).
- Within 45 minutes, northbound travel reaches Lower Baseline E along Trafalgar Rd. Southbound travel extends to the waterfront across Oakville via existing local bus routes. Eastward travel away from midtown Oakville reaches Mimico GO Station, and westward travel towards midtown Oakville extends from Aldershot GO Station. Under future conditions, 45 minute reach spreads deep into surrounding municipalities of Burlington, Mississauga, and Toronto. The future Dundas BRT greatly increases east-west reach along Dundas; now reaching past Winston Churchill Blvd to Dixie Rd and past Bronte Rd to Walkers Line, respectively. Improved access to other transit operations along Dundas also increases north reach along Winston Churchill Blvd and Erin Mills Pkwy just shy of Eglinton Ave W. The implementation of Hurontario LRT also improves northwards reach up to Highway 403 along Hurontario St. Implementation of GO expansion extends travel along the Lakeshore West GO Line, spanning between Union Station and Aldershot GO Sation.

In summary, under present conditions the Site of midtown Oakville is bound by the QEW corridor, limiting northwards travel to Trafalgar Rd. The nearby Oakville GO Station serves as the primary east-west route. In the future, the inclusion of Trafalgar BRT, Dundas BRT and GO Expansion greatly improves overall reach, opening greater opportunities for travel in all directions. The effect of future implementations is especially noticeable in longer travel reaches, as future 45 minute travel provides access to central Burlington, Mississauga City Center, and downtown Toronto.

The evolving transportation context visualized in this analysis indicates that, at either local or intercity scales, there are suitable alternatives to driving or requiring a parking space for daily travel. The proposed development area is in a prime location that enables future Site users to shift away from auto use and utilize the major transit investments being afforded within the area.

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FIGURE 17 EXISTING TRANSIT REACH (TRAVEL AWAY FROM MIDTOWN OAKVILLE)

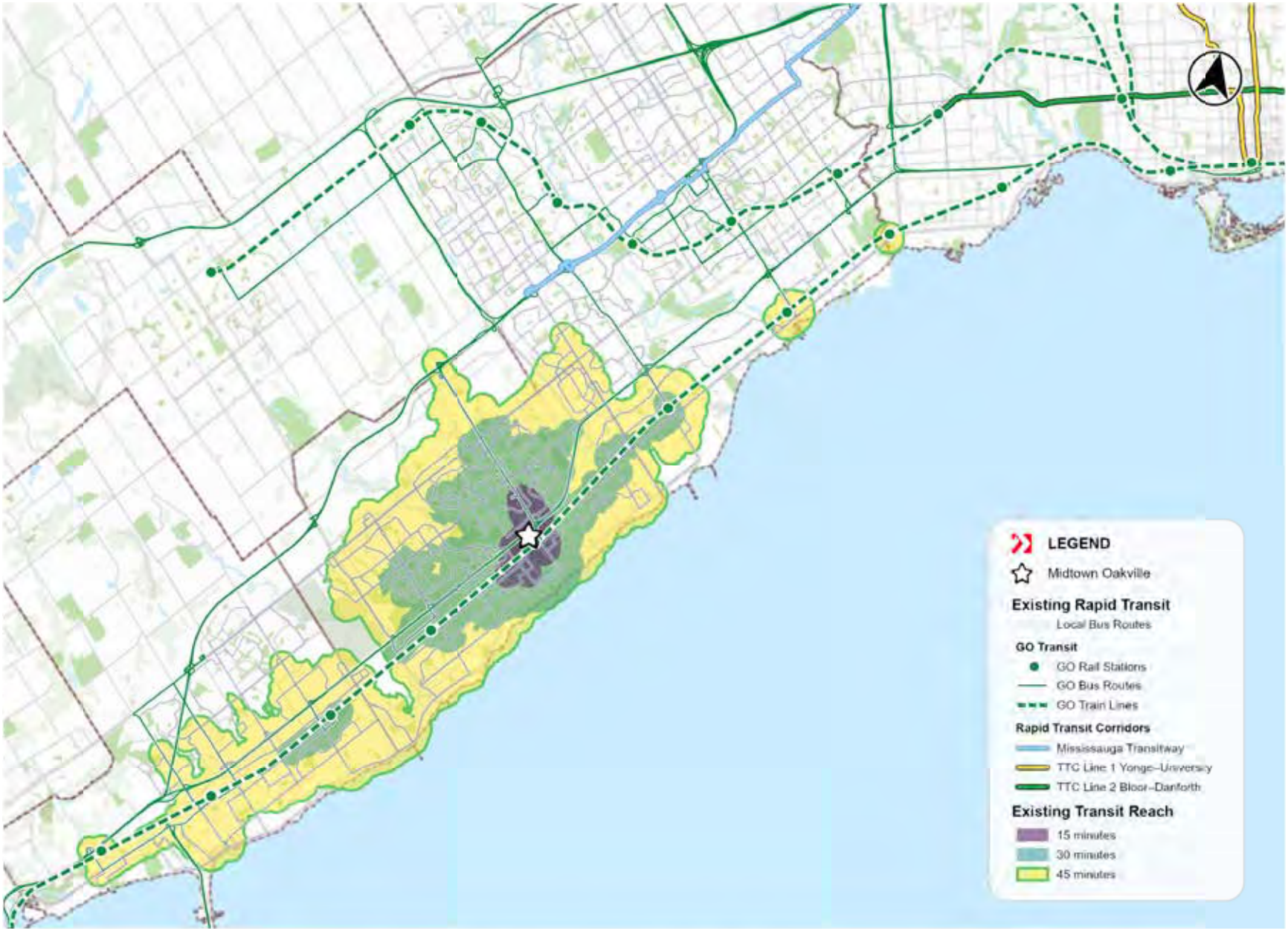

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FIGURE 18 EXISTING TRANSIT REACH (TRAVEL TOWARDS MIDTOWN OAKVILLE)

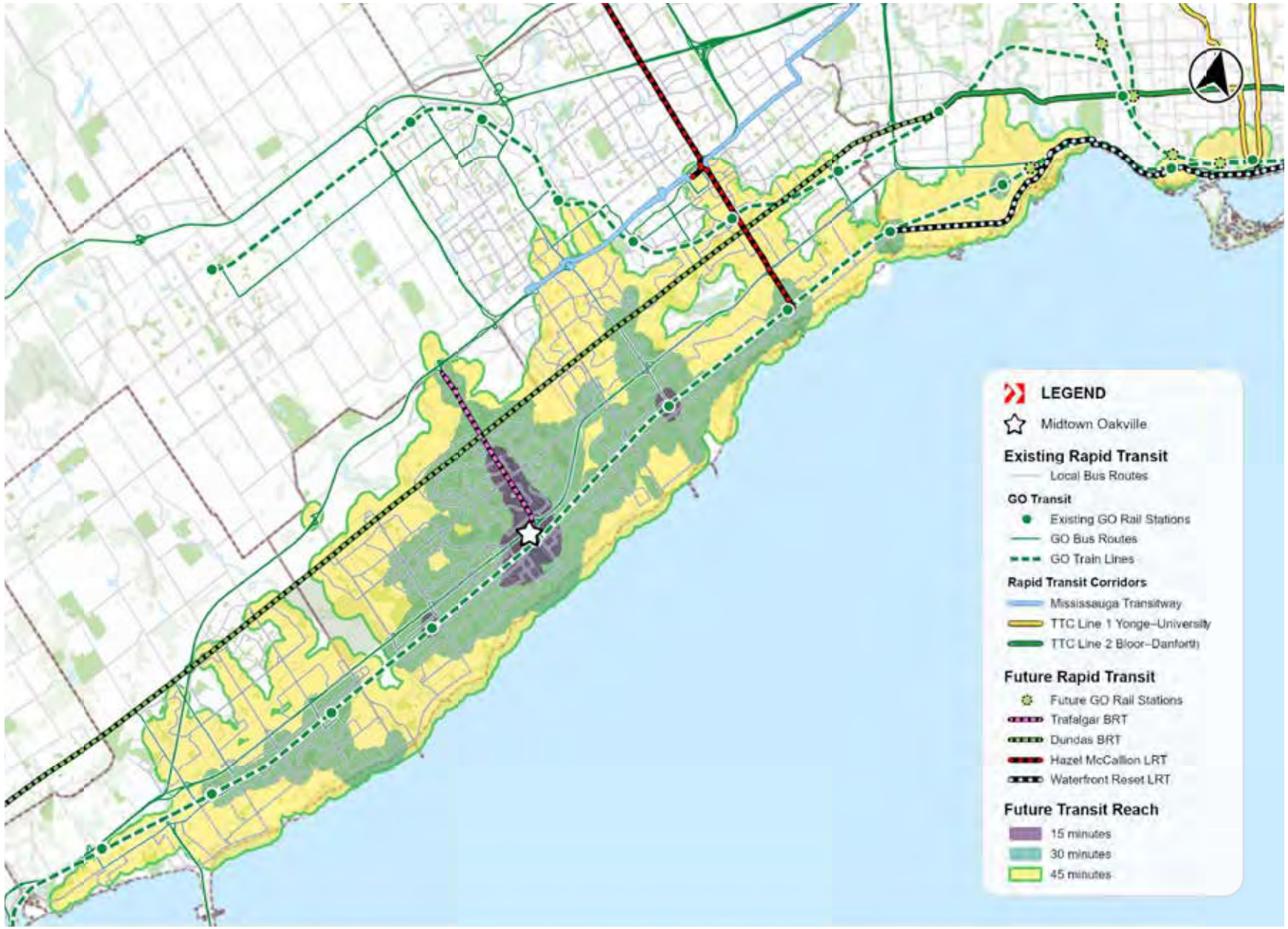

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FIGURE 19 FUTURE TRANSIT REACH (TRAVEL AWAY FROM MIDTOWN OAKVILLE)

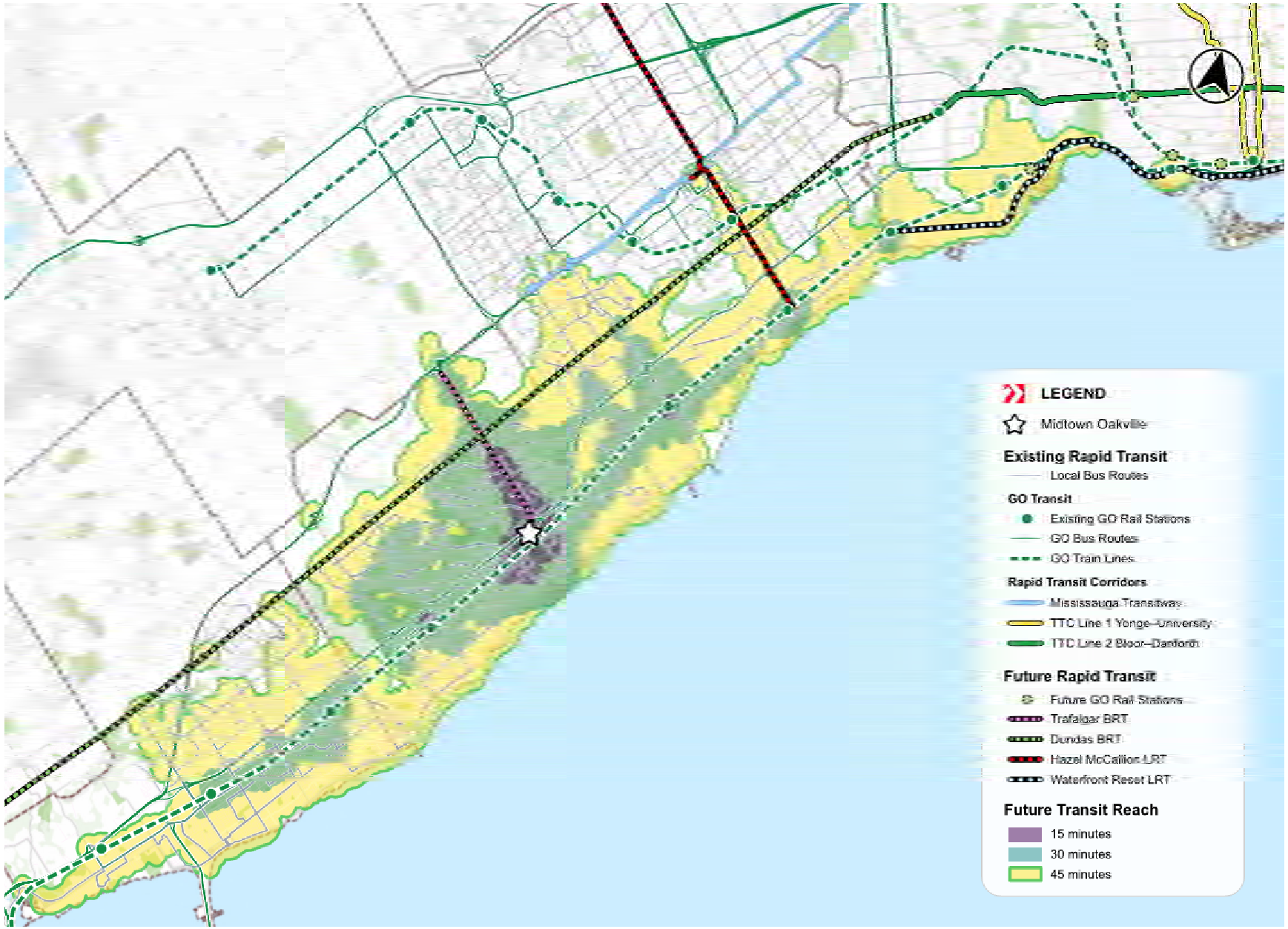

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FIGURE 20 FUTURE TRANSIT REACH (TRAVEL TOWARDS MIDTOWN OAKVILLE)

4.3 Area Cycling Network

4.3.1 Existing Cycling Network

Cycling facilities are not currently provided near the Site. Signed bike routes are provided on Trafalgar Road and Chartwell Road south of Cornwall Road, and a multi-use trail is provided on Cornwall Road between Watson Avenue and Chartwell Road.

As cyclists are permitted to ride on most roads except controlled-access highways, the lack of bicycle facilities on local and collector roadways will not prohibit this type of travel.

4.3.2 Future Cycling Network

The Draft Official Plan Amendment for Midtown Oakville proposes cycling facilities within the right-of-way of Cornwall Road, South Service Road East, as well as the extensions of Davis Road and Cross Avenue and the proposed Local streets within Midtown Oakville. Off-road active transportation connections are proposed to be constructed, providing convenient access to the Oakville GO Station and retail possibilities along Cornwall Road.

Active transportation connections are proposed on separate bridges over the QEW, as well as on the N-S Arterial Street crossing the QEW corridor, creating a seamless connection to the lands north of the QEW, eliminating the need to only use Trafalgar Road and cross a busy highway interchange.

The proposed active transportation network is illustrated in **Figure 21,** as per Midtown Oakville Schedule L-6.

4.4 Area Pedestrian Network

Existing pedestrian facilities are currently limited, with sidewalks not provided on the main accesses to the Site, in South Service Road East and Chartwell Road. However, the proposed development, outlines planned sidewalk improvements in the area of the Site. Walking facilities will be provided on both sides of all proposed roadways, including an off-road direct connection to the Oakville GO Station. Active transportation connections are proposed on separate bridges over the QEW, as well as on the N-S Minor Arterial Street crossing the QEW corridor, creating a seamless connection to the lands north of the QEW, eliminating the need to only use Trafalgar Road and cross a busy highway interchange The Site will be within walking distance to several existing and proposed retail opportunities, as well as transit connections, reducing the need for residents to travel regularly using a car and own a vehicle.

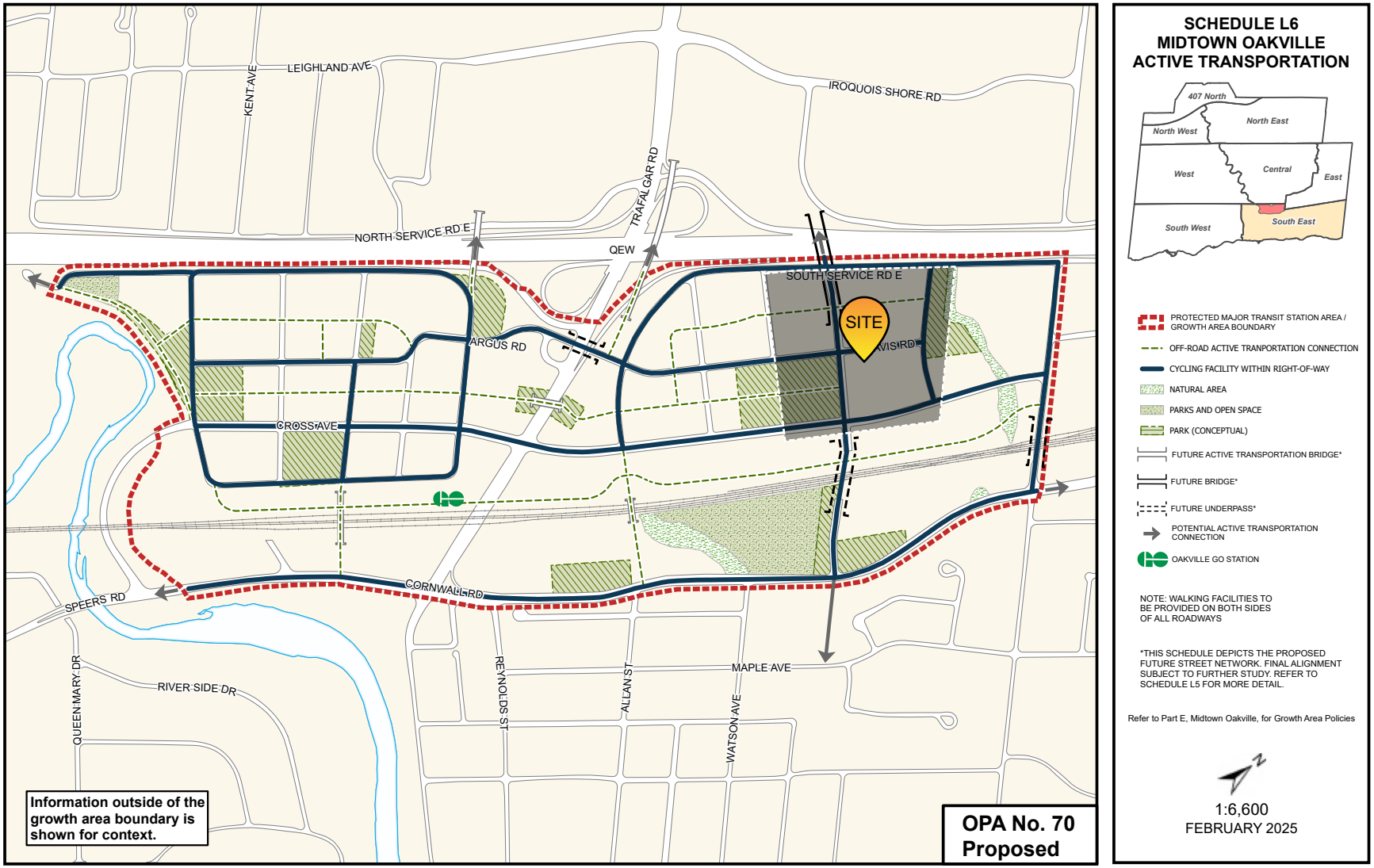

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FIGURE 21 MIDTOWN OAKVILLE OPA PROPOSED ACTIVE TRANSPORTATION NETWORK

5.0 OVERVIEW OF SITE MASTER PLAN

5.1 Approach to Transportation Planning

The proposed development of the Site Master Plan includes a comprehensive focus on mobility and the provision of travel mode choices, within the framework established by area planning documents and the Town of Oakville and Region of Halton transportation design and planning guidelines.

Key transportation elements of the Site Master Plan will be incorporated into the majority of the development proposal, as well as the overall Transportation Demand Management (TDM) Plan strategy, and will be expanded upon during subsequent development stages.

It is important to note that the transportation infrastructure and the TDM strategy (outlined in Section **9.0**), is intended to be flexible in order to adapt to future development and transportation plans, as they are implemented over the long-term and as travel demands evolve. The TDM strategy is intended to evolve as travel demands and expectations change, including potential shifts in travel patterns as a consequence of technology and design advancements, Regional transit infrastructure improvements, fuel sources, autonomous vehicles, climate change and travel preferences. The TDM strategy considers measures that could adapt, monitor and mitigate travel demands.

5.1.1 Long-Term Planning

The proposed Site Master Plan is intended to develop over several phases and multiple years and will need to respond to potential changes in travel demands and expectations.

The Site Master Plan focuses on planned major capital projects and prioritizes the Site's "Transit First" principle from the beginning of occupancy, and the early delivery by Metrolinx of the enhanced GO Rail service along the Lakeshore West GO Rail Line, and its integration with GO Bus service and the Town of Oakville's local transit service. These investments are scheduled prior to the expected implementation of the early phases of the Site Master Plan. This will ensure development of the Site Master Plan lands is completed in consideration of both existing and planned transit services.

The proposed Site Master Plan is being designed to be flexible over time and respond to changes in travel demand. For example, parking and active transportation needs would be reviewed over time, as development is phased, to ensure that the need for vehicle parking, bicycle parking, bicycle amenities, pedestrian amenities, etc. are accounted for within subsequent development phases. Internal areas within development blocks, as well as below-grade parking areas, could be monitored for pick-up / drop-off travel behaviour, with consideration to accommodate these demands "off-street".

Consistent with the Site Master Plan's long-term planning approach is a need for on-going monitoring and review as the Site Master Plan is developed, with more detailed planning and transportation strategy measures being pursued as part of subsequent Site plan stages of development. This can include updated TDM measures and performance metrics, while maintaining consistent transportation and mobility principles

5.1.2 Transportation Design Principles

The Site Master Plan is based on the key mobility goal to ensure that the sustainable trip rate (active trips, transit trips and auto passenger trips) within Midtown Oakville is high, when compared to the remainder of Oakville. To

achieve this goal, key mobility principles were established that have guided the development of the Site include the following:

Establish a mixed-use development with a sustainable mix of supportive uses that will help to ensure that travel demands are internalized (to Midtown Oakville) to the extent possible, that they make efficient use of available transportation infrastructure and that efficiencies can be gained for parking and goods movement.

A "Transit First" Site Master Plan, focusing on providing sustainable and effective transit options from "opening day" of new development through the development of the Site. The development will incorporate convenient access between different modes of transit, with a focus on direct, safe and convenient access to public transit, and provide attractive connections between public transit and the public realm. The Site Master Plan facilitates transit use for "opening day" travel demands.

A comprehensive plan to provide Mobility Choice, which includes complementary built form, transit provision, and appropriate infrastructure to support, encourage and make convenient active transportation alternatives. The plan includes delivering complete streets consistent with the Livable Oakville Official Plan and Midtown Oakville, to achieve an attractive public realm and ensure that streets prioritize pedestrian and transit use, while facilitating necessary access and movement. Furthermore, mobility choice will include providing flexibility in the Site Master Plan streets and access arrangements to facilitate potential changes in the use / application of automobiles.

A plan that supports the Transportation Demand Management (TDM) Plan strategy, which will focus on discouraging auto dependence and the effective rate of auto-driver trips by discouraging auto use through parking management / provisions and incentivizing alternative transportation options. The TDM measures will be advanced through appropriate application, monitoring and mitigating strategies.

Integration with the larger planning framework, including infrastructure investments and area-wide planning initiatives being led by the Town of Oakville and other public agencies (Province / Metrolinx, Region of Halton). This wider planning framework and associated transportation network planning has informed the Site Master Plan street network, transit service provisions and active transportation infrastructure. This ensures that the impact of the proposed development is fully integrated in area-wide planning initiatives.

These principles are reflected in many of the initiatives and design components considered within the Site Master Plan, inclusive of the following:

- Large-scale provision of residential development;
- Establishment of an aspirational land-use mix that supports optimal use of transportation infrastructure and reduces peak period automobile trips;
- Urban style, retail stores located at-grade, along the street frontage to create an active, walkable public realm;
- The inclusion of multiple active transportation connections to the existing and planned multi-modal transportation network leading to the Oakville GO Station hub and adjacent areas of Oakville ;
- Provision of complete streets;
- All vehicle parking accommodated below-grade to minimize disruption to the public realm;
- All servicing / loading consolidated internal to the development blocks to minimize disruption to the public realm;

- Provision of short-term layby and pick-up / drop-off facilities within the development blocks and lay-by facilities on the public streets;
- Provision of pedestrian amenities on the Site, including pedestrian boulevards, generous pedestrian sidewalks, pedestrian paths and walkways, that encourage pedestrian travel through the Site and to / from adjacent lands and key transit infrastructure;
- Provision of bicycle lanes on the proposed municipal streets;
- Provision of secure, weather protected long-term bicycle parking in appropriate locations;
- Convenient, accessible short-term bicycle parking in appropriate locations adjacent to retail entrances; and
- The integration of public realm and green space.

5.2 Overview of Development Proposal

5.2.1 Updated Development Statistics

The proposed mixed-use development ("Development Proposal" or "Site Master Plan") includes four blocks with a total of 6,945 residential units and 9,188 m^2 GFA of retail space. The detailed development statistics proposed for the current Site Master Plan are summarized in **Table 2**. The development proposal for the Site is illustrated in **Figure 4.**

Table 7 Summary of Current Development Proposal

Land Use / Type		Block 1	Block 2	Block 3	Block 4	Total
Residential (units)		2,220	2,156	1,305	1,264	**6,945 units**
Retail (GFA)		1,503 m²	1,514 m²	3,293 m²	2,808 m²	**9,118 m²**
Vehicle Parking (spaces)	Resident	1,110	1,078	653	632	**3,473 spaces**
	Non-Resident Visitor	333	324	196	190	**1,043 spaces**
	Non-Resident Retail	16	17	36	31	**100 spaces**
	Total	**1,459**	**1,419**	**885**	**853**	**4,616 spaces**
Bicycle Parking (spaces)	Resident Long-Term	1,110	1,078	653	632	**3,473 spaces**
	Resident Short-Term	222	216	131	127	**696 spaces**
	Non-Resident	2	2	4	3	**11 spaces**
	Total	**1,334**	**1,296**	**788**	**762**	**4,180 spaces**
Loading Facilities		5	5	5	4	**19 spaces**

Notes:

1. Site statistics based on site plans prepared by Graziani + Corazza Architects, dated October 22, 2025.

5.2.2 Proposed Street Network

The public street network proposed as part of the Site Master Plan will provide access for all modes of travel and generally aligns with the proposed transportation network within the Oakville Midtown Official Plan Amendment (the "Midtown OPA"). The proposed street network for the Site, with connections to the Draft Midtown Oakville OPA transportation network, is illustrated in **Figure 22.** To better align with the Site's western property boundary and to facilitate the efficient development of the blocks, the following minor changes to the street network included within the Draft Midtown Oakville OPA, are being proposed as part of the development of the Site, inclusive of a local street network that builds upon and extends the street network:

- The Draft Midtown Oakville OPA illustrates a new north-street local street along the western border of the Site that connects between South Service Road East and Davis Road. The development proposal extends this north-south street (proposed as Local Street A) southward from Davis Road to connect to Cross Avenue. The extension of this local road will provide improved connectivity for all modes of travel and better serve the access and circulation needs of the revised development proposal.
- The north-south local street (Local Street A) on the west side of the Site is proposed to be shifted slightly further west to align with the western property limits of the Site so that Local Street A is within the Site boundaries.
- The addition of two active-only crossings of the planned new N-S arterial street road that crosses the QEW and the Metrolinx/CN rail corridor. On the north side of the Site (between South Service Road and Davis Road), the active-only crossing will be in the form of an underpass under the N-S Arterial Street. Between Davis Road and Cross Avenue, the active-only crossing will be in the form of an overpass over the N-S Arterial Street.
- The east-west Collector Street (Davis Road), adjacent to the proposed Block 1 within the Site, adopts a tangent alignment versus the "curved" alignment illustrated in the Draft Midtown Oakville OPA. This tangent alignment produces a more uniform development block on the north side of Davis Road, that also provides a more regular shape upon which to lay out buildings and interior open space.

The proposed changes enhance the functionality of the Draft Midtown Oakville OPA transportation network. The remainder of the proposed new street network remains consistent with the Draft Midtown Oakville OPA, inclusive of the extension of Davis Road and Cross Avenue through the Site and the N-S Arterial Street that grade separated with a flyover across the QEW and a "rail-over-road" underpass across the Metrolinx / CN rail corridor to the south (N-S Arterial Street).

The functional plans for the Site's proposed public street network are provided in **Appendix D** and the proposed cross-sections for these streets are provided in **Appendix E**, inclusive of the below-grade infrastructure servicing plans completed by UrbanTech Consulting. These functional plans adopt the Draft Midtown Oakville OPA rights-of-ways (ROW's) and balance travel demand needs, in order to encourage active transportation to serve the day-to-day needs of residents, visitors, employees and commuters.

To enhance the level of safety for active transportation, an option for a protected intersection at Davis Street and the N-S Arterial Street has been created and is provided in **Appendix F.**

The vertical profile for the N-S Arterial Street is provided in **Appendix G.** A streetscape plan completed by SLA that illustrates design elements along Davis Road, the "main street" of the Site, is provided in **Appendix H**.

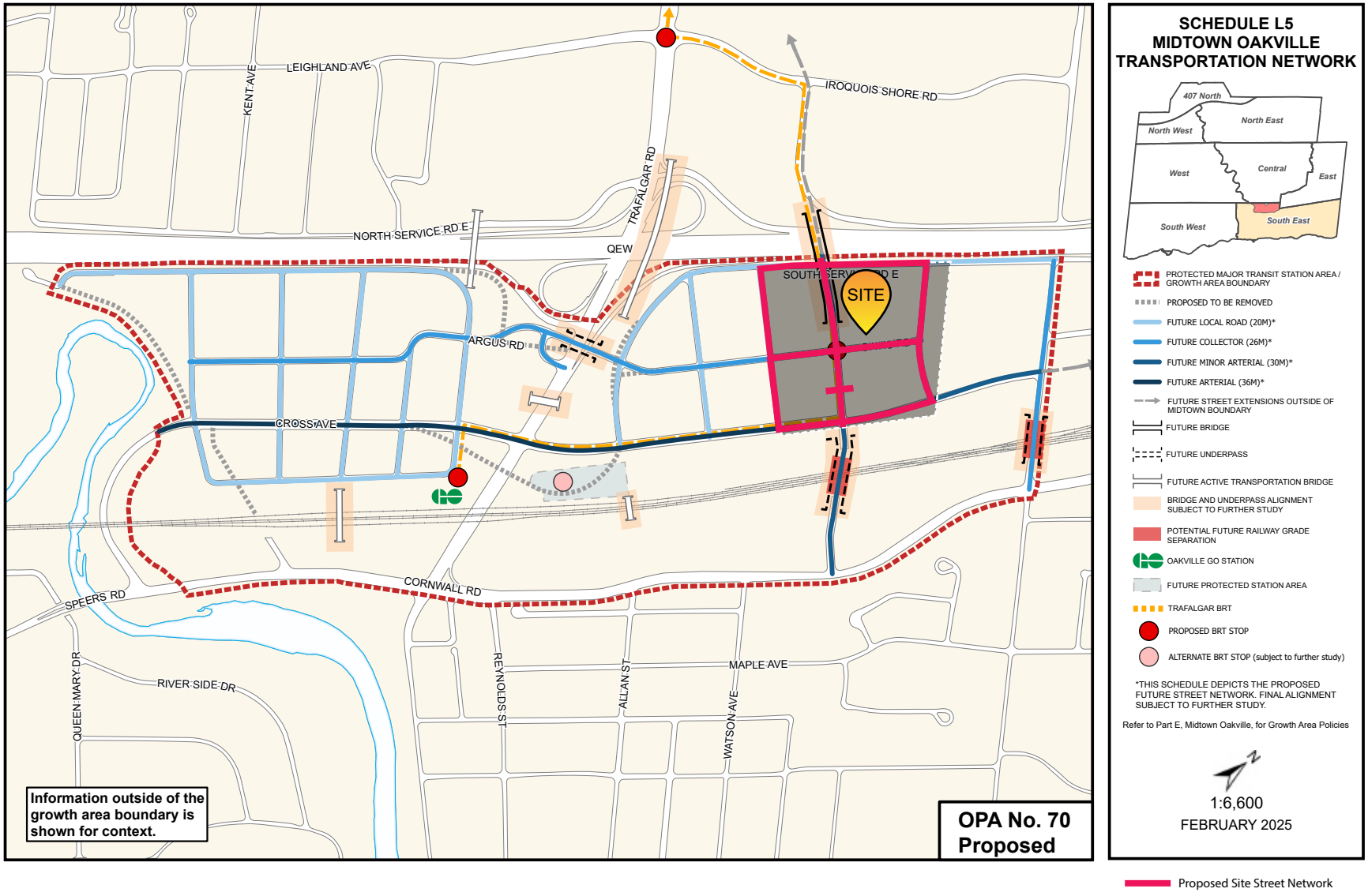

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FIGURE 22 PROPOSED SITE MASTER PLAN STREET NETWORK

5.2.3 Site Vehicle Access

The proposed points of access for the four development blocks are summarized in **Table 8**. The Site driveways have been located in consideration of internal circulation systems that accommodate pick-up and drop off needs, access to loading facilities, emergency access and access to below-grade parking garage ramps.

Table 8 Proposed Points of Access for the Site by Block

	South Service Road	Davis Road	Local Street A	Local Street B
Block 1	1 access	1 access	1 access	--
Block 2	1 access	1 access	--	1 access
Block 3	--	1 access	2 accesses	--
Block 4	--	1 access	--	1 access

The Town of Oakville standards (STD. 10-2) reference a minimum 7.5 metre width for all driveway accesses. All driveway accesses along Davis Road meet this requirement but a 6.0 metre driveway width is proposed for all accesses along the local streets and South Service Road. A narrower driveway width along lower order roads prioritizes pedestrians by minimizing crossing widths and acts as a traffic calming measure by encouraging lower vehicle speeds. The proposed driveway widths also accommodate all vehicle movements.

The Transportation Association of Canada (TAC) guide only provides suggested clear throat lengths for collector and arterial roads. Therefore, clear throat distances for the Davis Road (minor collector road) driveways are provided on the functional road plan. The distance is measured from the road to the pick up/ drop off courtyard since the driveways provide priority to inbound vehicles. The suggested 25 metre clear throat length is provided for all David Road driveways

An illustration of these measurements is provided in the functional plan in **Appendix D.**

5.2.4 Daylighting Triangles

Daylighting triangles are located at the corners of an intersection and are typically kept free of visual obstacles that could restrict a driver's sight distance. The purposes of daylighting triangles are as follows:

1. Minimize conflicts between pedestrian, cyclists and vehicles;
2. Introduce utilities, streetscape and street furniture; and
3. Widen sidewalks at the corners of intersections.

The size of a daylighting triangle is dependent on the road classification of the intersecting public roads and the type of intersection control. The minimum daylight triangle sizes align with the Town of Oakville standard STD 8-4 (last revised in July 1995) and are summarized in **Table 9**.

Table 9 Town of Oakville Daylighting Triangle Requirements

Road Classification	Daylighting triangles			
	Minor Local Road	Local Road	Collector Road	Arterial Road
Minor Local / Local Road	n/a	n/a	7.5 m	15.0 m
Collector Road	7.5 m	7.5 m	7.5 m	15.0 m
Arterial Road	15.0 m	15.0 m	15.0 m	15.0 m

The Oakville OP policy: 8.12.3 states the following:

> "*Where appropriate and public safety is not affected, the Town will minimize the amount of land utilized for daylighting triangles to contribute to a more urban environment and maximize the efficient use of land.*"

Consistent with Oakville OP policy 8.12.3 and to ensure a more urban context is created at intersections within Midtown, reduced daylighting triangles and corner roundings are being proposed at the intersection of the local, collector and arterial streets.

A summary of the daylighting triangles and corner roundings proposed for the public street intersections is provided in **Table 10**. These areas are proposed to be provided for surface easements in order to construct compact and efficient below-grade parking facilities.

Table 10 Proposed Midtown Oakville Daylighting Triangle and Corner Roundings

Road Classification	Minor Local Road	Local Road	Collector Road	Arterial Road
Minor Local / Local Road	5.0 m corner rounding	5 m corner rounding	7.5 m corner rounding	7.5 m daylighting triangle
Collector Road	7.5 m corner rounding	7.5 m corner rounding	7.5 m corner rounding	7.5 m daylighting triangle
Arterial Road	7.5 m daylighting triangle	7.5 m daylighting triangle	7.5 m daylighting triangle	7.5 m daylighting triangle

As a comparison, the City of Toronto adopts corner roundings at intersections based upon the road ROW widths as summarized in **Table 11**. The City of Toronto corner rounding requirements have been referenced to provide a comparable guideline for the urban community being envisioned within the Midtown Oakville area.

It is noted that the City of Toronto permits development sites to adopt these corner roundings to function as surface easements to facilitate the construction of below-grade parking facilities. With the proposed corner roundings being kept clear of visual obstructions, the below-grade facilities will not influence the at-grade sightlines or create conflicts between pedestrians and vehicles.

Table 11 City of Toronto Corner Rounding Requirements

Intersection Approaches		ROW Rounding
ROW Width (m)	Intersecting With ROW Width (m)	
<23	<23	5.0 m
23-36	23-36	6.0 m
<36	<36	8.0 m

5.2.5 Pedestrian Access

Pedestrian access and circulation will be provided throughout all four development blocks, with connectivity to the surrounding street network. This ensures direct and convenient access to and from all new public streets that are adjacent to Site, as well as to planned transit routings throughout the Midtown Oakville area, with links to the Oakville GO Transit hub. The development blocks will also include pedestrian linkages throughout for each building within the Site. The retail spaces will be located at-grade, along the frontage of the east-west collector street (Davis Road), through the centre of the mixed-use development. This is consistent with the uses expected along “Primary” and “Secondary” main streets in the Midtown area.

A pedestrian circulation plan for the Site is provided in **Appendix H**.

5.2.6 Cycling Access / Circulation

Cycling infrastructure is also planned for the Site, inclusive of dedicated bicycle parking rooms for long-term bicycle uses (i.e. resident and employee bike parking), with a mix of internal and external bicycle parking for short-term bicycle uses (i.e., resident visitor and non-residential visitor bicycle parking). The provision of convenient and direct connections between the Site’s cycling facilities and infrastructure planned within the new public streets within the Midtown area, will link the Site to the multi-modal transportation network being created throughout Midtown Oakville and the broader Town of Oakville.

5.2.7 Parking

Vehicle parking will be provided within below-grade parking facilities for each residential block. A series of at-grade facilities for pick-up and drop-off and service and emergency vehicle access, will also be provided at-grade to ensure that the Site will be appropriately served and connected to the planned public transportation systems within Midtown Oakville.

5.2.8 Bicycle Parking

The Site includes the provision of a total minimum of 4,180 bicycle parking spaces, inclusive of the following:

- A minimum of 3,473 long-term resident bicycle parking spaces within secure weather-protected facilities located within the underground parking garage, at grade, or on the mezzanine level.

- A minimum of 696 short-term resident visitor bicycle parking spaces will be provided on the Site.
- A further minimum of 11 bicycle parking spaces will be provided in proximity to the non-residential (retail) land uses likely along the development frontage of the E-W Collector street (Davis Road).
- Access to the bike parking rooms will be via pass-card or key and include security features.
- Access to long-term bike parking will generally be provided with dedicated elevators so as not to conflict with main pedestrian elevators.
- The bicycle repair stations will generally be provided within the bicycle storage rooms. The number and precise location of the bicycle repair stations will depend on the configuration and number of the internal bicycle storage rooms.
- Short-term bicycle parking will generally be included outside and near visitor / customer entrances so as to be convenient. Some residential visitor bicycle parking will likely be located internal to the residential buildings, given the proposed supply of visitor bike parking.
- Access to visitor internal bicycle parking storage areas will be coordinated with the architectural layout of the residential buildings and their podiums with the provision of access to external entrances.

5.2.9 Pick-up / Drop-off Facilities

5.2.9.1 Pick-up/ Drop-off Courtyards

Pick-up / drop-off (PUDO) facilities are proposed for each block to accommodate pick-up /drop-off and delivery activities for all buildings on the Site. Each PUDO square “courtyard” area measures 20 metres by 20 metres and can accommodate approximately 5 vehicles. The PUDO facilities are appropriately sized and located in consideration of convenient front door access.

Vehicle manoeuvring diagrams that confirm the functionality of the PUDO areas listed below, in consideration of a Dodge Caravan (95th percentile design vehicle), are provided in **Appendix J**. The PUDO facilities for each block will be further refined through subsequent phases of the development process.

- Buildings A/B
- Building D
- Building E
- Building F/G
- Buildings G/H
- Buildings I/J
- Building K
- Building L
- Buildings M/N

5.2.9.2 Care-A-Van Pick-Up/ Drop-Off

In comments provided on the November 2024 application, Oakville Transit noted that care-A-van vehicles would use the PUDO facilities provided for each block. It was noted that a care-A-van vehicle is 8.2 metres long (over bumpers) and 3.0 metres wide, including mirrors (2.4 metres wide excluding mirrors), with an outside body turning radius of 10.5 metres, including the bumper.

To assess the functionality of the care-A-van vehicles within the proposed PUDO areas, we request to undertake an in-field test with Oakville Transit, to confirm the vehicle manoeuvring of a care-A-van vehicle. Additional vehicle manoeuvring diagrams will be provided once the field tests have been completed.

5.2.10 Loading

Each building or group of buildings on the development blocks, has been evaluated in regard to the practical, functional and policy requirements associated with the various types of loading operations that would be experienced on a daily basis.

The functional design of the proposed loading areas has been assessed with appropriate design vehicles and manoeuvring requirements, to ensure that the resulting loading spaces are capable of accommodating the needs each individual development building and or block. This ensures an efficient and compact development and safe Master Plan concept.

A total of 19 formal loading spaces, that meet the Town of Oakville's dimensional requirements have been provided across the four development blocks of the Site.

The vehicle manoeuvring diagrams (VMD's) for the proposed loading areas are provided in **Appendix J.** These VMD's include consideration for a Halton Region waste collection vehicle (10.5 m length) and a TAC single-unit truck (9.1 m length) and confirm that the loading spaces are functional and appropriately sized.

5.2.11 Vehicle Ramp Design Considerations

The vehicle ramps that lead to the below-grade levels have been conceptually located for each of the blocks. Blocks 1 and 2 are each envisioned to include two ramps to service their respective block and will only accommodate typical passenger vehicles. Blocks 3 and 4 are also envisioned to each include two ramps but one of the ramps will also accommodate loading vehicles. A loading area is proposed on the P3 level for both Blocks 3 and 4 to service the non-residential uses that front Cross Avenue.

At this time, the grading for each of these ramps has not been finalized but they will be refined as the development application process continues. It is intended to design the passenger vehicle ramps with a maximum slope of 15%, with 7.5% sloped transitions located at the top and bottom of each ramp. This design ensures a gradual vertical change and mitigates the vehicle chassis from striking the ground.

5.2.12 Traffic Management During Construction Plan

It is noted that the current development application is seeking an Official Plan Amendment (OPA) and a Zoning By-law Amendment (ZBA).

It is premature at this time to assess and prepare a set of plans that would outline and detail a strategy for the phased construction of the individual blocks within the Site. For this reason, a Construction Management Plan (CMP) strategy and supporting Traffic Management During Construction (TMDC) Plan will be undertaken at a later stage of the development application process for the Town's review.

5.3 Development Phasing

The preliminary phasing of the development blocks is proposed as summarized in **Table 12**. The phasing will be re-evaluated after the completion of Phase 1. This approach allows reasonable assumptions to be made in regard to the proposed street network for all phases, while maintaining flexibility for adjustments in the future stages of development for the Site.

The current conceptual phasing plan is illustrated in **Appendix K.**

Table 12 Preliminary Development Phasing

Block	Phase	Proposed Building	Proposed Street Network
1	Phase 1a	Building C	• Street A (South Service to Davis Road) with Site driveway along Street A.
	Phase 1b	Building A/B	• Above + Site driveway along South Service Road East.
	Phase 1c	Building D	• Above + Davis Road (Street A to N-S Arterial Street) with Site driveway along Davis Road.
2 to 4	--	• After completion of Block 1, the order of build-out of the subsequent blocks is to be based on market demand.	• The need for new internal road linkages as well as wider area transportation and servicing infrastructure to support each block will be re-evaluated in conjunction with that block.

6.0 VEHICLE PARKING CONSIDERATIONS

6.1 Zoning Bylaw 2014-014 and Bill 185

The Site falls within the "Mixed Use Zones" parking standard of the Town of Oakville Zoning By-law 2014-014. The minimum parking requirements of the Zoning By-law are provided in **Table 13**.

Table 13 Zoning By-law 2014-014 Minimum Parking Requirements

Land Use	Zoning By-law Minimum Required Parking Rate
Resident	
1 and 2-bedroom units (***less*** than 75 m^2 NFA)	0.80 spaces/ unit[2]
3-bedroom units (***greater*** than 75 m^2 NFA)	1.05 spaces/ unit[2]
Resident Visitor	0.20 spaces/ unit
Non-Resident	
Retail	1 space per 18 m^2 GFA

Notes:

1. As per Zoning By-law 2014-04 Section 5.2.2. "Where a minimum of 5 parking spaces are required on a lot of the total number of parking spaces required, 0.2 of the parking spaces required per dwelling shall be designated as visitors parking spaces."
2. Resident parking rate for units less than 75m^2 NFA is 1.0 – 0.2 (visitor) = 0.80 spaces/unit and resident parking rate for units greater than 75m^2 NFA is 1.25 – 0.2 (visitor) = 1.05 spaces/unit.
3. As per the rounding provisions of Zoning By-law 2014-04 (Section 5.1.5), where the application of the proposed parking ratio results in a fraction of a parking space or bicycle parking space being required, the minimum number of spaces required shall be increased to the next highest whole number if the fraction is greater than 0.25.
4. Non-resident uses not listed in Zoning By-law 2014-04 Table 5.2.2 shall align with rates in Table 5.2.1.

Notwithstanding the applicability of Zoning Bylaw 2014-014 to the Site, the Province of Ontario recent passed (June 6, 2024) Bill 185. Bill 185, among other things, amends the Planning Act of Ontario. Provisions in Bill 185, in amending the Planning Act, limits the ability of Official Plans and Zoning By-laws to include policies requiring an owner to provide or maintain parking facilities within protected major transit station areas (PMTSA's), certain other areas surrounding and including an existing or planned higher order station or stop and other prescribed areas. Bill 185 notes (paraphrased) that no official plan may contain any policy that has the effect of requiring and that a Zoning By-law may not require, 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 protected major transit station area;
- 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; or
- Any other area prescribed for the purposes of this clause.

The Site is located within the Midtown Oakville PMTSA. Thus, **Bill 185 results in a zero minimum parking requirement** for the Site.

6.2 Proposed Vehicle Parking Supply

Notwithstanding the requirements of Zoning Bylaw 2014-014 and Bill 185, a practical parking demand exists that will need to be accommodated for the Site, in order to be marketable and to function appropriately within Midtown Oakville.

It is noted that the minimum parking standards within Zoning Bylaw 2014-014 likely overstate the Site's parking demands, given the area's existing and future transit connectivity and the mixed-use, urban, active mobility focused nature of future Midtown Oakville.

It is proposed that the parking supply for the Site aligns with the following parking rates:

- Resident parking: minimum of 0.50 spaces per unit
- Resident visitor parking: minimum of 0.15 spaces per unit
- Non-resident (retail) parking: minimum of 1.08 spaces per 100 m^2 of GFA[2]

It is also important to note that the total supply of non-resident parking for resident visitor and retail, will be dependent on what combinations of non-resident land uses are included within each block of the Site.

The minimum parking supply requirement for the Site, compared to the proposed parking supply, is summarized in **Table 14.**

The current proposal for the Site meets the requirements of the proposed parking rates and includes a total of 4,616 parking spaces, inclusive of 3,473 resident spaces, 1,043 resident visitor spaces and 100 non-resident (retail) spaces. The non-resident spaces can be shared on a paid parking basis, between visitors and retail users.

Parking for the development is to be provided within below-grade parking facilities across the four blocks with the Site. Surface parking spaces will be dedicated to pick-up and drop-off facilities to accommodate short-term deliveries, passenger pick-up and drop-off and occasional short-term maintenance vehicle needs.

The proposed vehicle parking supply meets the proposed minimum parking ratios and will appropriately meet the parking needs of the Site.

[2] 1.08 spaces per 100 m^2 of GFA correlates to approximately 1 space per 1,000 ft^2 of GFA.

Table 14 Proposed Vehicle Parking Supply

Land Use		Resident (spaces)	Resident Visitor (spaces)	Non-Resident (Retail)	Total (spaces)
Proposed Minimum Parking Rates		**0.50 spaces / unit**	**0.15 spaces / unit**	**1.08 spaces / 100 m² GFA**	**--**
Block 1					
2,220 units 1,503 m² retail	Proposed Minimum	1,110	333	16	**1,459**
	Proposed Supply	1,110	333	16	**1,459**
Block 2					
2,156 units 1,514 m² retail	Proposed Minimum	1,078	324	17	**1,419**
	Proposed Supply	1,078	324	17	**1,419**
Block 3					
1,305 units 3,293 m² retail	Proposed Minimum	653	196	36	**885**
	Proposed Supply	653	196	36	**885**
Block 4					
1,264 units 2,808 m² retail	Proposed Minimum	632	190	31	**853**
	Proposed Supply	632	190	31	**853**
SITE TOTAL					
6,945 units 9,118 m² retail	**Proposed Minimum**	**3,473**	**1,043**	**100**	**4,616**
	Proposed Supply	**3,473**	**1,043**	**100**	**4,616**

Notes:

1. Site statistics based on site plans prepared by Graziani + Corazza Architects, dated October 22, 2025.
2. As per Zoning By-law 2014-014 (Section 5.1.5), should the calculation of the number of parking spaces required end in a fraction, the “the minimum number of spaces shall be increased to the next highest whole number if the fraction is greater than 0.25.”

6.3 Accessible Parking

The Town of Oakville Zoning By-law 2014-014 requires that accessible spaces be provided for non-resident visitor uses, with the applied rate being dependent upon the overall proposed non-resident parking supply. A summary of the accessible parking requirements for each block of the Site, is provided in **Table 15.**

The proposed non-resident parking supply for the Site includes a total of 1,143 spaces, inclusive of 1,043 resident visitor spaces and 100 retail spaces. As the total proposed non-resident parking supply for each block is within the range of 201 to 1,000 spaces, the Zoning By-law requires a minimum accessible parking supply of 2 spaces + 2% of the non-resident parking supply.

Furthermore, the By-law states that where there are an even number of total accessible parking spaces, an equal number of Type A and Type B spaces must be provided. If the required number of accessible spaces results in an odd number, the additional space shall be a Type B space. Both types must include a 1.5-metre pedestrian aisle adjacent to the accessible space.

The two types of spaces must adhere to the following dimensions:

- Type A space: 5.7 metres (length) x 3.65 metres (width)
- Type B space: 5.7 metres (length) x 2.7 metres (width)

Table 15 Zoning By-law 2014-014: Accessible Parking Requirements

Block	Non-Resident Parking Supply Resident Visitor + Retail (spaces)	Minimum Accessible Parking Rate	Minimum Accessible Parking Requirement (spaces)	Type Allocation
Block 1	349	2 + 2% of total non-resident parking supply	9	4 Type A 5 Type B
Block 2	341		9	4 Type A 5 Type B
Block 3	232		7	3 Type A 4 Type B
Block 4	221		7	3 Type A 4 Type B
Total Site	**1,143**	**--**	**32**	14 Type A 18 Type B

Notes:

1. Site statistics based on site plans prepared by Graziani + Corazza Architects, dated October 22, 2025.
2. Accessible parking rate as per Town of Oakville Zoning By-law 2014-014 Table 5.3.1 & Table 5.3.2

The development proposal will include a minimum of 32 accessible parking spaces which will meet the minimum requirements Zoning By-law requirements. The proposed accessible parking supply complies with the Zoning By-law dimensional requirements. Furthermore, accessible parking spaces are proposed to be provided within the below-grade parking facilities and will be located in proximity to the elevator cores.

The proposed accessible parking supply meets the requirements of Zoning By-law 2014-014 requirements and will meet the practical needs of the Site.

6.4 Adequacy of Proposed Parking Supply

The following sections provide an overview of the adequacy of the recommended parking supply. Adoption of a reduced residential parking minimum standard is considered appropriate based upon the following considerations:

- Provincial and local policy / plan that direct municipalities to reduce or eliminate minimum parking requirements;
- Existing and planned higher-order transit and active transportation facilities in the area;
- Review of other residential parking By-law standards across the Greater Toronto and Hamilton Area (GTHA) and Ontario; and
- TDM measures for the Site will influence parking demand on-Site and in the wider area.

6.4.1 Resident Parking Assessment

The following provides an overview of the contextual factors influencing parking demand at residential developments in the Mid-Town Oakville area and the appropriateness of the proposed reduced parking supply of **0.50 spaces per unit**.

6.4.1.1 Planning Policy and Planning Principles

There are many provincial plans and local policies that provide a framework to guide development in Ontario municipalities. These plans and policies often contain direction with regards to development along transit corridors, commenting on parking standards and the future regulations of parking minimums.

As outlined in **Section 3.0** there are several provincial, regional, and local area policy documents that pertain to the Site, including the Provincial Policy Statemen t (2024); MTO Transit Supportive Guidelines. The Site development incorporates the policy direction of these documents by incorporating a mix of uses, greater density and reduced parking standards based on the Site's proximity to existing and planned transit corridors and the implementation of transportation demand management ('TDM') strategies as part of the development. The recent Bill 185 implications on parking within PMTSA's, reducing the "required" parking to zero is also taken into account in the recommended minimum residential parking of 0.5 parking spaces per unit by recognizing that a practical need for parking is required, and providing what is intended to be a balance between reducing the travel demands associated with private vehicle travel and accommodating a vehicle ownership characteristics that will have to address the marketing aspects of high density residential housing. Consideration for a further reduction could be accommodated should the marketing of housing reflect lower demands by the ultimate occupants of the proposed development. This could be further reviewed through Zoning and Site Plan processes yet to occur.

6.4.1.2 Area Transportation Context

The Site is well situated in the Midtown Oakville area to take advantage of a diverse set of multi-modal mobility characteristics. The Site is located approximately 800 metres to 1.1 km away from the Oakville GO Station (depending on whether the Oakville GO Station is expanded eastward across Trafalgar Road). This provides convenient access to local and regional transit connections. In addition to the proximity to the Oakville GO Station, there is a planned Trafalgar BRT service that will literally pass through the Site offering direct higher-order transit service to all three development blocks, a direct connection to the Oakville GO Station and Oakville Transit

Terminal, as well as other regional transit connections via the Trafalgar BRT linkages to the planned Dundas BRT and its regional network connections. A further discussion of the existing transit context is outlined in **Section0**.

As outlined in **Section 4.3** and **Section 4.4** there are also significant pedestrian and cycling improvements planned for the area, which will facilitate a shift away from reliance upon the private automobile to transit and active transportation modes.

6.4.1.3 Review of Residential Zoning By-law Standards

A comprehensive Zoning By-law review has been undertaken which compares parking standards adopted across numerous municipalities across the GTHA and eastern Ontario with comparable transit access to the Site. The selection of municipalities was primarily based on certain urban characteristics, including density and intensification patterns, conventionally auto-centric network, and a diversity of transit services available in the area. These minimum parking requirements reflect evolving transit contexts, mixed-use environments, and the emergence of alternative modes of travel.

A summary of resident Zoning By-law rates for comparable Ontario municipalities are provided in **Table 16**.

Table 16 Residential Parking Supply Ratio Requirements By Ontario Municipality

Municipality	Zoning By-law	City Area	Land Use Category	Nearby Transit	Minimum Resident Parking Requirement
Site	**--**	**Midtown**	**Mixed-Use Building**	• Oakville Local Bus Routes, • GO Train (Lakeshore West Line) • Future Dundas and Trafalgar BRT	**0.50 spaces / unit**
Mississauga	By-law 0225-2007	Precinct 1	Condo / Rental Apartment	• MiWay Bus • Mississauga Transitway • MiWay Express Bus • GO Bus • Future Hazel McCallion LRT	**0.80 spaces / unit**
	Undergoing City staff investigation	Along future Hazel McCallion LRT	--		**In 2024, the City of Mississauga's Council approved reducing minimum residential parking requirements along the future Hazel McCallion Light Rail Transit line.**
Vaughan	By-law 001-2021 (Passed)	VMC	Apartment Dwelling	• TTC Bus / Subway • GO Bus / Train • YRT Bus • YRT Viva BRT	**0.40 spaces / unit**
Toronto	By-law 569-2013	Parking Zone A & B	Mixed-Use Building	• TTC Bus / Subway / Streetcar • GO Bus / Train • Miway Bus • Future TTC Subway • Future TTC Streetcar • Future TTC BRT	**No Minimum**
Brampton	By-law 270-2004	Central Area / Downtown	Apartment Dwelling	• GO Bus / Train • Brampton Bus • Brampton ZUM BRT • Future Hazel McCallion LRT	**No minimum**
Ottawa [1]	By-law 2008-250	Area "X"	Mixed-Use Building	• O-Train LRT • OC Transpo Rapid Bus • OC Transpo Frequent Bus	**0.0 to 0.5 spaces / unit**
Kingston	By-law 2022-62	Parking Area 1 (Downtown)	Mixed-Use Building	• Kingston Transit Express Bus • Kingston Transit Bus	**0.40 spaces / unit**
Kitchener	By-law 2019-051	Urban Growth Centre	Multiple Residential Buildings	• GO Bus / Train • GRT bus • GRT Ixpress Bus • GRT ION LRT	**No Minimum**
Bill 185 (received Royal Ascent June 6, 2024)					**Zero Parking Requirement in PMTSA's**

Notes:

1. Along select streets within Central Ottawa and where the nearest active entrance of a mixed-use building is within 400 metres or less of a rapid transit station, the City of Ottawa Zoning By-law 2008-250 has no minimum resident parking standards for mixed-use buildings. Otherwise, a minimum standard of 0.5 spaces per unit applies.

A number of municipalities (Brampton, Kitchener, Toronto, Ottawa) have adopted substantial reductions in their residential parking rates within their downtown areas to align with goals of reducing non-auto modes of travel and promote existing and planned investments to transit, cycling, and pedestrian infrastructure. For example, the City of Brampton removed minimum resident parking requirements in the City's Central Area / Downtown with the passing of their most recent zoning by-law, and in June 2023 the City of Mississauga's Council directed City staff to investigate the feasibility of eliminating minimum parking requirements along the future Hazel McCallion LRT line.

Given that the level of existing and planned future transit service levels across the municipalities highlighted in **Table 16** are comparable to that of Midtown Oakville, it is evident that the minimum parking requirements stipulated in the prevailing Zoning By-law 2014-014 exceed what is otherwise considered appropriate in comparable municipalities with a similar transit context. Collectively, the above indicates a general trend within municipalities across the GTHA and eastern Ontario to present a progressive outlook towards the provision of residential parking supply, particularly where transit and transportation context is, or is planned to be, conducive to non-automobile travel.

6.4.1.4 Observed Resident Parking Reduction Approvals

Consistent with the trend of reduced parking standards, there is a demonstrated trend towards parking supply reductions across the broader Greater Toronto and Hamilton Area (GTHA) beyond their respective Zoning By-law standards. BA Group has reviewed approvals for developments near GO Stations (with comparable transportation contexts as the Site) for which reduced resident standards have been provided by City Council as part of the Zoning By-law Amendment process, by the Committee of Adjustment as part of Minor Variance applications, or at the Ontario Land Tribunal (OLT), formerly known as the Ontario Municipal Board (OMB) and the Local Planning Appeal Tribunal (LPAT).

A summary of these GTHA-wide resident parking reduction approvals for proxy sites with similar or less transit-supportive contexts as the proposed development are provided in **Table 17**.

Table 17 Approved GTHA Wide Resident Parking Supply Reductions

Address	Nearest Major Transit Station	Approved Minimum Resident Parking Rate	Permission Through	Year of Approval
Proposed Development				
Proposed Development area	Oakville GO Station (~800 to 1.1 km from Proposed Development)	0.50 spaces / unit (proposed)	--	--
City of Mississauga				
151 City Centre Drive	City Centre Transit Terminal (~750m from Site)	1-Bed – 0.62 spaces / unit 2-Bed – 0.72 spaces / unit	CoA File A355.21 (September 23, 2021)	2021
151 City Centre Drive	City Centre Transit Terminal (~750m from Site)	0.62 spaces / unit	CoA File A308.23 (September 7, 2023)	2023
Block 8 Mississauga City Centre	City Centre Transit Terminal (~300m from Site)	0.67 spaces / unit	CoA File A323.23 (December 2023)	2023
City of Hamilton				
90 Charlton Avenue West, 85 Robinson Street, and 220 Park Street South	Hamilton GO Centre Station (~700 m from Site)	0.58 spaces / unit (effective)	Site-Specific By-law 14-118	2014
98 James Street South	Hamilton GO Centre Station (~150 m from Site) West Harbour GO Station (~1.5km from Site)	0.47 spaces / unit	Site-Specific By-law 15-024	2015
108 James Street North and 111 and 15 Hughson Street North	West Harbour GO Station (~850m from Site)	0.50 spaces / unit	Site-Specific By-law 15-188	2015
71 Rebecca Street	Hamilton GO Centre Station (~750 m from site) West Harbour GO Station (~1.4km from Site)	0.65 spaces / unit	Site-Specific By-law 18-293	2018
175 Catharine Street South and 117 Forest Avenue	Hamilton GO Centre Station (~350m from Site)	0.65 spaces / unit	Site-Specific By-law 20-216	2020
600 James Street North	West Harbour GO Station (~900m from Site)	0.58 spaces / unit	LPAT Case No. PL190517 Site-Specific By-law 21-053-LPAT	2021

Address	Nearest Major Transit Station	Approved Minimum Resident Parking Rate	Permission Through	Year of Approval
City of Pickering				
Universal City 2 & 3 (Bayly Street & Liverpool Road)	Pickering GO Station (~550 m from Site)	0.74 spaces / unit	CoA File P/CA 60/19	2019
Universal City 6 (Bayly Street & Liverpool Road)	Pickering GO Station (~550 m from Site)	0.71 spaces / unit	Site-Specific By-law 7810/21	2021
Universal City 4 & 5 (Bayly Street & Liverpool Road)	Pickering GO Station (~550 m from Site)	0.65 spaces / unit	Site-Specific By-law 7936/22	2022
Universal City 7 (Bayly Street & Liverpool Road)	Pickering GO Station (~550 m from Site)	0.65 spaces / unit	Site-Specific By-law 7924/22	2022
PTC Phase 1	Pickering GO Station (~750 m from Site)	0.65 spaces / unit	Site-Specific By-law 7981/23	2023
1786-1790 Liverpool Road	Pickering GO Station (~700 m from Site)	0.55 spaces / unit	Site-Specific By-law 8023/23	2023
City of Vaughan				
Transit City 3 [1] (Millway Avenue & Portage Parkway)	Vaughan Metropolitan Centre Subway Station (~450 m from Site)	0.33 spaces / unit	Site-Specific By-law 096-2018	2018
Transit City 4-6 [1] (Jane Street & Portage Parkway)	Vaughan Metropolitan Centre Subway Station (~400 m from Site)	0.41 spaces / unit	Site-Specific By-law 071-2019	2019
101 Edgeley Boulevard [1] (Block A5)	Vaughan Metropolitan Centre Subway Station (~550 m from Site)	0.18 spaces / unit	Site-Specific By-law 124-2021	2021
VMC Block 3 South (Interchange Way and Commerce Street)	Vaughan Metropolitan Centre Subway Station (~700 m from Site)	0.30 spaces / unit	Site-Specific By-law 147-2022	2022
North-East Corner of Highway 7 and Commerce Street (Block E2)	Vaughan Metropolitan Centre Subway Station (~550 m from Site)	0.18 spaces / unit	Site-Specific By-law 151-2022	2022
7800 Jane Street	Vaughan Metropolitan Centre Subway Station (~250 m from Site)	0.37 spaces / unit	Site-Specific By-law 153-2022	2022
216 & 220 Doughton Rd	Vaughan Metropolitan Centre Subway Station (~700 m from Site)	0.35 spaces / unit	Site-Specific By-law 155-2022	2022

Cities such as Hamilton, Pickering, and Vaughan have shown flexibility and pragmatism in adapting to the evolving transportation landscape as options become available to residents that were not available at the time when the Zoning By-law was enacted. For example, within the City of Pickering near the Pickering GO Station / Pickering Town Centre, decreasing parking supplies have been observed relative to the by-law requirement as the population continues to grow and as transit services levels continue to improve within its urban area. A review of these approvals, shown in **Table 17** illustrates a significant decline in resident parking rates over the last four years as there has been a reduction of 0.19 spaces per unit from 2019 to 2023.

Furthermore, this review of reduced parking approvals illustrates how numerous municipalities across the GTHA continue to approve resident parking standard reductions from their Zoning By-law standards, even for standards updated recently. For example, in 2023, the City of Mississauga approved a parking reduction of 0.62 spaces per unit (from 0.80 spaces per unit) for 151 City Centre Drive, a site located approximately 750 metres from the City Centre Bus Terminal. This approval represents a reduction of approximately 23% from the by-law standard. Furthermore, the applicable by-law standard of 0.80 spaces per unit was already the updated and reduced standard which the City of Mississauga passed in 2021. Therefore, it is not uncommon for municipalities to approve reduced resident parking rates from their Zoning By-law, even for standards updated recently.

In addition, the City of Pickering approved a resident parking reduction of 0.55 spaces per unit (from 0.80 spaces per unit) at 1786-1790 Liverpool Road, representing a reduction of approximately 38% from the by-law standard.

Further in the City of Vaughan, VMC Block 3 South and 216 and 220 Doughton Road are approximately 700 metres from the Vaughan Metropolitan Centre (VMC) subway station and were approved with a minimum resident parking requirement of 0.30 and 0.35 spaces per unit, respectively. By way of comparison, the proposed development is within 800 m to 1.1 km of the existing Oakville GO Station. As such, the proposed development may be considered comparable to some degree to these VMC sites, further considering its future evolving area and mobility context, recognizing new cycling and pedestrian infrastructure and intensification policies on local and regional levels. Moreover, it is appropriate to compare the VMC sites and the Site as they share comparable distances to higher-order transit facilities and similar access to comparable transit reach envelopes. As such, the proposed resident parking rate is viewed as proportionate to the parking approvals observed at other progressive centre areas, such as the VMC.

Overall, approved resident parking rates for comparable transit-oriented approvals within the GTHA range from 0.18 spaces per unit to 0.74 spaces per unit. The proposed minimum resident rate (0.50 spaces per unit) is within this range and is, therefore, considered appropriate for the proposed development's existing and, most notably, future transportation context.

6.4.2 Residential Based Transportation Demand Management (TDM) Strategies

As discussed in detail in **Section 9.0**, a TDM Plan for the Site is proposed to guide the provision of viable, alternative personal transportation options beyond the single-occupant, private automobile. The objective is to encourage the use of active and sustainable transportation modes, respond to the mobility needs of Site residents, and reduce dependence on automobiles, while being flexible to be able to adapt to future mobility needs and a long-term phased development plan.

The future Site area context provides frequent, public transit services and improved pedestrian and cycling connectivity. The TDM Plan supplements and further leverages the physical infrastructure and attributes of the Site area with a goal of reducing or minimizing auto-mode share. The proposed residential-based TDM strategies include, but are not limited to the following:

- Provision of a reduced resident parking supply;
- Provision unbundled parking from unit cost;
- Provision of convenient pick-up and drop-off facilities within and around the development blocks to facilitate passenger pick-up and drop-off via shared use mobility services, short-term small scale residential deliveries (substituting for shopping trips);
- Consideration of internal residential building facilities to facilitate the secure drop-off of small parcels, packages, and potentially food deliveries;
- Consideration to provide car share spaces on Site;
- Consideration to provide an annual car share membership for each residential unit;
- Provision of the required long-term bicycle parking supply, meeting the Zoning By-law standards;
- Consideration to provide a private bike share stations on Site;
- Consideration of a range of bike parking facilities for long term resident needs, such as cargo bike parking;
- Provision of bicycle repair stations;
- Consideration to provide private or shared micromobility devices; and;
- Provision of direct pedestrian and cycling connections to building entrances, bicycle parking facilities, nearby transit stops, and the external / public network.

Overall, the proposed TDM strategies complement the Site's resident parking reduction. It is noted that the reduced parking supply is, in and of itself, considered one of the most effective TDM strategies that can be implemented for residential developments. In addition, the overall TDM strategies are supportive of and conform to the current and evolving policies discussed in **Section 9.0**. As such, the proposed resident parking reduction can be appropriately accommodated through the proposed resident-based TDM strategies.

6.4.2.1 Non-Residential Parking Assessment

The following provides an overview of the contextual factors influencing parking demand in the Mid-Town Oakville area and the appropriateness of the proposed reduced residential visitor supply of **0.15 spaces per unit**.

6.4.2.2 Planning Policy and Planning Principles

Similar to the resident parking assessment, the applicable provincial, regional, and local policies demonstrate increasing efforts to reduce auto-related trips for non-resident travel. Overall, increasing efforts and investments are being made to change the travel behaviour of future Site visitors.

As discussed in **Section 3.0** and **Section 6.4.1.1**, Provincial policy documents such as the Provincial Policy Statement (PPS), the Growth Plan for the Greater Golden Horseshoe, Provincial Planning Statement, and the Ontario Ministry of Transportation Transit-Supportive Guidelines, support the use of appropriate development standards and TDM measures, such as reduced parking standards, to facilitate intensification and support transit-supportive development within Site areas. In addition, Metrolinx policy documents, including the 2041 Regional Transportation Plan, Mobility Hub Guidelines, and the GO Rail Station Access Plan, prioritize the intensification of development near transit and the creation of a multi-modal regional transportation system. As such these documents directly state the potential to reduce and potentially remove minimum parking requirements in transit-supportive areas while also providing direction to improve the accessibility of regional transit, including the

Oakville GO Station and the designated PMTSA. As such, these documents support the reduced non-residential parking standards.

Overall, a common theme across provincial and regional policy documents is to encourage the reduction of auto-related trips and increase the modal share of more active forms of transportation. The provision reduced visitor and non-residential parking standards encourages visitors to utilize more transit oriented and active forms of transportation to travel to and from the Site, thereby facilitating intensification and supporting the transit and active transportation investments being made within the Site area.

6.4.2.3 Evolving Area Transportation Context

As described in **Section 4.0** and **Section 6.4.1.2** the Site area is in close proximity of the Oakville GO Station and existing and future Oakville Transit bus stops. It will also benefit from various planned improvements to the local area road, transit, cycling, and pedestrian networks as part of the Midtown Oakville OPA and Metrolinx BRT projects. These improvements showcase the Town's direction towards prioritizing non-auto modes of travel and increasing the mode share of transit and active transportation, of which the reduced non-resident parking spaces would align with.

6.4.2.4 Review of Residential Visitor Zoning By-law Standards

In addition to the resident parking standards reviewed in **Section 6.4.1.3**, a comprehensive Zoning By-law review was also undertaken to compare residential visitor parking standards adopted across numerous municipalities in Ontario with comparable transit access to the proposed Site, summarized in **Table 18**. The selection of municipalities was primarily based on certain urban characteristics, including density and intensification patterns, conventionally auto-centric network, and a diversity of transit services available in the area.

Several municipalities across Ontario have approved relatively low parking standards for residential visitor parking within their respective Zoning By-laws. These reduced minimum parking requirements reflect evolving transit contexts, mixed-use environments, and the emergence of alternative modes of travel.

Overall, the range of minimum resident visitor parking standards was observed to be between 0 to 0.20 spaces per unit. As such, the ratio of 0.15 spaces per unit proposed for the Site is within the range observed for contemporary zoning standards across the GTHA and southern Ontario.

This indicates a general trend within municipalities across the GTA towards a progressive outlook towards the provision of residential visitor parking supply, particularly where transit is existing or planned, conducive to non-automobile travel. Within many of these observed municipalities, the existing and planned transit context is comparable or less than those available near the Site.

Table 18 Residential Visitor Parking Supply Requirements by Ontario Municipality

Municipality	Zoning By-law	City Area	Land Use Category	Nearby Transit	Minimum Visitor Parking Requirements
Site	**--**	**Midtown**	**Mixed-Use Building**	• Oakville Local Bus Routes • GO Train • Future Dundas & Trafalgar BRT	**0.15 spaces / unit**
Barrie	Draft Zoning By-law (June 2023)	District 1 District 2	Any Dwelling Unit	• GO Train • Barrie Transit Bus	**0.10 spaces / unit**
Mississauga	By-law 0225-2007	Precinct 1	Condo / Rental Apartment	• MiWay Bus & Express Bus • Mississauga Transitway • GO Bus / Train • Future Hurontario LRT • Future Lakeshore BRT	**0.20 spaces / unit**
		City Centre	Apartment Dwelling		**0.15 spaces / unit**
Pickering	By-law 7553-17	City Centre	Apartment Dwelling	• Durham Region Transit Bus • GO Train Future Durham-Scarborough BRT	**0.15 spaces / unit**
Waterloo	By-law 2018-050	Residential Mixed-Use Zones (Parking Area A)	Residential	• Grand River Bus • Grand River ION LRT • GO Bus / Train	**0.10 spaces / unit** [1]
Vaughan	By-law 001-2021	VMC	Apartment Dwelling	• YRT Bus & Viva BRT • GO Bus / Train • TTC Bus / Subway	**0.15 spaces / unit**
	Yonge-Steeles Secondary Plan (OLT)	Yonge-Steeles	Apartment Dwelling	• YRT Bus & Viva BRT • GO Bus • TTC Bus / Subway • Future Yonge North Subway Extension	**0.15 spaces / unit**
Toronto	By-law 569-2013	Parking Zone B	All non-residential uses	• TTC Bus / Subway / Streetcar • GO Bus / Train • Miway Bus • Future TTC Subway • Future TTC Streetcar	**2 spaces + 0.05 spaces / unit**
Kingston	By-law 2022-62	Parking Area 1 (Downtown) & Parking Area 2 (Main Street Corridor)	Mixed-Use Building	• Kingston Transit Bus • Kingston Transit Express Bus	**0.10 spaces / unit**
Hamilton	By-law 05-200	Downtown Zone	Multiple Dwelling	• HSR Bus • Future B-Line LRT • Future A-Line BRT • GO Bus / Train	**Inclusive of minimum resident rate**

Municipality	Zoning By-law	City Area	Land Use Category	Nearby Transit	Minimum Visitor Parking Requirements
Kitchener	By-law 2019-051	Urban Growth Centre / Downtown	Multiple Residential Buildings	• Grand River Bus • Grand River ION LRT • GO Bus / Train	**No minimum**
Brampton	By-law 270-2004	Central Area / Downtown	Apartment Dwelling	• Brampton Bus • Brampton ZUM BRT • GO Bus / Train • Future Hurontario LRT	**0.20 spaces / unit**
Bill 185 (received Royal Ascent June 6, 2024)					**Zero Parking Requirement in PMTSA's**

Notes:
1. The City of Waterloo Zoning By-law 2018-050 provides parking standards for each Residential Mixed-Use (RMU) Zone. As such, the range of parking standards across the various RMUs is reported in this table.

6.4.2.5 Observed Residential Visitor Parking Reduction Approvals

Consistent with the trend of reduced residential visitor parking standards, there is a demonstrated trend towards parking supply reductions across the broader Greater Toronto and Hamilton Area (GTHA) beyond their respective Zoning By-law standards. BA Group has reviewed approvals for developments near GO Stations (with comparable transportation contexts as the Site) for which reduced residential visitor standards have been provided by City Council as part of the Zoning By-law Amendment process, by the Committee of Adjustment as part of Minor Variance applications, or at the Ontario Land Tribunal (OLT), formerly known as the Ontario Municipal Board (OMB) and the Local Planning Appeal Tribunal (LPAT). The residential visitor parking approvals that are under review are for sites specifically within the Cities of Mississauga and Brampton where they have a minimum residential visitor parking rate of 0.20 spaces per unit and a further reduced rate of 0.15 spaces per unit was approved. These sites provide the best comparison given that the proposed Site is proposing a 0.15 spaces per unit ratio within Oakville which has a minimum residential parking requirement of 0.20 spaces per unit.

A summary of these residential visitor parking reduction approvals for proxy sites with similar or less transit-supportive contexts as the proposed development are provided in **Table 19**.

Table 19 Approved GTHA Wide Residential Visitor Parking Supply Reductions

Address	Nearest Major Transit Station	Approved Minimum Residential Visitor Parking Rate	Permission Through	Year of Approval
Proposed Site Master Plan				
Proposed Development Area	Oakville GO Station (~800 to 1.1 km from Site)	0.15 spaces / unit (proposed)	--	--
City of Mississauga				
78 Park Street East and 22 – 28 Ann Street	Port Credit GO Station (~80 m from Site)	0.10 spaces / unit	CoA File: A413.20 Site-Specific Zoning By-law 0054-2020	2020
86 Dundas Street East	Cooksville GO Station (~1 km from Site)	0.15 spaces / unit	CoA File: A51/21	2021
70 Mississauga Road South & 181 Lakeshore Road West	Port Credit GO Station (~1.3 km from Site)	0.15 spaces / unit	CoA File: A226/21	2021
180 Rutledge Road	Streetsville GO Station (~1 km from Site)	0.10 spaces / unit	CoA File: A185/23	2023
City of Brampton				
245 Steeles Avenue West (Phase 1)	Brampton Innovation GO Station (~3.3km from Site)	0.15 spaces / unit	CoA Application No. A-2022-0023	2022
Block 7 (Mount Pleasant Area)	Mount Pleasant GO Station (~200 m from Site)	0.15 spaces / unit	OMB Cases: PL160478 & PL160479	2017
2 & 4 Hanover Road	Bramalea GO Station (~3.4km from Site)	0.14 spaces / unit	Site-Specific Zoning By-law 48-2020	2020
80 Scott Street	Brampton Innovation GO Station (~650 m from Site)	0.15 spaces / unit	Site-Specific Zoning By-law 140-2020	2020
499 Main Street South (Shoppers World Brampton)	Brampton Innovation GO Station (~3.3km from Site)	0.15 spaces / unit	Site-Specific Zoning By-law 228-2020	2020

6.4.2.6 Review of Non-Residential Zoning By-law Standards

A comprehensive Zoning By-law comparison review for non-residential parking standards was also undertaken and is summarized in **Table 20**.

Similar to **Section 6.4.2.4,** several municipalities across Ontario have approved relatively low parking standards for non-residential parking within their respective Zoning By-laws.

Overall, the range of minimum non-residential parking standards was observed to be between 0.00 to 4.50 spaces per 100 m^2 of non-residential GFA. As such, the proposed rate of 1.08 spaces per 100 m^2 of non-residential NFA proposed for the Site is within the range observed across the GTHA and southern Ontario.

The above indicates a general trend within municipalities across the GTA towards a progressive outlook towards the provision of a non-residential parking supply, particularly where transit and transportation context exists or is planned, conducive to non-automobile travel. Within many of these observed municipalities, the existing and planned transit context is comparable or less than those available near the Site.

Table 20 Non-Residential Parking Supply Requirements by Ontario Municipality

Municipality	Zoning By-law	City Area	Land Use Category	Nearby Transit	Minimum Parking Requirements
Site	**--**	**Midtown**	**Mixed-Use Building**	• Oakville Local Bus Routes • GO Train • Future Dundas & Trafalgar BRT	**1.08 spaces / 100 m^2 (for all non-residential uses)**
Barrie	Draft Zoning By-law (June 2023)	District 1 District 2	All non-residential uses	• GO Train • Barrie Transit Bus	**No minimum**
Mississauga	By-law 0225-2007	Precinct 1 [1]	Retail	• MiWay Bus & Express Bus • Mississauga Transitway • GO Bus / Train • Future Hurontario LRT • Future Lakeshore BRT	**3.00 spaces / 100 m^2**
Pickering	By-law 7553-17	City Centre	Retail	• Durham RT Bus • GO Train • Future Durham-Scarborough BRT	**3.50 spaces / 100 m^2**
Vaughan	By-law 001-2021	VMC	Retail [2]	• YRT Bus & Viva BRT • GO Bus / Train • TTC Bus / Subway	**0.70 spaces / 100 m^2**
Toronto	By-law 569-2013	Parking Zone B	All non-residential uses	• TTC Bus / Subway / Streetcar • GO Bus / Train	**No minimum**

Municipality	Zoning By-law	City Area	Land Use Category	Nearby Transit	Minimum Parking Requirements
				• Miway Bus • Future TTC Subway • Future TTC Streetcar	
Kingston	By-law 2022-62	Parking Area 1 (Downtown) & Parking Area 2 (Main Street Corridor)	Retail & Commercial	• Kingston Transit Bus • Kingston Transit Express Bus	**No minimum**
Hamilton	By-law 05-200	Downtown Zone	Retail & Commercial	• HSR Bus • Future B-Line LRT • Future A-Line BRT • GO Bus / Train	**No minimum**
Kitchener	By-law 2019-051	Urban Growth Centre / Downtown	Retail	• Grand River Bus • Grand River ION LRT • GO Bus / Train	**No minimum**
Brampton	By-law 270-2004	Central Area / Downtown	Retail	• Brampton Bus • Brampton ZUM BRT • GO Bus / Train • Future Hurontario LRT	**4.50 spaces / 100 m^2**
Bill 185 (received Royal Ascent June 6, 2024)					**Zero Parking Requirement in PMTSA's**

Notes:
1. Shared parking calculations allow for visitor parking to accommodate non-residential uses as an option for providing non-residential parking.
2. Retail parking rate applies to establishments less than 5,000 m^2 of GFA.

6.4.2.7 Application of the Principle of Shared Parking and On-site Retail Market

The principle of shared parking will be applied to the parking supply provided within the underground parking garages within each development block.

The shared parking principle takes advantage of the temporal parking characteristics associated with the non-residential parking demands that will be experienced by the proposed land uses. The residential visitor and retail parking demands may peak at different times through the weekday and weekend periods. Visitor parking tends to peak later in the day on both weekdays and weekends, while the typical retail that would be contemplated within the proposed development, may peak earlier in the day. This will enable segments of the visitor parking supply to supplement the retail parking supply that is proposed.

Similarly, the demand for both visitor parking and for retail parking will be replaced, to a certain degree, by active transportation modes given the relatively significant amount of residential development and the associated

population that will serve as an implicit market for the retail uses. Furthermore, with the eventual development of further residential uses within the Midtown Oakville area, additional market sources will be introduced to support the retail (and other non-residential) land uses.

The combined effects of the shared parking principle and the presence of an on-site retail market will serve to reduce the overall non-residential parking demands associated with the Site.

6.4.2.8 Pick-up and Drop-off Conditions in Urban Intensification Areas

BA Group has reviewed pick-up and drop-off conditions at residential developments in intensification areas to understand the typical demand related to pick-up and drop-off spaces during peak times. Pick-up / Drop-off activity generally includes passenger or parcel / food pick-up and drop-off trips near building entrances (given the desire to get close to the subject building).

In general, the rate of pick-up and drop-off activity at residential buildings amounts to an approximate accumulation of between 0.005 and 0.008 vehicles per unit. The Site plans for the various development blocks to include pick-up and drop-off facilities on-site within each Block, and within planned on-street publicly available lay-by parking. This is intended to accommodate all, or the majority of pick-up and drop-off activity associated with the residential and non-residential activity within each Block. This would tend to mitigate impacts generally within the extended Midtown Oakville area and within the Oakville GO Station vicinity.

The planned public streets that abut the proposed development blocks are capable of accommodating lay-by parking within the planned rights-of-way. The precise location and configuration of the lay-by parking will be coordinated with Town of Oakville transportation and urban design staff as the Midtown Oakville public street network design is further advanced.

6.4.2.9 Non-Residential Based Transportation Demand Management (TDM) Strategies

As discussed in detail in **Section 9.0**, a TDM Plan for the Site is proposed to guide the provision of viable, alternative travel options beyond the single-occupant, private automobile. The objective is to encourage the use of active and sustainable transportation modes, respond to the mobility needs of Site residents and reduce dependence on automobiles. The future Site context provides frequent, public transit services and improved pedestrian and cycling connectivity. The TDM Plan further leverages the physical infrastructure and attributes of the Site area with a goal of reducing or minimizing auto-mode share. The proposed non-residential-based TDM strategies include, but are not limited to, the following:

- Provision of a reduced non-resident parking supply; and
- Provision of the required short-term bicycle parking supply, meeting the Zoning By-law standards.
- The location of the proposed development within Midtown Oakville provides for an implicit market to support non-residential land uses. As such, mobility needs of the planned non-residential uses will be accommodated by active transportation modes, offsetting what would otherwise by travel needs.

6.5 Parking Summary

It is proposed to provide a reduced parking supply relative to the requirements stipulated in Town of Oakville's Zoning By-law 2014-014. The current proposal includes a total of 4,557 parking spaces for the Site, including 3,428 residential spaces, 1,029 resident visitor spaces and 100 non-residential (retail) parking spaces. The appropriateness of the proposed parking standards, for all uses, are summarized in **Table 21**.

Table 21 Summary Parking Rationale

Theme / Initiative	Description	
	Resident	Non-Resident
Site	Proposed Resident Rate: **0.50 spaces / unit**	Proposed Residential Visitor Rate: **0.15 spaces / unit** Proposed Non-Residential Rate: **1.08 spaces per 100 m^2**
Ontario Bill 185	Application of Bill 185 and the provisions which amend the Planning Act result in parking requirements of **zero parking spaces** for both the resident parking and visitor parking components **(i.e., 0 parking spaces / unit)** as well as for the non-residential land use components (**0 parking spaces per 100 m^2 of GFA**) of the development proposal.	
Progressive Inter-Governmental Policy Context	Existing and evolving provincial, regional, and local policies prioritize sustainable travel choices over automobiles, supporting the use of parking management strategies and reduced minimum parking requirements.	
Availability of Non-Automobile Travel Options	The Site is in close proximity to existing and planned higher-order transit services, bicycle and pedestrian route facilities, and various transportation improvements that encourage non-automobile dependent travel across the Town and Region.	
Comparison of Zoning By-laws across Ontario	Resident Zoning By-law Range: **0.00 - 0.80 spaces / unit**	Residential Visitor Zoning By-law Range: **0.0 - 0.20 spaces / unit** Non-Residential Zoning By-law Range: **0.00 – 4.50 spaces / 100 m^2 GFA**
On-site or Development frontage PUDO facilities	The Site will be providing either on-site or facilitating on-street pick-up and drop-off (PUDO) facilities within each Block. This will accommodate all or the majority of pick-up and drop-off activities, mitigating impact on the broader Midtown Oakville area and the Oakville GO Station operations.	
TDM Strategies	The proposed comprehensive TDM strategies encourage the use of sustainable transportation modes, reducing reliance on private automobile ownership and usage for both residents and visitors.	

7.0 BICYCLE PARKING CONSIDERATIONS

7.1 Zoning By-law Bicycle Parking Requirements

The minimum bicycle parking requirements included within the Town of Oakville Zoning By-law 2014-014 that are applicable to the Site, are summarized in **Table 22**.

Table 22 Zoning By-law 2014-014 Bicycle Parking Requirements

Land Use		Minimum Bicycle Parking Rate	Proposed Minimum Bicycle Parking Rates
Resident	Long-term	Minimum of 30 spaces (per tower)[2]	0.5 spaces/unit
	Short-term		0.1 spaces/unit
Non-Resident (Retail)	--	Greater of 2 or 1 space / 1000 m^2 GFA	Greater of 2 or 1 space / 1000 m^2 GFA

Notes:

1. As per Zoning By-law 2014-014 (Section 5.1.5), should the calculation of the number of parking spaces required end in a fraction, the "the minimum number of spaces shall be increased to the next highest whole number if the fraction is greater than 0.25."
2. Zoning By-law 2014 Section 5.4.1 a) also states that "in no circumstance shall the number of minimum bicycle parking spaces required on a lot be greater than 30." For the purposes of this report, it has been assumed that the minimum of 30 resident bicycle parking spaces would be applied per building tower.

7.2 Proposed Bicycle Parking Supply

The proposed bicycle parking supply for the Site is summarized in **Table 23**. The proposed development includes the provision of a minimum total of 4,180 bicycle parking spaces and is consistent with the minimum requirements set out in Zoning By-law 2014-014. This bicycle parking supply includes 3,473 long-term bicycle parking spaces (resident), 696 short-term (resident visitor) bicycle spaces and 11 bicycle parking spaces for non-resident retail users to be provided along the frontages of Davis Road.

The long-term bicycle parking will be supplied in secure, weather protected internal rooms within each block. Access to the bike parking rooms will be via pass-card or key and be fitted with security features. Separate rooms will be provided for the resident and the non-resident bicycle parking facilities. As a part of the TDM strategies, a Bicycle Repair Station will also be included within the bicycle storage rooms.

Short-term bike parking will generally be located outside and near visitor / customer entrances. Access to visitor internal bike parking storage areas will be coordinated with the architectural layout of the residential buildings and their podiums and will have access to external entrances.

Table 23 Proposed Bicycle Parking Supply

Site		Resident Long-Term (spaces)	Resident Short-Term (spaces)	Retail (spaces)	Total (spaces)
Zoning Bylaw Minimum Ratio	--	**Minimum of 30 spaces per building tower**		**Greater of 2 or 1 space / 1000 m² GFA**	--
Proposed Minimum Ratio	--	**0.5 spaces/unit**	**0.1 spaces/unit**		--
Block 1					
2,220 units 1,503 m² retail	Required	120		2	**122**
	Proposed	1,110	222	2	**1,334**
Block 2					
2,156 units 1,514 m² retail	Required	120		2	**122**
	Proposed	1,078	216	2	**1,296**
Block 3					
1,305 units 3,293 m² retail	Required	90		4	**94**
	Proposed	653	131	4	**788**
Block 4					
1,264 units 2,808 m² retail	Required	90		3	**93**
	Proposed	632	127	3	**762**
SITE TOTAL					
6,945 units 9,118 m² retail	**Required**	**420**		**11**	**431**
	Proposed	**3,473**	**696**	**11**	**4,180**

Notes:

1. Site statistics based on site plans prepared by Graziani + Corazza Architects, dated October 22, 2025.
2. As per Zoning By-law 2014-014 (Section 5.1.5), should the calculation of the number of parking spaces required end in a fraction, the "the minimum number of spaces shall be increased to the next highest whole number if the fraction is greater than 0.25."

8.0 LOADING CONSIDERATIONS

8.1 Loading Requirements

The Town of Oakville's Zoning By-law 2014-014 does not include a requirement for a minimum number of loading spaces. The By-law does however require the following in regard to where a loading space is provided:

- The minimum dimensions of a loading space are: 3.5 m width, 12.0 m length and 4.2 m vertical clearance;
- A loading space shall abut the building for which the loading space is provided; and
- A loading space shall be set back 7.5 m from any residential zone, except if entirely within a structure.

8.2 Proposed Waste Management Strategy

Regardless of the absence of a Zoning Bylaw requirement, there is a practical requirement for an appropriate loading supply for the Site that reflects the intensification being proposed. As such, the loading supply has been considered within the context of the following principles:

- Residential refuse loading areas that meet the Region of Halton requirements for dimensional standards (non-residential refuse collection will be privately operated);
- Resident move-in / move-out needs that are impacted by the scale of the scale development and the mix of non-residential uses;
- Delivery vehicle needs associated with the residential units; and
- The needs of the non-residential land uses and their associated intensities.

8.2.1 Proposed Loading Supply

The proposed loading supply for the Site is summarized in **Table 24.** The loading supply indicates that some of the Type G loading spaces will be shared between some of the towers.

Table 24 Proposed Loading Supply

Block	Number of Towers on Block	Number of 13 m x 4 m (Type G) Loading Spaces	Number of 3.5 m x 11 m (Type B) Loading Spaces	Total Number of Loading Spaces
Block 1	4	3	2	**5**
Block 2	4	3	2	**5**
Block 3	3	2	3	**5**
Block 4	3	2	2	**4**
Total Site	**14**	**10**	**9**	**19**

The Site is proposed to include a total of 19 loading spaces, inclusive of 10 Type G spaces (13 metres by 4 metres) and 9 Type B spaces (3.5 metres by 11 metres).

The Type G loading spaces will accommodate refuse collection vehicles, in addition to the space required around the vehicle, related to the collection of refuse bins that are typically collected by an overhead refuse collection vehicle. Additional bin-staging areas will be provided that will be directly related to the scale (number of units) of the residential development to be served by the Type G loading area. For some blocks, in order to be efficient, the Type G loading spaces can serve more than one building.

The location of the loading areas is illustrated in the architectural drawings in **Appendix B**.

8.2.2 Height Clearances

The Region of Halton has specific vertical clearances for their refuse collection vehicles. A 7.5 m vertical height will be provided where the refuse collection vehicle will be engaged in collecting and returning the bins to their staging area. Beyond this active loading space, a 4.5 m vertical clearance will be provided to ensure that all service vehicle design vehicles are able to enter and exit the loading area without risk of coming into conflict with overhead features of the building (i.e., structural beams, electrical conduits, plumbing pipes, overhead doors, etc.).

8.3 Loading Summary

Each building or group of buildings on the development block, have been evaluated in consideration of practical, functional and policy requirements associated with the various types of loading operations, that would be experienced on a daily basis.

The functional design of the proposed loading areas has been assessed with appropriate design vehicles and manoeuvring requirements, to ensure that the resulting loading spaces are capable of accommodating the needs each individual development building and or block. This ensures an efficient and compact development and safe Master Plan concept.

A total of 19 formal loading spaces, that meet the Town of Oakville's dimensional requirements have been provided across the four development blocks of the Site.

The vehicle manoeuvring diagrams (VMD's) for the proposed loading areas are provided in **Appendix J.** These VMD's include consideration for a Halton Region waste collection vehicle (10.5 m length) and a TAC single-unit truck (9.1 m length) and confirm that the loading spaces are functional and meet the requirements of Halton Region.

9.0 TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN

Transportation Demand Management (TDM) measures will be incorporated within the Site to minimize the need for automobile travel and to encourage and facilitate the use of non-automobile travel modes on a daily basis. The following sections outline the proposed physical and operational strategies that complement the Site design, with the goal of encouraging a shift in the travel pattern of future residents to sustainable modes of transportation, while being flexible to adapt to future mobility needs and a long-term phased development plan.

The TDM Plan strives to reduce automobile use as a part of the design and construction of the development, as well as after construction, as an on-going strategy by supporting and promoting the use of non-auto travel modes. The key objective of the TDM Plan is to reduce peak hour single occupant automobile traffic with a focus on the following specific policy areas:

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

9.1 TDM Plan Strategies

The existing and future area context provides for excellent public transit services, as well as travel by active transportation, which will reduce the need of future residents of the Site to travel using an automobile. Additional TDM strategies, which have been recommended as part of the proposed development, are summarized in **Table 25**.

Based upon the Site context and proposed land use, the recommended TDM strategies have been selected to further support non-automobile modes of travel. The measures fall into two general categories: a ‘hard’ or ‘soft’ measure. A ‘hard’ TDM measure is a physical infrastructure component, where the applicant or land developer is responsible for implementations. A ‘soft’ TDM measure is where the applicant or land developer is responsible for notifying a third party for implementations. The following sections provide additional details regarding each recommended TDM strategy.

Table 25 Summary of Potential Site TDM Measures

Measure	Type	Description	Objective
Reduced Car Ownership			
Reduced Parking Supply	Hard Measure	A reduced parking supply is proposed for the Site, in comparison with the minimum resident parking requirements outlined in Town Zoning By-law as follows: • resident parking ratio = 0.50 space per unit; • visitor parking ratio = 0.15 spaces per unit; and, • non-residential parking ratio = 1.08 spaces per 100m^2 GFA Providing a reduced parking supply is a key component in reducing single occupant vehicle trips.	Reduce auto-oriented dependence and the need for everyday travel. Promote non-auto modes of travel during peak travel periods.
Unbundled Parking	Soft Measure	Unbundle unit leases and parking payment.	Reduce auto-oriented dependence and the need for everyday travel.
Car Share Spaces	Hard Measure	Consideration to provide car share spaces on the Site through a car share provider. The number and details of the car shares spaces would be negotiated with a car share provider at a later time.	Promote alternative transportation service options besides car ownership.
Car Share Memberships	Soft Measure	Consideration to provide an optional annual car share membership per unit for the first year of occupancy.	
Parking Pricing	Soft Measure	Consider a paid parking operation for all non-resident parking, provided in a shared parking environment.	Influence travel mode choice.
Cycling			
Bicycle Parking	Hard Measure	Provide bicycle parking that exceeds Town standards at a minimum rate of 0.5 resident spaces per/ unit and 0.10 visitor spaces per resident unit. Provide bike parking for non-residential uses at a rate of 1/1000 m^2 GFA.	Make cycling an attractive option for travel during the peak travel periods.
Bicycle Repair Station	Hard Measure	Provide bicycle repair stations (one for each internal bike storage room) within the residential bicycle parking storage area on Site.	
Bicycle Parking: Range of Types	Hard Measure	Consider providing a range of bicycle parking facilities for long term resident needs, such as Cargo Bike parking.	Increase the utility of bicycle travel for a variety of trip types.

Measure	Type	Description	Objective
Bike Share	Hard Measure	Consider providing private bike share stations, both regular and e-bike support, for residents and visitors of the Site.	Promote alternative transportation service options besides car ownership
Micromobility			
Private / Shared Micromobility Devices	Hard Measure	Explore the provision of micromobility devices (manual bikes, e-bikes, e-scooters, etc.) in consideration of the Town of Oakville policy review of micromobility to facilitate "last kilometer" trip making in the Midtown Oakville context.	Promote alternative transportation service options besides car ownership
Transit			
Transit Information Centre	Hard Measure	Explore the provision of monitors displaying real-time transit information in the resident lobbies to assist residents taking local transit services (e.g., bus and streetcar routes) and using the GO Transit system.	Reduce car dependence and the need for everyday travel.
Travel Mode Information Package	Soft Measure	Implement marketing programs to ensure that new residents are aware of available modal choices in the area.	Promote transit travel during peak travel periods
Pedestrian Access and Walkability			
Pedestrian & Cycling Connections	Hard Measure	Provide direct connections to Davis Road, N-S Minor Arterial Street, and Cross Avenue, which connects pedestrians and cyclists to the surrounding area's bike lanes, Oakville Transit bus stops, and the Oakville GO Station. Ensure internal pedestrian connections facilitate anticipated desire lines within and between development blocks. Ensure continuous, safe, and direct pedestrian connections with enhanced pedestrian amenities (landscaping, benches, shade, etc.) are provided.	Make walking and cycling an attractive option for travel during peak travel periods.
Building Infrastructure			
Pick-up / Drop off Facilities	Hard Measure	Provision of convenient pick-up and drop-off facilities within and around the development blocks to facilitate passenger pick-up and drop-off via shared use mobility services, short-term small scale residential deliveries (substituting for shopping trips)	Facilitate alternative means of travel other than private auto – use of shared auto services – reduces parking.
Secure Internal Package	Hard Measure	Consideration of internal residential building facilities to facilitate the secure	Increase opportunities to use delivery services during all times of day/week.

Measure	Type	Description	Objective
Storage facilities		drop-off of small parcels, packages, and potentially food deliveries	
Monitoring			
Monitoring program – travel modal split, parking demands, bicycle parking demands	Soft Measure	Implement a programme to monitor travel demand by mode as development is phased in over time. Respond to evolving demands and adjust mobility characteristics such as parking supply/configuration (review overall parking supply, adjust car-share resources) or bicycle parking supply/configuration (such as introducing and/or increasing cargo bike, e-Bike, or e-Scooter storage facilities).	Adapt to mobility changes over time with a view to reducing reliance on private use.
Communication/ TDM Coordinator			
Resident / Retail Tenant Information Meetings	Soft Measure	Arrange meetings of new residents or retail tenants to communicate the available mobility resources to accommodate daily needs. Organized by building management or concierge staff within individual buildings.	Ensure the resident and tenant populations are kept informed of mobility options as they evolve over time within Midtown.
TDM Coordinator	Soft Measure	As requested by the Town, consideration is to be provided for hiring a TDM coordinator to implement the TDM strategy for the Site. Continued consultation is underway with the Town's Sustainable Transportation Program Coordinator for Smart Commute program options and implementation of TDM measures.	To oversee the implementation of TDM measures for the Site.

10.0 ROAD SAFETY AND TRAFFIC CALMING

To enhance the level of safety for all road users on residential streets within Oakville, the Town recently introduced the Neighbourhood Traffic Safety Program. This program includes the following six components:

1. Automated Speed Enforcement (ASE)
2. Community Safety Zones
3. Traffic calming
4. Pedestrian crossovers
5. Reduced default speed limit
6. Vision Zero

The components of the Town's Neighbourhood Traffic Safety Program are summarized in **Table 26** and include consideration for how these measures would relate to the Site.

Table 26 Town's Neighbourhood Traffic Safety Program

Component	Description	Consideration for Site
Automated Speed Enforcement (ASE)	• Automated camera / speed measurement device used for speeding enforcement. • Town Council approved the use of 14 cameras to be installed and rotated through the Town's Community Safety Zones. • The ASE program was introduced in January 2025.	• Once the Site is built-out, monitoring of the streets surrounding the Site could be undertaken to determine if there are speeding concerns that need to be addressed through a Community Safety Zone designation and installation of ASE.
Community Safety Zones	• Community Safety Zones (CSZ's) may include roadways near schools, daycare centres, active parks, hospitals and senior citizen residences, and may also be used for collision prone areas. • The Highway Traffic Act (HTA) allows municipalities to designate road segments as CSZs where public safety is of special concern and certain HTA fines (including speeding) are doubled.	• Once the Site is built-out, monitoring of the streets surrounding the Site (Local Street A, Local Street B and Davis Road) could be undertaken to determine if a Community Safety Zone is recommended.
Traffic Calming	• Traffic speeds at various locations in Oakville are	• Although the design of the Site street network has been designed to

	measured through the speed survey program. • Traffic calming measures are used to reduce speeds where conventional methods of speed deterrence, such as enforcement and education, have not been effective. Some traffic calming examples include radar speed display signs, speed cushions, and raised barrier medians.	encourage lower speeds, once the Site is built-out, monitoring of the streets surrounding the Site could be undertaken to determine if additional traffic calming measures are required.
Pedestrian Crossovers PXO's)	• The Town has a Pedestrian Crossover (PXO) program. PXO's can be considered where a protected crossing is required for pedestrians. There are 4 different types of PXO's (as per the Ontario Traffic Manual Book 15), each providing a different level of protection.	• A PXO is being proposed for the Site along Davis Road, to provide a mid-block pedestrian crossing between the N-S Arterial Street and Local Street B. This PXO will provide connectivity for pedestrians between Blocks 2 and 4.
Reduced Default Speed Limit	• In September 2023, Town Council voted to maintain the default speed limit of 50 km/h across all local and minor collector roads in Oakville as studies demonstrated that 40 km/h speed limits do not reduce operating speeds.	• Appropriate posted speed limits can be considered by the Town for the streets surrounding the Site at a later stage.
Vision Zero	• Vision Zero is a road safety approach with the goal of zero fatalities and zero serious injuries on roadways. • A key planning goal from the Town's 2018 Switching Gears Transportation Master Plan, was to provide a safe and efficient transportation system for all road users. • The Town currently has various initiatives to improve traffic safety as part of the Neighbourhood Traffic Safety Program, including education and outreach, network screening and crossing guard programs.	• Once the Site is operational, monitoring of the streets surrounding the Site could be undertaken to determine if there are road safety concerns that need to be addressed.

The design of the Site street network reviewed the 3 road safety pillars summarized in **Table 27**, with a focus on "Engineering". Once the Site is operational, the Town could address the "Education" and "Enforcement" pillars to address any road safety concerns. Road safety considers all road users, inclusive of pedestrians (focus on vulnerable users such as children, seniors, accessibility challenges) cyclists and vehicles.

Engineering measures that contribute to road safety include physical measures that focus on the design and operation of streets. The measures that impact road safety typically include traffic calming measures, changes to traffic control, traffic signal timing/coordination and pavement markings, signage, policy changes, review of design standards and changes to regulations such as traffic flow and parking rules.

The "Engineering" traffic calming measures that are proposed for the Site include street cross-sections that provide appropriate lane widths, on-street parking, curb extensions, a pedestrian crossover, dedicated facilities for active transportation and boulevard landscaping. A pavement marking and signage plan will be provided as part of the **Site Plan Approval (SPA)** application.

Table 27 Road Safety Pillars

Engineering	Education	Enforcement
• Engineering includes safety measures that consider the physical and built environment, inclusive of the lay-out of the Site and design of the street network. • The proposed Site Street network include a functional design that considers road safety.	• Education includes widespread communication to provide information to the community about road safety. • The goal of education is to alter road user behaviour and increase the level of safety.	• Enforcement is a key component to improve driver behaviour and enhance the level of safety.

11.0 TRAFFIC VOLUME FORECASTING

11.1 Traffic Analysis Scenarios

The traffic operations analysis has been undertaken for the weekday morning and afternoon peak hours, for the following scenarios. Considering the significant traffic volumes derived from MTO and Town corridor growth rates, this study considers two scenarios: 1) corridor growth volumes included in the analysis and 2) corridor growth volumes excluded from the analysis for the future background and future total scenarios.

- Existing traffic (2024) – traffic activity levels under current conditions;
- Future background conditions (2044) – traffic activity levels 20 years into the future, which includes allowances for the build-out of Midtown Oakville and assumes that the complete road network proposed by the Midtown Oakville EA and OPA is operational (**corridor growth volumes excluded**).
- Future background conditions (2044) – traffic activity levels 20 years into the future, which includes allowances for the build-out of Midtown Oakville with **corridor growth included** and assumes that the complete road network proposed by the Midtown Oakville EA and OPA is operational.
- Future total conditions (2044) – traffic activity levels 20 years into the future, with the Site fully developed and occupied, with projected Site generated traffic added to the future road network. (**corridor growth volumes excluded**).
- Future total conditions (2044) – traffic activity levels 20 years into the future, with the Site fully developed and occupied, with projected Site generated traffic added to the future road network and the **inclusion of allowances for corridor growth.**

11.2 Existing Traffic Volumes

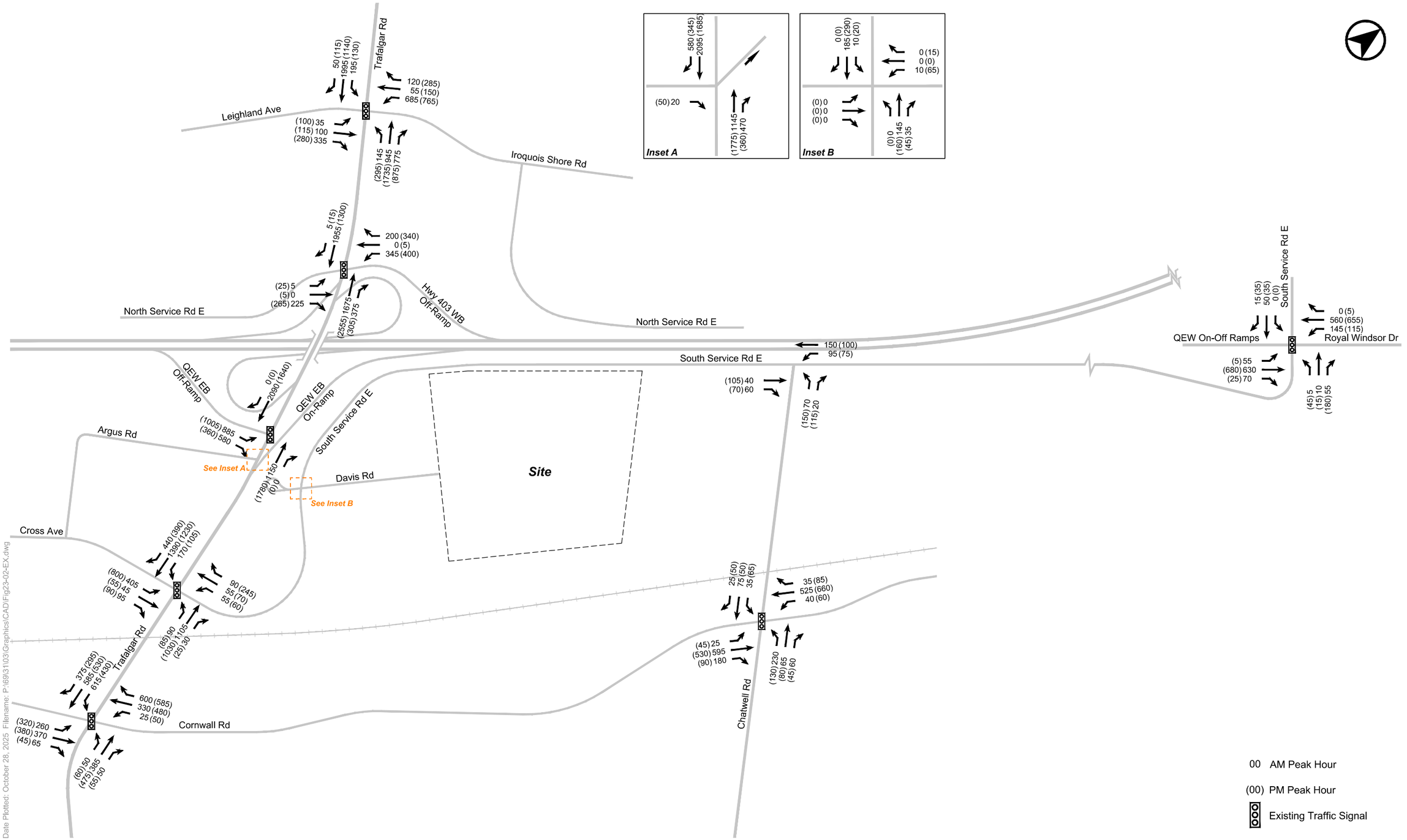
Existing baseline traffic and pedestrian volumes were established at intersections within the study area for the weekday morning and afternoon peak hour using traffic count information obtained from surveys conducted by Spectrum Traffic Data Inc. on Tuesday, June 4th, 2024. A list of the count data and sources is provided in **Table 28**. All turning movement counts are provided in **Appendix L.**

Table 28 Study Area Intersections

Intersections	Type of Control	Count Date	Source
Trafalgar Road & Iroquois Shore Road / Leighland Avenue	Signalized	Tuesday, June 4th, 2024	Spectrum Traffic Data Inc.
Trafalgar Road & North Service Road / Highway 403 WB Off-Ramp			
Trafalgar Road & Highway 403 EB Off-Ramp			
Trafalgar Road & Cross Avenue / South Service Road East			
Trafalgar Road & Cornwall Road			
Cornwall Road & Chartwell Road			
South Service Road East & The Canadian Road / Royal Windsor Drive / Highway 403 WB On-Off Ramp			
Trafalgar Road & Argus Road	Stop Control		
South Service Road East & Chartwell Road			
South Service Road East & Davis Road			

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

Existing, balanced baseline area traffic volumes for the weekday morning and afternoon peak hours are illustrated in **Figure 23**.



00 AM Peak Hour

(00) PM Peak Hour

Existing Traffic Signal

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FIGURE 23 EXISTING TRAFFIC VOLUMES

11.3 Future Background Traffic

Traffic growth in the Site vicinity has been considered based on an evaluation of traffic volume changes related to:

- General corridor growth on the study area roads (i.e. Trafalgar Road and Highway 403 Ramps)
- Specific area development traffic (i.e. background development traffic)

11.3.1 Corridor Growth

Historical traffic volume counts at the signalized intersection of Trafalgar Road and Cross Avenue / South Service Road from 2001 to 2024 were reviewed to determine if there have been any changes in traffic activity due to general traffic corridor growth within the study area. It was determined that the traffic volumes along Trafalgar Road have remained consistent or have declined during this period.

Considering the significant traffic volumes derived from MTO and Town corridor growth rates, this study considers two scenarios: 1) **corridor growth volumes included** in the analysis and 2) **corridor growth volumes excluded** from the analysis for the future background and future total scenarios.

Corridor growth traffic volumes are illustrated in Figure 26.

11.3.1.1 MTO and Town Growth

The MTO has requested that a 3.1% annual growth rate be added to the Highway 403 Off-Ramp movements, and The Town of Oakville has requested that a 3% annual growth rate be added to all municipal roads in the study area. Recognizing that the study's horizon is 20 years, the compounded traffic volumes from these growth rates result in the order of over a thousand vehicles being added to Trafalgar Road and hundreds of vehicles being added to other municipal roads. While it is important to plan for future growth, a comprehensive review of area background developments has been undertaken and is considered representative of future background traffic at the study horizon. As the area around the Site develops, drivers who do not need to access a specific destination in the Site area (such as a background development or the GO station), will choose other routes with more capacity available. For this reason, for comparison purposes, the traffic analysis scenarios within this report include the future background and future total scenarios **with and without the addition of the MTO and Town growth**.

11.3.1.2 Trafalgar BRT Diversions

It is expected that area travel patterns and travel mode choice will shift as the BRT will improve transit travel times, relative to vehicle travel times through the corridor. The BRT will reduce the "last mile" segment of a transit trip along the Trafalgar corridor to more efficiently connect to the ultimate destination from the initial origin. The BRT could replace trips in the following ways:

1. Replace vehicle trips to and from zones along the Trafalgar corridor, especially park and ride drivers between residential areas along the corridor, to and from the Oakville GO Station.
2. Replace local drivers to/from other GO stations areas along the Lakeshore West line, shifting them to use the BRT to connect with Oakville GO Station and then taking GO to their destination or vice versa.
3. Replace driving for local trips that start and end within the Trafalgar corridor.

The data analytics of connected vehicle data has been undertaken for this report to estimate the potential proportion of traffic along Trafalgar Road that may shift to use the BRT for the above-noted reasons.

Methodology

Connected vehicle data (CVD) is a set of information that modern vehicle onboard electronics passively collect regarding the date, time, vehicle location, travel speed and various vehicle status. This data is owned by the vehicle manufacturer or the provider of the navigation application provided within the vehicles, such as TomTom. “Transportation big data” processing platforms, such as StreetLight and similar services, process this data to allow users to make customized queries for deriving area specific travel pattern and routing information. Using this platform, the weekday 2023 traffic patterns were reviewed, of vehicles travelling along the segment of Trafalgar Road between Highway 407 in the north and South Service Road in the south.

Study Area

The study area for the connected vehicle data review includes the length of Trafalgar Road, where the new BRT will be in place from South Service Road, to just south of Highway 407. The study area along Trafalgar Road, including the internal zones, external gateways and corridor cordons, is illustrated in **Figure 24**.

The external gateways (in red) are set to track traffic going into and out of this study area at the available points of access along the street network. Internal zones (in blue) along either side of Trafalgar Road, separated by the major corridors and future BRT stop locations, help identify the portion of traffic with local origins or destinations. The set of cordon lines (in green) at key locations along Trafalgar Road enable filtering for the trip data that pass through different segments of Trafalgar Road. It is noted that for this study, the cordon line of interest is the segment of Trafalgar Road between the QEW and South Service Road.

For the purposes of tracking the trips that route to and from areas along the Lakeshore West GO rail line, the key GO station areas are illustrated in **Figure 25,** relative to the study area.

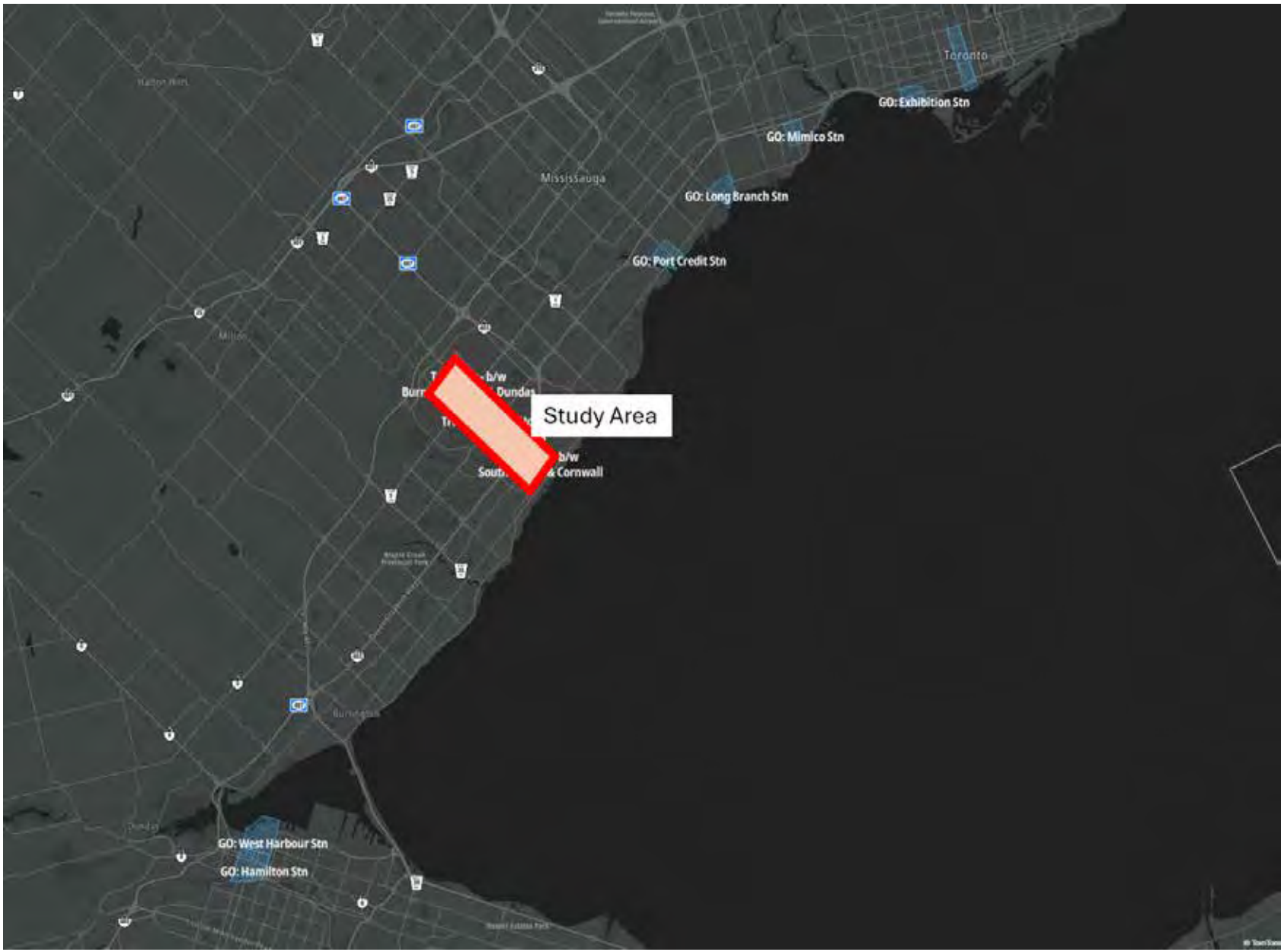

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FIGURE 24 TRAFALGAR ROAD STUDY AREA

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FIGURE 25 KEY GO STATION AREAS

Traffic along Trafalgar Road from / to Oakville Station

The proportion of traffic along the segment of Trafalgar Road between the QEW and South Service Road that starts within the study area (i.e. local) routing to Oakville GO Station and vice versa was extracted from the 2023 weekday dataset. These drivers that were already taking GO transit could shift to the connecting BRT and avoid the daily parking costs. It was noted where the origins and destinations, relative to the Oakville GO Station parking lot (i.e. they are mostly to the north), such that results in relation to the pairing of each origin/destination and Oakville GO Station parking lot can be defined as travelling northbound or southbound along Trafalgar Road. Similarly, taking consideration of the results from all the non-overlapping pairs of origins and destinations in the study area reflect 100% of the two-way traffic along Trafalgar Road.

Based on a morning period from 6:00 am to 9:00 am and an afternoon period from 3:00 pm to 7:00 pm, the proportion of local traffic along the segment of Trafalgar Road between the QEW and South Service Road, with one trip end along Trafalgar Road and the other trip end at the Oakville GO Station parking lot, is summarized in **Table 29** by direction. Based on the foregoing, there is some potential for existing local park and riders at Oakville GO Station to shift to connect with the GO station via the new BRT instead of driving.

Table 29 Traffic Reduction for Local Park and Ride Patrons at Oakville GO Station

Direction	AM	PM
Northbound	0.8%	1.6%
Southbound	2.4%	0.9%

Traffic Along Trafalgar Road using QEW to/from Key GO Station Areas

The proportion of traffic along the segment of Trafalgar Road between the QEW and South Service Road that starts within the study area (i.e. local) routing to areas around GO stations along the Lakeshore West Line and vice versa was extracted from the 2023 weekday dataset. These drivers could shift over to use the BRT, connecting with the GO train at Oakville GO Station to travel to and from the Lakeshore West GO station areas. It was noted whether these trips have routed via the QEW to and from the Lakeshore West GO station areas. It is expected only those that already travel to the QEW would be likely to shift to the BRT that also passes by the same area as it connects to the Oakville GO Station. Based on a morning period from 6:00 am to 9:00 am and an afternoon period from 3:00 pm to 7:00 pm, the proportion of traffic along Trafalgar Road that may shift from auto to a combination of the new BRT and GO rail transit is summarized in **Table 30** by direction.

Table 30 Traffic Reduction for Local Traffic to/from Lakeshore West GO Station

Direction	AM	PM
Northbound	0.04%	0.0%
Southbound	0.0%	0.02%

Based on the existing origin-destination and routing patterns of drivers, the potential for non-current GO train users to shift to use GO rail due to the new BRT is negligible.

Local Traffic Along Trafalgar Road

The proportion of traffic along the segment of Trafalgar Road between the QEW and South Service Road that starts and ends within the study area (i.e. local) was extracted from the 2023 weekday dataset. These drivers could shift over to use the BRT for local trips along the Trafalgar Road corridor.

Based on a morning period from 6:00 am to 9:00 am and an afternoon period from 3:00 pm to 7:00 pm, the proportion of local traffic along the segment of Trafalgar Road, between the QEW and South Service Road, is summarized in **Table 31** by direction. It is assumed the traffic reduction potential of internal traffic routing along Trafalgar Road will be evenly split between northbound and southbound directions.

Table 31 Traffic Reduction for Local Park and Ride Patrons at Oakville GO Station

Direction	AM	PM
Northbound	0.7%	1.1%
Southbound	0.7%	1.0%

Summary

Based on the foregoing, there is some potential for existing local vehicle trips to shift to the new BRT. The combined traffic reduction potential along Trafalgar Road is summarized in **Table 32.**

Table 32 Total Traffic Reduction reflecting Shift to Trafalgar BRT

Direction	AM	PM
Northbound	1.5%	2.7%
Southbound	3.1%	1.9%

Application of these proportions to the existing traffic volumes along Trafalgar Road, between QEW and South Service Road by direction, estimates a reduction in the order of 20 to 70 vehicles by direction, during the weekday peak hours.

11.3.2 Background Development Traffic

A comprehensive review of background developments expected to be fully built out and occupied by the study horizon was undertaken based on active applications available on the Town of Oakville's website. **Table 33** provides a summary of the background developments considered in this study. These developments represent in the order of 8,389 residential units and 9,913 m^2 of retail and other uses.

Background development volumes are shown in Figure 27. It is noted that some projected traffic from these background developments was reassigned to the area road network projected to be built out at the study area horizon i.e. the Argus Road underpass and the new N-S Arterial Street, on the east side of Trafalgar Road.

Table 33 Area Background Developments

Location	Development Statistics			Source[1]	Date	Status
	Resident Units	Retail GFA (m^2)	Other GFA[2] (m^2)			
590 Argus Road	1,854	962	1,459	BA	August 2025	OPA / ZBA Under Review
157 & 167 Cross Avenue	1,221	1,524	2,729	BA	August 2025	OPA / ZBA Under Review
166 South Service Road	1,848	1,231	2,787	BA	August 2025	OPA / ZBA Under Review
217 Cross Avenue & 571 Argus Road	1,958	1,556	2,623	BA	August 2025	OPA / ZBA Under Review
177 Cross Avenue	522	3,000	-	--	2016	OPA / ZBA Under Review
271 Cornwall Road[3]	317	960	-	--	--	OPA / ZBA Under Review
349 Davis Road	388	680	1,470	Crozier	March 2023	OPA / ZBA Under Review
627 Lyons Lane	281			Paradigm	May 2022	OPA / ZBA Under Review
Total	**8,389**	**9,913**	**11,068**	**--**		

Notes:
1. Where no traffic figure exist, trips were generated with trip generation rates selected for the site.
2. "Other" represents uses ranging from daycares, health clubs and office.
3. Development statistics taken from https://www.oakville.ca/town-hall/news-notices/2022-planning-public-notices-archive/notice-of-passing-of-a-proposed-official-plan-and-zoning-by-law-amendment-at-271-cornwall-road-and-4/.

Future background traffic volumes, which represent the sum of existing, background development and corridor growth allowances, are shown for the two analysis scenarios (with and without corridor growth) in **Figure 28** and **Figure 29**, respectively.

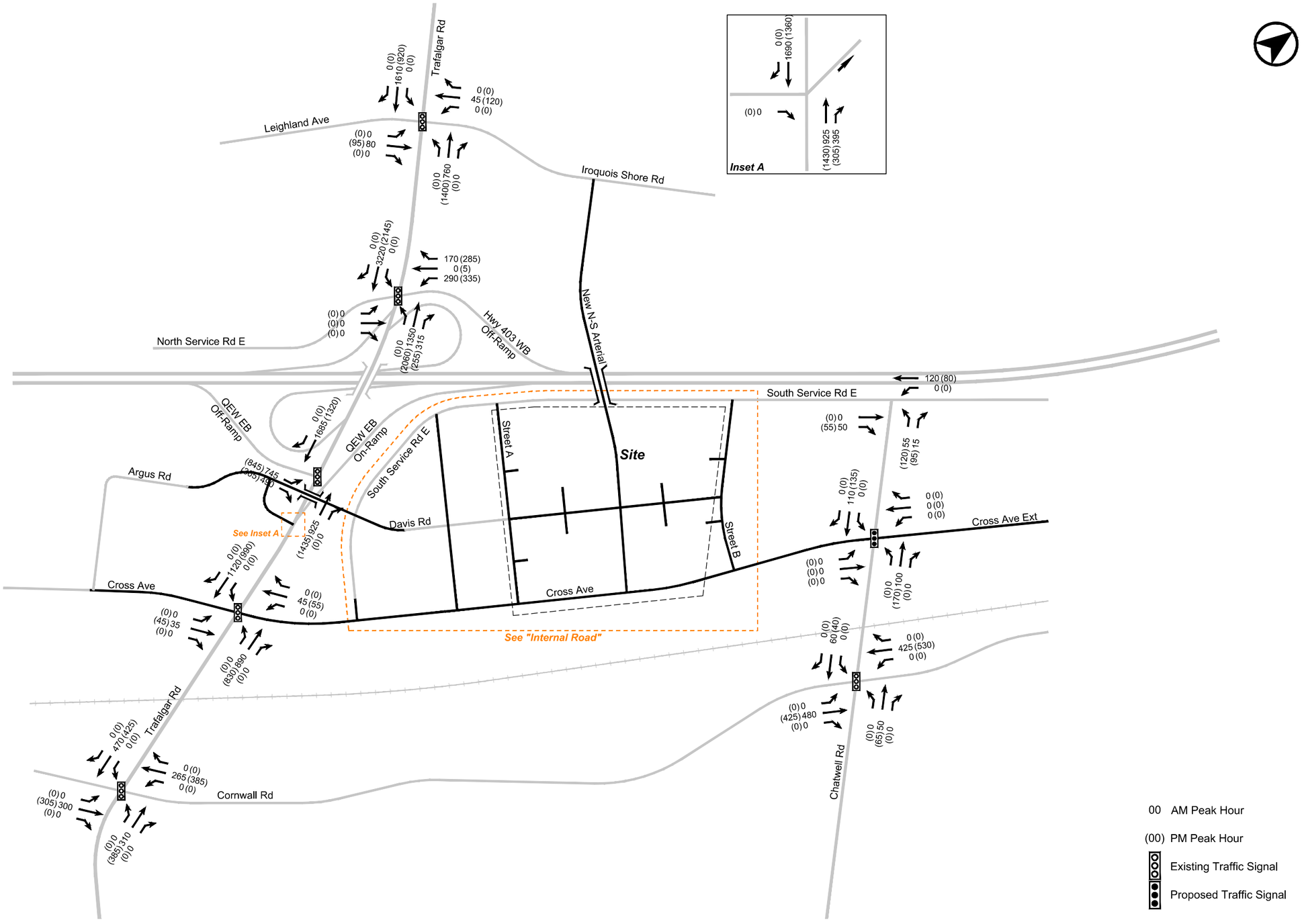

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FIGURE 26 CORRIDOR GROWTH TRAFFIC VOLUMES

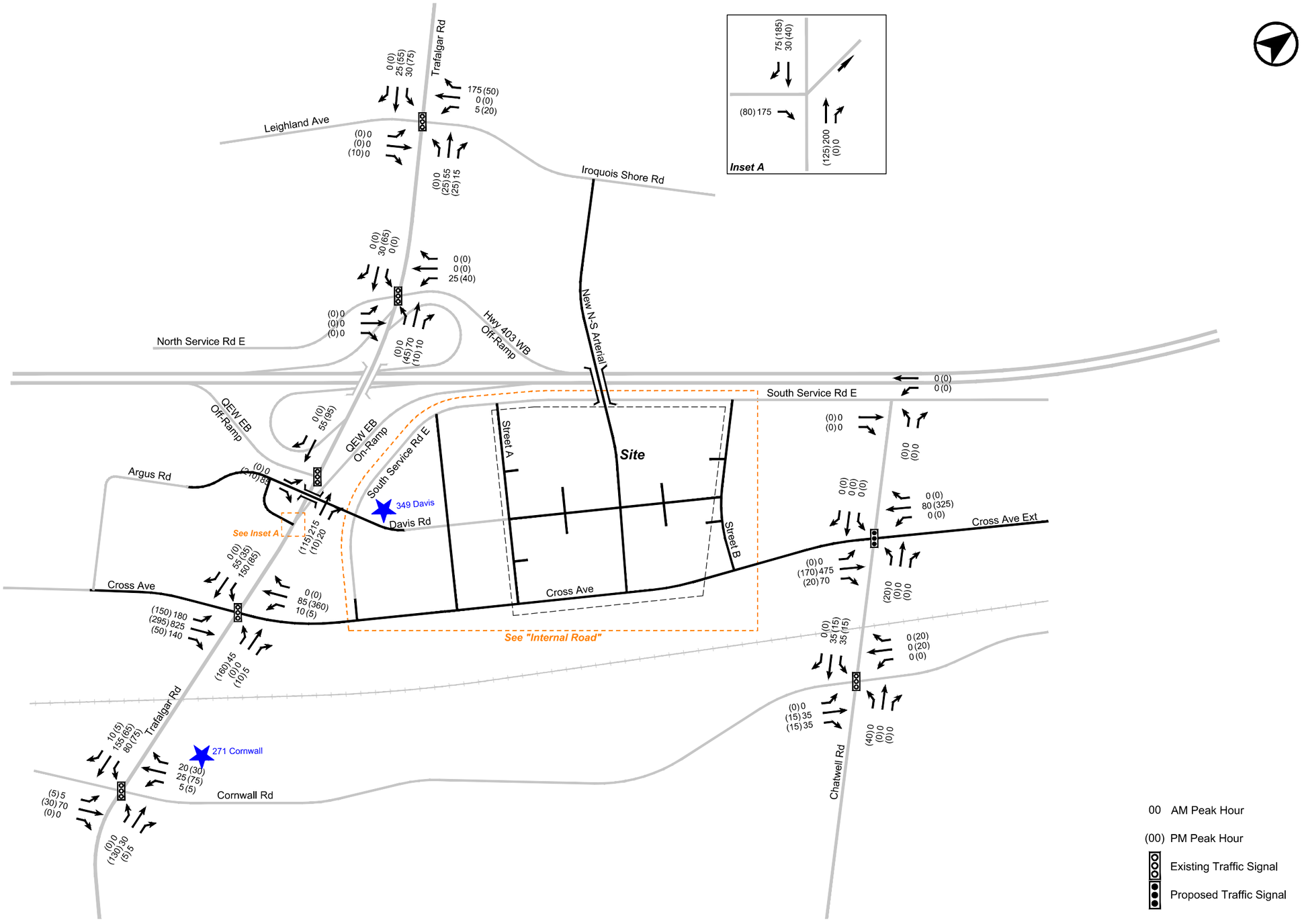

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FIGURE 27 BACKGROUND DEVELOPMENTS TRAFFIC VOLUMES

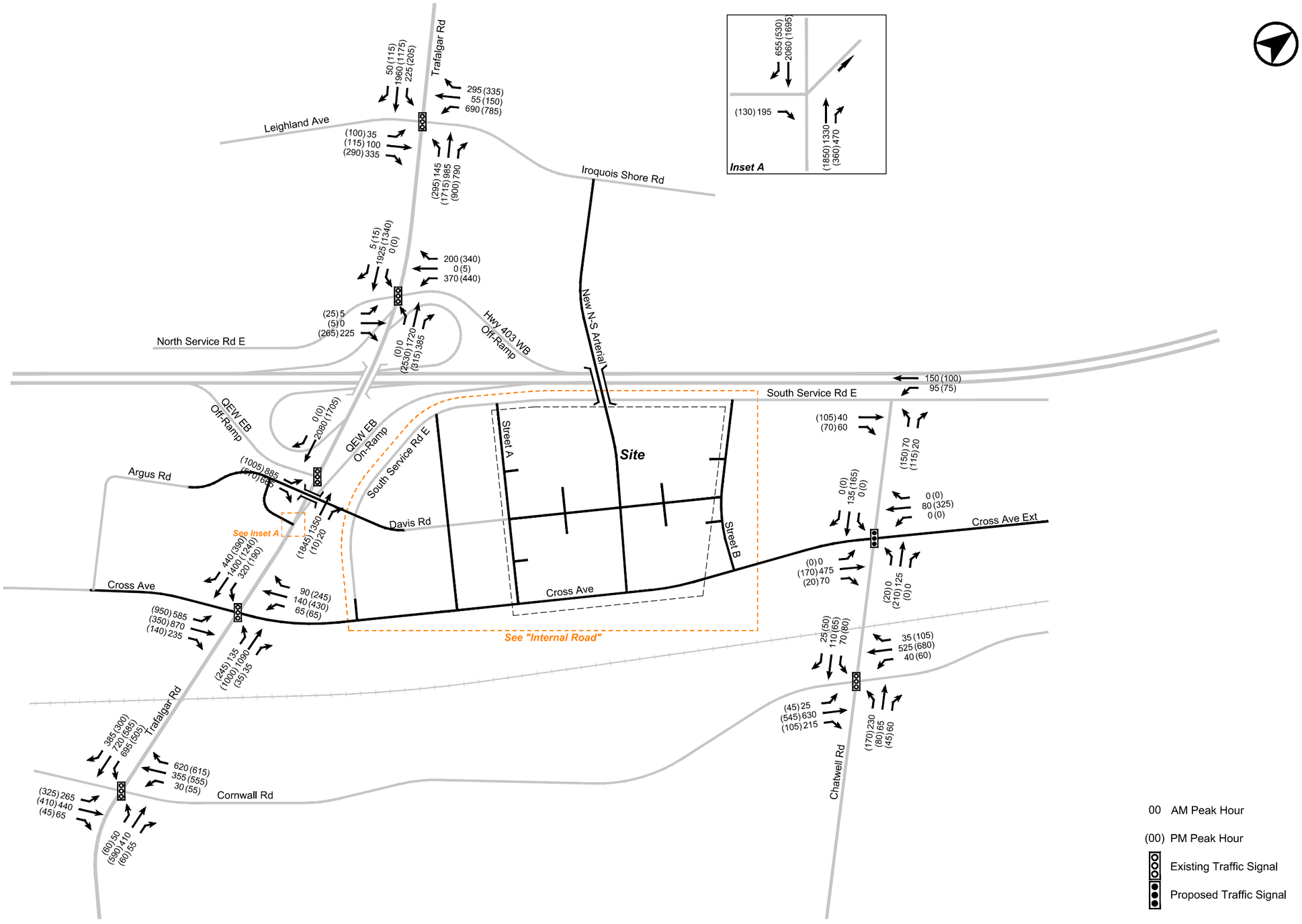

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FIGURE 28 FUTURE BACKGROUND TRAFFIC VOLUMES (WITHOUT CORRIDOR GROWTH)

420 - 468 SOUTH SERVICE ROAD EAST

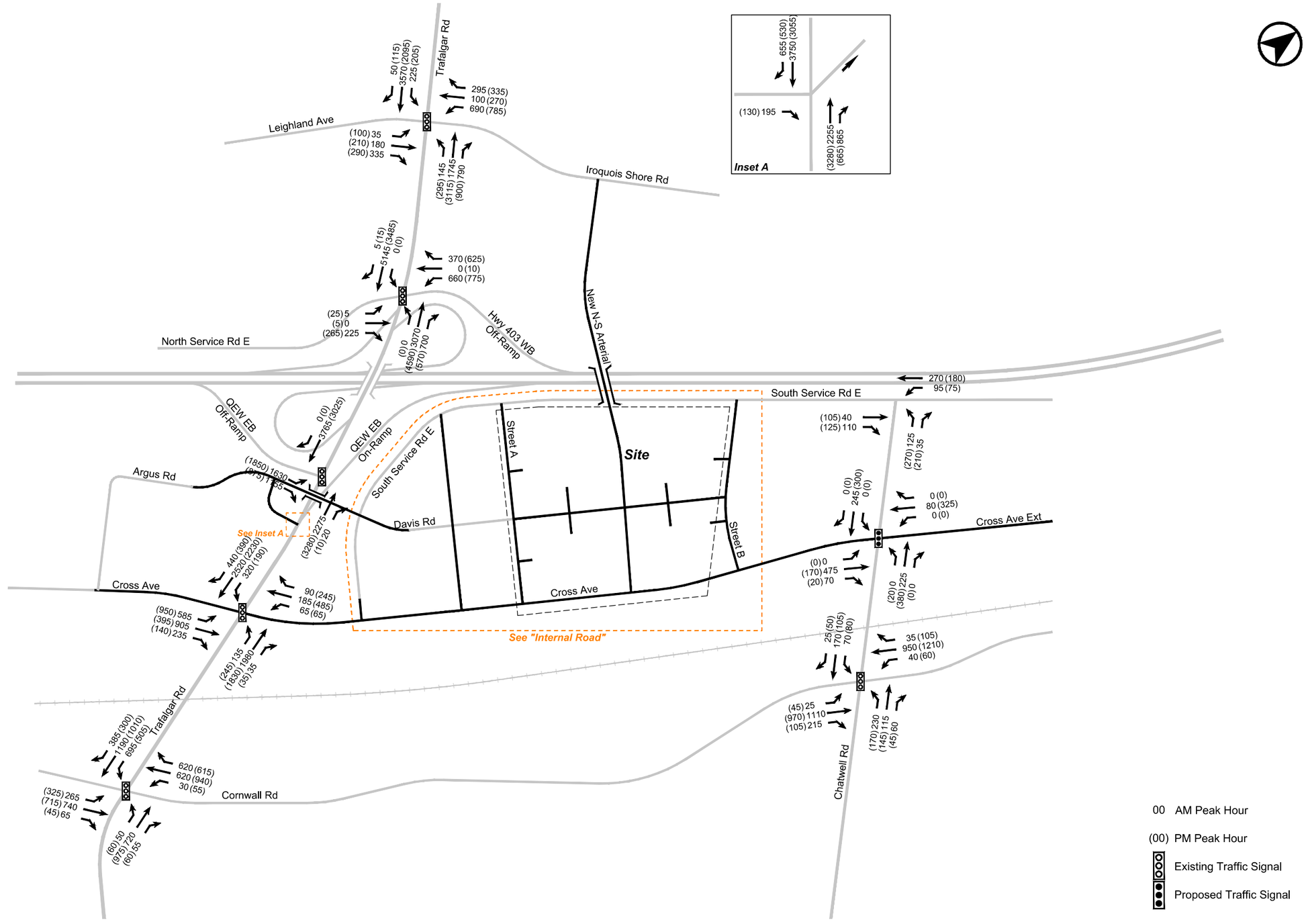

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FIGURE 29 FUTURE BACKGROUND TRAFFIC VOLUMES (WITH CORRIDOR GROWTH)

420 - 468 SOUTH SERVICE ROAD EAST

11.4 Site Traffic Volumes

11.4.1 Approach

Vehicle trip generation for the Site has been established for each land use using trip generation rates from the 11th Edition of the ITE Trip Generation Manual. Multi-modal trip generation has been established using the vehicle trip generation and projected auto mode share and vehicle occupancy for Midtown Oakville.

Internal trip making between land uses (i.e. interactions) within the proposal development has been considered. The layout of the proposed development includes 4 mixed-use blocks and it is expected that two types of internal interactions will occur as follows: 1) interaction between the residential land uses and the retail uses within each block and 2) interaction between the blocks. Interaction trips were calculated based on the interaction effects for each land use pairing as set out in NCHRP Report 684, a current standard for determining interaction rates. The resulting internal trip interactions considers the trip-making constraints at either trip end, so as to not double count the remaining primary / external trip making.

Gross vehicle trip forecasting (which includes both primary and internal trips) was completed for each of the residential and retail uses of the development, as described in the following sections.

11.4.2 Residential Vehicle Trip Generation

Vehicle trip generation rates for the residential uses have been determined from the 11th Edition of the ITE Trip Generation Manual. In recognition of the Site's proximity to the Oakville GO and ultimate build-out condition of Midtown Oakville, which will be a multi-use, 'complete' community, ITE Land Use Code 222: Multifamily Housing (High-Rise) (for sites that are located in dense multi-use urban areas and are located close to rail transit) was selected as the most appropriate vehicle trip generation rate for the ultimate build-out of the Site. The selected rate for vehicle trip generation and the expected number of gross residential vehicle trips, are summarized in **Table 34**.

For the purposes of the trip generation forecasting, all resident unit counts for each block were rounded upwards to the nearest 50 units in order to ensure a conservative traffic analysis. The **residential uses of the** Site **are expected to generate 1,565 and 1,350 two-way gross vehicle trips,** during the morning and afternoon peak hours, respectively.

Table 34 Residential Gross Vehicle Trip Generation

Block	Number of Units	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
ITE LUC 222: Multifamily Housing (High-Rise) (Dense Multi-Use Urban – Close to Rail Transit)		0.02	0.20	0.22	0.13	0.06	0.19
Block 1	2,220	55	440	495	295	135	430
Block 2	2,156	55	430	485	290	130	420
Block 3	1,305	35	265	300	175	80	255
Block 4	1,264	30	255	285	170	75	245
Total Vehicle Trips	**6,945**	**175**	**1,390**	**1,565**	**930**	**420**	**1,350**

Notes:
1. The effective unit count adopted for conservative trip generation purposes only is 7,100 units after rounding the unit count **for each block** upwards to the nearest 50 units. However, the actual site statistics are summarized in the table above.

11.4.3 Retail Vehicle Trip Generation

Vehicle trip generation for the retail uses across all blocks has been determined from the 11th Edition of the ITE Trip Generation Manual. The site plan currently proposes approximately 9,118 m^2 GFA of retail. The corresponding ITE trip generation rate (converted to trips / 100 m^2 GFA, since ITE provides rates in trips / 1,000 ft^2 GFA) and the resultant gross retail vehicle trips, are summarized in **Table 35**. For the purposes of the trip generation forecasting, all retail GFA's for each block were rounded upwards to the nearest 50 m^2 in order to ensure a conservative traffic analysis. The **retail uses of the Site are expected to generate 175 and 510 two-way gross vehicle trips**, during the morning and afternoon peak hours, respectively.

Table 35 Retail Gross Vehicle Trip Generation

Block	GFA (m^2)	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
ITE LUC 821: Shopping Plaza Converted rates to **trips / 100 m^2 GFA**		1.15	0.71	1.86	2.74	2.85	5.59
Block 1	1,503	20	10	30	40	45	85
Block 2	1,514	20	10	30	40	45	85
Block 3	3,293	35	25	60	90	90	180
Block 4	2,808	35	20	55	80	80	160
Total Vehicle Trips	**9,118**	**110**	**65**	**175**	**250**	**260**	**510**

Notes:
1. The effective unit count adopted for conservative trip generation purposes only is 9,150 m^2 GFA after rounding the gross floor areas for each block upwards to the nearest 50 m^2. The actual site statistics are summarized in the table above.

11.4.4 Summary of Gross Vehicle Trip Forecasting

A summary of the gross vehicle trips generated by the residential and retail uses on the Site is provided in **Table 36**. The Site is expected to generate **1,740 and 1,860 two-way gross vehicle trips** during the morning and afternoon peak hours, respectively.

Table 36 Site Gross Trip Generation

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Residential Trips	175	1,390	1,565	930	420	1,350
Retail Trips	110	65	175	250	260	510
Total Vehicle Trips	**285**	**1,455**	**1,740**	**1,180**	**680**	**1,860**

11.4.5 Site Interaction Considerations

Interaction effects are the result of individual trips from the different land uses on the Site overlapping with one another. These interaction effects have been studied and summarized as a set of ratios between different land uses. The interaction rates are based upon the gross demand of each land use within Report 684, published by the National Cooperative Highway Research Program (NCHRP). The rates, with respect to each land use pairing, are summarized in Table 37.

Table 37 Interaction Trip Rate by Land Use

	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Site Residential				
With Retail	2%	1%	46%	42%
Site Retail				
With Residential	17%	14%	10%	26%

Application of these rates to the gross vehicle trips established in the previous sections yields the potential interaction for each land use. The actualized Site internal trips will be the smaller of the potential interaction trips calculated for each end of the land use pairing.

11.4.6 Residential Primary Vehicle Trips

A summary of the residential gross, interaction, and net primary vehicle trips for the Site is provided in Table 38.

Table 38 Residential Vehicle Trip Summary

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Gross Trips	175	1,390	1,565	930	420	1,350
Interaction Trips	5	15	20	70	25	95
Primary Trips	**170**	**1,375**	**1,545**	**860**	**395**	**1,255**

The residential uses of the Site are expected to generate **1,545 and 1,255 two-way primary vehicle trips**, during the morning and afternoon peak hours, respectively.

11.4.7 Retail Primary Vehicle Trips

A summary of the retail gross, interaction, and net primary vehicle trips for the Site is provided in Table 39**.**

The retail uses of the Site are expected to generate **155 and 415 two-way primary vehicle trips** during the morning and afternoon peak hours, respectively.

Table 39 Retail Vehicle Trip Summary

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Gross Trips	110	65	175	250	260	510
Interaction Trips	15	5	20	25	70	95
Primary Vehicle Trips	**95**	**60**	**155**	**225**	**190**	**415**

11.4.8 Summary of Total Site Primary Vehicle Trips

The total primary vehicle trips forecast for the Site are summarized in Table 40.

The Site is expected to generate **1,700 and 1,670 two-way primary vehicle trips**, during the morning and afternoon peak hours, respectively.

Table 40 Site Primary Trip Generation

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Residential Trips	170	1,375	1,545	860	395	1,255
Retail Trips	95	60	155	225	190	415
Total Vehicle Trips	**265**	**1,435**	**1,700**	**1,085**	**585**	**1,670**

Figure 30 illustrates Site traffic volumes distributed onto the study area road network.

11.4.9 Residential Trip Distribution

The residential trip distribution for the Site has been based on a review of the 2022 Transportation Tomorrow Survey (TTS) for home-based vehicle trips to and from the study area during the weekday morning and afternoon peak periods. The distribution of inbound and outbound residential traffic is summarized in **Table 41**.

Table 41 Residential Trip Distribution

Route	From / To (Direction)	Inbound	Outbound
Trafalgar Road / Overpass	North	20%	25%
	South	10%	10%
Highway 403	East	30%	30%
	West	15%	10%
Cornwall Road	East	5%	5%
	West	10%	10%
Royal Windsor Drive	East	5%	5%
Chartwell Road	South	5%	5%
Total		**100%**	**100%**

Notes:
1. Based on a review of home-based trips to and from TTS zones 4013-4015, 4017, 4027, 4029 and 4030, for outbound trips beginning between 6:00 a.m. – 8:59 a.m. and inbound trips beginning between 3:00 p.m. – 5:59 p.m.

11.4.10 Retail Trip Distribution

The retail trip distribution pattern for the Site has been based on a review of the 2016 TTS for retail-destined trips to and from the study area during the weekday morning and afternoon peak hours. The distribution of inbound and outbound retail traffic is summarized in **Table 42**.

Table 42 Retail Trip Distribution

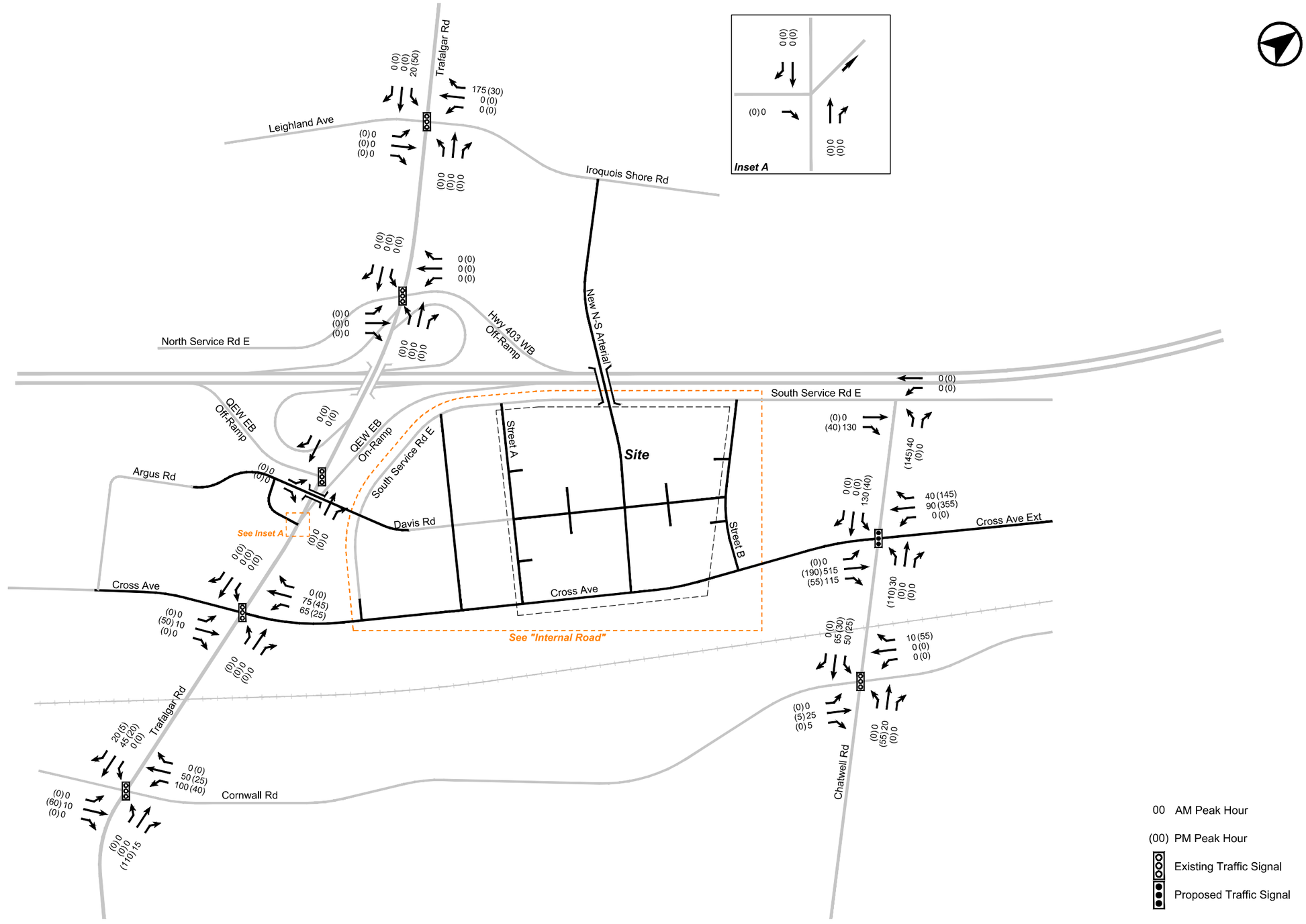
Route	From / To (Direction)	Inbound	Outbound
Trafalgar Road / Overpass	North	35%	35%
	South	10%	10%
Highway 403	East	15%	15%
	West	15%	15%
Cornwall Road	East	5%	5%
	West	10%	10%
Royal Windsor Drive	East	5%	5%
Chartwell Road	South	5%	5%
Total		**100%**	**100%**

Notes:

1. Based on a review of market-based trips to and from TTS zones 4013-4015, 4017, 4027, 4029 and 4030, for inbound and outbound trips beginning between 6:00 a.m. – 5:59 p.m.

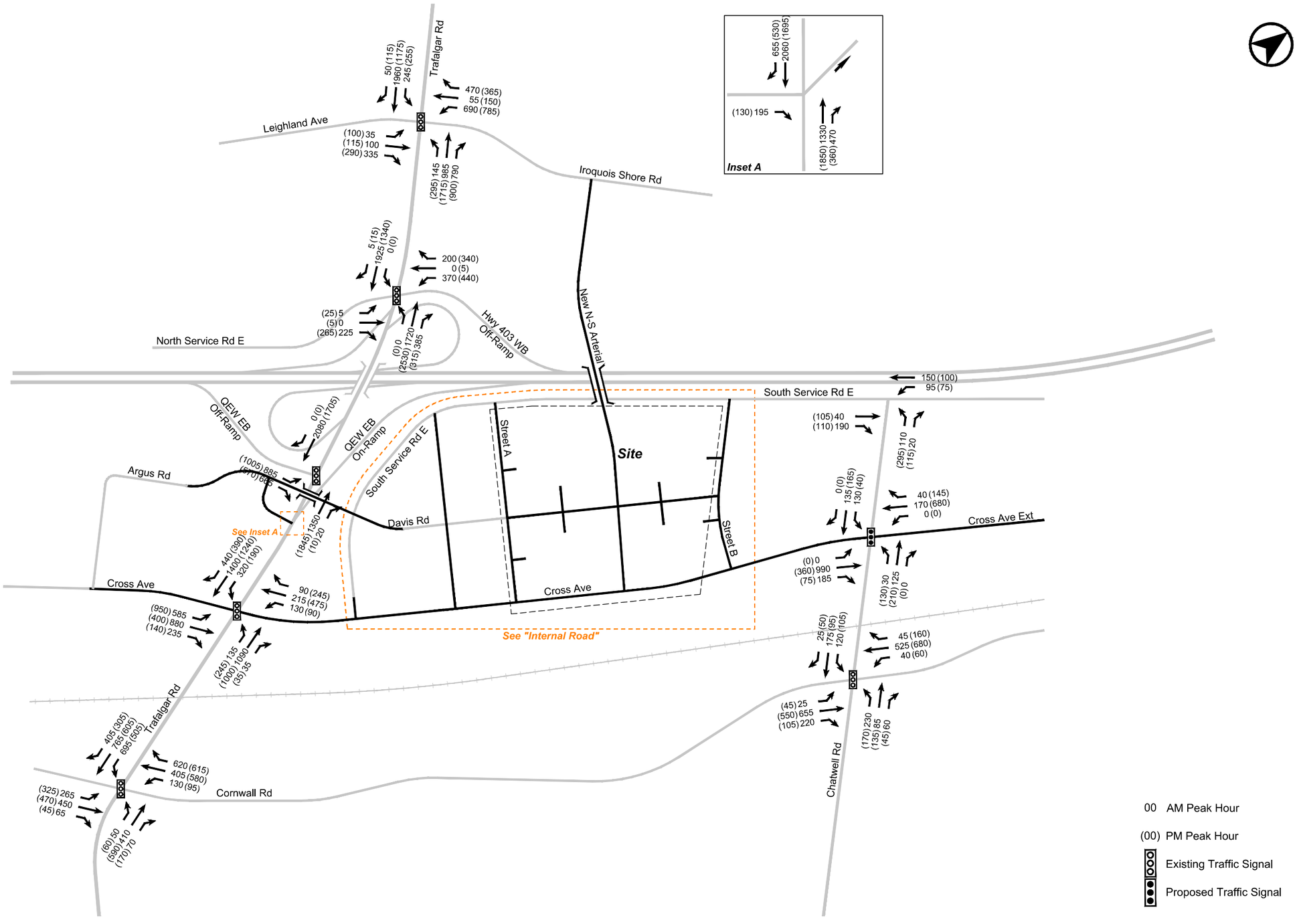
11.5 Future Total Traffic Volumes

Future total traffic, which represents the sum of future background traffic and Site generated traffic volumes is illustrated in **Figure 31**. The future total traffic, with the additional corridor growth, is shown in **Figure 32**.



Date Plotted: October 28, 2025 Filename: P:\69\31\03\Graphics\CAD\Fig30-02-ST.dwg

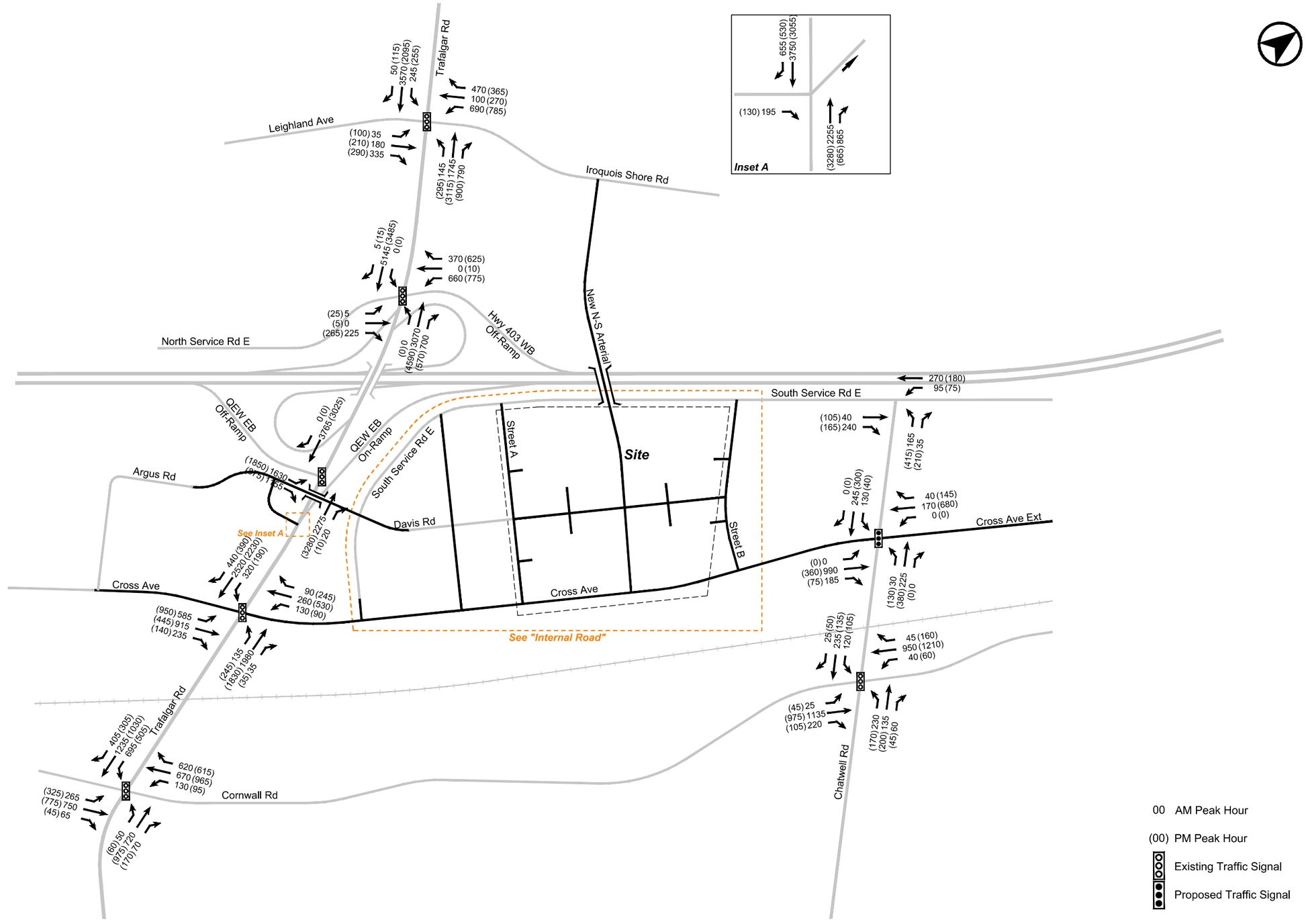
FIGURE 30 SITE TRAFFIC VOLUMES



Date Plotted: October 28, 2025 Filename: P:\69\31\03\Graphics\CAD\Fig31-02-FT_ncg.dwg

FIGURE 31 FUTURE TOTAL TRAFFIC VOLUMES (WITHOUT CORRIDOR GROWTH)

420 - 468 SOUTH SERVICE ROAD EAST



Date Plotted: October 28, 2025 Filename: P:\69\31\03\Graphics\CAD\Fig32-02-FT_bdcg.dwg

FIGURE 32 FUTURE TOTAL TRAFFIC VOLUMES (WITH CORRIDOR GROWTH)

420 - 468 SOUTH SERVICE ROAD EAST

12.0 TRAFFIC OPERATIONS ANALYSIS

12.1 Overview

Under future conditions, with the full build-out of the Midtown Oakville area, the road network will continue to operate under very busy conditions, with some intersections operating at, or above, their theoretical capacity. This is reflective of a busy urban centre where the majority of mobility needs will be met by non-auto modes of travel.

The Site's Transportation Demand Management (TDM) Plan seeks to encourage travel by non-auto modes, while the Site's proximity to frequent higher-order transit, including GO, the future Trafalgar BRT and other bus services operated by Oakville Transit, will allow residents, employees and visitors of the Site to access local and Regional destinations without use of a car.

A number of trends will shape future mobility in and around the Site and in the Town of Oakville more broadly, including:

- **Many residents who choose to live in Midtown Oakville will do so because of its proximity to transit and the ability to live and work without the daily use of a car. Midtown Oakville is intentionally planned to be a transit-oriented community that is characterized by higher density than the rest of Oakville.** Options to travel to / from Midtown Oakville by car will be limited, given that the existing and future road network will operate under very busy conditions and on-site parking supply will be limited. Future residents who choose to live in Midtown Oakville will do so because the other mobility connections that will be available to them, in particular the GO line, the Trafalgar BRT and other bus services, will enable them to meet their day-to-day needs without needing to use a car.

- **Travel modes in Halton Region and the rest of the GTAH are evolving and auto use is decreasing over time, particularly true for peak period travel**. This change is partly occurring in response to increasing congestion caused by population and employment growth in the GTAH. This change is being supported by ongoing municipal and provincial efforts to promote non-auto travel modes, including improvements to transit service, the expansion of safe cycling and walking infrastructure, the creation of more mixed-use communities that allow people to meet their daily needs locally and the increased availability of first and last mile travel options, including e-bikes and bike share (currently not in Oakville).

  This decrease in auto use, particularly in the peak periods, is occurring faster in intensification areas and transit-oriented urban nodes like Midtown Oakville, but is also occurring in car-centric areas of the Region. This is borne out through data collected by the 5-yearly TTS, the latest available of which is the 2022 TTS[3].

- **Work commute habits are also changing, as a result of continued work-from-home initiatives**. Even with some employees returning to the office, an increased proportion of the population now works remotely for some or all of their employment. This results in the reduced need to travel during peak periods, reducing overall trip rates for all modes and reducing the relative peak period impact of new development.

[3] "*Transportation Tomorrow Survey 2022. Travel Summaries for the TTS Area, 1996-2022*". Prepared by Malatest, for the Transportation Information Steering Committee (TISC). July 2025. https://dmg.utoronto.ca/wp-content/uploads/2025/08/2022-TTS-Travel-Summaries-TTS-Area-v5.pdf

- **An increasing number of daily needs are being met through e-commerce**. This includes on-line shopping, grocery online shopping, food / restaurant deliveries and delivery services, etc. This decreases the need to travel but increases delivery vehicle trips. This results in the need to provide appropriately sized and well-designed pick-up / drop-off and temporary layby areas for delivery services.
- **Midtown Oakville is a designated Urban Growth Centre and is intended to be a focus of population and employment growth in the Town of Oakville**. Midtown Oakville is identified in Provincial, Regional and Town policy as a place for intensification. A significant portion of the population and employment growth that is designated for Oakville is intended to be accommodated in Midtown Oakville. The area has some of the best transit access in Oakville, and underutilized or vacant land available for redevelopment. The area is a designated Protected Major Transit Station Area (PMTSA) and a designated Primary Growth Area and Urban Growth Centre[4] that is expected to accommodate the highest level of intensification in the Town. As a result, the traffic impact of growth in the Town will be more concentrated in and around Midtown Oakville. At the same time, growth in the MTSA will have a relatively lower traffic impact, on a per-unit basis, than growth in other less transit-accessible areas of the Town.
- **The proposed development will have minor traffic impact on at-capacity movements on the future area road network.** The intersections that will operate at, or above, their theoretical capacity will be as a result of background development traffic and general corridor growth elsewhere in Midtown and the rest of Oakville.
- **The planned introduction of significant new road infrastructure in Midtown Oakville, including through the Site, will help support increased traffic volumes to / from Midtown** and help to better distribute traffic to / from the surrounding road network. New infrastructure includes a new overpass over the QEW corridor (N-S Arterial Street), a new underpass under Trafalgar Road and the Metrolinx / CN rail corridor, QEW interchange improvements and a new network of major and minor streets throughout Midtown. Notably for the Site, this includes a new north-south major street connection from Iroquois Shore Road to Cornwall Road that will distribute traffic around the busy Trafalgar Road corridor and a new network of north-south and east-west streets.

The Town of Oakville is currently undertaking a dynamic multi-resolution model that could more accurately reflect the elastic nature of travel routes and travel modes on the area road network. Halton Region maintains a macroscopic EMME travel forecasting model for the entire Region that more dynamically assigns trips to different routes and different modes based on overall network capacity. For example, the EMME model can better reflect route and mode choice elasticity compared to a static model – e.g. people can choose different routes, different modes and different times of travel depending on the travel options that are available and the capacity of the road network. Thus, as population in the Oakville and in Midtown grows, the model aims to forecast the changing travel characteristics that would result for the local and regional area. As part of the next steps of the Midtown Oakville planning process, BA Group seeks to collaborate with the Town to understand the inputs and outputs of the Town's modelling work and the changing travel characteristics of the local and regional area as Midtown is built out.

[4] "*Livable Oakville Plan (2009 Town of Oakville Official Plan)*". Town of Oakville. Latest consolidated dated August 31, 2021. https://www.oakville.ca/business-development/planning-development/official-plan/livable-oakville-plan/

12.2 Capacity Analysis Methodology

The traffic operations analysis has been completed using Synchro Version 11.0, in accordance with the methodologies outlined in the Highway Capacity Manual (HCM) 2000 and Halton Region's Transportation Impact Study Guidelines.

For signalized intersections, the volume-to-capacity ratio (v/c) is an indicator of the capacity utilization for the key movements in the intersections. A v/c of 1.00 indicates that certain governing traffic movements through the key intersections are operating at or near maximum capacity. The primary overall level-of-service (LOS) indicator is delay, both on dividual movements and expressed as an average for all vehicles processed. Many busy urban intersections operate at LOS D to E, which reflects average delays in the range of 35 to 80 seconds.

For unsignalized intersections, level-of-service (LOS) characterizes operational conditions for key movements in terms of delay within the traffic stream. LOS A presents a good level-of-service with short delays, while LOS F represents a poor level-of-service with long delays. The volume-to-capacity ratio is an indicator of the capacity utilization for key movements at the intersection and the resultant residual capacity potential.

The LOS criteria provided by the HCM methodology is summarized as follows:

1. Signalized Intersection LOS
    a. LOS A: Control Delay ≤ 10s
    b. LOS B: 10s < Control Delay ≤ 20s
    c. LOS C: 20s < Control Delay ≤ 35s
    d. LOS D: 35s < Control Delay ≤ 55s
    e. LOS E: 55s < Control Delay ≤ 80s
    f. LOS F: Control Delay > 80s

2. Unsignalized Intersection LOS
    a. LOS A: Control Delay ≤ 10s
    b. LOS B: 10s < Control Delay ≤ 15s
    c. LOS C: 15s < Control Delay ≤ 25s
    d. LOS D: 25s < Control Delay ≤ 35s
    e. LOS E: 35s < Control Delay ≤ 50s
    f. LOS F: Control Delay > 50s

All Synchro output sheets, detailing capacity analysis and queuing analysis results for all the study area intersections, are provided in **Appendix C**.

12.3 Analysis Parameters

Heavy Vehicle Assumptions

Heavy and medium truck percentages incorporated into the analysis were based upon information provided as part of intersection turning movement counts.

Saturation Flow Assumptions

A base saturation flow of 1,900 passenger cars per hour of green time per lane (pcphgtl) was adopted as the base assumption for the Synchro analysis, that was assumed for all analysis scenarios.

Traffic Signal Timings

Existing traffic signal timings, phasing plans and cycle lengths were obtained from Halton Region. Where necessary, signal timing plans were optimized in future scenarios.

Lost Time Adjustments

For all signalized intersections, a lost-time adjustment (LTA) of -1.0 seconds was applied to all movements. This lost time adjustment provides allowances in the capacity analysis to better account for drivers completing their movements during amber or all-red time (a common phenomenon at busy intersections).

Peak Hour Factor

For all intersections, peak hour factors (PHF) were calculated based on the existing traffic volume data extracted from the traffic counts utilized in the study.

Lane Utilization Factors

The default Synchro lane utilization factors (LUF) were adopted, which take into consideration the distribution of individual lane usage within each group.

12.4 External Signalized Intersection Operations

12.4.1 Trafalgar Road / Leighland Avenue / Iroquois Shore Road

Under existing conditions, the intersection operates at busy overall v/c ratios of 0.92 and 0.88, in the AM and PM peak hour, respectively.

Under future background conditions without corridor growth, the intersection will operate at overall v/c ratios of 0.92 and 0.88 in the AM and PM peak hours, respectively. The northbound left-turn movement may exceed its theoretical capacity in the morning peak hour, with a v/c ratio of 1.02. This intersection can acceptably accommodate projected background traffic.

Under future background conditions with the addition of corridor growth, the intersection will operate at overall v/c ratios of 1.32 and 1.23 in the AM and PM peak hours, respectively. It should be noted that most movements continue to operate within capacity, but the added corridor growth along Trafalgar Road will push the southbound and northbound through movements well over capacity. It is likely that this volume of projected corridor growth will never materialize, as transit options to access the GO station improve, and drivers who are not accessing a destination in proximity to the study area find other routes that have more capacity, as the roads in the study area transition to more local traffic.

Under future total conditions without corridor growth but with the addition of Site traffic, the intersection will operate at overall v/c ratios of 0.93 and 0.91 in the AM and PM peak hours, respectively. The impact of Site-related traffic is in the order of 0% for both the AM and PM peak hours, respectively, as trips to and from the Site who are travelling to and from the north can make use of the Highway 403 overpass east of Trafalgar.

Under future total conditions with corridor growth, the intersection will operate at overall v/c ratios of 1.33 and 1.25 in the AM and PM peak hours, respectively. Thus, this intersection may exceed its theoretical capacity in the AM peak hour, as a result of the addition of the combination of background traffic and corridor growth traffic. The impact of Site-related traffic is in the order of 0% for both the AM and PM peak hours, respectively.

Under future background and future total conditions with corridor growth considered, traffic volumes at this intersection may exceed its theoretical capacity. Under future background and future total conditions without corridor growth, the intersection operates within its overall capacity in both the morning and afternoon peak hours.

Site traffic is not expected to impact this intersection, as trips to and from the Site will make use of the overpass.

Traffic capacity analysis results for this intersection are summarized in **Table 43**.

Table 43 Trafalgar Road / Leighland Avenue / Iroquois Shore Road Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	0.13 (0.42)	D (D)	0.13 (0.44)	D (D)	0.13 (0.41)	D (D)	0.13 (0.44)	D (D)	0.13 (0.41)	D (D)
EBT	0.37 (0.67)	D (E)	0.35 (0.59)	D (E)	0.64 (0.87)	E (F)	0.35 (0.59)	D (E)	0.64 (0.87)	E (F)
EBR	0.94 (0.78)	F (F)	0.90 (0.50)	F (E)	0.90 (0.44)	F (E)	0.90 (0.50)	F (E)	0.90 (0.44)	F (E)
WBL	0.83 (0.87)	E (E)	0.94 (0.96)	E (E)	0.94 (0.98)	E (E)	0.94 (0.98)	E (E)	0.94 (0.98)	E (E)
WBT	0.09 (0.30)	C (D)	0.09 (0.29)	C (D)	0.17 (0.48)	C (D)	0.09 (0.29)	C (D)	0.17 (0.48)	C (D)
WBR	0.09 (0.40)	C (D)	0.30 (0.44)	D (D)	0.35 (0.59)	D (D)	0.69 (0.49)	D (D)	0.73 (0.65)	D (D)
NBL	0.79 (0.88)	E (D)	0.87 (0.83)	E (E)	0.88 (0.90)	E (E)	0.87 (0.82)	E (D)	0.88 (0.90)	E (E)
NBT	0.48 (0.81)	C (B)	0.49 (0.85)	C (D)	0.87 (1.59)	B (F)	0.49 (0.89)	C (D)	0.87 (1.62)	B (F)
NBR	0.55 (0.81)	F (D)	0.61 (0.89)	F (E)	0.72 (1.18)	C (F)	0.61 (0.93)	F (E)	0.72 (1.20)	C (F)
SBL	0.67 (0.68)	C (D)	0.76 (0.82)	C (E)	1.11 (0.88)	F (E)	0.82 (0.89)	D (E)	1.21 (1.04)	F (F)
SBT	1.00 (0.63)	E (D)	0.92 (0.68)	D (D)	1.67 (1.26)	F (F)	0.92 (0.67)	D (D)	1.67 (1.26)	F (F)
SBR	0.04 (0.09)	C (C)	0.04 (0.09)	C (C)	0.04 (0.09)	C (C)	0.04 (0.09)	C (C)	0.04 (0.09)	C (C)
Overall	**0.92 (0.88)**	**E (D)**	**0.92 (0.88)**	**E (D)**	**1.32 (1.23)**	**F (F)**	**0.93 (0.91)**	**E (E)**	**1.33 (1.25)**	**F (F)**

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.4.2 Trafalgar Road / North Service Road East / Highway 403 WB Off-Ramp

Under existing conditions, the intersection operates at busy overall v/c ratios of 0.64 and 0.93, in the AM and PM peak hour, respectively.

Under future background conditions with the addition of background traffic but without corridor growth, the intersection operates under very busy conditions with overall v/c ratios of 0.74 and 1.00 in the AM and PM peak hour, respectively, resulting in an operation over theoretical capacity in the afternoon peak hour.

Under future background conditions with the addition of corridor growth, the intersection will operate at overall v/c ratios of 1.57 and 1.76 in the AM and PM peak hours, respectively. It should be noted that most movements continue to operate within capacity, but the added corridor growth along Trafalgar Road will push the southbound and northbound through movements well over capacity. It is likely that this volume of projected corridor growth will never materialize, as transit options to access the GO station improve, and drivers who are not accessing a destination in proximity to the study area find other routes that have more capacity, as the roads in the study area transition to more local traffic.

Under future total conditions without corridor growth but with the addition of Site traffic, the intersection will operate at overall v/c ratios of 0.74 and 1.00 in the AM and PM peak hours, respectively. The impact of Site-related traffic is in the order of 0% for both the AM and PM peak hours, respectively, as trips to and from the Site who are travelling to and from the north can make use of the Highway 403 overpass east of Trafalgar.

Under future total conditions with corridor growth, the intersection will operate at overall v/c ratios of 1.57 and 1.76 in the AM and PM peak hours, respectively. Thus, this intersection may exceed its theoretical capacity in the AM peak hour, as a result of the addition of the combination of background traffic and corridor growth traffic. The impact of site-related traffic is in the order of 0% for both the AM and PM peak hours, respectively.

Under future conditions, with the combined addition of both background development and Site-related traffic, traffic volumes at this intersection may exceed its theoretical capacity. Note that the addition of Site traffic alone would not cause this intersection to exceed its theoretical capacity; rather it is the combination of both background and site traffic that may cause this condition. With the combined buildout, some movements may experience longer queues that may require more than a single signal cycle to clear (i.e. the northbound through movements in the PM peak hours). Notwithstanding the above, the impact of Site related traffic alone is negligible (in the order 0% in both peak hours) and can be appropriately accommodated at this intersection.

Traffic capacity analysis results for this intersection are summarized in **Table 44**.

Table 44 Trafalgar Road / North Service Road East / Highway 403 WB Off-Ramp Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	0.17 (0.35)	E (E)	0.02 (0.09)	D (C)	0.02 (0.14)	C (C)	0.02 (0.09)	D (C)	0.02 (0.14)	C (C)
EBR	0.60 (0.49)	D (D)	0.50 (0.50)	D (D)	0.36 (0.47)	C (C)	0.50 (0.50)	D (D)	0.36 (0.47)	C (C)
WBL	0.63 (0.62)	E (D)	0.92 (0.94)	F (F)	1.02 (1.33)	F (F)	0.92 (0.94)	F (F)	1.02 (1.33)	F (F)
WBTL	0.63 (0.63)	E (D)	0.92 (0.99)	F (F)	1.02 (1.41)	F (F)	0.92 (0.99)	F (F)	1.02 (1.41)	F (F)
WBR	0.39 (0.73)	D (D)	0.38 (0.72)	D (D)	0.65 (1.20)	D (F)	0.38 (0.72)	D (D)	0.65 (1.20)	D (F)
NBT	0.62 (1.04)	B (D)	0.68 (1.03)	B (D)	1.46 (2.04)	F (F)	0.68 (1.03)	B (D)	1.46 (2.04)	F (F)
SBT	0.57 (0.47)	B (C)	0.60 (0.48)	C (B)	1.92 (1.38)	F (F)	0.60 (0.48)	C (B)	1.92 (1.38)	F (F)
SBR	0.00 (0.01)	A (B)	0.00 (0.01)	A (B)	0.00 (0.01)	B (B)	0.00 (0.01)	A (B)	0.00 (0.01)	B (B)
Overall	**0.64 (0.93)**	**B (F)**	**0.74 (1.00)**	**C (D)**	**1.57 (1.76)**	**F (F)**	**0.74 (1.00)**	**C (D)**	**1.57 (1.76)**	**F (F)**

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.4.3 Trafalgar Road / Highway 403 EB Off-Ramp

Under existing conditions, the intersection operates at busy overall v/c ratios of 0.87 and 0.74, in the AM and PM peak hour, respectively.

Under future background conditions without corridor growth, the intersection will operate at overall v/c ratios of 0.93 and 0.83 in the AM and PM peak hours, respectively. All movements operate within capacity.

Under future background conditions with the addition of corridor growth, the intersection will operate at theoretical overall v/c ratios of 1.65 and 1.38 in the AM and PM peak hours, respectively. The added corridor growth along Trafalgar Road and at the Highway Off Ramps will push all movements well over capacity. It is likely that this volume of projected corridor growth will never materialize, as transit options to access the GO station improve,

and drivers who are not accessing a destination in proximity to the study area find other routes that have more capacity, as the roads in the study area transition to more local traffic.

Under future total conditions without corridor growth but with the addition of Site traffic, the intersection will operate at overall v/c ratios of 0.93 and 0.83 in the AM and PM peak hours, respectively. The impact of Site -related traffic is in the order of 0% for both the AM and PM peak hours, respectively, as trips to and from the Site who are travelling to and from Highway 403 can make use of the new ramp proposed at The Canadian Road.

Under future total conditions with corridor growth, the intersection will operate at theoretical overall v/c ratios of 1.65 and 1.38 in the AM and PM peak hours, respectively. As described for the future background with corridor growth scenario, this amount of corridor growth is not likely to materialize, as transit improves, and drivers find other routes with more capacity.

Site traffic is not expected to have an impact at this intersection. Traffic capacity analysis results for this intersection are summarized in **Table 45**.

Table 45 Trafalgar Road / Highway 403 EB Off-Ramp Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	0.69 (0.89)	D (D)	0.60 (0.76)	C (D)	1.09 (1.36)	F (F)	0.60 (0.76)	C (D)	1.09 (1.36)	F (F)
EBR	0.98 (0.68)	E (D)	0.97 (0.94)	E (E)	1.68 (1.41)	F (F)	0.97 (0.94)	E (E)	1.68 (1.41)	F (F)
NBT	0.45 (0.64)	B (C)	0.59 (0.75)	C (C)	1.00 (1.36)	C (F)	0.59 (0.75)	C (C)	1.00 (1.36)	C (F)
SBT	0.80 (0.59)	C (B)	0.89 (0.69)	D (B)	1.62 (1.25)	F (F)	0.89 (0.69)	D (B)	1.62 (1.25)	F (F)
Overall	**0.87 (0.74)**	**D (C)**	**0.93 (0.83)**	**D (C)**	**1.65 (1.38)**	**F (F)**	**0.93 (0.83)**	**D (C)**	**1.65 (1.38)**	**F (F)**

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.4.4 Trafalgar Road / Cross Avenue / South Service Road East

Under existing conditions, the intersection operates at busy overall v/c ratios of 0.70 and 0.80, in the AM and PM peak hour, respectively.

Under future background conditions, with the addition of background development traffic, the intersection begins to operate over its theoretical capacity, with overall v/c ratios of 0.96 and 1.02 in the AM and PM peak hours, respectively. These traffic volumes are not likely to actually materialize, as trips to and from these background developments may be overestimated with the rise of hybrid work arrangements, and the very close proximity of these sites to the Oakville GO station, which transports riders to downtown Toronto in under an hour.

Under future background conditions with corridor growth, the intersection will operate at overall v/c ratios of 1.22 and 1.28 in the AM and PM peak hours, respectively, as the northbound and southbound through movements experience very high volumes, that are also not likely to materialize fully. Thus, the intersection may exceed its theoretical capacity in both the AM and PM peak hours because of the adopted corridor growth traffic.

Under future total conditions, without corridor growth but with the addition of Site traffic, the intersection continues to operate over its theoretical capacity, with overall v/c ratios of 0.99 and 1.04 in the AM and PM peak hours, respectively. Site traffic will be minimal at this intersection.

Under future total conditions with corridor growth, the intersection will operate at overall v/c ratios of 1.25 and 1.30 in the AM and PM peak hours, respectively. Thus, this intersection may exceed its theoretical capacity in the AM and PM peak hours, as a result of the addition of corridor growth and background traffic.

As Site traffic will be minimal at this intersection during either the AM or PM peak hour, the impact of the Site on this intersection is expected to be minimal.

Traffic capacity analysis results for this intersection are summarized in **Table 46.**

Table 46 Trafalgar Road / Cross Avenue / South Service Road East Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	0.74 (0.89)	E (E)	0.82 (1.03)	E (F)	0.82 (1.03)	E (F)	0.82 (1.03)	E (F)	0.82 (1.03)	E (F)
EBTR	0.26 (0.23)	D (D)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
EBT	-- (--)	-- (--)	0.84 (0.29)	D (C)	0.86 (0.32)	D (C)	0.88 (0.36)	E (D)	0.90 (0.40)	E (D)
EBR	-- (--)	-- (--)	0.23 (0.10)	D (C)	0.24 (0.10)	D (C)	0.31 (0.10)	D (C)	0.31 (0.10)	D (C)
WBL	0.25 (0.25)	D (D)	0.37 (0.24)	D (D)	0.37 (0.24)	D (D)	0.63 (0.32)	D (D)	0.63 (0.32)	D (D)
WBT	0.32 (0.39)	E (E)	0.28 (0.84)	D (E)	0.37 (0.95)	D (F)	0.41 (1.00)	D (F)	0.49 (1.12)	D (F)
WBR	0.06 (0.64)	E (E)	0.06 (0.39)	D (E)	0.06 (0.42)	D (E)	0.06 (0.42)	D (E)	0.06 (0.44)	D (E)
NBL	0.53 (0.50)	D (D)	0.86 (1.02)	E (F)	0.88 (1.02)	E (F)	0.86 (1.02)	E (F)	0.88 (1.02)	E (F)
NBTR	0.48 (0.52)	C (D)	0.73 (0.64)	D (D)	1.35 (1.17)	F (F)	0.73 (0.64)	D (D)	1.31 (1.14)	F (F)
SBL	0.57 (0.42)	C (C)	0.96 (0.75)	F (D)	0.96 (0.83)	E (D)	1.00 (0.72)	F (D)	1.06 (0.82)	F (D)
SBTR	0.77 (0.83)	C (D)	0.95 (1.10)	D (F)	1.53 (1.76)	F (F)	0.97 (1.07)	E (F)	1.57 (1.71)	F (F)
Overall	**0.70 (0.80)**	**C (D)**	**0.96 (1.02)**	**D (E)**	**1.22 (1.28)**	**F (F)**	**0.99 (1.04)**	**E (E)**	**1.25 (1.30)**	**F (F)**

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.4.5 Trafalgar Road / Cornwall Road

Under existing conditions, the intersection operates at good overall v/c ratios of 0.75 and 0.73, in the AM and PM peak hour, respectively.

Under future background conditions, with the addition of background development traffic but without corridor growth, the intersection operates at acceptable v/c ratios of 0.86 and 0.88 in the AM and PM peak hour, respectively.

Under future background conditions with corridor growth, the intersection will begin to operate over theoretical capacity with overall v/c ratios of 1.18 and 1.15 in the AM and PM peak hour, respectively. As stated previously, the corridor growth volumes are not likely to fully materialize as these roads will serve local traffic as opposed to corridor traffic in the future, and drivers will find other roads with more capacity to reach their destination.

Under future total conditions, with the addition of Site traffic and without corridor growth, the intersection operates at acceptable v/c ratios of 0.88 and 0.90. The impact of Site traffic is in the order of 2%-3% during the AM and PM peak hour, respectively.

Under future total conditions with corridor growth, the intersection will continue to operate over its theoretical capacity, with overall v/c ratios of 1.24 and 1.16 in the AM and PM peak hour, respectively. It should be noted that a characteristic of the HCM methodology (which has been utilized in this analysis) is an exaggeration of capacity impacts associated with traffic volume increases in above capacity conditions. Essentially, with a linear increase in traffic volume, the resulting v/c ratio increases exponentially once it surpasses a v/c ratio of 1.00.

Site traffic continues to demonstrate a minimal impact on the operations of this intersection with the consideration of corridor growth. Site traffic can be acceptably accommodated at this intersection.

Traffic capacity analysis results for this intersection are summarized in **Table 45**.

Table 47 Trafalgar Road / Cornwall Road Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	0.74 (0.82)	E (E)	0.79 (0.82)	E (E)	0.87 (0.89)	F (F)	0.81 (0.84)	E (E)	0.87 (0.89)	F (F)
EBTR	0.45 (0.40)	D (D)	0.54 (0.36)	D (C)	0.80 (0.60)	D (D)	0.70 (0.45)	D (D)	1.01 (0.69)	F (D)
WBL	0.10 (0.16)	D (D)	0.13 (0.15)	D (C)	0.21 (0.23)	D (C)	0.53 (0.28)	D (C)	0.65 (0.40)	D (C)
WBT	0.46 (0.57)	D (D)	0.48 (0.53)	D (D)	0.75 (0.87)	D (D)	0.58 (0.58)	D (D)	0.85 (0.92)	E (E)
WBR	0.72 (0.74)	E (E)	0.86 (0.91)	E (E)	0.91 (0.93)	E (E)	0.89 (0.94)	E (E)	0.93 (0.94)	F (E)
NBL	0.17 (0.20)	C (C)	0.26 (0.32)	C (D)	0.38 (0.46)	D (D)	0.28 (0.32)	C (C)	0.38 (0.46)	D (D)
NBTR	0.43 (0.48)	D (D)	0.47 (0.70)	D (D)	0.83 (1.10)	E (F)	0.46 (0.78)	D (D)	0.82 (1.21)	D (F)
SBL	0.84 (0.75)	E (E)	0.90 (0.90)	E (E)	0.90 (0.93)	E (E)	0.90 (0.92)	E (E)	0.90 (0.93)	E (E)
SBT	0.67 (0.65)	D (E)	0.81 (0.81)	D (E)	1.40 (1.40)	F (F)	0.84 (0.81)	D (E)	1.42 (1.41)	F (F)
SBR	0.33 (0.25)	E (F)	0.35 (0.28)	D (F)	0.44 (0.38)	D (E)	0.37 (0.29)	D (F)	0.46 (0.38)	D (E)
Overall	**0.75 (0.73)**	**D (E)**	**0.86 (0.88)**	**E (E)**	**1.18 (1.15)**	**F (F)**	**0.88 (0.90)**	**E (E)**	**1.24 (1.16)**	**F (F)**

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.4.6 Cornwall Road / Chartwell Road

Under existing conditions, the intersection operates at good overall v/c ratios of 0.66 and 0.49, in the AM and PM peak hour, respectively.

Under future background conditions with the addition of background traffic and without corridor growth, the intersection will operate with good overall v/c ratios of 0.53 and 0.46 during the AM and PM peak hour, respectively.

Under future background conditions with corridor growth, the intersection will operate at good overall v/c ratios of 0.75 and 0.66 in the AM and PM peak hours, respectively.

Under future total conditions with the addition of Site traffic, the intersection will operate with acceptable v/c ratios of 0.57 and 0.48 in the AM and PM peak hours, respectively.

Under future total conditions with corridor growth, the intersection will operate at acceptable overall v/c ratios of 0.80 and 0.70 in the AM and PM peak hours, respectively.

The impact of Site-related traffic volumes is expected to be moderate and can be appropriately accommodated at this intersection.

Traffic capacity analysis results for this intersection are summarized in **Table 48**.

Table 48 Cornwall Road / Chartwell Road Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	0.07 (0.12)	A (A)	0.08 (0.11)	B (A)	0.14 (0.21)	B (A)	0.08 (0.12)	B (A)	0.16 (0.24)	B (A)
EBT	0.63 (0.47)	B (A)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
EBR	0.13 (0.06)	A (A)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
EBTR	-- (--)	-- (--)	0.50 (0.29)	B (A)	0.75 (0.48)	B (A)	0.54 (0.29)	B (A)	0.81 (0.48)	C (A)
WBL	0.14 (0.13)	A (A)	0.18 (0.15)	B (A)	0.42 (0.23)	C (B)	0.20 (0.15)	B (A)	0.53 (0.24)	D (B)
WBTR	0.31 (0.35)	A (A)	0.33 (0.40)	B (B)	0.55 (0.67)	B (B)	0.35 (0.43)	B (B)	0.59 (0.70)	B (B)
NBL	0.72 (0.56)	C (C)	0.53 (0.67)	C (D)	0.69 (0.70)	C (D)	0.56 (0.68)	C (D)	0.73 (0.74)	C (D)
NBTR	0.19	B	0.16	C	0.29	C	0.19	B	0.30	C

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
	(0.28)	(C)	(0.30)	(C)	(0.51)	(C)	(0.47)	(C)	(0.65)	(D)
SBL	0.12 (0.29)	B (C)	0.44 (0.34)	C (B)	0.39 (0.44)	B (B)	0.60 (0.55)	C (C)	0.57 (0.74)	C (D)
SBT	0.16 (0.16)	B (C)	0.44 (0.18)	C (B)	0.58 (0.30)	C (B)	0.55 (0.27)	C (C)	0.66 (0.37)	C (C)
SBR	0.02 (0.04)	B (C)	0.02 (0.04)	C (A)	0.02 (0.04)	C (C)	0.02 (0.04)	C (A)	0.02 (0.04)	C (A)
Overall	**0.66 (0.49)**	**B (A)**	**0.53 (0.46)**	**B (B)**	**0.75 (0.66)**	**B (B)**	**0.57 (0.48)**	**B (B)**	**0.80 (0.70)**	**C (B)**

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.4.7 Cross Avenue / Chartwell Road

Under both future background conditions, the intersection will operate at good overall v/c ratios of 0.35 and 0.38 or better in the AM and PM peak hours, respectively.

Under both future total conditions, the intersection will operate at good overall v/c ratios of 0.76 and 0.73 or better in the AM and PM peak hours, respectively.

The Site-related traffic volumes can be appropriately accommodated at this intersection.

Traffic capacity analysis results for this intersection are summarized in **Table 46.**

Table 49 Cross Avenue Extension / Chartwell Road Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBTLR	***Proposed under future conditions.***		0.25 (0.09)	A (A)	0.26 (0.10)	B (A)	0.60 (0.24)	B (A)	0.69 (0.30)	B (B)
WBTLR			0.04 (0.15)	A (A)	0.04 (0.17)	A (A)	0.10 (0.46)	A (B)	0.11 (0.57)	B (C)
NBLTR			0.36 (0.61)	C (C)	0.56 (0.76)	D (C)	0.37 (0.82)	C (D)	0.45 (0.88)	B (C)
SBLTR			0.39 (0.42)	C (C)	0.61 (0.56)	C (B)	0.78 (0.42)	C (B)	0.86 (0.49)	D (B)
Overall			**0.28 (0.27)**	**B (B)**	**0.35 (0.38)**	**B (B)**	**0.65 (0.59)**	**B (B)**	**0.76 (0.73)**	**B (B)**

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.4.8 South Service Road East / The Canadian Road & Royal Windsor Drive / Highway 403 WB On/Off Ramp

Under existing conditions, the intersection operates at good overall v/c ratios of 0.33 and 0.35, in the AM and PM peak hour, respectively.

Traffic capacity analysis results for this intersection are summarized in **Table 50**.

Table 50 South Service Road East / The Canadian Road & The Royal Windsor Drive / Highway 403 WB On/Off-Ramp Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	0.05 (0.01)	A (A)	***Highway ramp to be reconfigured to connect via Cross Avenue instead of South Service Road.***							
EBTR	0.35 (0.36)	A (B)								
WBL	0.27 (0.23)	A (A)								
WBT	0.27 (0.30)	A (A)								
WBR	-- (0.00)	-- (A)								
NBL	0.04 (0.35)	D (D)								
NBT	0.06 (0.08)	D (D)								
NBR	0.04 (0.12)	D (D)								
SBT	0.28 (0.20)	D (D)								
SBR	0.01 (0.02)	D (D)								
Overall	**0.33 (0.35)**	**B (B)**								

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.4.9 South Service Road East / Argus Road / Davis Road

This intersection currently operates as the intersection of South Service Road and Davis Road under existing conditions as an unsignalized intersection. The operations results for this intersection as an unsignalized intersection are provided in **Section 12.6**. It is proposed to signalize this intersection under future background and future total conditions to accommodate traffic utilizing the Argus Road underpass under Trafalgar Road.

Under future background conditions with the addition of background traffic and without corridor growth, the intersection will operate with good v/c ratios of 0.24 and 0.48 in the AM and PM peak hour, respectively.

Under future background conditions with corridor growth considerations, the intersection will operate with good v/c ratios of 0.34 and 0.64 in the AM and PM peak hour, respectively.

Under future total conditions, with Site traffic added to the network and without corridor growth, the intersection will operate with good v/c ratios of 0.33 and 0.54 in the AM and PM peak hours, respectively.

Under future total conditions with corridor growth, the intersection will operate at good overall v/c ratios of 0.43 and 0.69 in the AM and PM peak hours, respectively.

The impact of Site-related traffic volumes at this intersection is expected to be moderate but Site traffic volumes can be acceptably accommodated.

Traffic capacity analysis results for this intersection are summarized in **Table 51**.

Table 51 South Service Road E & Argus Road / Davis Road Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBTLR	***Unsignalized under existing conditions.***		0.12 (0.04)	A (A)	0.13 (0.05)	A (A)	0.12 (0.04)	A (A)	0.13 (0.05)	A (A)
WBTLR			0.09 (0.36)	A (A)	0.10 (0.47)	A (B)	0.23 (0.43)	A (A)	0.26 (0.55)	A (B)
NBTLR			0.64 (0.58)	D (C)	0.68 (0.59)	C (C)	0.65 (0.63)	D (C)	0.70 (0.64)	C (C)
SBTLR			0.65 (0.73)	D (C)	0.75 (0.84)	C (C)	0.64 (0.78)	D (D)	0.75 (0.86)	C (C)
Overall			**0.24 (0.48)**	**C (C)**	**0.34 (0.64)**	**C (C)**	**0.33 (0.54)**	**C (C)**	**0.43 (0.69)**	**C (C)**

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.5 Internal Signalized Intersection Operations

The traffic analysis results of the signalized intersections that are proposed within the Site Master Plan are discussed in the following sections.

12.5.1 Davis Road / New N-S Arterial Street

The intersection of Davis Road / New N-S Arterial Street is proposed in future scenarios and is the central intersection of the Site.

Under both future background conditions, the intersection will operate at good overall v/c ratios of 0.22 and 0.08 in the AM and PM peak hours, respectively.

Under both future total conditions, the intersection will operate at good overall v/c ratios of 0.39 and 0.21 in the AM and PM peak hours, respectively.

The impact of Site-related traffic volumes is expected to be moderate and can be appropriately accommodated at this intersection.

Traffic capacity analysis results for this intersection are summarized in **Table 52**.

Table 52 Davis Road / New N-S Arterial Street Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	***Proposed under future conditions.***		0.11 (0.04)	A (A)	0.11 (0.04)	A (A)	0.27 (0.13)	A (B)	0.27 (0.13)	A (B)
EBTR			-- (--)	-- (--)	-- (--)	-- (--)	0.12 (0.06)	B (A)	0.12 (0.06)	B (A)
WBL			-- (--)	-- (--)	-- (--)	-- (--)	0.12 (0.06)	A (B)	0.12 (0.06)	A (B)
WBTR			-- (--)	-- (--)	-- (--)	-- (--)	0.09 (0.04)	C (B)	0.09 (0.04)	B (B)
NBL			-- (--)	-- (--)	-- (--)	-- (--)	0.10 (0.32)	B (C)	0.10 (0.32)	B (C)
NBTR			0.60 (0.21)	C (C)	0.60 (0.21)	C (C)	0.68 (0.31)	C (D)	0.68 (0.31)	C (D)
SBL			-- (--)	-- (--)	-- (--)	-- (--)	0.29 (0.31)	C (C)	0.29 (0.31)	C (C)
SBTR			0.03 (0.09)	C (C)	0.03 (0.09)	C (C)	0.05 (0.16)	C (C)	0.05 (0.16)	C (C)
Overall			**0.22 (0.08)**	**C (C)**	**0.22 (0.08)**	**C (C)**	**0.39 (0.21)**	**B (C)**	**0.39 (0.21)**	**B (C)**

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.5.2 Cross Avenue / New N-S Arterial Street

Under both future background conditions, the intersection will operate at good overall v/c ratios of 0.37 and 0.17 in the AM and PM peak hours, respectively.

Under both future total conditions, the intersection will operate at good overall v/c ratios of 0.64 and 0.37 in the AM and PM peak hours, respectively.

The Site-related traffic volumes can be appropriately accommodated at this intersection.

Traffic capacity analysis results for this intersection are summarized in **Table 52**.

Table 53 Cross Avenue / New N-S Arterial Street Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	***Proposed under future conditions.***		0.76 (0.20)	C (A)	0.76 (0.20)	C (A)	0.97 (0.37)	E (A)	0.97 (0.37)	E (A)
EBTR			0.41 (0.08)	B (A)	0.41 (0.08)	B (A)	0.52 (0.11)	C (A)	0.52 (0.11)	C (A)
WBL			-- (--)	-- (--)	-- (--)	-- (--)	0.51 (0.04)	D (A)	0.51 (0.04)	D (A)
WBTR			0.09 (0.14)	B (A)	0.09 (0.14)	B (A)	0.21 (0.27)	C (A)	0.21 (0.27)	C (A)
NBL			-- (--)	-- (--)	-- (--)	-- (--)	0.01 (0.34)	C (C)	0.01 (0.34)	C (C)
NBTR			-- (--)	-- (--)	-- (--)	-- (--)	0.02 (0.19)	C (C)	0.02 (0.19)	C (C)
SBL			-- (--)	-- (--)	-- (--)	-- (--)	0.29 (0.36)	B (D)	0.29 (0.36)	B (D)
SBTR			-- (--)	-- (--)	-- (--)	-- (--)	0.05 (0.06)	B (D)	0.05 (0.06)	B (D)
Overall			**0.37 (0.17)**	**C (A)**	**0.37 (0.17)**	**C (A)**	**0.64 (0.37)**	**C (B)**	**0.64 (0.37)**	**C (B)**

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Overall / through / shared through movements ≥ 0.85, exclusive turning movements ≥ 0.95.

12.6 Unsignalized Intersection Operations

Capacity analysis for the study area unsignalized intersections is summarized in **Table 54**. Most of the area's unsignalized intersections will operate at acceptable levels-of-service (LOS) with the Site build-out.

The intersections of the Cross Avenue extension and Chartwell Road will operate at high delays if the corridor growth of 3% is sustained on both corridors for the next 20 years (as is assumed in the analysis). However, this is unlikely as congestion will deter longer distance, non-local drivers from traversing on these roads if congestion and high delays persist.

Table 54 Unsignalized Intersection Analysis Results

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Trafalgar Road / Argus Road										
EBR	B (A)	10.3 (9.7)	B (B)	13.1 (10.7)	B (B)	15.0 (14.2)	B (B)	13.1 (10.7)	B (B)	15.0 (14.2)
South Service Road / Davis Road										
EBTLR	A (A)	0.0 (0.0)	***Signalized under Future Conditions.***							
WBTLR	B (B)	11.2 (12.9)								
NBTL	A (A)	0.0 (0.0)								
NBTR	A (A)	0.0 (0.0)								
SBTL	A (A)	0.8 (1.1)								
SBTR	A (A)	0.0 (0.0)								
Cross Avenue Extension / South Service Road										
EBL	***Cross Avenue to be extended in future conditions.***		A (A)	7.8 (9.0)	A (A)	8.2 (10.0)	A (A)	8.0 (9.3)	A (B)	8.5 (10.4)
SBLR			B (C)	12.2 (15.7)	C (F)	19.6 (59.5)	B (C)	14.0 (18.3)	D (F)	29.3 (95.1)
Chartwell Road / South Service Road										
WBTL	A (A)	3.4 (3.6)	A (A)	3.4 (3.6)	A (A)	2.6 (2.7)	A (A)	3.6 (3.7)	A (A)	2.9 (2.8)
NBLR	B (C)	13.2 (15.0)	B (C)	13.2 (15.0)	C (E)	19.4 (49.4)	C (D)	16.5 (29.2)	D (F)	29.8 (183.1)

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Street A / South Service Road										
WBTL	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	A (A)	0.8 (2.0)	A (A)	0.6 (1.7)
NBLR	-- (--)	-- (--)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	9.8 (9.4)	B (B)	10.5 (10.3)
Street B / South Service Road										
WBTL	-- (--)	-- (--)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.8 (1.7)	A (A)	0.6 (1.6)
NBLR	-- (--)	-- (--)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)
Davis Road / Street A										
EBTLR	-- (--)	-- (--)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.0 (0.6)	A (A)	0.0 (0.6)
WBTLR	-- (--)	-- (--)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.6 (0.6)	A (A)	0.6 (0.6)
NBTLR	-- (--)	-- (--)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (B)	9.8 (12.8)	A (B)	9.8 (12.8)
SBTLR	-- (--)	-- (--)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	B (B)	13.0 (13.8)	B (B)	13.0 (13.8)
Davis Road / Street B										
EBLR	-- (--)	-- (--)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	B (A)	10.6 (9.0)	B (A)	10.6 (9.0)
NBTL	-- (--)	-- (--)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	5.2 (4.3)	A (A)	5.2 (4.3)
Cross Avenue / Street A										
EBLT	***Constructed with Site.***						A (A)	0.0 (8.8)	A (A)	0.0 (8.8)
SBL							D (C)	25.5 (17.6)	D (C)	25.5 (17.6)
SBR							A (A)	8.9 (9.9)	A (A)	8.9 (9.9)

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Cross Avenue / Street B										
EBLT	***Constructed with Site.***						A (A)	0.5 (3.7)	A (A)	0.5 (3.6)
SBL							C (D)	19.5 (32.0)	C (D)	19.5 (26.8)
SBR							A (A)	9.8 (10.0)	A (A)	9.8 (9.3)
Street A / Block 1 Site Driveway										
WBLR	***Constructed with Site.***						B (B)	10.7 (10.3)	B (B)	10.7 (10.3)
SBTL							A (A)	7.3 (7.6)	A (A)	7.3 (7.6)
Street B / Block 2 Site Driveway										
EBLR	***Constructed with Site.***						A (A)	9.2 (8.8)	A (A)	9.2 (8.8)
NBTL							A (A)	7.3 (7.5)	A (A)	7.3 (7.5)
Street A / Block 3 Site Driveway										
WBLR	***Constructed with Site.***						B (B)	10.3 (10.8)	B (B)	10.3 (10.8)
SBTL							A (A)	0.9 (3.6)	A (A)	0.9 (3.6)
Street B / Block 4 Site Driveway										
EBLR	***Constructed with Site.***						B (B)	12.7 (10.2)	B (B)	12.7 (10.2)
NBTL							A (A)	4.0 (3.7)	A (A)	4.0 (3.7)
Davis Road / Block 1 Site Driveway / Block 3 Site Driveway										
EBTLR	***Constructed with Site.***						A (A)	0.4 (3.1)	A (A)	0.4 (3.1)
WBTLR							A (A)	1.5 (2.0)	A (A)	1.5 (2.0)
NBTLR							B (A)	10.1 (9.0)	B (A)	10.1 (9.0)
SBTLR							B (C)	14.9 (15.2)	B (C)	14.9 (15.2)

	Existing		Future Background (without Corridor Growth)		Future Background (with Corridor Growth)		Future Total (without Corridor Growth)		Future Total (with Corridor Growth)	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Davis Road / Block 2 Site Driveway / Block 4 Site Driveway										
EBTLR	***Constructed with Site.***						A (A)	3.8 (4.6)	A (A)	3.8 (4.6)
WBTLR							A (A)	1.9 (2.9)	A (A)	1.9 (2.9)
NBTLR							B (B)	11.2 (12.6)	B (B)	11.2 (12.6)
SBTLR							B (B)	10.7 (10.9)	B (B)	10.7 (10.9)

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. As per the Halton Region's TIS guidelines, critical movements have been highlighted in yellow. Where LOS exceeds LOS D.

13.0 QUEUING ASSESSMENT

As per Halton Region's request, an assessment for 95th percentile queues for each of the study area intersections, is provided in the following sections.

13.1 Trafalgar Road / Leighland Avenue / Iroquois Shore Road

Queue results at the Trafalgar Road / Leighland Avenue / Iroquois Shore Road intersection are summarized in Table 55. Overall, Site -related impacts on most movements are negligible to minor, given the future supporting road network that is available to serve the Site, including the New N-S Arterial Street and the new full interchange. The New N-S Arterial Street connects northwards to Iroquois Shore Boulevard, which provides notable access to the Trafalgar Road and Eighth Line corridors, partly increasing the queuing and delays for the southbound left and westbound right turn movements at the intersection with Trafalgar Road.

Queues exceeding storage lengths are expected to be contained within the adjacent through lanes, as observed under existing conditions for certain movements like the westbound right turn. The Site -related impacts on the southbound left and westbound right turn movements are in the order of up to 5 and 11 car lengths, respectively, during the peak hours. The westbound through movement at the intersection is expected to operate with sufficient residual storage and capacity to accommodate the additional Site trips.

Table 55 Trafalgar Road / Leighland Avenue / Iroquois Shore Road 95th Percentile Queues

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
EBL 80m	13 (31)	14 (32)	14 (32)	14 (32)	14 (32)
EBT	49 (64)	46 (54)	78 (107)	46 (54)	78 (107)
EBR	142 (86)	124 (51)	124 (51)	124 (51)	124 (51)
WBL 165m	117 (135)	140 (165)	140 (165)	140 (165)	140 (165)
WBT	23 (56)	23 (54)	37 (95)	23 (54)	37 (95)
WBR 15m	15 (55)	42 (59)	51 (92)	118 (64)	139 (102)
NBL	60 (55)	67 (79)	15 (38)	67 (79)	15 (38)
NBT	95 (121)	68 (144)	78 (142)	68 (144)	78 (142)
NBR	193 (228)	226 (112)	18 (52)	226 (114)	18 (52)
SBL	46 (45)	54 (91)	114 (89)	67 (128)	128 (126)

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
85m					
SBT	249 (124)	216 (133)	574 (327)	216 (133)	574 (327)
SBR 80m	0 (2)	0 (2)	0 (2)	0 (2)	0 (2)

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. All queues are in metres (m).
3. As per the Halton Region's TIS guidelines, critical movements (where queues exceed storage) have been highlighted in yellow.

13.2 Trafalgar Road / North Service Road East / Highway 403 Westbound Off-Ramp

Queue results at the Trafalgar Road / North Service Road East / Highway 403 Westbound Off-Ramp intersection are summarized in Table 56. Overall, Site -related impacts on all movements are negligible given the future supporting road network that is available to serve the Site, including the New N-S Arterial Street and the new full interchange.

Table 56 Trafalgar Road / North Service Road East / Highway 403 Westbound Off-Ramp 95th Percentile Queues

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
EBL	6 (18)	4 (12)	4 (12)	4 (12)	4 (12)
EBR	74 (76)	70 (85)	70 (93)	70 (85)	70 (93)
WBL	75 (83)	98 (123)	200 (246)	98 (123)	200 (246)
WBT	75 (83)	98 (126)	200 (249)	98 (126)	200 (249)
WBR	46 (109)	51 (116)	139 (309)	51 (116)	139 (309)
NBT	141 (416)	112 (385)	520 (595)	112 (385)	520 (595)
SBT	201 (153)	180 (65)	538 (426)	180 (65)	538 (426)
SBR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. All queues are in metres (m).
3. As per the Halton Region's TIS guidelines, critical movements (where queues exceed storage) have been highlighted in yellow.

13.3 Trafalgar Road / Highway 403 Eastbound Off-Ramp

Queue results at the Trafalgar Road / Highway 403 Eastbound Off-Ramp intersection are summarized in Table 57. Overall, Site -related impacts on all movements are negligible given the future supporting road network that is available to serve the Site, including the New N-S Arterial Street and the new full interchange.

Table 57 Trafalgar Road / Highway 403 Eastbound Off-Ramp 95th Percentile Queues

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
EBL	138 (176)	123 (159)	325 (426)	123 (159)	325 (426)
EBR	251 (127)	276 (238)	586 (441)	276 (238)	586 (441)
NBT	47 (117)	63 (166)	54 (441)	63 (166)	54 (441)
SBT	140 (83)	137 (113)	211 (196)	137 (113)	211 (196)

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. All queues are in metres (m).
3. As per the Halton Region's TIS guidelines, critical movements (where queues exceed storage) have been highlighted in yellow.

13.4 Trafalgar Road / Cross Avenue / South Service Road

Queue results at the Trafalgar Road / Cross Avenue / South Service Road intersection are summarized in Table 58. Overall, Site -related impacts on all movements are minimal – up to 4 car-lengths. The Site has negligible impact to the critical eastbound, northbound and southbound left turn movements.

Table 58 Trafalgar Road / Cross Avenue / South Service Road East 95th Percentile Queues

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
EBL 130m	75 (144)	105 (200)	105 (200)	105 (200)	105 (200)
EBT	36 (40)	156 (56)	163 (63)	158 (64)	166 (71)
EBR		31 (16)	33 (16)	44 (16)	45 (16)
WBL 50m	21 (21)	21 (20)	21 (20)	48 (27)	48 (27)

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
WBT	30 (38)	32 (99)	40 (119)	46 (116)	55 (134)
WBR	0 (72)	0 (48)	0 (50)	0 (49)	0 (50)
NBL 20m	29 (27)	46 (98)	43 (73)	46 (92)	44 (66)
NBT	84 (82)	99 (96)	307 (238)	100 (103)	307 (218)
SBL 55m	32 (24)	113 (57)	49 (32)	113 (55)	49 (33)
SBT	174 (139)	225 (220)	175 (292)	225 (220)	175 (292)

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. All queues are in metres (m).
3. As per the Halton Region's TIS guidelines, critical movements (where queues exceed storage) have been highlighted in yellow.

13.5 Trafalgar Road / Cornwall Road

Queue results at the Trafalgar Road / Cornwall Road intersection are summarized in Table 59. Overall, Site - related impacts on all movements are minimal – up to 3 car-lengths. The Site has negligible impact to the critical westbound right turn and southbound left turn movements.

Table 59 Trafalgar Road / Cornwall Road 95th Percentile Queues

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
EBL 85m	69 (89)	67 (78)	67 (78)	67 (78)	67 (78)
EBT	66 (61)	88 (69)	165 (123)	94 (80)	184 (136)
WBL 85m	10 (16)	13 (18)	13 (18)	43 (28)	44 (28)
WBT	53 (72)	65 (91)	117 (171)	74 (96)	128 (185)
WBR 75m	86 (93)	143 (185)	167 (194)	143 (185)	167 (194)
NBL 40m	16 (19)	13 (18)	13 (18)	13 (18)	13 (18)

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
NBT	83 (101)	79 (114)	142 (229)	82 (135)	145 (266)
SBL 85m	122 (85)	125 (81)	82 (53)	122 (81)	81 (53)
SBT	222 (185)	152 (127)	165 (141)	162 (133)	171 (147)
SBR	88 (68)	41 (39)	32 (29)	40 (39)	32 (30)

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. All queues are in metres (m).
3. As per the Halton Region's TIS guidelines, critical movements (where queues exceed storage) have been highlighted in yellow.

13.6 Cornwall Road / Chartwell Road

Queue results at the Trafalgar Road / Cornwall Road intersection are summarized in Table 60. All queues can be contained within the provided storage, at most exceeding by 1-2 car-lengths.

Table 60 Cornwall Road / Chartwell Road 95th Percentile Queues

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
EBL 45m	5 (7)	8 (7)	8 (7)	8 (7)	9 (7)
EBT	86 (64)	75 (38)	134 (70)	83 (39)	173 (71)
EBR	8 (5)				
WBL 30m	7 (9)	12 (15)	19 (15)	13 (15)	24 (15)
WBT	29 (35)	49 (67)	85 (128)	51 (74)	97 (137)
NBL	46 (26)	47 (48)	53 (50)	45 (48)	48 (51)
NBT	17 (19)	19 (29)	36 (48)	24 (44)	38 (63)
SBL 25m	9 (15)	28 (6)	27 (21)	35 (19)	26 (39)
SBT	15 (12)	39 (5)	54 (19)	46 (16)	54 (20)

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
SBR 25m	2 (7)	5 (0)	6 (5)	0 (1)	0 (1)

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. All queues are in metres (m).
3. As per the Halton Region's TIS guidelines, critical movements (where queues exceed storage) have been highlighted in yellow.

13.7 Cross Avenue / Chartwell Road

Queue results at the Trafalgar Road / Cornwall Road intersection are summarized in Table 61. Queues can be contained within the provided through lanes.

Table 61 Cross Avenue / Chartwell Road 95th Percentile Queues

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
EBT		23 (8)	23 (8)	62 (34)	67 (35)
WBT		7 (21)	7 (27)	15 (76)	17 (84)
NBT		30 (53)	55 (79)	32 (98)	37 (149)
SBT		26 (29)	44 (44)	75 (27)	104 (36)

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. All queues are in metres (m).
3. As per the Halton Region's TIS guidelines, critical movements (where queues exceed storage) have been highlighted in yellow.

13.8 South Service Road East / The Canadian Road & Royal Windsor Drive / Highway 403 Westbound On-Off Ramps

Existing queue results at the South Service Road East / The Canadian Road & Royal Windsor Drive / Highway 403 Westbound On-Off Ramps intersection are summarized in Table 62. Under future conditions, the intersection is expected to be reconfigured to a full interchange.

Table 62 South Service Road East / The Canadian Road & Royal Windsor Drive / Highway 403 Westbound On-Off Ramps 95th Percentile Queues

	Existing	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
EBL	3 (1)				
EBT	53 (57)				
WBL	12 (11)				
WBT	39 (51)				
NBL	5 (22)				
NBT	8 (10)				
NBR	1 (21)				
SBT	24 (18)				

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. All queues are in metres (m).
3. As per the Halton Region's TIS guidelines, critical movements (where queues exceed storage) have been highlighted in yellow.

13.9 South Service Road East / Argus Road / Davis Road

Queue results at the South Service Road East / Argus Road / Davis Road intersection are summarized in Table 63. Queues can be contained within the provided through lanes.

Table 63 South Service Road East / Argus Road / Davis Road 95th Percentile Queues

	Existing	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
EBT		4 (2)	6 (2)	5 (2)	6 (2)
WBT		14 (57)	19 (77)	20 (77)	41 (94)
NBT		56 (58)	75 (71)	57 (62)	77 (84)
SBT		57 (75)	84 (116)	57 (77)	84 (128)

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. All queues are in metres (m).
3. As per the Halton Region's TIS guidelines, critical movements (where queues exceed storage) have been highlighted in yellow.

13.10 Unsignalized Intersections

Queue results at the study area's unsignalized intersections and Site driveways are summarized in Table 64.

All queues at the proposed Site driveways are well contained within the allowable storage. Most unsignalized study area intersections also demonstrate acceptable queuing in all scenarios without the corridor growth assumptions.

Table 64 Unsignalized Intersections 95th Percentile Queues

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
Trafalgar Road / Argus Road					
EBR	1 (2)	11 (5)	14 (8)	11 (5)	14 (8)
South Service Road / Davis Road					
WBTLR	1 (5)				
SBTL	0 (0)				
Cross Avenue Extension / South Service Road					
EBL		4 (7)	8 (15)	5 (9)	9 (17)
SBLR		13 (27)	38 (133)	21 (36)	67 (181)
Chartwell Road / South Service Road					
WBTL	2 (2)	2 (2)	2 (2)	2 (2)	3 (2)
NBLR	6 (19)	6 (19)	18 (96)	12 (58)	34 (243)
Street A / South Service Road					
WBTL				0 (2)	0 (2)
NBLR				5 (1)	5 (2)
Street B / South Service Road					
WBTL				0 (1)	1 (2)
Davis Road / Street A					
EBTLR				0 (0)	0 (0)
WBTLR				0 (0)	0 (0)
NBTLR				2 (8)	2 (8)
SBTLR				11 (4)	11 (4)

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
Davis Road / Street B					
EBLR				7 (2)	7 (2)
NBTL				1 (2)	1 (2)
Cross Avenue / Street A					
EBL				0 (0)	0 (0)
SBL				28 (8)	28 (8)
SBR				0 (0)	0 (0)
Cross Avenue / Street B					
EBTL				0 (2)	0 (2)
SBL				32 (21)	32 (17)
SBR				6 (3)	6 (2)
Street A / Block 1 Site Driveway					
WBLR				13 (4)	13 (4)
SBTL				0 (1)	0 (1)
Street B / Block 2 Site Driveway					
EBLR				6 (2)	6 (2)
NBTL				0 (2)	0 (2)
Street A / Block 3 Site Driveway					
WBLR				7 (4)	7 (4)
SBTL				0 (0)	0 (0)
Street B / Block 4 Site Driveway					
EBLR				8 (3)	8 (3)
NBTL				1 (2)	1 (2)
Davis Road / Block 1 Site Driveway / Block 3 Site Driveway					
EBTLR				0 (1)	0 (1)
WBTLR				1 (2)	1 (2)
NBTLR				4 (2)	4 (2)

	Existing (m)	Future Background (without Corridor Growth) (m)	Future Background (with Corridor Growth) (m)	Future Total (without Corridor Growth) (m)	Future Total (with Corridor Growth) (m)
SBTLR				9 (3)	9 (3)
Davis Road / Block 2 Site Driveway / Block 4 Site Driveway					
EBTLR				0 (2)	0 (2)
WBTLR				0 (1)	0 (1)
NBTLR				5 (3)	5 (3)
SBTLR				10 (4)	10 (4)

Notes:
1. XX (XX) – AM Peak (PM Peak).
2. All queues are in metres (m).
3. As per the Halton Region's TIS guidelines, critical movements (where queues exceed storage) have been highlighted in yellow.

14.0 PHASE 1 (BLOCK 1) TRAFFIC OPERATIONS ASSESSMENT

The build-out of Phase 1 (Block 1) of the Site will be supported by the construction of Local Street A (South Service Road East to Davis Road) and Davis Road (Local Street A to N-S Arterial Street). There are proposed to be a total of 3 Site driveways, with one located along each of South Service Road East, Local Street A and Davis Road. The preliminary conceptual phasing of Phase 1 (Block 1) is summarized in **Table 12**. The phasing plan is illustrated in **Appendix K.**

Table 65 Proposed Phase 1 (Block 1)

Block	Phase	Proposed Building	Proposed Street Network
1	Phase 1a	Building C	• Street A (South Service to Davis Road) with Site driveway along Street A.
	Phase 1b	Building A/B	• Above + Site driveway along South Service Road East.
	Phase 1c	Building D	• Above + Davis Road (Street A to N-S Arterial Street) with Site driveway along Davis Road.

The Block 1 site trip generation is summarized in **Table 66**. A total of 515 and 470 are expected to and from Block 1 based on the currently proposed development programme. These trips were analyzed at the Site driveways.

Table 66 Phase 1 (Block 1) Vehicle Trip Summary

Block 1	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Residential (2,220 units)	55	435	490	275	125	400
Retail (1,503 m²)	15	10	25	40	30	70
Total Vehicle Trips	**70**	**445**	**515**	**315**	**155**	**470**

A preliminary traffic analysis of the Phase 1 adjacent intersections is provided in **Table 67** and confirms that all driveways and adjacent intersections will operate acceptably at LOS C or better, during both the morning and afternoon peak hours. A more detailed analysis and review of any necessary road improvements will be provided at a later time, as the development plans progress for Phase 1.

Table 67 Phase 1 (Block 1) Traffic Operations

Intersection	Movement	Future Total Traffic Conditions	
		LOS	Delay (s)
South Service Road / Street A	EBTR	A (A)	0.0 (0.0)
	WBTL	A (A)	0.8 (2.3)
	NBLR	C (C)	16.2 (17.4)
Davis Road / Street A	EBTL	A (A)	3.8 (4.0)
	WBTR	A (A)	0.0 (0.0)
	SBLR	A (A)	9.2 (8.6)
Street A / Site Driveway	WBLR	B (A)	10.5 (9.7)
	NBTR	A (A)	0.0 (0.0)
	SBTL	A (A)	7.3 (7.6)
Davis Road / Site Driveway	EBTL	A (A)	7.3 (7.4)
	WBTR	A (A)	0.0 (0.0)
	SBLR	A (A)	8.6 (8.4)

Notes:
1. XX (XX) – AM Peak (PM Peak).

Appendix A:
Approved Temporary Land Use Concept Plan – MHBC, May 2024

CONCEPT PLAN

420-468 South Service Road,
Oakville, ON

Subject Lands

SCALE: 1:10,000

SITE STATISTICS

	HA	AC
Total Site Area	**11.049**	**27.302**
Existing Building	0.041	0.100
Small Vehicle Parking	0.173	0.428
Shipping Containers for Public Storage	1.660	4.101
Large Vehicle & Trailer Parking	2.100	5.189
General Storage	0.459	1.135
Ungraded Area	4.443	10.980
Snow Storage	0.361	0.892
45° Lose Stone Slope	0.452	1.117

STORAGE STATISTICS

Small Vehicle Parking	64
Shipping Containers for Public Storage	502
Large Vehicle & Trailer Parking	312

PARKING STATISTICS

	No. of Spots
Customer Parking Area (north)	15

LIGHT POLE (all lighting to be dark sky friendly)

10M BUFFER

VEGETATION COMMUNITY BOUNDARY

NOTE:

NO DEVELOPMENT CONSTRUCTION INCLUDING THE PLACEMENT OF ANY GRAVEL OR CLEAR STONE TO OCCUR WITHIN THE 10M BUFFER OR WESTERLY UNGRADED AREA.

NOTES:

- Total site area determined via site survey
- Delineated site areas are rough approximations only

No.	Date	Issue/Revision	By
5	2024-05-09	Add jersey barrier and light poles	RM
4	2024-05-08	Reduce small car storage area	RM
3	2024-04-10	Revise customer parking; Revise container storage layout	RM
2	2024-04-08	Issued for submission	HH
1	2024-02-23	Revise north customer parking sizes for by-law conformity	RM

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE

204-442 BRANT STREET, BURLINGTON, ON, L7R 2G4 | P: 905.639.8686 | WWW.MHBCPLAN.COM

Date: Friday, May 10, 2024

File No.: 1677 - X	**Drawn By:** P.B. / R.M.
Plan Scale: 1:600	**Checked By:** initials

Project:

Part of Lot 12, Concession 3
Trafalgar, Town of Oakville
Region of Halton

Z:\16773 - 420-468 South Service Road, Oakville\1 - MHBC Documents\Concept Plan\2024-05-10

Appendix B:
Reduced Scale Architectural Plans

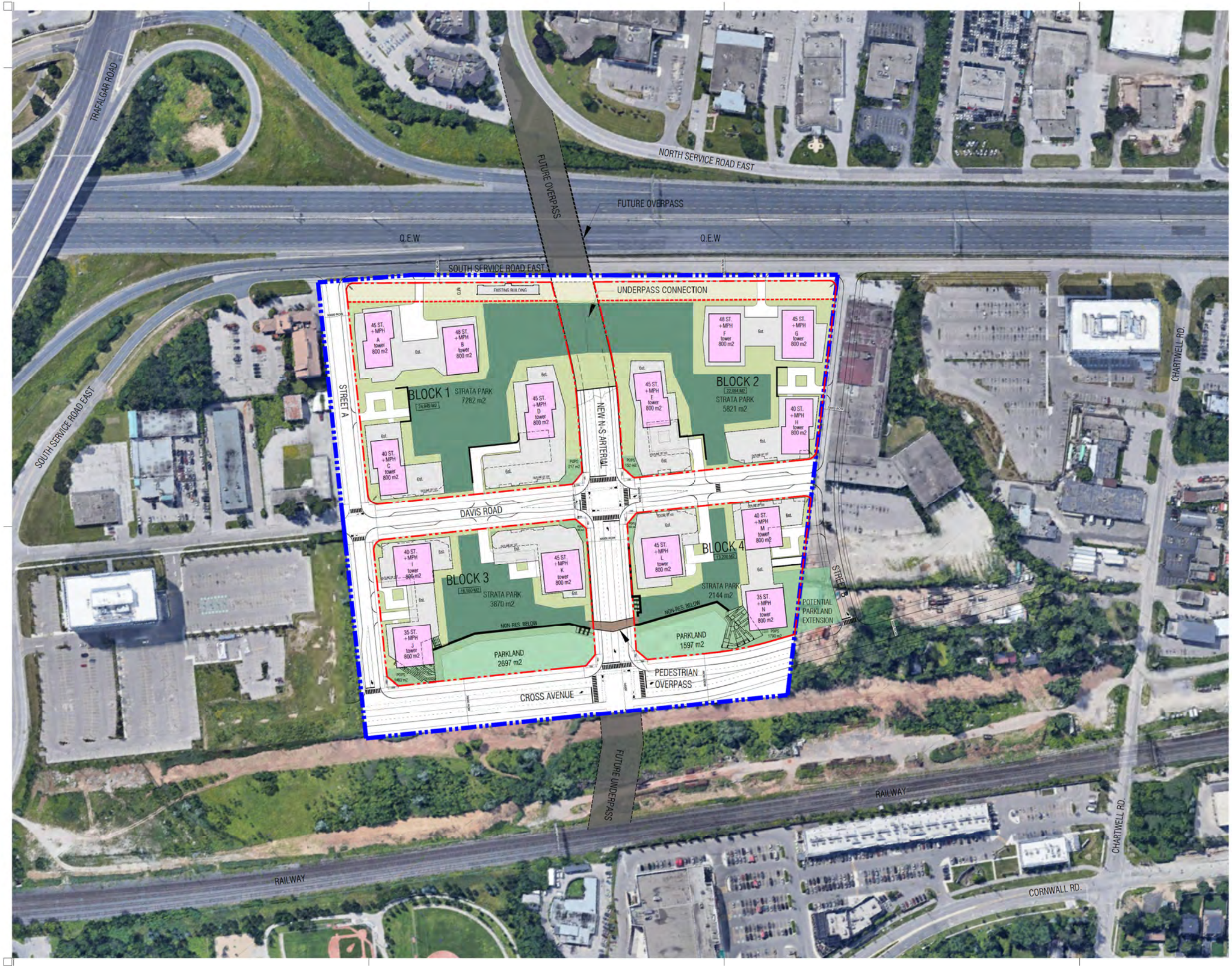
PROPOSED MIXED-USE DEVELOPMENT

SOUTH SERVICE ROAD

OAKVILLE THE ROSE CORPORATION ONTARIO

GRAZIANI + CORAZZA ARCHITECTS

8400 JANE STREET, BUILDING D-SUITE 300 CONCORD, ONTARIO L4K 4L8
T.905.795.2601 F.905.795.2844 WWW.GC-ARCHITECTS.COM



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1.	SEP.12.2024 ISSUED TO CITY FOR PAC MEETING	J. CHI.
2.	NOV.01.2024 ISSUED TO CITY FOR OPA	J. CHI.
3.	OCT.22.2025 ISSUED TO CITY FOR OPA	J. CHI.

ISSUED FOR REVISIONS

GRAZIANI + CORAZZA ARCHITECTS
ONTARIO ASSOCIATION OF ARCHITECTS
JOHNNY CHIVIENTI LICENCE 6299
T 905.795.2601 F 905.795.2644 WWW.GC-ARCHITECTS.COM

PROPOSED MIXED-USE DEVELOPMENT

SOUTH SERVICE ROAD

THE ROSE CORPORATION

OAKVILLE ONTARIO

PROJECT ARCHITECT:	J.C.
ASSISTANT DESIGNER:	B.D / J.L.
DRAWN BY:	B.D / C.R. / S.H. / J.L.
CHECKED BY:	D.B. / G.C.
PLOT DATE:	OCT.15.2025
JOB #	2127.23

CONTEXT PLAN

1:200 A100

TITLEBLOCK SIZE: 610 x 900

BLOCK 1

SITE AREA GROSS		23915 m2
SITE AREA NET	67%	22092 m2

LAND USE AREAS (m2)
% based on gross site area

STRATA PARK	22.1%	5281
PARKLAND	0.0%	0
PDPS	0.7%	217
MTO	8.4%	2109
ROADS / R.O.W.	16.9%	4035
DEVELOPABLE LANDS	44.8%	14958
TOTAL	100%	32345

AREAS & UNIT COUNTS

	Non-Res. GCA (m2) **	%	Residential GCA (m2) **	%	Unit Count ***
BLDG A			31574	100%	554
BLDG B			43974	100%	549
BLDG C	804	2.1%	37818	97.9%	489
BLDG D	699	1.4%	48525	98.6%	628
TOTAL	1503	0.9%	171893	99.1%	2219
			173396		

LOT COVERAGE	22%
FSI GROSS	5.27 X
FSI NET	7.85 X

UNITS BREAKDOWN

	UNIT TYPE	PERCENTAGE %	UNIT COUNT ***
3.8.3.3 (4) NOT LESS THAN 15% OF ALL RESIDENTIAL SUITES SHALL BE PROVIDED WITH A BARRIER-FREE PATH OF TRAVEL FROM THE SUITE ENTRANCE DOOR TO, (a) AT LEAST ONE BEDROOM AT THE SAME LEVEL, AND (c) AT LEAST ONE BATHROOM (i) HAVING AN AREA NOT LESS THAN 4.5m2 AT THE SAME LEVEL, AND (ii) CONFORMING TO SENTENCE 9.5.3.3 (1)	1 BEDROOM	60%	1332
	2 BEDROOM	30%	666
	3 BEDROOM	10%	223
	TOTAL	100%	2220
REQUIRED B.F.	2220 X 15% =	333	PROVIDED B.F. 338

AMENITY

		INDOOR	OUTDOOR
PROVIDED AMENITY PER LEVEL (m2)	GROUND	1603	
	7TH	2810	5362
	TOTAL	4413	5362
RATIO / UNIT (m2)		1.99	2.42

PARKING

	LEVEL	RESIDENT	RESIDENT VISITOR	NON-RESIDENT
TARGET RATIO / UNIT		0.50/unit	0.15/unit	1.0B/100m2 GFA
TARGET PARKING SPACES		1110	333	16
TARGET TOTAL		1459		
PHASE 1 TARGET PARKING SPACES		249	73	8

PROVIDED PARKING PER LEVEL	P1		287	16
	P2	538	46	
	P3	574		
	PARTIAL P4	8		
TOTAL		1120	333	16
COMBINED TOTAL		1459		

BARRIER FREE PARKING SPACES
PER 201 TO 1000 TOTAL PARKING SPACES ON THE LOT,
MUST PROVIDE 2, PLUS 2% OF THE TOTAL NUMBER OF SPACES AS BARRIER FREE

	PARKING SUPPLY (RES.VISITOR + NON-RES.)	PARKING RATE	TOTAL
REQUIRED B.F.	349	X 2% + 2 =	9
PROPOSED B.F.	349	X 2% + 2 =	9
			4 TYPE A
			5 TYPE B

BIKE STORAGE

	RESIDENT LONG-TERM	RESIDENT SHORT-TERM	RETAIL
REQUIRED RATIO / UNIT	In no circumstances shall the number of minimum bicycle parking spaces required on a lot be greater than 100	In no circumstances shall the number of minimum bicycle parking spaces required on a lot be greater than 50	GREATER OF 2 OR 1 SPACE / 1000M2 GFA
REQUIRED SPACES		30 PER BUILDING	2
TOTAL REQUIRED SPACES		122	
PROVIDED RATIO / UNIT	0.5	0.1	GREATER OF 2 OR 1 SPACE / 1000M2 GFA
PROVIDED SPACES	1110	222	2
TOTAL PROVIDED SPACES		1334	

BUILDING HEIGHT

	GROUND FLOOR F.F.E.	STOREYS	HEIGHT+MECH. ****
BLDG A	107.00 m	45	171 m max.
BLDG B	107.00 m	48	171 m max.
BLDG C	107.00 m	40	171 m max.
BLDG D	107.00 m	45	171 m max.

BUILDING SETBACKS

NORTH	3.0 m + 14.0m MTO Setback
EAST	9.0 m
SOUTH	3.0 m
WEST	3.0 m

Notes:
* Setbacks to main building face
** GCA does not include above and below grade parking
*** Actual unit count may vary depending on market demand

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A 604 Renderings - Pedestrian View Looking South West Under Overpass
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BLOCK 2

SITE AREA GROSS		28156 m2
SITE AREA NET	71%	19823 m2

LAND USE AREAS (m2)
% based on gross site area

STRATA PARK	21.9%	5821
PARKLAND	0.0%	0
PDPS	0.6%	152
MTO	9.2%	2442
ROADS / R.O.W.	12.2%	3251
DEVELOPABLE LANDS	56.1%	14932
TOTAL	100%	26598

AREAS & UNITS BREAKDOWN

	Non-Res. GCA (m2) **	%	Residential GCA (m2) **	%	Unit Count ***
BLDG E	378	0.8%	45412	99.2%	609
BLDG F			41980	100%	586
BLDG G			40550	100%	503
BLDG H	1136	2.9%	38290	97.1%	518
TOTAL	1514	0.9%	157203	99.1%	2156
			168717		

LOT COVERAGE	27%
FSI GROSS	6.35 X
FSI NET	8.96 X

UNITS BREAKDOWN

	UNIT TYPE	PERCENTAGE %	UNIT COUNT ***
3.8.3.3 (4) NOT LESS THAN 15% OF ALL RESIDENTIAL SUITES SHALL BE PROVIDED WITH A BARRIER-FREE PATH OF TRAVEL FROM THE SUITE ENTRANCE DOOR TO, (a) AT LEAST ONE BEDROOM AT THE SAME LEVEL, AND (c) AT LEAST ONE BATHROOM (i) HAVING AN AREA NOT LESS THAN 4.5m2 AT THE SAME LEVEL, AND (ii) CONFORMING TO SENTENCE 9.5.3.3 (1)	1 BEDROOM	60%	1293
	2 BEDROOM	30%	647
	3 BEDROOM	10%	216
	TOTAL	100%	2156
REQUIRED B.F.	2156 X 15% =	323	PROVIDED B.F. 329

AMENITY

		INDOOR	OUTDOOR
PROVIDED AMENITY PER LEVEL (m2)	GROUND	1480	
	7TH	2810	4398
	TOTAL	4290	4398
RATIO / UNIT (m2)		1.99	2.04

PARKING

	LEVEL	RESIDENT	RESIDENT VISITOR	NON-RESIDENT
TARGET RATIO / UNIT		0.50/unit	0.15/unit	1.0B/100m2 GFA
TARGET PARKING SPACES		1078	324	17
TARGET TOTAL		1419		

PROVIDED PARKING PER LEVEL	P1		240	17
	P2	418	84	
	P3	502		
	PARTIAL P4	158		
TOTAL		1078	324	17
COMBINED TOTAL		1419		

BARRIER FREE PARKING SPACES
PER 201 TO 1000 TOTAL PARKING SPACES ON THE LOT,
MUST PROVIDE 2, PLUS 2% OF THE TOTAL NUMBER OF SPACES AS BARRIER FREE

	PARKING SUPPLY (RES.VISITOR + NON-RES.)	PARKING RATE	TOTAL
REQUIRED B.F.	341	X 2% + 2 =	9
PROPOSED B.F.	341	X 2% + 2 =	9
			4 TYPE A
			5 TYPE B

BIKE STORAGE

	RESIDENT LONG-TERM	RESIDENT SHORT-TERM	RETAIL
REQUIRED RATIO / UNIT	In no circumstances shall the number of minimum bicycle parking spaces required on a lot be greater than 100	In no circumstances shall the number of minimum bicycle parking spaces required on a lot be greater than 50	GREATER OF 2 OR 1 SPACE / 1000M2 GFA
REQUIRED SPACES		30 PER BUILDING	2
TOTAL REQUIRED SPACES		123	
PROPOSED RATIO / UNIT	0.5	0.1	GREATER OF 2 OR 1 SPACE / 1000M2 GFA
PROPOSED SPACES	1078	218	2
TOTAL PROPOSED SPACES		1298	

BUILDING HEIGHT

	GROUND FLOOR F.F.E.	STOREYS	HEIGHT+MECH. ****
BLDG E	107.00 m	45	171 m max.
BLDG F	107.00 m	48	171 m max.
BLDG G	107.00 m	45	171 m max.
BLDG H	107.00 m	40	171 m max.

BUILDING SETBACKS

NORTH	3.0 m + 14.0m MTO Setback
EAST	3.0 m
SOUTH	3.0 m
WEST	9.0 m

BLOCK 3

SITE AREA GROSS		29373 m2
SITE AREA NET	56%	16431 m2

LAND USE AREAS (m2)
% based on gross site area

STRATA PARK	18.2%	4970
PARKLAND	5.2%	1397
PDPS	0.3%	1183
MTO	0.0%	0
ROADS / R.O.W.	43.0%	12642
DEVELOPABLE LANDS	26.2%	7681
TOTAL	100%	29373

AREAS & UNITS BREAKDOWN

	Non-Res. GCA (m2) **	%	Residential GCA (m2) **	%	Unit Count ***
BLDG I	616	1.7%	35481	98.3%	420
BLDG J			31893	100%	370
BLDG K	653	1.5%	44100	98.5%	515
NON RES.	2024	100%			
TOTAL	3293	2.9%	111882	97.1%	1305
			115174		

LOT COVERAGE	16%
FSI GROSS	3.93 X
FSI NET	7.01 X

UNITS BREAKDOWN

	UNIT TYPE	PERCENTAGE %	UNIT COUNT ***
3.8.3.3 (4) NOT LESS THAN 15% OF ALL RESIDENTIAL SUITES SHALL BE PROVIDED WITH A BARRIER-FREE PATH OF TRAVEL FROM THE SUITE ENTRANCE DOOR TO, (a) AT LEAST ONE BEDROOM AT THE SAME LEVEL, AND (c) AT LEAST ONE BATHROOM (i) HAVING AN AREA NOT LESS THAN 4.5m2 AT THE SAME LEVEL, AND (ii) CONFORMING TO SENTENCE 9.5.3.3 (1)	1 BEDROOM	60%	783.0
	2 BEDROOM	30%	391.5
	3 BEDROOM	10%	131.0
	TOTAL	100%	1305
REQUIRED B.F.	1305 X 15% =	196	PROVIDED B.F. 196

AMENITY

		INDOOR	OUTDOOR
PROVIDED AMENITY PER LEVEL (m2)	GROUND	0	
	7TH	2237	2909
	TOTAL	2237	2909
RATIO / UNIT (m2)		1.71	2.23

PARKING

	LEVEL	RESIDENT	RESIDENT VISITOR	NON-RESIDENT
TARGET RATIO / UNIT		0.50/unit	0.15/unit	1.0B/100m2 GFA
TARGET PARKING SPACES		653	196	16
TARGET TOTAL		885		

PROVIDED PARKING PER LEVEL	P1	145	35	
	P2	46	160	36
	P3	397		
	PARTIAL P4	65		
TOTAL		653	196	36
COMBINED TOTAL		885.0		

BARRIER FREE PARKING SPACES
PER 201 TO 1000 TOTAL PARKING SPACES ON THE LOT,
MUST PROVIDE 2, PLUS 2% OF THE TOTAL NUMBER OF SPACES AS BARRIER FREE

	PARKING SUPPLY (RES.VISITOR + NON-RES.)	PARKING RATE	TOTAL
REQUIRED B.F.	232	X 2% + 2 =	7
PROPOSED B.F.	232	X 2% + 2 =	7
			3 TYPE A
			4 TYPE B

BIKE STORAGE

	RESIDENT LONG-TERM	RESIDENT SHORT-TERM	RETAIL
REQUIRED RATIO / UNIT	In no circumstances shall the number of minimum bicycle parking spaces required on a lot be greater than 100	In no circumstances shall the number of minimum bicycle parking spaces required on a lot be greater than 50	GREATER OF 2 OR 1 SPACE / 1000M2 GFA
REQUIRED SPACES		30 PER BUILDING	4
TOTAL REQUIRED SPACES		94	
PROPOSED RATIO / UNIT	0.5	0.1	GREATER OF 2 OR 1 SPACE / 1000M2 GFA
PROPOSED SPACES	653	131	4
TOTAL PROPOSED SPACES		787	

BUILDING HEIGHT

	GROUND FLOOR F.F.E.	STOREYS	HEIGHT+MECH. ****
BLDG I	104.50 m	40	152 m max.
BLDG J	104.50 m	35	152 m max.
BLDG K	104.50 m	45	152 m max.

BUILDING SETBACKS

NORTH	3.0 m
EAST	3.0 m
SOUTH	12.0 m
WEST	3.0 m

BLOCK 4

SITE AREA GROSS		21744 m2
SITE AREA NET	61%	13200 m2

LAND USE AREAS (m2)
% based on gross site area

STRATA PARK	9.9%	2144
PARKLAND	7.3%	1597
PDPS	8.7%	1893
MTO	0.0%	0
ROADS / R.O.W.	39.1%	8511
DEVELOPABLE LANDS	34.8%	7566
TOTAL	100%	21744

AREAS & UNITS BREAKDOWN

	Non-Res. GCA (m2) **	%	Residential GCA (m2) **	%	Unit Count ***
BLDG L	560	1.3%	43722	98.7%	484
BLDG M	738	1.8%	39300	98.2%	415
BLDG N			31304	100%	365
NON RES.	1510	100%			
TOTAL	2808	2.5%	109930	97.5%	1264
			112738		

LOT COVERAGE	22%
FSI GROSS	5.18 X
FSI NET	8.54 X

UNITS BREAKDOWN

	UNIT TYPE	PERCENTAGE %	UNIT COUNT ***
3.8.3.3 (4) NOT LESS THAN 15% OF ALL RESIDENTIAL SUITES SHALL BE PROVIDED WITH A BARRIER-FREE PATH OF TRAVEL FROM THE SUITE ENTRANCE DOOR TO, (a) AT LEAST ONE BEDROOM AT THE SAME LEVEL, AND (c) AT LEAST ONE BATHROOM (i) HAVING AN AREA NOT LESS THAN 4.5m2 AT THE SAME LEVEL, AND (ii) CONFORMING TO SENTENCE 9.5.3.3 (1)	1 BEDROOM	60%	758
	2 BEDROOM	30%	379
	3 BEDROOM	10%	127
	TOTAL	100%	1264
REQUIRED B.F.	1264 X 15% =	190	PROVIDED B.F. 190

AMENITY

		INDOOR	OUTDOOR
PROVIDED AMENITY PER LEVEL (m2)	GROUND	0	
	7TH	2237	1508
	TOTAL	2237	1508
RATIO / UNIT (m2)		1.77	1.19

PARKING

	LEVEL	RESIDENT	RESIDENT VISITOR	NON-RESIDENT
TARGET RATIO / UNIT		0.50/unit	0.15/unit	1.0B/100m2 GFA
TARGET PARKING SPACES		632	190	31
TARGET TOTAL		853		

PROVIDED PARKING PER LEVEL	P1	83	49	
	P2		141	31
	P3	313		
	PARTIAL P4	236		
TOTAL		632	190	31
COMBINED TOTAL		853		

BARRIER FREE PARKING SPACES
PER 201 TO 1000 TOTAL PARKING SPACES ON THE LOT,
MUST PROVIDE 2, PLUS 2% OF THE TOTAL NUMBER OF SPACES AS BARRIER FREE

	PARKING SUPPLY (RES.VISITOR + NON-RES.)	PARKING RATE	TOTAL
REQUIRED B.F.	221	X 2% + 2 =	7
PROPOSED B.F.	221	X 2% + 2 =	7
			3 TYPE A
			4 TYPE B

BIKE STORAGE

	RESIDENT LONG-TERM	RESIDENT SHORT-TERM	RETAIL
REQUIRED RATIO / UNIT	In no circumstances shall the number of minimum bicycle parking spaces required on a lot be greater than 100	In no circumstances shall the number of minimum bicycle parking spaces required on a lot be greater than 50	GREATER OF 2 OR 1 SPACE / 1000M2 GFA
REQUIRED SPACES		30 PER BUILDING	3
TOTAL REQUIRED SPACES		93	
PROPOSED RATIO / UNIT	0.5	0.1	GREATER OF 1 OR 1 SPACE / 1000M2 GFA
PROPOSED SPACES	632	126	3
TOTAL PROPOSED SPACES		761	

BUILDING HEIGHT

	GROUND FLOOR F.F.E.	STOREYS	HEIGHT+MECH. ****
BLDG L	105.00 m	45	152 m max.
BLDG M	105.00 m	40	152 m max.
BLDG N	105.00 m	35	152 m max.

BUILDING SETBACKS

NORTH	3.0 m
EAST	3.0 m
SOUTH	6.0 m
WEST	3.0 m

TOTAL SITE

SITE AREA GROSS		110488 m2
SITE AREA NET		70555 m2

LAND USE AREAS (m2)
% based on gross site area

STRATA PARK	17.3%	19117
PARKLAND	3.9%	4294
PDPS	3.5%	3865
MTO	4.1%	4551
ROADS / R.O.W.	32.0%	35382
DEVELOPABLE LANDS	39.2%	43779
TOTAL	100%	110488

AREAS & UNITS BREAKDOWN

	Non-Res. GCA (m2) **	%	Residential GCA (m2) **	%	Unit Count ***
TOTAL	9117	1.6%	560907	98.4%	5943
			570024		

LOT COVERAGE	21%
FSI GROSS	5.16 X
FSI NET	8.08 X

UNITS BREAKDOWN

	UNIT TYPE	PERCENTAGE %	UNIT COUNT ***
3.8.3.3 (4) NOT LESS THAN 15% OF ALL RESIDENTIAL SUITES SHALL BE PROVIDED WITH A BARRIER-FREE PATH OF TRAVEL FROM THE SUITE ENTRANCE DOOR TO, (a) AT LEAST ONE BEDROOM AT THE SAME LEVEL, AND (c) AT LEAST ONE BATHROOM (i) HAVING AN AREA NOT LESS THAN 4.5m2 AT THE SAME LEVEL, AND (ii) CONFORMING TO SENTENCE 9.5.3.3 (1)	1 BEDROOM	60%	4160
	2 BEDROOM	30%	2082
	3 BEDROOM	10%	696
	TOTAL	100%	6945
REQUIRED B.F.	6945 X 15% =	1042	PROVIDED B.F. 1042

AMENITY

	INDOOR	OUTDOOR
TOTAL	13127	15267
RATIO / UNIT (m2)	1.90	2.20

PARKING

	RESIDENT	RESIDENT VISITOR	NON-RESIDENT
TARGET RATIO / UNIT	0.50/unit	0.15/unit	1.0B/100m2 GFA
TOTAL TARGET PARKING SPACES	3472	1043	100
TARGET TOTAL		4616	

TOTAL		3473	1043	100
COMBINED TOTAL			4616	

BARRIER FREE PARKING SPACES

	TOTAL
REQUIRED B.F.	32
PROPOSED B.F.	32
	14 TYPE A
	18 TYPE B

BIKE STORAGE

	RESIDENT LONG-TERM	RESIDENT SHORT-TERM	RETAIL
REQUIRED RATIO / UNIT	In no circumstances shall the number of minimum bicycle parking spaces required on a lot be greater than 100	In no circumstances shall the number of minimum bicycle parking spaces required on a lot be greater than 50	GREATER OF 2 OR 1 SPACE / 1000M2 GFA
REQUIRED SPACES		30 PER BUILDING	13
TOTAL REQUIRED SPACES		481	
PROPOSED RATIO / UNIT	0.5	0.1	GREATER OF 2 OR 1 SPACE / 1000M2 GFA
PROPOSED SPACES	3473	695	13
TOTAL PROPOSED SPACES		4178	

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1.	SEP.12.2024	ISSUED TO CITY FOR PAC MEETING
2.	NOV.19.2024	ISSUED TO CITY FOR RFA
3.	OCT.22.2025	ISSUED TO CITY FOR RFA

ISSUED FOR REVISIONS

GRAZIANI + CORAZZA ARCHITECTS
ONTARIO ASSOCIATION OF ARCHITECTS
JOHANT GHIVENTI LICENCE 6299
T 905.795.2601 F 905.795.2644 WWW.GC-ARCHITECTS.COM

PROPOSED MIXED-USE DEVELOPMENT

SOUTH SERVICE ROAD

THE ROSE CORPORATION

OAKVILLE ONTARIO

PROJECT ARCHITECT:	J.C.
ASSISTANT DESIGNER:	B.D / J.L.
DRAWN BY:	B.D / C.R. / S.H. / J.L.
CHECKED BY:	D.B. / G.C.
PLOT DATE:	OCT.22.2025
JOB #	2127.23

STATISTICS & NOTES

A101

TITLEBLOCK SIZE: 610 x 900

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1.	SEP.17.2024 ISSUED TO CITY FOR PAC MEETING.	J. CHI
2.	NOV.01.2024 ISSUED TO CITY FOR OPA	J. CHI
3.	OCT.22.2025 ISSUED TO CITY FOR OPA	J. CHI

LEGEND

- PROPERTY LINE
- PHASE 1 LIMIT
- RETAINING WALL
- POPS
- PRIVATE OPEN SPACE
- STRATA PARK
- PARKLAND
- MTO SETBACK
- PEDESTRIAN OVERPASS
- EXISTING BUILDING

ISSUED FOR REVISIONS

GRAZIANI + CORAZZA ARCHITECTS
ONTARIO ASSOCIATION OF ARCHITECTS
JOHANT CHIVIENTI LICENCE 6299
T 905.795.2801 F 905.795.2944 WWW.GC-ARCHITECTS.COM

PROPOSED MIXED-USE DEVELOPMENT

SOUTH SERVICE ROAD

THE ROSE CORPORATION

OAKVILLE ONTARIO

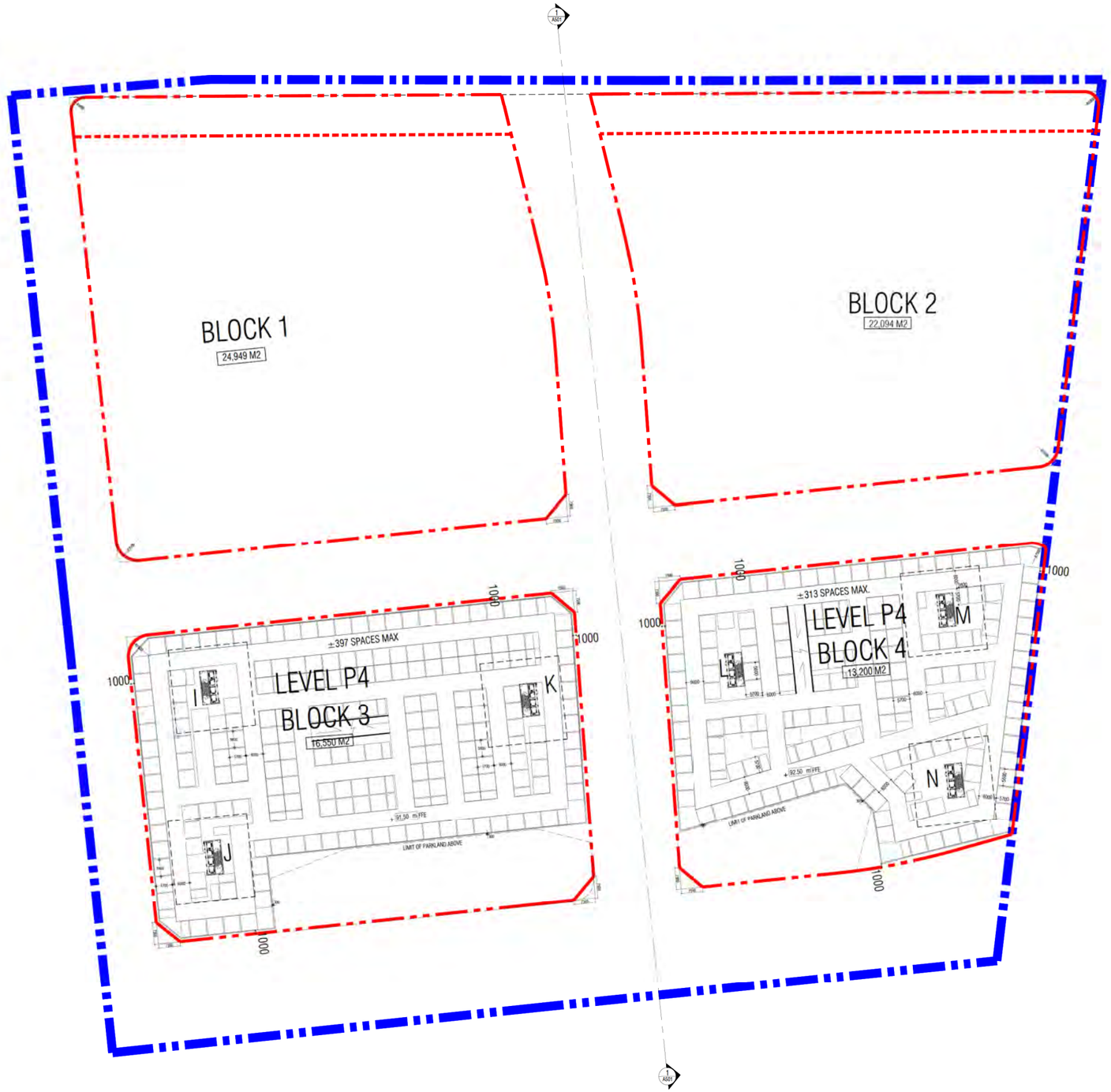
PROJECT ARCHITECT:	J.C.
ASSISTANT DESIGNER:	B.D / J.L.
DRAWN BY:	B.D / C.R. / S.H. / J.L.
CHECKED BY:	D.B. / G.C.
PLOT DATE:	OCT.15.2025
JOB #	2127.23

SITE PLAN

1:750

A102

TITLEBLOCK SIZE: 610 x 900



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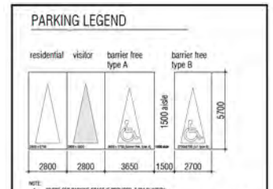
4.	SEP.17.2024 - ISSUED TO CITY FOR PAC MEETING.	J. CHI
2.	NOV.01.2024 - ISSUED TO CITY FOR OPA	J. CHI
3.	OCT.22.2025 - ISSUED TO CITY FOR OPA	J. CHI

PARKING LEGEND



NOTE:
1. WHERE ONE PARKING SPACE IS PROVIDED, 3.0M IN WIDTH.
2. WHERE TWO PARKING SPACES ARE PROVIDED SIDE-BY-SIDE, 2.9M IN WIDTH PER PARKING SPACE, OR 6.4M IN TOTAL SIDEWISE WIDTH).
3. WHERE A WALL, COLUMN, OR OTHER OBSTRUCTION IS LOCATED ABUTTING ANY PARKING SPACE, THE MIN. WIDTH OF A PARKING SPACE SHALL BE INCREASED BY 0.3 METERS.
4. AN EQUAL NUMBER OF TYPE A AND TYPE B BARRIER FREE SPACES IS REQUIRED. WHERE THE REQUIRED MINIMUM NUMBER OF BARRIER FREE SPACES IS ODD, THE REMAINING SPACE SHALL BE TYPE B.

ISSUED FOR REVISIONS

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PROPOSED MIXED-USE DEVELOPMENT

SOUTH SERVICE ROAD

THE ROSE CORPORATION

OAKVILLE ONTARIO

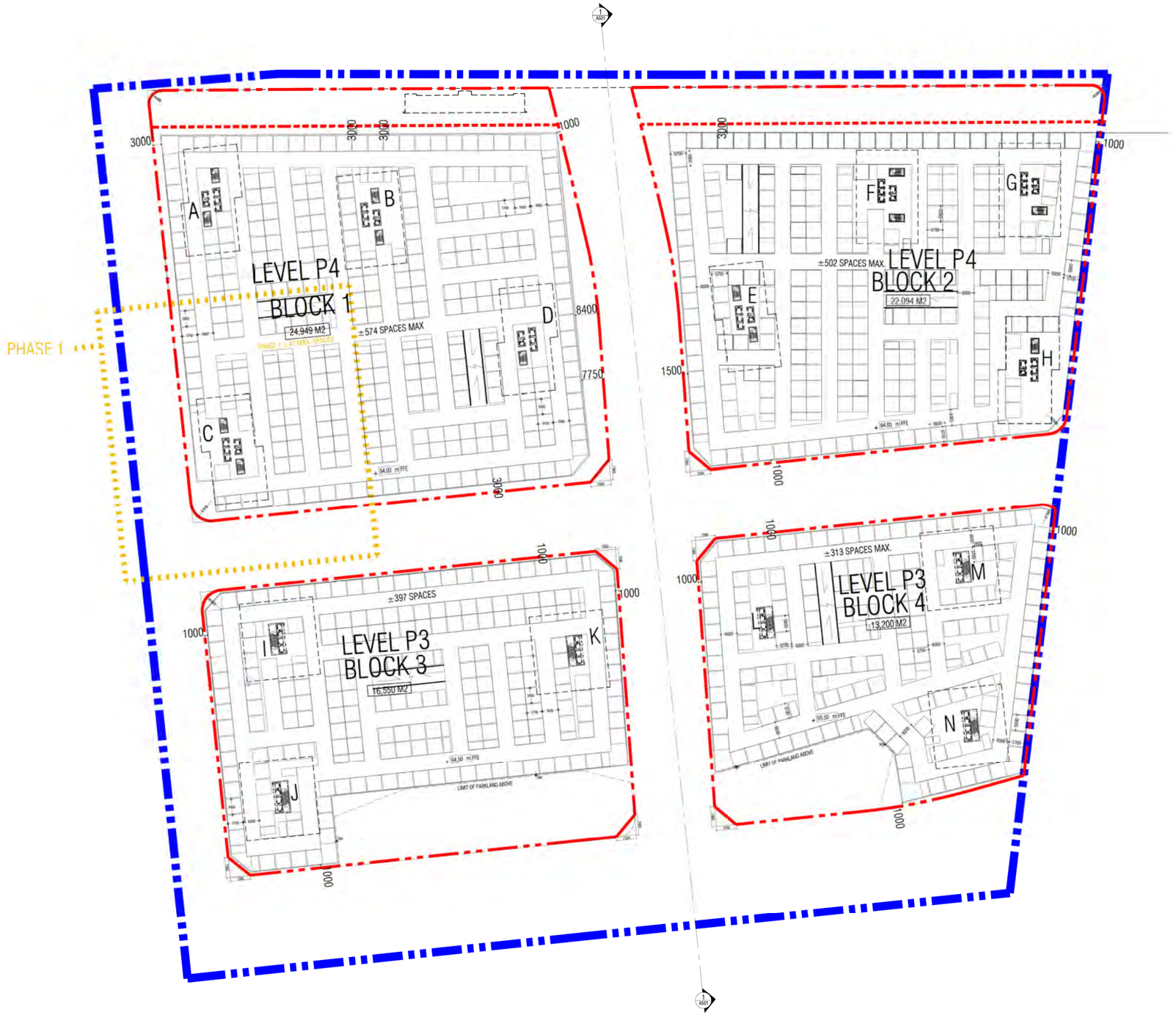
PROJECT ARCHITECT:	J.C.
ASSISTANT DESIGNER:	B.D / J.L.
DRAWN BY:	B.D / C.R. / S.H. / J.L.
CHECKED BY:	D.B. / G.C.
PLOT DATE:	OCT.17.2025
JOB #	2127.23

P4 UNDERGROUND PLAN

1:750

A201

TITLEBLOCK SIZE: 610 x 900



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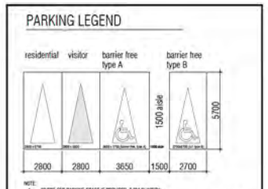
2.	NOV.01.2024 - ISSUED TO CITY FOR OPA	J. CHI
3.	OCT.22.2025 - ISSUED TO CITY FOR OPA	J. CHI

PARKING LEGEND



NOTE:
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2. WHERE TWO PARKING SPACES ARE PROVIDED SIDE-BY-SIDE, 2.9M IN WIDTH PER PARKING SPACE, OR 5.4M IN TOTAL (COMBINED WIDTH).
3. WHERE A WALL, COLUMN, OR OTHER OBSTRUCTION IS LOCATED ABUTTING ANY PARKING SPACE, THE MIN. WIDTH OF A PARKING SPACE SHALL BE INCREASED BY 0.3 METERS.
4. AN EQUAL NUMBER OF TYPE A AND TYPE B BARRIER FREE SPACES IS REQUIRED. WHERE THE REQUIRED MINIMUM NUMBER OF BARRIER FREE SPACES IS ODD, THE REMAINING SPACE SHALL BE TYPE B.

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PROPOSED MIXED-USE DEVELOPMENT

SOUTH SERVICE ROAD

THE ROSE CORPORATION

OAKVILLE ONTARIO

PROJECT ARCHITECT:	J.C.
ASSISTANT DESIGNER:	B.D / J.L.
DRAWN BY:	B.D / C.R. / S.H. / J.L.
CHECKED BY:	D.B. / G.C.
PLOT DATE:	OCT.17.2025
JOB #	2127.23

P4-P3 UNDERGROUND PLAN

1:750

A202

TITLEBLOCK SIZE: 610 x 900

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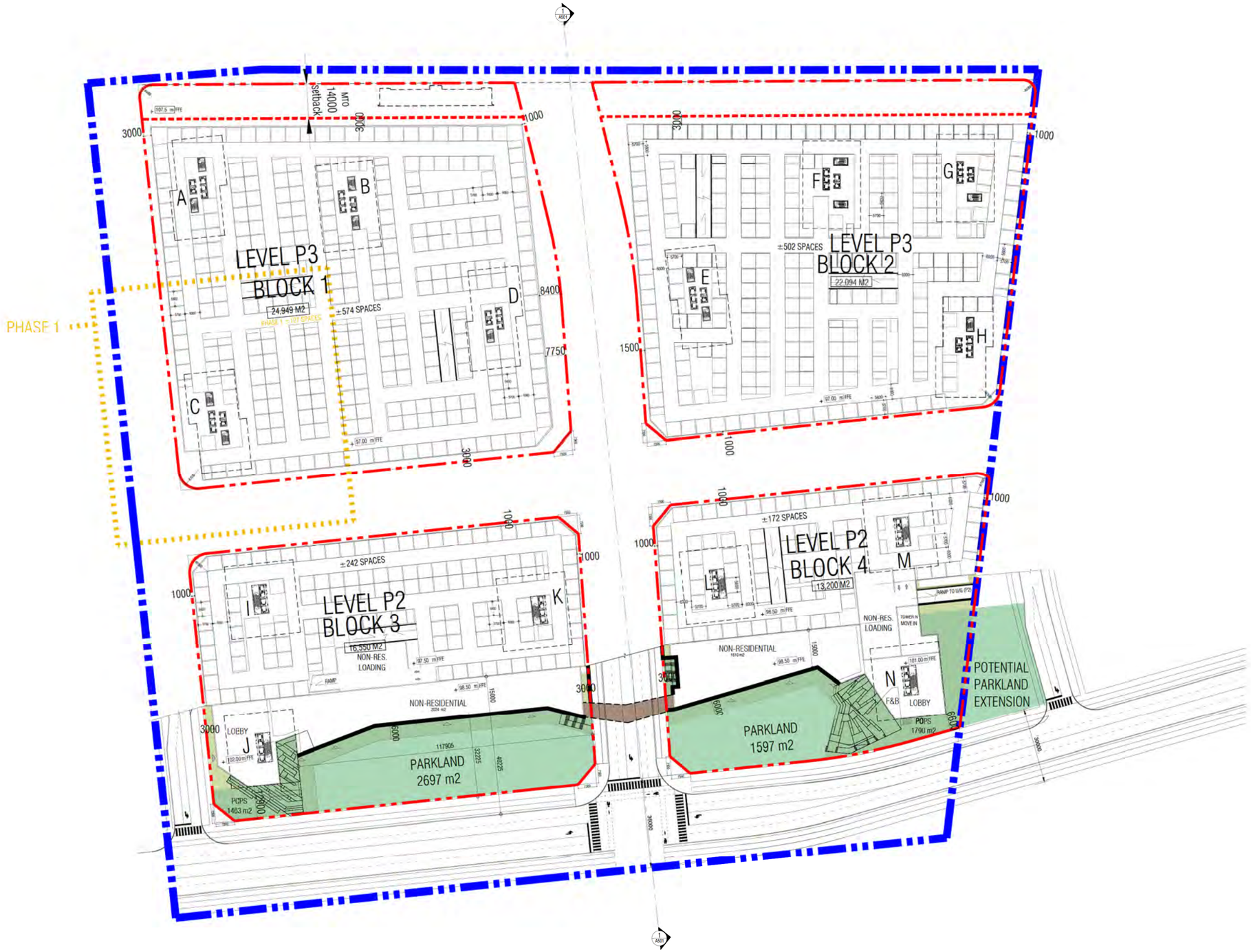
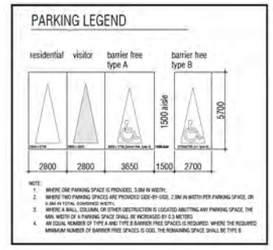
2.	NOV.01.2024 - ISSUED TO CITY FOR OPA	J. CHI
3.	OCT.22.2025 - ISSUED TO CITY FOR OPA	J. CHI



PARKING LEGEND



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PROPOSED MIXED-USE DEVELOPMENT

SOUTH SERVICE ROAD

THE ROSE CORPORATION

OAKVILLE ONTARIO

PROJECT ARCHITECT:	J.C.
ASSISTANT DESIGNER:	B.D / J.L.
DRAWN BY:	B.D / C.R. / S.H. / J.L.
CHECKED BY:	D.B. / G.C.
PLOT DATE:	OCT.17.2025
JOB #	2127.23

P3-P2 UNDERGROUND PLAN

1:750

A203

TITLEBLOCK SIZE: 610 x 900

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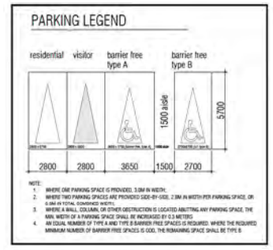
2.	NOV.01.2024 - ISSUED TO CITY FOR OPA	J. CHI
3.	OCT.22.2025 - ISSUED TO CITY FOR OPA	J. CHI

PARKING LEGEND



NOTE:
1. WHERE ONE PARKING SPACE IS PROVIDED, 3.0M IN WIDTH.
2. WHERE TWO PARKING SPACES ARE PROVIDED SIDE-BY-SIDE, 2.9M IN WIDTH PER PARKING SPACE, OR 6.4M IN TOTAL (COMBINED WIDTH).
3. WHERE A WALL, COLUMN, OR OTHER OBSTRUCTION IS LOCATED ABUTTING ANY PARKING SPACE, THE MIN. WIDTH OF A PARKING SPACE SHALL BE INCREASED BY 0.3 METERS.
4. AN EQUAL NUMBER OF TYPE A AND TYPE B BARRIER FREE SPACES IS REQUIRED. WHERE THE REQUIRED MINIMUM NUMBER OF BARRIER FREE SPACES IS ODD, THE REMAINING SPACE SHALL BE TYPE B

ISSUED FOR REVISIONS

GRAZIANI + CORAZZA ARCHITECTS

ONTARIO ASSOCIATION OF ARCHITECTS
JOHN V. CHIVENTI
LICENCE 6299

T 905.795.2601 F 905.795.2644 WWW.GC-ARCHITECTS.COM

PROPOSED MIXED-USE DEVELOPMENT

SOUTH SERVICE ROAD

THE ROSE CORPORATION

OAKVILLE — ONTARIO

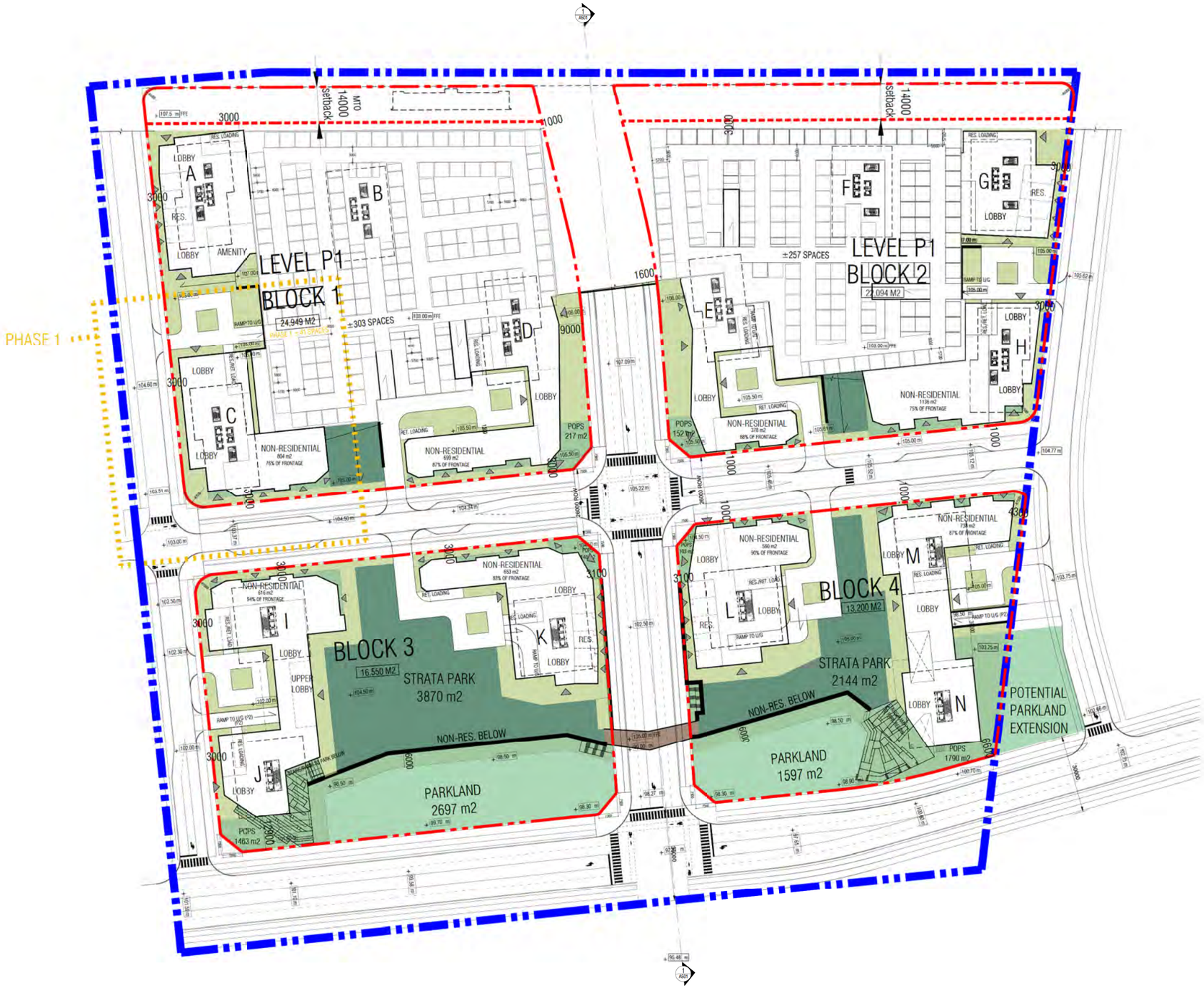
PROJECT ARCHITECT:	J.C.
ASSISTANT DESIGNER:	B.D / J.L.
DRAWN BY:	B.D / C.R. / S.H. / J.L.
CHECKED BY:	D.B. / G.C.
PLOT DATE:	OCT.17.2025
JOB #	2127.23

P2-P1 UNDERGROUND PLAN

1:750

A204

TITLEBLOCK SIZE: 610 x 900



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PARKING LEGEND

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GRAZIANI + CORAZZA ARCHITECTS

ONTARIO ASSOCIATION OF ARCHITECTS
JOHANN CHIVENTI
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PROPOSED MIXED-USE DEVELOPMENT

SOUTH SERVICE ROAD

THE ROSE CORPORATION

OAKVILLE ONTARIO

PROJECT ARCHITECT:	J.C.
ASSISTANT DESIGNER:	B.D / J.L.
DRAWN BY:	B.D / C.R. / S.H. / J.L.
CHECKED BY:	D.B. / G.C.
PLOT DATE:	OCT.17.2025
JOB #	2127.23

P1-LOWER GROUND PLAN

1:750

A205

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LEGEND

- PROPERTY LINE
- PHASE 1 LIMIT
- RETAINING WALL
- POPS
- PRIVATE OPEN SPACE
- STRATA PARK
- PARKLAND
- MTO SETBACK
- PEDESTRIAN OVERPASS
- EXISTING BUILDING

OVERLAY LEGEND

- AMENITY
- RESIDENTIAL
- NON-RESIDENTIAL

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PROPOSED MIXED-USE DEVELOPMENT

SOUTH SERVICE ROAD

THE ROSE CORPORATION

OAKVILLE ONTARIO

PROJECT ARCHITECT:	J.C.
ASSISTANT DESIGNER:	B.D / J.L.
DRAWN BY:	B.D / C.R. / S.H. / J.L.
CHECKED BY:	D.B. / G.C.
PLOT DATE:	OCT.15.2025
JOB #	2127.23

GROUND FLOOR PLAN

1:750 A301

TITLEBLOCK SIZE: 610 x 900

Appendix C:
Terms of Reference

MEMORANDUM

TO

Matt Krusto, Halton Region

Aquisha Khan, Town of Oakville

Usman Akhtar, MTO

FROM	PROJECT	DATE
Clara Filipetti	6931-03 420-468 South Service Road	September 18, 2024

RE: 420-468 SOUTH SERVICE ROAD – PROPOSED TRAFFIC ANALYSIS TERMS OF REFERENCE

BA Group has been retained by The Rose Corporation to provide transportation consulting services in support of an Official Plan Amendment (OPA) being made to the Town of Oakville for a proposed mixed-use development to be located at the lands municipally known as 420-268 South Service Road East (herein referred to as "the site"), in the southeast quadrant of the Queen Elizabeth Way (QEW) / Trafalgar Road. The 27.3 acre site is a roughly rectangular parcel bounded by the QEW to the north, commercial uses to the west and east, and the Lakeshore West GO rail corridor to the south. The site location is shown in **Exhibit 1**.

The site was formerly the location of the General Electric Canada Lamp Plant. It is currently vacant, with the exception of a 2-storey former GE office building along South Service Road.

A Temporary Use By-law was granted in May 2024 to permit the temporary use of the site for the outdoor storage of trailers, motor vehicles and shipping containers for use as storage containers.

The proposed redevelopment is for a mixed-use community containing in the order of 7,000 units, a mix of non-residential uses and a large public park. A network of new streets is contemplated through the site and through the surrounding Midtown Oakville neighbourhood, consistent with the Town of Oakville's Midtown Oakville Draft OPA (April 2024).

Exhibit 1: Site Location

1.0 SCOPE OF WORK

1.1 Study Area Intersections

The study area is proposed to comprise of the following intersections:

Existing Intersections

- Trafalgar Road & Iroquois Shore Road / Leighland Avenue
- Trafalgar Road & North Service Road / Highway 403 WB Off-Ramp
- Trafalgar Road & Highway 403 EB Off-Ramp
- Trafalgar Road & Argus Road
- Trafalgar Road & Cross Avenue / South Service Road East
- Trafalgar Road & Cornwall Road
- South Service Road East / Davis Road
- South Service Road East / Chartwell Road
- South Service Road East / The Canadian Road & Royal Windsor Drive / Highway 403 WB On/Off Ramp

Future Intersections (to be constructed with the buildout of the site and the Midtown Oakville Road Network)

- Cross Avenue / South Service Road
- Site-related Intersections (to be determined)

1.2 Traffic Analysis Periods

Traffic analysis will be undertaken for the weekday morning and afternoon peak hours within the peak periods of 7:00 a.m. – 9:00 a.m. and 4:00 p.m. – 6:00 p.m., respectively.

1.3 Traffic Analysis Scenarios

Traffic analysis will assume a 20-year buildout for the site as well as the Midtown Oakville OPA road network. The following scenarios will be reviewed:

- Existing Conditions (2024)
- Future Background Conditions (2044), assuming background development traffic (discussed below) and the full buildout of the ultimate road network
- Future Total Conditions (2044), assuming the buildout of the site and the full buildout of the ultimate road network

1.4 Study Guidelines / Policies

The following guidelines will be referenced:

- Halton Region's Transportation Impact Study Guidelines (January 2015)

- Halton Region's Access Management Guideline (January 2015)
- Town of Oakville's Livable by Design Manuals
- Draft Midtown Oakville Official Plan Amendment (2024)

1.5 Data Collection

Traffic data collection, including data related to pedestrians, cyclists, vehicles, trucks, and buses has been undertaken by Spectrum Traffic Data Inc. on behalf of BA Group on Tuesday, June 4th, 2024. The relevant signal timing plans have been requested from the Town of Oakville.

1.6 Background Traffic

1.6.1 General Corridor Growth

Historical counts at intersections along Trafalgar Road in the study area will be reviewed to determine an appropriate corridor growth assumption, if any, to apply along the study area roads.

1.6.2 Background Developments

Potential future developments based on active applications found on the Town of Oakville's development application portal are being reviewed to determine the additional traffic to be added to the study area intersections. The following developments have been identified and will be included as a part of this study:

- 157-165 Cross Avenue
- 177 Cross Avenue
- 207 Cross Avenue & 571 Argus Road
- 570 Argus Road
- 590 Argus Road
- 166 South Service Road
- 271 Cornwall Road
- 349 Davis Road
- 599 Lyons Lane
- 627 Lyons Lane

1.7 Site Trip Generation

Travel demands for vehicles, transit users, cyclists, and pedestrians will be determined using information from the 11th Edition of the ITE Trip Generation Manual.

Additionally, the Transportation Tomorrow Survey (TTS) will be reviewed to determine mode splits, in conjunction with information collected from the proxy site surveys.

1.8 Trip Distribution

Vehicle, pedestrian, transit, and cycling trips will be distributed using information from the TTS as well as a review of existing travel patterns from the turning movement counts.

1.9 Traffic Analysis

Traffic analysis will be undertaken using Synchro 11 software.

2.0 TRANSPORTATION DEMAND MANAGEMENT

A TDM Plan, which seeks to reduce the number of single-occupant vehicle trips generated by the site, will be provided in the TIS.

3.0 VEHICLE PARKING, LOADING AND BICYCLE PARKING

The appropriateness of the supply of vehicle parking, loading and bicycle parking spaces for the site will be reviewed in the context of relevant Town and Provincial zoning bylaws and policies.

Outlook

RE: [EXTERNAL] 420-468 South Service Road - Transportation Study Terms of Reference

From Aquisha Khan <aquisha.khan@oakville.ca>
Date Wed 2024-10-09 12:39 PM
To Clara Filipetti <Clara.Filipetti@bagroup.com>
Cc Amy Z. Jiang <jiang@bagroup.com>; matt.kursto@halton.ca <matt.kursto@halton.ca>; Akhtar, Usman (MTO) <usman.akhtar@ontario.ca>; 'Khan, Ayesha' <Ayesha.Khan@halton.ca>; Eric Chan <eric.chan@oakville.ca>

1 attachment (967 KB)
[EXTERNAL] FW: 420-468 South Service Road - Transportation Study Terms of Reference;

Hi Clara,

Thank you for providing a copy of the TOR for our review.

- Please structure the Traffic Impact Assessment Study as per Provincial TIS Guidelines and Headings
- Please use a 3% growth rate for all municipal roadways within the study area.
- Please include in the Study intersections:
  - Chartwell Road & Cornwall Road
  - Please use the approved EA report (2013) for the anticipated/proposed intersections on the east side of Trafalgar. (please note these intersections may change throughout the duration of the project at which time the report would require updating).
- Please include a Parking section in the report
- Please include a TDM section in the report
- Please include a Traffic Calming section in the report
- Please include a Sightline Review section in the report
- Please include an Access review section in the report.
- Please include all warrant(s) analysis in the Appendix.

If there are any questions or concerns to the above, please feel free to contact me.

Have a great day and a memorable Thanksgiving 😊!

Aquisha Khan, (She/Her/Hers), P. Eng.,
Transportation Engineer, East Oakville
Transportation Planning Services,
Town of Oakville | P: 905-845-6601, Ext. 3236 | C: 289-952-9345 | www.oakville.ca

Regards

Aquisha Khan, (She/Her/Hers), P. Eng.
Transportation Engineer
Transportation and Engineering
Town of Oakville | 905-845-6601, ext. 3236 | www.oakville.ca

Vision: A vibrant and livable community for all
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From: Clara Filipetti <Clara.Filipetti@bagroup.com>
Sent: Wednesday, September 18, 2024 2:11 PM

To: matt.kursto@halton.ca; Akhtar, Usman (MTO) <usman.akhtar@ontario.ca>; Aquisha Khan <aquisha.khan@oakville.ca>
Cc: Amy Z. Jiang <jiang@bagroup.com>
Subject: [EXTERNAL] 420-468 South Service Road - Transportation Study Terms of Reference

You don't often get email from clara.filipetti@bagroup.com. Learn why this is important

Hi All,

BA Group has been retained to provide transportation consulting services in support of a proposed development located at 420-468 South Service Road in the Town of Oakville. Please find attached a proposed terms of reference for this work.
Let us know if you have any questions or concerns surrounding the TOR. We look forward to receiving your feedback.

Thank you,

Clara

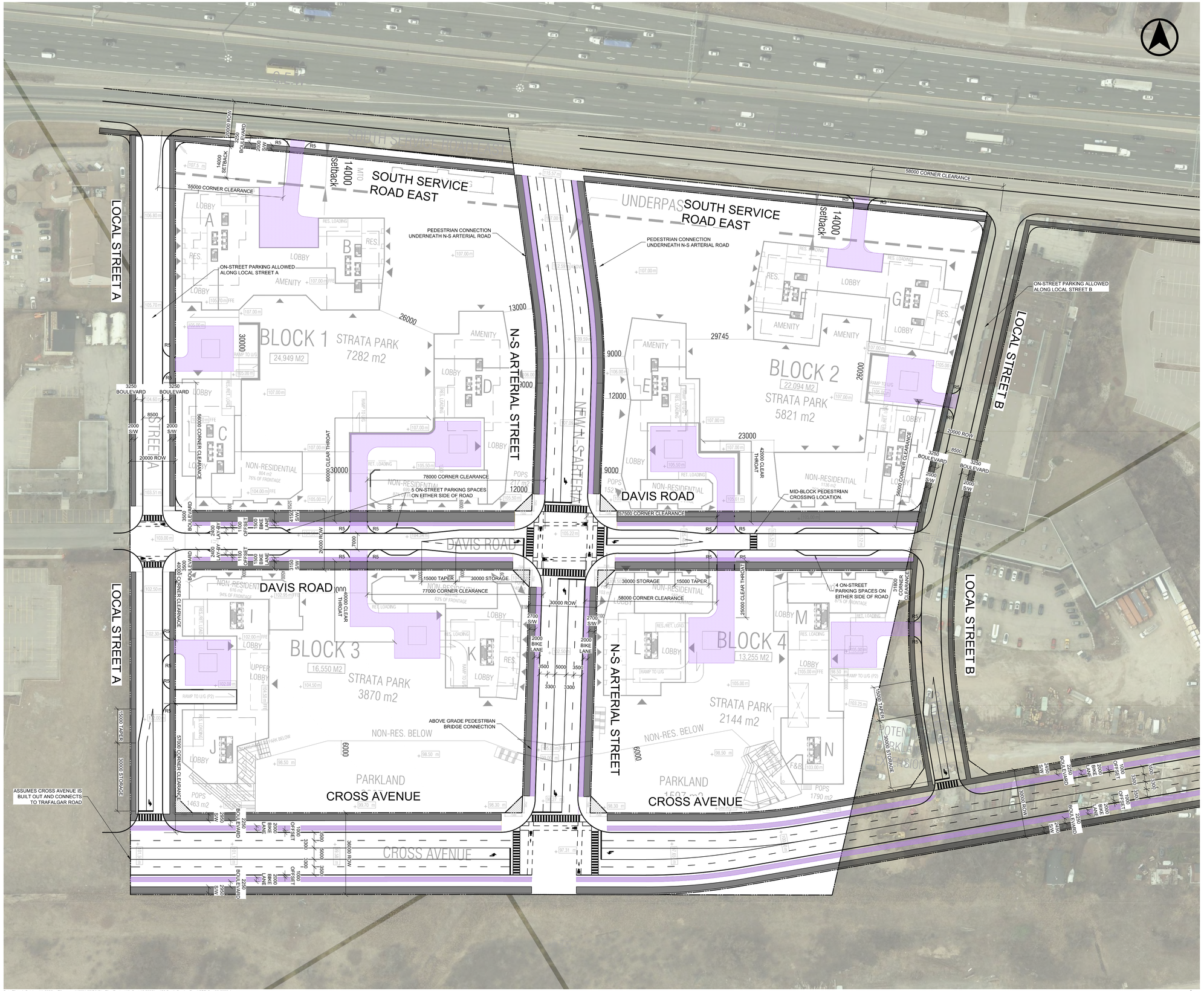
Clara Filipetti
Transportation Analyst

BA Consulting Group Ltd.

95 St. Clair Avenue West, Suite 1000 | Toronto
416 961 7110 x196 | Clara.Filipetti@bagroup.com

BA Consulting Group Ltd.

Appendix D:
Functional Plan of Site Street Network



00 MM-DD-YR INT REVISION NOTE

BA Group

BA Consulting Group Ltd.
1000 – 95 St. Clair Ave. W,
Toronto ON M4V 1N6
TEL 416 961 7110
EMAIL bagroup@bagroup.com

MOVEMENT IN URBAN ENVIRONMENTS
BAGROUP.COM

420 SOUTH SERVICE ROAD

FUNCTIONAL ROAD PLAN

FULL BUILD OUT

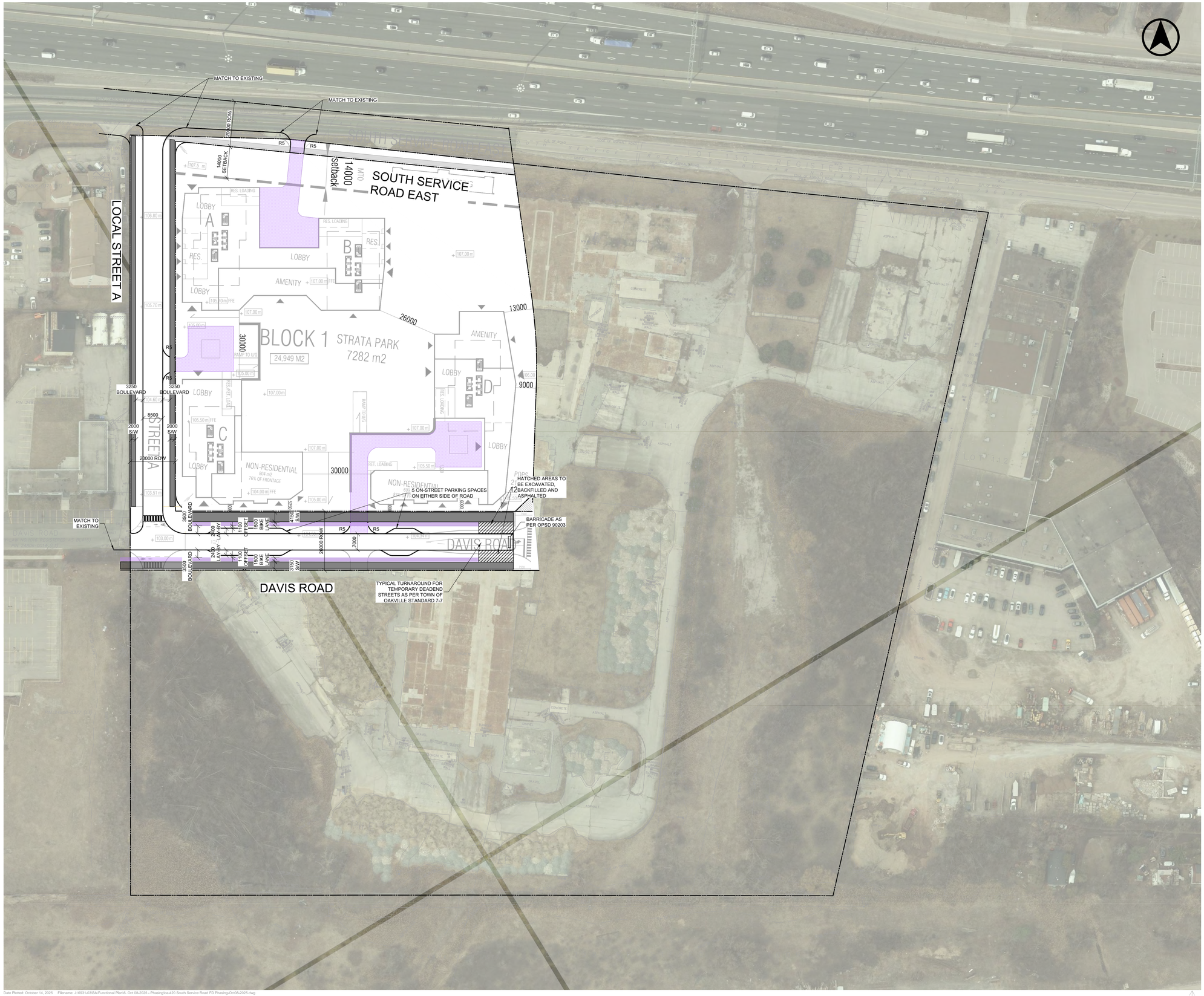
Date: October 14, 2025

Project No.: 6931-03

Scale: 1:750 (0, 15, 30m)

FD-02

Date Plotted: October 14, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg



Date Plotted: October 14, 2025 Filename: J:\6931-03\BA\Functional Plan\6. Oct 08-2025 - Phasing\ba-420 South Service Road FD Phasing-Oct08-2025.dwg

00	MM-DD-YR	INT REVISION NOTE

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Toronto ON M4V 1N6
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EMAIL bagroup@bagroup.com

MOVEMENT IN URBAN ENVIRONMENTS
BAGROUP.COM

420 SOUTH SERVICE ROAD

FUNCTIONAL ROAD PLAN

PHASE 1

Date: October 14, 2025

Project No.: 6931-03

Scale: 1:750 (0, 15, 30m)

FD-01

Appendix E:
Proposed Cross-Sections of Site Street Network

Date Plotted: September 30, 2025 Filename: J:\6931-03\BA\Functional Plan\5. Sept 23-2025\ba-420 South Service Rd-Cross Section Elements-Sept 23-2025-6931-03.dwg

STREET A - 20M ROW

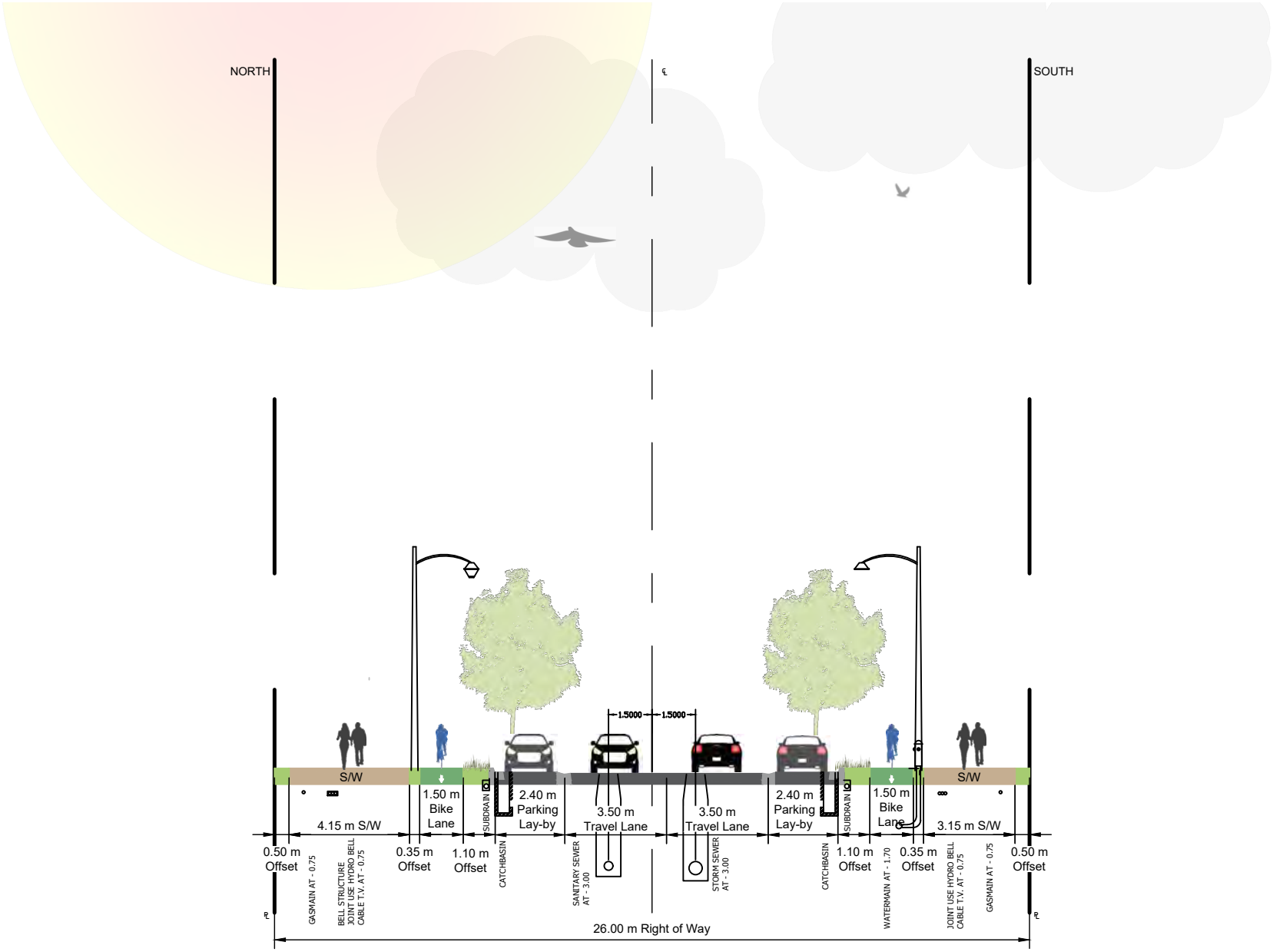
Date Plotted: September 30, 2025 Filename: J:\6931-03\BA\Functional Plan\5. Sept 23-2025\ba-420 South Service Rd-Cross Section Elements-Sept 23-2025-6931-03.dwg

STREET B - 20M ROW

Date Plotted: September 30, 2025 Filename: J:\6931-03\BA\Functional Plan\5. Sept 23-2025\ba-420 South Service Rd-Cross Section Elements-Sept 23-2025-6931-03.dwg

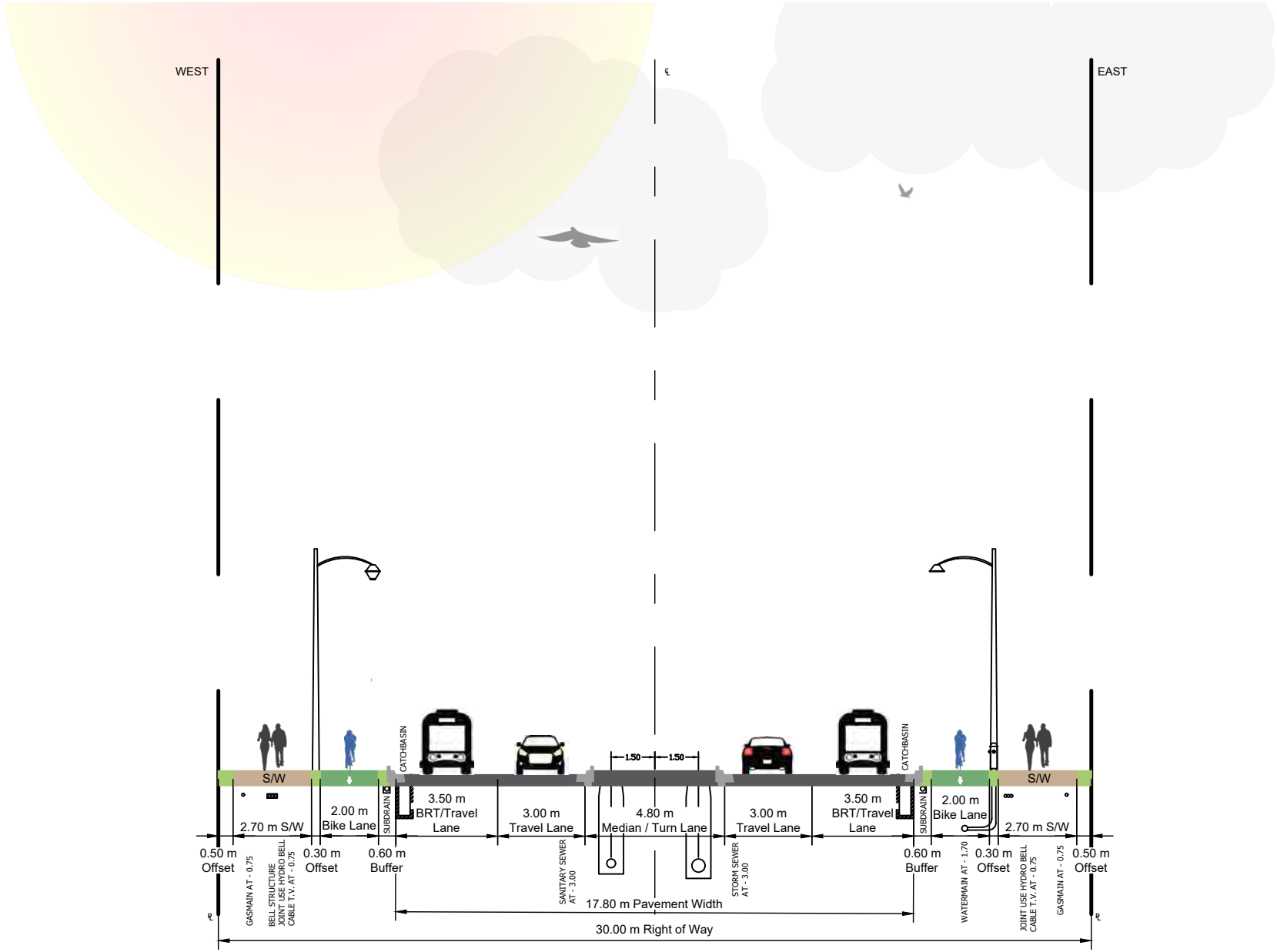
SOUTH SERVICE ROAD EAST - 20M ROW

Date Plotted: September 30, 2025 Filename: J:\6931-03\BA\Functional Plan\5. Sept 23-2025\ba-420 South Service Rd-Cross Section Elements-Sept 23-2025-6931-03.dwg



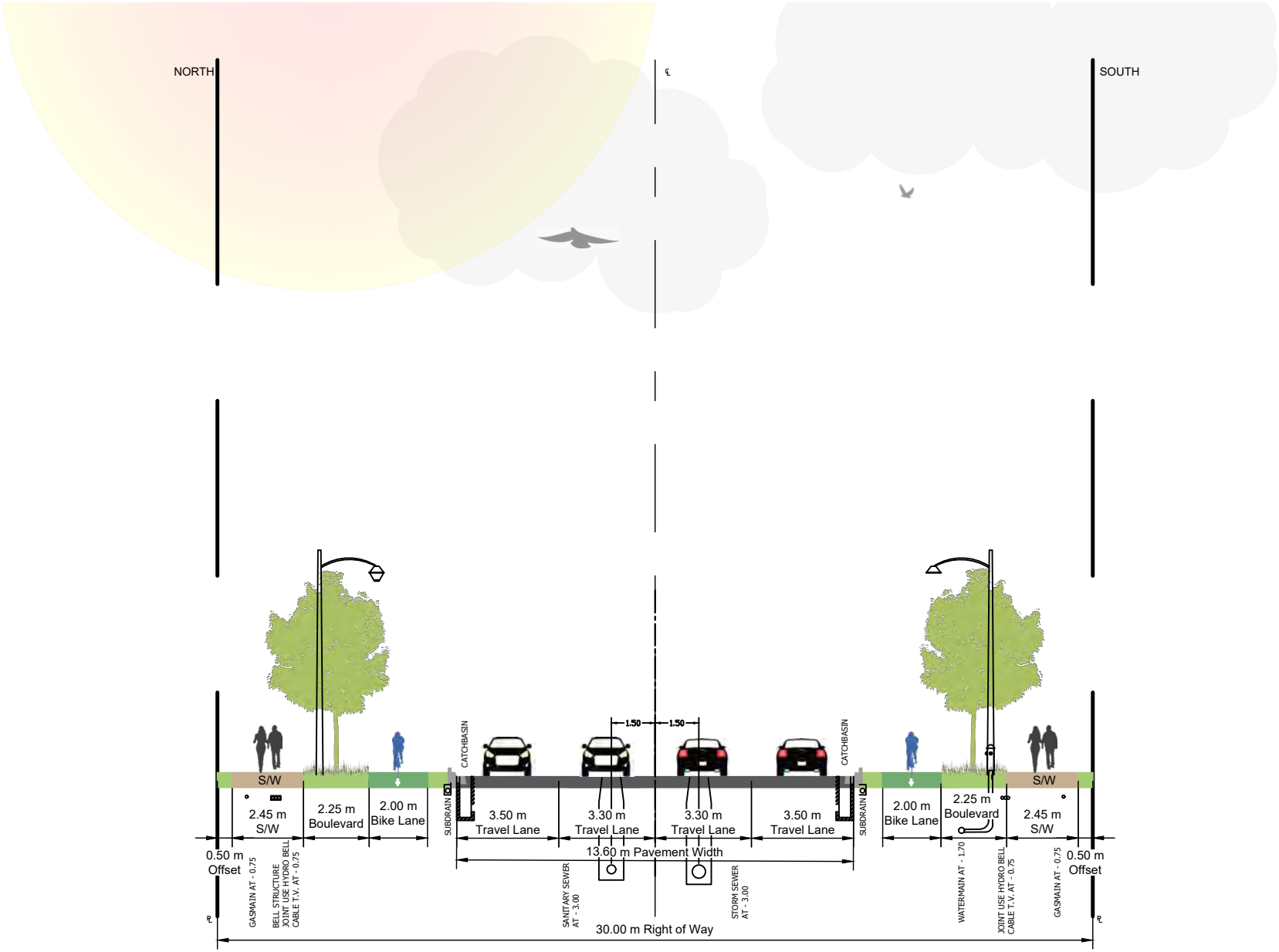
DAVIS ROAD - 26M ROW

Date Plotted: September 30, 2025 Filename: J:\6931-03\BA\Functional Plan\5. Sept 23-2025\ba-420 South Service Rd-Cross Section Elements-Sept 23-2025-6931-03.dwg



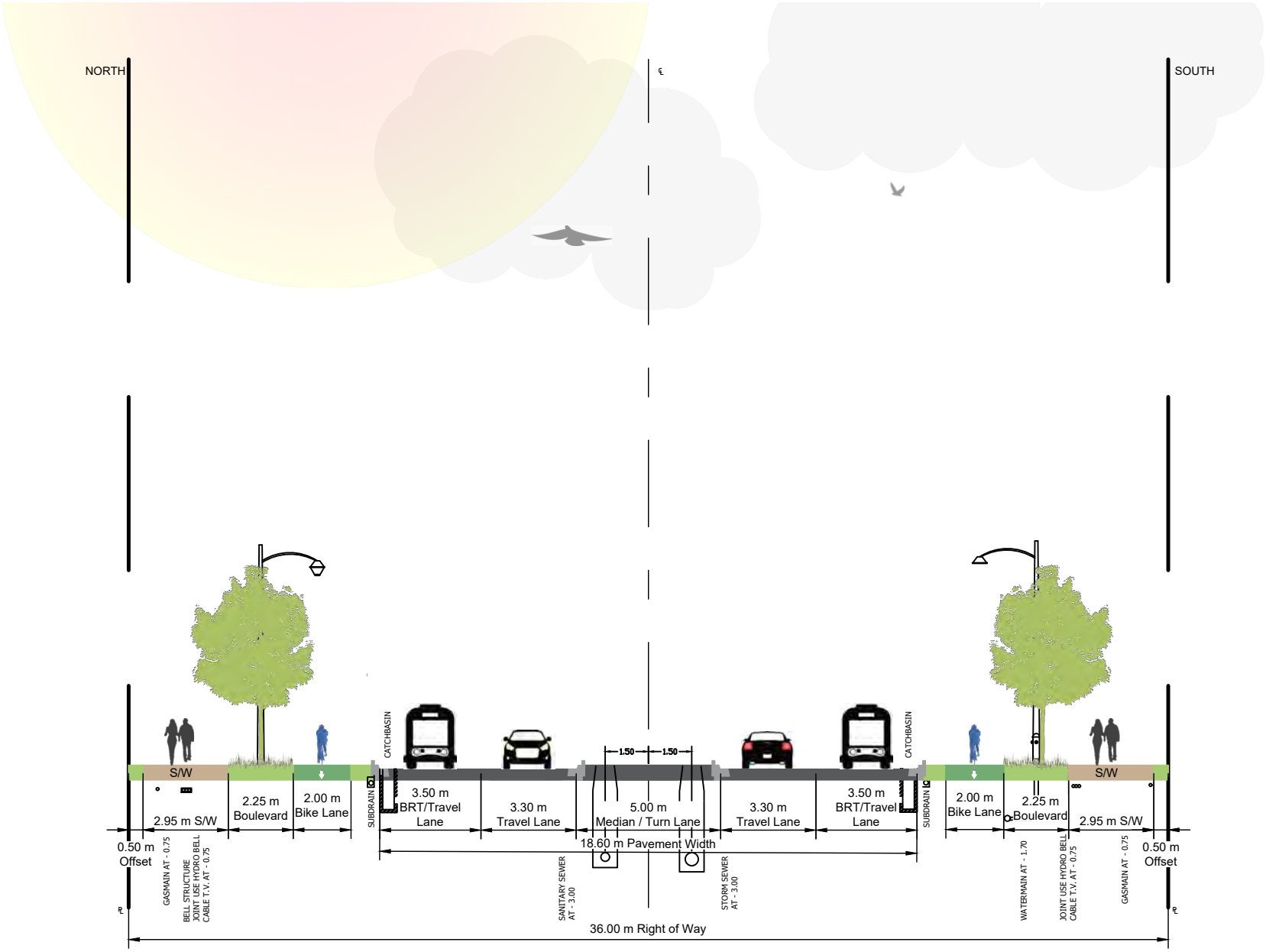
N-S ARTERIAL ROAD - 30M ROW

Date Plotted: September 30, 2025 Filename: J:\6931-03\BA\Functional Plan\5. Sept 23-2025\ba-420 South Service Rd-Cross Section Elements-Sept 23-2025-6931-03.dwg



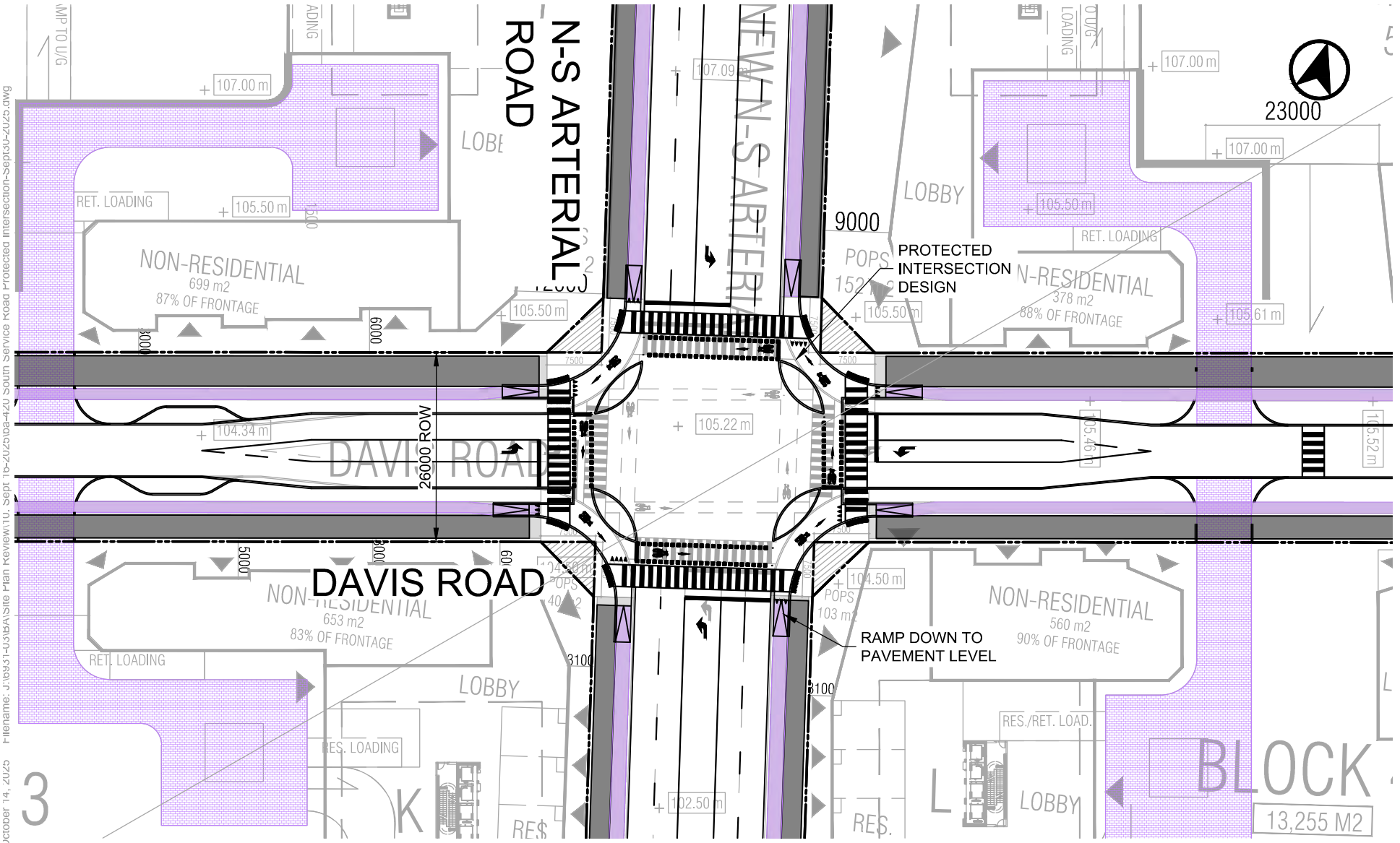
CROSS AVENUE EAST OF N-S ARTERIAL ROAD - 30M ROW

Date Plotted: September 30, 2025 Filename: J:\6931-03\BA\Functional Plan\5. Sept 23-2025\ba-420 South Service Rd-Cross Section Elements-Sept 23-2025-6931-03.dwg



CROSS AVENUE WEST OF N-S ARTERIAL ROAD - 36M ROW

Appendix F:
Alternative Design – Protected Intersection at N-S Arterial Street at Davis Riad



Scale

420 SOUTH SERVICE ROAD

FUNCTIONAL ROAD PLAN

PROTECTED INTERSECTION OPTION

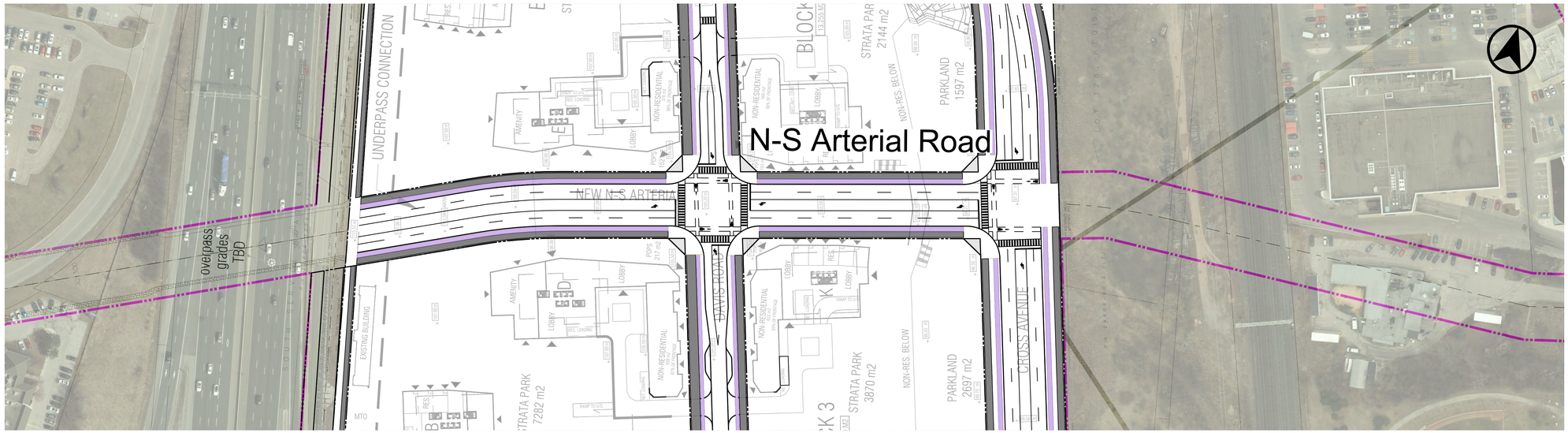
DAVIS ROAD / N-S ARTERIAL ROAD INTERSECTION

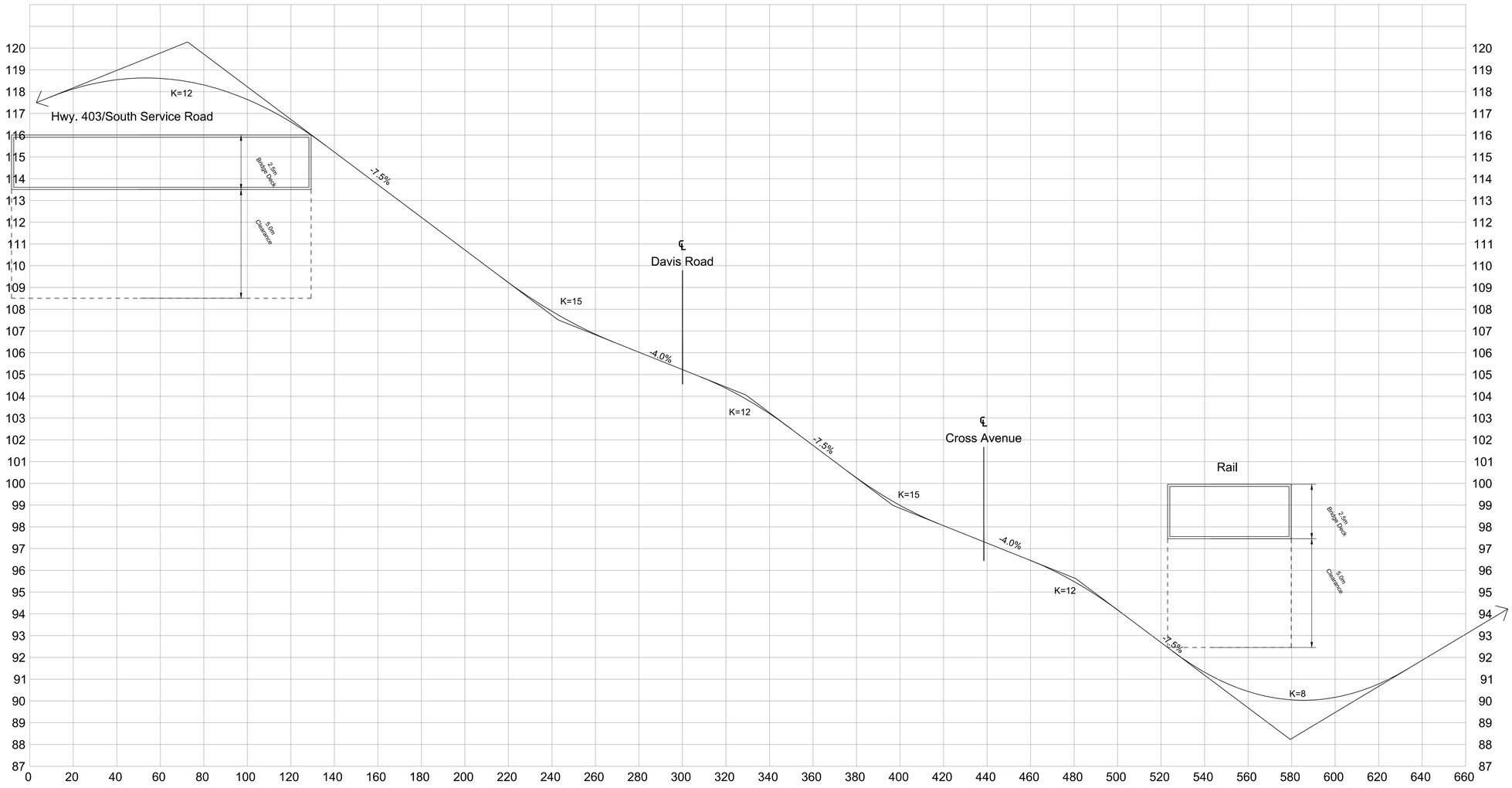
BA Group

Project:	420 South Service Road
Project No.	6931-03
Date:	October 14, 2025
Revised:	--
Drawing No.	SPR-01

Date Plotted: October 14, 2025 Filename: J:\6931-03\BA\Site Plan Review\10_Sept 16-2025\6931-420 South Service Road Protected Intersection-Sept30-2025.dwg

Appendix G:
N-S Arterial Street – Vertical Profile





Profile of N-S Arterial Road

GENERAL NOTES

1. DESCRIPTON
2. DESRIPTION

00	MM-DD-YR	INT	REVISION NOTE

BA Consulting Group Ltd,
1000 – 55 St. Clair Ave. W,
Toronto ON M4V 1N6
TEL 416 961 7110
EMAIL bagroup@bagroup.com

MOVEMENT IN URBAN ENVIRONMENTS
BAGROUP.COM

420 SOUTH SERVICE ROAD

VERTICAL PROFILE OF N-S ARTERIAL ROAD

Date: Month Day, 2016

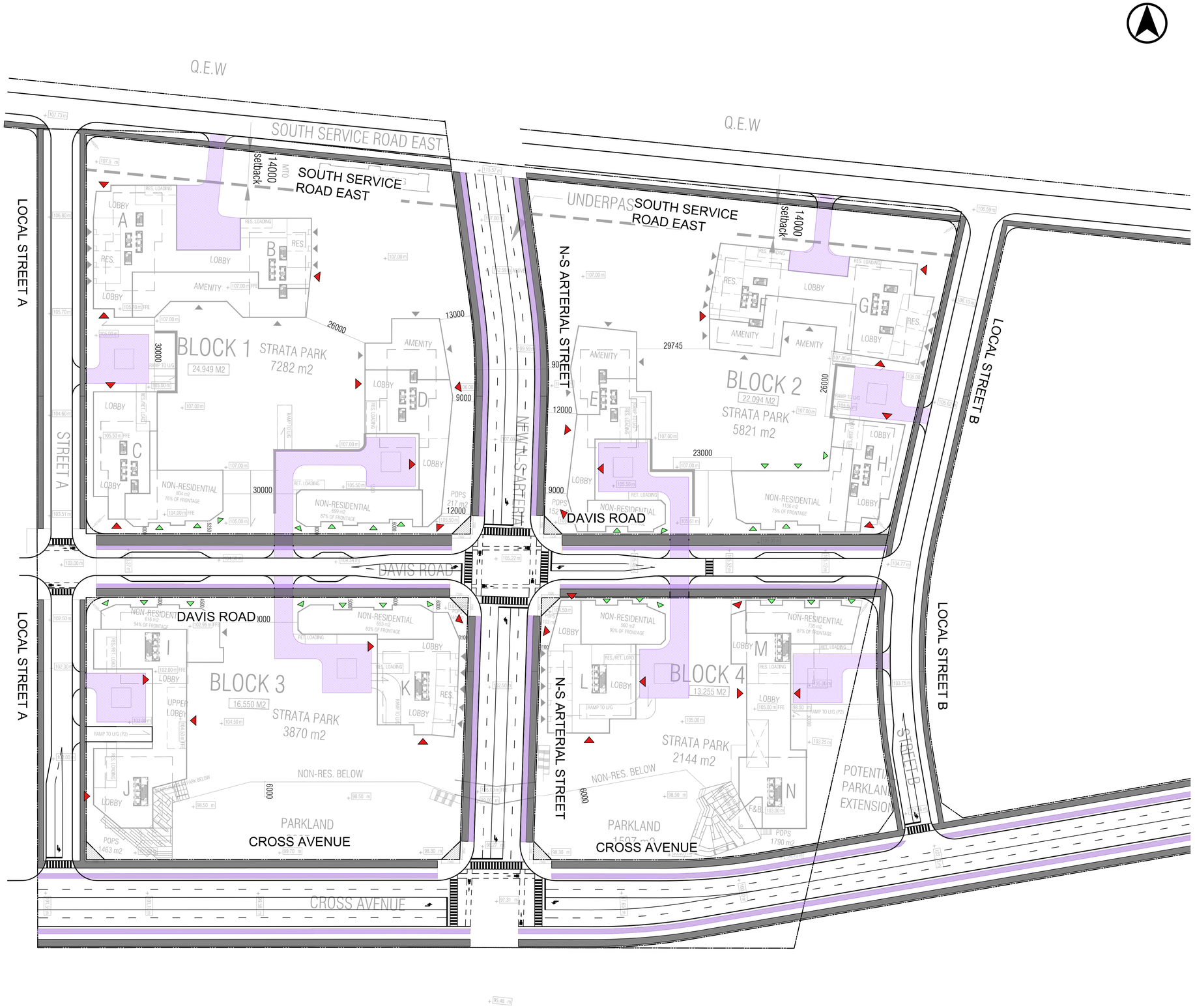
Project No.: 0000-00

Scale: 1:1,000 (0 10 20 30 40 50m)

PROFILE-01

Date Plotted: October 9, 2025 Filename: J:\6931-03\BA\Functional Plan\Profiles\ba Alignments With Profiles Jul2-24.dwg

Appendix H:
Pedestrian Circulation Plan


Q.E.W
SOUTH SERVICE ROAD EAST
LOCAL STREET A
STREET A
14000 Setback
MTO
SOUTH SERVICE ROAD EAST
Q.E.W
UNDERPASS
SOUTH SERVICE ROAD EAST
14000 Setback
N-S ARTERIAL STREET
LOCAL STREET B
BLOCK 1
STRATA PARK
7282 m2
24,949 M2
BLOCK 2
22,094 M2
STRATA PARK
5821 m2
BLOCK 3
16,550 M2
STRATA PARK
3870 m2
BLOCK 4
13,255 M2
STRATA PARK
2144 m2
NEW N-S ARTERIAL
DAVIS ROAD
DAVIS ROAD
CROSS AVENUE
CROSS AVENUE
PARKLAND
PARKLAND
POTENTIAL PARKLAND EXTENSION
NON-RESIDENTIAL
NON-RESIDENTIAL
NON-RESIDENTIAL

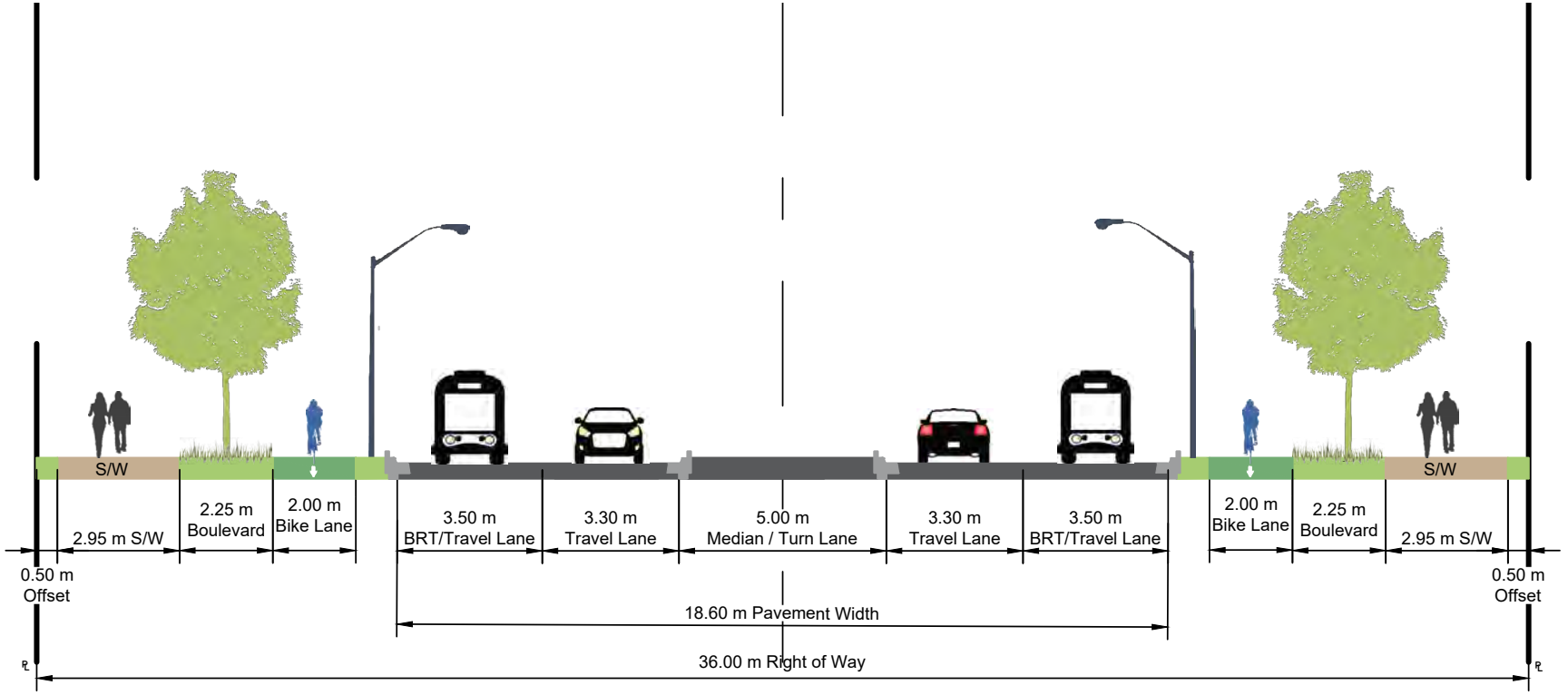
Appendix I:
Streetscape Plan of Davis Road “Main Street”

STREETSCAPE PLANS

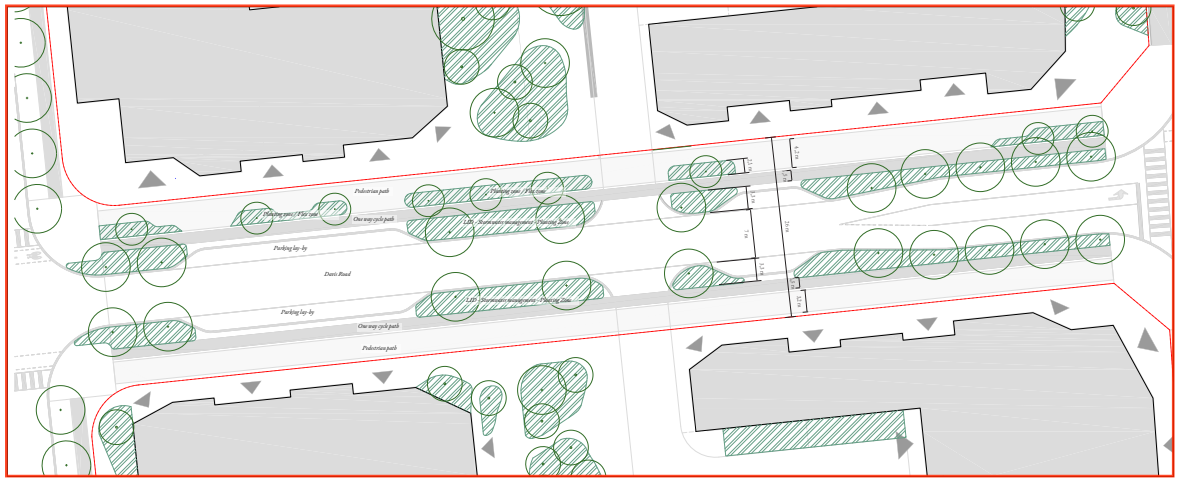
PREPARED FOR:

420-468 South Service Road East, Oakville, Ontario

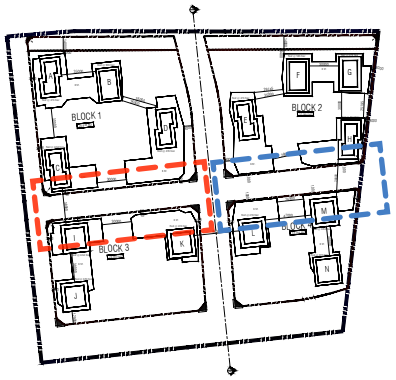
October, 2025



Davis Road - 26m ROW

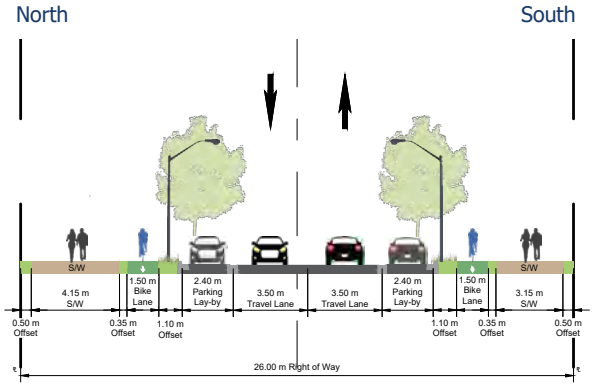


DAVIS ROAD - WEST OF OVERPASS



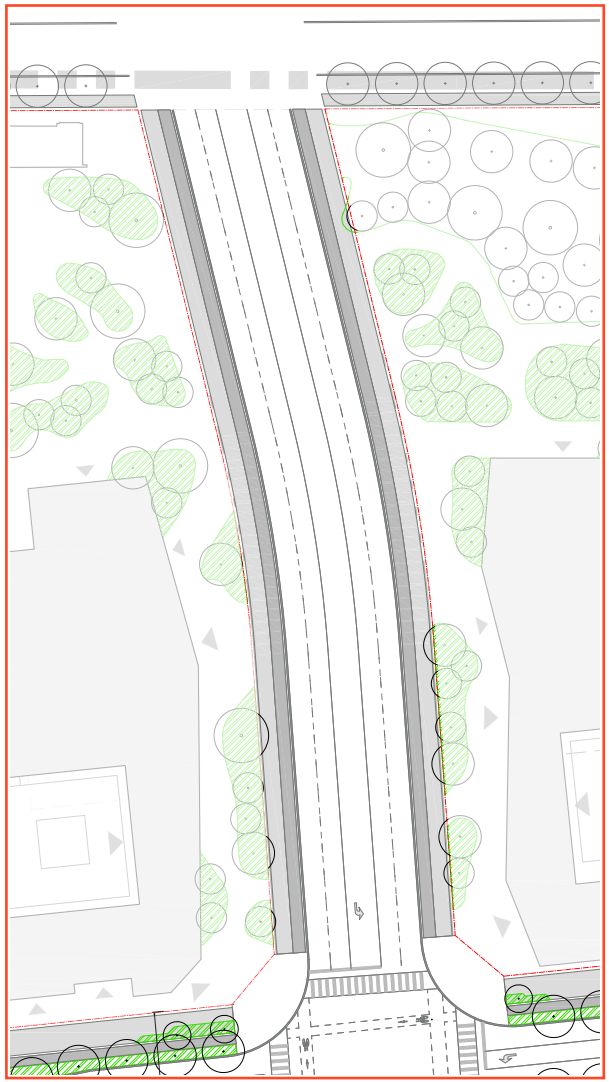
DAVIS ROAD - EAST OF OVERPASS

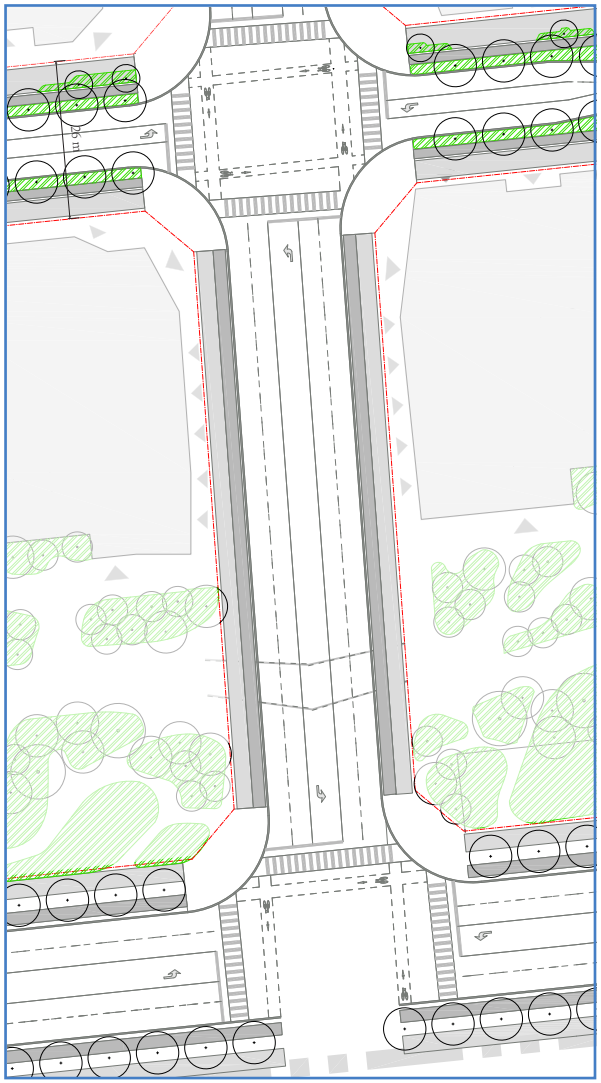
Streetscape Plan Prepared by SLA

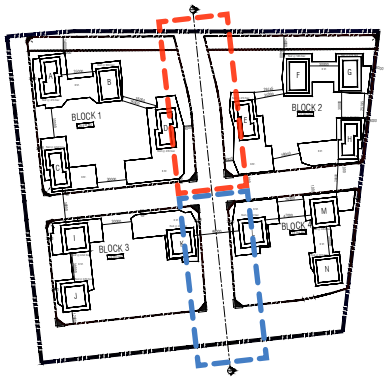


Cross-section Prepared - by BA GROUP

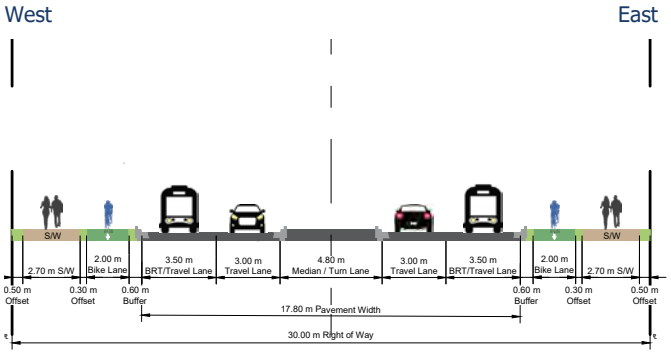
N-S Arterial Road- 30m ROW





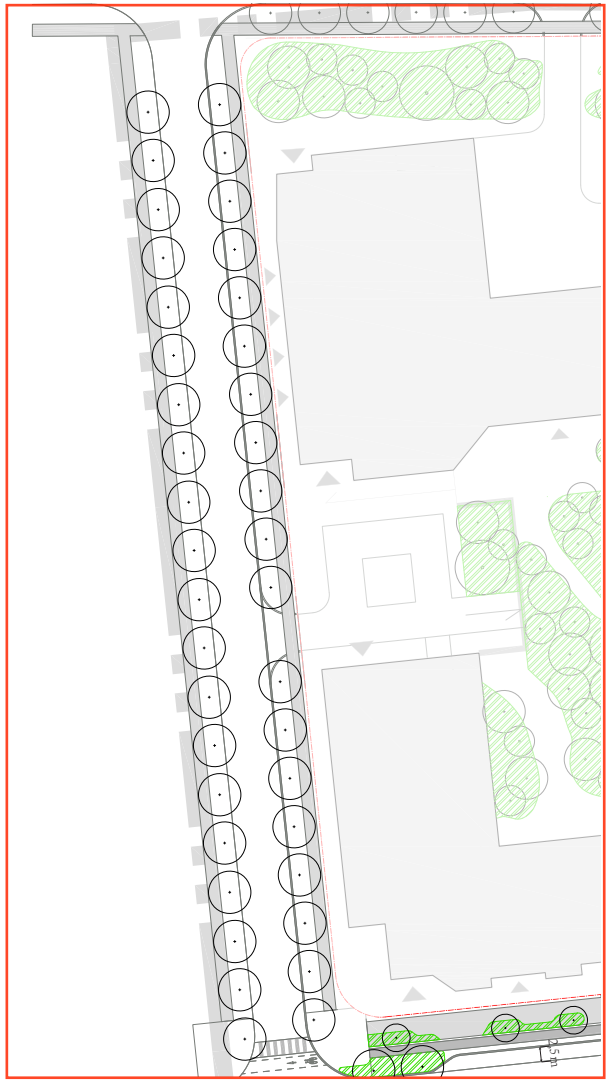


Streetscape Plan Prepared by SLA

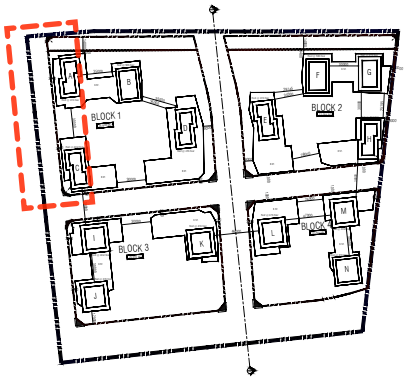


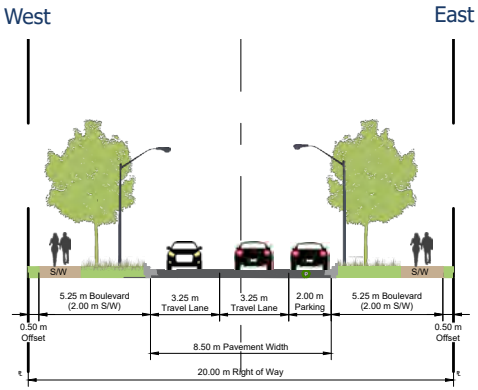
Cross-section - Prepared by BA GROUP

STREET A - 20m ROW



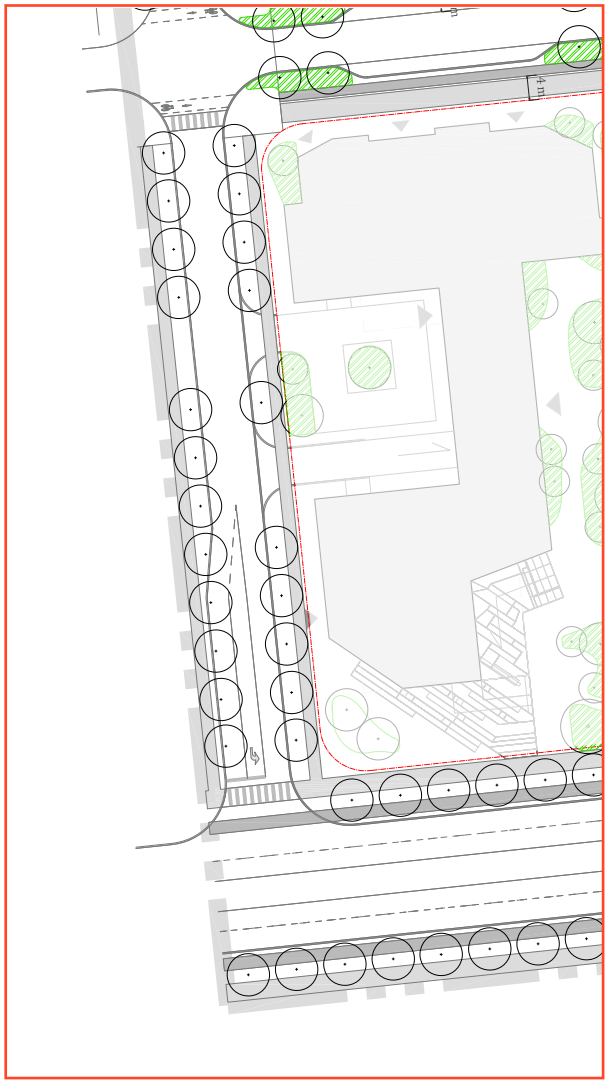
Streetscape Plan Prepared by SLA



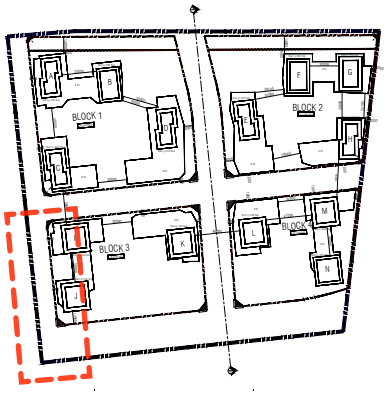


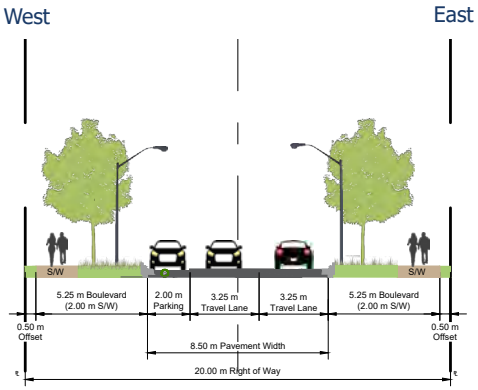
Cross-section - Prepared by BA GROUP

STREET B - 20m ROW



Streetscape Plan Prepared by SLA

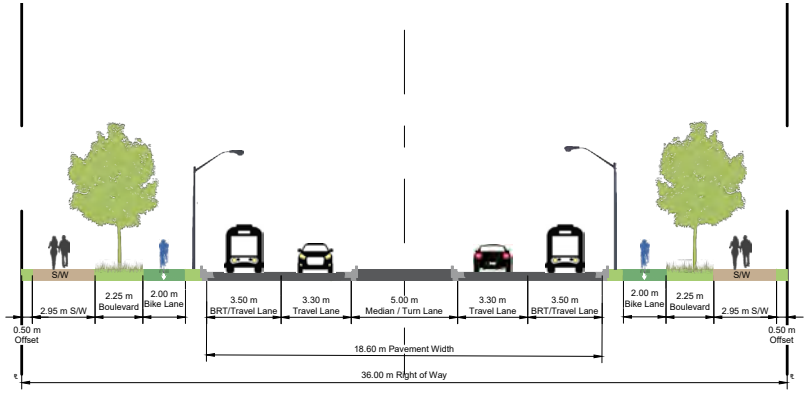




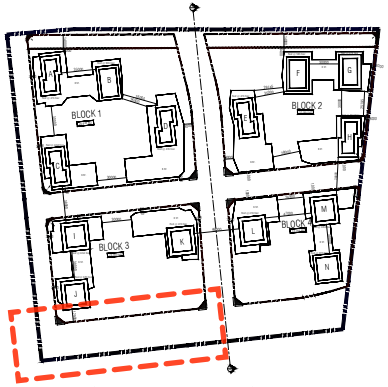
Cross-section - Prepared by BA GROUP

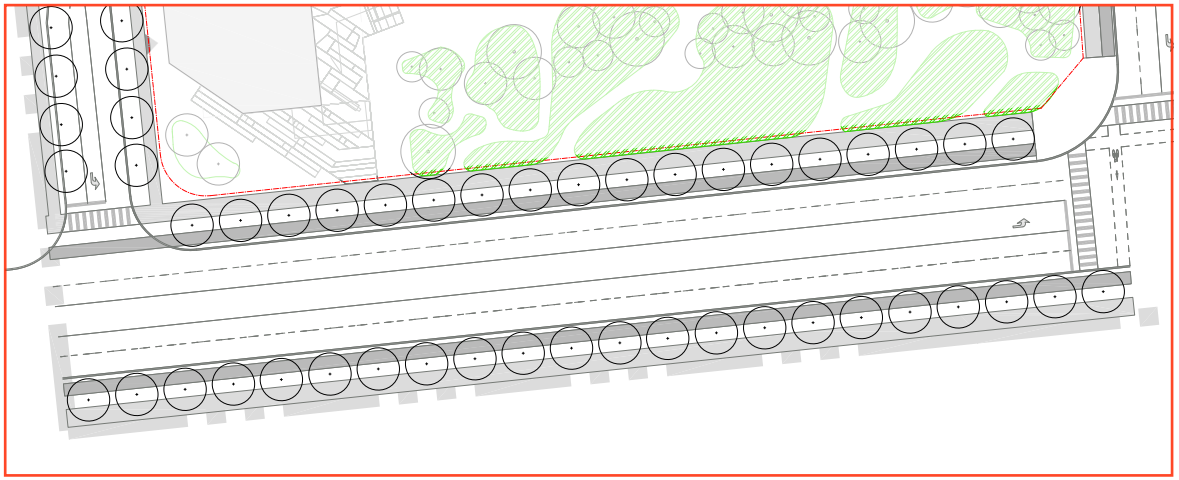
West of N-S Arterial Road
Cross Avenue - 36m ROW

North South



Cross-section - Prepared by BA GROUP

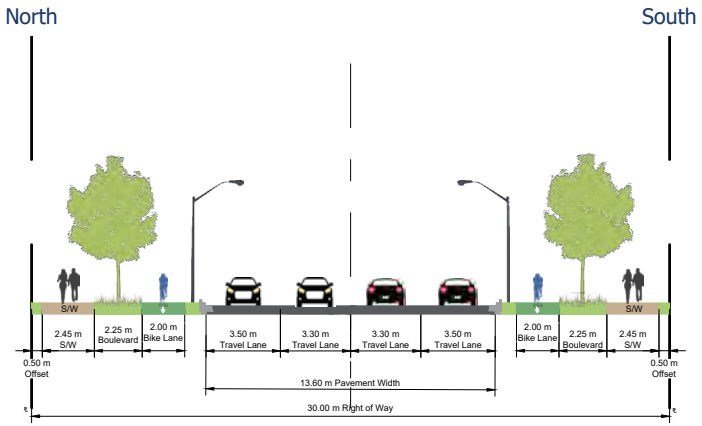




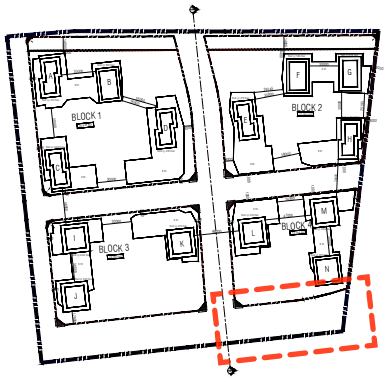
Streetscape Plan Prepared by SLA

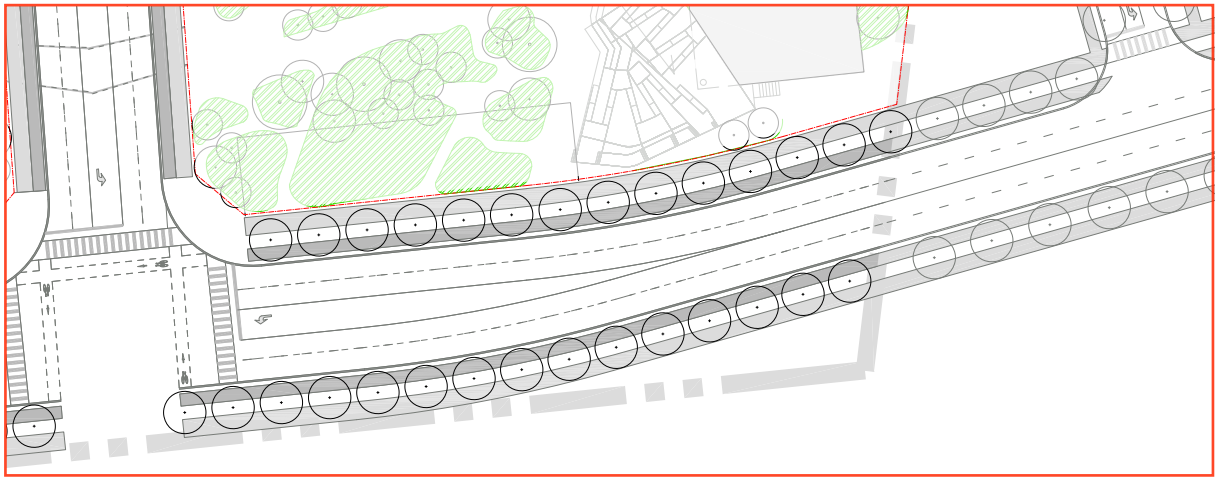
East of N-S Arterial Road

Cross Avenue - 30m ROW



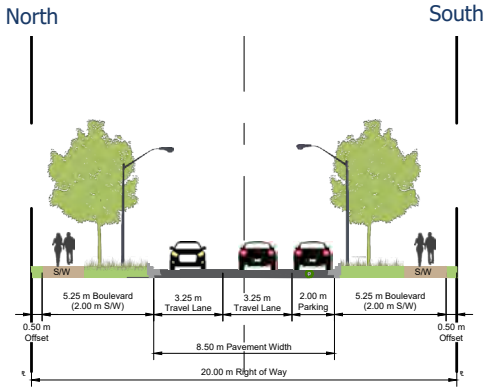
Cross-section - Prepared by BA GROUP



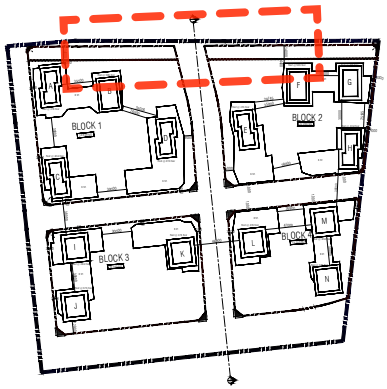


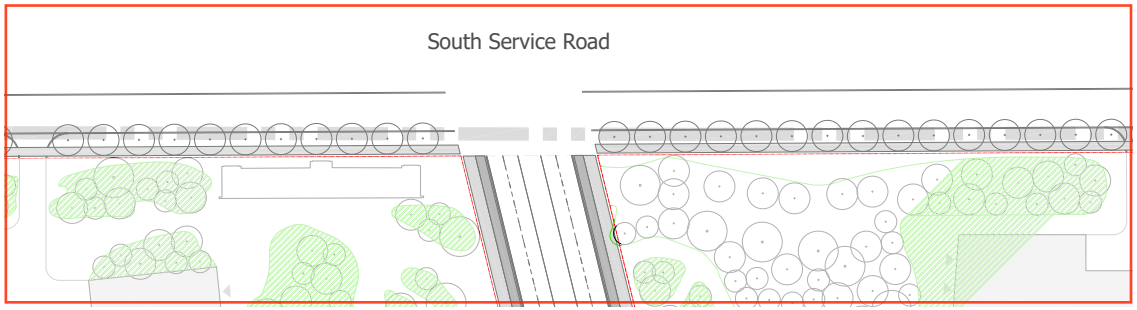
Streetscape Plan Prepared by SLA

South Service Rd - 20m ROW



Cross-Section - Prepared by BA GROUP



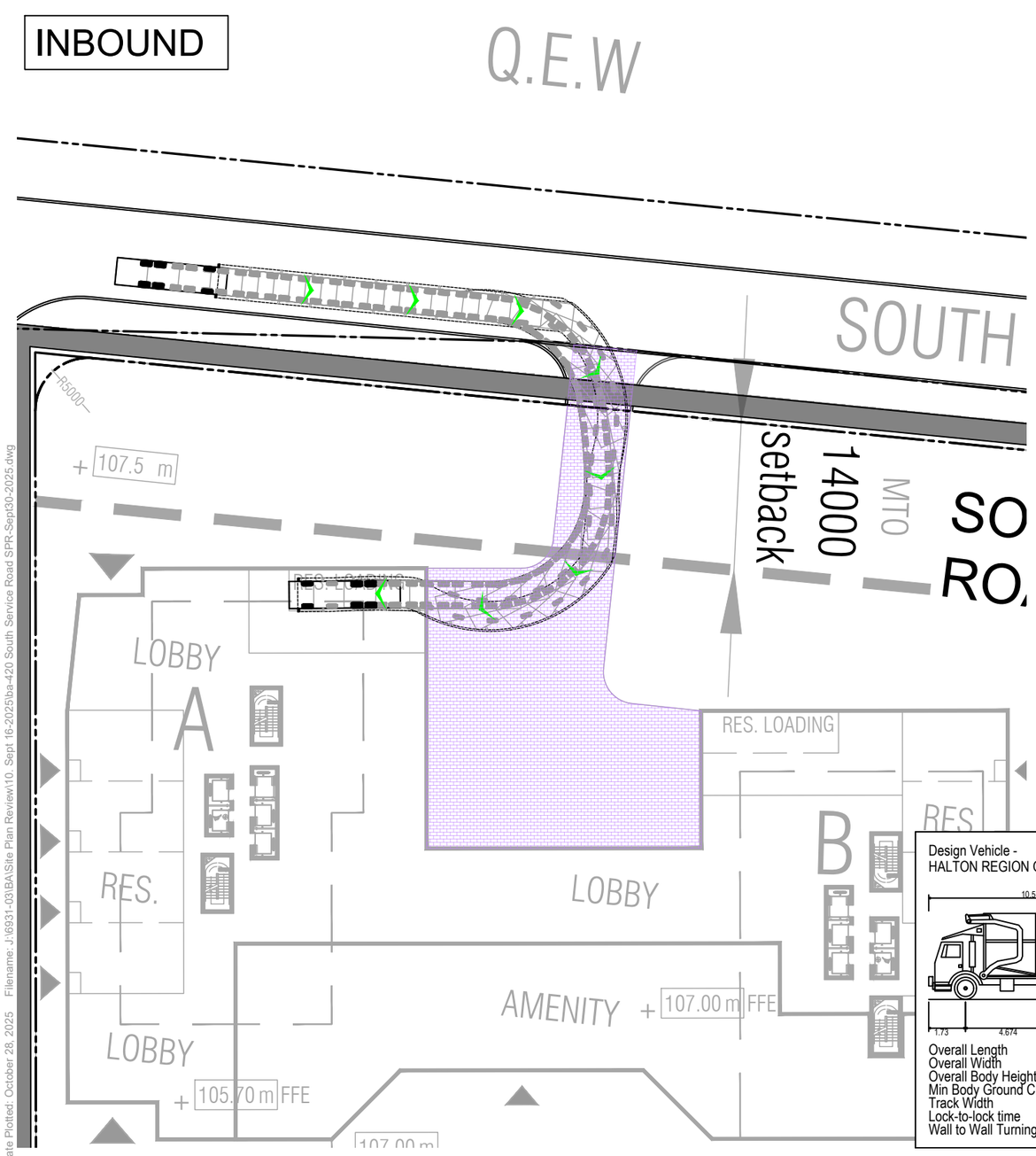


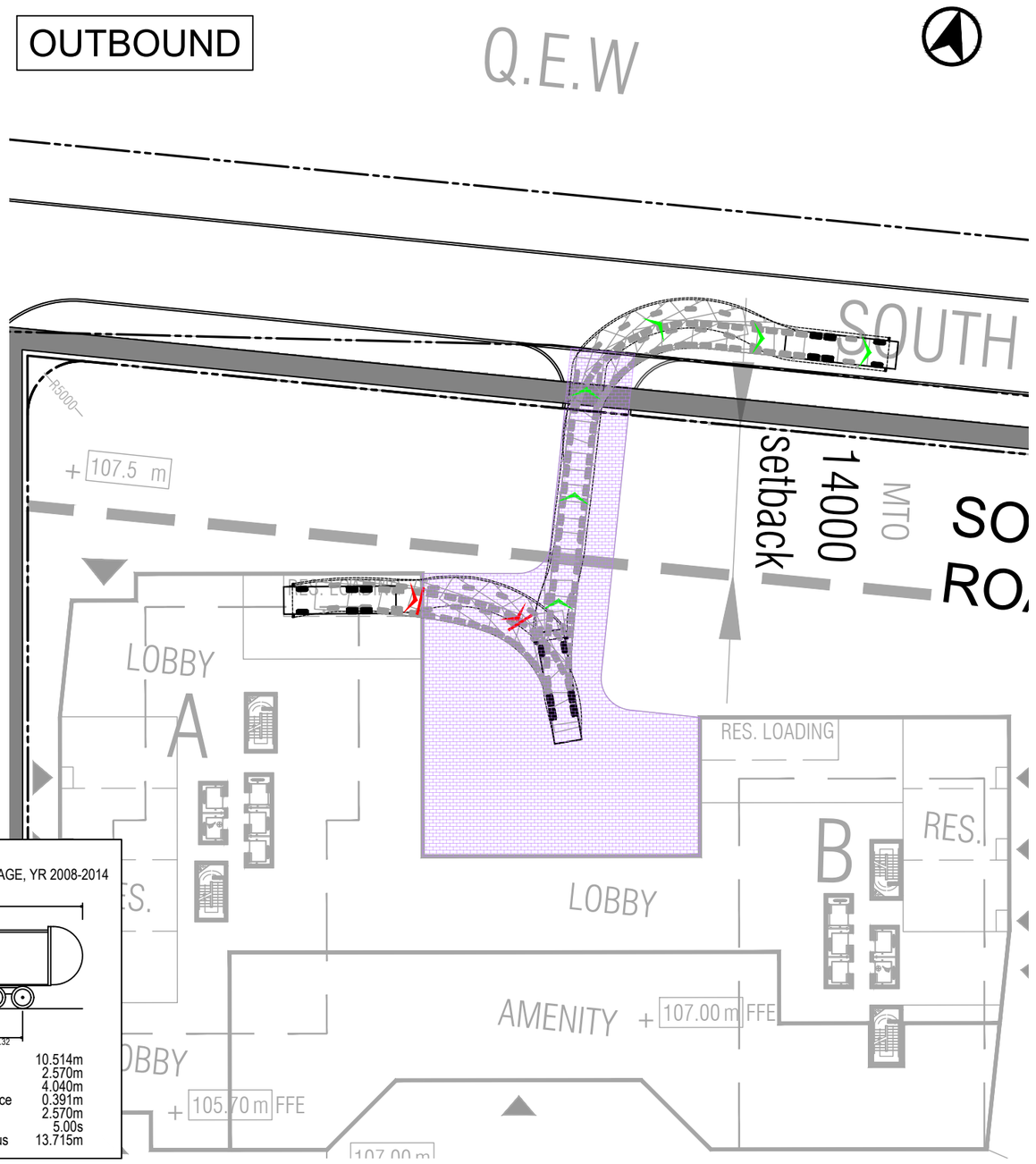
Streetscape Plan Prepared by SLA

Appendix J:
Vehicle Manoeuvring Diagrams

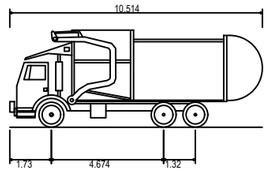
INBOUND

OUTBOUND





Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014



Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - BUILDING A

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-01

INBOUND

OUTBOUND

Q.E.W

SOUTH SERVICE ROAD

14000 setback

MTO

R5000

+ 107.5 m

RES. LOADING

LOBBY

A

B

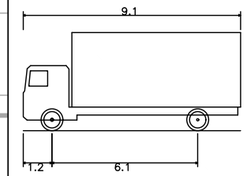
RES.

AMENITY

+ 107.00 m FFE

+ 105.70 m FFE

Design Vehicle - TAC SU (Single Unit) Truck



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - BUILDING A

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-02

INBOUND

OUTBOUND

Q.E.W

SOUTH SERVICE ROAD

14000 setback

MTO

R5000

+ 107.5 m

RES. LOADING

LOBBY

A

B

RES.

LOBBY

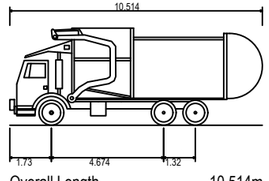
AMENITY

+ 107.00 m FFE

LOBBY

+ 105.70 m FFE

Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014



Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - BUILDING B

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-03

INBOUND

OUTBOUND

Q.E.W

SOUTH

SO
RO

14000
setback
MTO

R5000

+ 107.5 m

RES. LOADING

LOBBY

A

B

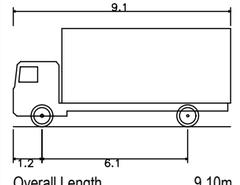
RES.

AMENITY

+ 107.00 m FFE

+ 105.70 m FFE

Design Vehicle - TAC SU (Single Unit) Truck



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - BUILDING B

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-04

Q.E.W

SOUTH SERVICE ROAD EAST

LOCAL STREET A

107.73 m

107.5 m

106.80 m

105.70 m

107.00 m

105.70 m FFE

107.00 m FFE

R5000

14000 Setback

MTO

SOUTH SERVICE ROAD EAST

RES. LOADING

LOBBY

A

RES.

LOBBY

RES. LOADING

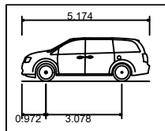
B

RES.

LOBBY

AMENITY

LOBBY



2020 Dodge Grand Caravan GT

Overall Length	5.17m
Overall Width (without Mirrors)	2.00m
Overall Width (with Mirrors)	2.25m
Overall Body Height	1.75m
Outside Wall to Wall Turning Radius	6.50m
Inside Wall to Wall Turning Radius	3.35m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - BUILDING A & B

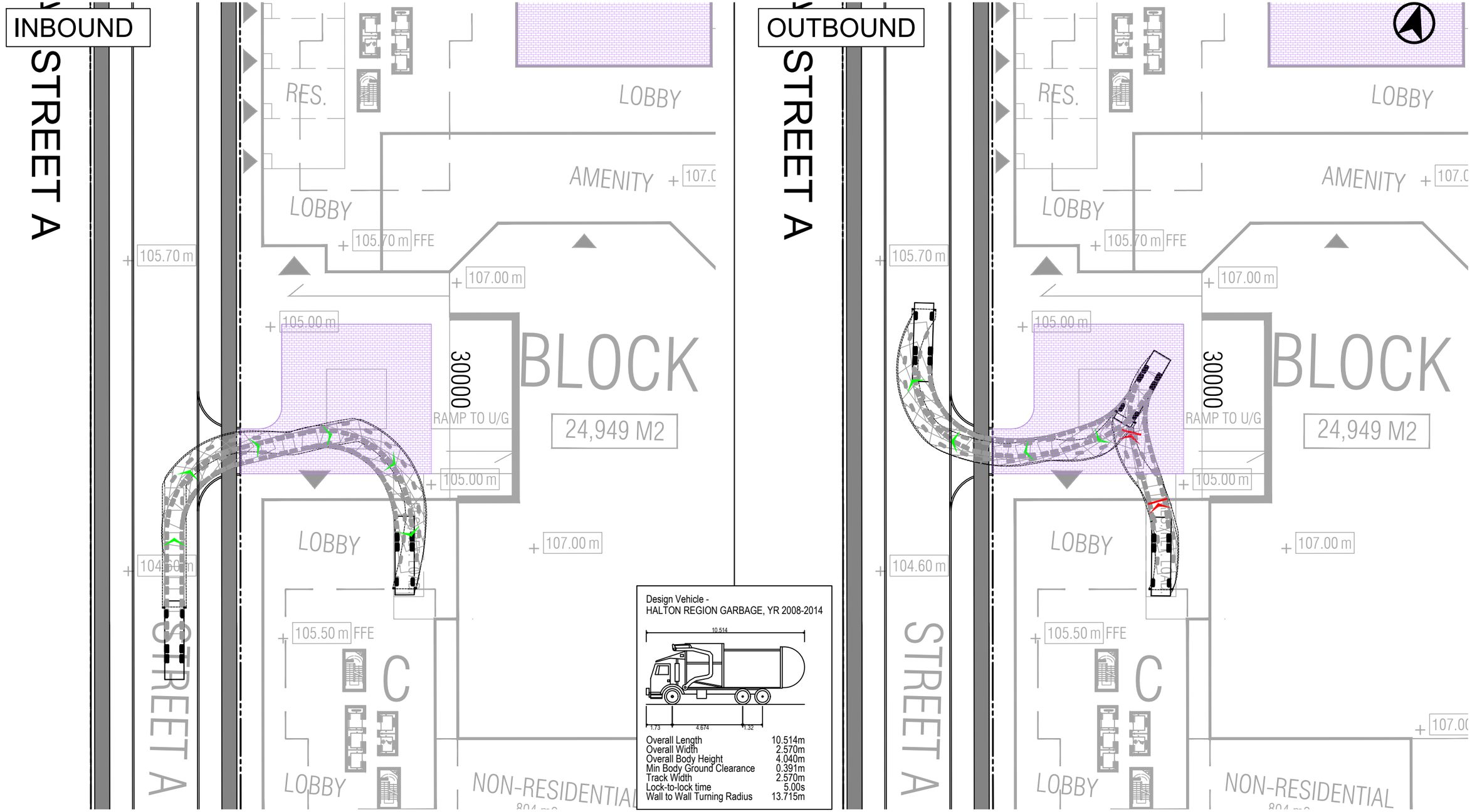
VEHICLE MANOEUVRING DIAGRAM

2020 DODGE GRAND CARAVAN (95TH PERCENTILE VEHICLE)

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0, 5, 10, 15, 20m)

Drawing No. VMD-05



Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - BUILDING C

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-06

INBOUND

OUTBOUND

STREET A

STREET A

RES.

LOBBY

AMENITY

LOBBY

105.70 m FFE

105.70 m

107.00 m

105.00 m

30000

RAMP TO U/G

BLOCK

24,949 M2

105.00 m

LOBBY

107.00 m

104.60 m

105.50 m FFE

C

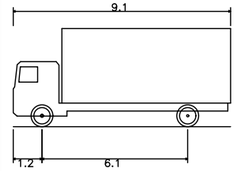
LOBBY

NON-RESIDENTIAL

104.60 m

STREET A

Design Vehicle - TAC SU (Single Unit) Truck



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - BUILDING C

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

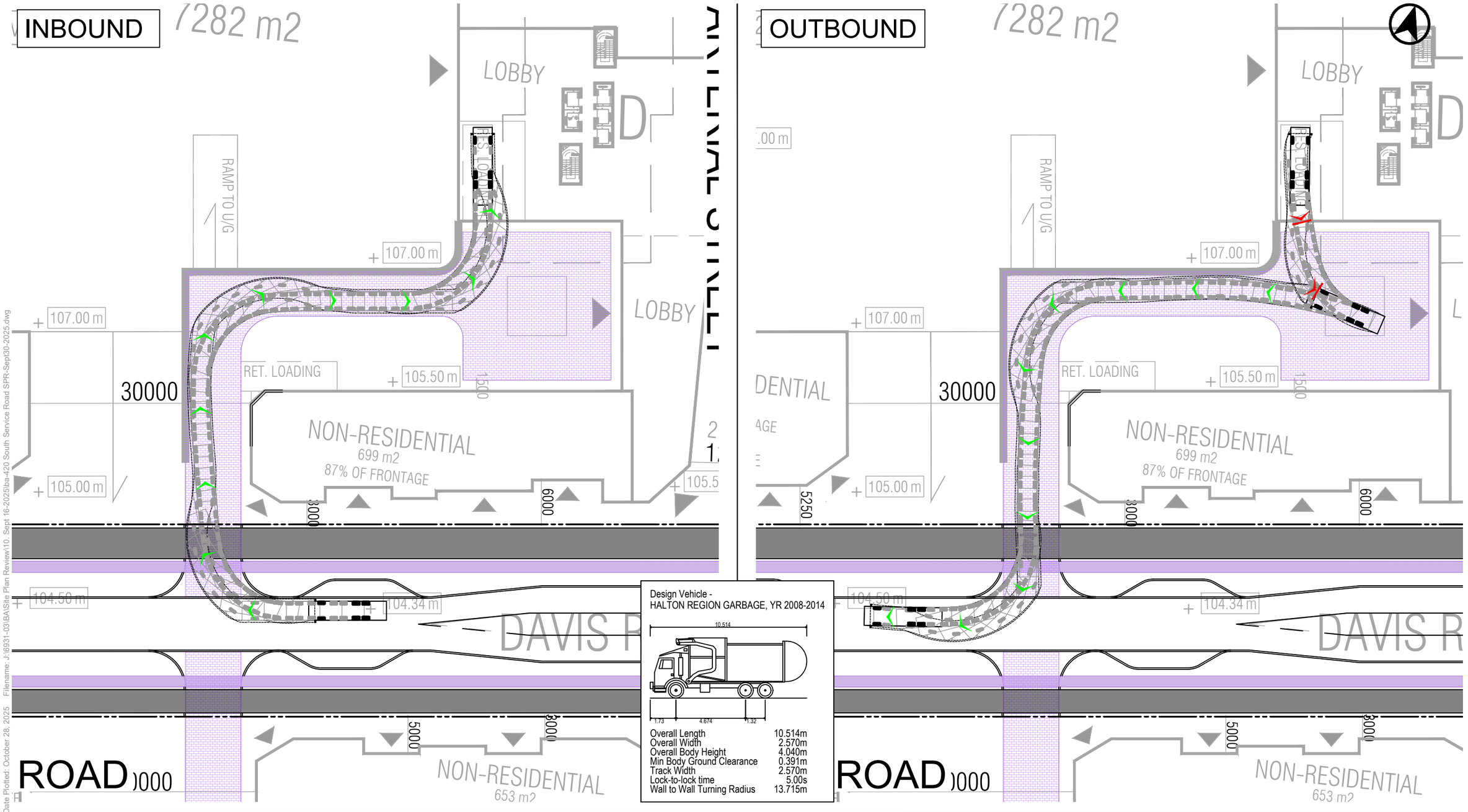
Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 0 5 10 15 20m

Drawing No. VMD-07

INBOUND

OUTBOUND



Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014

Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - BUILDING D

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0, 5, 10, 15, 20m)

Drawing No. VMD-08

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

INBOUND

OUTBOUND

7282 m2

LOBBY

D

RAMP TO U/G

RET. LOADING

107.00 m

105.50 m

105.00 m

104.50 m

104.34 m

30000

1500

NON-RESIDENTIAL
699 m2
87% OF FRONTAGE

NON-RESIDENTIAL
653 m2

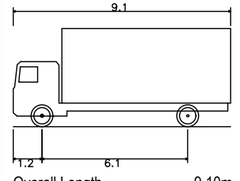
3000

6000

5000

DAVIS ROAD

Design Vehicle - TAC SU (Single Unit) Truck



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - BUILDING D

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-09

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

INBOUND

OUTBOUND

7282 m2

LOBBY

D

RAMP TO U/G

RES. LOADING

107.00 m

105.50 m

105.00 m

104.50 m

104.34 m

30000

1500

NON-RESIDENTIAL
699 m2
87% OF FRONTAGE

NON-RESIDENTIAL
653 m2

3000

6000

5000

DAVIS ROAD

Design Vehicle - TAC SU (Single Unit) Truck

Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - BUILDING D

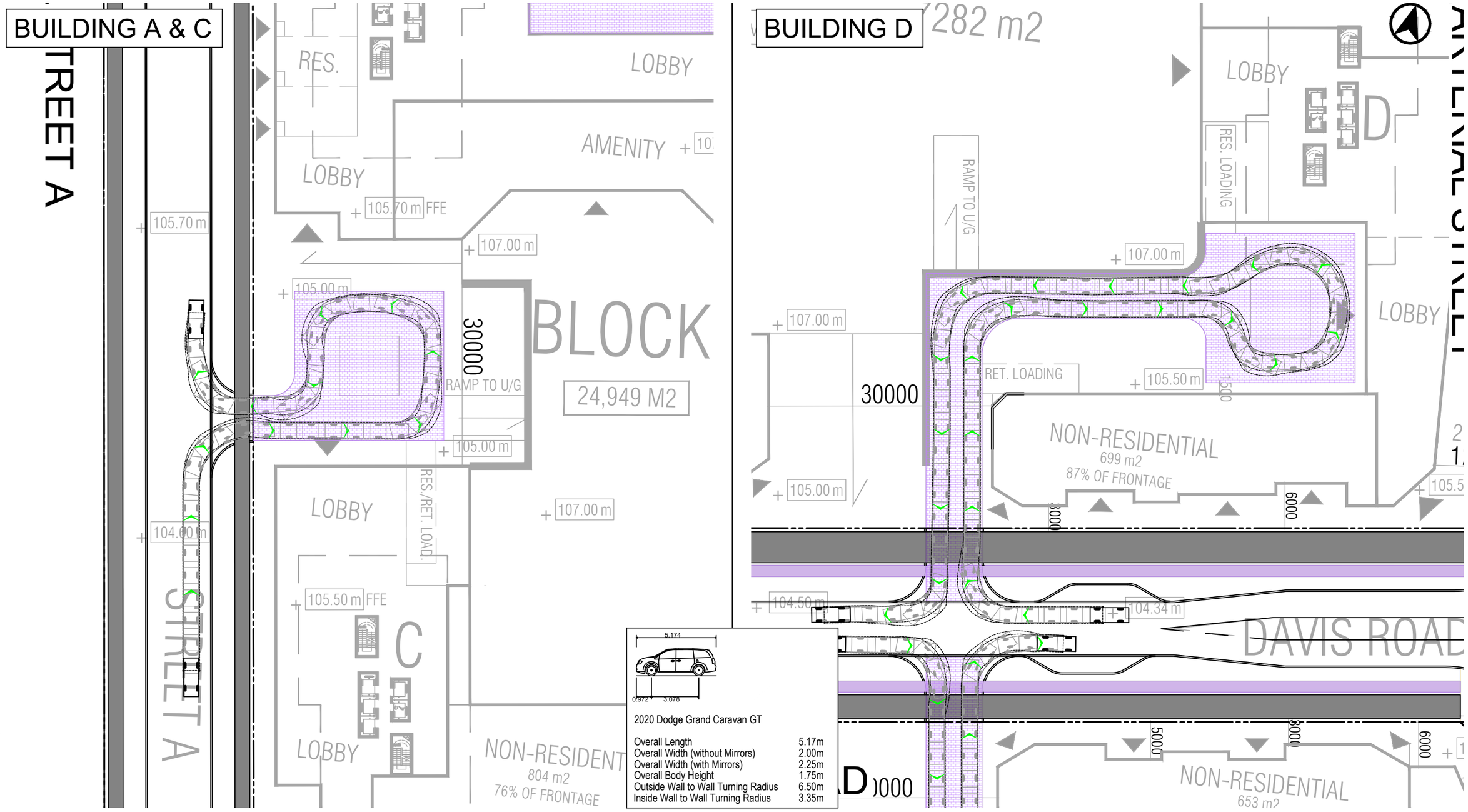
VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 0 5 10 15 20m

Drawing No. VMD-10



Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 1 - PICK-UP / DROP-OFF

VEHICLE MANOEUVRING DIAGRAM

2020 DODGE GRAND CARAVAN (95TH PERCENTILE VEHICLE)

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-11

INBOUND

OUTBOUND

DAVIS ROAD

DAVIS ROAD

BLOC

22,094 M2

STRATA PA

5821 m2

LOBBY

RET. LOADING

NON-RESIDENTIAL

POPS

NON-RESIDENTIAL

560 m2

RAMP TO U/G

12000

23000

9000

7500

106.00 m

107.00 m

105.50 m

105.61 m

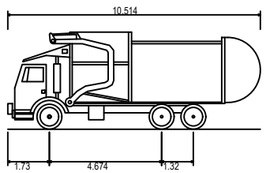
105.46 m

105.52 m

104.50 m

105.00

Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014



Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING E

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 0 5 10 15 20m

Drawing No. VMD-12

Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg
Date Plotted: October 28, 2025

INBOUND

OUTBOUND

DAVIS ROAD

DAVIS ROAD

BLOC

22,094 M2

STRATA PA

5821 m2

E

RAMP TO U/G

RET. LOADING

LOBBY

POPS

152 m2

NON-RESIDENTIAL

NON-RESIDENTIAL

560 m2

POPS

103 m2

12000

23000

9000

7500

106.00 m

107.00 m

105.50 m

105.61 m

105.46 m

105.52 m

104.50 m

Design Vehicle - TAC SU (Single Unit) Truck

Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

Date Plotted: October 28, 2025

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING E

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 — 0 5 10 15 20m

Drawing No. VMD-13

INBOUND

OUTBOUND

DAVIS ROAD

DAVIS ROAD

BLOC

22,094 M2

STRATA PA

5821 m2

12000

23000

9000

LOBBY

RAMP TO U/G

RES. LOADING

NON-RESIDENTIAL

POPS

NON-RESIDENTIAL

560 m2

106.00 m

107.00 m

105.50 m

105.46 m

105.52 m

104.50 m

7500

Design Vehicle - TAC SU (Single Unit) Truck

Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

Date Plotted: October 28, 2025

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING E

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 0 5 10 15 20m

Drawing No. VMD-14

INBOUND

ARTERIAL STREET

NEW N-S ARTERIAL

DAVIS ROAD

BLOCK 2

22,094 M2

STRATA PARK

5821 m2

NON-RESIDENTIAL

1136 m2

75% OF FRONTAGE

LOBBY

POPS

217 m2

POPS

152 m2

POPS

140 m2

POPS

103 m2

RAMP TO U/G

RES. LOADING

RET. LOADING

RES./RET. LOADING

9000

12000

23000

26000

7500

6000

106.00 m

107.09 m

107.00 m

105.61 m

105.50 m

105.22 m

105.46 m

105.55 m

105.12 m

105.00 m

104.50 m

104.77 m

5.174

0.972

3.078

2020 Dodge Grand Caravan GT

Overall Length	5.17m
Overall Width (without Mirrors)	2.00m
Overall Width (with Mirrors)	2.25m
Overall Body Height	1.75m
Outside Wall to Wall Turning Radius	6.50m
Inside Wall to Wall Turning Radius	3.35m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING E

VEHICLE MANOEUVRING DIAGRAM

2020 DODGE GRAND CARAVAN (95TH PERCENTILE VEHICLE)

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0, 5, 10, 15, 20m)

Drawing No. VMD-15

INBOUND

OUTBOUND

VICE

14000 Setback

RES. LOADING

RES.

LOBBY

AMENITY

AMENITY

LOBBY

RES.

LOBBY

AMENITY

AMENITY

LOBBY

RES.

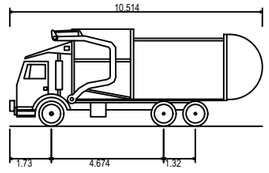
107.00 m

105.00 m

6000

BLOCK 2

Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014



Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING F

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 0 5 10 15 20m

Drawing No. VMD-16

INBOUND

OUTBOUND

VICE

14000 Setback

RES. LOADING

RES.

LOBBY

AMENITY

BLOCK 2

6000

107.00 m

105.00 m

Design Vehicle - TAC SU (Single Unit) Truck

Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

Date Plotted: October 28, 2025

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING F

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 0 5 10 15 20m

Drawing No. VMD-17

INBOUND

OUTBOUND

VICE

14000 Setback

RES. LOADING

RES.

LOBBY

AMENITY

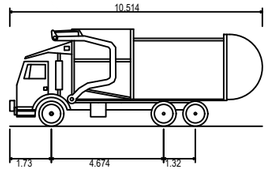
BLOCK 2

6000

107.00 m

105.00 m

Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014



Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING G

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

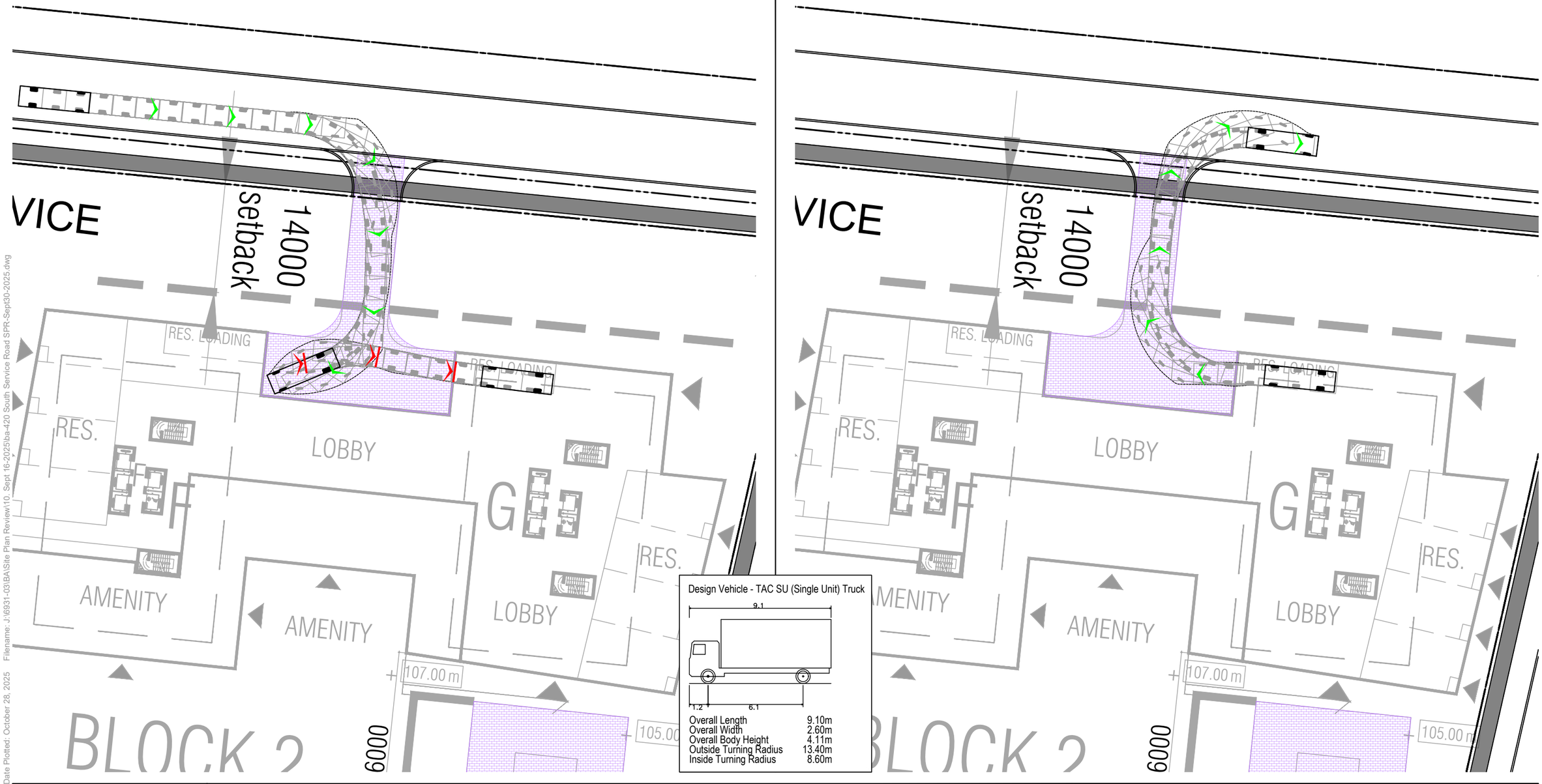
Scale 1:500 — 0 5 10 15 20m

Drawing No. VMD-18

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

INBOUND

OUTBOUND



Design Vehicle - TAC SU (Single Unit) Truck

Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING F

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

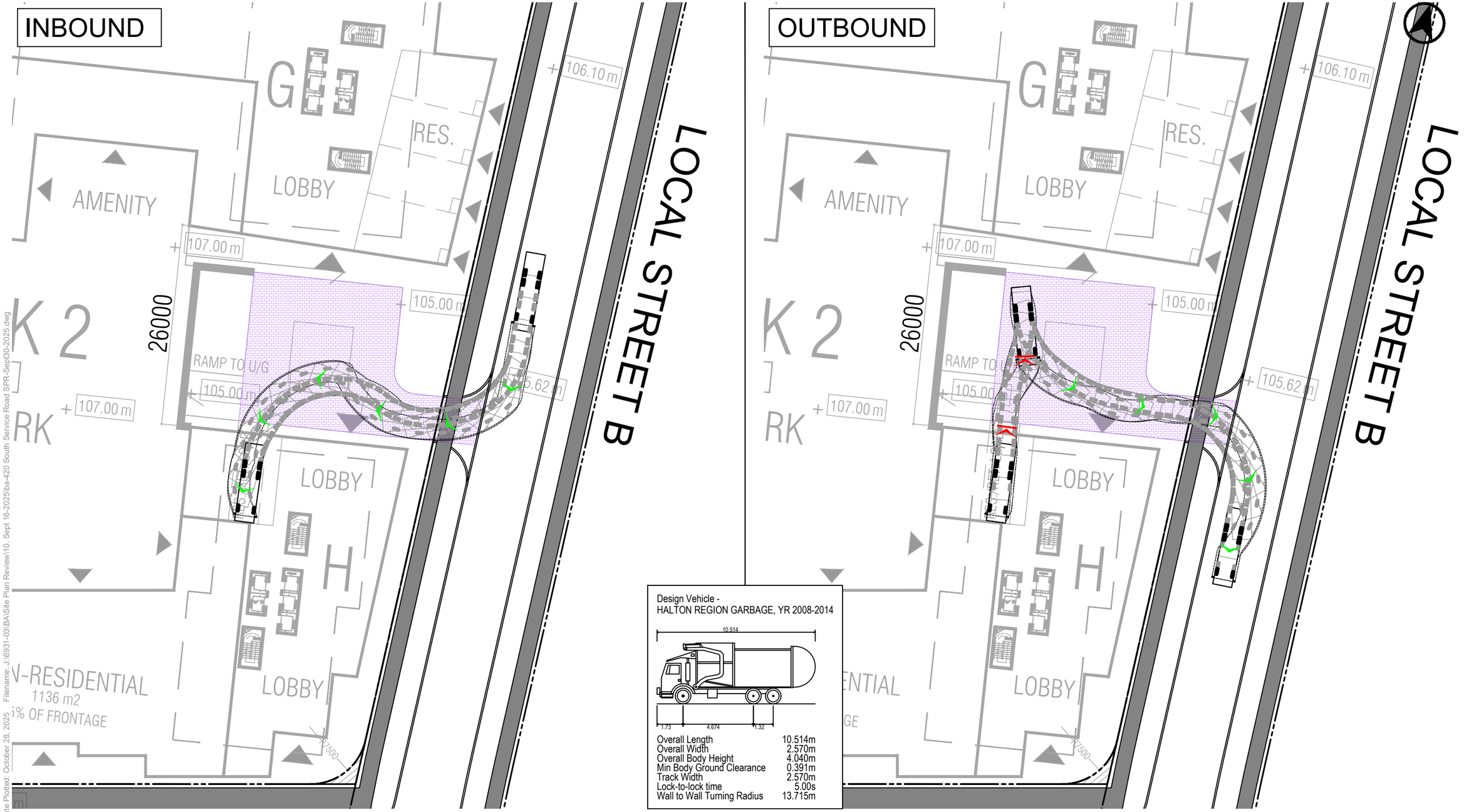
Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 — 0 5 10 15 20m

Drawing No. VMD-19

INBOUND

OUTBOUND



Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014

Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING H

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

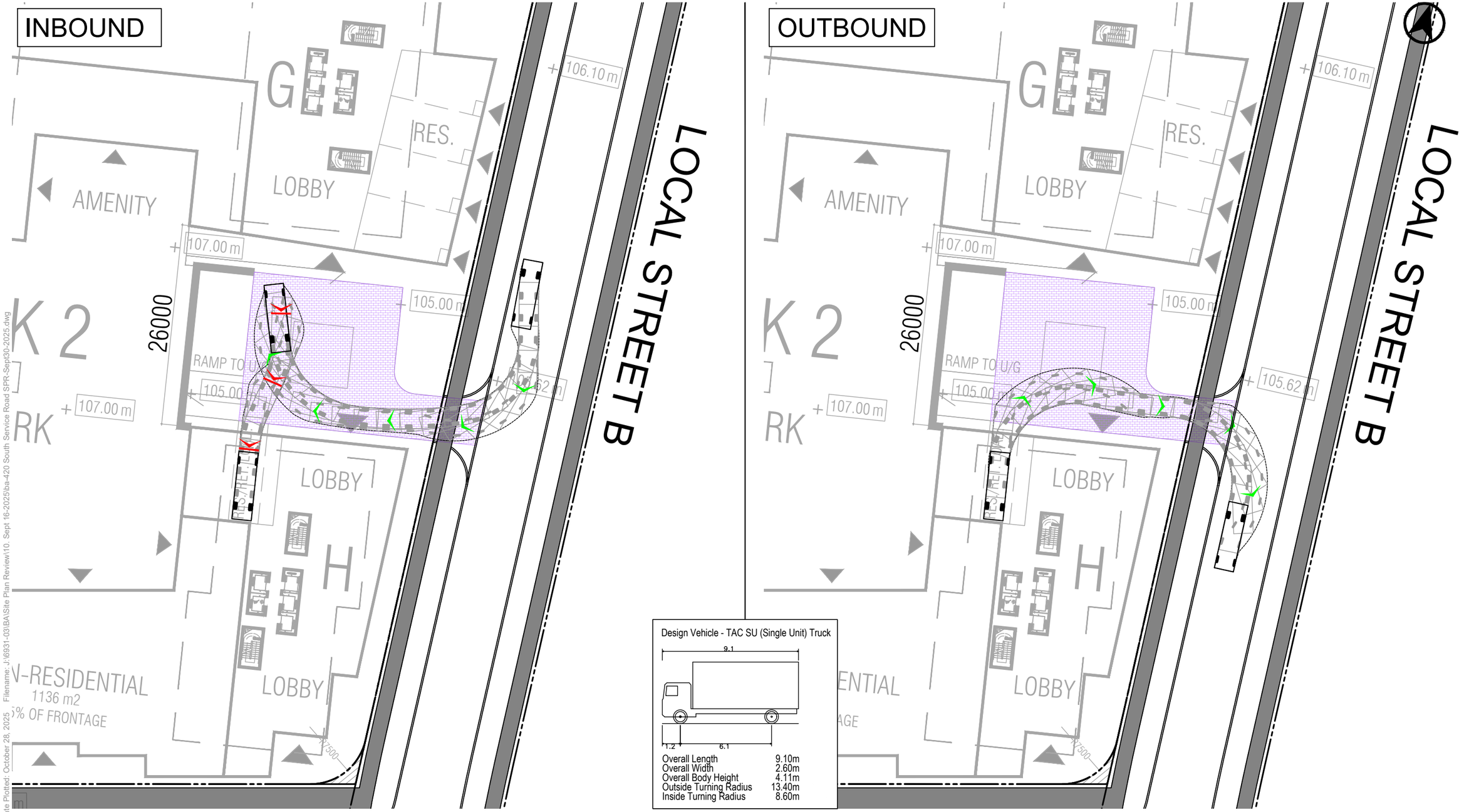
Scale 1:500 — 0 5 10 15 20m

Drawing No. VMD-20

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

INBOUND

OUTBOUND



Design Vehicle - TAC SU (Single Unit) Truck

Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING H

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

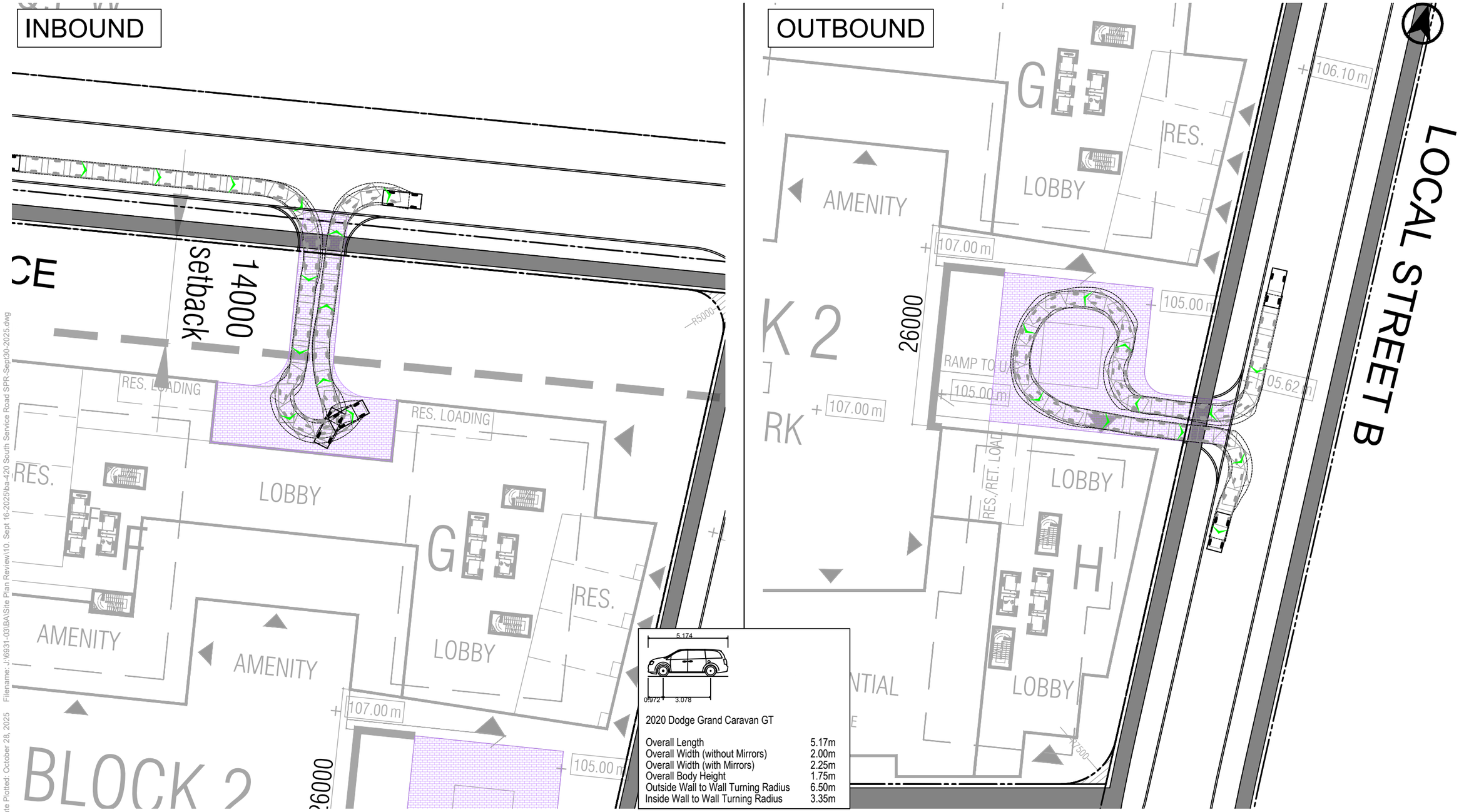
Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-21

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

INBOUND

OUTBOUND



5.174

0.972 3.078

2020 Dodge Grand Caravan GT

Overall Length	5.17m
Overall Width (without Mirrors)	2.00m
Overall Width (with Mirrors)	2.25m
Overall Body Height	1.75m
Outside Wall to Wall Turning Radius	6.50m
Inside Wall to Wall Turning Radius	3.35m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 2 - BUILDING G & H

VEHICLE MANOEUVRING DIAGRAM

2020 DODGE GRAND CARAVAN (95TH PERCENTILE VEHICLE)

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 0 5 10 15 20m

Drawing No. VMD-22

INBOUND

OUTBOUND

DAVIS ROAD

SOUTH SERVICE ROAD

BLOCK

NON-RESIDENT
616 m2
94% OF FRONTAGE

LOBBY

UPPER LOBBY

RAMP TO U/G (P2)

RES. LOADING

1 LEVEL PARK BELOW

16,550

105.00 m

104.50 m

103.37 m

103.00 m

102.95 m FFE

102.50 m

102.30 m

102.00 m FFE

102.00 m

104.50 m FFE

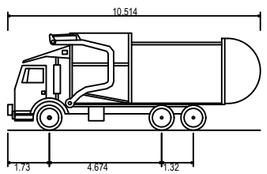
R7500

3000

5250

4500

Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014



Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

BA Group

420 SOUTH SERVICE ROAD

BLOCK 3 - BUILDING I

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0, 5, 10, 15, 20m)

Drawing No. VMD-23

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10_Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

INBOUND

OUTBOUND

DAVIS ROAD

LOCAL STREET A

BLOCK

16,550

NON-RESIDENT
616 m2
94% OF FRONTAGE

RES/RET. LOBBY

LOBBY

UPPER LOBBY

RAMP TO U/G (P2)

RES. LOADING

BELOW

R7500

3000

5250

4500

105.00 m

104.50 m

103.37 m

103.00 m

102.95 m FFE

102.50 m

102.30 m

102.00 m FFE

102.00 m

104.50 m FFE

Design Vehicle - TAC SU (Single Unit) Truck

Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sep30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 3 - BUILDING I

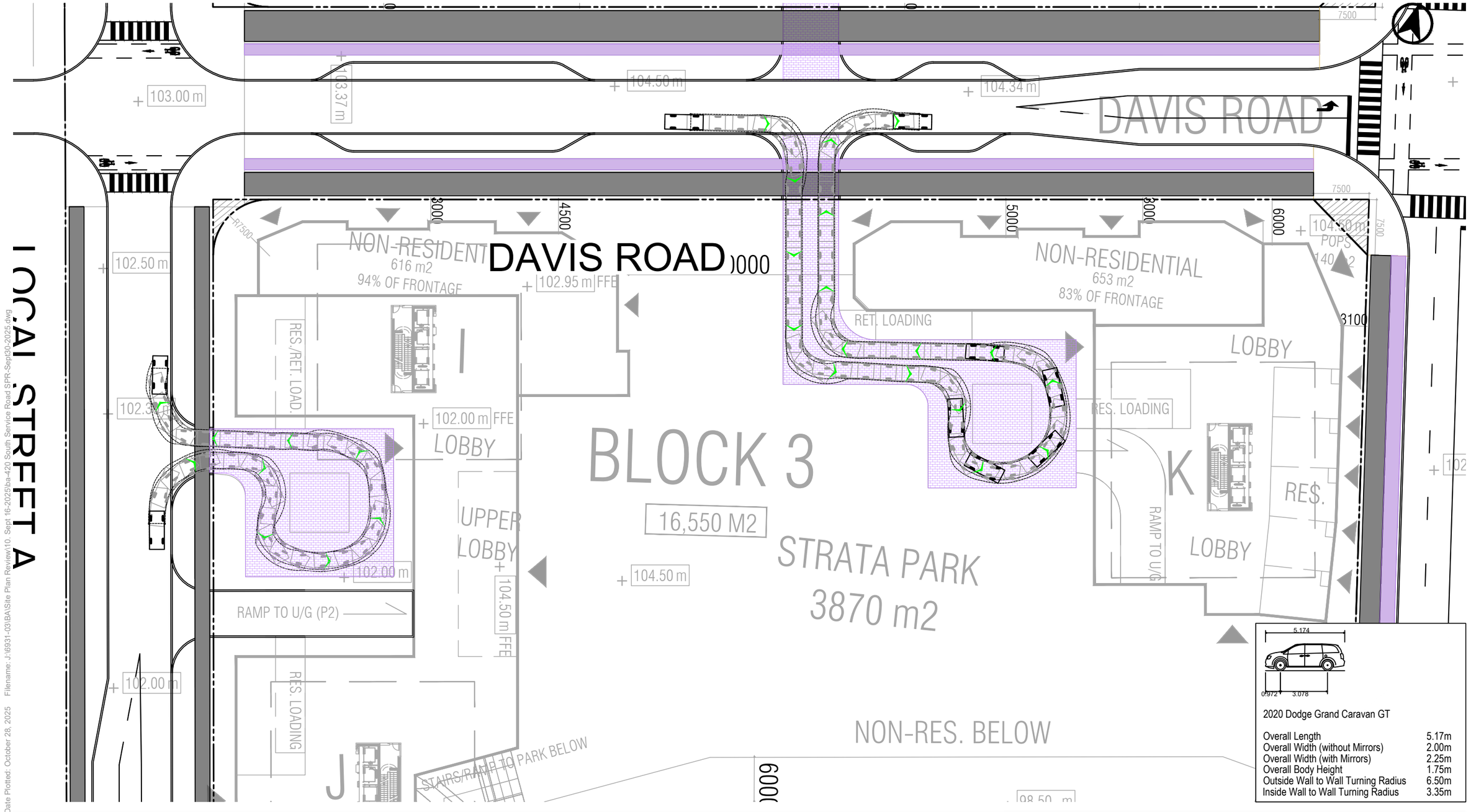
VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-24



Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 3 - BUILDING I & K

VEHICLE MANOEUVRING DIAGRAM

2020 DODGE GRAND CARAVAN (95TH PERCENTILE VEHICLE)

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-25

INBOUND

OUTBOUND

DAVIS ROAD

BLOCK 3

16,550

NON-RESIDENT
616 m2
94% OF FRONTAGE

RES./RET. LOAD.

LOBBY

UPPER LOBBY

RAMP TO U/G (P2)

PARK BELOW

105.00 m

104.50 m

103.00 m

103.37 m

102.95 m FFE

102.50 m

102.30 m

102.00 m FFE

102.00 m

104.50 m FFE

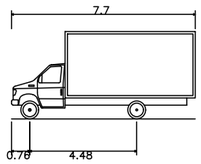
R7500

3000

5250

4500

Design Vehicle - CUBEVAN (Ford E350)



Overall Length	7.70m
Overall Width	2.45m
Overall Body Height	3.66m
Outside Turning Radius	9.49m
Inside Turning Radius	5.68m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10_Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 3 - BUILDING J

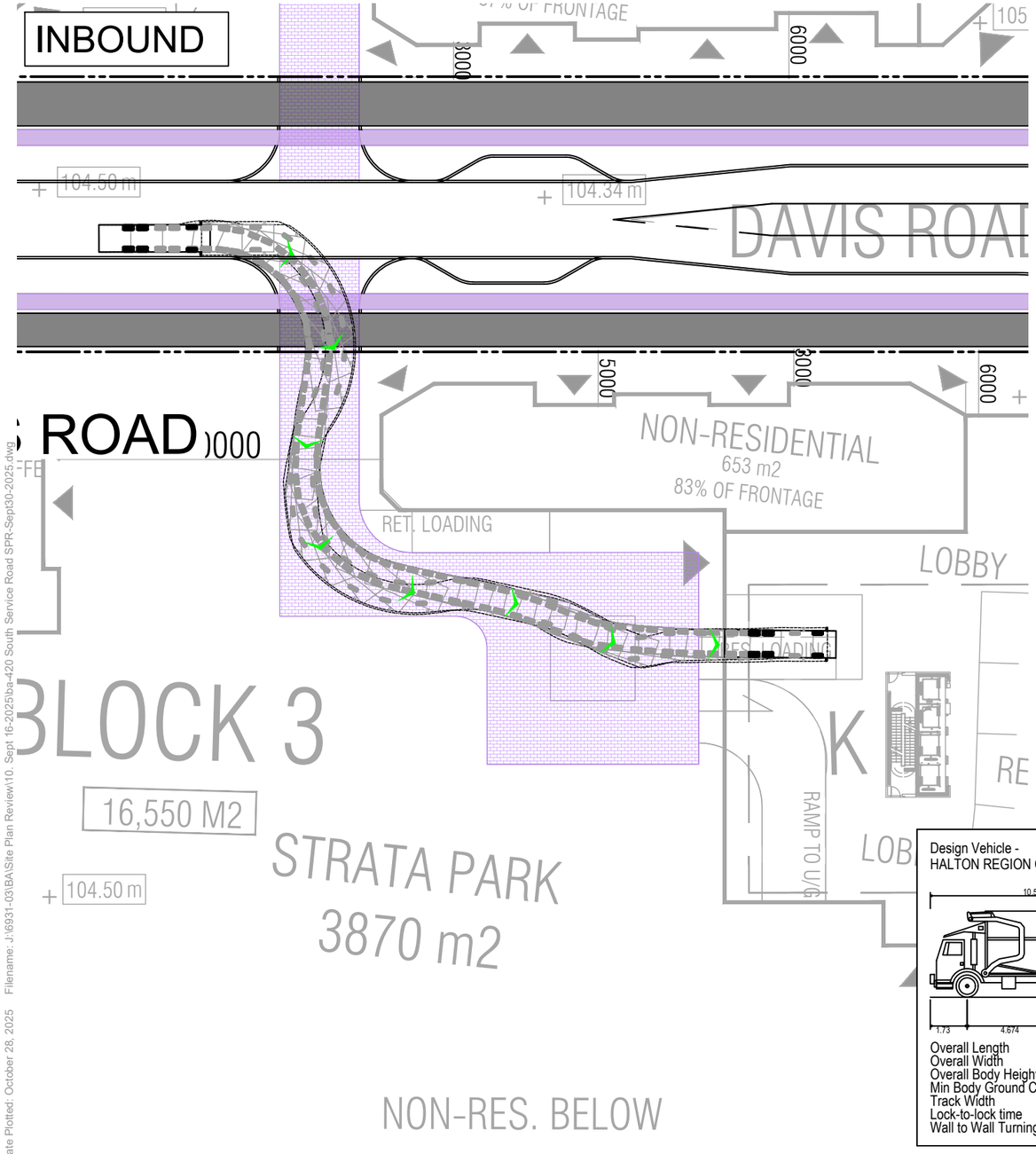
VEHICLE MANOEUVRING DIAGRAM

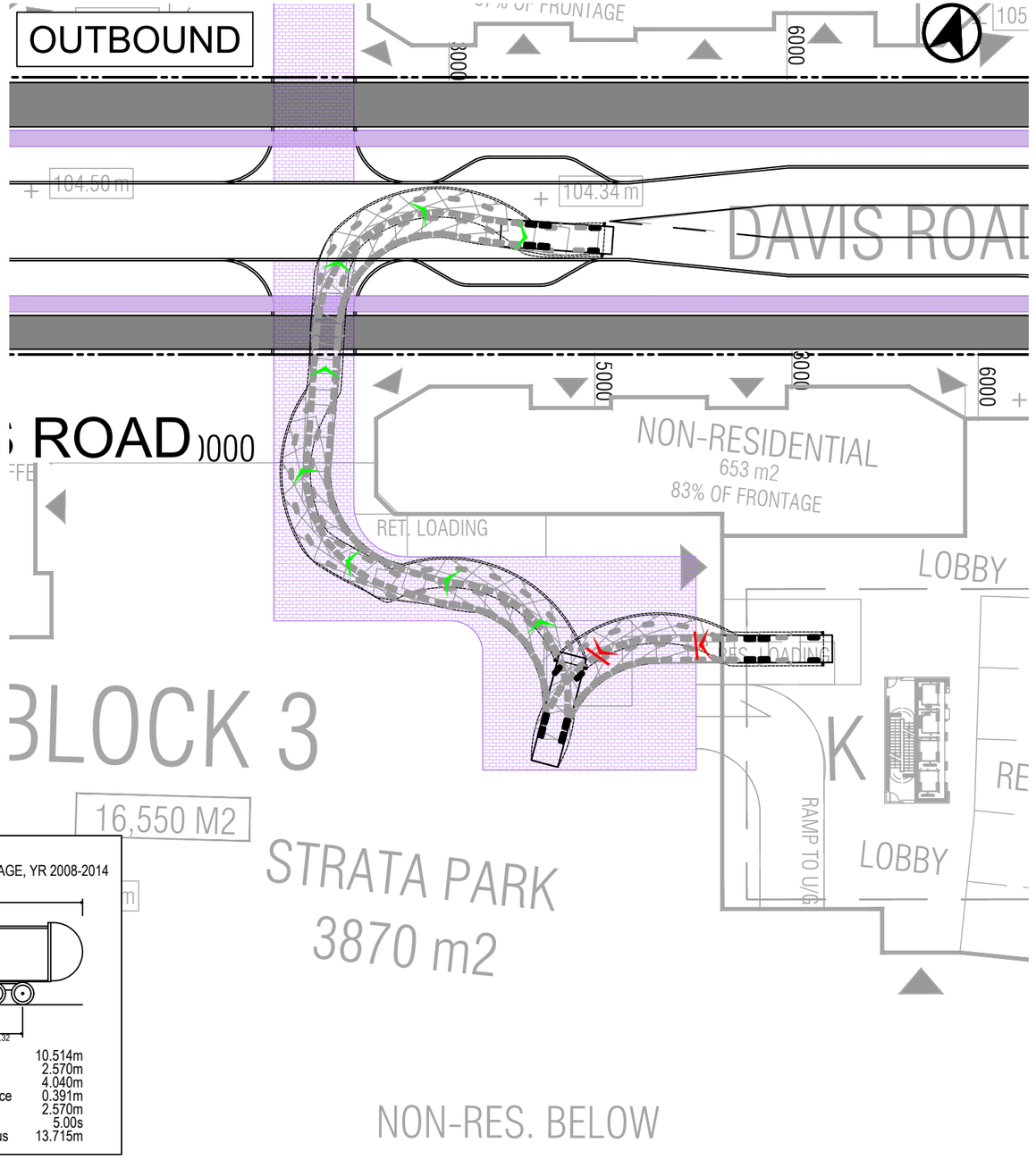
CUBE VAN

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

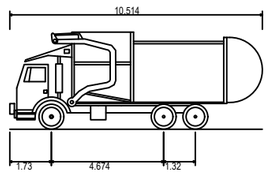
Scale 1:500 0 5 10 15 20m

Drawing No. VMD-26





Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014



Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

BA Group

420 SOUTH SERVICE ROAD

BLOCK 3 - BUILDING K

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-27

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

INBOUND

OUTBOUND

DAVIS ROAD

104.50 m

104.34 m

105

6000

5000

NON-RESIDENTIAL
653 m2
83% OF FRONTAGE

RET. LOADING

LOBBY

RES. LOADING

RAMP TO U/G

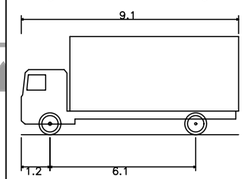
BLOCK 3

16,550 M2

STRATA PARK
3870 m2

NON-RES. BELOW

Design Vehicle - TAC SU (Single Unit) Truck



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 3 - BUILDING K

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

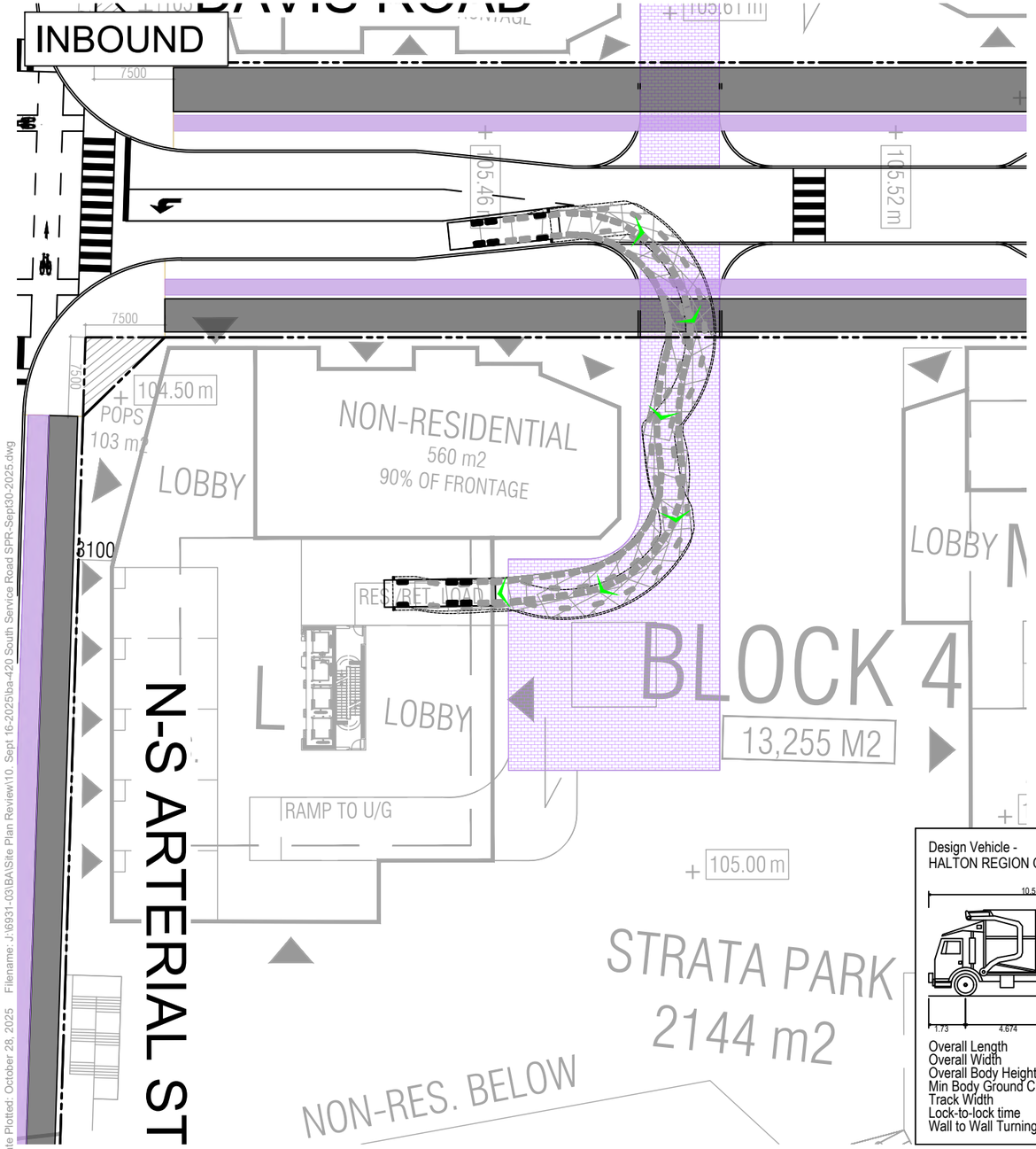
Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

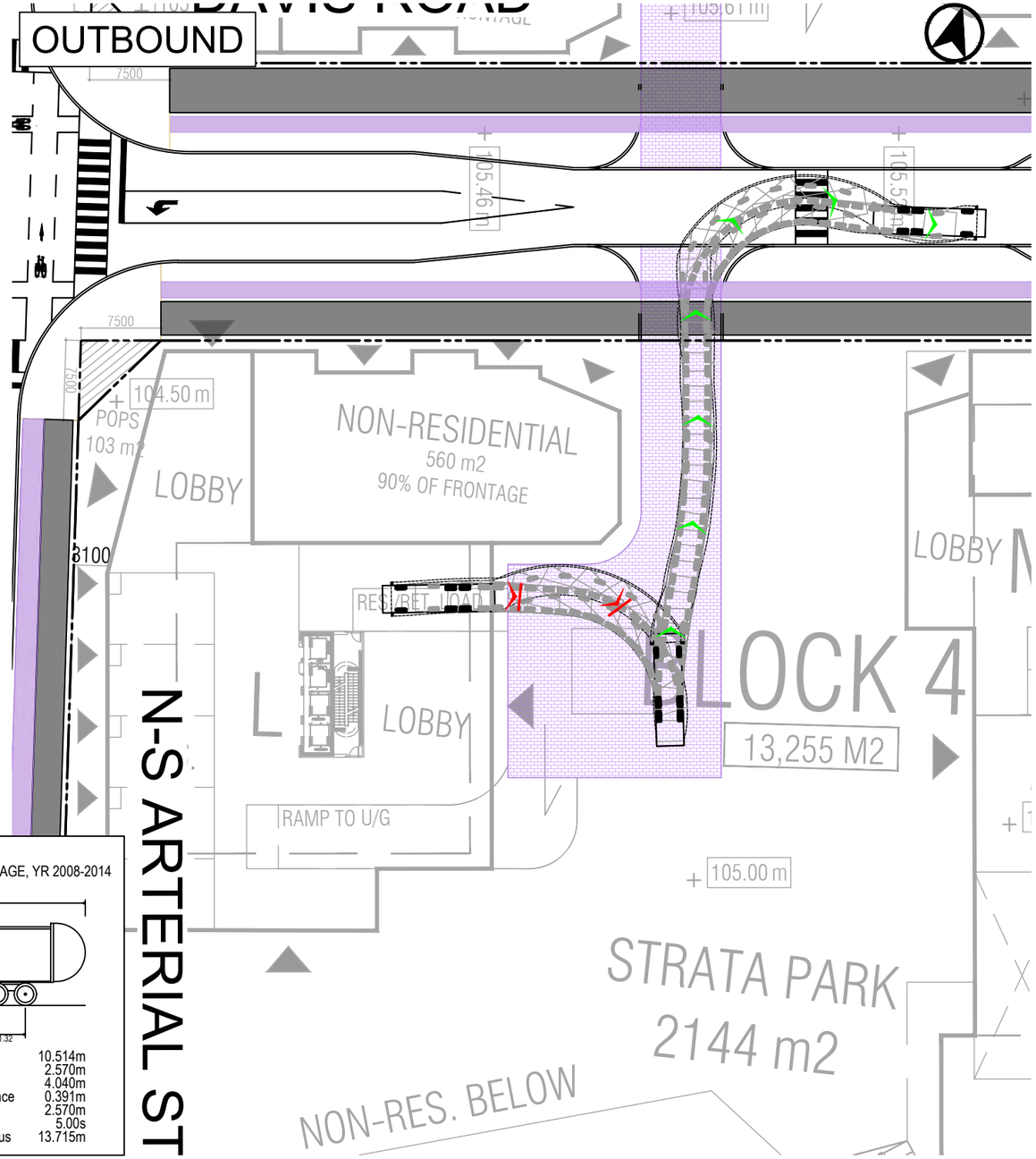
Scale 1:500 0 5 10 15 20m

Drawing No. VMD-28

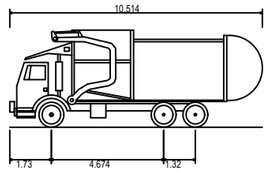
INBOUND

OUTBOUND





Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014



Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 4 - BUILDING L

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

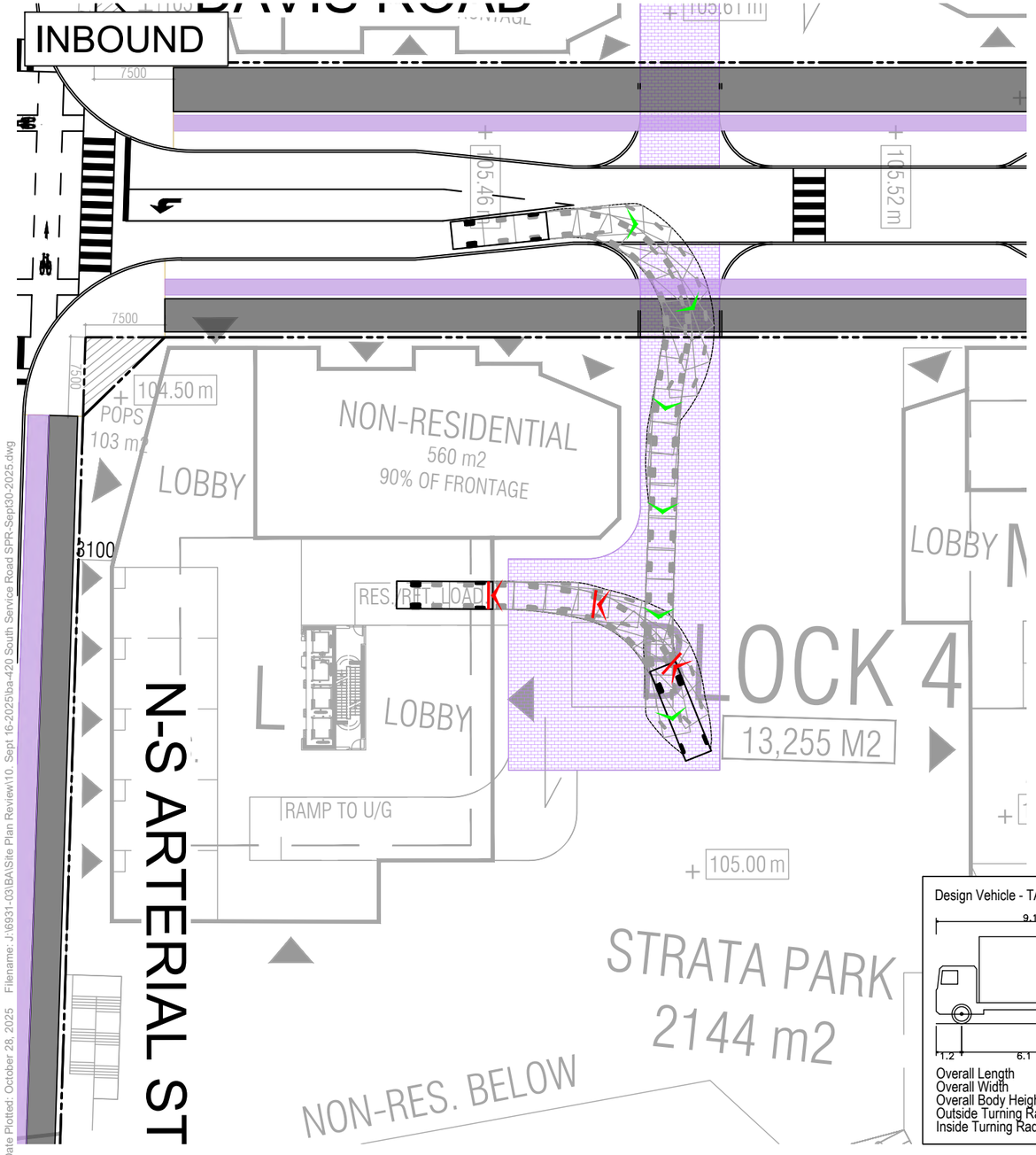
Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

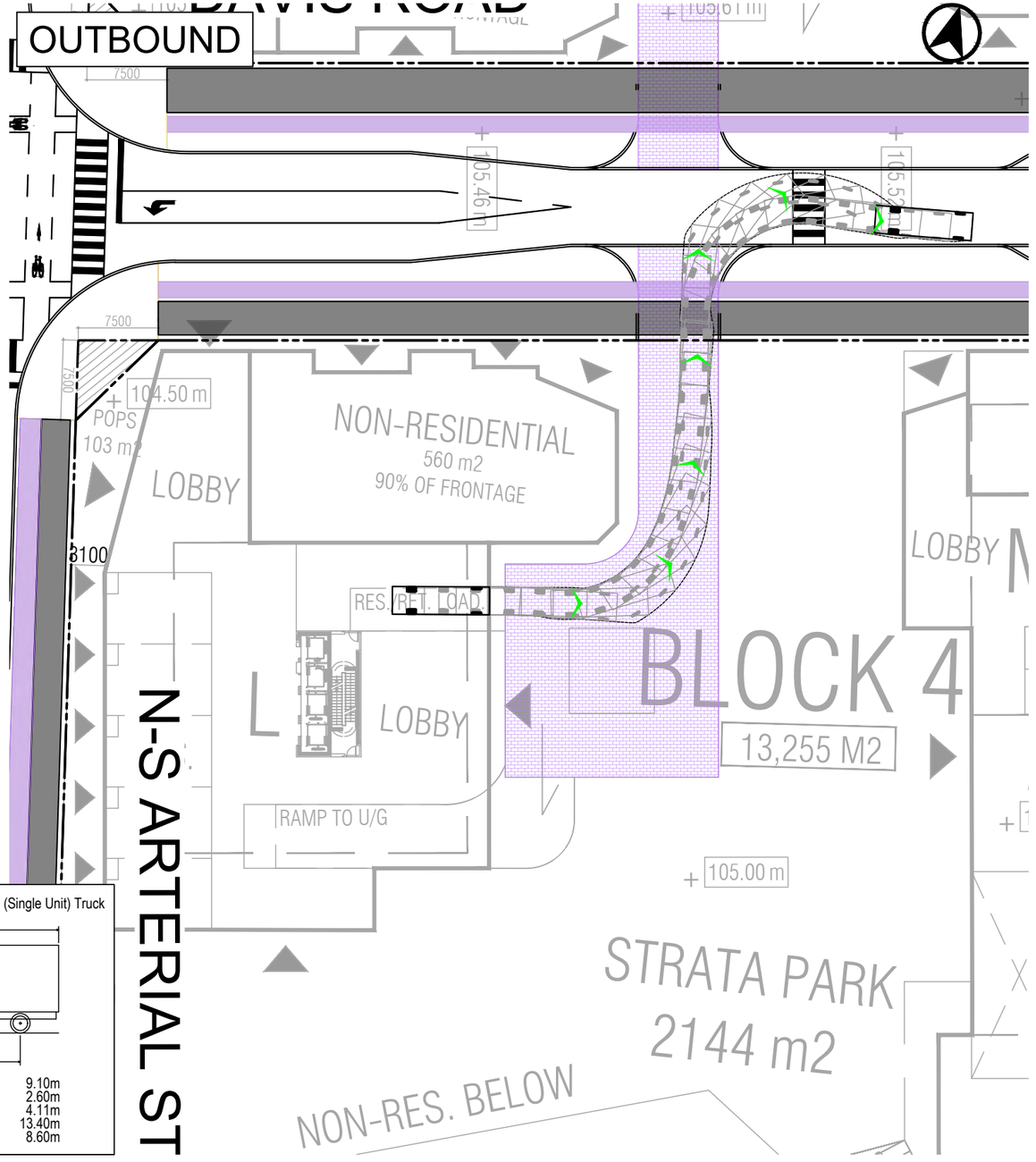
Scale 1:500 (0, 5, 10, 15, 20m)

Drawing No. VMD-29

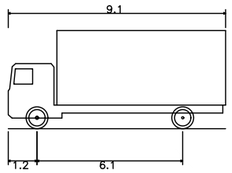
INBOUND

OUTBOUND





Design Vehicle - TAC SU (Single Unit) Truck



Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 4 - BUILDING L

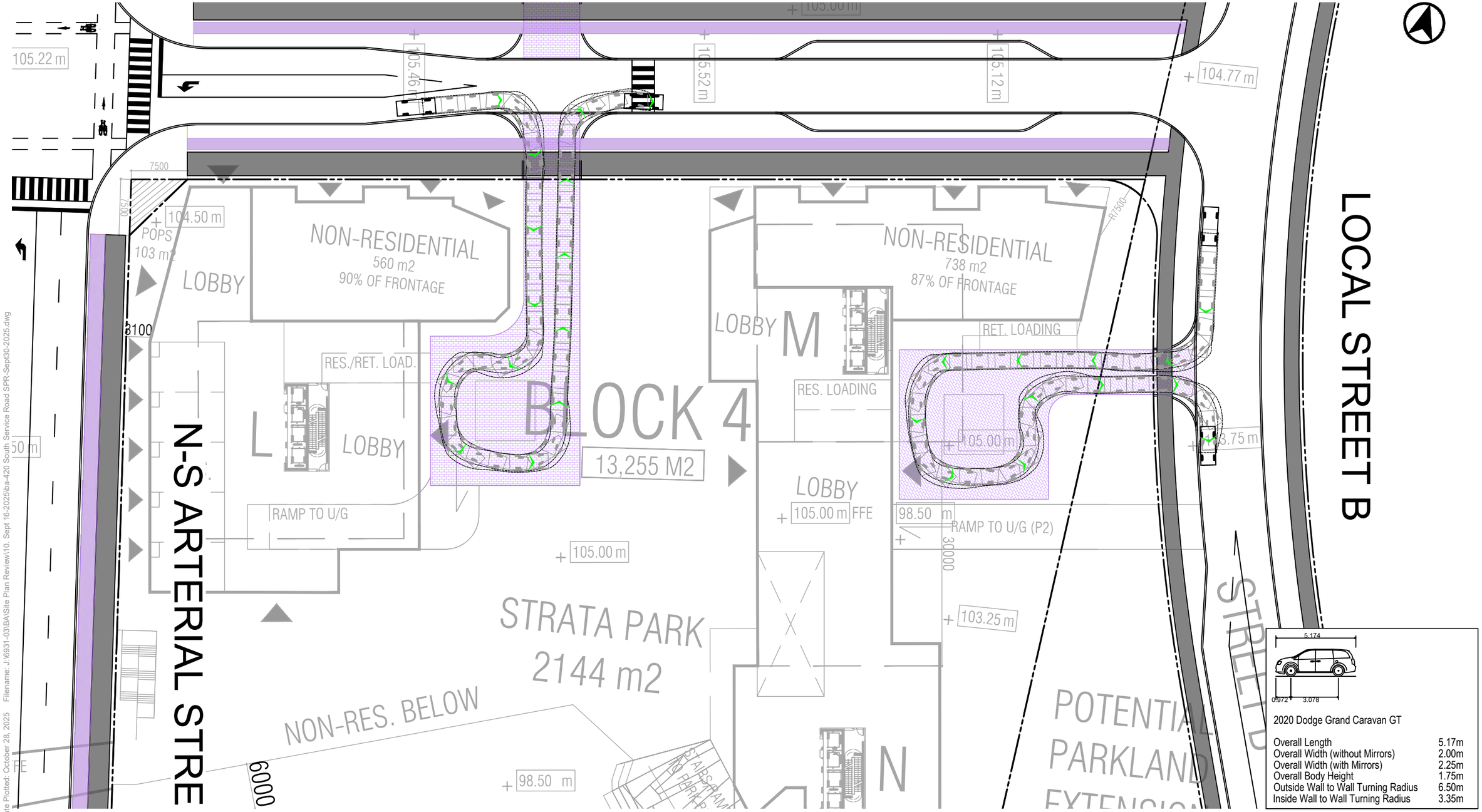
VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0 5 10 15 20m)

Drawing No. VMD-30



Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sept30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 4 - BUILDING L & M

VEHICLE MANOEUVRING DIAGRAM

2020 DODGE GRAND CARAVAN (95TH PERCENTILE VEHICLE)

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 (0, 5, 10, 15, 20m)

Drawing No. VMD-31

INBOUND

OUTBOUND

NON-RESIDENTIAL
738 m2
87% OF FRONTAGE

LOBBY M

RET. LOADING

RES. LOADING

CK 4

255 M2

LOBBY
105.00 m FFE

98.50 m

RAMP TO U/G (P2)

30000

105.12 m

104.77 m

105.00 m

103.75 m

103.25 m

103.00 m

R7500

PARK
m2

POTENTIAL
PARKLAND
EXTENSION

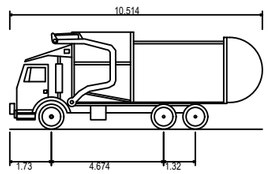
STREET B

F&B

N

STAIR/RAMP TO PARKBELOW

Design Vehicle -
HALTON REGION GARBAGE, YR 2008-2014



Overall Length	10.514m
Overall Width	2.570m
Overall Body Height	4.040m
Min Body Ground Clearance	0.391m
Track Width	2.570m
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	13.715m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sep30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 4 - BUILDING M

VEHICLE MANOEUVRING DIAGRAM

HALTON REGION WASTE COLLECTION TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 0 5 10 15 20m

Drawing No. VMD-32

INBOUND

OUTBOUND

NON-RESIDENTIAL
738 m2
87% OF FRONTAGE

LOBBY M

RET. LOADING

RES. LOADING

CK 4

255 M2

LOBBY
105.00 m FFE

98.50 m

RAMP TO U/G (P2)

3000

104.77 m

105.12 m

103.75 m

103.25 m

103.00 m

102.66 m

R7500

STREET B

POTENTIAL PARKLAND EXTENSION

PARK

m2

N

F&B

STAIR/RAMP TO PARK BELOW

Design Vehicle - TAC SU (Single Unit) Truck

Overall Length	9.10m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	13.40m
Inside Turning Radius	8.60m

Date Plotted: October 28, 2025 Filename: J:\6931-03\BA\Site Plan Review\10. Sept 16-2025\ba-420 South Service Road SPR-Sep30-2025.dwg

BA Group

420 SOUTH SERVICE ROAD

BLOCK 4 - BUILDING M

VEHICLE MANOEUVRING DIAGRAM

TAC SINGLE UNIT (SU) TRUCK

Project:	420 South Service Road
Project No.	6931-03
Date:	October 28, 2025
Revised:	August 18, 2025

Scale 1:500 0 5 10 15 20m

Drawing No. VMD-33

Appendix K:
Phasing Plan

LEGEND

- Phase 1
- Phase 2
- Phase 3
- Phase 4
- Timing TBD by Region

* Refer to submitted Drawing FD-01 - Functional Road Plan prepared by BA GROUP

Appendix L:
Traffic Counts

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & LEIGHLAND AVE / IROQUIOS SHORE RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (1 . TRAFALGAR RD & LEIGHLAND AVE / IROQUIOS SHORE RD)

Start Time	N Approach TRAFALGAR RD						E Approach IROQUOIS SHORE RD						S Approach TRAFALGAR RD						W Approach LEIGHLAND AVE						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	3	225	30	0	5	258	10	5	98	0	0	113	92	120	17	2	0	231	54	9	7	0	4	70	672	
07:15:00	6	348	34	1	3	389	19	3	91	0	1	113	125	142	13	0	0	280	67	14	3	0	6	84	866	
07:30:00	5	396	29	0	9	430	25	5	128	0	2	158	118	168	25	0	0	311	84	17	11	0	6	112	1011	
07:45:00	5	472	34	0	6	511	31	13	145	0	2	189	162	244	42	1	0	449	93	26	14	0	6	133	1282	3831
08:00:00	9	532	40	2	11	583	31	17	186	0	4	234	180	214	41	0	0	435	91	18	6	0	14	115	1367	4526
08:15:00	10	525	46	0	7	581	22	5	176	0	2	203	167	245	35	0	0	447	94	25	7	0	7	126	1357	5017
08:30:00	7	480	60	0	5	547	36	19	156	0	2	211	209	280	25	0	0	514	62	20	7	1	6	90	1362	5368
08:45:00	22	458	49	0	11	529	29	12	166	0	3	207	218	206	43	0	0	467	89	39	14	0	7	142	1345	5431
BREAK																										
16:00:00	22	280	32	0	27	334	58	32	197	0	7	287	181	337	59	2	0	579	72	32	24	0	23	128	1328	
16:15:00	30	290	34	1	16	355	58	27	195	0	2	280	186	393	67	2	0	648	55	30	25	0	22	110	1393	
16:30:00	27	256	26	0	15	309	61	28	171	0	1	260	214	376	76	1	0	667	79	27	31	0	20	137	1373	
16:45:00	35	293	34	0	16	362	57	38	187	0	4	282	218	408	72	1	0	699	41	28	21	0	20	90	1433	5527
17:00:00	33	285	33	0	13	351	81	34	164	0	2	279	195	443	73	1	0	712	72	24	28	0	20	124	1466	5665
17:15:00	25	275	34	0	12	334	87	47	237	0	2	371	234	418	64	1	0	717	78	28	18	0	16	124	1546	5818
17:30:00	22	289	27	0	15	338	60	32	178	0	6	270	226	466	84	1	0	777	88	35	31	0	22	154	1539	5984
17:45:00	25	285	36	0	15	346	56	31	159	0	0	246	225	408	78	1	1	712	72	27	23	0	11	122	1426	5977
Grand Total	286	5689	578	4	186	6557	721	348	2634	0	40	3703	2950	4868	814	13	1	8645	1191	399	270	1	210	1861	**20766**	-
Approach%	4.4%	86.8%	8.8%	0.1%		-	19.5%	9.4%	71.1%	0%		-	34.1%	56.3%	9.4%	0.2%		-	64%	21.4%	14.5%	0.1%		-	-	-
Totals %	1.4%	27.4%	2.8%	0%		31.6%	3.5%	1.7%	12.7%	0%		17.8%	14.2%	23.4%	3.9%	0.1%		41.6%	5.7%	1.9%	1.3%	0%		9%	-	-
Heavy	7	139	10	0		-	17	7	73	0		-	69	147	18	0		-	22	3	1	0		-	-	-
Heavy %	2.4%	2.4%	1.7%	0%		-	2.4%	2%	2.8%	0%		-	2.3%	3%	2.2%	0%		-	1.8%	0.8%	0.4%	0%		-	-	-
Bicycles	0	0	0	0		-	0	5	0	0		-	0	1	0	0		-	0	2	0	0		-	-	-
Bicycle %	0%	0%	0%	0%		-	0%	1.4%	0%	0%		-	0%	0%	0%	0%		-	0%	0.5%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & LEIGHLAND AVE / IROQUIOS SHORE RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)

Start Time	N Approach TRAFALGAR RD						E Approach IROQUOIS SHORE RD						S Approach TRAFALGAR RD						W Approach LEIGHLAND AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	9	532	40	2	11	583	31	17	186	0	4	234	180	214	41	0	0	435	91	18	6	0	14	115	1367
08:15:00	10	525	46	0	7	581	22	5	176	0	2	203	167	245	35	0	0	447	94	25	7	0	7	126	1357
08:30:00	7	480	60	0	5	547	36	19	156	0	2	211	209	280	25	0	0	514	62	20	7	1	6	90	1362
08:45:00	22	458	49	0	11	529	29	12	166	0	3	207	218	206	43	0	0	467	89	39	14	0	7	142	1345
Grand Total	48	1995	195	2	34	2240	118	53	684	0	11	855	774	945	144	0	0	1863	336	102	34	1	34	473	**5431**
Approach%	2.1%	89.1%	8.7%	0.1%		-	13.8%	6.2%	80%	0%		-	41.5%	50.7%	7.7%	0%		-	71%	21.6%	7.2%	0.2%		-	**-**
Totals %	0.9%	36.7%	3.6%	0%		41.2%	2.2%	1%	12.6%	0%		15.7%	14.3%	17.4%	2.7%	0%		34.3%	6.2%	1.9%	0.6%	0%		8.7%	**-**
PHF	0.55	0.94	0.81	0.25		0.96	0.82	0.7	0.92	0		0.91	0.89	0.84	0.84	0		0.91	0.89	0.65	0.61	0.25		0.83	**-**
Heavy	3	48	2	0		53	5	2	29	0		36	21	38	7	0		66	9	2	1	0		12	**-**
Heavy %	6.3%	2.4%	1%	0%		2.4%	4.2%	3.8%	4.2%	0%		4.2%	2.7%	4%	4.9%	0%		3.5%	2.7%	2%	2.9%	0%		2.5%	**-**
Lights	45	1947	193	2		2187	113	51	655	0		819	753	907	137	0		1797	327	100	33	1		461	**-**
Lights %	93.8%	97.6%	99%	100%		97.6%	95.8%	96.2%	95.8%	0%		95.8%	97.3%	96%	95.1%	0%		96.5%	97.3%	98%	97.1%	100%		97.5%	**-**
Single-Unit Trucks	2	17	0	0		19	3	2	15	0		20	9	8	4	0		21	2	1	1	0		4	**-**
Single-Unit Trucks %	4.2%	0.9%	0%	0%		0.8%	2.5%	3.8%	2.2%	0%		2.3%	1.2%	0.8%	2.8%	0%		1.1%	0.6%	1%	2.9%	0%		0.8%	**-**
Buses	1	23	2	0		26	2	0	9	0		11	9	26	3	0		38	7	1	0	0		8	**-**
Buses %	2.1%	1.2%	1%	0%		1.2%	1.7%	0%	1.3%	0%		1.3%	1.2%	2.8%	2.1%	0%		2%	2.1%	1%	0%	0%		1.7%	**-**
Articulated Trucks	0	8	0	0		8	0	0	5	0		5	3	4	0	0		7	0	0	0	0		0	**-**
Articulated Trucks %	0%	0.4%	0%	0%		0.4%	0%	0%	0.7%	0%		0.6%	0.4%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	32	-	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	30	-	**-**
Pedestrians%	-	-	-	-	40.5%		-	-	-	-	8.9%		-	-	-	-	0%		-	-	-	-	38%		**-**
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	4	-	**-**
Bicycles on Crosswalk%	-	-	-	-	2.5%		-	-	-	-	5.1%		-	-	-	-	0%		-	-	-	-	5.1%		**-**

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & LEIGHLAND AVE / IROQUIOS SHORE RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (24.88 °C)

Start Time	N Approach TRAFALGAR RD						E Approach IROQUOIS SHORE RD						S Approach TRAFALGAR RD						W Approach LEIGHLAND AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	35	293	34	0	16	362	57	38	187	0	4	282	218	408	72	1	0	699	41	28	21	0	20	90	1433
17:00:00	33	285	33	0	13	351	81	34	164	0	2	279	195	443	73	1	0	712	72	24	28	0	20	124	1466
17:15:00	25	275	34	0	12	334	87	47	237	0	2	371	234	418	64	1	0	717	78	28	18	0	16	124	1546
17:30:00	22	289	27	0	15	338	60	32	178	0	6	270	226	466	84	1	0	777	88	35	31	0	22	154	1539
Grand Total	115	1142	128	0	56	1385	285	151	766	0	14	1202	873	1735	293	4	0	2905	279	115	98	0	78	492	**5984**
Approach%	8.3%	82.5%	9.2%	0%		-	23.7%	12.6%	63.7%	0%		-	30.1%	59.7%	10.1%	0.1%		-	56.7%	23.4%	19.9%	0%		-	**-**
Totals %	1.9%	19.1%	2.1%	0%		23.1%	4.8%	2.5%	12.8%	0%		20.1%	14.6%	29%	4.9%	0.1%		48.5%	4.7%	1.9%	1.6%	0%		8.2%	**-**
PHF	0.82	0.97	0.94	0		0.96	0.82	0.8	0.81	0		0.81	0.93	0.93	0.87	1		0.93	0.79	0.82	0.79	0		0.8	**-**
Heavy	0	24	0	0		24	0	1	10	0		11	11	26	4	0		41	4	1	0	0		5	**-**
Heavy %	0%	2.1%	0%	0%		1.7%	0%	0.7%	1.3%	0%		0.9%	1.3%	1.5%	1.4%	0%		1.4%	1.4%	0.9%	0%	0%		1%	**-**
Lights	115	1118	128	0		1361	285	150	756	0		1191	862	1709	289	4		2864	275	114	98	0		487	**-**
Lights %	100%	97.9%	100%	0%		98.3%	100%	99.3%	98.7%	0%		99.1%	98.7%	98.5%	98.6%	100%		98.6%	98.6%	99.1%	100%	0%		99%	**-**
Single-Unit Trucks	0	5	0	0		5	0	1	2	0		3	4	7	1	0		12	2	0	0	0		2	**-**
Single-Unit Trucks %	0%	0.4%	0%	0%		0.4%	0%	0.7%	0.3%	0%		0.2%	0.5%	0.4%	0.3%	0%		0.4%	0.7%	0%	0%	0%		0.4%	**-**
Buses	0	16	0	0		16	0	0	6	0		6	6	18	3	0		27	2	1	0	0		3	**-**
Buses %	0%	1.4%	0%	0%		1.2%	0%	0%	0.8%	0%		0.5%	0.7%	1%	1%	0%		0.9%	0.7%	0.9%	0%	0%		0.6%	**-**
Articulated Trucks	0	3	0	0		3	0	0	2	0		2	1	1	0	0		2	0	0	0	0		0	**-**
Articulated Trucks %	0%	0.3%	0%	0%		0.2%	0%	0%	0.3%	0%		0.2%	0.1%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	50	-	-	-	-	-	11	-	-	-	-	-	0	-	-	-	-	-	76	-	**-**
Pedestrians%	-	-	-	-	33.8%		-	-	-	-	7.4%		-	-	-	-	0%		-	-	-	-	51.4%		**-**
Bicycles on Road	0	0	0	0	0	-	0	3	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	-	4.1%		-	-	-	-	2%		-	-	-	-	0%		-	-	-	-	1.4%		**-**

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather: Overcast Clouds (17.47 °C)**

Peak Hour: 04:45 PM - 05:45 PM **Weather: Overcast Clouds (24.88 °C)**

	Bicycles on Crosswalk	Pedestrians
N	6	50
S	0	0
E	3	11
W	2	76

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & QEW WB RAMPS / N SERVICE RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (2 . TRAFALGAR RD & QEW WB RAMPS / N SERVICE RD)

Start Time	N Approach TRAFALGAR RD						E Approach QEW WB ON RAMPS			S Approach TRAFALGAR RD						W Approach NORTH SERVICE RD E						SW Approach QEW WB ON RAMPS			NE Approach QEW WB OFF RAMPS						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Bear Right N:SW	Thru N:S	UTurn N:N	Peds N:	Approach Total	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Hard Right W:SW	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total	UTurn SW:SW	Peds SW:	Approach Total	Hard Right NE:N	Bear Right NE:W	Thru NE:SW	Bear Left NE:S	UTurn NE:NE	Peds NE:	Approach Total		
07:00:00	1	96	266	0	0	363	0	1	0	37	196	0	0	0	233	9	28	1	0	0	38	0	1	0	51	0	0	69	0	1	120	754	
07:15:00	1	143	375	0	0	519	0	2	0	36	225	0	0	0	261	10	19	0	0	4	29	0	4	0	52	0	0	66	0	2	118	927	
07:30:00	0	187	412	0	1	599	0	3	0	63	272	0	0	0	335	15	41	3	0	1	59	0	1	0	47	0	0	95	0	3	142	1135	
07:45:00	1	227	476	0	0	704	0	3	0	59	385	0	0	0	444	22	47	2	0	2	71	0	3	0	81	0	0	79	0	2	160	1379	4195
08:00:00	1	245	560	0	0	806	0	2	0	92	364	0	0	0	456	12	45	0	0	3	57	0	3	0	56	0	1	74	0	3	131	1450	4891
08:15:00	1	286	532	0	1	819	0	1	0	98	418	0	0	0	516	25	31	1	0	6	57	0	5	0	54	0	0	70	0	1	124	1516	5480
08:30:00	3	299	407	0	0	709	0	1	0	91	463	0	0	0	554	12	32	3	0	3	47	0	4	0	41	0	1	83	0	1	125	1435	5780
08:45:00	1	269	455	0	0	725	0	1	0	94	428	0	0	0	522	20	47	1	0	0	68	0	0	0	47	0	0	118	0	1	165	1480	5881
BREAK																																	
16:00:00	4	232	298	0	0	534	0	7	0	103	549	0	0	0	652	36	26	4	0	4	66	0	6	0	63	0	0	82	0	7	145	1397	
16:15:00	6	250	306	0	0	562	0	2	0	105	576	0	0	0	681	25	48	3	0	4	76	0	5	0	71	0	0	89	0	2	160	1479	
16:30:00	2	216	270	0	0	488	0	5	0	80	595	0	0	0	675	29	33	5	0	3	67	0	10	0	74	0	0	107	0	3	181	1411	
16:45:00	3	222	324	0	0	549	0	2	0	94	612	0	0	0	706	28	23	11	0	5	62	0	5	0	84	0	1	94	0	4	179	1496	5783
17:00:00	5	212	283	0	0	500	0	0	0	82	632	0	0	0	714	27	55	6	0	3	88	0	5	0	65	0	0	98	0	1	163	1465	5851
17:15:00	6	233	324	0	1	563	0	4	0	63	601	0	0	0	664	30	52	4	0	5	86	0	5	0	93	0	1	117	0	3	211	1524	5896
17:30:00	2	225	371	0	0	598	0	4	0	65	709	0	0	0	774	16	35	6	0	4	57	0	6	0	100	0	3	90	0	4	193	1622	6107
17:45:00	4	169	350	0	1	523	0	1	0	72	588	0	0	0	660	26	38	9	0	5	73	0	5	0	79	0	0	134	0	3	213	1469	6080
Grand Total	41	3511	6009	0	4	9561	0	39	0	1234	7613	0	0	0	8847	342	600	59	0	52	1001	0	68	0	1058	0	7	1465	0	41	2530	**21939**	-
Approach%	0.4%	36.7%	62.8%	0%		-	0%		-	13.9%	86.1%	0%	0%		-	34.2%	59.9%	5.9%	0%		-	0%		-	41.8%	0%	0.3%	57.9%	0%		-	**-**	-
Totals %	0.2%	16%	27.4%	0%		43.6%	0%		0%	5.6%	34.7%	0%	0%		40.3%	1.6%	2.7%	0.3%	0%		4.6%	0%		0%	4.8%	0%	0%	6.7%	0%		11.5%	**-**	-
Heavy	1	70	156	0		-	0		-	29	208	0	0		-	2	5	1	0		-	0		-	31	0	0	36	0		-	**-**	-
Heavy %	2.4%	2%	2.6%	0%		-	0%		-	2.4%	2.7%	0%	0%		-	0.6%	0.8%	1.7%	0%		-	0%		-	2.9%	0%	0%	2.5%	0%		-	**-**	-
Bicycles	0	0	0	0		-	0		-	0	1	0	0		-	0	0	0	0		-	0		-	0	0	0	0	0		-	**-**	-
Bicycle %	0%	0%	0%	0%		-	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%		-	0%	0%	0%	0%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & QEW WB RAMPS / N SERVICE RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)

Start Time	N Approach TRAFALGAR RD						E Approach QEW WB ON RAMPS			S Approach TRAFALGAR RD						W Approach NORTH SERVICE RD E						SW Approach QEW WB ON RAMPS			NE Approach QEW WB OFF RAMPS						Int. Total (15 min)
	Right	Bear Right	Thru	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Hard Right	Right	Left	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Hard Right	Bear Right	Thru	Bear Left	UTurn	Peds	Approach Total	
08:00:00	1	245	560	0	0	806	0	2	0	92	364	0	0	0	456	12	45	0	0	3	57	0	3	0	56	0	1	74	0	3	131	1450
08:15:00	1	286	532	0	1	819	0	1	0	98	418	0	0	0	516	25	31	1	0	6	57	0	5	0	54	0	0	70	0	1	124	1516
08:30:00	3	299	407	0	0	709	0	1	0	91	463	0	0	0	554	12	32	3	0	3	47	0	4	0	41	0	1	83	0	1	125	1435
08:45:00	1	269	455	0	0	725	0	1	0	94	428	0	0	0	522	20	47	1	0	0	68	0	0	0	47	0	0	118	0	1	165	1480
Grand Total	6	1099	1954	0	1	3059	0	5	0	375	1673	0	0	0	2048	69	155	5	0	12	229	0	12	0	198	0	2	345	0	6	545	**5881**
Approach%	0.2%	35.9%	63.9%	0%		-	0%		-	18.3%	81.7%	0%	0%		-	30.1%	67.7%	2.2%	0%		-	0%		-	36.3%	0%	0.4%	63.3%	0%		-	**-**
Totals %	0.1%	18.7%	33.2%	0%		52%	0%		0%	6.4%	28.4%	0%	0%		34.8%	1.2%	2.6%	0.1%	0%		3.9%	0%		0%	3.4%	0%	0%	5.9%	0%		9.3%	**-**
PHF	0.5	0.92	0.87	0		0.93	0		0	0.96	0.9	0	0		0.92	0.69	0.82	0.42	0		0.84	0		0	0.88	0	0.5	0.73	0		0.83	**-**
Heavy	0	32	49	0		81	0		0	13	62	0	0		75	0	1	0	0		1	0		0	5	0	0	15	0		20	**-**
Heavy %	0%	2.9%	2.5%	0%		2.6%	0%		0%	3.5%	3.7%	0%	0%		3.7%	0%	0.6%	0%	0%		0.4%	0%		0%	2.5%	0%	0%	4.3%	0%		3.7%	**-**
Lights	6	1067	1905	0		2978	0		0	362	1611	0	0		1973	69	154	5	0		228	0		0	193	0	2	330	0		525	**-**
Lights %	100%	97.1%	97.5%	0%		97.4%	0%		0%	96.5%	96.3%	0%	0%		96.3%	100%	99.4%	100%	0%		99.6%	0%		0%	97.5%	0%	100%	95.7%	0%		96.3%	**-**
Single-Unit Trucks	0	17	13	0		30	0		0	5	19	0	0		24	0	1	0	0		1	0		0	2	0	0	10	0		12	**-**
Single-Unit Trucks %	0%	1.5%	0.7%	0%		1%	0%		0%	1.3%	1.1%	0%	0%		1.2%	0%	0.6%	0%	0%		0.4%	0%		0%	1%	0%	0%	2.9%	0%		2.2%	**-**
Buses	0	7	32	0		39	0		0	8	39	0	0		47	0	0	0	0		0	0		0	0	0	0	2	0		2	**-**
Buses %	0%	0.6%	1.6%	0%		1.3%	0%		0%	2.1%	2.3%	0%	0%		2.3%	0%	0%	0%	0%		0%	0%		0%	0%	0%	0%	0.6%	0%		0.4%	**-**
Articulated Trucks	0	8	4	0		12	0		0	0	4	0	0		4	0	0	0	0		0	0		0	3	0	0	3	0		6	**-**
Articulated Trucks %	0%	0.7%	0.2%	0%		0.4%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%		0%	1.5%	0%	0%	0.9%	0%		1.1%	**-**
Pedestrians	-	-	-	-	1	-	-	2	-	-	-	-	-	0	-	-	-	-	-	10	-	-	10	-	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	2.8%		-	5.6%		-	-	-	-	0%		-	-	-	-	27.8%		-	27.8%		-	-	-	-	-	8.3%		**-**
Bicycles on Road	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	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	0%		-	-	-	-	0%		-	-	-	-	0%		-	0%		-	-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	3	-	-	-	-	-	0	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	3	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	8.3%		-	-	-	-	0%		-	-	-	-	5.6%		-	5.6%		-	-	-	-	-	8.3%		**-**

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & QEW WB RAMPS / N SERVICE RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

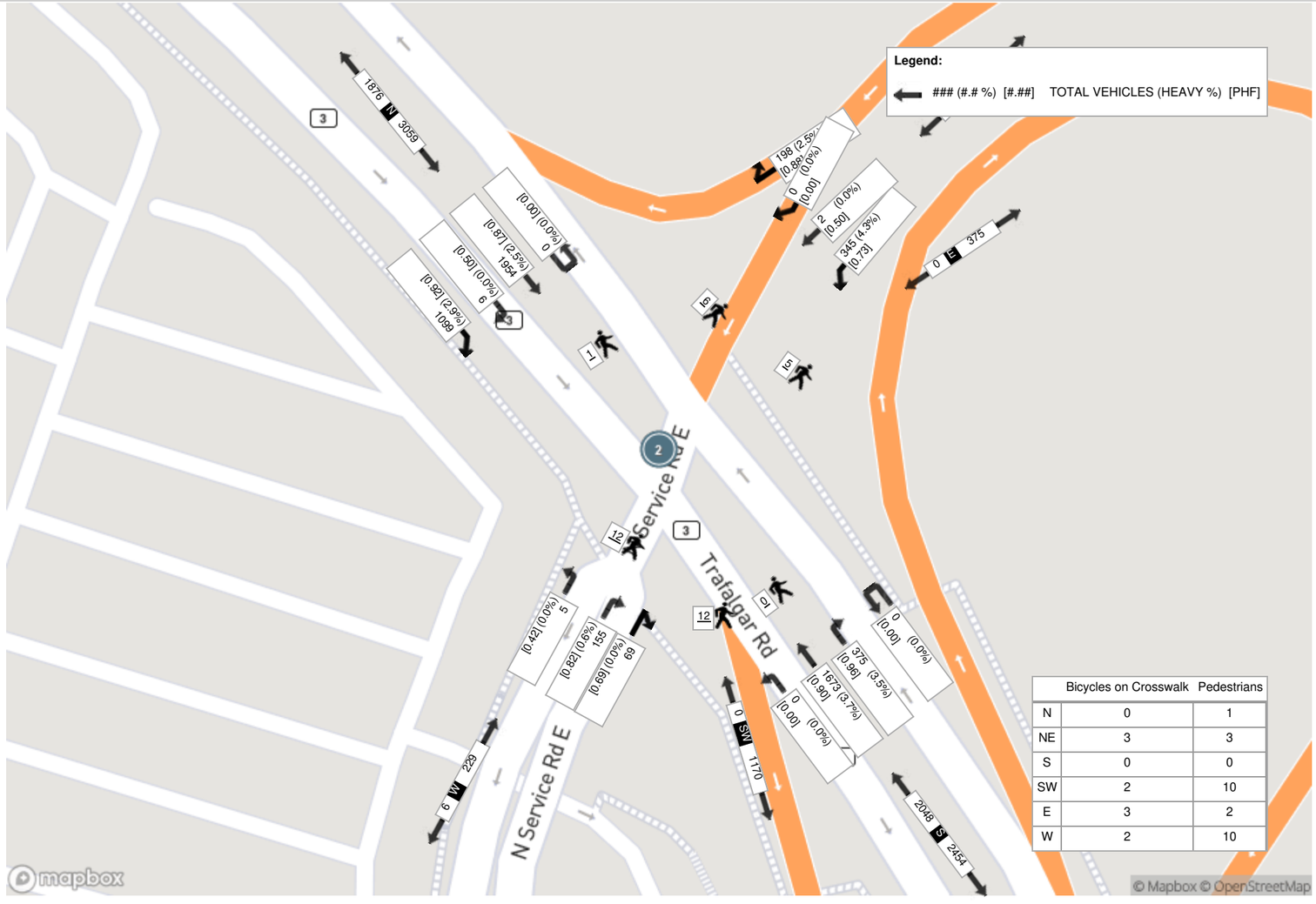
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (24.88 °C)

Start Time	N Approach TRAFALGAR RD						E Approach QEW WB ON RAMPS			S Approach TRAFALGAR RD						W Approach NORTH SERVICE RD E						SW Approach QEW WB ON RAMPS			NE Approach QEW WB OFF RAMPS						Int. Total (15 min)
	Right	Bear Right	Thru	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Hard Right	Right	Left	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Hard Right	Bear Right	Thru	Bear Left	UTurn	Peds	Approach Total	
16:45:00	3	222	324	0	0	549	0	2	0	94	612	0	0	0	706	28	23	11	0	5	62	0	5	0	84	0	1	94	0	4	179	1496
17:00:00	5	212	283	0	0	500	0	0	0	82	632	0	0	0	714	27	55	6	0	3	88	0	5	0	65	0	0	98	0	1	163	1465
17:15:00	6	233	324	0	1	563	0	4	0	63	601	0	0	0	664	30	52	4	0	5	86	0	5	0	93	0	1	117	0	3	211	1524
17:30:00	2	225	371	0	0	598	0	4	0	65	709	0	0	0	774	16	35	6	0	4	57	0	6	0	100	0	3	90	0	4	193	1622
Grand Total	16	892	1302	0	1	2210	0	10	0	304	2554	0	0	0	2858	101	165	27	0	17	293	0	21	0	342	0	5	399	0	12	746	**6107**
Approach%	0.7%	40.4%	58.9%	0%		-	0%		-	10.6%	89.4%	0%	0%		-	34.5%	56.3%	9.2%	0%		-	0%		-	45.8%	0%	0.7%	53.5%	0%		-	-
Totals %	0.3%	14.6%	21.3%	0%		36.2%	0%		0%	5%	41.8%	0%	0%		46.8%	1.7%	2.7%	0.4%	0%		4.8%	0%		0%	5.6%	0%	0.1%	6.5%	0%		12.2%	-
PHF	0.67	0.96	0.88	0		0.92	0		0	0.81	0.9	0	0		0.92	0.84	0.75	0.61	0		0.83	0		0	0.86	0	0.42	0.85	0		0.88	-
Heavy	1	6	32	0		39	0		0	4	39	0	0		43	0	1	0	0		1	0		0	6	0	0	6	0		12	-
Heavy %	6.3%	0.7%	2.5%	0%		1.8%	0%		0%	1.3%	1.5%	0%	0%		1.5%	0%	0.6%	0%	0%		0.3%	0%		0%	1.8%	0%	0%	1.5%	0%		1.6%	-
Lights	15	886	1270	0		2171	0		0	300	2515	0	0		2815	101	164	27	0		292	0		0	336	0	5	393	0		734	-
Lights %	93.8%	99.3%	97.5%	0%		98.2%	0%		0%	98.7%	98.5%	0%	0%		98.5%	100%	99.4%	100%	0%		99.7%	0%		0%	98.2%	0%	100%	98.5%	0%		98.4%	-
Single-Unit Trucks	1	2	6	0		9	0		0	1	10	0	0		11	0	1	0	0		1	0		0	5	0	0	5	0		10	-
Single-Unit Trucks %	6.3%	0.2%	0.5%	0%		0.4%	0%		0%	0.3%	0.4%	0%	0%		0.4%	0%	0.6%	0%	0%		0.3%	0%		0%	1.5%	0%	0%	1.3%	0%		1.3%	-
Buses	0	1	23	0		24	0		0	2	27	0	0		29	0	0	0	0		0	0		0	0	0	0	1	0		1	-
Buses %	0%	0.1%	1.8%	0%		1.1%	0%		0%	0.7%	1.1%	0%	0%		1%	0%	0%	0%	0%		0%	0%		0%	0%	0%	0%	0.3%	0%		0.1%	-
Articulated Trucks	0	3	3	0		6	0		0	1	2	0	0		3	0	0	0	0		0	0		0	1	0	0	0	0		1	-
Articulated Trucks %	0%	0.3%	0.2%	0%		0.3%	0%		0%	0.3%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%		0%	0.3%	0%	0%	0%	0%		0.1%	-
Pedestrians	-	-	-	-	1	-	-	7	-	-	-	-	-	0	-	-	-	-	-	12	-	-	17	-	-	-	-	-	-	7	-	-
Pedestrians%	-	-	-	-	1.6%		-	11.5%		-	-	-	-	0%		-	-	-	-	19.7%		-	27.9%		-	-	-	-	-	11.5%		-
Bicycles on Road	0	0	0	0	0	-	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	0	0	-	0	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	0%		-	-	-	-	0%		-	-	-	-	0%		-	0%		-	-	-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	3	-	-	-	-	-	0	-	-	-	-	-	5	-	-	4	-	-	-	-	-	-	5	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	4.9%		-	-	-	-	0%		-	-	-	-	8.2%		-	6.6%		-	-	-	-	-	8.2%		-

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

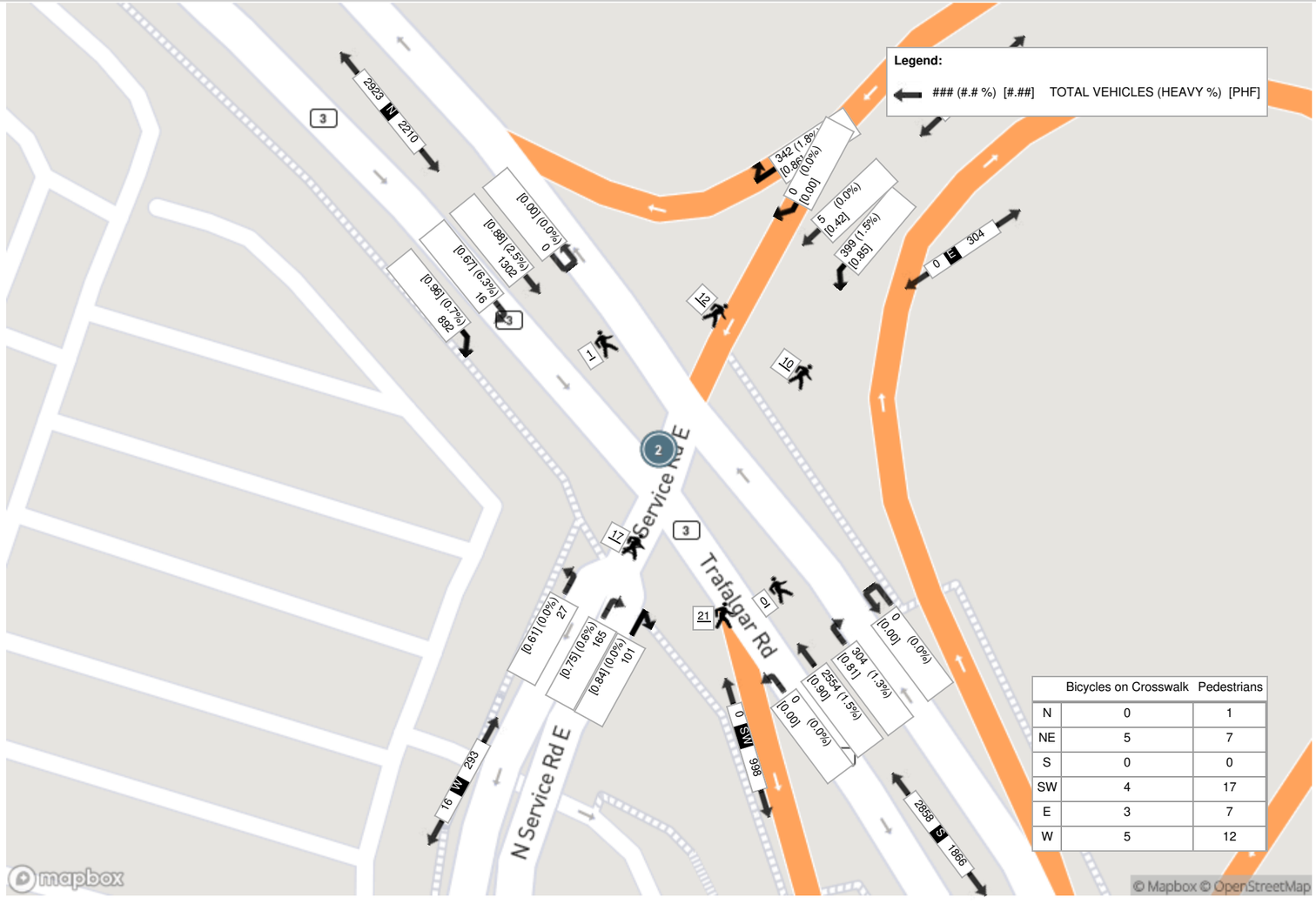
Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	1
NE	3	3
S	0	0
SW	2	10
E	3	2
W	2	10

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (24.88 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	1
NE	5	7
S	0	0
SW	4	17
E	3	7
W	5	12

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & QEW EB RAMPS
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (3 . TRAFALGAR RD & QEW EB RAMPS)

Start Time	N Approach TRAFALGAR RD					S Approach TRAFALGAR RD				W Approach QEW EB OFF RAMPS					NW Approach QEW EB ON RAMPS			Int. Total (15 min)	Int. Total (1 hr)
	Hard Right N:NW	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total	UTurn NW:NW	Peds NW:	Approach Total		
07:00:00	60	305	0	0	365	126	0	0	126	88	112	0	2	200	0	2	0	691	
07:15:00	85	364	0	0	449	143	0	0	143	96	126	0	5	222	0	4	0	814	
07:30:00	77	480	0	0	557	189	0	0	189	116	139	0	0	255	0	1	0	1001	
07:45:00	82	487	0	0	569	245	0	0	245	138	218	0	3	356	0	3	0	1170	3676
08:00:00	104	604	0	0	708	276	0	0	276	147	171	0	4	318	0	3	0	1302	4287
08:15:00	104	521	0	0	625	272	0	0	272	165	245	0	3	410	0	3	0	1307	4780
08:30:00	88	425	0	0	513	332	0	0	332	126	222	0	5	348	0	5	0	1193	4972
08:45:00	94	539	0	0	633	272	0	0	272	144	248	0	0	392	0	0	0	1297	5099
BREAK																			
16:00:00	65	340	0	0	405	453	0	0	453	73	213	0	5	286	0	5	0	1144	
16:15:00	73	369	0	0	442	430	0	0	430	97	238	0	5	335	0	6	0	1207	
16:30:00	55	364	0	0	419	480	0	0	480	81	219	0	9	300	0	8	0	1199	
16:45:00	56	373	0	0	429	407	0	0	407	89	251	0	1	340	0	3	0	1176	4726
17:00:00	74	357	0	0	431	449	0	0	449	84	244	0	7	328	0	5	0	1208	4790
17:15:00	64	407	0	0	471	411	0	0	411	93	300	0	5	393	0	5	0	1275	4858
17:30:00	81	437	0	0	518	522	0	0	522	83	214	0	8	297	0	7	0	1337	4996
17:45:00	64	438	0	0	502	396	0	0	396	99	246	0	5	345	0	5	0	1243	5063
Grand Total	1226	6810	0	0	8036	5403	0	0	5403	1719	3406	0	67	5125	0	65	0	**18564**	-
Approach%	15.3%	84.7%	0%		-	100%	0%		-	33.5%	66.5%	0%		-	0%		-	**-**	-
Totals %	6.6%	36.7%	0%		43.3%	29.1%	0%		29.1%	9.3%	18.3%	0%		27.6%	0%		0%	**-**	-
Heavy	27	170	0		-	173	0		-	39	67	0		-	0		-	**-**	-
Heavy %	2.2%	2.5%	0%		-	3.2%	0%		-	2.3%	2%	0%		-	0%		-	**-**	-
Bicycles	0	3	0		-	1	0		-	0	0	0		-	0		-	**-**	-
Bicycle %	0%	0%	0%		-	0%	0%		-	0%	0%	0%		-	0%		-	**-**	-

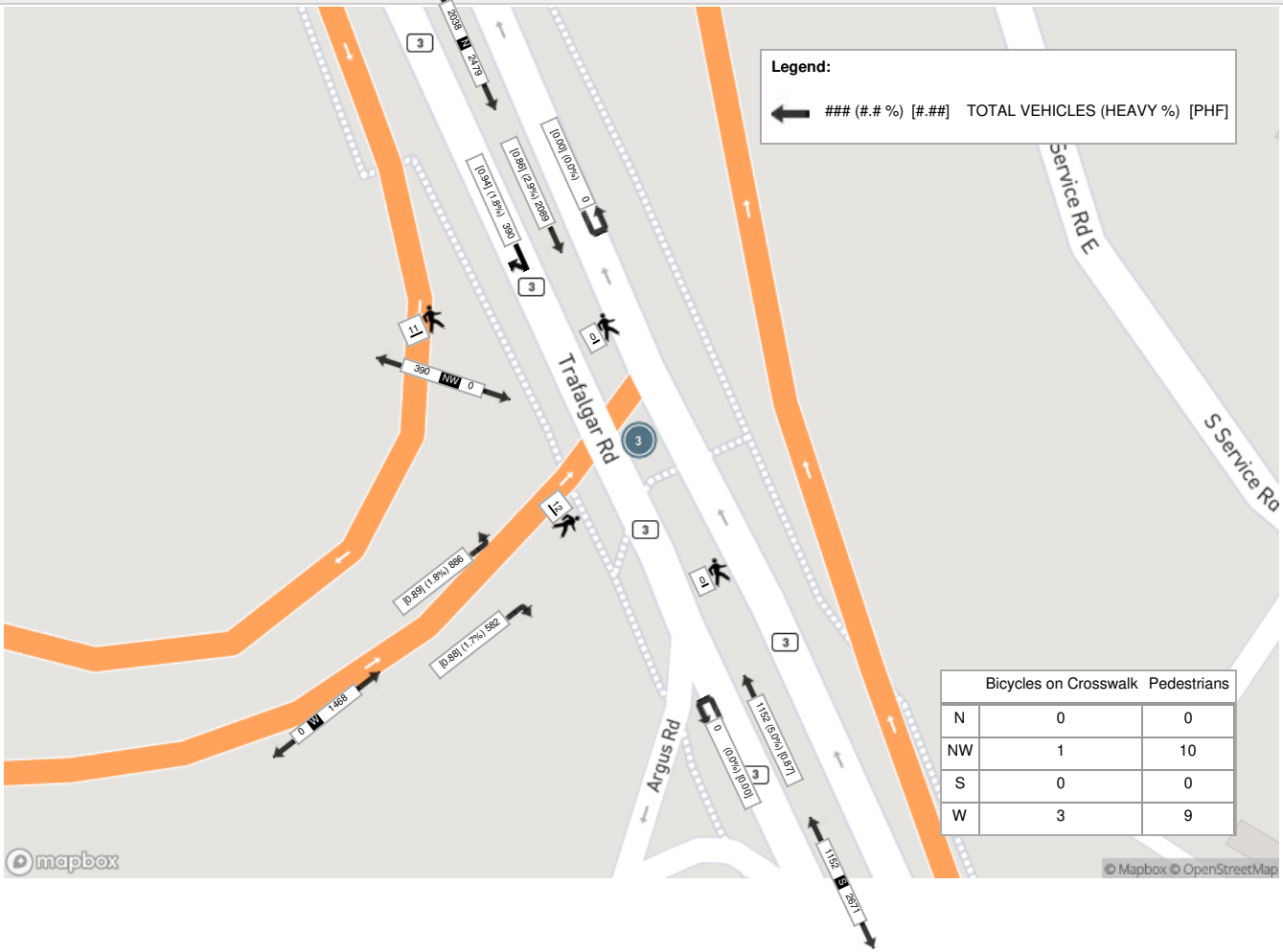
Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)

Start Time	N Approach TRAFALGAR RD					S Approach TRAFALGAR RD				W Approach QEW EB OFF RAMPS					NW Approach QEW EB ON RAMPS			Int. Total (15 min)
	Hard Right	Thru	UTurn	Peds	Approach Total	Thru	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	
08:00:00	104	604	0	0	708	276	0	0	276	147	171	0	4	318	0	3	0	1302
08:15:00	104	521	0	0	625	272	0	0	272	165	245	0	3	410	0	3	0	1307
08:30:00	88	425	0	0	513	332	0	0	332	126	222	0	5	348	0	5	0	1193
08:45:00	94	539	0	0	633	272	0	0	272	144	248	0	0	392	0	0	0	1297
Grand Total	390	2089	0	0	2479	1152	0	0	1152	582	886	0	12	1468	0	11	0	**5099**
Approach%	15.7%	84.3%	0%		-	100%	0%		-	39.6%	60.4%	0%		-	0%		-	**-**
Totals %	7.6%	41%	0%		48.6%	22.6%	0%		22.6%	11.4%	17.4%	0%		28.8%	0%		0%	**-**
PHF	0.94	0.86	0		0.88	0.87	0		0.87	0.88	0.89	0		0.9	0		0	**-**
Heavy	7	60	0		67	58	0		58	10	16	0		26	0		0	**-**
Heavy %	1.8%	2.9%	0%		2.7%	5%	0%		5%	1.7%	1.8%	0%		1.8%	0%		0%	**-**
Lights	383	2029	0		2412	1094	0		1094	572	870	0		1442	0		0	**-**
Lights %	98.2%	97.1%	0%		97.3%	95%	0%		95%	98.3%	98.2%	0%		98.2%	0%		0%	**-**
Single-Unit Trucks	3	21	0		24	15	0		15	6	8	0		14	0		0	**-**
Single-Unit Trucks %	0.8%	1%	0%		1%	1.3%	0%		1.3%	1%	0.9%	0%		1%	0%		0%	**-**
Buses	3	32	0		35	41	0		41	4	5	0		9	0		0	**-**
Buses %	0.8%	1.5%	0%		1.4%	3.6%	0%		3.6%	0.7%	0.6%	0%		0.6%	0%		0%	**-**
Articulated Trucks	1	7	0		8	2	0		2	0	3	0		3	0		0	**-**
Articulated Trucks %	0.3%	0.3%	0%		0.3%	0.2%	0%		0.2%	0%	0.3%	0%		0.2%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	0	-	-	-	-	9	-	-	10	-	**-**
Pedestrians%	-	-	-	0%		-	-	0%		-	-	-	39.1%		-	43.5%		**-**
Bicycles on Road	0	0	0	0	-	0	0	0	-	0	0	0	0	-	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	0%		-	-	-	0%		-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	0	-	-	-	-	3	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	0%		-	-	-	13%		-	4.3%		**-**

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (24.88 °C)

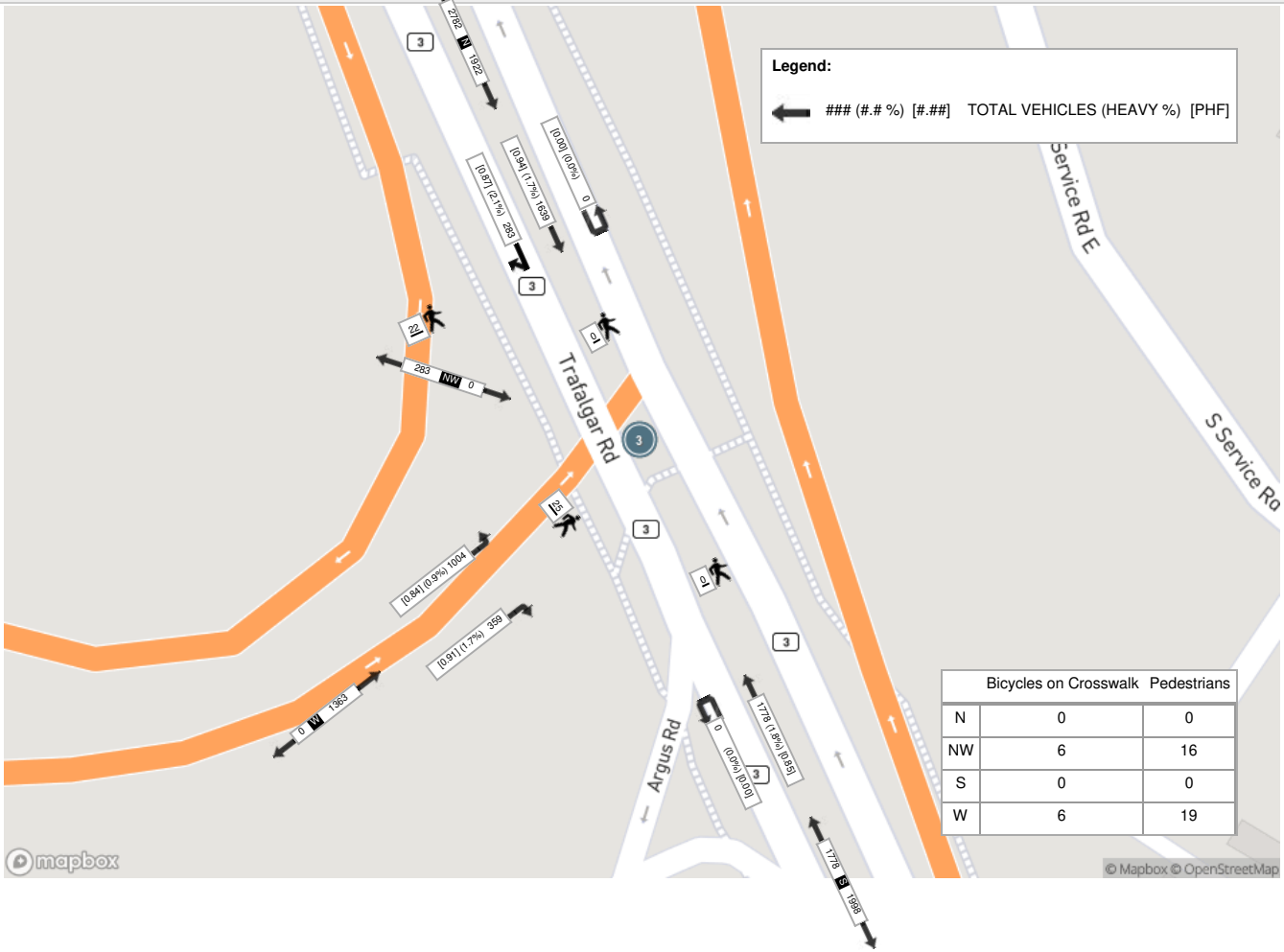
Start Time	N Approach TRAFALGAR RD					S Approach TRAFALGAR RD				W Approach QEW EB OFF RAMPS					NW Approach QEW EB ON RAMPS			Int. Total (15 min)
	Hard Right	Thru	UTurn	Peds	Approach Total	Thru	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	
17:00:00	74	357	0	0	431	449	0	0	449	84	244	0	7	328	0	5	0	1208
17:15:00	64	407	0	0	471	411	0	0	411	93	300	0	5	393	0	5	0	1275
17:30:00	81	437	0	0	518	522	0	0	522	83	214	0	8	297	0	7	0	1337
17:45:00	64	438	0	0	502	396	0	0	396	99	246	0	5	345	0	5	0	1243
Grand Total	283	1639	0	0	1922	1778	0	0	1778	359	1004	0	25	1363	0	22	0	**5063**
Approach%	14.7%	85.3%	0%		-	100%	0%		-	26.3%	73.7%	0%		-	0%		-	**-**
Totals %	5.6%	32.4%	0%		38%	35.1%	0%		35.1%	7.1%	19.8%	0%		26.9%	0%		0%	**-**
PHF	0.87	0.94	0		0.93	0.85	0		0.85	0.91	0.84	0		0.87	0		0	**-**
Heavy	6	28	0		34	32	0		32	6	9	0		15	0		0	**-**
Heavy %	2.1%	1.7%	0%		1.8%	1.8%	0%		1.8%	1.7%	0.9%	0%		1.1%	0%		0%	**-**
Lights	277	1611	0		1888	1746	0		1746	353	995	0		1348	0		0	**-**
Lights %	97.9%	98.3%	0%		98.2%	98.2%	0%		98.2%	98.3%	99.1%	0%		98.9%	0%		0%	**-**
Single-Unit Trucks	6	5	0		11	4	0		4	1	4	0		5	0		0	**-**
Single-Unit Trucks %	2.1%	0.3%	0%		0.6%	0.2%	0%		0.2%	0.3%	0.4%	0%		0.4%	0%		0%	**-**
Buses	0	23	0		23	28	0		28	4	1	0		5	0		0	**-**
Buses %	0%	1.4%	0%		1.2%	1.6%	0%		1.6%	1.1%	0.1%	0%		0.4%	0%		0%	**-**
Articulated Trucks	0	0	0		0	0	0		0	1	4	0		5	0		0	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0%		0%	0.3%	0.4%	0%		0.4%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	0	-	-	-	-	19	-	-	16	-	**-**
Pedestrians%	-	-	-	0%		-	-	0%		-	-	-	40.4%		-	34%		**-**
Bicycles on Road	0	0	0	0	-	0	0	0	-	0	0	0	0	-	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	0%		-	-	-	0%		-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	0	-	-	-	-	6	-	-	6	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	0%		-	-	-	12.8%		-	12.8%		**-**

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
NW	1	10
S	0	0
W	3	9

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (24.88 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
NW	6	16
S	0	0
W	6	19

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & CROSS AVE / S SERVICE RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (5 . TRAFALGAR RD & CROSS AVE / S SERVICE RD)

Start Time	N Approach TRAFALGAR RD						E Approach SOUTH SERVICE RD E						S Approach TRAFALGAR RD						W Approach CROSS AVE						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	117	150	10	0	0	277	9	2	1	0	2	12	1	139	13	0	0	153	13	6	60	0	0	79	521	
07:15:00	130	184	11	2	0	327	9	8	2	0	1	19	6	139	8	0	1	153	17	6	70	0	5	93	592	
07:30:00	170	255	24	1	0	450	15	3	4	0	3	22	3	174	17	0	4	194	23	6	89	1	0	119	785	
07:45:00	149	307	25	2	0	483	18	6	11	0	2	35	5	239	16	0	1	260	31	8	112	0	1	151	929	2827
08:00:00	157	351	30	2	0	540	22	8	9	0	2	39	8	274	20	0	1	302	20	9	97	0	6	126	1007	3313
08:15:00	123	323	54	1	0	501	24	9	13	0	1	46	3	270	28	0	2	301	27	10	110	0	4	147	995	3716
08:30:00	81	346	44	2	0	473	18	16	19	0	1	53	13	325	22	0	4	360	26	10	105	0	3	141	1027	3958
08:45:00	81	371	44	2	0	498	27	22	15	0	2	64	7	238	19	0	0	264	23	15	92	0	1	130	956	3985
BREAK																										
16:00:00	51	258	25	2	0	336	58	9	16	0	2	83	6	339	20	1	5	366	27	11	176	0	3	214	999	
16:15:00	64	277	26	4	0	371	52	15	13	1	3	81	6	319	22	0	2	347	36	12	193	0	5	241	1040	
16:30:00	66	302	31	4	0	403	63	15	23	0	5	101	9	318	25	0	3	352	19	7	187	0	3	213	1069	
16:45:00	54	252	31	3	0	340	47	17	24	0	1	88	8	300	24	0	2	332	19	18	158	0	3	195	955	4063
17:00:00	91	293	36	3	0	423	70	24	30	0	3	124	5	214	14	0	10	233	18	11	193	0	8	222	1002	4066
17:15:00	95	305	21	9	0	430	76	14	12	0	6	102	4	247	18	1	3	270	20	18	210	0	2	248	1050	4076
17:30:00	104	299	32	8	0	443	54	14	8	0	4	76	11	264	22	0	2	297	28	11	230	0	3	269	1085	4092
17:45:00	98	334	16	1	0	449	45	20	11	0	4	76	4	303	32	0	3	339	22	14	165	0	4	201	1065	4202
Grand Total	1631	4607	460	46	0	6744	607	202	211	1	42	1021	99	4102	320	2	43	4523	369	172	2247	1	51	2789	**15077**	-
Approach%	24.2%	68.3%	6.8%	0.7%		-	59.5%	19.8%	20.7%	0.1%		-	2.2%	90.7%	7.1%	0%		-	13.2%	6.2%	80.6%	0%		-	-	-
Totals %	10.8%	30.6%	3.1%	0.3%		44.7%	4%	1.3%	1.4%	0%		6.8%	0.7%	27.2%	2.1%	0%		30%	2.4%	1.1%	14.9%	0%		18.5%	-	-
Heavy	61	79	10	0		-	13	3	4	0		-	1	85	20	0		-	24	3	105	0		-	-	-
Heavy %	3.7%	1.7%	2.2%	0%		-	2.1%	1.5%	1.9%	0%		-	1%	2.1%	6.3%	0%		-	6.5%	1.7%	4.7%	0%		-	-	-
Bicycles	0	3	0	0		-	0	3	1	0		-	0	0	0	0		-	11	2	1	0		-	-	-
Bicycle %	0%	0.1%	0%	0%		-	0%	1.5%	0.5%	0%		-	0%	0%	0%	0%		-	3%	1.2%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & CROSS AVE / S SERVICE RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)

Start Time	N Approach TRAFALGAR RD						E Approach SOUTH SERVICE RD E						S Approach TRAFALGAR RD						W Approach CROSS AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	157	351	30	2	0	540	22	8	9	0	2	39	8	274	20	0	1	302	20	9	97	0	6	126	1007
08:15:00	123	323	54	1	0	501	24	9	13	0	1	46	3	270	28	0	2	301	27	10	110	0	4	147	995
08:30:00	81	346	44	2	0	473	18	16	19	0	1	53	13	325	22	0	4	360	26	10	105	0	3	141	1027
08:45:00	81	371	44	2	0	498	27	22	15	0	2	64	7	238	19	0	0	264	23	15	92	0	1	130	956
Grand Total	442	1391	172	7	0	2012	91	55	56	0	6	202	31	1107	89	0	7	1227	96	44	404	0	14	544	**3985**
Approach%	22%	69.1%	8.5%	0.3%		-	45%	27.2%	27.7%	0%		-	2.5%	90.2%	7.3%	0%		-	17.6%	8.1%	74.3%	0%		-	**-**
Totals %	11.1%	34.9%	4.3%	0.2%		50.5%	2.3%	1.4%	1.4%	0%		5.1%	0.8%	27.8%	2.2%	0%		30.8%	2.4%	1.1%	10.1%	0%		13.7%	**-**
PHF	0.7	0.94	0.8	0.88		0.93	0.84	0.63	0.74	0		0.79	0.6	0.85	0.79	0		0.85	0.89	0.73	0.92	0		0.93	**-**
Heavy	16	32	6	0		54	4	3	2	0		9	1	37	7	0		45	9	0	30	0		39	**-**
Heavy %	3.6%	2.3%	3.5%	0%		2.7%	4.4%	5.5%	3.6%	0%		4.5%	3.2%	3.3%	7.9%	0%		3.7%	9.4%	0%	7.4%	0%		7.2%	**-**
Lights	426	1359	166	7		1958	87	52	54	0		193	30	1070	82	0		1182	87	44	374	0		505	**-**
Lights %	96.4%	97.7%	96.5%	100%		97.3%	95.6%	94.5%	96.4%	0%		95.5%	96.8%	96.7%	92.1%	0%		96.3%	90.6%	100%	92.6%	0%		92.8%	**-**
Single-Unit Trucks	4	17	5	0		26	2	3	2	0		7	1	18	0	0		19	1	0	5	0		6	**-**
Single-Unit Trucks %	0.9%	1.2%	2.9%	0%		1.3%	2.2%	5.5%	3.6%	0%		3.5%	3.2%	1.6%	0%	0%		1.5%	1%	0%	1.2%	0%		1.1%	**-**
Buses	11	9	0	0		20	0	0	0	0		0	0	19	6	0		25	8	0	23	0		31	**-**
Buses %	2.5%	0.6%	0%	0%		1%	0%	0%	0%	0%		0%	0%	1.7%	6.7%	0%		2%	8.3%	0%	5.7%	0%		5.7%	**-**
Articulated Trucks	1	6	1	0		8	2	0	0	0		2	0	0	1	0		1	0	0	2	0		2	**-**
Articulated Trucks %	0.2%	0.4%	0.6%	0%		0.4%	2.2%	0%	0%	0%		1%	0%	0%	1.1%	0%		0.1%	0%	0%	0.5%	0%		0.4%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	7	-	-	-	-	-	12	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	11.1%		-	-	-	-	25.9%		-	-	-	-	44.4%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1	1	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	11.1%		-	-	-	-	0%		-	-	-	-	7.4%		**-**

Spectrum

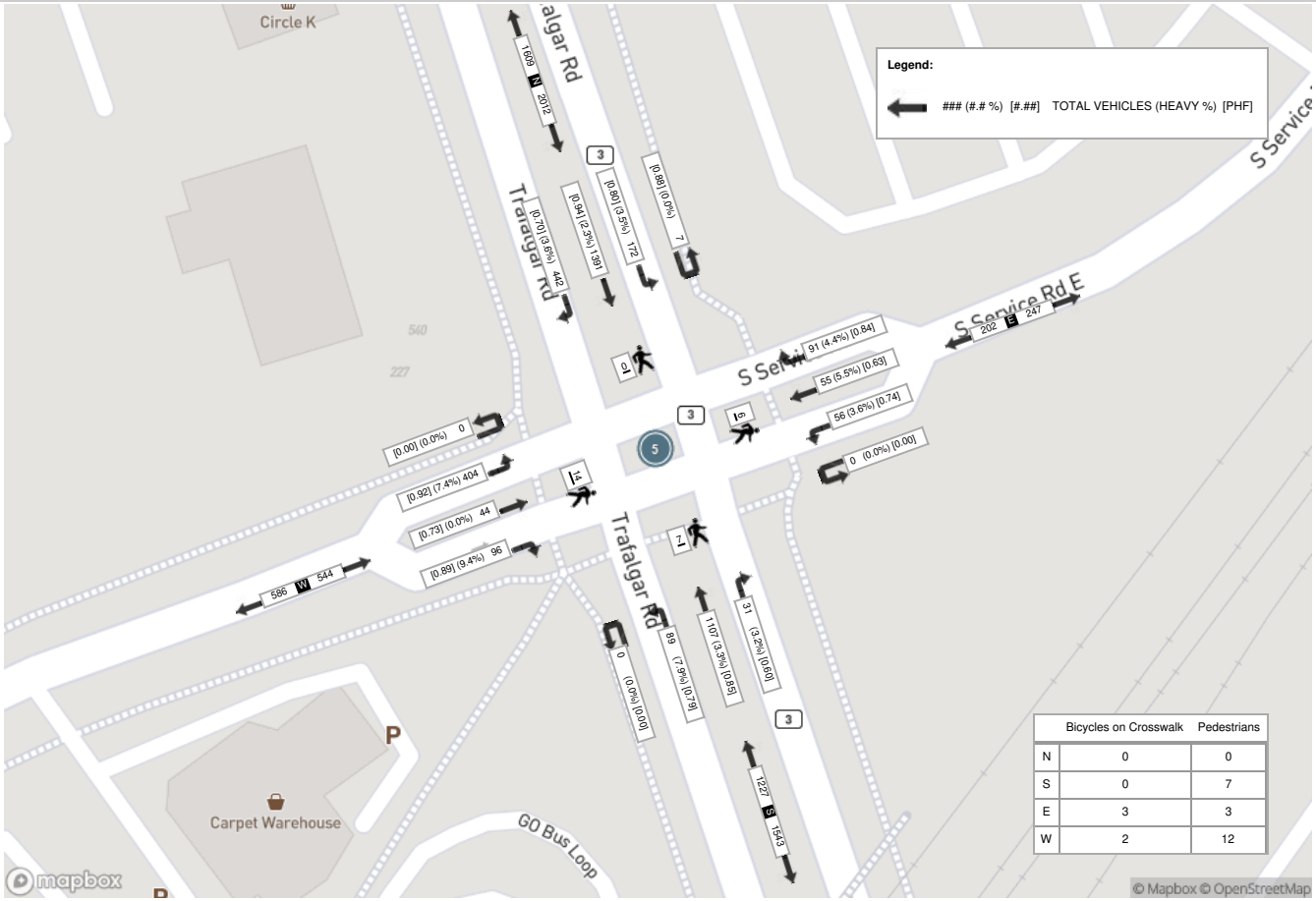
Turning Movement Count
Location Name: TRAFALGAR RD & CROSS AVE / S SERVICE RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

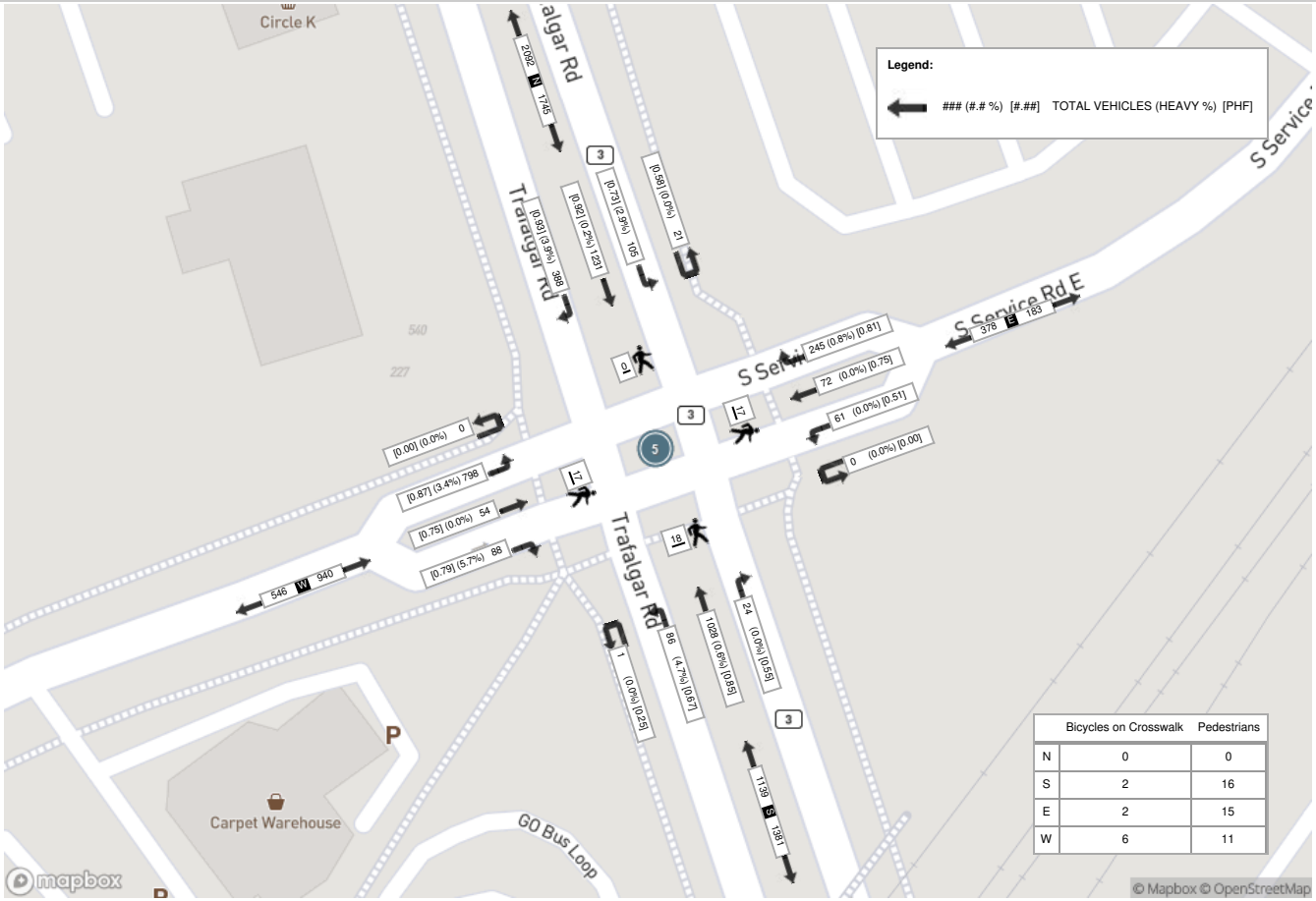
Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (24.88 °C)

Start Time	N Approach TRAFALGAR RD						E Approach SOUTH SERVICE RD E						S Approach TRAFALGAR RD						W Approach CROSS AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	91	293	36	3	0	423	70	24	30	0	3	124	5	214	14	0	10	233	18	11	193	0	8	222	1002
17:15:00	95	305	21	9	0	430	76	14	12	0	6	102	4	247	18	1	3	270	20	18	210	0	2	248	1050
17:30:00	104	299	32	8	0	443	54	14	8	0	4	76	11	264	22	0	2	297	28	11	230	0	3	269	1085
17:45:00	98	334	16	1	0	449	45	20	11	0	4	76	4	303	32	0	3	339	22	14	165	0	4	201	1065
Grand Total	388	1231	105	21	0	1745	245	72	61	0	17	378	24	1028	86	1	18	1139	88	54	798	0	17	940	**4202**
Approach%	22.2%	70.5%	6%	1.2%		-	64.8%	19%	16.1%	0%		-	2.1%	90.3%	7.6%	0.1%		-	9.4%	5.7%	84.9%	0%		-	**-**
Totals %	9.2%	29.3%	2.5%	0.5%		41.5%	5.8%	1.7%	1.5%	0%		9%	0.6%	24.5%	2%	0%		27.1%	2.1%	1.3%	19%	0%		22.4%	**-**
PHF	0.93	0.92	0.73	0.58		0.97	0.81	0.75	0.51	0		0.76	0.55	0.85	0.67	0.25		0.84	0.79	0.75	0.87	0		0.87	**-**
Heavy	15	3	3	0		21	2	0	0	0		2	0	6	4	0		10	5	0	27	0		32	**-**
Heavy %	3.9%	0.2%	2.9%	0%		1.2%	0.8%	0%	0%	0%		0.5%	0%	0.6%	4.7%	0%		0.9%	5.7%	0%	3.4%	0%		3.4%	**-**
Lights	373	1228	102	21		1724	243	72	61	0		376	24	1022	82	1		1129	83	54	771	0		908	**-**
Lights %	96.1%	99.8%	97.1%	100%		98.8%	99.2%	100%	100%	0%		99.5%	100%	99.4%	95.3%	100%		99.1%	94.3%	100%	96.6%	0%		96.6%	**-**
Single-Unit Trucks	2	2	2	0		6	1	0	0	0		1	0	4	0	0		4	0	0	2	0		2	**-**
Single-Unit Trucks %	0.5%	0.2%	1.9%	0%		0.3%	0.4%	0%	0%	0%		0.3%	0%	0.4%	0%	0%		0.4%	0%	0%	0.3%	0%		0.2%	**-**
Buses	12	1	1	0		14	1	0	0	0		1	0	1	4	0		5	5	0	25	0		30	**-**
Buses %	3.1%	0.1%	1%	0%		0.8%	0.4%	0%	0%	0%		0.3%	0%	0.1%	4.7%	0%		0.4%	5.7%	0%	3.1%	0%		3.2%	**-**
Articulated Trucks	1	0	0	0		1	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Articulated Trucks %	0.3%	0%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	15	-	-	-	-	-	16	-	-	-	-	-	11	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	28.8%		-	-	-	-	30.8%		-	-	-	-	21.2%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	6	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	3.8%		-	-	-	-	3.8%		-	-	-	-	11.5%		**-**

Peak Hour: 08:00 AM - 09:00 AM **Weather: Overcast Clouds (17.47 °C)**



Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (24.88 °C)**



Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & CORNWALL RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (7 . TRAFALGAR RD & CORNWALL RD)

Start Time	N Approach TRAFALGAR RD						E Approach CORNWALL RD						S Approach TRAFALGAR RD						W Approach CORNWALL RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	51	57	57	1	7	166	64	38	3	0	1	105	2	48	5	0	0	55	5	23	42	0	0	70	396	
07:15:00	61	68	75	0	8	204	56	38	4	0	2	98	1	54	15	0	3	70	9	43	32	0	3	84	456	
07:30:00	73	91	95	0	12	259	82	54	1	0	9	137	2	64	13	0	3	79	5	57	70	0	7	132	607	
07:45:00	105	113	111	0	4	329	106	75	2	0	1	183	6	69	12	0	4	87	14	83	67	0	6	164	763	2222
08:00:00	108	137	147	0	6	392	141	76	5	0	3	222	10	113	20	0	8	143	24	83	57	0	11	164	921	2747
08:15:00	79	125	165	0	3	369	160	83	5	0	1	248	18	97	19	0	4	134	21	124	74	0	3	219	970	3261
08:30:00	87	139	172	0	6	398	159	83	7	0	2	249	10	96	7	0	1	113	11	72	63	0	3	146	906	3560
08:45:00	100	185	132	0	8	417	139	87	8	2	3	236	11	78	6	0	1	95	10	92	66	0	2	168	916	3713
BREAK																										
16:00:00	68	126	101	0	12	295	178	125	8	0	4	311	17	128	15	0	0	160	6	74	78	0	0	158	924	
16:15:00	78	131	110	0	16	319	140	135	17	0	8	292	14	101	13	0	2	128	17	104	100	0	4	221	960	
16:30:00	94	139	115	0	6	348	132	99	11	0	6	242	14	137	15	0	4	166	12	88	82	0	4	182	938	
16:45:00	57	132	104	0	10	293	133	123	13	0	2	269	12	111	16	0	2	139	11	116	62	0	4	189	890	3712
17:00:00	65	149	116	1	12	331	83	73	7	0	5	163	13	112	16	0	3	141	11	111	70	0	3	192	827	3615
17:15:00	69	140	134	0	20	343	75	154	11	0	5	240	18	97	20	0	10	135	16	140	74	0	11	230	948	3603
17:30:00	66	123	123	0	12	312	89	125	18	0	2	232	15	121	19	0	3	155	25	105	68	0	5	198	897	3562
17:45:00	59	165	147	0	13	371	103	134	11	0	7	248	12	102	10	0	4	124	10	103	69	0	6	182	925	3597
Grand Total	1220	2020	1904	2	155	5146	1840	1502	131	2	61	3475	175	1528	221	0	52	1924	207	1418	1074	0	72	2699	**13244**	-
Approach%	23.7%	39.3%	37%	0%		-	52.9%	43.2%	3.8%	0.1%		-	9.1%	79.4%	11.5%	0%		-	7.7%	52.5%	39.8%	0%		-	**-**	-
Totals %	9.2%	15.3%	14.4%	0%		38.9%	13.9%	11.3%	1%	0%		26.2%	1.3%	11.5%	1.7%	0%		14.5%	1.6%	10.7%	8.1%	0%		20.4%	**-**	-
Heavy	37	21	48	0		-	55	45	2	0		-	4	22	2	0		-	4	45	27	0		-	**-**	-
Heavy %	3%	1%	2.5%	0%		-	3%	3%	1.5%	0%		-	2.3%	1.4%	0.9%	0%		-	1.9%	3.2%	2.5%	0%		-	**-**	-
Bicycles	1	5	17	0		-	0	3	0	0		-	1	2	0	0		-	2	4	0	0		-	**-**	-
Bicycle %	0.1%	0.2%	0.9%	0%		-	0%	0.2%	0%	0%		-	0.6%	0.1%	0%	0%		-	1%	0.3%	0%	0%		-	**-**	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)

Start Time	N Approach TRAFALGAR RD						E Approach CORNWALL RD						S Approach TRAFALGAR RD						W Approach CORNWALL RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	108	137	147	0	6	392	141	76	5	0	3	222	10	113	20	0	8	143	24	83	57	0	11	164	921
08:15:00	79	125	165	0	3	369	160	83	5	0	1	248	18	97	19	0	4	134	21	124	74	0	3	219	970
08:30:00	87	139	172	0	6	398	159	83	7	0	2	249	10	96	7	0	1	113	11	72	63	0	3	146	906
08:45:00	100	185	132	0	8	417	139	87	8	2	3	236	11	78	6	0	1	95	10	92	66	0	2	168	916
Grand Total	374	586	616	0	23	1576	599	329	25	2	9	955	49	384	52	0	14	485	66	371	260	0	19	697	**3713**
Approach%	23.7%	37.2%	39.1%	0%		-	62.7%	34.5%	2.6%	0.2%		-	10.1%	79.2%	10.7%	0%		-	9.5%	53.2%	37.3%	0%		-	**-**
Totals %	10.1%	15.8%	16.6%	0%		42.4%	16.1%	8.9%	0.7%	0.1%		25.7%	1.3%	10.3%	1.4%	0%		13.1%	1.8%	10%	7%	0%		18.8%	**-**
PHF	0.87	0.79	0.9	0		0.94	0.94	0.95	0.78	0.25		0.96	0.68	0.85	0.65	0		0.85	0.69	0.75	0.88	0		0.8	**-**
Heavy	14	8	18	0		40	24	15	1	0		40	3	9	1	0		13	2	23	10	0		35	**-**
Heavy %	3.7%	1.4%	2.9%	0%		2.5%	4%	4.6%	4%	0%		4.2%	6.1%	2.3%	1.9%	0%		2.7%	3%	6.2%	3.8%	0%		5%	**-**
Lights	360	578	598	0		1536	575	314	24	2		915	46	375	51	0		472	64	348	250	0		662	**-**
Lights %	96.3%	98.6%	97.1%	0%		97.5%	96%	95.4%	96%	100%		95.8%	93.9%	97.7%	98.1%	0%		97.3%	97%	93.8%	96.2%	0%		95%	**-**
Single-Unit Trucks	5	4	9	0		18	7	8	0	0		15	1	5	0	0		6	1	14	5	0		20	**-**
Single-Unit Trucks %	1.3%	0.7%	1.5%	0%		1.1%	1.2%	2.4%	0%	0%		1.6%	2%	1.3%	0%	0%		1.2%	1.5%	3.8%	1.9%	0%		2.9%	**-**
Buses	7	2	7	0		16	16	6	1	0		23	2	4	1	0		7	1	9	5	0		15	**-**
Buses %	1.9%	0.3%	1.1%	0%		1%	2.7%	1.8%	4%	0%		2.4%	4.1%	1%	1.9%	0%		1.4%	1.5%	2.4%	1.9%	0%		2.2%	**-**
Articulated Trucks	2	2	2	0		6	1	1	0	0		2	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0.5%	0.3%	0.3%	0%		0.4%	0.2%	0.3%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	20	-	-	-	-	-	8	-	-	-	-	-	12	-	-	-	-	-	16	-	**-**
Pedestrians%	-	-	-	-	30.8%		-	-	-	-	12.3%		-	-	-	-	18.5%		-	-	-	-	24.6%		**-**
Bicycles on Road	0	2	2	0	0	-	0	0	0	0	0	-	1	0	0	0	0	-	1	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	3	-	**-**
Bicycles on Crosswalk%	-	-	-	-	4.6%		-	-	-	-	1.5%		-	-	-	-	3.1%		-	-	-	-	4.6%		**-**

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & CORNWALL RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

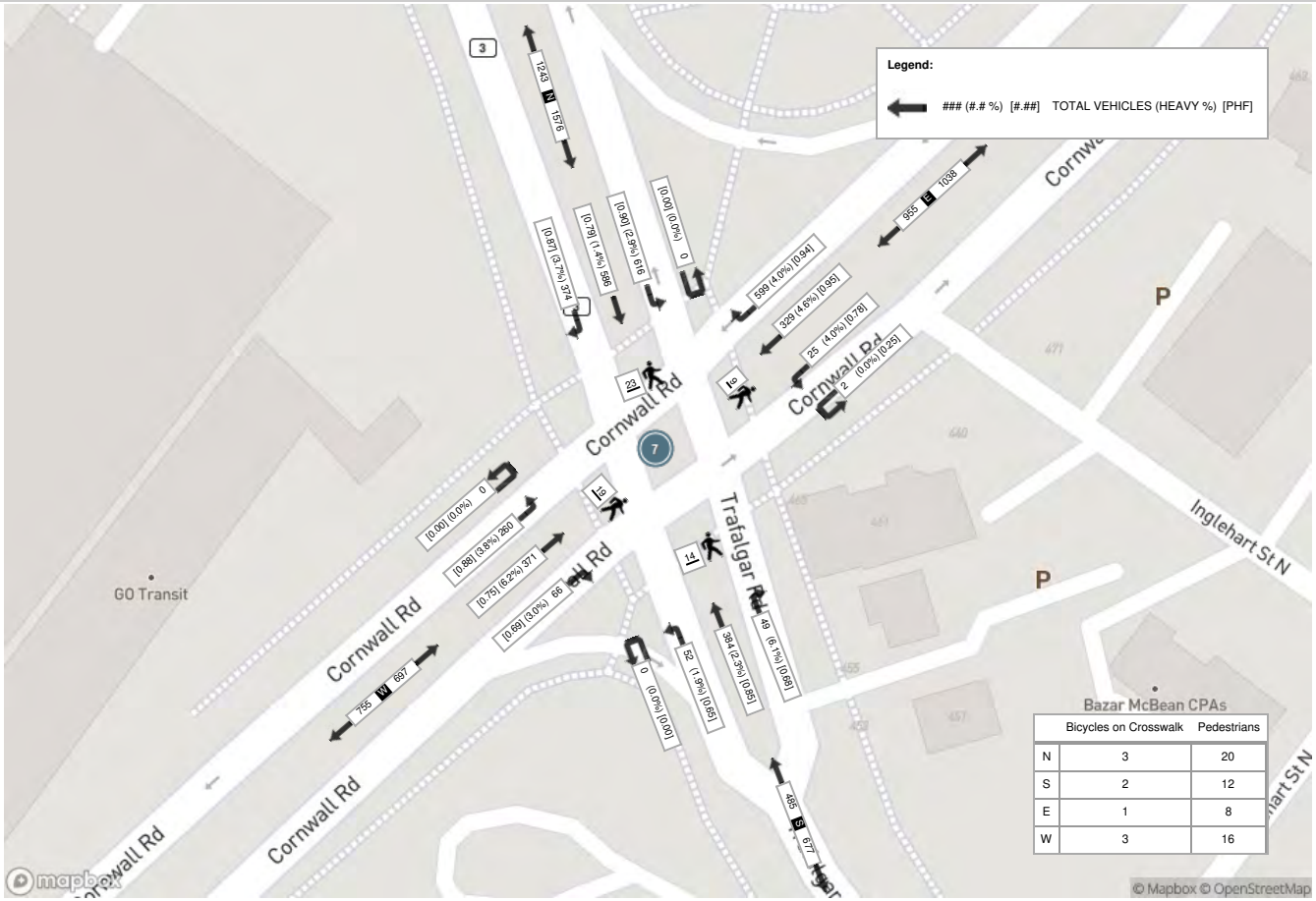
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (24.88 °C)

Start Time	N Approach TRAFALGAR RD						E Approach CORNWALL RD						S Approach TRAFALGAR RD						W Approach CORNWALL RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	68	126	101	0	12	295	178	125	8	0	4	311	17	128	15	0	0	160	6	74	78	0	0	158	924
16:15:00	78	131	110	0	16	319	140	135	17	0	8	292	14	101	13	0	2	128	17	104	100	0	4	221	960
16:30:00	94	139	115	0	6	348	132	99	11	0	6	242	14	137	15	0	4	166	12	88	82	0	4	182	938
16:45:00	57	132	104	0	10	293	133	123	13	0	2	269	12	111	16	0	2	139	11	116	62	0	4	189	890
Grand Total	297	528	430	0	44	1255	583	482	49	0	20	1114	57	477	59	0	8	593	46	382	322	0	12	750	**3712**
Approach%	23.7%	42.1%	34.3%	0%		-	52.3%	43.3%	4.4%	0%		-	9.6%	80.4%	9.9%	0%		-	6.1%	50.9%	42.9%	0%		-	**-**
Totals %	8%	14.2%	11.6%	0%		33.8%	15.7%	13%	1.3%	0%		30%	1.5%	12.9%	1.6%	0%		16%	1.2%	10.3%	8.7%	0%		20.2%	**-**
PHF	0.79	0.95	0.93	0		0.9	0.82	0.89	0.72	0		0.9	0.84	0.87	0.92	0		0.89	0.68	0.82	0.81	0		0.85	**-**
Heavy	12	6	7	0		25	12	9	0	0		21	0	2	1	0		3	0	7	3	0		10	**-**
Heavy %	4%	1.1%	1.6%	0%		2%	2.1%	1.9%	0%	0%		1.9%	0%	0.4%	1.7%	0%		0.5%	0%	1.8%	0.9%	0%		1.3%	**-**
Lights	285	522	423	0		1230	571	473	49	0		1093	57	475	58	0		590	46	375	319	0		740	**-**
Lights %	96%	98.9%	98.4%	0%		98%	97.9%	98.1%	100%	0%		98.1%	100%	99.6%	98.3%	0%		99.5%	100%	98.2%	99.1%	0%		98.7%	**-**
Single-Unit Trucks	2	5	2	0		9	6	5	0	0		11	0	2	1	0		3	0	4	0	0		4	**-**
Single-Unit Trucks %	0.7%	0.9%	0.5%	0%		0.7%	1%	1%	0%	0%		1%	0%	0.4%	1.7%	0%		0.5%	0%	1%	0%	0%		0.5%	**-**
Buses	10	1	4	0		15	6	3	0	0		9	0	0	0	0		0	0	2	2	0		4	**-**
Buses %	3.4%	0.2%	0.9%	0%		1.2%	1%	0.6%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.5%	0.6%	0%		0.5%	**-**
Articulated Trucks	0	0	1	0		1	0	1	0	0		1	0	0	0	0		0	0	1	1	0		2	**-**
Articulated Trucks %	0%	0%	0.2%	0%		0.1%	0%	0.2%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.3%	0.3%	0%		0.3%	**-**
Pedestrians	-	-	-	-	37	-	-	-	-	-	16	-	-	-	-	-	7	-	-	-	-	-	11	-	**-**
Pedestrians%	-	-	-	-	44%		-	-	-	-	19%		-	-	-	-	8.3%		-	-	-	-	13.1%		**-**
Bicycles on Road	1	1	1	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	7	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	8.3%		-	-	-	-	4.8%		-	-	-	-	1.2%		-	-	-	-	1.2%		**-**

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

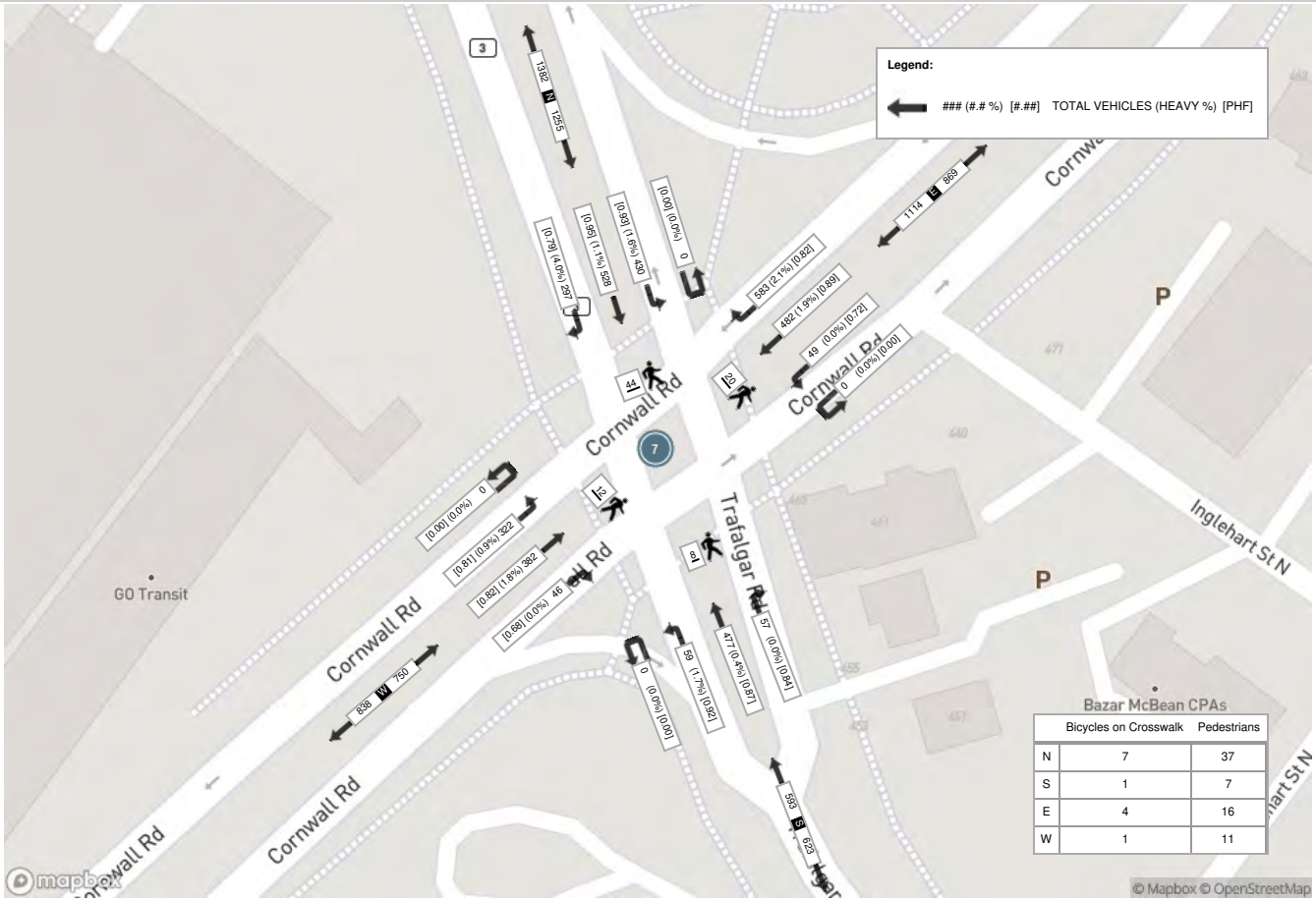
Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)



	Bicycles on Crosswalk	Pedestrians
N	3	20
S	2	12
E	1	8
W	3	16

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:00 PM - 05:00 PM **Weather: Overcast Clouds (24.88 °C)**



	Bicycles on Crosswalk	Pedestrians
N	7	37
S	1	7
E	4	16
W	1	11

Spectrum

Turning Movement Count
Location Name: CORNWALL RD & CHARTWELL RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (19 . CORNWALL RD & CHARTWELL RD)

Start Time	N Approach CHARTWELL RD						E Approach CORNWALL RD						S Approach CHARTWELL RD						W Approach CORNWALL RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	3	0	2	0	3	5	3	54	3	0	0	60	3	5	11	0	1	19	8	56	1	0	2	65	149	
07:15:00	4	3	1	0	0	8	0	47	10	0	0	57	5	7	20	0	0	32	23	60	0	0	1	83	180	
07:30:00	3	5	5	0	3	13	6	73	4	0	0	83	6	8	21	0	1	35	28	94	1	0	0	123	254	
07:45:00	4	15	11	0	1	30	9	101	4	0	0	114	5	11	24	0	1	40	26	93	4	0	2	123	307	890
08:00:00	5	18	3	0	2	26	10	114	7	0	4	131	10	23	54	0	1	87	43	137	3	0	1	183	427	1168
08:15:00	3	17	13	0	3	33	14	142	9	0	2	165	12	12	63	0	0	87	58	159	7	0	1	224	509	1497
08:30:00	6	23	7	0	0	36	3	140	9	0	0	152	18	14	65	0	0	97	51	138	6	0	1	195	480	1723
08:45:00	13	15	11	0	1	39	6	131	14	0	1	151	20	15	48	0	0	83	26	159	7	0	1	192	465	1881
BREAK																										
16:00:00	20	20	14	0	2	54	18	189	11	0	1	218	12	15	40	0	1	67	19	123	9	0	1	151	490	
16:15:00	9	9	17	0	1	35	22	161	18	0	0	201	9	26	39	0	0	74	23	129	4	0	3	156	466	
16:30:00	14	13	18	0	0	45	23	162	18	0	0	203	12	18	28	0	1	58	27	150	19	0	0	196	502	
16:45:00	7	9	15	0	1	31	21	147	14	0	0	182	14	19	24	0	1	57	23	128	14	0	1	165	435	1893
17:00:00	14	12	15	0	1	41	31	155	12	0	1	198	8	22	33	0	2	63	26	123	13	0	1	162	464	1867
17:15:00	15	9	18	0	1	42	29	146	7	0	0	182	7	17	27	0	2	51	31	149	21	0	2	201	476	1877
17:30:00	20	15	13	0	4	48	30	153	9	0	3	192	9	25	26	0	2	60	36	131	19	1	0	187	487	1862
17:45:00	12	14	7	0	1	33	25	140	13	0	0	178	14	20	24	0	1	58	33	127	12	0	0	172	441	1868
Grand Total	152	197	170	0	24	519	250	2055	162	0	12	2467	164	257	547	0	14	968	481	1956	140	1	17	2578	**6532**	-
Approach%	29.3%	38%	32.8%	0%		-	10.1%	83.3%	6.6%	0%		-	16.9%	26.5%	56.5%	0%		-	18.7%	75.9%	5.4%	0%		-	-	-
Totals %	2.3%	3%	2.6%	0%		7.9%	3.8%	31.5%	2.5%	0%		37.8%	2.5%	3.9%	8.4%	0%		14.8%	7.4%	29.9%	2.1%	0%		39.5%	-	-
Heavy	4	5	5	0		-	4	62	3	0		-	2	2	19	0		-	17	54	3	0		-	-	-
Heavy %	2.6%	2.5%	2.9%	0%		-	1.6%	3%	1.9%	0%		-	1.2%	0.8%	3.5%	0%		-	3.5%	2.8%	2.1%	0%		-	-	-
Bicycles	0	10	0	0		-	0	1	1	0		-	0	0	0	0		-	1	4	1	0		-	-	-
Bicycle %	0%	5.1%	0%	0%		-	0%	0%	0.6%	0%		-	0%	0%	0%	0%		-	0.2%	0.2%	0.7%	0%		-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)

Start Time	N Approach CHARTWELL RD						E Approach CORNWALL RD						S Approach CHARTWELL RD						W Approach CORNWALL RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	5	18	3	0	2	26	10	114	7	0	4	131	10	23	54	0	1	87	43	137	3	0	1	183	427
08:15:00	3	17	13	0	3	33	14	142	9	0	2	165	12	12	63	0	0	87	58	159	7	0	1	224	509
08:30:00	6	23	7	0	0	36	3	140	9	0	0	152	18	14	65	0	0	97	51	138	6	0	1	195	480
08:45:00	13	15	11	0	1	39	6	131	14	0	1	151	20	15	48	0	0	83	26	159	7	0	1	192	465
Grand Total	27	73	34	0	6	134	33	527	39	0	7	599	60	64	230	0	1	354	178	593	23	0	4	794	**1881**
Approach%	20.1%	54.5%	25.4%	0%		-	5.5%	88%	6.5%	0%		-	16.9%	18.1%	65%	0%		-	22.4%	74.7%	2.9%	0%		-	**-**
Totals %	1.4%	3.9%	1.8%	0%		7.1%	1.8%	28%	2.1%	0%		31.8%	3.2%	3.4%	12.2%	0%		18.8%	9.5%	31.5%	1.2%	0%		42.2%	**-**
PHF	0.52	0.79	0.65	0		0.86	0.59	0.93	0.7	0		0.91	0.75	0.7	0.88	0		0.91	0.77	0.93	0.82	0		0.89	**-**
Heavy	1	1	2	0		4	1	23	1	0		25	1	0	10	0		11	9	25	2	0		36	**-**
Heavy %	3.7%	1.4%	5.9%	0%		3%	3%	4.4%	2.6%	0%		4.2%	1.7%	0%	4.3%	0%		3.1%	5.1%	4.2%	8.7%	0%		4.5%	**-**
Lights	26	72	32	0		130	32	504	38	0		574	59	64	220	0		343	169	568	21	0		758	**-**
Lights %	96.3%	98.6%	94.1%	0%		97%	97%	95.6%	97.4%	0%		95.8%	98.3%	100%	95.7%	0%		96.9%	94.9%	95.8%	91.3%	0%		95.5%	**-**
Single-Unit Trucks	1	1	2	0		4	1	9	0	0		10	1	0	2	0		3	3	13	2	0		18	**-**
Single-Unit Trucks %	3.7%	1.4%	5.9%	0%		3%	3%	1.7%	0%	0%		1.7%	1.7%	0%	0.9%	0%		0.8%	1.7%	2.2%	8.7%	0%		2.3%	**-**
Buses	0	0	0	0		0	0	12	1	0		13	0	0	8	0		8	6	9	0	0		15	**-**
Buses %	0%	0%	0%	0%		0%	0%	2.3%	2.6%	0%		2.2%	0%	0%	3.5%	0%		2.3%	3.4%	1.5%	0%	0%		1.9%	**-**
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	3	0	0		3	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.4%	**-**
Pedestrians	-	-	-	-	5	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	4	-	**-**
Pedestrians%	-	-	-	-	27.8%		-	-	-	-	33.3%		-	-	-	-	0%		-	-	-	-	22.2%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	1	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	5.6%		-	-	-	-	5.6%		-	-	-	-	5.6%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: CORNWALL RD & CHARTWELL RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

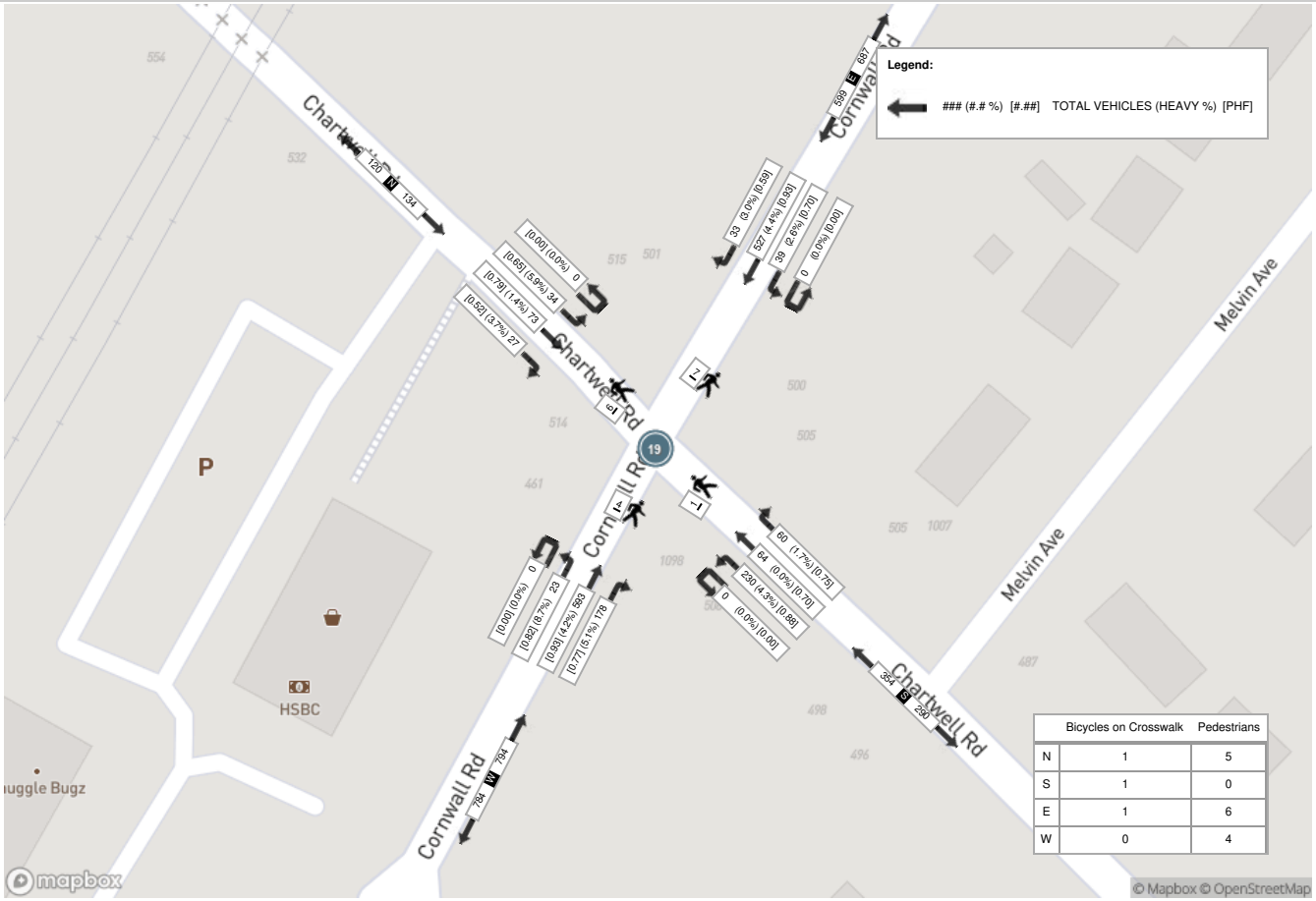
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (24.88 °C)

Start Time	N Approach CHARTWELL RD						E Approach CORNWALL RD						S Approach CHARTWELL RD						W Approach CORNWALL RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	20	20	14	0	2	54	18	189	11	0	1	218	12	15	40	0	1	67	19	123	9	0	1	151	490
16:15:00	9	9	17	0	1	35	22	161	18	0	0	201	9	26	39	0	0	74	23	129	4	0	3	156	466
16:30:00	14	13	18	0	0	45	23	162	18	0	0	203	12	18	28	0	1	58	27	150	19	0	0	196	502
16:45:00	7	9	15	0	1	31	21	147	14	0	0	182	14	19	24	0	1	57	23	128	14	0	1	165	435
Grand Total	50	51	64	0	4	165	84	659	61	0	1	804	47	78	131	0	3	256	92	530	46	0	5	668	**1893**
Approach%	30.3%	30.9%	38.8%	0%		-	10.4%	82%	7.6%	0%		-	18.4%	30.5%	51.2%	0%		-	13.8%	79.3%	6.9%	0%		-	**-**
Totals %	2.6%	2.7%	3.4%	0%		8.7%	4.4%	34.8%	3.2%	0%		42.5%	2.5%	4.1%	6.9%	0%		13.5%	4.9%	28%	2.4%	0%		35.3%	**-**
PHF	0.63	0.64	0.89	0		0.76	0.91	0.87	0.85	0		0.92	0.84	0.75	0.82	0		0.86	0.85	0.88	0.61	0		0.85	**-**
Heavy	2	2	0	0		4	1	11	0	0		12	0	1	3	0		4	1	11	1	0		13	**-**
Heavy %	4%	3.9%	0%	0%		2.4%	1.2%	1.7%	0%	0%		1.5%	0%	1.3%	2.3%	0%		1.6%	1.1%	2.1%	2.2%	0%		1.9%	**-**
Lights	48	49	64	0		161	83	648	61	0		792	47	77	128	0		252	91	519	45	0		655	**-**
Lights %	96%	96.1%	100%	0%		97.6%	98.8%	98.3%	100%	0%		98.5%	100%	98.7%	97.7%	0%		98.4%	98.9%	97.9%	97.8%	0%		98.1%	**-**
Single-Unit Trucks	2	2	0	0		4	1	6	0	0		7	0	1	2	0		3	0	5	1	0		6	**-**
Single-Unit Trucks %	4%	3.9%	0%	0%		2.4%	1.2%	0.9%	0%	0%		0.9%	0%	1.3%	1.5%	0%		1.2%	0%	0.9%	2.2%	0%		0.9%	**-**
Buses	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	5	0	0		5	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.7%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	1	1	0	0		2	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0.8%	0%		0.4%	1.1%	0.2%	0%	0%		0.3%	**-**
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	5	-	**-**
Pedestrians%	-	-	-	-	23.1%		-	-	-	-	7.7%		-	-	-	-	15.4%		-	-	-	-	38.5%		**-**
Bicycles on Road	0	4	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	7.7%		-	-	-	-	0%		-	-	-	-	7.7%		-	-	-	-	0%		**-**

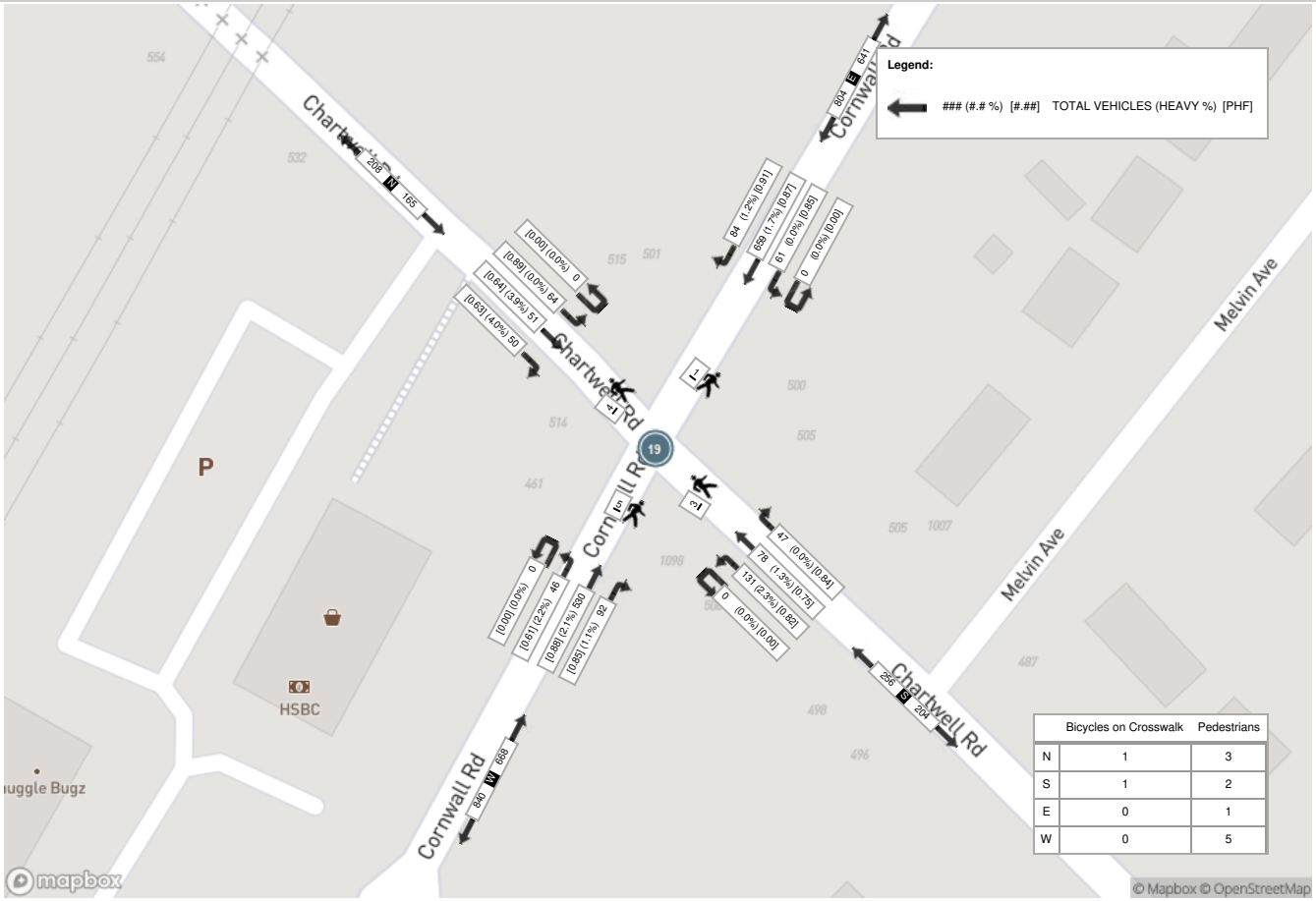
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather: Overcast Clouds (17.47 °C)**



	Bicycles on Crosswalk	Pedestrians
N	1	5
S	1	0
E	1	6
W	0	4

Peak Hour: 04:00 PM - 05:00 PM **Weather: Overcast Clouds (24.88 °C)**



	Bicycles on Crosswalk	Pedestrians
N	1	3
S	1	2
E	0	1
W	0	5

Spectrum

Turning Movement Count
Location Name: S SERVICE RD & ROYAL WINDSOR DR
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (20 . S SERVICE RD & ROYAL WINDSOR DR)

Start Time	N Approach THE CANADIAN RD						E Approach ROYAL WINDSOR DR						S Approach S SERVICE RD						W Approach ROYAL WINDSOR DR						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	2	1	1	0	0	4	1	65	11	0	0	77	8	1	0	0	0	9	4	133	9	0	0	146	236	
07:15:00	3	2	1	0	1	6	3	81	14	0	0	98	5	1	1	0	0	7	2	136	9	0	0	147	258	
07:30:00	1	3	0	0	0	4	0	103	13	0	0	116	14	2	0	0	0	16	9	144	9	0	0	162	298	
07:45:00	3	8	1	0	0	12	1	137	26	0	0	164	14	2	1	0	0	17	19	171	11	0	0	201	394	1186
08:00:00	4	7	0	0	0	11	0	134	24	0	0	158	12	3	0	0	0	15	17	140	15	0	0	172	356	1306
08:15:00	6	10	1	0	0	17	1	151	28	0	0	180	13	3	0	0	0	16	13	157	13	1	0	184	397	1445
08:30:00	4	21	0	0	0	25	0	130	45	0	0	175	15	0	1	0	0	16	18	161	19	0	0	198	414	1561
08:45:00	2	12	0	0	0	14	0	144	49	0	0	193	15	2	2	0	0	19	20	171	8	0	0	199	425	1592
BREAK																										
16:00:00	13	14	0	0	0	27	1	192	22	0	0	215	36	2	2	0	0	40	15	140	0	0	0	155	437	
16:15:00	3	7	3	0	0	13	1	136	27	0	0	164	39	1	4	0	0	44	6	138	5	0	0	149	370	
16:30:00	10	16	2	0	0	28	2	150	21	0	1	173	48	4	15	0	0	67	9	144	2	2	0	157	425	
16:45:00	6	8	0	0	1	14	1	121	30	0	0	152	37	3	2	0	0	42	9	144	2	2	0	157	365	1597
17:00:00	8	10	1	0	0	19	1	205	26	0	0	232	48	7	11	0	0	66	6	164	4	1	0	175	492	1652
17:15:00	9	12	0	0	0	21	1	174	28	0	0	203	46	1	10	0	0	57	6	174	1	1	0	182	463	1745
17:30:00	12	8	0	0	0	20	2	159	32	0	0	193	49	2	9	0	0	60	8	180	1	1	0	190	463	1783
17:45:00	4	7	0	0	0	11	0	116	28	1	0	145	39	4	13	0	0	56	6	160	0	1	0	167	379	1797
Grand Total	90	146	10	0	2	246	15	2198	424	1	1	2638	438	38	71	0	0	547	167	2457	108	9	0	2741	**6172**	-
Approach%	36.6%	59.3%	4.1%	0%		-	0.6%	83.3%	16.1%	0%		-	80.1%	6.9%	13%	0%		-	6.1%	89.6%	3.9%	0.3%		-	**-**	-
Totals %	1.5%	2.4%	0.2%	0%		4%	0.2%	35.6%	6.9%	0%		42.7%	7.1%	0.6%	1.2%	0%		8.9%	2.7%	39.8%	1.7%	0.1%		44.4%	**-**	-
Heavy	14	8	2	0		-	4	155	16	0		-	15	1	7	0		-	8	159	8	0		-	**-**	-
Heavy %	15.6%	5.5%	20%	0%		-	26.7%	7.1%	3.8%	0%		-	3.4%	2.6%	9.9%	0%		-	4.8%	6.5%	7.4%	0%		-	**-**	-
Bicycles	0	8	0	1		-	0	0	3	0		-	0	2	0	0		-	0	0	0	0		-	**-**	-
Bicycle %	0%	5.5%	0%	0%		-	0%	0%	0.7%	0%		-	0%	5.3%	0%	0%		-	0%	0%	0%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: S SERVICE RD & ROYAL WINDSOR DR
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

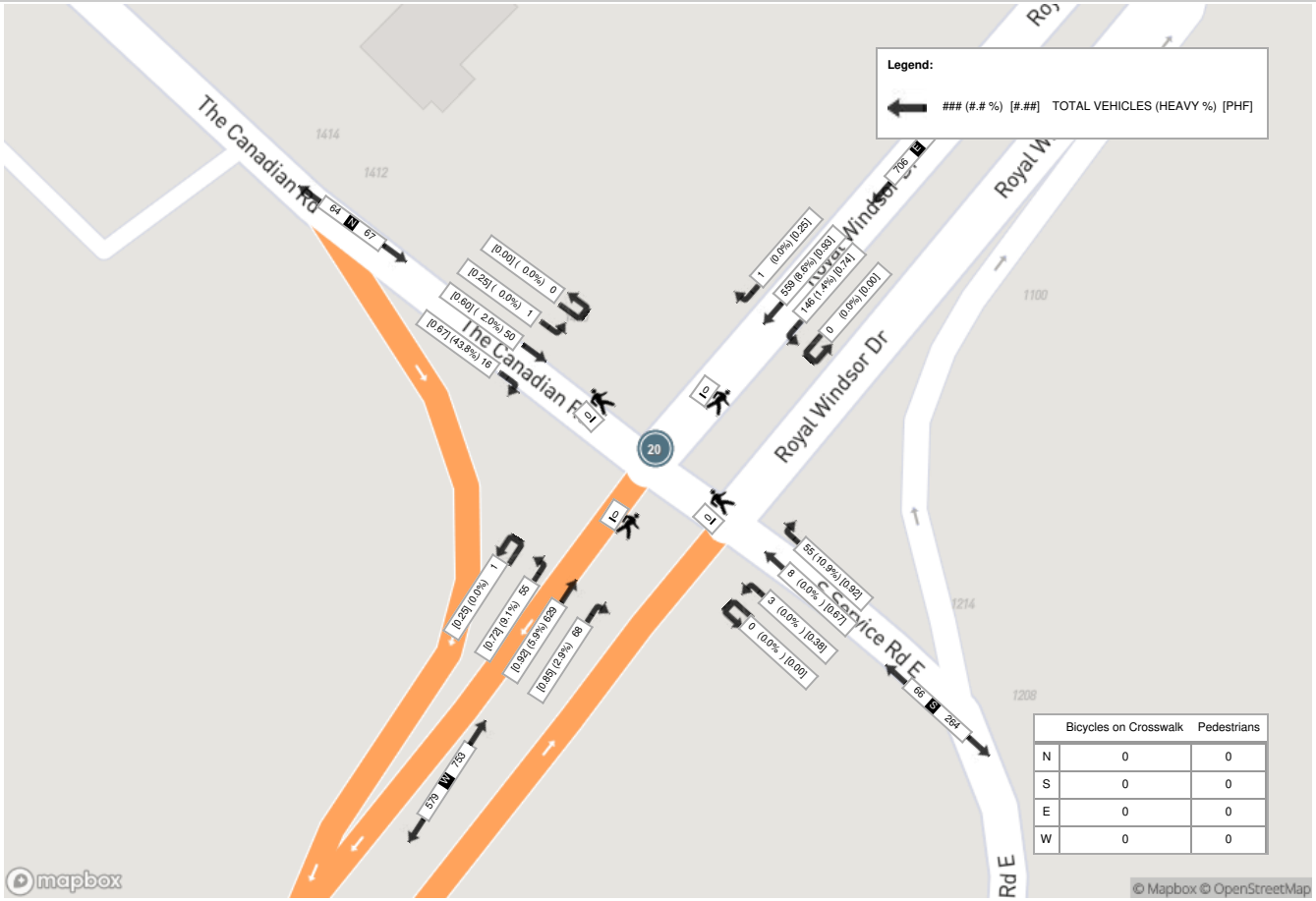
Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)

Start Time	N Approach THE CANADIAN RD						E Approach ROYAL WINDSOR DR						S Approach S SERVICE RD						W Approach ROYAL WINDSOR DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	4	7	0	0	0	11	0	134	24	0	0	158	12	3	0	0	0	15	17	140	15	0	0	172	356
08:15:00	6	10	1	0	0	17	1	151	28	0	0	180	13	3	0	0	0	16	13	157	13	1	0	184	397
08:30:00	4	21	0	0	0	25	0	130	45	0	0	175	15	0	1	0	0	16	18	161	19	0	0	198	414
08:45:00	2	12	0	0	0	14	0	144	49	0	0	193	15	2	2	0	0	19	20	171	8	0	0	199	425
Grand Total	16	50	1	0	0	67	1	559	146	0	0	706	55	8	3	0	0	66	68	629	55	1	0	753	**1592**
Approach%	23.9%	74.6%	1.5%	0%		-	0.1%	79.2%	20.7%	0%		-	83.3%	12.1%	4.5%	0%		-	9%	83.5%	7.3%	0.1%		-	**-**
Totals %	1%	3.1%	0.1%	0%		4.2%	0.1%	35.1%	9.2%	0%		44.3%	3.5%	0.5%	0.2%	0%		4.1%	4.3%	39.5%	3.5%	0.1%		47.3%	**-**
PHF	0.67	0.6	0.25	0		0.67	0.25	0.93	0.74	0		0.91	0.92	0.67	0.38	0		0.87	0.85	0.92	0.72	0.25		0.95	**-**
Heavy	7	1	0	0		8	0	48	2	0		50	6	0	0	0		6	2	37	5	0		44	**-**
Heavy %	43.8%	2%	0%	0%		11.9%	0%	8.6%	1.4%	0%		7.1%	10.9%	0%	0%	0%		9.1%	2.9%	5.9%	9.1%	0%		5.8%	**-**
Lights	9	49	1	0		59	1	511	144	0		656	49	8	3	0		60	66	592	50	1		709	**-**
Lights %	56.3%	98%	100%	0%		88.1%	100%	91.4%	98.6%	0%		92.9%	89.1%	100%	100%	0%		90.9%	97.1%	94.1%	90.9%	100%		94.2%	**-**
Single-Unit Trucks	7	1	0	0		8	0	16	1	0		17	5	0	0	0		5	1	16	5	0		22	**-**
Single-Unit Trucks %	43.8%	2%	0%	0%		11.9%	0%	2.9%	0.7%	0%		2.4%	9.1%	0%	0%	0%		7.6%	1.5%	2.5%	9.1%	0%		2.9%	**-**
Buses	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	**-**
Articulated Trucks	0	0	0	0		0	0	30	1	0		31	1	0	0	0		1	1	20	0	0		21	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	5.4%	0.7%	0%		4.4%	1.8%	0%	0%	0%		1.5%	1.5%	3.2%	0%	0%		2.8%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	1	0	-	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (24.88 °C)

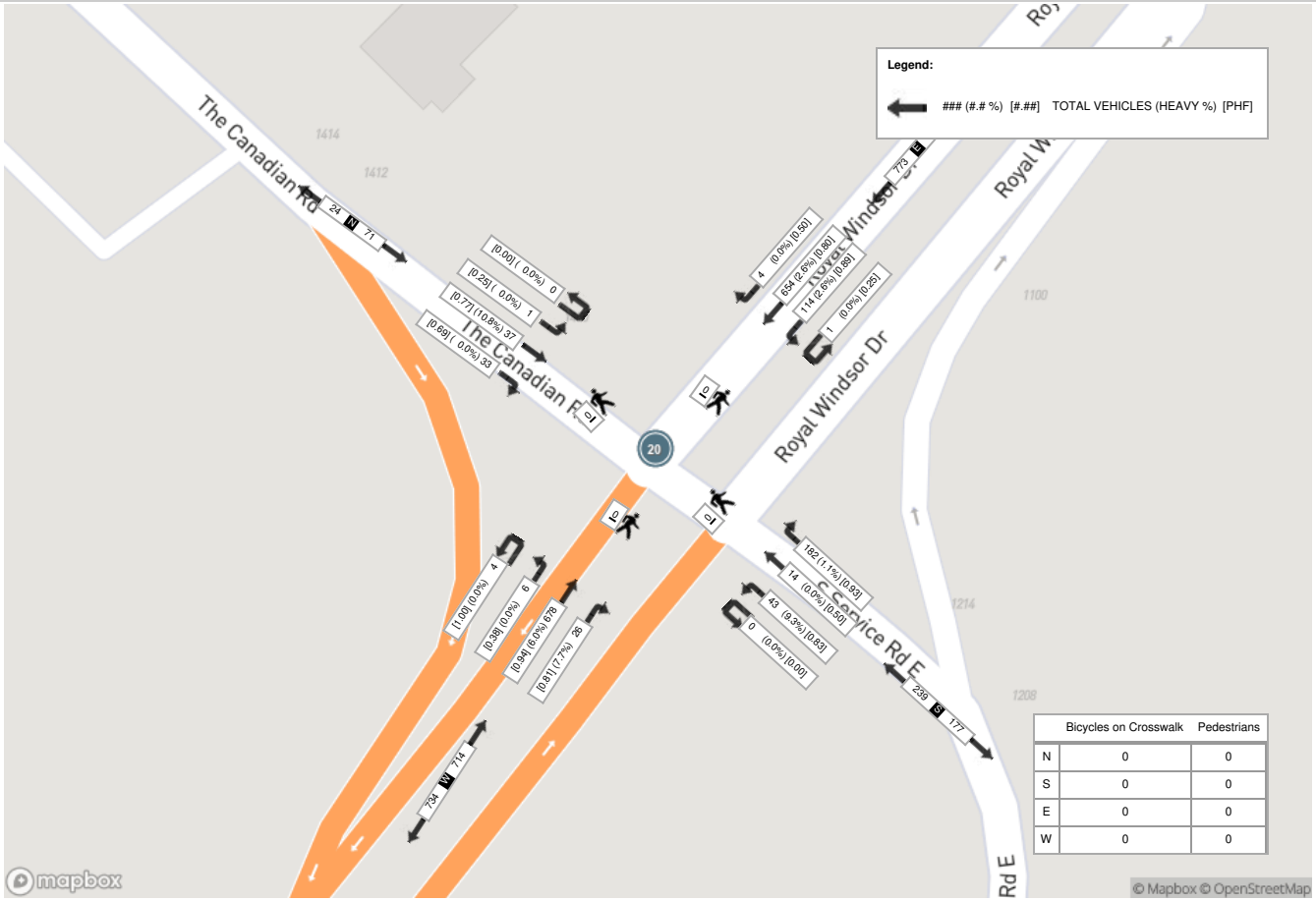
Start Time	N Approach THE CANADIAN RD						E Approach ROYAL WINDSOR DR						S Approach S SERVICE RD						W Approach ROYAL WINDSOR DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	8	10	1	0	0	19	1	205	26	0	0	232	48	7	11	0	0	66	6	164	4	1	0	175	492
17:15:00	9	12	0	0	0	21	1	174	28	0	0	203	46	1	10	0	0	57	6	174	1	1	0	182	463
17:30:00	12	8	0	0	0	20	2	159	32	0	0	193	49	2	9	0	0	60	8	180	1	1	0	190	463
17:45:00	4	7	0	0	0	11	0	116	28	1	0	145	39	4	13	0	0	56	6	160	0	1	0	167	379
Grand Total	33	37	1	0	0	71	4	654	114	1	0	773	182	14	43	0	0	239	26	678	6	4	0	714	**1797**
Approach%	46.5%	52.1%	1.4%	0%		-	0.5%	84.6%	14.7%	0.1%		-	76.2%	5.9%	18%	0%		-	3.6%	95%	0.8%	0.6%		-	**-**
Totals %	1.8%	2.1%	0.1%	0%		4%	0.2%	36.4%	6.3%	0.1%		43%	10.1%	0.8%	2.4%	0%		13.3%	1.4%	37.7%	0.3%	0.2%		39.7%	**-**
PHF	0.69	0.77	0.25	0		0.85	0.5	0.8	0.89	0.25		0.83	0.93	0.5	0.83	0		0.91	0.81	0.94	0.38	1		0.94	**-**
Heavy	0	4	0	0		4	0	17	3	0		20	2	0	4	0		6	2	41	0	0		43	**-**
Heavy %	0%	10.8%	0%	0%		5.6%	0%	2.6%	2.6%	0%		2.6%	1.1%	0%	9.3%	0%		2.5%	7.7%	6%	0%	0%		6%	**-**
Lights	33	33	1	0		67	4	637	111	1		753	180	14	39	0		233	24	637	6	4		671	**-**
Lights %	100%	89.2%	100%	0%		94.4%	100%	97.4%	97.4%	100%		97.4%	98.9%	100%	90.7%	0%		97.5%	92.3%	94%	100%	100%		94%	**-**
Single-Unit Trucks	0	2	0	0		2	0	8	2	0		10	1	0	1	0		2	1	14	0	0		15	**-**
Single-Unit Trucks %	0%	5.4%	0%	0%		2.8%	0%	1.2%	1.8%	0%		1.3%	0.5%	0%	2.3%	0%		0.8%	3.8%	2.1%	0%	0%		2.1%	**-**
Buses	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	2	0	0		2	0	8	1	0		9	1	0	3	0		4	1	27	0	0		28	**-**
Articulated Trucks %	0%	5.4%	0%	0%		2.8%	0%	1.2%	0.9%	0%		1.2%	0.5%	0%	7%	0%		1.7%	3.8%	4%	0%	0%		3.9%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	4	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 08:00 AM - 09:00 AM **Weather: Overcast Clouds (17.47 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
E	0	0
W	0	0

Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (24.88 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
E	0	0
W	0	0

Spectrum

Turning Movement Count
Location Name: TRAFALGAR RD & ARGUS RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (4 . TRAFALGAR RD & ARGUS RD)

Start Time	N Approach TRAFALGAR RD						E Approach QEW ON RAMP			S Approach TRAFALGAR RD						W Approach ARGUS RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	105	291	0	0	0	396	0	1	0	80	129	0	0	0	209	2	0	0	0	2	2	607	
07:15:00	135	329	0	0	0	464	0	2	0	81	142	0	0	0	223	2	0	0	0	4	2	689	
07:30:00	145	453	0	0	0	598	0	3	0	93	191	0	0	0	284	3	0	0	0	0	3	885	
07:45:00	152	472	0	0	0	624	0	2	0	105	246	0	0	0	351	8	0	0	0	1	8	983	3164
08:00:00	187	563	0	0	0	750	0	2	0	137	271	0	0	0	408	7	0	0	0	4	7	1165	3722
08:15:00	169	523	0	0	0	692	0	1	0	124	280	0	0	0	404	3	0	0	0	1	3	1099	4132
08:30:00	98	454	0	0	0	552	0	1	0	116	319	0	0	0	435	4	0	0	0	5	4	991	4238
08:45:00	127	555	0	0	0	682	0	1	0	94	274	0	0	0	368	7	0	0	0	0	7	1057	4312
BREAK																							
16:00:00	80	339	0	0	0	419	0	5	0	97	456	0	0	0	553	14	0	0	0	5	14	986	
16:15:00	84	385	0	0	0	469	0	4	0	118	437	0	0	0	555	13	0	0	0	4	13	1037	
16:30:00	83	363	0	0	0	446	0	4	0	90	479	0	0	0	569	7	0	0	0	7	7	1022	
16:45:00	86	383	0	0	0	469	0	2	0	70	414	0	0	0	484	2	0	0	0	2	2	955	4000
17:00:00	74	385	0	0	0	459	0	1	0	79	438	0	0	0	517	17	0	0	0	6	17	993	4007
17:15:00	83	416	0	0	0	499	0	4	0	87	418	0	0	0	505	15	0	0	0	4	15	1019	3989
17:30:00	85	437	0	0	0	522	0	3	0	77	509	0	0	0	586	10	0	0	0	7	10	1118	4085
17:45:00	104	449	0	0	0	553	0	4	0	119	408	0	0	0	527	7	0	0	0	3	7	1087	4217
Grand Total	1797	6797	0	0	0	8594	0	40	0	1567	5411	0	0	0	6978	121	0	0	0	55	121	**15693**	-
Approach%	20.9%	79.1%	0%	0%		-	0%		-	22.5%	77.5%	0%	0%		-	100%	0%	0%	0%		-	**-**	-
Totals %	11.5%	43.3%	0%	0%		54.8%	0%		0%	10%	34.5%	0%	0%		44.5%	0.8%	0%	0%	0%		0.8%	**-**	-
Heavy	64	147	0	0		-	0		-	32	173	0	0		-	9	0	0	0		-	**-**	-
Heavy %	3.6%	2.2%	0%	0%		-	0%		-	2%	3.2%	0%	0%		-	7.4%	0%	0%	0%		-	**-**	-
Bicycles	1	3	0	0		-	0		-	0	1	0	0		-	0	0	0	0		-	**-**	-
Bicycle %	0.1%	0%	0%	0%		-	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	**-**	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)

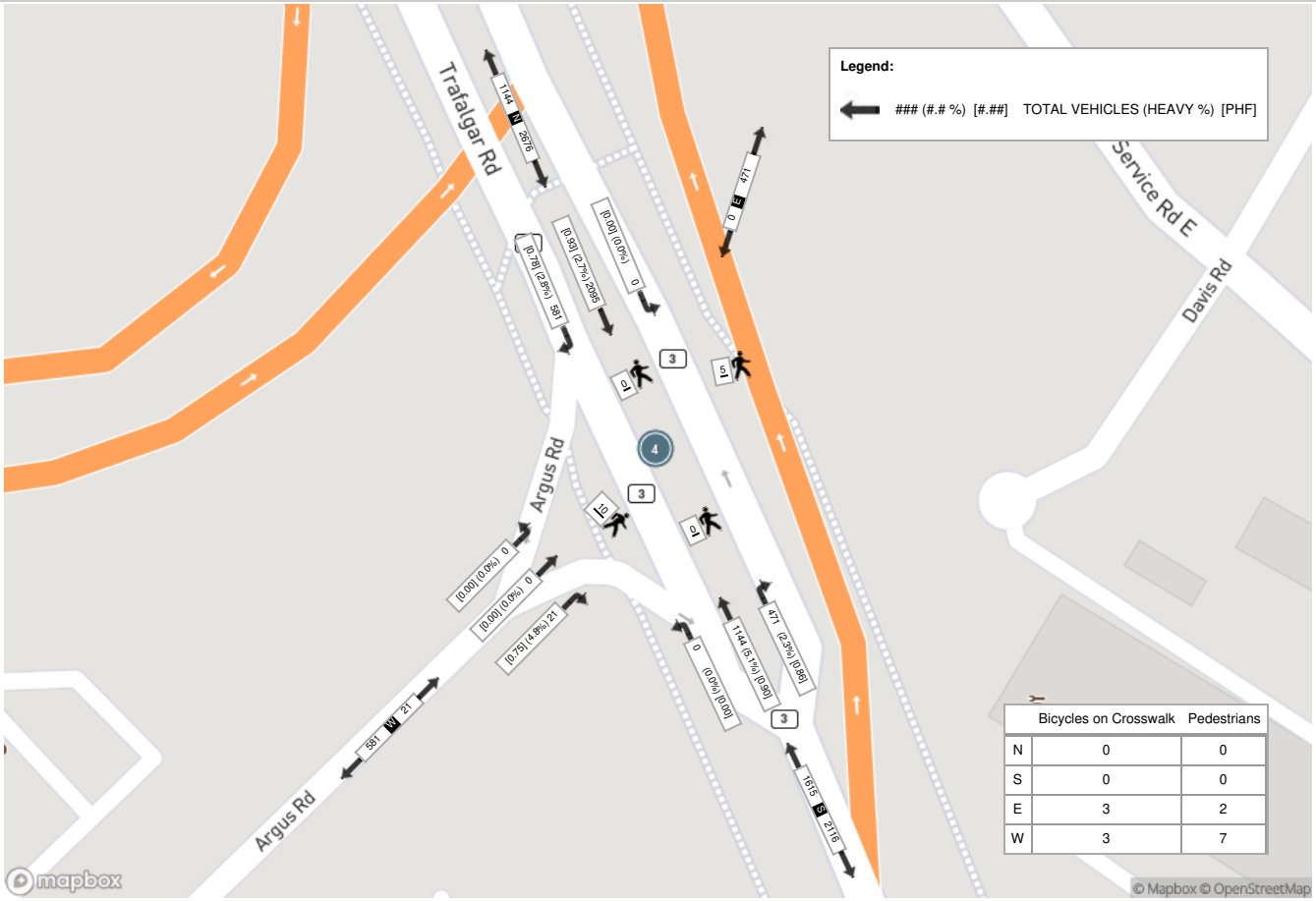
Start Time	N Approach TRAFALGAR RD						E Approach QEW ON RAMP			S Approach TRAFALGAR RD						W Approach ARGUS RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	187	563	0	0	0	750	0	2	0	137	271	0	0	0	408	7	0	0	0	4	7	1165
08:15:00	169	523	0	0	0	692	0	1	0	124	280	0	0	0	404	3	0	0	0	1	3	1099
08:30:00	98	454	0	0	0	552	0	1	0	116	319	0	0	0	435	4	0	0	0	5	4	991
08:45:00	127	555	0	0	0	682	0	1	0	94	274	0	0	0	368	7	0	0	0	0	7	1057
Grand Total	581	2095	0	0	0	2676	0	5	0	471	1144	0	0	0	1615	21	0	0	0	10	21	**4312**
Approach%	21.7%	78.3%	0%	0%		-	0%		-	29.2%	70.8%	0%	0%		-	100%	0%	0%	0%		-	**-**
Totals %	13.5%	48.6%	0%	0%		62.1%	0%		0%	10.9%	26.5%	0%	0%		37.5%	0.5%	0%	0%	0%		0.5%	**-**
PHF	0.78	0.93	0	0		0.89	0		0	0.86	0.9	0	0		0.93	0.75	0	0	0		0.75	**-**
Heavy	16	56	0	0		72	0		0	11	58	0	0		69	1	0	0	0		1	**-**
Heavy %	2.8%	2.7%	0%	0%		2.7%	0%		0%	2.3%	5.1%	0%	0%		4.3%	4.8%	0%	0%	0%		4.8%	**-**
Lights	565	2039	0	0		2604	0		0	460	1086	0	0		1546	20	0	0	0		20	**-**
Lights %	97.2%	97.3%	0%	0%		97.3%	0%		0%	97.7%	94.9%	0%	0%		95.7%	95.2%	0%	0%	0%		95.2%	**-**
Single-Unit Trucks	1	28	0	0		29	0		0	9	15	0	0		24	1	0	0	0		1	**-**
Single-Unit Trucks %	0.2%	1.3%	0%	0%		1.1%	0%		0%	1.9%	1.3%	0%	0%		1.5%	4.8%	0%	0%	0%		4.8%	**-**
Buses	15	21	0	0		36	0		0	1	41	0	0		42	0	0	0	0		0	**-**
Buses %	2.6%	1%	0%	0%		1.3%	0%		0%	0.2%	3.6%	0%	0%		2.6%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	7	0	0		7	0		0	1	2	0	0		3	0	0	0	0		0	**-**
Articulated Trucks %	0%	0.3%	0%	0%		0.3%	0%		0%	0.2%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	2	-	-	-	-	-	0	-	-	-	-	-	7	-	**-**
Pedestrians%	-	-	-	-	0%		-	13.3%		-	-	-	-	0%		-	-	-	-	46.7%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	3	-	-	-	-	-	0	-	-	-	-	-	3	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	20%		-	-	-	-	0%		-	-	-	-	20%		**-**

Peak Hour: 05:00 PM - 06:00 PM Weather: Overcast Clouds (24.88 °C)

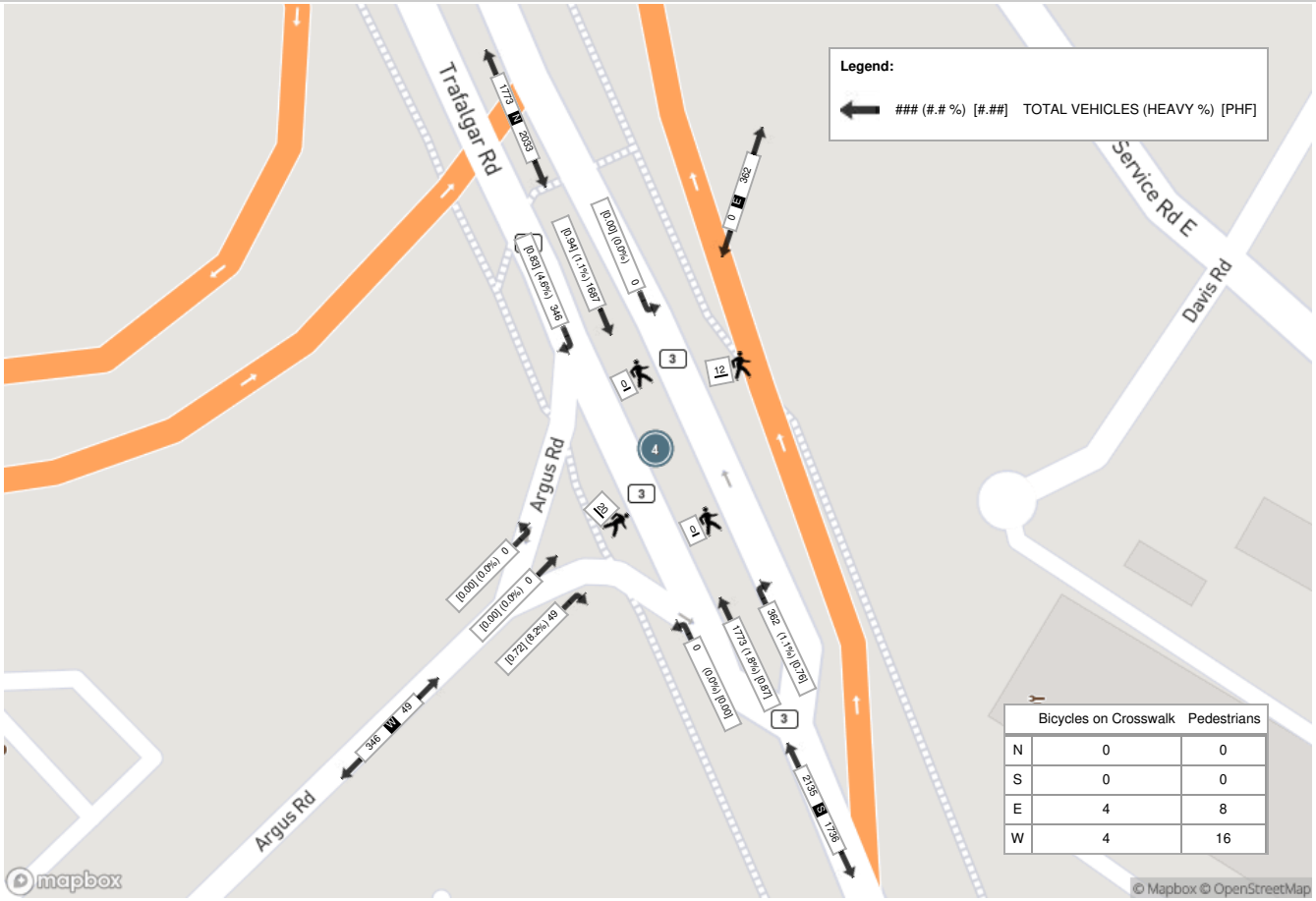
Start Time	N Approach TRAFALGAR RD						E Approach QEW ON RAMP			S Approach TRAFALGAR RD						W Approach ARGUS RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	74	385	0	0	0	459	0	1	0	79	438	0	0	0	517	17	0	0	0	6	17	993
17:15:00	83	416	0	0	0	499	0	4	0	87	418	0	0	0	505	15	0	0	0	4	15	1019
17:30:00	85	437	0	0	0	522	0	3	0	77	509	0	0	0	586	10	0	0	0	7	10	1118
17:45:00	104	449	0	0	0	553	0	4	0	119	408	0	0	0	527	7	0	0	0	3	7	1087
Grand Total	346	1687	0	0	0	2033	0	12	0	362	1773	0	0	0	2135	49	0	0	0	20	49	**4217**
Approach%	17%	83%	0%	0%		-	0%		-	17%	83%	0%	0%		-	100%	0%	0%	0%		-	**-**
Totals %	8.2%	40%	0%	0%		48.2%	0%		0%	8.6%	42%	0%	0%		50.6%	1.2%	0%	0%	0%		1.2%	**-**
PHF	0.83	0.94	0	0		0.92	0		0	0.76	0.87	0	0		0.91	0.72	0	0	0		0.72	**-**
Heavy	16	18	0	0		34	0		0	4	32	0	0		36	4	0	0	0		4	**-**
Heavy %	4.6%	1.1%	0%	0%		1.7%	0%		0%	1.1%	1.8%	0%	0%		1.7%	8.2%	0%	0%	0%		8.2%	**-**
Lights	330	1669	0	0		1999	0		0	358	1741	0	0		2099	45	0	0	0		45	**-**
Lights %	95.4%	98.9%	0%	0%		98.3%	0%		0%	98.9%	98.2%	0%	0%		98.3%	91.8%	0%	0%	0%		91.8%	**-**
Single-Unit Trucks	1	5	0	0		6	0		0	4	4	0	0		8	1	0	0	0		1	**-**
Single-Unit Trucks %	0.3%	0.3%	0%	0%		0.3%	0%		0%	1.1%	0.2%	0%	0%		0.4%	2%	0%	0%	0%		2%	**-**
Buses	15	12	0	0		27	0		0	0	28	0	0		28	3	0	0	0		3	**-**
Buses %	4.3%	0.7%	0%	0%		1.3%	0%		0%	0%	1.6%	0%	0%		1.3%	6.1%	0%	0%	0%		6.1%	**-**
Articulated Trucks	0	1	0	0		1	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0.1%	0%	0%		0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	8	-	-	-	-	-	0	-	-	-	-	-	16	-	**-**
Pedestrians%	-	-	-	-	0%		-	25%		-	-	-	-	0%		-	-	-	-	50%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	4	-	-	-	-	-	0	-	-	-	-	-	4	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	12.5%		-	-	-	-	0%		-	-	-	-	12.5%		**-**

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)



Peak Hour: 05:00 PM - 06:00 PM **Weather: Overcast Clouds (24.88 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
E	4	8
W	4	16

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (18 . S SERVICE RD & CHARTWELL RD)

Start Time	E Approach S SERVICE RD					S Approach CHARTWELL RD					W Approach S SERVICE RD					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
07:00:00	4	6	0	0	10	1	10	0	0	11	6	8	0	0	14	35	
07:15:00	7	5	0	0	12	1	9	0	0	10	6	7	0	0	13	35	
07:30:00	12	8	0	0	20	6	10	0	0	16	11	9	0	0	20	56	
07:45:00	19	23	0	0	42	11	14	0	0	25	14	9	0	0	23	90	216
08:00:00	23	20	0	0	43	9	15	0	0	24	12	7	0	0	19	86	267
08:15:00	27	20	0	0	47	6	18	1	0	25	19	8	0	0	27	99	331
08:30:00	48	30	0	0	78	7	16	0	0	23	18	13	0	0	31	132	407
08:45:00	50	23	0	0	73	0	19	0	0	19	12	14	0	0	26	118	435
BREAK																	
16:00:00	20	30	0	0	50	11	36	0	0	47	17	20	0	0	37	134	
16:15:00	21	16	0	0	37	14	43	0	0	57	18	31	0	0	49	143	
16:30:00	42	16	0	0	58	31	30	0	0	61	18	17	0	0	35	154	
16:45:00	24	16	0	0	40	19	32	0	0	51	21	23	0	0	44	135	566
17:00:00	30	15	0	0	45	30	43	0	0	73	18	36	0	0	54	172	604
17:15:00	18	22	0	0	40	34	36	0	0	70	16	23	0	0	39	149	610
17:30:00	28	21	0	0	49	31	41	0	0	72	14	24	0	0	38	159	615
17:45:00	24	19	0	0	43	27	35	0	0	62	9	18	0	0	27	132	612
Grand Total	397	290	0	0	687	238	407	1	0	646	229	267	0	0	496	**1829**	-
Approach%	57.8%	42.2%	0%		-	36.8%	63%	0.2%		-	46.2%	53.8%	0%		-	**-**	-
Totals %	21.7%	15.9%	0%		37.6%	13%	22.3%	0.1%		35.3%	12.5%	14.6%	0%		27.1%	**-**	-
Heavy	6	7	0		-	3	8	0		-	3	5	0		-	**-**	-
Heavy %	1.5%	2.4%	0%		-	1.3%	2%	0%		-	1.3%	1.9%	0%		-	**-**	-
Bicycles	3	8	0		-	1	0	0		-	2	0	0		-	**-**	-
Bicycle %	0.8%	2.8%	0%		-	0.4%	0%	0%		-	0.9%	0%	0%		-	**-**	-

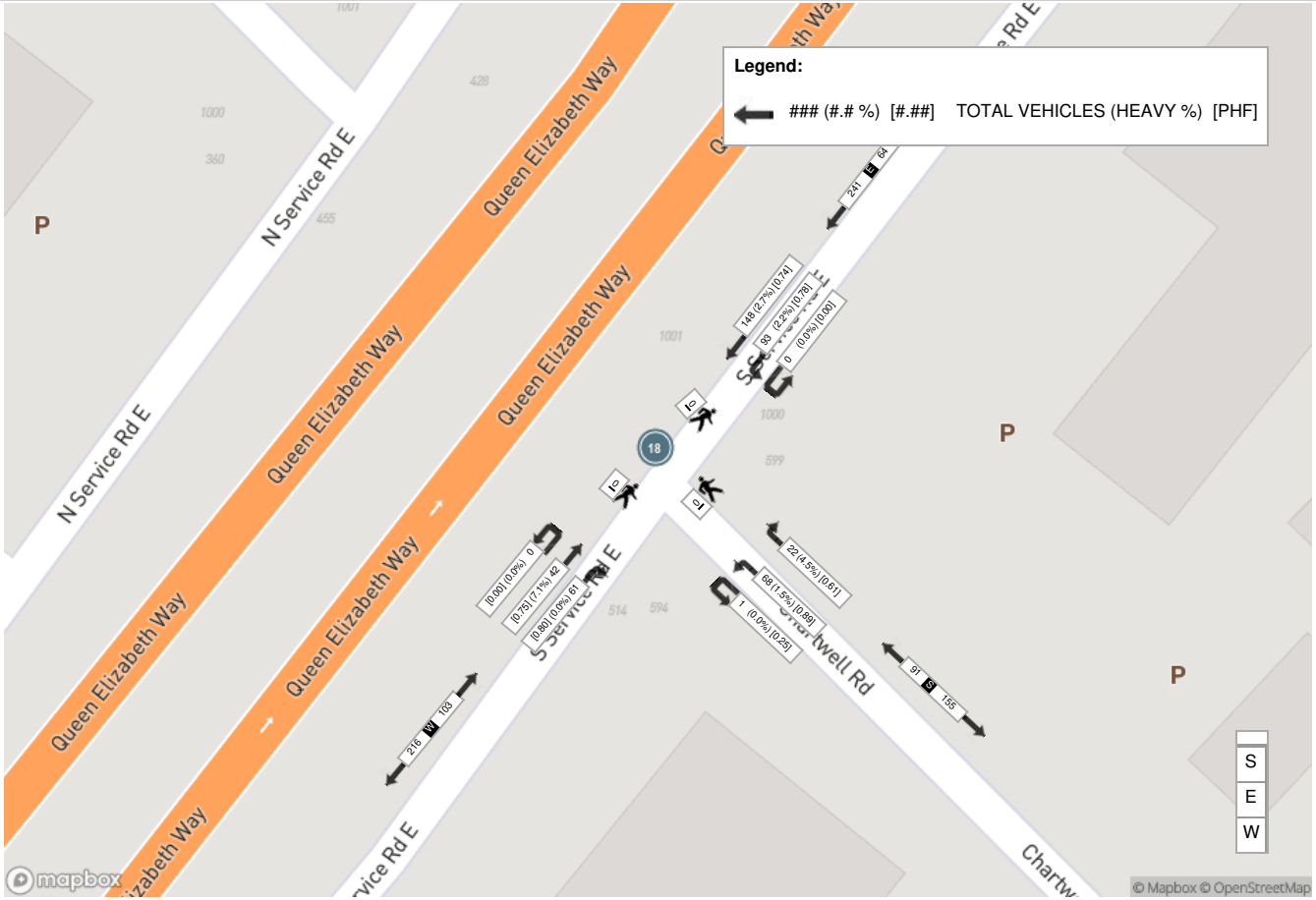
Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)

Start Time	E Approach S SERVICE RD					S Approach CHARTWELL RD					W Approach S SERVICE RD					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:00:00	23	20	0	0	43	9	15	0	0	24	12	7	0	0	19	86
08:15:00	27	20	0	0	47	6	18	1	0	25	19	8	0	0	27	99
08:30:00	48	30	0	0	78	7	16	0	0	23	18	13	0	0	31	132
08:45:00	50	23	0	0	73	0	19	0	0	19	12	14	0	0	26	118
Grand Total	148	93	0	0	241	22	68	1	0	91	61	42	0	0	103	**435**
Approach%	61.4%	38.6%	0%		-	24.2%	74.7%	1.1%		-	59.2%	40.8%	0%		-	**-**
Totals %	34%	21.4%	0%		55.4%	5.1%	15.6%	0.2%		20.9%	14%	9.7%	0%		23.7%	**-**
PHF	0.74	0.78	0		0.77	0.61	0.89	0.25		0.91	0.8	0.75	0		0.83	**-**
Heavy	4	2	0		6	1	1	0		2	0	3	0		3	**-**
Heavy %	2.7%	2.2%	0%		2.5%	4.5%	1.5%	0%		2.2%	0%	7.1%	0%		2.9%	**-**
Lights	144	91	0		235	21	67	1		89	61	39	0		100	**-**
Lights %	97.3%	97.8%	0%		97.5%	95.5%	98.5%	100%		97.8%	100%	92.9%	0%		97.1%	**-**
Single-Unit Trucks	3	2	0		5	1	1	0		2	0	2	0		2	**-**
Single-Unit Trucks %	2%	2.2%	0%		2.1%	4.5%	1.5%	0%		2.2%	0%	4.8%	0%		1.9%	**-**
Buses	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Articulated Trucks	1	0	0		1	0	0	0		0	0	1	0		1	**-**
Articulated Trucks %	0.7%	0%	0%		0.4%	0%	0%	0%		0%	0%	2.4%	0%		1%	**-**
Bicycles on Road	0	0	0	0	-	1	0	0	0	-	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	%		-	-	-	%		-	-	-	%		**-**

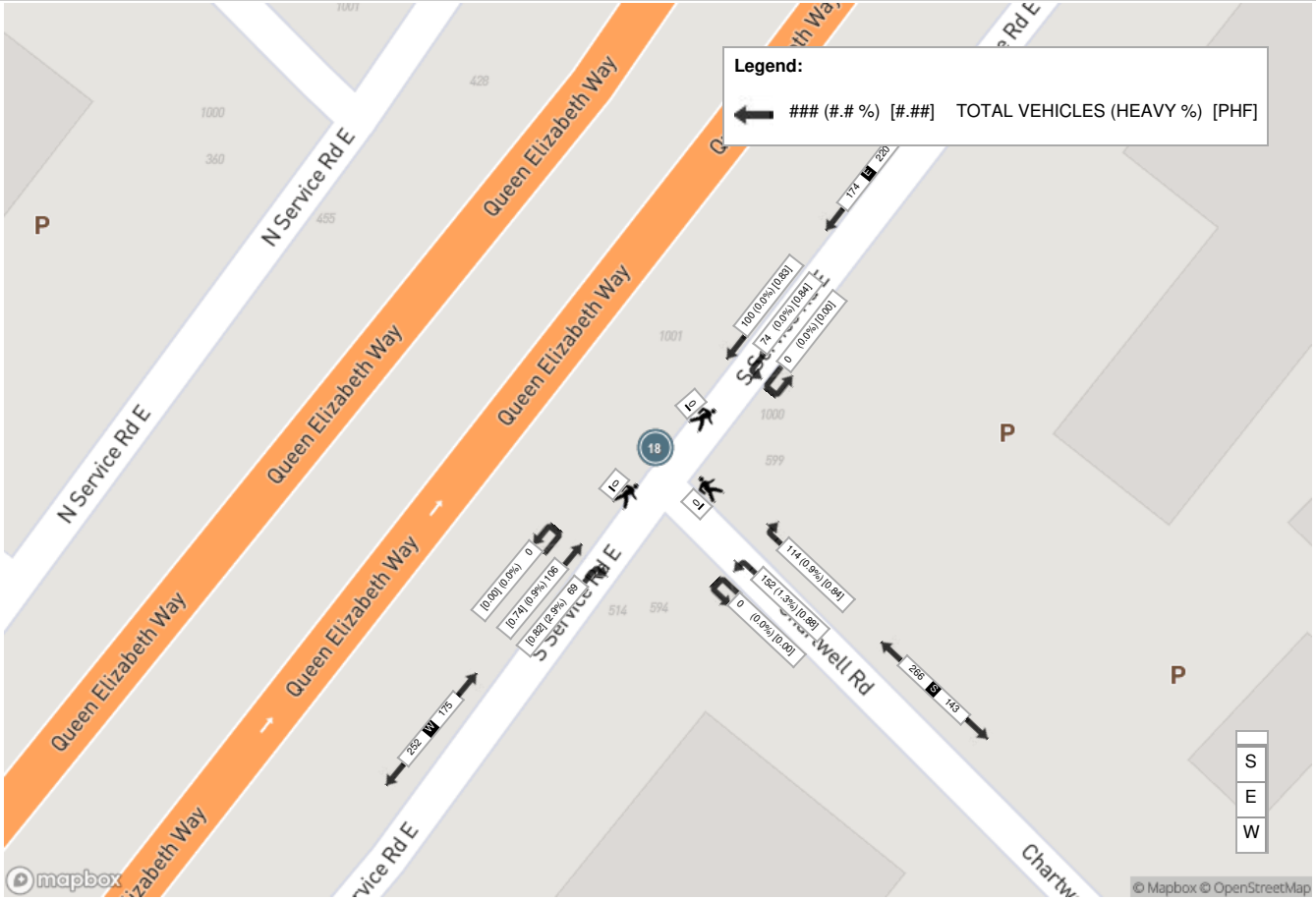
Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (24.88 °C)

Start Time	E Approach S SERVICE RD					S Approach CHARTWELL RD					W Approach S SERVICE RD					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:45:00	24	16	0	0	40	19	32	0	0	51	21	23	0	0	44	135
17:00:00	30	15	0	0	45	30	43	0	0	73	18	36	0	0	54	172
17:15:00	18	22	0	0	40	34	36	0	0	70	16	23	0	0	39	149
17:30:00	28	21	0	0	49	31	41	0	0	72	14	24	0	0	38	159
Grand Total	100	74	0	0	174	114	152	0	0	266	69	106	0	0	175	**615**
Approach%	57.5%	42.5%	0%		-	42.9%	57.1%	0%		-	39.4%	60.6%	0%		-	**-**
Totals %	16.3%	12%	0%		28.3%	18.5%	24.7%	0%		43.3%	11.2%	17.2%	0%		28.5%	**-**
PHF	0.83	0.84	0		0.89	0.84	0.88	0		0.91	0.82	0.74	0		0.81	**-**
Heavy	0	0	0		0	1	2	0		3	2	1	0		3	**-**
Heavy %	0%	0%	0%		0%	0.9%	1.3%	0%		1.1%	2.9%	0.9%	0%		1.7%	**-**
Lights	100	74	0		174	113	150	0		263	67	105	0		172	**-**
Lights %	100%	100%	0%		100%	99.1%	98.7%	0%		98.9%	97.1%	99.1%	0%		98.3%	**-**
Single-Unit Trucks	0	0	0		0	1	1	0		2	1	1	0		2	**-**
Single-Unit Trucks %	0%	0%	0%		0%	0.9%	0.7%	0%		0.8%	1.4%	0.9%	0%		1.1%	**-**
Buses	0	0	0		0	0	1	0		1	1	0	0		1	**-**
Buses %	0%	0%	0%		0%	0%	0.7%	0%		0.4%	1.4%	0%	0%		0.6%	**-**
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Bicycles on Road	0	4	0	0	-	0	0	0	0	-	1	0	0	0	-	**-**
Bicycles on Road%	-	-	-	%		-	-	-	%		-	-	-	%		**-**

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Overcast Clouds (24.88 °C)



Spectrum

Turning Movement Count
Location Name: S SERVICE RD & DAVIS RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (17 . S SERVICE RD & DAVIS RD)

Start Time	N Approach SOUTH SERVICE RD E						E Approach DAVIS RD						S Approach SOUTH SERVICE RD E						W Approach DAVIS RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	9	0	0	0	9	0	0	2	0	0	2	2	15	1	0	0	18	0	0	0	0	1	0	29	
07:15:00	0	20	0	0	0	20	0	0	0	0	1	0	2	17	1	0	0	20	0	0	0	0	0	0	40	
07:30:00	0	21	1	0	0	22	1	0	0	0	1	1	3	28	0	0	0	31	1	0	0	0	0	1	55	
07:45:00	0	35	3	0	0	38	1	0	2	0	0	3	7	26	0	0	0	33	0	0	0	0	0	0	74	198
08:00:00	0	38	4	0	0	42	0	0	3	0	0	3	5	31	0	0	0	36	0	0	0	0	0	0	81	250
08:15:00	0	37	1	0	0	38	0	0	0	0	0	0	11	41	0	0	0	52	1	0	0	0	0	1	91	301
08:30:00	0	51	1	0	0	52	0	0	3	0	0	3	11	42	1	0	0	54	0	0	0	0	0	0	109	355
08:45:00	0	60	5	0	0	65	1	0	3	0	0	4	10	33	1	0	0	44	0	0	0	0	0	0	113	394
BREAK																										
16:00:00	0	69	0	0	0	69	2	0	6	0	0	8	6	33	0	0	0	39	0	0	0	0	1	0	116	
16:15:00	0	60	9	0	0	69	2	0	6	0	0	8	8	42	0	0	0	50	0	0	0	0	0	0	127	
16:30:00	0	73	0	0	0	73	3	0	23	0	2	26	14	35	0	0	0	49	0	0	0	0	0	0	148	
16:45:00	0	65	3	0	0	68	6	0	17	0	0	23	18	38	0	0	0	56	0	0	0	0	0	0	147	538
17:00:00	0	93	7	0	0	100	4	0	18	0	0	22	7	46	0	0	0	53	0	0	0	0	0	0	175	597
17:15:00	0	65	0	0	0	65	2	0	3	0	0	5	4	34	0	0	0	38	0	0	0	0	0	0	108	578
17:30:00	0	77	0	0	0	77	2	0	5	0	1	7	8	39	1	0	0	48	1	0	0	0	0	1	133	563
17:45:00	0	55	2	0	0	57	1	0	4	0	0	5	6	27	0	0	0	33	0	0	0	0	0	0	95	511
Grand Total	0	828	36	0	0	864	25	0	95	0	5	120	122	527	5	0	0	654	3	0	0	0	2	3	**1641**	-
Approach%	0%	95.8%	4.2%	0%		-	20.8%	0%	79.2%	0%		-	18.7%	80.6%	0.8%	0%		-	100%	0%	0%	0%		-	**-**	-
Totals %	0%	50.5%	2.2%	0%		52.7%	1.5%	0%	5.8%	0%		7.3%	7.4%	32.1%	0.3%	0%		39.9%	0.2%	0%	0%	0%		0.2%	**-**	-
Heavy	0	15	0	0		-	0	0	2	0		-	3	9	1	0		-	0	0	0	0		-	**-**	-
Heavy %	0%	1.8%	0%	0%		-	0%	0%	2.1%	0%		-	2.5%	1.7%	20%	0%		-	0%	0%	0%	0%		-	**-**	-
Bicycles	0	0	0	0		-	0	0	0	0		-	0	2	0	0		-	0	0	0	0		-	**-**	-
Bicycle %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0.4%	0%	0%		-	0%	0%	0%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: S SERVICE RD & DAVIS RD
Date: Tue, Jun 04, 2024 Deployment Lead: David Chu

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

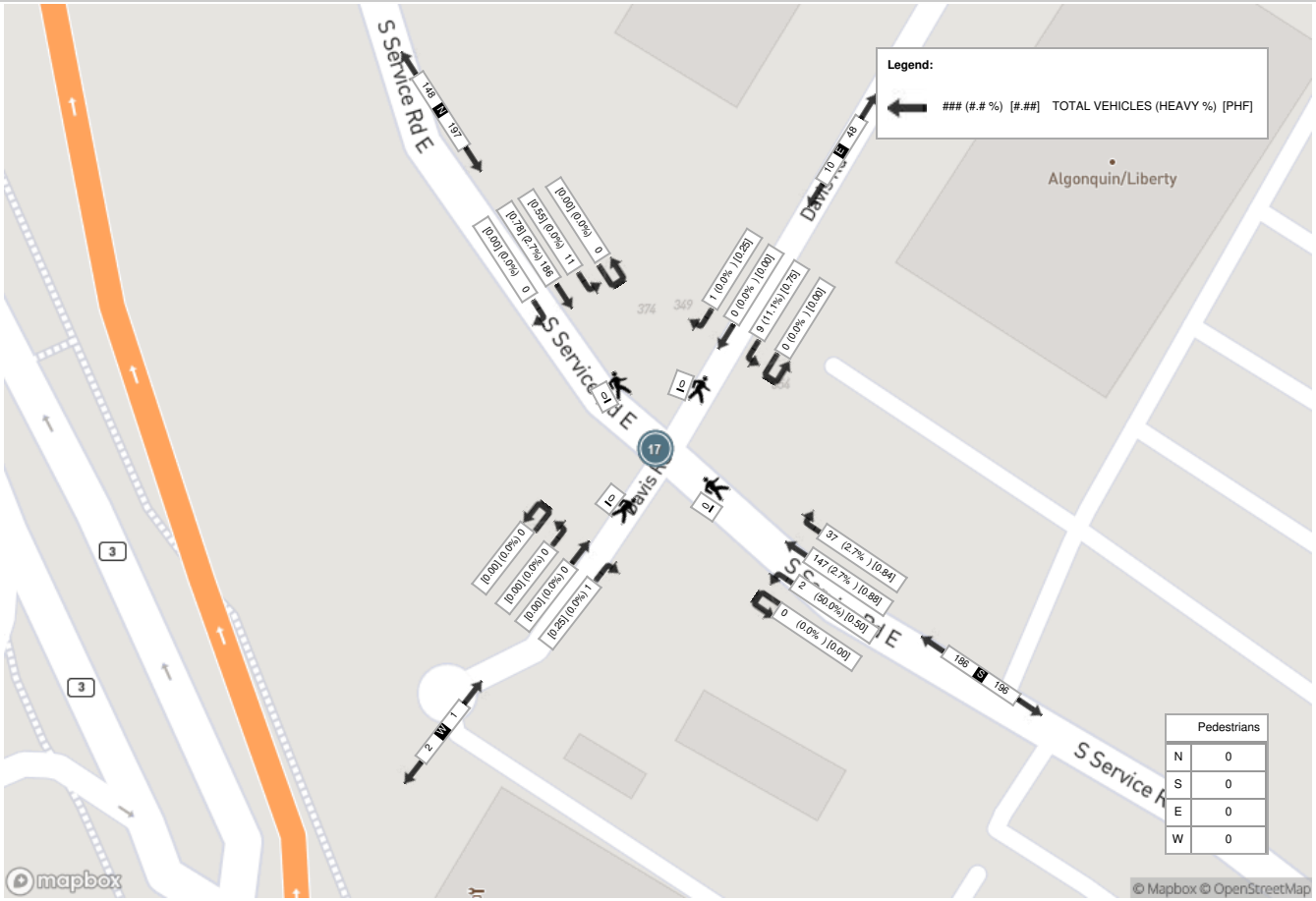
Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (17.47 °C)

Start Time	N Approach SOUTH SERVICE RD E						E Approach DAVIS RD						S Approach SOUTH SERVICE RD E						W Approach DAVIS RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	0	38	4	0	0	42	0	0	3	0	0	3	5	31	0	0	0	36	0	0	0	0	0	0	81
08:15:00	0	37	1	0	0	38	0	0	0	0	0	0	11	41	0	0	0	52	1	0	0	0	0	1	91
08:30:00	0	51	1	0	0	52	0	0	3	0	0	3	11	42	1	0	0	54	0	0	0	0	0	0	109
08:45:00	0	60	5	0	0	65	1	0	3	0	0	4	10	33	1	0	0	44	0	0	0	0	0	0	113
Grand Total	0	186	11	0	0	197	1	0	9	0	0	10	37	147	2	0	0	186	1	0	0	0	0	1	**394**
Approach%	0%	94.4%	5.6%	0%		-	10%	0%	90%	0%		-	19.9%	79%	1.1%	0%		-	100%	0%	0%	0%		-	**-**
Totals %	0%	47.2%	2.8%	0%		50%	0.3%	0%	2.3%	0%		2.5%	9.4%	37.3%	0.5%	0%		47.2%	0.3%	0%	0%	0%		0.3%	**-**
PHF	0	0.78	0.55	0		0.76	0.25	0	0.75	0		0.63	0.84	0.88	0.5	0		0.86	0.25	0	0	0		0.25	**-**
Heavy	0	5	0	0		5	0	0	1	0		1	1	4	1	0		6	0	0	0	0		0	**-**
Heavy %	0%	2.7%	0%	0%		2.5%	0%	0%	11.1%	0%		10%	2.7%	2.7%	50%	0%		3.2%	0%	0%	0%	0%		0%	**-**
Lights	0	181	11	0		192	1	0	8	0		9	36	143	1	0		180	1	0	0	0		1	**-**
Lights %	0%	97.3%	100%	0%		97.5%	100%	0%	88.9%	0%		90%	97.3%	97.3%	50%	0%		96.8%	100%	0%	0%	0%		100%	**-**
Single-Unit Trucks	0	4	0	0		4	0	0	1	0		1	1	3	1	0		5	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	2.2%	0%	0%		2%	0%	0%	11.1%	0%		10%	2.7%	2%	50%	0%		2.7%	0%	0%	0%	0%		0%	**-**
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Articulated Trucks %	0%	0.5%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.5%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

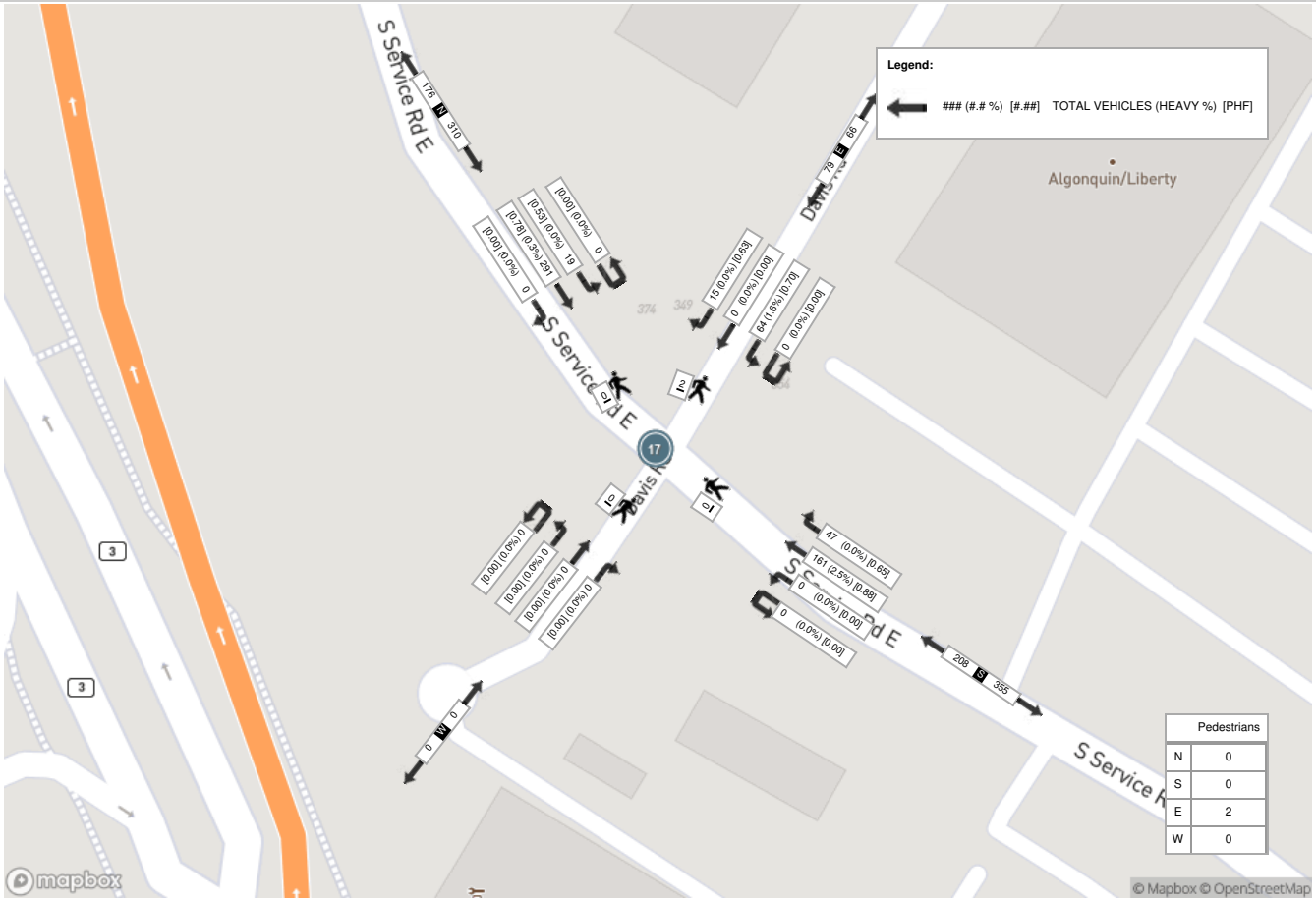
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (24.88 °C)

Start Time	N Approach SOUTH SERVICE RD E						E Approach DAVIS RD						S Approach SOUTH SERVICE RD E						W Approach DAVIS RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	0	60	9	0	0	69	2	0	6	0	0	8	8	42	0	0	0	50	0	0	0	0	0	0	127
16:30:00	0	73	0	0	0	73	3	0	23	0	2	26	14	35	0	0	0	49	0	0	0	0	0	0	148
16:45:00	0	65	3	0	0	68	6	0	17	0	0	23	18	38	0	0	0	56	0	0	0	0	0	0	147
17:00:00	0	93	7	0	0	100	4	0	18	0	0	22	7	46	0	0	0	53	0	0	0	0	0	0	175
Grand Total	0	291	19	0	0	310	15	0	64	0	2	79	47	161	0	0	0	208	0	0	0	0	0	0	**597**
Approach%	0%	93.9%	6.1%	0%		-	19%	0%	81%	0%		-	22.6%	77.4%	0%	0%		-	0%	0%	0%	0%		-	**-**
Totals %	0%	48.7%	3.2%	0%		51.9%	2.5%	0%	10.7%	0%		13.2%	7.9%	27%	0%	0%		34.8%	0%	0%	0%	0%		0%	**-**
PHF	0	0.78	0.53	0		0.78	0.63	0	0.7	0		0.76	0.65	0.88	0	0		0.93	0	0	0	0		0	**-**
Heavy	0	1	0	0		1	0	0	1	0		1	0	4	0	0		4	0	0	0	0		0	**-**
Heavy %	0%	0.3%	0%	0%		0.3%	0%	0%	1.6%	0%		1.3%	0%	2.5%	0%	0%		1.9%	0%	0%	0%	0%		0%	**-**
Lights	0	290	19	0		309	15	0	63	0		78	47	157	0	0		204	0	0	0	0		0	**-**
Lights %	0%	99.7%	100%	0%		99.7%	100%	0%	98.4%	0%		98.7%	100%	97.5%	0%	0%		98.1%	0%	0%	0%	0%		0%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	1	0		1	0	3	0	0		3	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	1.6%	0%		1.3%	0%	1.9%	0%	0%		1.4%	0%	0%	0%	0%		0%	**-**
Buses	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Buses %	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

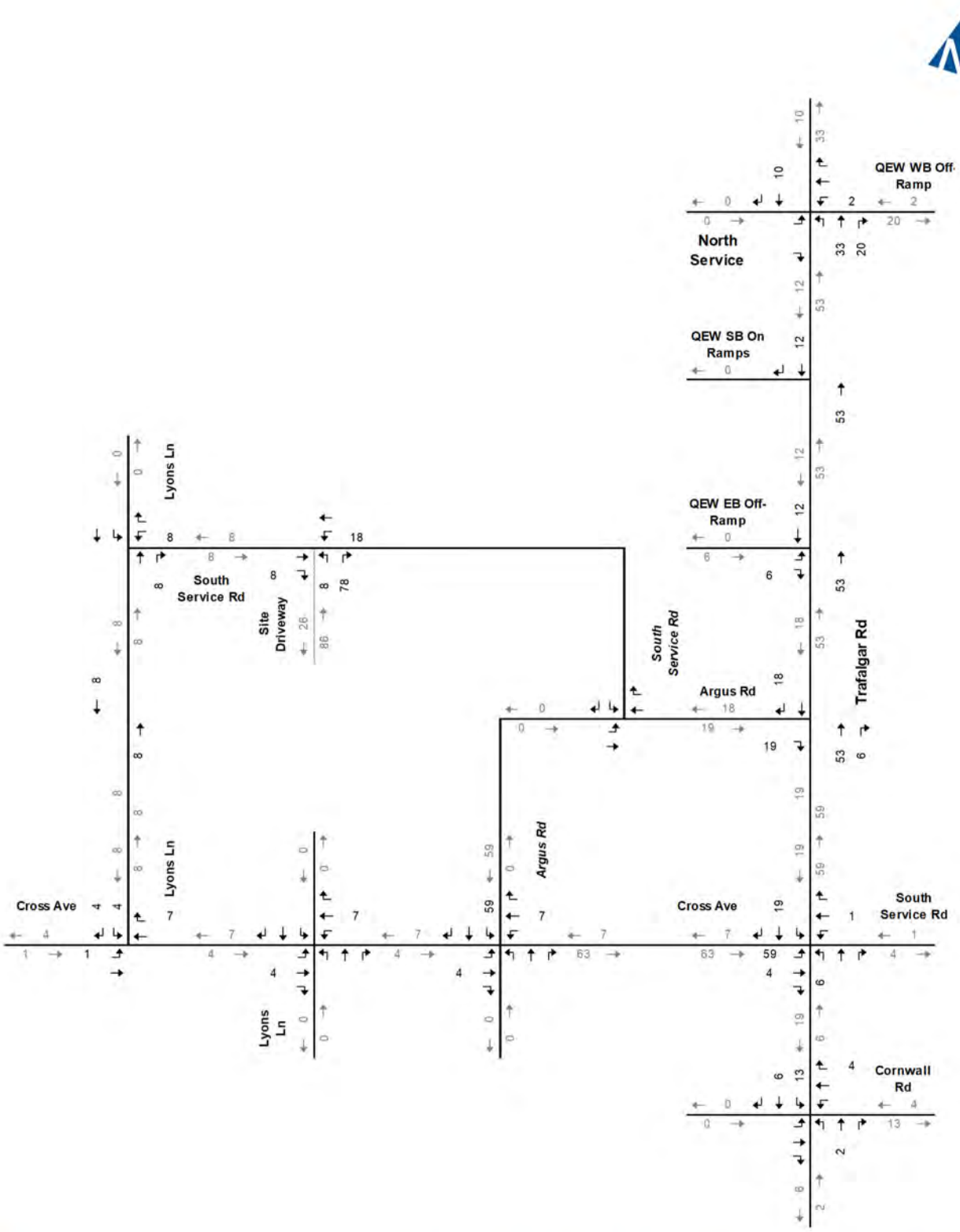
Peak Hour: 08:00 AM - 09:00 AM **Weather: Overcast Clouds (17.47 °C)**



Peak Hour: 04:15 PM - 05:15 PM **Weather: Overcast Clouds (24.88 °C)**



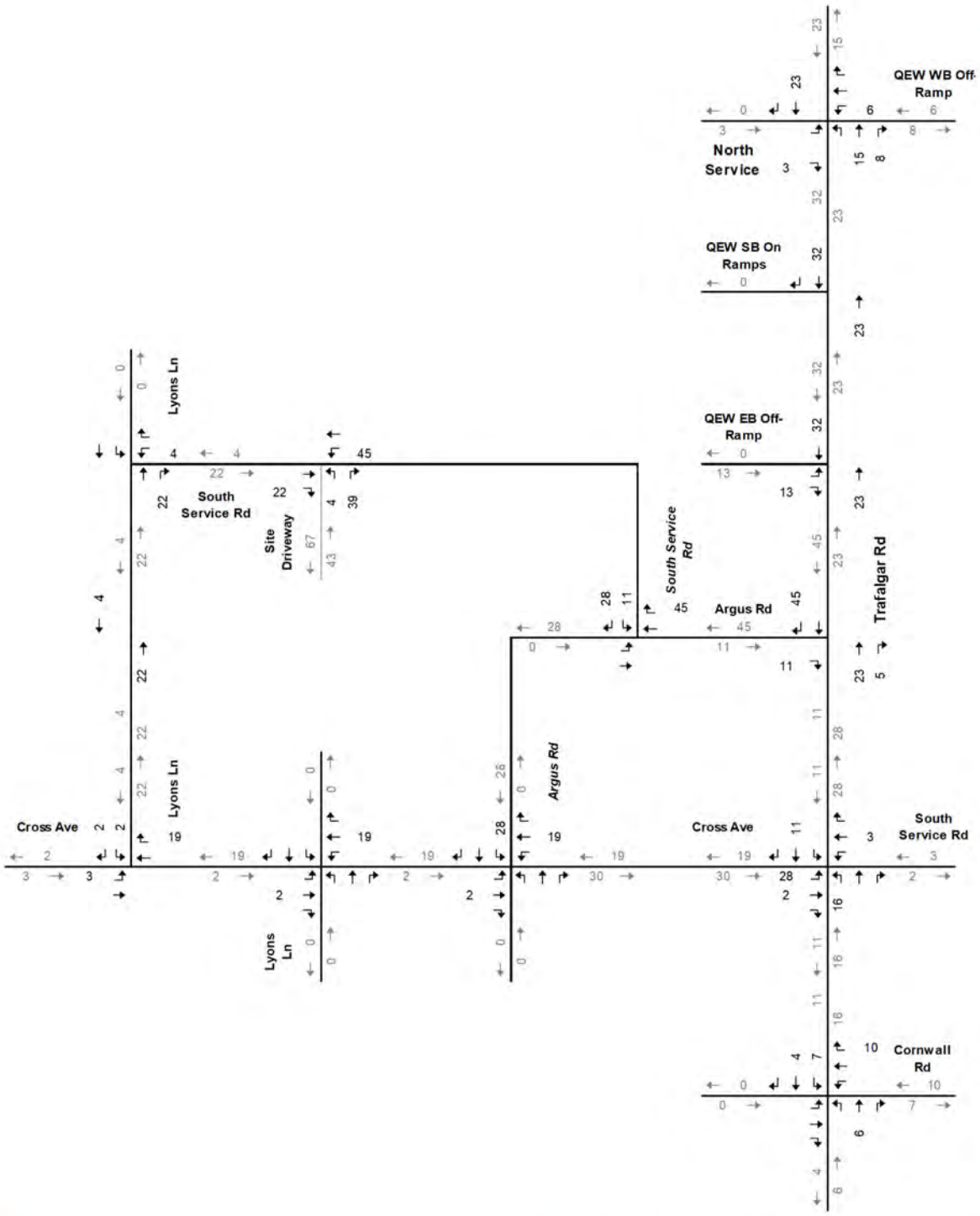
Appendix M:
Background Development Information



Site Generated Traffic Volumes
AM Peak Hour

627 Lyons Lane, Oakville
210060

Figure 3.2A

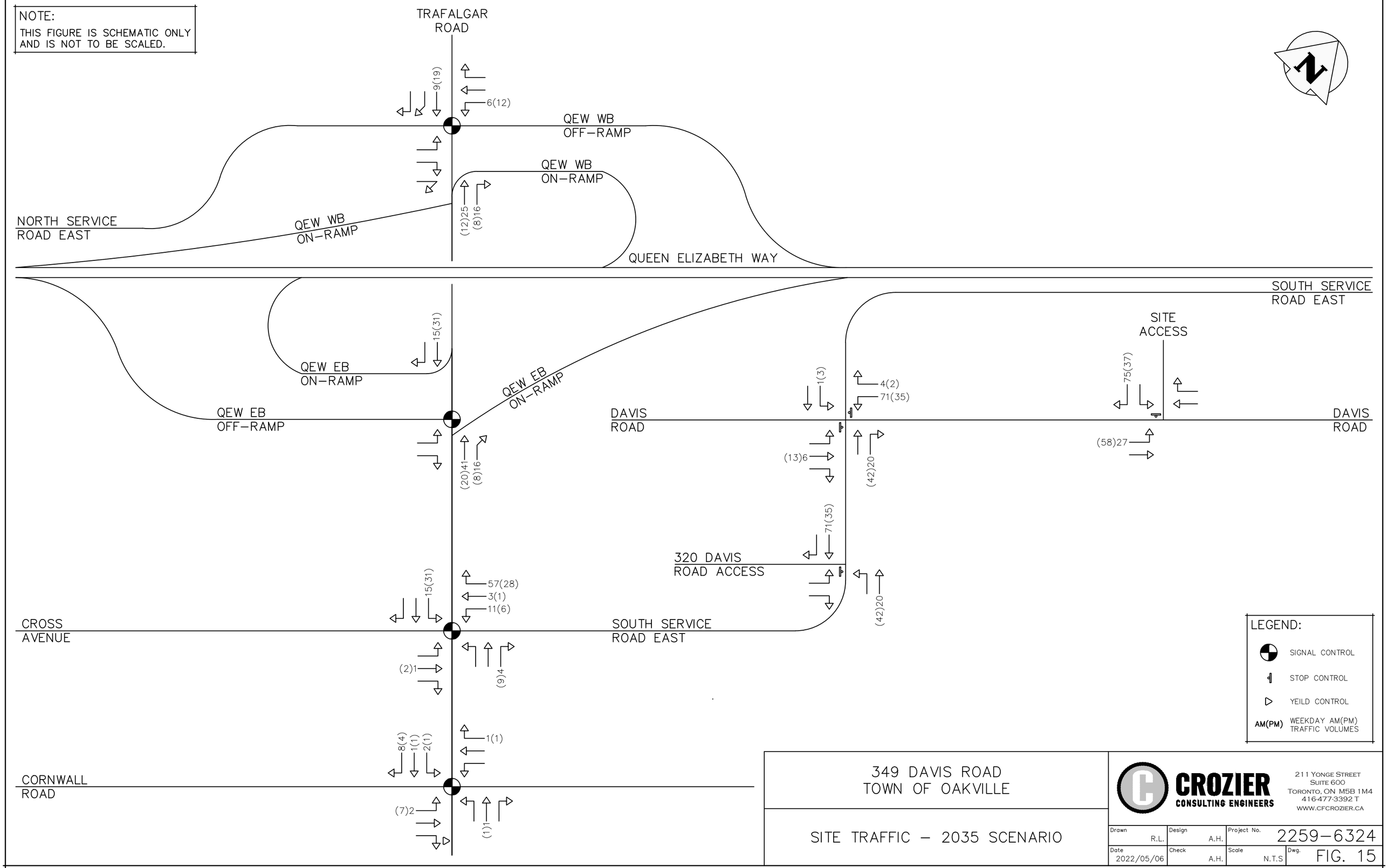


Site Generated Traffic Volumes
PM Peak Hour

627 Lyons Lane, Oakville
210060

Figure 3.2B

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

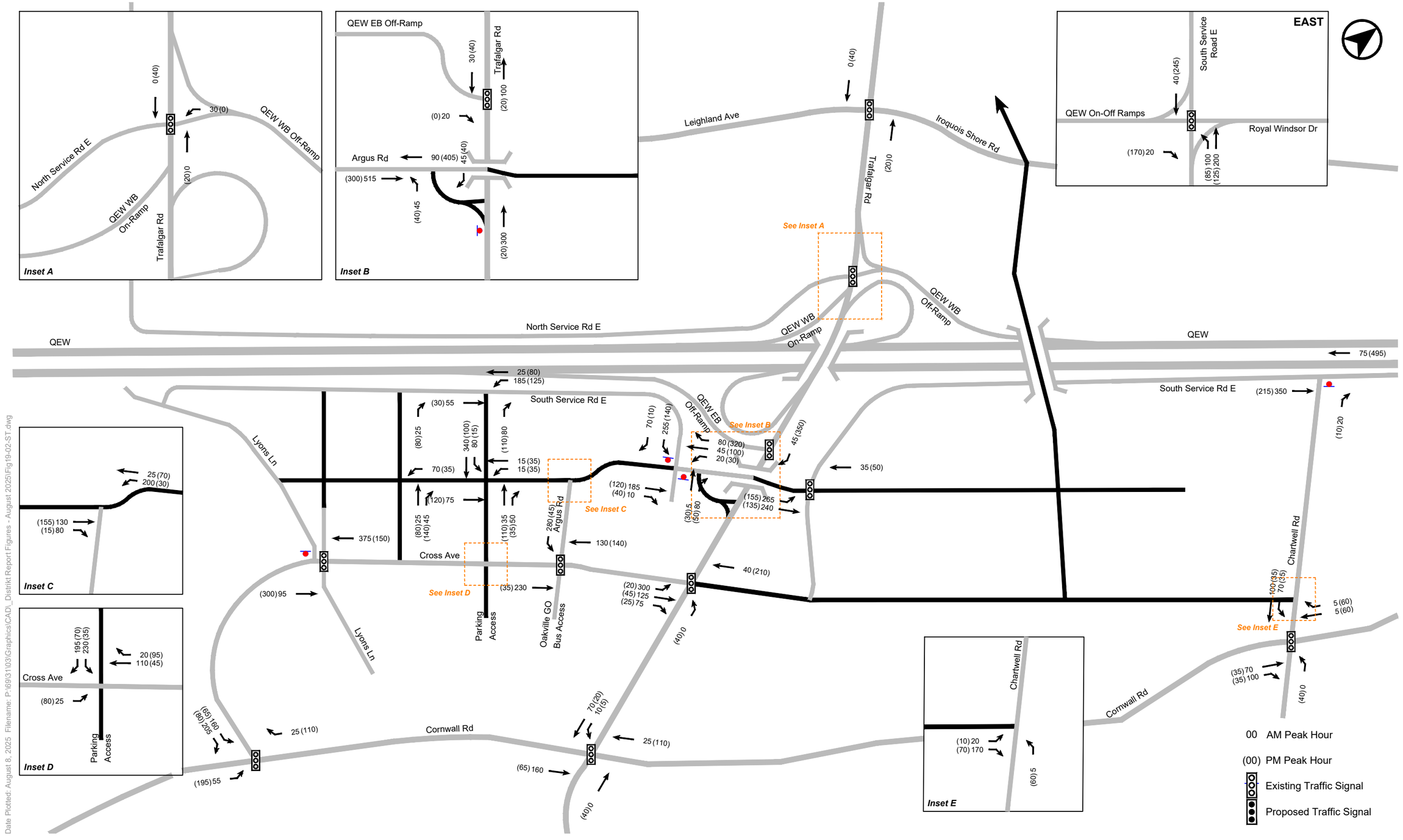
- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

349 DAVIS ROAD
TOWN OF OAKVILLE

SITE TRAFFIC – 2035 SCENARIO

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	A.H.		2259-6324
Date	Check	Scale	Dwg.
2022/05/06	A.H.	N.T.S	FIG. 15

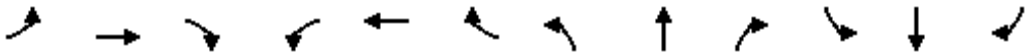


Date Plotted: August 8, 2025 Filename: P:\69\31103\Graphics\CAD_Distrikt Report Figures - August 2025\Fig19-02-ST.dwg

FIGURE 19 SITE GENERATED TRAFFIC VOLUMES

Appendix N:
Synchro Traffic Analysis Worksheet

1: Trafalgar Rd & Leighland Ave/Iroquois Shore Rd

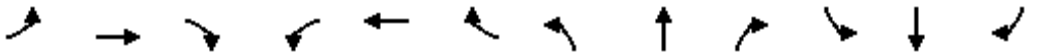


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	101	338	692	56	121	146	955	783	197	2015	51
v/c Ratio	0.12	0.39	0.99	0.83	0.09	0.22	0.78	0.47	0.74	0.65	0.98	0.08
Control Delay	28.7	62.0	81.8	59.1	33.8	6.6	54.8	33.3	15.5	29.5	56.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	28.7	62.0	81.8	59.1	33.8	6.6	54.8	33.3	15.7	29.5	56.4	0.2
Queue Length 50th (m)	5.9	27.3	~61.6	98.8	11.3	0.0	27.3	97.8	51.0	30.2	210.6	0.0
Queue Length 95th (m)	13.1	49.0	#142.3	116.5	22.5	15.0	#59.8	95.0	193.4	45.9	#248.9	0.0
Internal Link Dist (m)		361.1			497.8			251.4			315.2	
Turn Bay Length (m)	80.0			165.0		15.0				85.0		80.0
Base Capacity (vph)	365	256	340	964	624	561	189	2015	1061	304	2059	649
Starvation Cap Reductn	0	0	0	0	0	0	0	0	20	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.39	0.99	0.72	0.09	0.22	0.77	0.47	0.75	0.65	0.98	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

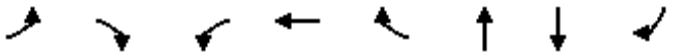
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	100	335	685	55	120	145	945	775	195	1995	50
Future Volume (vph)	35	100	335	685	55	120	145	945	775	195	1995	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.8	5.8	4.7	5.8	5.8	3.0	5.1	5.1	3.0	5.1	5.1
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	1.00	1.00	0.91
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1659	1863	1568	3367	1827	1410	1719	4988	1513	1786	5085	1383
Flt Permitted	0.72	1.00	1.00	0.95	1.00	1.00	0.07	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1258	1863	1568	3367	1827	1410	131	4988	1513	390	5085	1383
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	35	101	338	692	56	121	146	955	783	197	2015	51
RTOR Reduction (vph)	0	0	123	0	0	80	0	0	457	0	0	31
Lane Group Flow (vph)	35	101	215	692	56	41	146	955	326	197	2015	20
Confl. Peds. (#/hr)	35					35	35		10	10		35
Heavy Vehicles (%)	3%	2%	3%	4%	4%	4%	5%	4%	3%	1%	2%	6%
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Actuated Green, G (s)	25.7	19.5	19.5	33.6	46.9	46.9	64.2	54.4	54.4	64.4	54.5	54.5
Effective Green, g (s)	27.7	20.5	20.5	34.6	47.9	47.9	66.2	55.4	55.4	66.4	55.5	55.5
Actuated g/C Ratio	0.20	0.15	0.15	0.25	0.34	0.34	0.47	0.40	0.40	0.47	0.40	0.40
Clearance Time (s)	5.7	6.8	6.8	5.7	6.8	6.8	4.0	6.1	6.1	4.0	6.1	6.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	269	272	229	832	625	482	184	1973	598	293	2015	548
v/s Ratio Prot	0.01	0.05		c0.21	0.03		c0.06	0.19		0.05	c0.40	
v/s Ratio Perm	0.02		c0.14			0.03	0.31		0.22	0.27		0.01
v/c Ratio	0.13	0.37	0.94	0.83	0.09	0.09	0.79	0.48	0.55	0.67	1.00	0.04
Uniform Delay, d1	46.0	53.9	59.1	49.9	31.3	31.2	34.9	31.6	32.6	23.1	42.2	25.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.08	1.06	4.25	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.9	42.3	7.1	0.1	0.1	17.4	0.7	2.9	6.0	20.0	0.1
Delay (s)	46.2	54.8	101.5	57.1	31.3	31.3	55.2	34.1	141.6	29.0	62.3	26.0
Level of Service	D	D	F	E	C	C	E	C	F	C	E	C
Approach Delay (s)		87.4			51.8			80.4			58.6	
Approach LOS		F			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	67.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

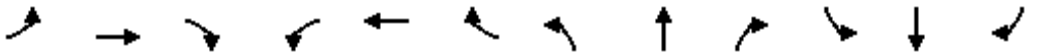
c Critical Lane Group



Lane Group	EBL	EBR	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	5	232	178	178	206	2114	2015	5
v/c Ratio	0.05	0.71	0.63	0.63	0.56	0.60	0.55	0.00
Control Delay	63.6	56.8	63.4	63.4	26.4	9.8	13.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	56.8	63.4	63.4	26.4	9.8	13.2	0.0
Queue Length 50th (m)	1.4	56.6	50.9	50.9	21.3	42.5	110.6	0.0
Queue Length 95th (m)	6.2	74.4	75.1	75.1	46.3	140.6	m200.7	m0.0
Internal Link Dist (m)				348.8		307.3	251.4	
Turn Bay Length (m)								
Base Capacity (vph)	128	685	522	522	581	3516	3656	1139
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.34	0.34	0.34	0.35	0.60	0.55	0.00

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	225	345	0	200	0	1675	375	0	1955	5
Future Volume (vph)	5	0	225	345	0	200	0	1675	375	0	1955	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		6.0	6.0	6.0	6.0		6.0			6.0	6.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91			0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		0.99			1.00	0.96
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95		1.00	0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1805		1599	1649	1649	1568		4822			5036	1543
Flt Permitted	0.95		1.00	0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (perm)	1805		1599	1649	1649	1568		4822			5036	1543
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	0	232	356	0	206	0	1727	387	0	2015	5
RTOR Reduction (vph)	0	0	24	0	0	102	0	15	0	0	0	2
Lane Group Flow (vph)	5	0	208	178	178	104	0	2099	0	0	2015	3
Confl. Peds. (#/hr)							10		5	5		10
Heavy Vehicles (%)	0%	0%	1%	4%	0%	3%	0%	4%	4%	0%	3%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA			NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases	7		4	8		8						6
Actuated Green, G (s)	1.4		29.4	23.0	23.0	23.0		96.6			96.6	96.6
Effective Green, g (s)	2.4		30.4	24.0	24.0	24.0		97.6			97.6	97.6
Actuated g/C Ratio	0.02		0.22	0.17	0.17	0.17		0.70			0.70	0.70
Clearance Time (s)	5.0		7.0	7.0	7.0	7.0		7.0			7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	30		347	282	282	268		3361			3510	1075
v/s Ratio Prot	0.00							c0.44			0.40	
v/s Ratio Perm			c0.13	0.11	0.11	0.07						0.00
v/c Ratio	0.17		0.60	0.63	0.63	0.39		0.62			0.57	0.00
Uniform Delay, d1	67.8		49.3	53.9	53.9	51.5		11.4			10.7	6.4
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.88			1.30	1.00
Incremental Delay, d2	2.6		2.8	4.6	4.6	0.9		0.8			0.3	0.0
Delay (s)	70.4		52.1	58.4	58.4	52.4		10.8			14.2	6.4
Level of Service	E		D	E	E	D		B			B	A
Approach Delay (s)		52.5			56.2			10.8			14.1	
Approach LOS		D			E			B			B	

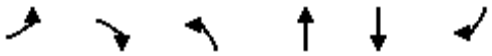
Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	903	592	1173	2133
v/c Ratio	0.69	0.98	0.45	0.80
Control Delay	39.7	73.4	18.8	32.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	39.7	73.4	18.8	32.9
Queue Length 50th (m)	113.7	169.1	44.4	225.8
Queue Length 95th (m)	138.2	#251.3	46.6	139.8
Internal Link Dist (m)	190.2		21.3	307.3
Turn Bay Length (m)				
Base Capacity (vph)	1312	607	2646	2697
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.69	0.98	0.44	0.79

Intersection Summary

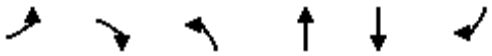
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	885	580	0	1150	2090	0
Future Volume (vph)	885	580	0	1150	2090	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		4940	5036	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		4940	5036	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	903	592	0	1173	2133	0
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	903	590	0	1173	2133	0
Confl. Peds. (#/hr)			10			10
Heavy Vehicles (%)	2%	2%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	2	
Permitted Phases		4				
Actuated Green, G (s)	52.5	52.5		73.5	73.5	
Effective Green, g (s)	53.5	53.5		74.5	74.5	
Actuated g/C Ratio	0.38	0.38		0.53	0.53	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1311	604		2628	2679	
v/s Ratio Prot	0.26			0.24	c0.42	
v/s Ratio Perm		c0.37				
v/c Ratio	0.69	0.98		0.45	0.80	
Uniform Delay, d1	36.3	42.6		20.1	26.6	
Progression Factor	1.00	1.00		0.91	1.14	
Incremental Delay, d2	1.5	30.3		0.5	2.2	
Delay (s)	37.8	72.9		18.7	32.6	
Level of Service	D	E		B	C	
Approach Delay (s)	51.7			18.7	32.6	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	20	0	1145	2095	580
Future Volume (Veh/h)	0	20	0	1145	2095	580
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	22	0	1231	2253	624
Pedestrians	10					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				271	45	
pX, platoon unblocked	0.70	0.65	0.65			
vC, conflicting volume	2985	1073	2887			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1420	0	2032			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	90	696	183			

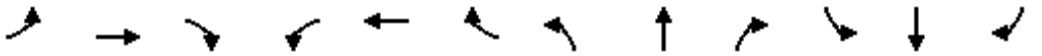
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	22	410	410	410	901	901	1075
Volume Left	0	0	0	0	0	0	0
Volume Right	22	0	0	0	0	0	624
cSH	696	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.24	0.24	0.24	0.53	0.53	0.63
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.3	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	10.3	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	418	144	57	57	93	93	1170	175	1887
v/c Ratio	0.74	0.37	0.23	0.35	0.32	0.53	0.47	0.55	0.76
Control Delay	62.7	25.5	37.0	65.8	2.8	40.4	24.1	21.9	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.7	25.5	37.0	65.8	2.8	40.4	24.1	21.9	29.8
Queue Length 50th (m)	60.2	17.2	12.1	16.0	0.0	13.1	47.0	18.0	110.1
Queue Length 95th (m)	75.4	35.8	21.2	30.3	0.0	m29.4	83.5	m31.5	m173.5
Internal Link Dist (m)		193.0		396.1			253.9		247.4
Turn Bay Length (m)	130.0		50.0			120.0		55.0	
Base Capacity (vph)	907	493	251	161	294	210	2510	319	2472
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.29	0.23	0.35	0.32	0.44	0.47	0.55	0.76

Intersection Summary

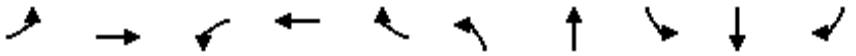
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	405	45	95	55	55	90	90	1105	30	170	1390	440
Future Volume (vph)	405	45	95	55	55	90	90	1105	30	170	1390	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	4.0	6.0		3.0	6.0	
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3273	1582		1725	1810	1553	1671	5013		1735	4824	
Flt Permitted	0.95	1.00		0.67	1.00	1.00	0.06	1.00		0.17	1.00	
Satd. Flow (perm)	3273	1582		1208	1810	1553	102	5013		317	4824	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	418	46	98	57	57	93	93	1139	31	175	1433	454
RTOR Reduction (vph)	0	60	0	0	0	84	0	2	0	0	34	0
Lane Group Flow (vph)	418	84	0	57	57	9	93	1168	0	175	1853	0
Confl. Peds. (#/hr)			5	5			15		5	5		15
Heavy Vehicles (%)	7%	0%	9%	4%	5%	4%	8%	3%	3%	4%	2%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2			6		
Actuated Green, G (s)	23.3	27.9		21.0	12.8	12.8	77.2	67.7		79.6	68.4	
Effective Green, g (s)	24.3	28.9		23.0	13.8	13.8	79.2	68.7		81.6	69.4	
Actuated g/C Ratio	0.17	0.21		0.16	0.10	0.10	0.57	0.49		0.58	0.50	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	5.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.5	4.0	4.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	568	326		232	178	153	175	2459		308	2391	
v/s Ratio Prot	c0.13	0.05		0.02	c0.03		0.04	0.23		c0.05	c0.38	
v/s Ratio Perm				0.02		0.01	0.26			0.28		
v/c Ratio	0.74	0.26		0.25	0.32	0.06	0.53	0.48		0.57	0.77	
Uniform Delay, d1	54.8	46.5		50.6	58.7	57.2	22.5	23.7		15.3	28.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.54	0.99		1.49	1.01	
Incremental Delay, d2	4.9	0.4		0.7	1.4	0.2	2.3	0.5		1.5	1.5	
Delay (s)	59.7	47.0		51.2	60.2	57.4	36.9	23.9		24.3	30.6	
Level of Service	E	D		D	E	E	D	C		C	C	
Approach Delay (s)		56.5			56.5			24.9			30.1	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

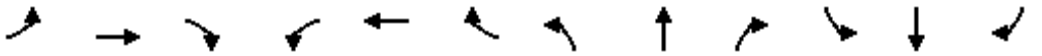
c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	271	453	26	344	625	52	453	641	609	391
v/c Ratio	0.74	0.46	0.09	0.49	0.89	0.15	0.41	0.84	0.64	0.43
Control Delay	73.1	40.2	26.3	49.8	26.0	19.1	40.8	67.2	41.7	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.1	40.2	26.3	49.8	26.0	19.1	40.8	67.2	41.7	20.3
Queue Length 50th (m)	38.9	57.2	4.9	48.2	40.3	6.2	54.4	100.2	130.3	37.8
Queue Length 95th (m)	#69.0	65.5	9.9	52.8	85.5	15.6	83.1	122.2	#222.2	87.8
Internal Link Dist (m)		551.4		604.3			115.4		253.9	
Turn Bay Length (m)	85.0		85.0		75.0	40.0		85.0		
Base Capacity (vph)	366	995	441	1139	825	356	1107	825	949	900
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.46	0.06	0.30	0.76	0.15	0.41	0.78	0.64	0.43

Intersection Summary

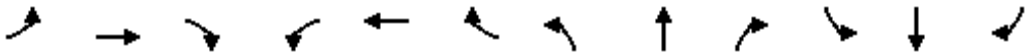
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	370	65	25	330	600	50	385	50	615	585	375
Future Volume (vph)	260	370	65	25	330	600	50	385	50	615	585	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.4		4.0	5.4	5.4	3.0	5.9		4.0	5.9	5.9
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3367	3316		1721	3438	1483	1764	3453		3400	1881	1498
Flt Permitted	0.95	1.00		0.49	1.00	1.00	0.37	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3367	3316		889	3438	1483	696	3453		3400	1881	1498
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	271	385	68	26	344	625	52	401	52	641	609	391
RTOR Reduction (vph)	0	10	0	0	0	390	0	6	0	0	0	151
Lane Group Flow (vph)	271	443	0	26	344	235	52	447	0	641	609	240
Confl. Peds. (#/hr)	25		15	15		25	20		10	10		20
Heavy Vehicles (%)	4%	6%	3%	4%	5%	4%	2%	2%	6%	3%	1%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases				4		4	2					6
Actuated Green, G (s)	14.2	40.2		34.3	29.8	29.8	47.8	41.6		30.4	66.8	66.8
Effective Green, g (s)	15.2	41.2		36.3	30.8	30.8	49.8	42.6		31.4	67.8	67.8
Actuated g/C Ratio	0.11	0.29		0.26	0.22	0.22	0.36	0.30		0.22	0.48	0.48
Clearance Time (s)	5.7	6.4		5.0	6.4	6.4	4.0	6.9		5.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	365	975		263	756	326	302	1050		762	910	725
v/s Ratio Prot	c0.08	0.13		0.00	0.10		0.01	0.13		c0.19	c0.32	
v/s Ratio Perm				0.02		c0.16	0.05					0.16
v/c Ratio	0.74	0.45		0.10	0.46	0.72	0.17	0.43		0.84	0.67	0.33
Uniform Delay, d1	60.5	40.2		39.0	47.3	50.6	30.1	38.9		51.9	27.5	22.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.14	1.36	2.70
Incremental Delay, d2	7.9	0.3		0.2	0.4	7.6	0.3	1.3		6.1	2.8	0.9
Delay (s)	68.4	40.6		39.2	47.8	58.2	30.3	40.2		65.4	40.4	60.8
Level of Service	E	D		D	D	E	C	D		E	D	E
Approach Delay (s)		51.0			54.1			39.2			55.0	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	52.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	10	0	0	0	145	35	10	185	0
Future Volume (Veh/h)	0	0	0	10	0	0	0	145	35	10	185	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	0	11	0	0	0	167	40	11	213	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	318	442	106	316	422	104	213			207		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	318	442	106	316	422	104	213			207		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	6.9	5.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.7			2.2		
p0 queue free %	100	100	100	98	100	100	100			99		
cM capacity (veh/h)	612	509	934	588	522	938	1067			1376		

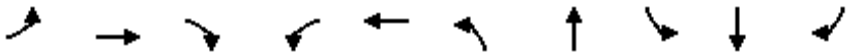
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	11	84	124	118	106
Volume Left	0	11	0	0	11	0
Volume Right	0	0	0	40	0	0
cSH	1700	588	1067	1700	1376	1700
Volume to Capacity	0.00	0.02	0.00	0.07	0.01	0.06
Queue Length 95th (m)	0.0	0.5	0.0	0.0	0.2	0.0
Control Delay (s)	0.0	11.2	0.0	0.0	0.8	0.0
Lane LOS	A	B			A	
Approach Delay (s)	0.0	11.2	0.0		0.4	
Approach LOS	A	B				

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	22.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	40	60	95	150	70	20
Future Volume (Veh/h)	40	60	95	150	70	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	49	73	116	183	85	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			122		500	86
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			122		500	86
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		83	98
cM capacity (veh/h)			1465		490	965

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	122	299	109
Volume Left	0	116	85
Volume Right	73	0	24
cSH	1700	1465	549
Volume to Capacity	0.07	0.08	0.20
Queue Length 95th (m)	0.0	2.1	5.9
Control Delay (s)	0.0	3.4	13.2
Lane LOS		A	B
Approach Delay (s)	0.0	3.4	13.2
Approach LOS			B

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	27	647	196	43	609	250	136	38	82	27
v/c Ratio	0.07	0.63	0.21	0.14	0.31	0.72	0.26	0.12	0.16	0.06
Control Delay	7.8	13.3	2.0	8.9	7.9	31.9	10.4	16.0	16.2	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	13.3	2.0	8.9	7.9	31.9	10.4	16.0	16.2	2.4
Queue Length 50th (m)	1.4	48.4	0.0	2.3	18.1	25.1	6.0	3.2	6.9	0.0
Queue Length 95th (m)	4.9	85.6	8.0	7.4	28.7	#46.4	16.8	9.0	15.2	2.3
Internal Link Dist (m)		585.1			130.4		189.6		431.7	
Turn Bay Length (m)	45.0			30.0				25.0		25.0
Base Capacity (vph)	403	1027	950	309	1939	405	592	378	595	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.63	0.21	0.14	0.31	0.62	0.23	0.10	0.14	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

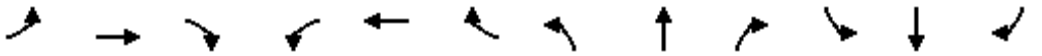
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	595	180	40	525	35	230	65	60	35	75	25
Future Volume (vph)	25	595	180	40	525	35	230	65	60	35	75	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1650	1827	1538	1752	3435		1728	1733		1696	1881	1527
Flt Permitted	0.41	1.00	1.00	0.30	1.00		0.70	1.00		0.67	1.00	1.00
Satd. Flow (perm)	717	1827	1538	549	3435		1280	1733		1196	1881	1527
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	647	196	43	571	38	250	71	65	38	82	27
RTOR Reduction (vph)	0	0	86	0	7	0	0	47	0	0	0	20
Lane Group Flow (vph)	27	647	110	43	602	0	250	89	0	38	82	7
Confl. Peds. (#/hr)	5					5	5		5	5		5
Heavy Vehicles (%)	9%	4%	5%	3%	4%	3%	4%	0%	2%	6%	1%	4%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	32.7	32.7	32.7	32.7	32.7		15.3	15.3		15.3	15.3	15.3
Effective Green, g (s)	33.7	33.7	33.7	33.7	33.7		16.3	16.3		16.3	16.3	16.3
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56		0.27	0.27		0.27	0.27	0.27
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	402	1026	863	308	1929		347	470		324	511	414
v/s Ratio Prot		c0.35			0.18			0.05			0.04	
v/s Ratio Perm	0.04		0.07	0.08			c0.20			0.03		0.00
v/c Ratio	0.07	0.63	0.13	0.14	0.31		0.72	0.19		0.12	0.16	0.02
Uniform Delay, d1	6.0	8.9	6.2	6.3	7.0		19.8	16.8		16.4	16.6	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	2.9	0.3	0.9	0.4		7.2	0.2		0.2	0.1	0.0
Delay (s)	6.3	11.9	6.5	7.2	7.4		27.0	17.0		16.6	16.8	16.0
Level of Service	A	B	A	A	A		C	B		B	B	B
Approach Delay (s)		10.5			7.4			23.4			16.6	
Approach LOS		B			A			C			B	

Intersection Summary					
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.66				
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0		
Intersection Capacity Utilization	64.3%	ICU Level of Service	C		
Analysis Period (min)	15				

c Critical Lane Group

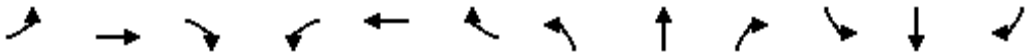
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	59	744	154	596	5	11	59	53	16
v/c Ratio	0.05	0.35	0.26	0.27	0.04	0.06	0.24	0.28	0.07
Control Delay	2.9	10.0	3.9	8.4	44.8	45.0	2.5	49.4	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.9	10.0	3.9	8.4	44.8	45.0	2.5	49.4	0.7
Queue Length 50th (m)	1.1	36.1	6.3	28.2	1.1	2.3	0.0	11.3	0.0
Queue Length 95th (m)	2.5	53.4	11.6	39.0	4.8	7.9	1.0	23.8	0.0
Internal Link Dist (m)		208.7		203.3		1140.2		129.5	
Turn Bay Length (m)	125.0		145.0		15.0		40.0		
Base Capacity (vph)	1375	2135	657	2206	227	314	335	308	279
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.35	0.23	0.27	0.02	0.04	0.18	0.17	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	630	70	145	560	0	5	10	55	0	50	15
Future Volume (vph)	55	630	70	145	560	0	5	10	55	0	50	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4		5.0	7.4		6.8	6.8	6.8		6.8	6.8
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3213	3364		1787	3312		1805	1900	1455		1863	1122
Flt Permitted	0.43	1.00		0.34	1.00		0.72	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1443	3364		635	3312		1373	1900	1455		1863	1122
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	59	670	74	154	596	0	5	11	59	0	53	16
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	53	0	0	14
Lane Group Flow (vph)	59	738	0	154	596	0	5	11	6	0	53	2
Heavy Vehicles (%)	9%	6%	3%	1%	9%	0%	0%	0%	11%	0%	2%	44%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8		8	4		4
Actuated Green, G (s)	75.1	68.7		79.9	71.1		10.3	10.3	10.3		10.3	10.3
Effective Green, g (s)	77.1	69.7		81.9	72.1		11.3	11.3	11.3		11.3	11.3
Actuated g/C Ratio	0.70	0.63		0.74	0.66		0.10	0.10	0.10		0.10	0.10
Clearance Time (s)	6.0	8.4		6.0	8.4		7.8	7.8	7.8		7.8	7.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	1130	2131		575	2170		141	195	149		191	115
v/s Ratio Prot	0.00	c0.22		c0.02	0.18			0.01			c0.03	
v/s Ratio Perm	0.03			0.18			0.00		0.00			0.00
v/c Ratio	0.05	0.35		0.27	0.27		0.04	0.06	0.04		0.28	0.01
Uniform Delay, d1	5.0	9.5		4.2	8.0		44.4	44.5	44.5		45.6	44.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.4		0.3	0.3		0.1	0.1	0.1		0.8	0.0
Delay (s)	5.0	9.9		4.4	8.3		44.5	44.7	44.6		46.4	44.4
Level of Service	A	A		A	A		D	D	D		D	D
Approach Delay (s)		9.5			7.5			44.6			45.9	
Approach LOS		A			A			D			D	

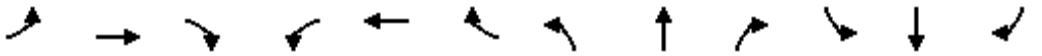
Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	103	119	289	789	155	294	304	1789	902	134	1175	119
v/c Ratio	0.40	0.67	0.90	0.87	0.30	0.56	0.87	0.81	0.88	0.67	0.63	0.20
Control Delay	34.6	80.1	51.2	60.0	41.4	18.7	47.6	17.1	15.6	45.3	39.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	0.0
Total Delay	34.6	80.1	51.2	60.0	41.4	18.7	47.6	17.1	21.7	45.3	39.3	1.2
Queue Length 50th (m)	18.4	33.7	29.0	112.4	34.9	22.9	51.7	119.6	228.7	21.2	106.8	0.0
Queue Length 95th (m)	31.4	#63.9	#86.2	135.0	56.2	55.1	m55.0	m120.6	m228.4	44.9	124.0	1.6
Internal Link Dist (m)		361.1			497.8			251.4			315.2	
Turn Bay Length (m)	80.0			165.0		15.0				85.0		80.0
Base Capacity (vph)	288	181	325	993	535	533	356	2211	1028	215	1854	588
Starvation Cap Reductn	0	0	0	0	0	0	0	0	92	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.66	0.89	0.79	0.29	0.55	0.85	0.81	0.96	0.62	0.63	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	115	280	765	150	285	295	1735	875	130	1140	115
Future Volume (vph)	100	115	280	765	150	285	295	1735	875	130	1140	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.8	5.8	4.7	5.8	5.8	3.0	5.1	5.1	3.0	5.1	5.1
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.86	1.00	1.00	0.95	1.00	1.00	0.81
Flpb, ped/bikes	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1685	1881	1599	3467	1881	1387	1787	5136	1525	1805	5085	1300
Flt Permitted	0.66	1.00	1.00	0.95	1.00	1.00	0.12	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1168	1881	1599	3467	1881	1387	224	5136	1525	149	5085	1300
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	103	119	289	789	155	294	304	1789	902	134	1175	119
RTOR Reduction (vph)	0	0	172	0	0	140	0	0	372	0	0	76
Lane Group Flow (vph)	103	119	117	789	155	154	304	1789	530	134	1175	43
Confl. Peds. (#/hr)	55					55	80		15	15		80
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	1%	1%	1%	0%	2%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Actuated Green, G (s)	22.4	12.2	12.2	35.8	37.8	37.8	73.4	59.3	59.3	60.1	50.0	50.0
Effective Green, g (s)	24.4	13.2	13.2	36.8	38.8	38.8	74.4	60.3	60.3	62.1	51.0	51.0
Actuated g/C Ratio	0.17	0.09	0.09	0.26	0.28	0.28	0.53	0.43	0.43	0.44	0.36	0.36
Clearance Time (s)	5.7	6.8	6.8	5.7	6.8	6.8	4.0	6.1	6.1	4.0	6.1	6.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	244	177	150	911	521	384	346	2212	656	197	1852	473
v/s Ratio Prot	0.03	0.06		c0.23	0.08		c0.13	0.35		0.05	0.23	
v/s Ratio Perm	0.04		c0.07			0.11	c0.34		0.35	0.25		0.03
v/c Ratio	0.42	0.67	0.78	0.87	0.30	0.40	0.88	0.81	0.81	0.68	0.63	0.09
Uniform Delay, d1	50.8	61.3	62.0	49.2	39.9	41.1	33.1	34.8	34.8	28.8	36.8	29.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.33	0.45	1.17	1.00	1.00	1.00
Incremental Delay, d2	1.2	9.6	22.1	8.7	0.3	0.7	7.7	1.0	3.3	9.3	1.7	0.4
Delay (s)	52.0	70.9	84.1	57.9	40.2	41.8	51.8	16.6	43.9	38.0	38.5	29.6
Level of Service	D	E	F	E	D	D	D	B	D	D	D	C
Approach Delay (s)		74.6			51.9			28.4			37.7	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

2: Trafalgar Rd & North Service Rd E/Hwy 403 WB Off-Ramp

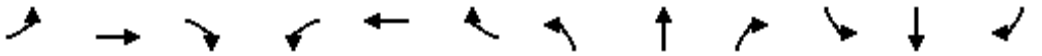
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	27	5	282	217	214	362	3042	1383	16
v/c Ratio	0.24	no cap	0.53	0.62	0.63	0.76	1.02	0.46	0.02
Control Delay	67.3		35.8	51.8	52.7	46.7	37.7	30.5	0.5
Queue Delay	0.0		0.0	0.0	0.0	0.0	2.0	0.0	0.0
Total Delay	67.3	Error	35.8	51.8	52.7	46.7	39.7	30.5	0.5
Queue Length 50th (m)	7.6	0.0	50.7	53.3	52.8	70.7	~390.7	135.4	0.0
Queue Length 95th (m)	18.0	0.0	76.4	83.2	82.7	109.2	#416.1	152.7	m0.0
Internal Link Dist (m)		327.0			348.8		307.3	251.4	
Turn Bay Length (m)									
Base Capacity (vph)	128	1	685	426	412	559	2992	2986	880
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	18	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	5.00	0.41	0.51	0.52	0.65	1.02	0.46	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



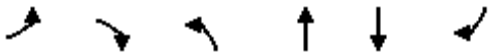
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	5	265	400	5	340	0	2555	305	0	1300	15
Future Volume (vph)	25	5	265	400	5	340	0	2555	305	0	1300	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00		0.91			0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1805	0	1599	1681	1688	1583		5030			5036	1437
Flt Permitted	0.95	1.00	1.00	0.75	0.73	1.00		1.00			1.00	1.00
Satd. Flow (perm)	1805	0	1599	1335	1289	1583		5030			5036	1437
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	5	282	426	5	362	0	2718	324	0	1383	16
RTOR Reduction (vph)	0	0	21	0	0	57	0	9	0	0	0	7
Lane Group Flow (vph)	27	5	261	217	214	305	0	3033	0	0	1383	9
Confl. Peds. (#/hr)							15		10	10		15
Heavy Vehicles (%)	0%	0%	1%	2%	0%	2%	0%	1%	1%	0%	3%	6%
Turn Type	custom	NA	Perm	Perm	NA	Perm		NA			NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	7		4	8		8						6
Actuated Green, G (s)	5.0	45.9	45.9	35.9	35.9	35.9		80.1			80.1	80.1
Effective Green, g (s)	6.0	46.9	46.9	36.9	36.9	36.9		81.1			81.1	81.1
Actuated g/C Ratio	0.04	0.33	0.33	0.26	0.26	0.26		0.58			0.58	0.58
Clearance Time (s)	5.0	7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	77	0	535	351	339	417		2913			2917	832
v/s Ratio Prot	0.01							c0.60			0.27	
v/s Ratio Perm			c0.16	0.16	0.17	c0.19						0.01
v/c Ratio	0.35	no cap	0.49	0.62	0.63	0.73		1.04			0.47	0.01
Uniform Delay, d1	65.1	Error	37.0	45.4	45.5	47.0		29.5			17.1	12.5
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.54			1.61	1.00
Incremental Delay, d2	2.8	Error	0.7	3.2	3.8	6.5		26.4			0.4	0.0
Delay (s)	67.9	Error	37.7	48.6	49.3	53.5		42.2			27.9	12.5
Level of Service	E	F	D	D	D	D		D			C	B
Approach Delay (s)		Error			51.0			42.2			27.8	
Approach LOS		F			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	Error	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	1058	379	1874	1726
v/c Ratio	0.89	0.69	0.64	0.59
Control Delay	54.2	45.3	24.5	18.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	54.2	45.3	24.5	18.8
Queue Length 50th (m)	146.5	89.3	100.5	78.6
Queue Length 95th (m)	175.7	127.2	116.6	83.4
Internal Link Dist (m)	190.2		21.3	307.3
Turn Bay Length (m)				
Base Capacity (vph)	1238	574	2913	2913
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.85	0.66	0.64	0.59

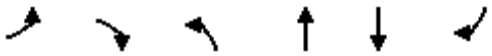
Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1005	360	0	1780	1640	0
Future Volume (vph)	1005	360	0	1780	1640	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3467	1583		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3467	1583		5085	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1058	379	0	1874	1726	0
RTOR Reduction (vph)	0	9	0	0	0	0
Lane Group Flow (vph)	1058	370	0	1874	1726	0
Confl. Peds. (#/hr)			25			25
Heavy Vehicles (%)	1%	2%	0%	2%	2%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	2	
Permitted Phases		4				
Actuated Green, G (s)	46.8	46.8		79.2	79.2	
Effective Green, g (s)	47.8	47.8		80.2	80.2	
Actuated g/C Ratio	0.34	0.34		0.57	0.57	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1183	540		2912	2912	
v/s Ratio Prot	c0.31			c0.37	0.34	
v/s Ratio Perm		0.23				
v/c Ratio	0.89	0.68		0.64	0.59	
Uniform Delay, d1	43.7	39.6		20.2	19.3	
Progression Factor	1.00	1.00		1.14	0.91	
Incremental Delay, d2	8.9	3.6		0.8	0.8	
Delay (s)	52.6	43.2		23.9	18.4	
Level of Service	D	D		C	B	
Approach Delay (s)	50.2			23.9	18.4	
Approach LOS	D			C	B	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	50	0	1775	1685	345
Future Volume (Veh/h)	0	50	0	1775	1685	345
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	53	0	1888	1793	367
Pedestrians	20					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				271	45	
pX, platoon unblocked	0.85	0.78	0.78			
vC, conflicting volume	2626	801	2180			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1217	0	1525			
tC, single (s)	6.8	7.1	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	94	100			
cM capacity (veh/h)	147	817	340			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	53	629	629	629	717	717	726
Volume Left	0	0	0	0	0	0	0
Volume Right	53	0	0	0	0	0	367
cSH	817	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.06	0.37	0.37	0.37	0.42	0.42	0.43
Queue Length 95th (m)	1.7	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	9.7	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

5: Trafalgar Rd & Cross Ave/South Service Rd E

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	825	150	62	72	253	88	1088	108	1670
v/c Ratio	0.89	0.29	0.23	0.44	0.86	0.49	0.51	0.41	0.82
Control Delay	61.4	24.9	31.5	69.4	47.5	41.0	34.7	22.8	33.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	24.9	31.5	69.4	47.5	41.0	34.7	22.8	33.8
Queue Length 50th (m)	117.0	20.1	10.8	20.3	23.7	11.8	93.0	14.7	106.6
Queue Length 95th (m)	143.5	39.9	20.6	37.5	#72.4	m26.8	81.6	m24.4	139.0
Internal Link Dist (m)		193.0		396.1			253.9		247.4
Turn Bay Length (m)	130.0		50.0			120.0		55.0	
Base Capacity (vph)	976	523	266	168	297	211	2139	278	2047
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.29	0.23	0.43	0.85	0.42	0.51	0.39	0.82

Intersection Summary

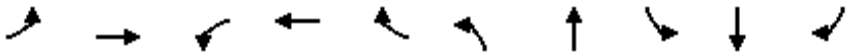
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	800	55	90	60	70	245	85	1030	25	105	1230	390
Future Volume (vph)	800	55	90	60	70	245	85	1030	25	105	1230	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	4.0	6.0		3.0	6.0	
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.96		1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.98	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	1602		1761	1900	1599	1719	5113		1751	4897	
Flt Permitted	0.95	1.00		0.66	1.00	1.00	0.07	1.00		0.18	1.00	
Satd. Flow (perm)	3400	1602		1226	1900	1599	127	5113		326	4897	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	825	57	93	62	72	253	88	1062	26	108	1268	402
RTOR Reduction (vph)	0	41	0	0	0	155	0	2	0	0	40	0
Lane Group Flow (vph)	825	109	0	62	72	98	88	1086	0	108	1630	0
Confl. Peds. (#/hr)			20	20			15		15	15		15
Heavy Vehicles (%)	3%	0%	6%	0%	0%	1%	5%	1%	0%	3%	0%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2			6		
Actuated Green, G (s)	37.2	40.6		21.6	12.5	12.5	65.4	56.2		64.2	55.1	
Effective Green, g (s)	38.2	41.6		23.6	13.5	13.5	67.4	57.2		66.2	56.1	
Actuated g/C Ratio	0.27	0.30		0.17	0.10	0.10	0.48	0.41		0.47	0.40	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	5.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.5	4.0	4.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	927	476		245	183	154	177	2089		256	1962	
v/s Ratio Prot	c0.24	0.07		0.02	0.04		c0.04	0.21		0.03	c0.33	
v/s Ratio Perm				0.02		c0.06	0.20			0.17		
v/c Ratio	0.89	0.23		0.25	0.39	0.64	0.50	0.52		0.42	0.83	
Uniform Delay, d1	48.9	37.1		50.2	59.4	60.9	26.6	31.1		22.0	37.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.70	1.11		1.10	0.85	
Incremental Delay, d2	10.5	0.2		0.6	1.9	9.4	1.6	0.7		0.9	3.6	
Delay (s)	59.4	37.3		50.8	61.3	70.4	46.8	35.1		25.2	35.7	
Level of Service	E	D		D	E	E	D	D		C	D	
Approach Delay (s)		56.0			65.5			36.0			35.0	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	330	438	52	495	603	62	547	443	546	304
v/c Ratio	0.82	0.40	0.15	0.59	0.88	0.18	0.47	0.75	0.63	0.37
Control Delay	77.3	37.9	24.9	48.8	26.8	20.1	40.8	62.3	58.2	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.3	37.9	24.9	48.8	26.8	20.1	40.8	62.3	58.2	29.5
Queue Length 50th (m)	48.4	53.8	9.5	69.8	52.7	7.9	64.4	68.5	152.9	52.7
Queue Length 95th (m)	#88.5	61.2	15.5	72.3	92.5	19.1	101.1	m85.2	#184.9	m67.5
Internal Link Dist (m)		551.4		604.3			115.4		253.9	
Turn Bay Length (m)	85.0		85.0		75.0	40.0		85.0		
Base Capacity (vph)	401	1102	522	1279	814	354	1170	725	869	830
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.40	0.10	0.39	0.74	0.18	0.47	0.61	0.63	0.37

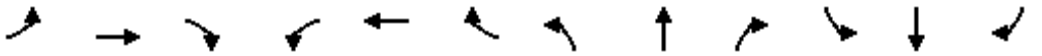
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	380	45	50	480	585	60	475	55	430	530	295
Future Volume (vph)	320	380	45	50	480	585	60	475	55	430	530	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.4		4.0	5.4	5.4	3.0	5.9		4.0	5.9	5.9
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3475		1795	3539	1470	1767	3540		3433	1881	1516
Flt Permitted	0.95	1.00		0.50	1.00	1.00	0.36	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3475		940	3539	1470	669	3540		3433	1881	1516
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	330	392	46	52	495	603	62	490	57	443	546	304
RTOR Reduction (vph)	0	6	0	0	0	334	0	5	0	0	0	133
Lane Group Flow (vph)	330	432	0	52	495	269	62	542	0	443	546	171
Confl. Peds. (#/hr)	45		10	10		45	10		20	20		10
Heavy Vehicles (%)	1%	2%	0%	0%	2%	2%	2%	0%	0%	2%	1%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases				4		4	2					6
Actuated Green, G (s)	15.2	42.7		40.2	33.5	33.5	50.5	44.1		23.2	61.9	61.9
Effective Green, g (s)	16.2	43.7		42.2	34.5	34.5	52.5	45.1		24.2	62.9	62.9
Actuated g/C Ratio	0.12	0.31		0.30	0.25	0.25	0.38	0.32		0.17	0.45	0.45
Clearance Time (s)	5.7	6.4		5.0	6.4	6.4	4.0	6.9		5.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	401	1084		330	872	362	308	1140		593	845	681
v/s Ratio Prot	c0.10	0.12		0.01	0.14		0.01	0.15		c0.13	c0.29	
v/s Ratio Perm				0.04		c0.18	0.06					0.11
v/c Ratio	0.82	0.40		0.16	0.57	0.74	0.20	0.48		0.75	0.65	0.25
Uniform Delay, d1	60.5	37.8		35.2	46.2	48.7	28.7	38.0		55.0	29.9	23.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.04	1.78	4.12
Incremental Delay, d2	12.8	0.2		0.2	0.9	8.0	0.3	1.4		3.3	2.4	0.6
Delay (s)	73.3	38.1		35.4	47.1	56.7	29.0	39.4		60.7	55.6	99.2
Level of Service	E	D		D	D	E	C	D		E	E	F
Approach Delay (s)		53.2			51.6			38.3			67.6	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	55.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	65	0	15	0	160	45	20	290	0
Future Volume (Veh/h)	0	0	0	65	0	15	0	160	45	20	290	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	0	76	0	18	0	188	53	24	341	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	501	630	170	433	604	120	341			241		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	501	630	170	433	604	120	341			241		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	85	100	98	100			98		
cM capacity (veh/h)	442	394	850	500	408	915	1229			1337		

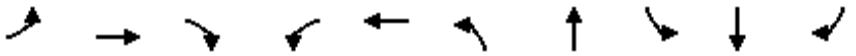
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	94	94	147	194	170
Volume Left	0	76	0	0	24	0
Volume Right	0	18	0	53	0	0
cSH	1700	547	1229	1700	1337	1700
Volume to Capacity	0.00	0.17	0.00	0.09	0.02	0.10
Queue Length 95th (m)	0.0	4.9	0.0	0.0	0.4	0.0
Control Delay (s)	0.0	12.9	0.0	0.0	1.1	0.0
Lane LOS	A	B			A	
Approach Delay (s)	0.0	12.9	0.0		0.6	
Approach LOS	A	B				

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	29.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	105	70	75	100	150	115
Future Volume (Veh/h)	105	70	75	100	150	115
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	118	79	84	112	169	129
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			197		438	158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			197		438	158
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		69	86
cM capacity (veh/h)			1388		543	891

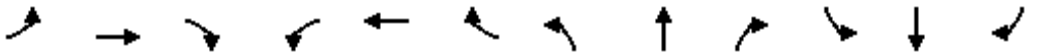
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	197	196	298
Volume Left	0	84	169
Volume Right	79	0	129
cSH	1700	1388	654
Volume to Capacity	0.12	0.06	0.46
Queue Length 95th (m)	0.0	1.5	19.1
Control Delay (s)	0.0	3.6	15.0
Lane LOS		A	C
Approach Delay (s)	0.0	3.6	15.0
Approach LOS			C

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		



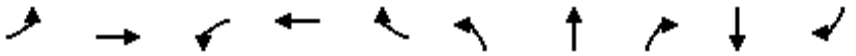
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	48	564	96	64	792	138	133	69	53	53
v/c Ratio	0.11	0.44	0.09	0.12	0.33	0.50	0.33	0.27	0.14	0.15
Control Delay	6.7	8.0	1.9	6.6	5.9	26.5	14.7	21.0	18.5	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	8.0	1.9	6.6	5.9	26.5	14.7	21.0	18.5	6.5
Queue Length 50th (m)	1.9	29.5	0.0	2.6	18.6	14.2	8.3	6.8	5.1	0.0
Queue Length 95th (m)	7.2	63.9	5.3	8.8	35.4	26.2	18.8	14.7	11.5	6.5
Internal Link Dist (m)		585.1			130.4		189.6		431.7	
Turn Bay Length (m)	45.0			30.0				25.0		25.0
Base Capacity (vph)	432	1275	1094	517	2387	424	598	404	578	519
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.44	0.09	0.12	0.33	0.33	0.22	0.17	0.09	0.10

Intersection Summary



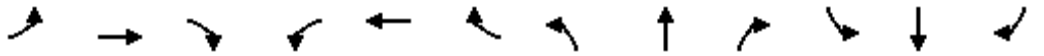
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	530	90	60	660	85	130	80	45	65	50	50
Future Volume (vph)	45	530	90	60	660	85	130	80	45	65	50	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1765	1863	1554	1799	3472		1761	1786		1805	1827	1517
Flt Permitted	0.34	1.00	1.00	0.40	1.00		0.72	1.00		0.67	1.00	1.00
Satd. Flow (perm)	631	1863	1554	755	3472		1339	1786		1277	1827	1517
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	48	564	96	64	702	90	138	85	48	69	53	53
RTOR Reduction (vph)	0	0	34	0	12	0	0	39	0	0	0	43
Lane Group Flow (vph)	48	564	62	64	780	0	138	94	0	69	53	10
Confl. Peds. (#/hr)	5		5	5		5	5					5
Confl. Bikes (#/hr)												5
Heavy Vehicles (%)	2%	2%	1%	0%	2%	1%	2%	1%	0%	0%	4%	4%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	37.9	37.9	37.9	37.9	37.9		10.1	10.1		10.1	10.1	10.1
Effective Green, g (s)	38.9	38.9	38.9	38.9	38.9		11.1	11.1		11.1	11.1	11.1
Actuated g/C Ratio	0.65	0.65	0.65	0.65	0.65		0.18	0.18		0.18	0.18	0.18
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	409	1207	1007	489	2251		247	330		236	337	280
v/s Ratio Prot		c0.30			0.22			0.05			0.03	
v/s Ratio Perm	0.08		0.04	0.08			c0.10			0.05		0.01
v/c Ratio	0.12	0.47	0.06	0.13	0.35		0.56	0.28		0.29	0.16	0.04
Uniform Delay, d1	4.0	5.3	3.9	4.1	4.8		22.2	21.0		21.1	20.5	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	1.3	0.1	0.6	0.4		2.7	0.5		0.7	0.2	0.1
Delay (s)	4.6	6.6	4.0	4.6	5.2		25.0	21.5		21.8	20.7	20.1
Level of Service	A	A	A	A	A		C	C		C	C	C
Approach Delay (s)		6.1			5.2			23.3			21.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	5	774	126	720	5	49	16	198	38	38
v/c Ratio	0.00	0.36	0.23	0.28	0.00	0.35	0.08	0.56	0.20	0.14
Control Delay	3.0	10.4	4.0	5.9	0.0	52.3	44.0	12.9	46.7	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	10.4	4.0	5.9	0.0	52.3	44.0	12.9	46.7	1.1
Queue Length 50th (m)	0.1	38.6	5.1	20.4	0.0	10.5	3.3	0.0	8.1	0.0
Queue Length 95th (m)	0.5	57.0	10.9	50.6	0.0	22.4	10.0	20.9	18.0	0.0
Internal Link Dist (m)		208.7		203.3			1140.2		129.5	
Turn Bay Length (m)	125.0		145.0		55.0	15.0		40.0		
Base Capacity (vph)	1378	2143	612	2579	1216	211	314	429	283	356
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.36	0.21	0.28	0.00	0.23	0.05	0.46	0.13	0.11

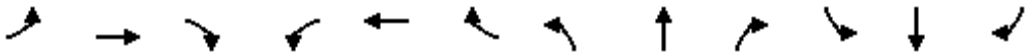
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	680	25	115	655	5	45	15	180	0	35	35
Future Volume (vph)	5	680	25	115	655	5	45	15	180	0	35	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4		5.0	7.4	7.4	6.8	6.8	6.8		6.8	6.8
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3502	3386		1752	3505	1615	1656	1900	1599		1712	1579
Flt Permitted	0.38	1.00		0.31	1.00	1.00	0.73	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1393	3386		578	3505	1615	1277	1900	1599		1712	1579
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	5	747	27	126	720	5	49	16	198	0	38	38
RTOR Reduction (vph)	0	2	0	0	0	2	0	0	176	0	0	34
Lane Group Flow (vph)	5	772	0	126	720	3	49	16	22	0	38	4
Confl. Bikes (#/hr)												5
Heavy Vehicles (%)	0%	6%	8%	3%	3%	0%	9%	0%	1%	0%	11%	0%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8		8	4		4
Actuated Green, G (s)	70.2	68.6		82.8	75.2	75.2	11.0	11.0	11.0		11.0	11.0
Effective Green, g (s)	72.2	69.6		83.8	76.2	76.2	12.0	12.0	12.0		12.0	12.0
Actuated g/C Ratio	0.66	0.63		0.76	0.69	0.69	0.11	0.11	0.11		0.11	0.11
Clearance Time (s)	6.0	8.4		6.0	8.4	8.4	7.8	7.8	7.8		7.8	7.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	964	2142		538	2428	1118	139	207	174		186	172
v/s Ratio Prot	0.00	c0.23		c0.02	c0.21			0.01			0.02	
v/s Ratio Perm	0.00			0.16		0.00	c0.04		0.01			0.00
v/c Ratio	0.01	0.36		0.23	0.30	0.00	0.35	0.08	0.12		0.20	0.02
Uniform Delay, d1	6.5	9.6		3.9	6.5	5.2	45.4	44.0	44.3		44.6	43.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.5		0.2	0.3	0.0	1.5	0.2	0.3		0.5	0.1
Delay (s)	6.5	10.1		4.1	6.8	5.2	46.9	44.2	44.6		45.2	43.8
Level of Service	A	B		A	A	A	D	D	D		D	D
Approach Delay (s)		10.1			6.4			45.0			44.5	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

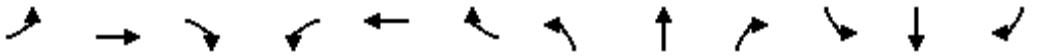
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	101	338	697	56	298	146	995	798	227	1980	51
v/c Ratio	0.12	0.37	0.96	0.94	0.09	0.48	0.85	0.48	0.76	0.73	0.90	0.07
Control Delay	28.9	58.5	73.4	74.1	34.7	11.9	67.3	30.4	19.3	33.1	43.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	28.9	58.5	73.4	74.1	34.7	11.9	67.3	30.4	19.7	33.1	43.6	0.2
Queue Length 50th (m)	6.1	27.0	60.0	103.4	11.6	13.5	27.3	93.1	89.7	34.2	193.4	0.0
Queue Length 95th (m)	13.5	46.3	#123.5	#139.8	22.6	41.6	#66.7	67.8	226.0	#53.9	216.4	0.0
Internal Link Dist (m)		361.1			497.8			251.4			315.2	
Turn Bay Length (m)	80.0			165.0		15.0				85.0		80.0
Base Capacity (vph)	288	271	351	752	599	619	171	2084	1047	309	2204	684
Starvation Cap Reductn	0	0	0	0	0	0	0	0	34	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.37	0.96	0.93	0.09	0.48	0.85	0.48	0.79	0.73	0.90	0.07

Intersection Summary

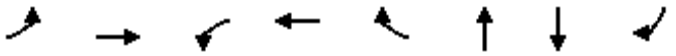
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	100	335	690	55	295	145	985	790	225	1960	50
Future Volume (vph)	35	100	335	690	55	295	145	985	790	225	1960	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.8	5.8	4.7	5.8	5.8	3.0	5.1	5.1	3.0	5.1	5.1
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	1.00	1.00	0.91
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1659	1863	1568	3367	1827	1410	1719	4988	1513	1786	5085	1383
Flt Permitted	0.72	1.00	1.00	0.95	1.00	1.00	0.07	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	1258	1863	1568	3367	1827	1410	126	4988	1513	363	5085	1383
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	35	101	338	697	56	298	146	995	798	227	1980	51
RTOR Reduction (vph)	0	0	122	0	0	157	0	0	421	0	0	29
Lane Group Flow (vph)	35	101	216	697	56	141	146	995	377	227	1980	22
Confl. Peds. (#/hr)	35					35	35		10	10		35
Heavy Vehicles (%)	3%	2%	3%	4%	4%	4%	5%	4%	3%	1%	2%	6%
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Actuated Green, G (s)	26.1	20.5	20.5	30.0	44.9	44.9	64.9	56.4	56.4	68.9	58.4	58.4
Effective Green, g (s)	28.1	21.5	21.5	31.0	45.9	45.9	66.9	57.4	57.4	70.9	59.4	59.4
Actuated g/C Ratio	0.20	0.15	0.15	0.22	0.33	0.33	0.48	0.41	0.41	0.51	0.42	0.42
Clearance Time (s)	5.7	6.8	6.8	5.7	6.8	6.8	4.0	6.1	6.1	4.0	6.1	6.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	271	286	240	745	598	462	168	2045	620	300	2157	586
v/s Ratio Prot	0.01	0.05		c0.21	0.03		c0.06	0.20		c0.06	c0.39	
v/s Ratio Perm	0.02		c0.14			0.10	0.36		0.25	0.32		0.02
v/c Ratio	0.13	0.35	0.90	0.94	0.09	0.30	0.87	0.49	0.61	0.76	0.92	0.04
Uniform Delay, d1	45.7	53.0	58.2	53.5	32.6	35.1	35.3	30.4	32.5	21.6	38.0	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.22	1.00	3.58	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.8	32.9	18.9	0.1	0.4	28.7	0.6	3.4	10.4	7.7	0.1
Delay (s)	45.9	53.8	91.1	72.4	32.7	35.5	71.7	31.0	119.7	32.0	45.7	23.7
Level of Service	D	D	F	E	C	D	E	C	F	C	D	C
Approach Delay (s)		79.8			59.8			70.6			43.8	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	58.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		

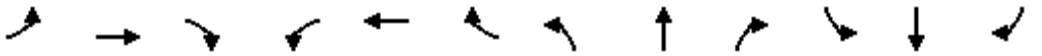
c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	5	232	190	191	206	2170	1985	5
v/c Ratio	0.02	0.59	0.92	0.92	0.50	0.66	0.58	0.00
Control Delay	33.6	45.7	97.3	98.2	27.3	14.9	20.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	45.7	97.3	98.2	27.3	14.9	20.8	0.0
Queue Length 50th (m)	1.1	53.0	56.6	56.9	26.2	97.8	166.3	0.0
Queue Length 95th (m)	4.2	70.2	#98.4	#98.4	50.5	112.2	m180.2	m0.0
Internal Link Dist (m)		327.0		348.8		307.3	251.4	
Turn Bay Length (m)								
Base Capacity (vph)	252	557	243	243	471	3308	3433	1074
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.42	0.78	0.79	0.44	0.66	0.58	0.00

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	225	370	0	200	0	1720	385	0	1925	5
Future Volume (vph)	5	0	225	370	0	200	0	1720	385	0	1925	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		6.0	6.0	6.0		6.0			6.0	6.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.91			0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		0.99			1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1805	1599		1649	1649	1568		4822			5036	1543
Flt Permitted	0.41	1.00		0.55	0.55	1.00		1.00			1.00	1.00
Satd. Flow (perm)	784	1599		963	963	1568		4822			5036	1543
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	0	232	381	0	206	0	1773	397	0	1985	5
RTOR Reduction (vph)	0	23	0	0	0	79	0	21	0	0	0	2
Lane Group Flow (vph)	5	209	0	190	191	128	0	2149	0	0	1985	3
Confl. Peds. (#/hr)							10		5	5		10
Heavy Vehicles (%)	0%	0%	1%	4%	0%	3%	0%	4%	4%	0%	3%	0%
Turn Type	pm+pt	NA		Perm	NA	Perm		NA			NA	Perm
Protected Phases	3	8			4			2			6	
Permitted Phases	8			4		4						6
Actuated Green, G (s)	35.5	35.5		29.1	29.1	29.1		90.5			90.5	90.5
Effective Green, g (s)	36.5	36.5		30.1	30.1	30.1		91.5			91.5	91.5
Actuated g/C Ratio	0.26	0.26		0.22	0.22	0.22		0.65			0.65	0.65
Clearance Time (s)	5.0	7.0		7.0	7.0	7.0		7.0			7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	221	416		207	207	337		3151			3291	1008
v/s Ratio Prot	0.00	c0.13						c0.45			0.39	
v/s Ratio Perm	0.01			0.20	c0.20	0.08						0.00
v/c Ratio	0.02	0.50		0.92	0.92	0.38		0.68			0.60	0.00
Uniform Delay, d1	38.9	44.0		53.7	53.8	47.0		15.2			13.9	8.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.01			1.56	1.00
Incremental Delay, d2	0.0	1.0		40.0	41.4	0.7		1.0			0.3	0.0
Delay (s)	38.9	45.0		93.7	95.2	47.7		16.3			22.0	8.4
Level of Service	D	D		F	F	D		B			C	A
Approach Delay (s)		44.9			78.0			16.3			22.0	
Approach LOS		D			E			B			C	

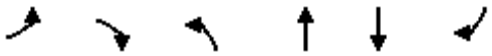
Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	903	679	1378	2122
v/c Ratio	0.60	0.97	0.59	0.89
Control Delay	31.8	66.7	23.0	37.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	31.8	66.7	23.0	37.1
Queue Length 50th (m)	101.1	189.7	56.8	231.7
Queue Length 95th (m)	122.8	#275.6	62.8	136.9
Internal Link Dist (m)	190.2		56.8	307.3
Turn Bay Length (m)				
Base Capacity (vph)	1520	702	2343	2389
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.97	0.59	0.89

Intersection Summary

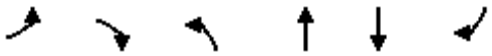
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	885	665	0	1350	2080	0
Future Volume (vph)	885	665	0	1350	2080	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		4940	5036	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		4940	5036	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	903	679	0	1378	2122	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	903	678	0	1378	2122	0
Confl. Peds. (#/hr)			10			10
Heavy Vehicles (%)	2%	2%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	2	
Permitted Phases		4				
Actuated Green, G (s)	60.6	60.6		65.4	65.4	
Effective Green, g (s)	61.6	61.6		66.4	66.4	
Actuated g/C Ratio	0.44	0.44		0.47	0.47	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1510	696		2342	2388	
v/s Ratio Prot	0.26			0.28	c0.42	
v/s Ratio Perm		c0.43				
v/c Ratio	0.60	0.97		0.59	0.89	
Uniform Delay, d1	29.8	38.4		26.8	33.4	
Progression Factor	1.00	1.00		0.82	0.97	
Incremental Delay, d2	0.6	27.5		0.8	4.5	
Delay (s)	30.4	65.9		22.8	36.8	
Level of Service	C	E		C	D	
Approach Delay (s)	45.7			22.8	36.8	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

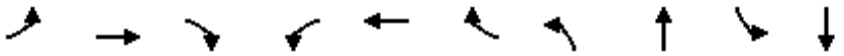
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	195	0	1330	2060	655
Future Volume (Veh/h)	0	195	0	1330	2060	655
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	210	0	1430	2215	704
Pedestrians	10					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				198	81	
pX, platoon unblocked	0.70	0.61	0.61			
vC, conflicting volume	3054	1100	2929			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	784	0	1937			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	68	100			
cM capacity (veh/h)	231	653	187			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	210	477	477	477	886	886	1147
Volume Left	0	0	0	0	0	0	0
Volume Right	210	0	0	0	0	0	704
cSH	653	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.32	0.28	0.28	0.28	0.52	0.52	0.67
Queue Length 95th (m)	11.1	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	13.1	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	13.1	0.0			0.0		
Approach LOS	B						

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	73.4%	ICU Level of Service		D
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	603	897	242	67	144	93	139	1160	330	1897
v/c Ratio	0.82	0.84	0.42	0.32	0.30	0.24	0.84	0.71	0.94	0.93
Control Delay	61.5	54.3	9.9	31.6	55.6	1.4	63.7	43.2	71.3	47.9
Queue Delay	2.3	49.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	103.9	10.4	31.6	55.6	1.4	63.7	43.2	71.3	47.9
Queue Length 50th (m)	86.4	128.4	7.3	11.3	19.5	0.0	30.2	86.0	~86.7	155.7
Queue Length 95th (m)	104.8	155.5	30.5	21.3	31.6	0.0	m#46.4	m98.5	m#112.9	m#224.9
Internal Link Dist (m)		97.1			158.4			292.1		174.2
Turn Bay Length (m)	130.0			50.0			120.0		55.0	
Base Capacity (vph)	841	1084	579	209	514	410	166	1628	350	2033
Starvation Cap Reductn	127	342	101	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	1.21	0.51	0.32	0.28	0.23	0.84	0.71	0.94	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

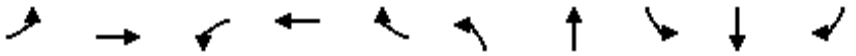
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	585	870	235	65	140	90	135	1090	35	320	1400	440
Future Volume (vph)	585	870	235	65	140	90	135	1090	35	320	1400	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0		3.0	6.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3273	3610	1447	1735	3438	1553	1671	5009		1736	4826	
Flt Permitted	0.95	1.00	1.00	0.19	1.00	1.00	0.09	1.00		0.10	1.00	
Satd. Flow (perm)	3273	3610	1447	353	3438	1553	160	5009		184	4826	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	603	897	242	67	144	93	139	1124	36	330	1443	454
RTOR Reduction (vph)	0	0	146	0	0	79	0	2	0	0	40	0
Lane Group Flow (vph)	603	897	96	67	144	14	139	1158	0	330	1857	0
Confl. Peds. (#/hr)			5	5			15		5	5		15
Heavy Vehicles (%)	7%	0%	9%	4%	5%	4%	8%	3%	3%	4%	2%	4%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2			6		
Actuated Green, G (s)	30.4	40.5	40.5	29.3	19.7	19.7	51.5	43.1		68.9	55.5	
Effective Green, g (s)	31.4	41.5	41.5	31.3	20.7	20.7	53.5	44.1		69.9	56.5	
Actuated g/C Ratio	0.22	0.30	0.30	0.22	0.15	0.15	0.38	0.32		0.50	0.40	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	5.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.5	4.0	4.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	734	1070	428	183	508	229	162	1577		344	1947	
v/s Ratio Prot	c0.18	c0.25		0.03	0.04		0.06	0.23		c0.16	0.38	
v/s Ratio Perm			0.07	0.05		0.01	0.27			c0.32		
v/c Ratio	0.82	0.84	0.23	0.37	0.28	0.06	0.86	0.73		0.96	0.95	
Uniform Delay, d1	51.6	46.1	37.1	44.2	53.1	51.3	34.3	42.7		40.9	40.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.27	0.99		1.33	1.10	
Incremental Delay, d2	7.4	5.9	0.3	1.5	0.4	0.2	24.2	2.0		26.7	8.0	
Delay (s)	59.0	52.0	37.4	45.6	53.5	51.4	67.8	44.3		81.2	52.4	
Level of Service	E	D	D	D	D	D	E	D		F	D	
Approach Delay (s)		52.4			51.1			46.8			56.7	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	52.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

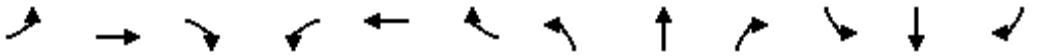
c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	276	526	31	370	646	52	484	724	750	401
v/c Ratio	0.80	0.54	0.12	0.52	0.96	0.22	0.45	0.90	0.78	0.44
Control Delay	78.3	43.7	29.0	51.1	40.0	19.3	40.8	74.8	40.1	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.3	43.7	29.0	51.1	40.0	19.3	40.8	74.8	40.1	16.4
Queue Length 50th (m)	41.0	66.4	5.6	48.6	60.7	6.6	62.0	113.8	138.5	36.1
Queue Length 95th (m)	#66.7	88.4	13.0	65.0	#143.0	12.9	79.4	m125.4	m151.7	m41.1
Internal Link Dist (m)		551.4		604.3			115.4		292.1	
Turn Bay Length (m)	85.0		85.0		75.0	40.0		85.0		
Base Capacity (vph)	347	971	334	825	709	235	1083	825	966	908
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.54	0.09	0.45	0.91	0.22	0.45	0.88	0.78	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	440	65	30	355	620	50	410	55	695	720	385
Future Volume (vph)	265	440	65	30	355	620	50	410	55	695	720	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.4		4.0	5.4	5.4	3.0	5.9		4.0	5.9	5.9
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3367	3329		1725	3438	1483	1768	3451		3400	1881	1498
Flt Permitted	0.95	1.00		0.41	1.00	1.00	0.22	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3367	3329		745	3438	1483	410	3451		3400	1881	1498
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	276	458	68	31	370	646	52	427	57	724	750	401
RTOR Reduction (vph)	0	8	0	0	0	362	0	7	0	0	0	146
Lane Group Flow (vph)	276	518	0	31	370	284	52	477	0	724	750	255
Confl. Peds. (#/hr)	25		15	15		25	20		10	10		20
Heavy Vehicles (%)	4%	6%	3%	4%	5%	4%	2%	2%	6%	3%	1%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases				4		4	2					6
Actuated Green, G (s)	13.5	39.5		34.7	30.0	30.0	46.1	40.5		32.0	67.9	67.9
Effective Green, g (s)	14.5	40.5		36.7	31.0	31.0	48.1	41.5		33.0	68.9	68.9
Actuated g/C Ratio	0.10	0.29		0.26	0.22	0.22	0.34	0.30		0.24	0.49	0.49
Clearance Time (s)	5.7	6.4		5.0	6.4	6.4	4.0	6.9		5.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	348	963		235	761	328	204	1022		801	925	737
v/s Ratio Prot	c0.08	0.16		0.01	0.11		0.01	0.14		c0.21	c0.40	
v/s Ratio Perm				0.03		c0.19	0.08					0.17
v/c Ratio	0.79	0.54		0.13	0.49	0.87	0.25	0.47		0.90	0.81	0.35
Uniform Delay, d1	61.3	41.9		38.8	47.6	52.5	32.3	40.2		52.0	30.0	21.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.25	1.19	2.30
Incremental Delay, d2	11.7	0.6		0.3	0.5	20.5	0.7	1.5		8.8	4.7	0.8
Delay (s)	73.0	42.5		39.1	48.0	73.0	32.9	41.7		73.7	40.4	50.8
Level of Service	E	D		D	D	E	C	D		E	D	D
Approach Delay (s)		53.0			63.2			40.9			55.5	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	55.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	155	109	247	241
v/c Ratio	0.12	0.09	0.65	0.65
Control Delay	1.5	6.0	38.4	40.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.5	6.0	38.4	40.6
Queue Length 50th (m)	1.4	5.8	39.1	40.5
Queue Length 95th (m)	4.4	13.6	56.3	57.4
Internal Link Dist (m)	146.6	179.3	180.3	263.4
Turn Bay Length (m)				
Base Capacity (vph)	1256	1254	809	802
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.09	0.31	0.30

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	95	40	10	85	0	0	180	35	10	200	0
Future Volume (vph)	0	95	40	10	85	0	0	180	35	10	200	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			1.00			0.98			1.00	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1824			1870			1804			1843	
Flt Permitted		1.00			0.98			1.00			0.98	
Satd. Flow (perm)		1824			1834			1804			1807	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	109	46	11	98	0	0	207	40	11	230	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	0	146	0	0	109	0	0	236	0	0	241	0
Heavy Vehicles (%)	0%	0%	0%	11%	0%	0%	50%	3%	3%	0%	3%	0%
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			17.5			17.5	
Effective Green, g (s)		61.5			61.5			18.5			18.5	
Actuated g/C Ratio		0.68			0.68			0.21			0.21	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1246			1253			370			371	
v/s Ratio Prot		c0.08						0.13				
v/s Ratio Perm					0.06						c0.13	
v/c Ratio		0.12			0.09			0.64			0.65	
Uniform Delay, d1		4.9			4.8			32.7			32.8	
Progression Factor		0.27			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.1			3.6			3.9	
Delay (s)		1.5			4.9			36.3			36.7	
Level of Service		A			A			D			D	
Approach Delay (s)		1.5			4.9			36.3			36.7	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

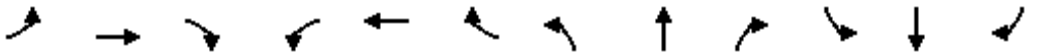
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	40	60	95	150	70	20
Future Volume (Veh/h)	40	60	95	150	70	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	49	73	116	183	85	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			122		500	86
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			122		500	86
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		83	98
cM capacity (veh/h)			1465		490	965

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	122	299	109
Volume Left	0	116	85
Volume Right	73	0	24
cSH	1700	1465	549
Volume to Capacity	0.07	0.08	0.20
Queue Length 95th (m)	0.0	2.1	5.9
Control Delay (s)	0.0	3.4	13.2
Lane LOS		A	B
Approach Delay (s)	0.0	3.4	13.2
Approach LOS			B

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	27	919	43	609	250	136	76	120	27
v/c Ratio	0.08	0.51	0.18	0.33	0.50	0.21	0.44	0.44	0.09
Control Delay	12.8	14.1	15.1	13.0	23.4	11.2	29.4	25.6	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	14.1	15.1	13.0	23.4	11.2	29.4	25.6	5.0
Queue Length 50th (m)	2.2	47.6	3.7	29.9	32.9	9.1	12.2	19.3	0.0
Queue Length 95th (m)	7.6	75.4	12.0	48.6	46.7	19.2	27.9	39.1	4.8
Internal Link Dist (m)		585.1		130.4		189.6		92.5	
Turn Bay Length (m)	45.0		30.0				25.0		25.0
Base Capacity (vph)	359	1822	241	1849	497	751	331	522	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.50	0.18	0.33	0.50	0.18	0.23	0.23	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	630	215	40	525	35	230	65	60	70	110	25
Future Volume (vph)	25	630	215	40	525	35	230	65	60	70	110	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		3.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.96		1.00	0.99		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1649	3330		1752	3434		1731	1732		1693	1881	1524
Flt Permitted	0.39	1.00		0.24	1.00		0.53	1.00		0.67	1.00	1.00
Satd. Flow (perm)	670	3330		450	3434		970	1732		1194	1881	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	685	234	43	571	38	250	71	65	76	120	27
RTOR Reduction (vph)	0	33	0	0	5	0	0	40	0	0	0	23
Lane Group Flow (vph)	27	886	0	43	604	0	250	96	0	76	120	4
Confl. Peds. (#/hr)	5					5	5		5	5		5
Heavy Vehicles (%)	9%	4%	5%	3%	4%	3%	4%	0%	2%	6%	1%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	47.2	47.2		47.2	47.2		30.8	30.8		12.1	12.1	12.1
Effective Green, g (s)	48.2	48.2		48.2	48.2		31.8	31.8		13.1	13.1	13.1
Actuated g/C Ratio	0.54	0.54		0.54	0.54		0.35	0.35		0.15	0.15	0.15
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	358	1783		241	1839		475	611		173	273	221
v/s Ratio Prot		c0.27			0.18		c0.09	0.06			0.06	
v/s Ratio Perm	0.04			0.10			c0.09			0.06		0.00
v/c Ratio	0.08	0.50		0.18	0.33		0.53	0.16		0.44	0.44	0.02
Uniform Delay, d1	10.1	13.2		10.7	11.8		22.1	19.9		35.1	35.1	32.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.62	0.60	1.00
Incremental Delay, d2	0.4	1.0		1.6	0.5		1.1	0.1		1.8	1.1	0.0
Delay (s)	10.5	14.2		12.3	12.3		23.1	20.0		23.6	22.0	33.0
Level of Service	B	B		B	B		C	C		C	C	C
Approach Delay (s)		14.1			12.3			22.0			23.9	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	145	0	0	195	0	0
Future Volume (Veh/h)	145	0	0	195	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	158	0	0	212	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	402					
pX, platoon unblocked						
vC, conflicting volume			158		370	158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			158		370	158
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1422		630	887

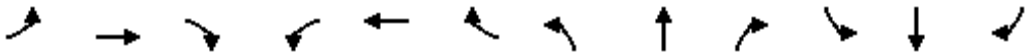
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	158	212	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.09	0.12	0.16
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	145	0	0	195	0	0
Future Volume (Veh/h)	145	0	0	195	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	158	0	0	212	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			158		370	158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			158		370	158
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1422		630	887

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	158	212	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1422	1700
Volume to Capacity	0.09	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.6%	ICU Level of Service	A
Analysis Period (min)	15		



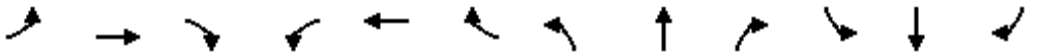
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	95	0	0	85	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	95	0	0	85	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	103	0	0	92	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		313			152							
pX, platoon unblocked												
vC, conflicting volume	92			103			195	195	103	195	195	92
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92			103			195	195	103	195	195	92
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1503			1489			764	700	952	764	700	965

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	103	92	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1503	1489	1700	1700
Volume to Capacity	0.00	0.00	0.06	0.32
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	103	408	92
v/c Ratio	0.10	0.60	0.06
Control Delay	9.0	22.4	0.1
Queue Delay	0.0	0.0	0.0
Total Delay	9.0	22.4	0.1
Queue Length 50th (m)	7.5	40.1	0.0
Queue Length 95th (m)	15.8	57.4	0.0
Internal Link Dist (m)		150.5	264.2
Turn Bay Length (m)	30.0		
Base Capacity (vph)	1029	1101	1687
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.10	0.37	0.05

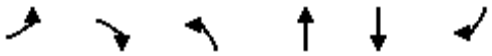
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	0	0	0	0	0	0	375	0	0	0	85
Future Volume (vph)	95	0	0	0	0	0	0	375	0	0	0	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0							5.0			5.0	
Lane Util. Factor	1.00							0.95			0.95	
Frt	1.00							1.00			0.85	
Flt Protected	0.95							1.00			1.00	
Satd. Flow (prot)	1770							3539			3008	
Flt Permitted	0.72							1.00			1.00	
Satd. Flow (perm)	1335							3539			3008	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	0	0	0	0	0	0	408	0	0	0	92
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	74	0
Lane Group Flow (vph)	103	0	0	0	0	0	0	408	0	0	18	0
Turn Type	pm+pt			pm+pt			Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	61.8							16.2			16.2	
Effective Green, g (s)	62.8							17.2			17.2	
Actuated g/C Ratio	0.70							0.19			0.19	
Clearance Time (s)	4.0							6.0			6.0	
Vehicle Extension (s)	3.0							3.0			3.0	
Lane Grp Cap (vph)	965							676			574	
v/s Ratio Prot	c0.01							c0.12			0.01	
v/s Ratio Perm	c0.07											
v/c Ratio	0.11							0.60			0.03	
Uniform Delay, d1	4.4							33.3			29.6	
Progression Factor	1.99							0.60			1.00	
Incremental Delay, d2	0.0							1.0			0.0	
Delay (s)	8.8							21.1			29.6	
Level of Service	A							C			C	
Approach Delay (s)		8.8			0.0			21.1			29.6	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

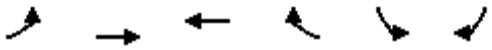
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.22	0.00	0.12
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

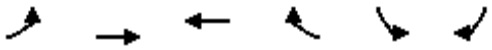
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	215	850	80	0	40	210
Future Volume (Veh/h)	215	850	80	0	40	210
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	234	924	87	0	43	228
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		182				
pX, platoon unblocked					0.80	
vC, conflicting volume	87				1017	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	87				508	44
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	84				87	78
cM capacity (veh/h)	1507				332	1017

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	234	462	462	58	29	271
Volume Left	234	0	0	0	0	43
Volume Right	0	0	0	0	0	228
cSH	1507	1700	1700	1700	1700	766
Volume to Capacity	0.16	0.27	0.27	0.03	0.02	0.35
Queue Length 95th (m)	4.4	0.0	0.0	0.0	0.0	12.8
Control Delay (s)	7.8	0.0	0.0	0.0	0.0	12.2
Lane LOS	A					B
Approach Delay (s)	1.6			0.0		12.2
Approach LOS						B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		



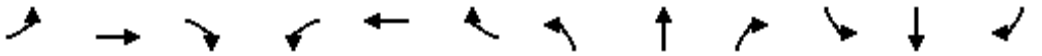
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	930	80	0	0	0
Future Volume (Veh/h)	0	930	80	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1011	87	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			141			
pX, platoon unblocked						
vC, conflicting volume	87				592	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	87				592	44
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1507				437	1017

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	0	506	506	58	29	0	0
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.30	0.30	0.03	0.02	0.57	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A	A
Approach Delay (s)	0.0			0.0		0.0	
Approach LOS						A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT
Lane Group Flow (vph)	408	598	87
v/c Ratio	0.72	0.41	0.09
Control Delay	27.4	19.5	18.2
Queue Delay	0.0	0.0	0.0
Total Delay	27.4	19.5	18.2
Queue Length 50th (m)	56.5	42.0	6.4
Queue Length 95th (m)	74.0	49.3	5.2
Internal Link Dist (m)		117.0	103.5
Turn Bay Length (m)	100.0		
Base Capacity (vph)	566	1612	1101
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.72	0.37	0.08

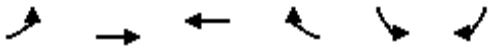
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	550	0	0	80	0	0	0	0	0	0	0
Future Volume (vph)	375	550	0	0	80	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0			5.0							
Lane Util. Factor	1.00	0.95			0.95							
Frt	1.00	1.00			1.00							
Flt Protected	0.95	1.00			1.00							
Satd. Flow (prot)	1770	3539			3539							
Flt Permitted	0.62	1.00			1.00							
Satd. Flow (perm)	1154	3539			3539							
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	408	598	0	0	87	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	408	598	0	0	87	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm			pm+pt		
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.8	35.8			22.8							
Effective Green, g (s)	36.8	36.8			23.8							
Actuated g/C Ratio	0.41	0.41			0.26							
Clearance Time (s)	4.0	6.0			6.0							
Vehicle Extension (s)	3.0	3.0			3.0							
Lane Grp Cap (vph)	540	1447			935							
v/s Ratio Prot	c0.08	0.17			0.02							
v/s Ratio Perm	c0.22											
v/c Ratio	0.76	0.41			0.09							
Uniform Delay, d1	21.8	18.9			25.0							
Progression Factor	1.00	1.00			0.75							
Incremental Delay, d2	6.0	0.9			0.2							
Delay (s)	27.8	19.8			19.0							
Level of Service	C	B			B							
Approach Delay (s)		23.0			19.0			0.0			0.0	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



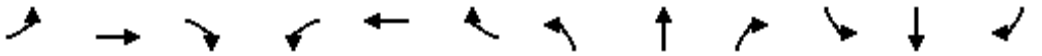
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	550	80	0	0	0
Future Volume (Veh/h)	0	550	80	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	598	87	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		127	245			
pX, platoon unblocked					0.88	
vC, conflicting volume	87				386	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	87				42	44
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1507				852	1017

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	199	399	58	29	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1507	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.23	0.03	0.02	0.60	0.19
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS					A	A
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	592	87	136	147
v/c Ratio	0.25	0.04	0.36	0.39
Control Delay	10.3	6.5	27.5	22.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.3	6.5	27.5	22.1
Queue Length 50th (m)	31.7	1.8	20.2	16.3
Queue Length 95th (m)	23.4	6.5	29.6	26.0
Internal Link Dist (m)	221.4	55.1	92.5	315.1
Turn Bay Length (m)				
Base Capacity (vph)	2383	2422	828	828
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.04	0.16	0.18

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	475	70	0	80	0	0	125	0	0	135	0
Future Volume (vph)	0	475	70	0	80	0	0	125	0	0	135	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.98			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3471			3539			1863			1863	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		3471			3539			1863			1863	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	516	76	0	87	0	0	136	0	0	147	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	585	0	0	87	0	0	136	0	0	147	0
Turn Type		NA			NA			NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.6			60.6			17.4			17.4	
Effective Green, g (s)		61.6			61.6			18.4			18.4	
Actuated g/C Ratio		0.68			0.68			0.20			0.20	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2375			2422			380			380	
v/s Ratio Prot		c0.17			0.02			0.07			c0.08	
v/s Ratio Perm												
v/c Ratio		0.25			0.04			0.36			0.39	
Uniform Delay, d1		5.4			4.6			30.7			30.9	
Progression Factor		1.58			1.00			0.87			0.66	
Incremental Delay, d2		0.2			0.0			0.6			0.7	
Delay (s)		8.7			4.6			27.3			21.1	
Level of Service		A			A			C			C	
Approach Delay (s)		8.7			4.6			27.3			21.1	
Approach LOS		A			A			C			C	

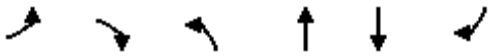
Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.36	0.01	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

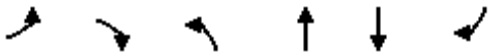
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.20	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

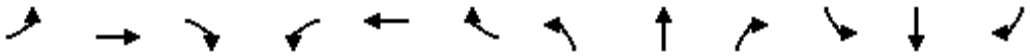
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.25	0.00	0.23
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

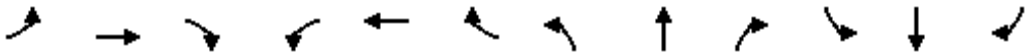
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	95	0	0	80	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	95	0	0	80	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	103	0	0	87	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					43							
pX, platoon unblocked												
vC, conflicting volume	87			103			190	190	103	190	190	87
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	87			103			190	190	103	190	190	87
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1509			1489			770	705	952	770	705	971

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	103	87	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1509	1489	1700	1700
Volume to Capacity	0.00	0.00	0.15	0.27
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	8.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		40										
pX, platoon unblocked												
vC, conflicting volume	0			0			0	0	0	0	0	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			0	0	0	0	0	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1623			1623			1023	896	1085	1023	896	1085

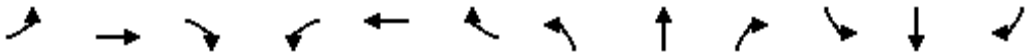
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.18	0.30
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	0.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.21	0.03	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

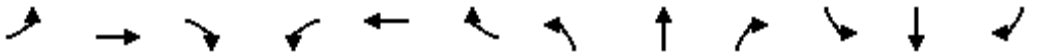
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	103	119	299	809	155	345	304	1768	928	211	1211	119
v/c Ratio	0.42	0.59	0.78	0.97	0.29	0.61	0.82	0.85	0.93	0.81	0.67	0.21
Control Delay	35.9	71.1	28.5	76.1	40.2	17.8	50.9	46.9	27.3	59.3	41.5	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.1	0.0	0.0	0.0
Total Delay	35.9	71.1	28.5	76.1	40.2	17.8	50.9	46.9	43.4	59.3	41.5	1.3
Queue Length 50th (m)	19.4	33.6	16.8	121.7	35.6	25.8	76.4	142.8	113.8	41.9	112.1	0.0
Queue Length 95th (m)	31.5	53.7	50.6	#164.7	53.7	58.7	m79.4	m143.8	m111.6	#91.1	133.4	1.6
Internal Link Dist (m)		361.1			497.8			251.4			315.2	
Turn Bay Length (m)	80.0			165.0		15.0				85.0		80.0
Base Capacity (vph)	247	255	422	838	580	592	390	2082	996	266	1795	575
Starvation Cap Reductn	0	0	0	0	0	0	0	0	88	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.47	0.71	0.97	0.27	0.58	0.78	0.85	1.02	0.79	0.67	0.21

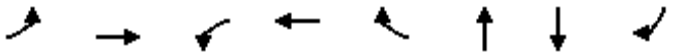
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	115	290	785	150	335	295	1715	900	205	1175	115
Future Volume (vph)	100	115	290	785	150	335	295	1715	900	205	1175	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.8	5.8	4.7	5.8	5.8	3.0	5.1	5.1	3.0	5.1	5.1
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.86	1.00	1.00	0.95	1.00	1.00	0.81
Flpb, ped/bikes	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1685	1881	1599	3467	1881	1388	1787	5136	1525	1805	5085	1300
Flt Permitted	0.66	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1168	1881	1599	3467	1881	1388	196	5136	1525	154	5085	1300
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	103	119	299	809	155	345	304	1768	928	211	1211	119
RTOR Reduction (vph)	0	0	212	0	0	170	0	0	378	0	0	77
Lane Group Flow (vph)	103	119	87	809	155	175	304	1768	550	211	1211	42
Confl. Peds. (#/hr)	55					55	80		15	15		80
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	1%	1%	1%	0%	2%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Actuated Green, G (s)	22.0	14.1	14.1	32.9	39.1	39.1	74.4	55.7	55.7	63.1	48.4	48.4
Effective Green, g (s)	24.0	15.1	15.1	33.9	40.1	40.1	75.4	56.7	56.7	65.1	49.4	49.4
Actuated g/C Ratio	0.17	0.11	0.11	0.24	0.29	0.29	0.54	0.41	0.41	0.46	0.35	0.35
Clearance Time (s)	5.7	6.8	6.8	5.7	6.8	6.8	4.0	6.1	6.1	4.0	6.1	6.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	233	202	172	839	538	397	366	2080	617	256	1794	458
v/s Ratio Prot	0.03	c0.06		c0.23	0.08		c0.14	0.34		0.09	0.24	
v/s Ratio Perm	0.05		0.05			0.13	0.31		c0.36	0.29		0.03
v/c Ratio	0.44	0.59	0.50	0.96	0.29	0.44	0.83	0.85	0.89	0.82	0.68	0.09
Uniform Delay, d1	51.2	59.5	58.9	52.5	38.8	40.8	35.3	37.8	38.8	37.7	38.5	30.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.44	1.18	1.76	1.00	1.00	1.00
Incremental Delay, d2	1.3	4.3	2.3	22.5	0.3	0.8	5.0	1.5	6.4	18.9	2.1	0.4
Delay (s)	52.5	63.8	61.2	75.0	39.1	41.6	55.9	46.2	74.6	56.6	40.5	30.7
Level of Service	D	E	E	E	D	D	E	D	E	E	D	C
Approach Delay (s)		60.1			61.9			56.0			42.0	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	54.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



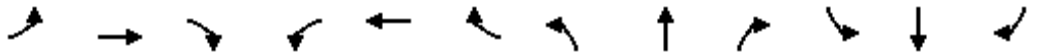
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	27	287	239	234	362	3026	1426	16
v/c Ratio	0.09	0.54	0.94	0.99	0.75	1.01	0.47	0.02
Control Delay	28.4	37.8	92.7	105.2	47.1	33.8	16.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	37.8	92.7	105.2	47.1	33.8	16.8	0.0
Queue Length 50th (m)	4.9	56.9	69.5	69.3	77.3	~367.4	57.8	0.0
Queue Length 95th (m)	11.6	85.1	#123.0	#125.6	115.9	#384.9	m65.2	m0.0
Internal Link Dist (m)		327.0		348.8		307.3	251.4	
Turn Bay Length (m)								
Base Capacity (vph)	305	609	275	257	521	3009	3006	884
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.47	0.87	0.91	0.69	1.01	0.47	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	5	265	440	5	340	0	2530	315	0	1340	15
Future Volume (vph)	25	5	265	440	5	340	0	2530	315	0	1340	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		6.0	6.0	6.0		6.0			6.0	6.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.91			0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1805	1604		1681	1688	1583		5025			5036	1437
Flt Permitted	0.41	1.00		0.52	0.48	1.00		1.00			1.00	1.00
Satd. Flow (perm)	781	1604		919	856	1583		5025			5036	1437
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	5	282	468	5	362	0	2691	335	0	1426	16
RTOR Reduction (vph)	0	20	0	0	0	48	0	10	0	0	0	7
Lane Group Flow (vph)	27	267	0	239	234	314	0	3016	0	0	1426	9
Confl. Peds. (#/hr)							15		10	10		15
Heavy Vehicles (%)	0%	0%	1%	2%	0%	2%	0%	1%	1%	0%	3%	6%
Turn Type	pm+pt	NA		Perm	NA	Perm		NA			NA	Perm
Protected Phases	3	8			4			2			6	
Permitted Phases	8			4		4						6
Actuated Green, G (s)	45.2	45.2		37.7	37.7	37.7		80.8			80.8	80.8
Effective Green, g (s)	46.2	46.2		38.7	38.7	38.7		81.8			81.8	81.8
Actuated g/C Ratio	0.33	0.33		0.28	0.28	0.28		0.58			0.58	0.58
Clearance Time (s)	4.5	7.0		7.0	7.0	7.0		7.0			7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	286	529		254	236	437		2936			2942	839
v/s Ratio Prot	0.00	c0.17						c0.60			0.28	
v/s Ratio Perm	0.03			0.26	c0.27	0.20						0.01
v/c Ratio	0.09	0.50		0.94	0.99	0.72		1.03			0.48	0.01
Uniform Delay, d1	32.6	37.7		49.5	50.5	45.7		29.1			16.9	12.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.60			0.96	1.00
Incremental Delay, d2	0.1	0.8		40.5	56.0	5.6		21.1			0.3	0.0
Delay (s)	32.7	38.5		90.0	106.5	51.3		38.5			16.6	12.2
Level of Service	C	D		F	F	D		D			B	B
Approach Delay (s)		38.0			77.9			38.5			16.6	
Approach LOS		D			E			D			B	

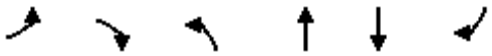
Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	108.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	1058	600	1942	1795
v/c Ratio	0.76	0.94	0.75	0.69
Control Delay	40.0	62.7	34.2	19.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	40.0	62.7	34.2	19.4
Queue Length 50th (m)	132.6	161.2	182.0	90.6
Queue Length 95th (m)	158.9	#237.6	m165.9	113.1
Internal Link Dist (m)	190.2		56.8	307.3
Turn Bay Length (m)				
Base Capacity (vph)	1436	659	2602	2602
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.74	0.91	0.75	0.69

Intersection Summary

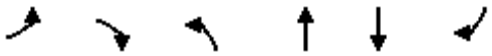
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1005	570	0	1845	1705	0
Future Volume (vph)	1005	570	0	1845	1705	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3467	1583		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3467	1583		5085	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1058	600	0	1942	1795	0
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	1058	596	0	1942	1795	0
Confl. Peds. (#/hr)			25			25
Heavy Vehicles (%)	1%	2%	0%	2%	2%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	2	
Permitted Phases		4				
Actuated Green, G (s)	55.3	55.3		70.7	70.7	
Effective Green, g (s)	56.3	56.3		71.7	71.7	
Actuated g/C Ratio	0.40	0.40		0.51	0.51	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1394	636		2604	2604	
v/s Ratio Prot	0.31			c0.38	0.35	
v/s Ratio Perm		c0.38				
v/c Ratio	0.76	0.94		0.75	0.69	
Uniform Delay, d1	36.0	40.1		27.0	25.8	
Progression Factor	1.00	1.00		1.20	0.69	
Incremental Delay, d2	2.4	21.3		1.1	1.3	
Delay (s)	38.4	61.4		33.4	19.0	
Level of Service	D	E		C	B	
Approach Delay (s)	46.8			33.4	19.0	
Approach LOS	D			C	B	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

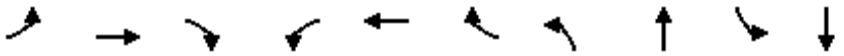
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	130	0	1850	1695	530
Future Volume (Veh/h)	0	130	0	1850	1695	530
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	138	0	1968	1803	564
Pedestrians	20					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				198	81	
pX, platoon unblocked	0.81	0.73	0.73			
vC, conflicting volume	2761	903	2387			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1051	0	1617			
tC, single (s)	6.8	7.1	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	82	100			
cM capacity (veh/h)	180	768	294			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	138	656	656	656	721	721	925
Volume Left	0	0	0	0	0	0	0
Volume Right	138	0	0	0	0	0	564
cSH	768	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.18	0.39	0.39	0.39	0.42	0.42	0.54
Queue Length 95th (m)	5.2	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.7	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	10.7	0.0			0.0		
Approach LOS	B						

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	59.8%	ICU Level of Service		B
Analysis Period (min)	15			



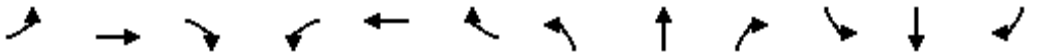
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	979	361	144	67	443	253	253	1067	196	1680
v/c Ratio	1.03	0.29	0.24	0.22	0.91	0.67	1.01	0.63	0.72	1.06
Control Delay	87.1	35.0	6.2	27.4	82.4	25.2	94.9	42.0	45.5	79.6
Queue Delay	26.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.7	35.0	6.2	27.4	82.4	25.2	94.9	42.0	45.5	79.6
Queue Length 50th (m)	~157.5	41.7	0.0	10.8	67.9	17.1	~67.7	77.8	36.7	~192.1
Queue Length 95th (m)	#200.2	55.8	15.9	20.4	#99.3	48.3	m#97.8	m96.0	m56.6	#219.7
Internal Link Dist (m)		97.1			158.4			292.1		174.2
Turn Bay Length (m)	130.0			50.0			120.0		55.0	
Base Capacity (vph)	947	1258	594	301	489	380	251	1703	288	1579
Starvation Cap Reductn	228	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.36	0.29	0.24	0.22	0.91	0.67	1.01	0.63	0.68	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

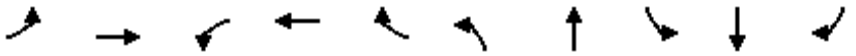
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	950	350	140	65	430	245	245	1000	35	190	1240	390
Future Volume (vph)	950	350	140	65	430	245	245	1000	35	190	1240	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0		3.0	6.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	3610	1436	1779	3610	1599	1719	5103		1752	4899	
Flt Permitted	0.95	1.00	1.00	0.54	1.00	1.00	0.09	1.00		0.15	1.00	
Satd. Flow (perm)	3400	3610	1436	1004	3610	1599	160	5103		277	4899	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	979	361	144	67	443	253	253	1031	36	196	1278	402
RTOR Reduction (vph)	0	0	94	0	0	161	0	3	0	0	41	0
Lane Group Flow (vph)	979	361	50	67	443	92	253	1064	0	196	1639	0
Confl. Peds. (#/hr)			20	20			15		15	15		15
Heavy Vehicles (%)	3%	0%	6%	0%	0%	1%	5%	1%	0%	3%	0%	4%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2			6		
Actuated Green, G (s)	38.0	47.8	47.8	29.0	19.4	19.4	59.3	44.3		54.9	41.6	
Effective Green, g (s)	39.0	48.8	48.8	31.0	20.4	20.4	61.3	45.3		56.9	42.6	
Actuated g/C Ratio	0.28	0.35	0.35	0.22	0.15	0.15	0.44	0.32		0.41	0.30	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	5.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.5	4.0	4.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	947	1258	500	280	526	232	248	1651		263	1490	
v/s Ratio Prot	c0.29	0.10		0.02	c0.12		c0.12	0.21		0.08	c0.33	
v/s Ratio Perm			0.03	0.03		0.06	0.33			0.23		
v/c Ratio	1.03	0.29	0.10	0.24	0.84	0.39	1.02	0.64		0.75	1.10	
Uniform Delay, d1	50.5	33.0	30.8	44.1	58.2	54.2	43.5	40.5		29.7	48.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.38	1.03		1.45	0.92	
Incremental Delay, d2	38.3	0.1	0.1	0.5	12.1	1.5	48.5	1.1		7.9	53.0	
Delay (s)	88.8	33.1	30.9	44.6	70.3	55.7	108.4	43.0		51.0	97.7	
Level of Service	F	C	C	D	E	E	F	D		D	F	
Approach Delay (s)		69.6			63.2			55.5			92.9	
Approach LOS		E			E			E			F	

Intersection Summary			
HCM 2000 Control Delay	73.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		

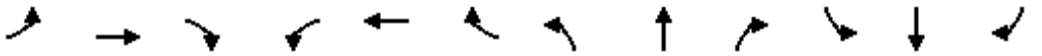
c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	335	469	57	572	634	62	670	521	603	309
v/c Ratio	0.82	0.36	0.14	0.54	0.95	0.28	0.69	0.90	0.79	0.41
Control Delay	77.0	32.6	21.9	43.0	48.2	24.7	49.8	77.4	61.3	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.0	32.6	21.9	43.0	48.2	24.7	49.8	77.4	61.3	28.2
Queue Length 50th (m)	49.6	50.5	8.8	72.1	101.6	9.7	93.2	82.7	135.5	43.1
Queue Length 95th (m)	#77.7	69.2	17.6	91.4	#184.6	18.1	114.1	m81.2	m127.3	m38.6
Internal Link Dist (m)		551.4		604.3			115.4		292.1	
Turn Bay Length (m)	85.0		85.0		75.0	40.0		85.0		
Base Capacity (vph)	408	1300	433	1107	683	218	1022	578	783	768
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.36	0.13	0.52	0.93	0.28	0.66	0.90	0.77	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



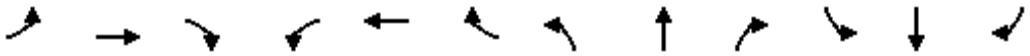
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	410	45	55	555	615	60	590	60	505	585	300
Future Volume (vph)	325	410	45	55	555	615	60	590	60	505	585	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.4		4.0	5.4	5.4	3.0	5.9		4.0	5.9	5.9
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3479		1795	3539	1470	1768	3548		3433	1881	1516
Flt Permitted	0.95	1.00		0.48	1.00	1.00	0.22	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3479		913	3539	1470	400	3548		3433	1881	1516
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	335	423	46	57	572	634	62	608	62	521	603	309
RTOR Reduction (vph)	0	6	0	0	0	226	0	6	0	0	0	143
Lane Group Flow (vph)	335	463	0	57	572	408	62	664	0	521	603	166
Confl. Peds. (#/hr)	45		10	10		45	10		20	20		10
Heavy Vehicles (%)	1%	2%	0%	0%	2%	2%	2%	0%	0%	2%	1%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases				4		4	2					6
Actuated Green, G (s)	15.5	51.1		48.3	41.6	41.6	42.0	36.3		22.6	54.2	54.2
Effective Green, g (s)	16.5	52.1		50.3	42.6	42.6	44.0	37.3		23.6	55.2	55.2
Actuated g/C Ratio	0.12	0.37		0.36	0.30	0.30	0.31	0.27		0.17	0.39	0.39
Clearance Time (s)	5.7	6.4		5.0	6.4	6.4	4.0	6.9		5.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	408	1294		376	1076	447	191	945		578	741	597
v/s Ratio Prot	c0.10	0.13		0.01	0.16		0.02	0.19		c0.15	c0.32	
v/s Ratio Perm				0.05		c0.28	0.09					0.11
v/c Ratio	0.82	0.36		0.15	0.53	0.91	0.32	0.70		0.90	0.81	0.28
Uniform Delay, d1	60.3	31.8		29.7	40.4	46.9	35.5	46.3		57.1	37.8	28.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.23	1.53	3.51
Incremental Delay, d2	12.5	0.2		0.2	0.5	22.8	1.0	4.4		6.8	3.4	0.4
Delay (s)	72.8	32.0		29.9	40.9	69.7	36.5	50.7		77.1	61.2	101.7
Level of Service	E	C		C	D	E	D	D		E	E	F
Approach Delay (s)		49.0			54.9			49.5			75.7	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	59.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	53	388	300	371
v/c Ratio	0.05	0.36	0.58	0.73
Control Delay	2.0	11.0	30.4	37.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.0	11.0	30.4	37.8
Queue Length 50th (m)	0.4	31.8	44.5	61.1
Queue Length 95th (m)	2.1	57.4	57.5	75.2
Internal Link Dist (m)	146.6	179.3	180.3	263.4
Turn Bay Length (m)				
Base Capacity (vph)	1129	1073	812	808
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.36	0.37	0.46

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	35	10	65	250	15	0	210	45	20	295	0
Future Volume (vph)	0	35	10	65	250	15	0	210	45	20	295	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			0.98			1.00	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1842			1862			1810			1894	
Flt Permitted		1.00			0.93			1.00			0.96	
Satd. Flow (perm)		1842			1754			1810			1820	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	41	12	76	294	18	0	247	53	24	347	0
RTOR Reduction (vph)	0	5	0	0	2	0	0	11	0	0	0	0
Lane Group Flow (vph)	0	48	0	0	386	0	0	289	0	0	371	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	3%	0%	0%	0%	0%
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		54.0			54.0			24.0			24.0	
Effective Green, g (s)		55.0			55.0			25.0			25.0	
Actuated g/C Ratio		0.61			0.61			0.28			0.28	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1125			1071			502			505	
v/s Ratio Prot		0.03						0.16				
v/s Ratio Perm					c0.22						c0.20	
v/c Ratio		0.04			0.36			0.58			0.73	
Uniform Delay, d1		7.0			8.7			27.9			29.5	
Progression Factor		0.25			1.00			1.00			1.00	
Incremental Delay, d2		0.1			0.9			1.6			5.5	
Delay (s)		1.9			9.7			29.5			35.0	
Level of Service		A			A			C			C	
Approach Delay (s)		1.9			9.7			29.5			35.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	105	70	75	100	150	115
Future Volume (Veh/h)	105	70	75	100	150	115
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	118	79	84	112	169	129
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			197		438	158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			197		438	158
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		69	86
cM capacity (veh/h)			1388		543	891

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	197	196	298
Volume Left	0	84	169
Volume Right	79	0	129
cSH	1700	1388	654
Volume to Capacity	0.12	0.06	0.46
Queue Length 95th (m)	0.0	1.5	19.1
Control Delay (s)	0.0	3.6	15.0
Lane LOS		A	C
Approach Delay (s)	0.0	3.6	15.0
Approach LOS			C

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	48	692	64	835	181	133	85	69	53
v/c Ratio	0.10	0.29	0.14	0.39	0.67	0.34	0.34	0.18	0.14
Control Delay	5.7	6.2	12.1	11.1	44.5	24.1	16.6	13.5	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.7	6.2	12.1	11.1	44.5	24.1	16.6	13.5	0.9
Queue Length 50th (m)	2.3	20.8	5.1	40.3	30.6	15.8	4.8	4.0	0.0
Queue Length 95th (m)	7.0	37.5	14.7	67.3	48.1	28.9	6.3	5.3	0.3
Internal Link Dist (m)		585.1		130.4		189.6		92.5	
Turn Bay Length (m)	45.0		30.0				25.0		25.0
Base Capacity (vph)	467	2379	456	2158	355	505	331	493	472
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.29	0.14	0.39	0.51	0.26	0.26	0.14	0.11

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	545	105	60	680	105	170	80	45	80	65	50
Future Volume (vph)	45	545	105	60	680	105	170	80	45	80	65	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1768	3441		1797	3458		1759	1786		1805	1827	1516
Flt Permitted	0.28	1.00		0.39	1.00		0.71	1.00		0.65	1.00	1.00
Satd. Flow (perm)	519	3441		735	3458		1318	1786		1228	1827	1516
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	48	580	112	64	723	112	181	85	48	85	69	53
RTOR Reduction (vph)	0	15	0	0	12	0	0	25	0	0	0	42
Lane Group Flow (vph)	48	677	0	64	823	0	181	108	0	85	69	11
Confl. Peds. (#/hr)	5		5	5		5	5					5
Confl. Bikes (#/hr)												5
Heavy Vehicles (%)	2%	2%	1%	0%	2%	1%	2%	1%	0%	0%	4%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	60.5	60.5		52.4	52.4		17.5	17.5		17.5	17.5	17.5
Effective Green, g (s)	61.5	61.5		53.4	53.4		18.5	18.5		18.5	18.5	18.5
Actuated g/C Ratio	0.68	0.68		0.59	0.59		0.21	0.21		0.21	0.21	0.21
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	425	2351		436	2051		270	367		252	375	311
v/s Ratio Prot	0.01	c0.20			c0.24			0.06			0.04	
v/s Ratio Perm	0.07			0.09			c0.14			0.07		0.01
v/c Ratio	0.11	0.29		0.15	0.40		0.67	0.30		0.34	0.18	0.04
Uniform Delay, d1	5.2	5.6		8.2	9.8		32.9	30.2		30.5	29.5	28.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.45	0.45	0.05
Incremental Delay, d2	0.1	0.3		0.7	0.6		6.4	0.5		0.8	0.2	0.0
Delay (s)	5.3	5.9		8.9	10.4		39.3	30.7		14.5	13.6	1.6
Level of Service	A	A		A	B		D	C		B	B	A
Approach Delay (s)		5.9			10.2			35.7			10.9	
Approach LOS		A			B			D			B	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	160	0	0	310	0	0
Future Volume (Veh/h)	160	0	0	310	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	0	0	337	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	402					
pX, platoon unblocked						
vC, conflicting volume			174		511	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			174		511	174
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1403		523	869

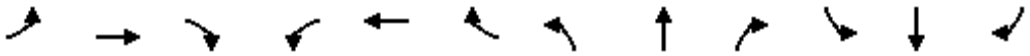
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	174	337	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.10	0.20	0.06
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	160	0	0	310	0	0
Future Volume (Veh/h)	160	0	0	310	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	0	0	337	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			174		511	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			174		511	174
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1403		523	869

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	174	337	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1403	1700
Volume to Capacity	0.10	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	35	0	0	250	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	35	0	0	250	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	38	0	0	272	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		313			152							
pX, platoon unblocked												
vC, conflicting volume	272			38			310	310	38	310	310	272
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	272			38			310	310	38	310	310	272
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1291			1572			642	605	1034	642	605	767

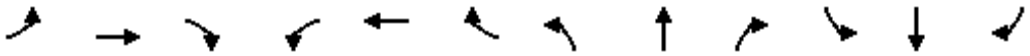
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	38	272	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1291	1572	1700	1700
Volume to Capacity	0.00	0.00	0.25	0.16
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	16.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	38	147	272
v/c Ratio	0.04	0.21	0.19
Control Delay	6.5	33.0	0.3
Queue Delay	0.0	0.0	0.0
Total Delay	6.5	33.0	0.3
Queue Length 50th (m)	0.3	13.1	0.0
Queue Length 95th (m)	m5.1	23.6	0.0
Internal Link Dist (m)		150.5	264.2
Turn Bay Length (m)	30.0		
Base Capacity (vph)	974	1297	1793
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.04	0.11	0.15

Intersection Summary

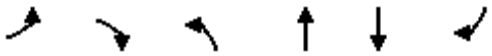
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	0	0	0	0	0	0	135	0	0	0	250
Future Volume (vph)	35	0	0	0	0	0	0	135	0	0	0	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0							5.0			5.0	
Lane Util. Factor	1.00							0.95			0.95	
Frt	1.00							1.00			0.85	
Flt Protected	0.95							1.00			1.00	
Satd. Flow (prot)	1770							3539			3008	
Flt Permitted	0.76							1.00			1.00	
Satd. Flow (perm)	1410							3539			3008	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	0	0	0	0	0	0	147	0	0	0	272
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	218	0
Lane Group Flow (vph)	38	0	0	0	0	0	0	147	0	0	54	0
Turn Type	Perm			Perm			pm+pt	NA		pm+pt	NA	
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	61.2							16.8			16.8	
Effective Green, g (s)	62.2							17.8			17.8	
Actuated g/C Ratio	0.69							0.20			0.20	
Clearance Time (s)	6.0							6.0			6.0	
Vehicle Extension (s)	3.0							3.0			3.0	
Lane Grp Cap (vph)	974							699			594	
v/s Ratio Prot								c0.04			0.02	
v/s Ratio Perm	c0.03											
v/c Ratio	0.04							0.21			0.09	
Uniform Delay, d1	4.4							30.2			29.5	
Progression Factor	0.94							1.15			1.00	
Incremental Delay, d2	0.1							0.1			0.1	
Delay (s)	4.2							34.9			29.6	
Level of Service	A							C			C	
Approach Delay (s)		4.2			0.0			34.9			29.6	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

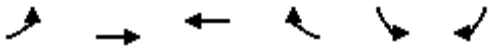
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.08	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

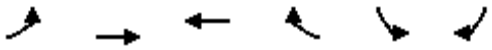
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	255	310	350	0	10	360
Future Volume (Veh/h)	255	310	350	0	10	360
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	277	337	380	0	11	391
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		182				
pX, platoon unblocked						
vC, conflicting volume	380				1102	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	380				1102	190
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	76				93	52
cM capacity (veh/h)	1175				157	820

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	277	168	168	253	127	402
Volume Left	277	0	0	0	0	11
Volume Right	0	0	0	0	0	391
cSH	1175	1700	1700	1700	1700	735
Volume to Capacity	0.24	0.10	0.10	0.15	0.07	0.55
Queue Length 95th (m)	7.3	0.0	0.0	0.0	0.0	26.8
Control Delay (s)	9.0	0.0	0.0	0.0	0.0	15.7
Lane LOS	A					C
Approach Delay (s)	4.1			0.0		15.7
Approach LOS						C

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		



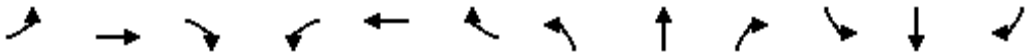
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	330	350	0	0	0
Future Volume (Veh/h)	0	330	350	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	359	380	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			141			
pX, platoon unblocked	1.00				1.00	1.00
vC, conflicting volume	380				560	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	379				558	188
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1176				459	821

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	0	180	180	253	127	0	0
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.11	0.11	0.15	0.07	0.26	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A	A
Approach Delay (s)	0.0			0.0		0.0	
Approach LOS						A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT
Lane Group Flow (vph)	147	217	380
v/c Ratio	0.18	0.07	0.13
Control Delay	6.6	4.9	4.0
Queue Delay	0.0	0.0	0.0
Total Delay	6.6	4.9	4.0
Queue Length 50th (m)	0.0	0.0	0.0
Queue Length 95th (m)	23.4	13.7	16.3
Internal Link Dist (m)		117.0	103.5
Turn Bay Length (m)	100.0		
Base Capacity (vph)	814	2941	2941
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.18	0.07	0.13

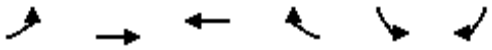
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	200	0	0	350	0	0	0	0	0	0	0
Future Volume (vph)	135	200	0	0	350	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0							
Lane Util. Factor	1.00	0.95			0.95							
Frt	1.00	1.00			1.00							
Flt Protected	0.95	1.00			1.00							
Satd. Flow (prot)	1770	3539			3539							
Flt Permitted	0.53	1.00			1.00							
Satd. Flow (perm)	981	3539			3539							
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	217	0	0	380	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	147	217	0	0	380	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	67.2	67.2			67.2							
Effective Green, g (s)	68.2	68.2			68.2							
Actuated g/C Ratio	0.76	0.76			0.76							
Clearance Time (s)	6.0	6.0			6.0							
Vehicle Extension (s)	3.0	3.0			3.0							
Lane Grp Cap (vph)	743	2681			2681							
v/s Ratio Prot		0.06			0.11							
v/s Ratio Perm	c0.15											
v/c Ratio	0.20	0.08			0.14							
Uniform Delay, d1	3.1	2.8			3.0							
Progression Factor	1.00	1.00			0.82							
Incremental Delay, d2	0.6	0.1			0.1							
Delay (s)	3.7	2.9			2.5							
Level of Service	A	A			A							
Approach Delay (s)		3.2			2.5			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	200	350	0	0	0
Future Volume (Veh/h)	0	200	350	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	217	380	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		127	245			
pX, platoon unblocked						
vC, conflicting volume	380				488	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	380				488	190
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1175				508	820

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	72	145	253	127	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1175	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.09	0.15	0.07	0.44	0.08
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS					A	A
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	207	353	250	179
v/c Ratio	0.09	0.15	0.61	0.42
Control Delay	5.8	7.0	33.3	22.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.8	7.0	33.3	22.7
Queue Length 50th (m)	5.4	10.5	36.9	19.5
Queue Length 95th (m)	8.2	21.4	53.4	28.5
Internal Link Dist (m)	221.4	48.5	92.5	315.1
Turn Bay Length (m)				
Base Capacity (vph)	2298	2328	795	828
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.15	0.31	0.22

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	170	20	0	325	0	20	210	0	0	165	0
Future Volume (vph)	0	170	20	0	325	0	20	210	0	0	165	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.98			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3483			3539			1855			1863	
Flt Permitted		1.00			1.00			0.96			1.00	
Satd. Flow (perm)		3483			3539			1790			1863	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	185	22	0	353	0	22	228	0	0	179	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	201	0	0	353	0	0	250	0	0	179	0
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		58.2			58.2			19.8			19.8	
Effective Green, g (s)		59.2			59.2			20.8			20.8	
Actuated g/C Ratio		0.66			0.66			0.23			0.23	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2291			2327			413			430	
v/s Ratio Prot		0.06			c0.10						0.10	
v/s Ratio Perm								c0.14				
v/c Ratio		0.09			0.15			0.61			0.42	
Uniform Delay, d1		5.6			5.9			30.9			29.4	
Progression Factor		0.92			1.00			0.91			0.71	
Incremental Delay, d2		0.1			0.1			2.4			0.7	
Delay (s)		5.2			6.0			30.6			21.5	
Level of Service		A			A			C			C	
Approach Delay (s)		5.2			6.0			30.6			21.5	
Approach LOS		A			A			C			C	

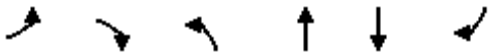
Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.15	0.07	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

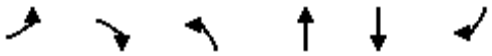
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.07	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

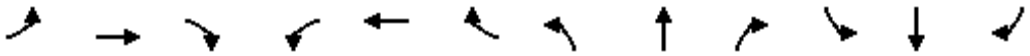
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.10	0.00	0.09
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

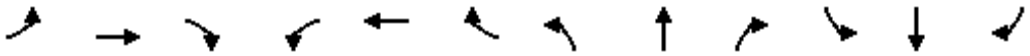
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	35	0	0	240	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	35	0	0	240	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	38	0	0	261	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					43							
pX, platoon unblocked												
vC, conflicting volume	261			38			299	299	38	299	299	261
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	261			38			299	299	38	299	299	261
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1303			1572			653	613	1034	653	613	778

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	38	261	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1303	1572	1700	1700
Volume to Capacity	0.00	0.00	0.07	0.12
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	16.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		40										
pX, platoon unblocked												
vC, conflicting volume	0			0			0	0	0	0	0	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			0	0	0	0	0	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1623			1623			1023	896	1085	1023	896	1085

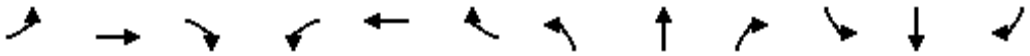
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.11	0.14
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	0.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.13	0.17	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



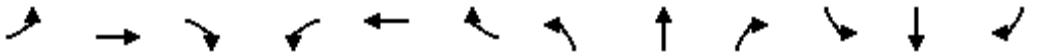
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	182	338	697	101	298	146	1763	798	227	3606	51
v/c Ratio	0.12	0.67	0.96	0.94	0.17	0.50	0.86	0.85	0.82	1.10	1.64	0.07
Control Delay	28.9	69.9	73.4	74.1	35.6	15.5	45.3	16.7	8.2	124.4	317.4	0.2
Queue Delay	0.0	0.0	54.8	59.0	0.0	0.0	0.0	0.0	2.4	0.0	0.4	0.0
Total Delay	28.9	69.9	128.2	133.1	35.6	15.5	45.3	16.7	10.6	124.4	317.8	0.2
Queue Length 50th (m)	6.1	50.9	60.0	103.4	21.5	20.8	24.2	130.4	91.5	~58.4	~554.5	0.0
Queue Length 95th (m)	13.5	78.4	#123.5	#139.8	36.9	50.8	m14.8	m77.8	m17.8	#114.2	#574.4	0.0
Internal Link Dist (m)		361.1			497.8			251.4			315.2	
Turn Bay Length (m)	80.0			165.0		15.0				85.0		80.0
Base Capacity (vph)	282	271	351	752	599	598	169	2073	978	207	2204	684
Starvation Cap Reductn	0	0	0	0	0	0	0	0	89	0	0	0
Spillback Cap Reductn	0	0	224	564	0	0	0	0	0	0	285	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.67	2.66	3.71	0.17	0.50	0.86	0.85	0.90	1.10	1.88	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

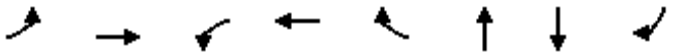
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	180	335	690	100	295	145	1745	790	225	3570	50
Future Volume (vph)	35	180	335	690	100	295	145	1745	790	225	3570	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.8	5.8	4.7	5.8	5.8	3.0	5.1	5.1	3.0	5.1	5.1
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	1.00	1.00	0.91
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1668	1863	1568	3367	1827	1410	1719	4988	1513	1787	5085	1383
Flt Permitted	0.69	1.00	1.00	0.95	1.00	1.00	0.07	1.00	1.00	0.07	1.00	1.00
Satd. Flow (perm)	1215	1863	1568	3367	1827	1410	127	4988	1513	126	5085	1383
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	35	182	338	697	101	298	146	1763	798	227	3606	51
RTOR Reduction (vph)	0	0	122	0	0	136	0	0	354	0	0	29
Lane Group Flow (vph)	35	182	216	697	101	162	146	1763	444	227	3606	22
Confl. Peds. (#/hr)	35					35	35		10	10		35
Heavy Vehicles (%)	3%	2%	3%	4%	4%	4%	5%	4%	3%	1%	2%	6%
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Actuated Green, G (s)	26.1	20.5	20.5	30.0	44.9	44.9	64.4	56.1	56.1	69.4	58.6	58.6
Effective Green, g (s)	28.1	21.5	21.5	31.0	45.9	45.9	66.4	57.1	57.1	71.4	59.6	59.6
Actuated g/C Ratio	0.20	0.15	0.15	0.22	0.33	0.33	0.47	0.41	0.41	0.51	0.43	0.43
Clearance Time (s)	5.7	6.8	6.8	5.7	6.8	6.8	4.0	6.1	6.1	4.0	6.1	6.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	265	286	240	745	598	462	165	2034	617	204	2164	588
v/s Ratio Prot	0.01	0.10		c0.21	0.06		0.06	0.35		c0.09	c0.71	
v/s Ratio Perm	0.02		c0.14			0.11	0.36		0.29	0.47		0.02
v/c Ratio	0.13	0.64	0.90	0.94	0.17	0.35	0.88	0.87	0.72	1.11	1.67	0.04
Uniform Delay, d1	45.7	55.6	58.2	53.5	33.5	35.7	36.4	38.0	34.7	42.4	40.2	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.40	0.44	0.84	1.00	1.00	1.00
Incremental Delay, d2	0.2	4.6	32.9	18.9	0.1	0.5	5.5	0.5	0.7	96.5	301.9	0.1
Delay (s)	45.9	60.2	91.1	72.4	33.6	36.2	56.3	17.0	30.0	138.9	342.1	23.6
Level of Service	D	E	F	E	C	D	E	B	C	F	F	C
Approach Delay (s)		78.1			59.0			23.0			326.1	
Approach LOS		E			E			C			F	

Intersection Summary					
HCM 2000 Control Delay	174.3	HCM 2000 Level of Service	F		
HCM 2000 Volume to Capacity ratio	1.32				
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.6		
Intersection Capacity Utilization	122.5%	ICU Level of Service	H		
Analysis Period (min)	15				

c Critical Lane Group



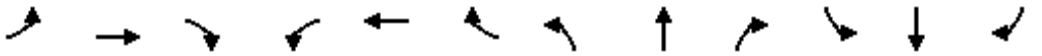
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	5	232	340	340	381	3887	5304	5
v/c Ratio	0.02	0.42	1.02	1.02	0.68	1.38	1.82	0.01
Control Delay	30.0	33.6	101.3	101.3	39.7	195.9	396.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	33.6	101.3	101.3	39.7	195.9	396.1	0.0
Queue Length 50th (m)	1.0	45.0	102.5	102.5	74.1	~549.6	~847.9	0.0
Queue Length 95th (m)	4.2	70.2	#199.8	#199.8	#139.0	m#520.2	m#537.8	m0.0
Internal Link Dist (m)		327.0		348.8		307.3	251.4	
Turn Bay Length (m)								
Base Capacity (vph)	271	557	333	333	557	2814	2913	922
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.42	1.02	1.02	0.68	1.38	1.82	0.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	225	660	0	370	0	3070	700	0	5145	5
Future Volume (vph)	5	0	225	660	0	370	0	3070	700	0	5145	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		6.0	6.0	6.0		6.0			6.0	6.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.91			0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		0.99			1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1805	1599		1649	1649	1568		4819			5036	1543
Flt Permitted	0.30	1.00		0.60	0.60	1.00		1.00			1.00	1.00
Satd. Flow (perm)	576	1599		1047	1047	1568		4819			5036	1543
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	0	232	680	0	381	0	3165	722	0	5304	5
RTOR Reduction (vph)	0	20	0	0	0	58	0	28	0	0	0	2
Lane Group Flow (vph)	5	212	0	340	340	323	0	3859	0	0	5304	3
Confl. Peds. (#/hr)							10		5	5		10
Heavy Vehicles (%)	0%	0%	1%	4%	0%	3%	0%	4%	4%	0%	3%	0%
Turn Type	pm+pt	NA		Perm	NA	Perm		NA			NA	Perm
Protected Phases	3	8			4			2			6	
Permitted Phases	8			4		4						6
Actuated Green, G (s)	50.0	50.0		43.6	43.6	43.6		76.0			76.0	76.0
Effective Green, g (s)	51.0	51.0		44.6	44.6	44.6		77.0			77.0	77.0
Actuated g/C Ratio	0.36	0.36		0.32	0.32	0.32		0.55			0.55	0.55
Clearance Time (s)	5.0	7.0		7.0	7.0	7.0		7.0			7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	230	582		333	333	499		2650			2769	848
v/s Ratio Prot	0.00	c0.13						0.80			c1.05	
v/s Ratio Perm	0.01			c0.32	0.32	0.21						0.00
v/c Ratio	0.02	0.36		1.02	1.02	0.65		1.46			1.92	0.00
Uniform Delay, d1	30.1	32.6		47.7	47.7	41.0		31.5			31.5	14.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.80			1.32	1.00
Incremental Delay, d2	0.0	0.4		54.8	54.8	2.9		205.4			412.1	0.0
Delay (s)	30.1	33.0		102.5	102.5	43.8		230.8			453.6	14.2
Level of Service	C	C		F	F	D		F			F	B
Approach Delay (s)		33.0			81.4			230.8			453.2	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	323.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	146.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

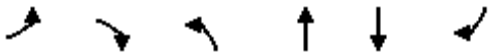
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	1663	1179	2321	3842
v/c Ratio	1.09	1.68	1.00	1.62
Control Delay	90.5	341.3	26.5	306.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	90.5	341.3	26.5	306.6
Queue Length 50th (m)	~281.3	~501.0	79.6	~587.2
Queue Length 95th (m)	#325.0	#585.6	m53.5	m211.0
Internal Link Dist (m)	190.2		56.8	307.3
Turn Bay Length (m)				
Base Capacity (vph)	1520	701	2328	2374
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.09	1.68	1.00	1.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

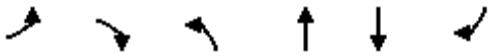
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1630	1155	0	2275	3765	0
Future Volume (vph)	1630	1155	0	2275	3765	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		4940	5036	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		4940	5036	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	1663	1179	0	2321	3842	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1663	1179	0	2321	3842	0
Confl. Peds. (#/hr)			10			10
Heavy Vehicles (%)	2%	2%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	2	
Permitted Phases		4				
Actuated Green, G (s)	61.0	61.0		65.0	65.0	
Effective Green, g (s)	62.0	62.0		66.0	66.0	
Actuated g/C Ratio	0.44	0.44		0.47	0.47	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1520	701		2328	2374	
v/s Ratio Prot	0.48			0.47	c0.76	
v/s Ratio Perm		c0.74				
v/c Ratio	1.09	1.68		1.00	1.62	
Uniform Delay, d1	39.0	39.0		36.9	37.0	
Progression Factor	1.00	1.00		0.56	0.99	
Incremental Delay, d2	53.3	313.1		5.0	278.4	
Delay (s)	92.3	352.1		25.6	315.2	
Level of Service	F	F		C	F	
Approach Delay (s)	200.0			25.6	315.2	
Approach LOS	F			C	F	

Intersection Summary			
HCM 2000 Control Delay	204.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.65		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	154.3%	ICU Level of Service	H
Analysis Period (min)	15		

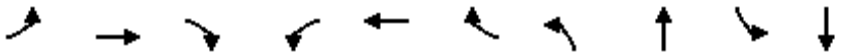
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	195	0	2255	3750	655
Future Volume (Veh/h)	0	195	0	2255	3750	655
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	210	0	2425	4032	704
Pedestrians	10					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				198	81	
pX, platoon unblocked	0.68	0.53	0.53			
vC, conflicting volume	5202	1706	4746			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2606	0	4961			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	63	100			
cM capacity (veh/h)	14	569	10			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	210	808	808	808	1613	1613	1510
Volume Left	0	0	0	0	0	0	0
Volume Right	210	0	0	0	0	0	704
cSH	569	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.37	0.48	0.48	0.48	0.95	0.95	0.89
Queue Length 95th (m)	13.5	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	15.0	0.0			0.0		
Approach LOS	B						

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	105.9%	ICU Level of Service	G	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	603	933	242	67	191	93	139	2077	330	3052
v/c Ratio	0.82	0.86	0.42	0.32	0.39	0.23	0.86	1.30	0.95	1.49
Control Delay	61.5	55.8	10.8	31.5	56.9	1.4	68.6	178.8	54.4	254.4
Queue Delay	2.3	49.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	104.8	11.3	31.5	56.9	1.4	68.6	178.8	54.4	254.4
Queue Length 50th (m)	86.4	135.3	9.1	11.3	26.2	0.0	28.7	~279.3	~92.3	~455.5
Queue Length 95th (m)	104.8	163.4	32.7	21.3	40.2	0.0	m#43.1	m#307.4	m48.8	m175.2
Internal Link Dist (m)		97.1			158.4			292.1		174.2
Turn Bay Length (m)	130.0			50.0			120.0		55.0	
Base Capacity (vph)	841	1087	574	210	522	413	162	1593	348	2049
Starvation Cap Reductn	127	337	101	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	1.24	0.51	0.32	0.37	0.23	0.86	1.30	0.95	1.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

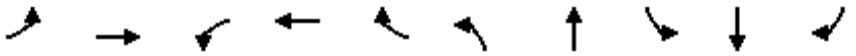
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	585	905	235	65	185	90	135	1980	35	320	2520	440
Future Volume (vph)	585	905	235	65	185	90	135	1980	35	320	2520	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0		3.0	6.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3273	3610	1447	1735	3438	1553	1671	5021		1736	4923	
Flt Permitted	0.95	1.00	1.00	0.19	1.00	1.00	0.09	1.00		0.09	1.00	
Satd. Flow (perm)	3273	3610	1447	346	3438	1553	164	5021		159	4923	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	603	933	242	67	191	93	139	2041	36	330	2598	454
RTOR Reduction (vph)	0	0	139	0	0	79	0	1	0	0	17	0
Lane Group Flow (vph)	603	933	103	67	191	14	139	2076	0	330	3035	0
Confl. Peds. (#/hr)			5	5			15		5	5		15
Heavy Vehicles (%)	7%	0%	9%	4%	5%	4%	8%	3%	3%	4%	2%	4%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2			6		
Actuated Green, G (s)	30.4	40.9	40.9	29.7	20.1	20.1	50.1	42.0		68.5	55.4	
Effective Green, g (s)	31.4	41.9	41.9	31.7	21.1	21.1	52.1	43.0		69.5	56.4	
Actuated g/C Ratio	0.22	0.30	0.30	0.23	0.15	0.15	0.37	0.31		0.50	0.40	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	5.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.5	4.0	4.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	734	1080	433	183	518	234	158	1542		343	1983	
v/s Ratio Prot	c0.18	c0.26		0.03	0.06		0.06	0.41		c0.16	c0.62	
v/s Ratio Perm			0.07	0.05		0.01	0.27			0.32		
v/c Ratio	0.82	0.86	0.24	0.37	0.37	0.06	0.88	1.35		0.96	1.53	
Uniform Delay, d1	51.6	46.4	37.0	44.0	53.5	50.9	36.0	48.5		44.5	41.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.22	0.99		1.25	1.13	
Incremental Delay, d2	7.4	7.3	0.3	1.5	0.6	0.1	31.3	159.1		7.7	238.9	
Delay (s)	59.0	53.7	37.3	45.4	54.1	51.1	75.4	207.1		63.4	286.1	
Level of Service	E	D	D	D	D	D	E	F		E	F	
Approach Delay (s)		53.3			51.6			198.8			264.4	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	187.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	117.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



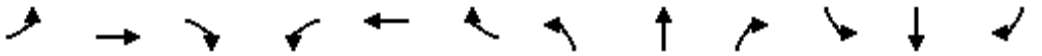
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	276	839	31	646	646	52	807	724	1240	401
v/c Ratio	0.87	0.81	0.17	0.80	0.97	0.33	0.79	0.90	1.34	0.49
Control Delay	87.8	51.9	30.2	58.6	47.4	24.0	52.6	75.1	187.3	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.8	51.9	30.2	58.6	47.4	24.0	52.6	75.1	187.3	22.1
Queue Length 50th (m)	41.5	122.5	5.7	93.4	81.9	6.5	115.6	115.2	~470.1	49.7
Queue Length 95th (m)	#66.7	#164.6	13.0	117.0	#167.1	12.9	141.9	m82.4	m#165.2	m31.9
Internal Link Dist (m)		551.4		604.3			115.4		292.1	
Turn Bay Length (m)	85.0		85.0		75.0	40.0		85.0		
Base Capacity (vph)	319	1041	248	825	670	160	1017	825	926	825
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.81	0.13	0.78	0.96	0.33	0.79	0.88	1.34	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

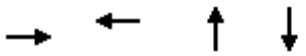
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	740	65	30	620	620	50	720	55	695	1190	385
Future Volume (vph)	265	740	65	30	620	620	50	720	55	695	1190	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.4		4.0	5.4	5.4	3.0	5.9		4.0	5.9	5.9
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3367	3357		1734	3438	1483	1770	3486		3400	1881	1498
Flt Permitted	0.95	1.00		0.17	1.00	1.00	0.10	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3367	3357		303	3438	1483	193	3486		3400	1881	1498
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	276	771	68	31	646	646	52	750	57	724	1240	401
RTOR Reduction (vph)	0	4	0	0	0	311	0	4	0	0	0	91
Lane Group Flow (vph)	276	835	0	31	646	336	52	803	0	724	1240	310
Confl. Peds. (#/hr)	25		15	15		25	20		10	10		20
Heavy Vehicles (%)	4%	6%	3%	4%	5%	4%	2%	2%	6%	3%	1%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases				4		4	2					6
Actuated Green, G (s)	12.3	42.3		38.7	34.0	34.0	43.3	37.7		32.0	65.1	65.1
Effective Green, g (s)	13.3	43.3		40.7	35.0	35.0	45.3	38.7		33.0	66.1	66.1
Actuated g/C Ratio	0.10	0.31		0.29	0.25	0.25	0.32	0.28		0.24	0.47	0.47
Clearance Time (s)	5.7	6.4		5.0	6.4	6.4	4.0	6.9		5.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	319	1038		146	859	370	136	963		801	888	707
v/s Ratio Prot	c0.08	0.25		0.01	0.19		0.02	0.23		c0.21	c0.66	
v/s Ratio Perm				0.05		c0.23	0.11					0.21
v/c Ratio	0.87	0.80		0.21	0.75	0.91	0.38	0.83		0.90	1.40	0.44
Uniform Delay, d1	62.5	44.5		37.0	48.5	50.9	37.4	47.6		52.0	37.0	24.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.42	1.14	1.62
Incremental Delay, d2	20.9	4.6		0.7	3.8	24.9	1.8	8.4		1.5	179.0	0.2
Delay (s)	83.4	49.1		37.8	52.2	75.8	39.2	56.0		75.4	221.3	39.9
Level of Service	F	D		D	D	E	D	E		E	F	D
Approach Delay (s)		57.6			63.4			55.0			145.9	
Approach LOS		E			E			E			F	

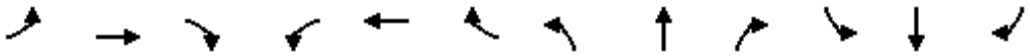
Intersection Summary			
HCM 2000 Control Delay	95.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	114.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	155	109	379	413
v/c Ratio	0.14	0.10	0.68	0.75
Control Delay	2.3	10.1	32.8	36.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.3	10.1	32.8	36.7
Queue Length 50th (m)	1.8	8.1	58.9	67.3
Queue Length 95th (m)	5.7	18.5	74.5	83.8
Internal Link Dist (m)	146.6	179.3	180.3	263.4
Turn Bay Length (m)				
Base Capacity (vph)	1082	1074	812	808
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.47	0.51

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	95	40	10	85	0	0	295	35	10	350	0
Future Volume (vph)	0	95	40	10	85	0	0	295	35	10	350	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			1.00			0.99			1.00	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1824			1870			1818			1844	
Flt Permitted		1.00			0.97			1.00			0.99	
Satd. Flow (perm)		1824			1832			1818			1820	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	109	46	11	98	0	0	339	40	11	402	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	143	0	0	109	0	0	373	0	0	413	0
Heavy Vehicles (%)	0%	0%	0%	11%	0%	0%	50%	3%	3%	0%	3%	0%
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		51.8			51.8			26.2			26.2	
Effective Green, g (s)		52.8			52.8			27.2			27.2	
Actuated g/C Ratio		0.59			0.59			0.30			0.30	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1070			1074			549			550	
v/s Ratio Prot		c0.08						0.21				
v/s Ratio Perm					0.06						c0.23	
v/c Ratio		0.13			0.10			0.68			0.75	
Uniform Delay, d1		8.3			8.2			27.6			28.3	
Progression Factor		0.25			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.2			3.5			5.7	
Delay (s)		2.4			8.4			31.0			34.1	
Level of Service		A			A			C			C	
Approach Delay (s)		2.4			8.4			31.0			34.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	40	110	95	270	125	35
Future Volume (Veh/h)	40	110	95	270	125	35
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	49	134	116	329	152	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			183		677	116
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			183		677	116
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		61	95
cM capacity (veh/h)			1392		385	928

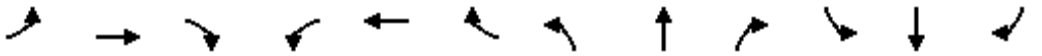
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	183	445	195
Volume Left	0	116	152
Volume Right	134	0	43
cSH	1700	1392	442
Volume to Capacity	0.11	0.08	0.44
Queue Length 95th (m)	0.0	2.2	17.7
Control Delay (s)	0.0	2.6	19.4
Lane LOS		A	C
Approach Delay (s)	0.0	2.6	19.4
Approach LOS			C

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	27	1441	43	1071	250	190	76	185	27
v/c Ratio	0.14	0.75	0.42	0.55	0.66	0.32	0.39	0.58	0.08
Control Delay	12.3	17.9	27.8	14.0	32.1	19.6	23.8	25.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	17.9	27.8	14.0	32.1	19.6	23.8	25.9	4.9
Queue Length 50th (m)	2.2	96.5	4.2	61.0	33.9	20.5	13.6	34.6	0.4
Queue Length 95th (m)	7.5	133.8	#19.0	84.8	52.5	36.1	26.9	53.8	5.6
Internal Link Dist (m)		585.1		130.4		189.6		92.5	
Turn Bay Length (m)	45.0		30.0				25.0		25.0
Base Capacity (vph)	196	1926	103	1952	377	751	316	522	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.75	0.42	0.55	0.66	0.25	0.24	0.35	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	1110	215	40	950	35	230	115	60	70	170	25
Future Volume (vph)	25	1110	215	40	950	35	230	115	60	70	170	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		3.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1653	3381		1752	3450		1733	1779		1694	1881	1524
Flt Permitted	0.20	1.00		0.10	1.00		0.41	1.00		0.64	1.00	1.00
Satd. Flow (perm)	348	3381		183	3450		750	1779		1138	1881	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	1207	234	43	1033	38	250	125	65	76	185	27
RTOR Reduction (vph)	0	15	0	0	3	0	0	24	0	0	0	22
Lane Group Flow (vph)	27	1426	0	43	1068	0	250	166	0	76	185	5
Confl. Peds. (#/hr)	5					5	5		5	5		5
Heavy Vehicles (%)	9%	4%	5%	3%	4%	3%	4%	0%	2%	6%	1%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	49.9	49.9		49.9	49.9		28.1	28.1		14.3	14.3	14.3
Effective Green, g (s)	50.9	50.9		50.9	50.9		29.1	29.1		15.3	15.3	15.3
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.32	0.32		0.17	0.17	0.17
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	196	1912		103	1951		360	575		193	319	259
v/s Ratio Prot		c0.42			0.31		c0.08	0.09			0.10	
v/s Ratio Perm	0.08			0.23			c0.14			0.07		0.00
v/c Ratio	0.14	0.75		0.42	0.55		0.69	0.29		0.39	0.58	0.02
Uniform Delay, d1	9.2	14.7		11.1	12.3		24.4	22.7		33.2	34.4	31.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.56	0.55	1.00
Incremental Delay, d2	1.5	2.7		12.0	1.1		5.7	0.3		1.3	2.5	0.0
Delay (s)	10.7	17.4		23.1	13.4		30.1	23.0		19.9	21.5	31.1
Level of Service	B	B		C	B		C	C		B	C	C
Approach Delay (s)		17.3			13.8			27.0			22.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	260	0	0	345	0	0
Future Volume (Veh/h)	260	0	0	345	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	283	0	0	375	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	402					
pX, platoon unblocked			0.93		0.93	0.93
vC, conflicting volume			283		658	283
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			187		592	187
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1286		435	792

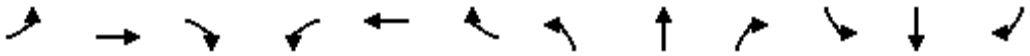
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	283	375	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.17	0.22	0.16
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	260	0	0	345	0	0
Future Volume (Veh/h)	260	0	0	345	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	283	0	0	375	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			283		658	283
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			283		658	283
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1279		429	756

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	283	375	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1279	1700
Volume to Capacity	0.17	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		



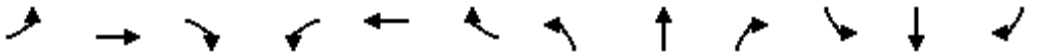
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	95	0	0	85	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	95	0	0	85	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	103	0	0	92	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		313			152							
pX, platoon unblocked												
vC, conflicting volume	92			103			195	195	103	195	195	92
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92			103			195	195	103	195	195	92
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1503			1489			764	700	952	764	700	965

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	103	92	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1503	1489	1700	1700
Volume to Capacity	0.00	0.00	0.06	0.32
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	103	408	92
v/c Ratio	0.10	0.60	0.06
Control Delay	9.0	22.4	0.1
Queue Delay	0.0	0.0	0.0
Total Delay	9.0	22.4	0.1
Queue Length 50th (m)	7.5	40.1	0.0
Queue Length 95th (m)	15.8	57.4	0.0
Internal Link Dist (m)		150.5	264.2
Turn Bay Length (m)	30.0		
Base Capacity (vph)	1029	1101	1687
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.10	0.37	0.05

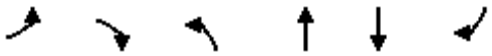
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	0	0	0	0	0	0	375	0	0	0	85
Future Volume (vph)	95	0	0	0	0	0	0	375	0	0	0	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0							5.0			5.0	
Lane Util. Factor	1.00							0.95			0.95	
Frt	1.00							1.00			0.85	
Flt Protected	0.95							1.00			1.00	
Satd. Flow (prot)	1770							3539			3008	
Flt Permitted	0.72							1.00			1.00	
Satd. Flow (perm)	1335							3539			3008	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	0	0	0	0	0	0	408	0	0	0	92
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	74	0
Lane Group Flow (vph)	103	0	0	0	0	0	0	408	0	0	18	0
Turn Type	pm+pt			pm+pt			Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	61.8							16.2			16.2	
Effective Green, g (s)	62.8							17.2			17.2	
Actuated g/C Ratio	0.70							0.19			0.19	
Clearance Time (s)	4.0							6.0			6.0	
Vehicle Extension (s)	3.0							3.0			3.0	
Lane Grp Cap (vph)	965							676			574	
v/s Ratio Prot	c0.01							c0.12			0.01	
v/s Ratio Perm	c0.07											
v/c Ratio	0.11							0.60			0.03	
Uniform Delay, d1	4.4							33.3			29.6	
Progression Factor	1.99							0.60			1.00	
Incremental Delay, d2	0.0							1.0			0.0	
Delay (s)	8.8							21.1			29.6	
Level of Service	A							C			C	
Approach Delay (s)		8.8			0.0			21.1			29.6	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

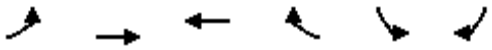
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.22	0.00	0.12
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

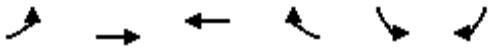
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	360	850	80	0	40	365
Future Volume (Veh/h)	360	850	80	0	40	365
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	391	924	87	0	43	397
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		182				
pX, platoon unblocked					0.79	
vC, conflicting volume	87				1331	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	87				886	44
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	74				74	61
cM capacity (veh/h)	1507				166	1017

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	391	462	462	58	29	440
Volume Left	391	0	0	0	0	43
Volume Right	0	0	0	0	0	397
cSH	1507	1700	1700	1700	1700	678
Volume to Capacity	0.26	0.27	0.27	0.03	0.02	0.65
Queue Length 95th (m)	8.3	0.0	0.0	0.0	0.0	38.3
Control Delay (s)	8.2	0.0	0.0	0.0	0.0	19.6
Lane LOS	A					C
Approach Delay (s)	2.4			0.0		19.6
Approach LOS						C

Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	58.0%	ICU Level of Service		B
Analysis Period (min)	15			



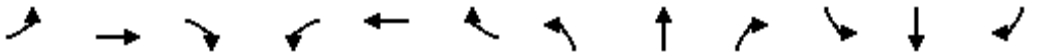
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	930	80	0	0	0
Future Volume (Veh/h)	0	930	80	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1011	87	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			141			
pX, platoon unblocked						
vC, conflicting volume	87				592	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	87				592	44
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1507				437	1017

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	0	506	506	58	29	0	0
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.30	0.30	0.03	0.02	0.57	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A	A
Approach Delay (s)	0.0			0.0		0.0	
Approach LOS						A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT
Lane Group Flow (vph)	408	598	87
v/c Ratio	0.72	0.41	0.09
Control Delay	27.4	19.5	17.7
Queue Delay	0.0	0.0	0.0
Total Delay	27.4	19.5	17.7
Queue Length 50th (m)	56.5	42.0	6.5
Queue Length 95th (m)	74.0	49.3	5.2
Internal Link Dist (m)		117.0	103.5
Turn Bay Length (m)	100.0		
Base Capacity (vph)	566	1612	1101
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.72	0.37	0.08

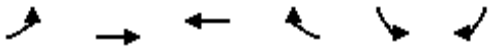
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	550	0	0	80	0	0	0	0	0	0	0
Future Volume (vph)	375	550	0	0	80	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0			5.0							
Lane Util. Factor	1.00	0.95			0.95							
Frt	1.00	1.00			1.00							
Flt Protected	0.95	1.00			1.00							
Satd. Flow (prot)	1770	3539			3539							
Flt Permitted	0.62	1.00			1.00							
Satd. Flow (perm)	1154	3539			3539							
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	408	598	0	0	87	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	408	598	0	0	87	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm			pm+pt		
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.8	35.8			22.8							
Effective Green, g (s)	36.8	36.8			23.8							
Actuated g/C Ratio	0.41	0.41			0.26							
Clearance Time (s)	4.0	6.0			6.0							
Vehicle Extension (s)	3.0	3.0			3.0							
Lane Grp Cap (vph)	540	1447			935							
v/s Ratio Prot	c0.08	0.17			0.02							
v/s Ratio Perm	c0.22											
v/c Ratio	0.76	0.41			0.09							
Uniform Delay, d1	21.8	18.9			25.0							
Progression Factor	1.00	1.00			0.73							
Incremental Delay, d2	6.0	0.9			0.2							
Delay (s)	27.8	19.8			18.4							
Level of Service	C	B			B							
Approach Delay (s)		23.0			18.4			0.0			0.0	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



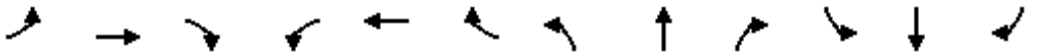
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	550	80	0	0	0
Future Volume (Veh/h)	0	550	80	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	598	87	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		127	245			
pX, platoon unblocked					0.88	
vC, conflicting volume	87				386	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	87				42	44
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1507				852	1017

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	199	399	58	29	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1507	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.23	0.03	0.02	0.60	0.19
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS					A	A
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	592	87	245	266
v/c Ratio	0.26	0.04	0.56	0.61
Control Delay	11.4	7.0	43.0	23.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.4	7.0	43.0	23.6
Queue Length 50th (m)	32.7	2.4	44.5	24.2
Queue Length 95th (m)	23.4	6.5	55.1	43.8
Internal Link Dist (m)	221.4	55.1	92.5	315.1
Turn Bay Length (m)				
Base Capacity (vph)	2283	2319	828	828
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.04	0.30	0.32

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	475	70	0	80	0	0	225	0	0	245	0
Future Volume (vph)	0	475	70	0	80	0	0	225	0	0	245	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.98			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3471			3539			1863			1863	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		3471			3539			1863			1863	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	516	76	0	87	0	0	245	0	0	266	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	584	0	0	87	0	0	245	0	0	266	0
Turn Type		NA			NA			NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		58.0			58.0			20.0			20.0	
Effective Green, g (s)		59.0			59.0			21.0			21.0	
Actuated g/C Ratio		0.66			0.66			0.23			0.23	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2275			2320			434			434	
v/s Ratio Prot		c0.17			0.02			0.13			c0.14	
v/s Ratio Perm												
v/c Ratio		0.26			0.04			0.56			0.61	
Uniform Delay, d1		6.4			5.5			30.5			30.9	
Progression Factor		1.57			1.00			1.29			0.58	
Incremental Delay, d2		0.3			0.0			1.7			2.5	
Delay (s)		10.3			5.5			41.1			20.5	
Level of Service		B			A			D			C	
Approach Delay (s)		10.3			5.5			41.1			20.5	
Approach LOS		B			A			D			C	

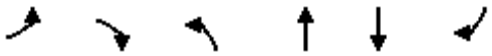
Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.36	0.01	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

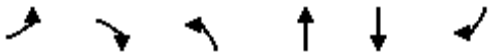
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.20	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

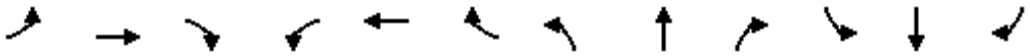
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.25	0.00	0.23
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

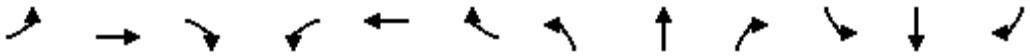
Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		0.0%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	95	0	0	80	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	95	0	0	80	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	103	0	0	87	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					43							
pX, platoon unblocked												
vC, conflicting volume	87			103			190	190	103	190	190	87
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	87			103			190	190	103	190	190	87
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1509			1489			770	705	952	770	705	971

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	103	87	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1509	1489	1700	1700
Volume to Capacity	0.00	0.00	0.15	0.27
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	8.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		40										
pX, platoon unblocked												
vC, conflicting volume	0			0			0	0	0	0	0	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			0	0	0	0	0	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1623			1623			1023	896	1085	1023	896	1085

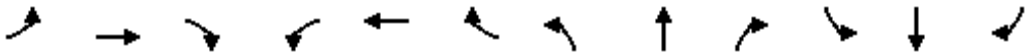
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.18	0.30
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	0.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.21	0.03	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



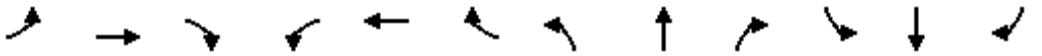
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	103	216	299	809	278	345	304	3211	928	211	2160	119
v/c Ratio	0.40	0.87	0.72	0.98	0.48	0.67	0.89	1.59	1.13	0.87	1.26	0.21
Control Delay	33.8	90.8	24.1	80.0	42.8	32.4	52.7	299.2	91.5	68.3	161.6	1.4
Queue Delay	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.4	0.0	1.6	0.0
Total Delay	33.8	90.8	25.3	80.0	42.8	32.4	52.7	299.2	91.9	68.3	163.2	1.4
Queue Length 50th (m)	18.4	62.3	16.5	121.7	65.8	54.6	78.5	~489.0	~193.9	44.0	~297.8	0.0
Queue Length 95th (m)	31.5	#107.2	51.0	#164.7	94.5	92.2	m37.8	m141.7	m52.4	#89.4	#327.2	1.6
Internal Link Dist (m)		361.1			497.8			251.4			315.2	
Turn Bay Length (m)	80.0			165.0		15.0				85.0		80.0
Base Capacity (vph)	260	255	421	824	580	520	363	2021	820	250	1712	557
Starvation Cap Reductn	0	0	0	0	0	0	0	0	51	0	0	0
Spillback Cap Reductn	0	0	30	0	0	0	0	0	0	0	605	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.85	0.76	0.98	0.48	0.66	0.84	1.59	1.21	0.84	1.95	0.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

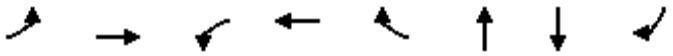
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	210	290	785	270	335	295	3115	900	205	2095	115
Future Volume (vph)	100	210	290	785	270	335	295	3115	900	205	2095	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.8	5.8	4.7	5.8	5.8	3.0	5.1	5.1	3.0	5.1	5.1
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.86	1.00	1.00	0.95	1.00	1.00	0.81
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1716	1881	1599	3467	1881	1388	1787	5136	1525	1805	5085	1300
Flt Permitted	0.59	1.00	1.00	0.95	1.00	1.00	0.08	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1063	1881	1599	3467	1881	1388	150	5136	1525	161	5085	1300
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	103	216	299	809	278	345	304	3211	928	211	2160	119
RTOR Reduction (vph)	0	0	206	0	0	92	0	0	221	0	0	79
Lane Group Flow (vph)	103	216	93	809	278	253	304	3211	707	211	2160	40
Confl. Peds. (#/hr)	55					55	80		15	15		80
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	1%	1%	1%	0%	2%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Actuated Green, G (s)	25.4	17.5	17.5	32.3	41.9	41.9	71.6	54.1	54.1	59.7	46.2	46.2
Effective Green, g (s)	27.4	18.5	18.5	33.3	42.9	42.9	72.6	55.1	55.1	61.7	47.2	47.2
Actuated g/C Ratio	0.20	0.13	0.13	0.24	0.31	0.31	0.52	0.39	0.39	0.44	0.34	0.34
Clearance Time (s)	5.7	6.8	6.8	5.7	6.8	6.8	4.0	6.1	6.1	4.0	6.1	6.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	249	248	211	824	576	425	339	2021	600	241	1714	438
v/s Ratio Prot	0.03	c0.11		c0.23	0.15		c0.14	c0.63		0.09	0.42	
v/s Ratio Perm	0.05		0.06			0.18	0.32		0.46	0.29		0.03
v/c Ratio	0.41	0.87	0.44	0.98	0.48	0.59	0.90	1.59	1.18	0.88	1.26	0.09
Uniform Delay, d1	48.2	59.6	56.0	53.0	39.5	41.2	43.4	42.5	42.5	39.4	46.4	31.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.29	1.19	1.37	1.00	1.00	1.00
Incremental Delay, d2	1.1	26.6	1.5	26.7	0.6	2.2	3.2	265.2	82.2	27.8	122.0	0.4
Delay (s)	49.3	86.2	57.5	79.8	40.2	43.4	59.3	315.6	140.3	67.2	168.4	32.2
Level of Service	D	F	E	E	D	D	E	F	F	E	F	C
Approach Delay (s)		66.1			63.3			261.5			153.3	
Approach LOS		E			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	186.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	121.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



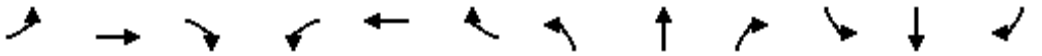
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	27	287	420	415	665	5489	3707	16
v/c Ratio	0.12	0.49	1.33	1.41	1.18	1.99	1.35	0.02
Control Delay	28.2	37.5	207.0	238.5	136.7	468.1	178.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	28.2	37.5	207.0	238.5	136.7	468.1	178.7	0.0
Queue Length 50th (m)	4.9	64.1	~175.1	~178.0	~231.5	~913.6	~518.4	0.0
Queue Length 95th (m)	11.6	92.9	#246.4	#249.2	#309.4	m#595.2	m#426.3	m0.0
Internal Link Dist (m)		327.0		348.8		307.3	251.4	
Turn Bay Length (m)								
Base Capacity (vph)	222	590	315	295	562	2756	2751	815
Starvation Cap Reductn	0	0	0	0	0	0	150	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.49	1.33	1.41	1.18	1.99	1.43	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	5	265	775	10	625	0	4590	570	0	3485	15
Future Volume (vph)	25	5	265	775	10	625	0	4590	570	0	3485	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		6.0	6.0	6.0		6.0			6.0	6.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.91			0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1805	1604		1681	1688	1583		5026			5036	1437
Flt Permitted	0.22	1.00		0.55	0.51	1.00		1.00			1.00	1.00
Satd. Flow (perm)	424	1604		967	903	1583		5026			5036	1437
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	5	282	824	11	665	0	4883	606	0	3707	16
RTOR Reduction (vph)	0	0	0	0	0	44	0	11	0	0	0	7
Lane Group Flow (vph)	27	287	0	420	415	621	0	5478	0	0	3707	9
Confl. Peds. (#/hr)							15		10	10		15
Heavy Vehicles (%)	0%	0%	1%	2%	0%	2%	0%	1%	1%	0%	3%	6%
Turn Type	pm+pt	NA		Perm	NA	Perm		NA			NA	Perm
Protected Phases	3	8			4			2			6	
Permitted Phases	8			4		4						6
Actuated Green, G (s)	52.3	52.3		44.8	44.8	44.8		73.7			73.7	73.7
Effective Green, g (s)	53.3	53.3		45.8	45.8	45.8		74.7			74.7	74.7
Actuated g/C Ratio	0.38	0.38		0.33	0.33	0.33		0.53			0.53	0.53
Clearance Time (s)	4.5	7.0		7.0	7.0	7.0		7.0			7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	200	610		316	295	517		2681			2687	766
v/s Ratio Prot	0.00	c0.18						c1.09			0.74	
v/s Ratio Perm	0.05			0.43	c0.46	0.39						0.01
v/c Ratio	0.14	0.47		1.33	1.41	1.20		2.04			1.38	0.01
Uniform Delay, d1	30.1	32.7		47.1	47.1	47.1		32.6			32.6	15.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.85			0.60	1.00
Incremental Delay, d2	0.3	0.6		168.3	202.2	107.6		469.6			171.0	0.0
Delay (s)	30.4	33.3		215.4	249.3	154.7		497.2			190.6	15.3
Level of Service	C	C		F	F	F		F			F	B
Approach Delay (s)		33.0			197.9			497.2			189.8	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	339.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	171.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

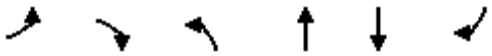
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	1947	921	3453	3184
v/c Ratio	1.36	1.41	1.36	1.25
Control Delay	198.7	224.8	188.8	144.0
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	198.7	224.8	188.9	144.0
Queue Length 50th (m)	~383.0	~358.6	~495.7	~422.0
Queue Length 95th (m)	#425.7	#440.9 m	#441.3 m	195.7
Internal Link Dist (m)	190.2		56.8	307.3
Turn Bay Length (m)				
Base Capacity (vph)	1436	655	2542	2542
Starvation Cap Reductn	0	0	136	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.36	1.41	1.44	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

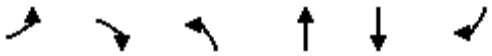
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1850	875	0	3280	3025	0
Future Volume (vph)	1850	875	0	3280	3025	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3467	1583		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3467	1583		5085	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1947	921	0	3453	3184	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1947	921	0	3453	3184	0
Confl. Peds. (#/hr)			25			25
Heavy Vehicles (%)	1%	2%	0%	2%	2%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	2	
Permitted Phases		4				
Actuated Green, G (s)	57.0	57.0		69.0	69.0	
Effective Green, g (s)	58.0	58.0		70.0	70.0	
Actuated g/C Ratio	0.41	0.41		0.50	0.50	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1436	655		2542	2542	
v/s Ratio Prot	0.56			c0.68	0.63	
v/s Ratio Perm		c0.58				
v/c Ratio	1.36	1.41		1.36	1.25	
Uniform Delay, d1	41.0	41.0		35.0	35.0	
Progression Factor	1.00	1.00		0.79	0.92	
Incremental Delay, d2	164.8	191.8		162.1	114.0	
Delay (s)	205.8	232.8		189.9	146.0	
Level of Service	F	F		F	F	
Approach Delay (s)	214.5			189.9	146.0	
Approach LOS	F			F	F	

Intersection Summary			
HCM 2000 Control Delay	182.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	126.2%	ICU Level of Service	H
Analysis Period (min)	15		

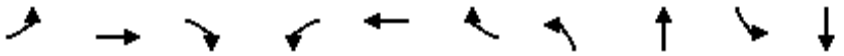
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	130	0	3280	3055	530
Future Volume (Veh/h)	0	130	0	3280	3055	530
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	138	0	3489	3250	564
Pedestrians	20					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				198	81	
pX, platoon unblocked	0.66	0.51	0.51			
vC, conflicting volume	4715	1385	3834			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1659	0	3181			
tC, single (s)	6.8	7.1	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	74	100			
cM capacity (veh/h)	59	529	49			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	138	1163	1163	1163	1300	1300	1214
Volume Left	0	0	0	0	0	0	0
Volume Right	138	0	0	0	0	0	564
cSH	529	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.26	0.68	0.68	0.68	0.76	0.76	0.71
Queue Length 95th (m)	8.3	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	14.2	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	14.2	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		



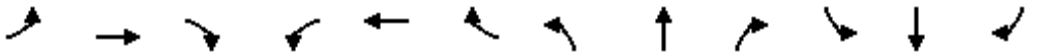
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	979	407	144	67	500	253	253	1923	196	2701
v/c Ratio	1.03	0.32	0.24	0.23	1.02	0.67	1.01	1.14	0.81	1.70
Control Delay	87.1	35.5	6.2	27.5	105.1	26.7	88.8	109.9	44.0	347.1
Queue Delay	26.6	0.0	0.0	0.0	0.0	1.5	0.0	3.4	0.0	0.0
Total Delay	113.7	35.5	6.2	27.5	105.1	28.2	88.8	113.3	44.0	347.1
Queue Length 50th (m)	~157.5	47.7	0.0	10.8	~81.1	18.7	~66.4	~237.1	43.5	~419.1
Queue Length 95th (m)	#200.2	63.0	15.9	20.4	#118.7	50.4	m#72.6	m#237.8	m32.2	m#292.4
Internal Link Dist (m)		97.1			158.4			292.1		174.2
Turn Bay Length (m)	130.0			50.0			120.0		55.0	
Base Capacity (vph)	947	1258	594	296	489	375	251	1691	253	1591
Starvation Cap Reductn	228	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	34	0	912	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.36	0.32	0.24	0.23	1.02	0.74	1.01	2.47	0.77	1.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

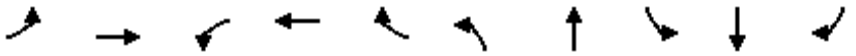
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	950	395	140	65	485	245	245	1830	35	190	2230	390
Future Volume (vph)	950	395	140	65	485	245	245	1830	35	190	2230	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0		3.0	6.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	3610	1436	1782	3610	1599	1719	5118		1752	5006	
Flt Permitted	0.95	1.00	1.00	0.51	1.00	1.00	0.09	1.00		0.09	1.00	
Satd. Flow (perm)	3400	3610	1436	962	3610	1599	162	5118		173	5006	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	979	407	144	67	500	253	253	1887	36	196	2299	402
RTOR Reduction (vph)	0	0	94	0	0	156	0	1	0	0	18	0
Lane Group Flow (vph)	979	407	50	67	500	97	253	1922	0	196	2683	0
Confl. Peds. (#/hr)			20	20			15		15	15		15
Heavy Vehicles (%)	3%	0%	6%	0%	0%	1%	5%	1%	0%	3%	0%	4%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2			6		
Actuated Green, G (s)	38.0	47.8	47.8	29.0	19.4	19.4	58.8	43.8		55.4	41.6	
Effective Green, g (s)	39.0	48.8	48.8	31.0	20.4	20.4	60.8	44.8		57.4	42.6	
Actuated g/C Ratio	0.28	0.35	0.35	0.22	0.15	0.15	0.43	0.32		0.41	0.30	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	5.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.5	4.0	4.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	947	1258	500	275	526	232	248	1637		237	1523	
v/s Ratio Prot	c0.29	0.11		0.02	c0.14		c0.12	0.38		0.09	c0.54	
v/s Ratio Perm			0.03	0.04		0.06	0.33			0.25		
v/c Ratio	1.03	0.32	0.10	0.24	0.95	0.42	1.02	1.17		0.83	1.76	
Uniform Delay, d1	50.5	33.5	30.8	44.1	59.3	54.4	43.4	47.6		36.7	48.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.41	1.07		1.30	1.12	
Incremental Delay, d2	38.3	0.2	0.1	0.5	27.4	1.7	41.2	81.1		2.3	343.0	
Delay (s)	88.8	33.6	30.9	44.6	86.7	56.0	102.5	131.8		49.9	397.8	
Level of Service	F	C	C	D	F	E	F	F		D	F	
Approach Delay (s)		68.7			73.8			128.4			374.2	
Approach LOS		E			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	206.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	124.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



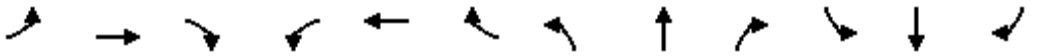
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	335	783	57	969	634	62	1067	521	1041	309
v/c Ratio	0.89	0.60	0.21	0.89	0.96	0.39	1.08	0.93	1.36	0.44
Control Delay	86.3	38.2	23.2	57.8	51.4	28.7	98.3	77.6	207.4	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	38.2	23.2	57.8	51.4	28.7	98.3	77.6	207.4	35.5
Queue Length 50th (m)	50.4	97.6	9.0	141.1	109.9	9.4	~184.4	83.1	~395.5	51.1
Queue Length 95th (m)	#77.7	123.0	17.6	#171.0	#194.0	18.1	#229.0	m53.0	m141.1	m29.0
Internal Link Dist (m)		551.4		604.3			115.4		292.1	
Turn Bay Length (m)	85.0		85.0		75.0	40.0		85.0		
Base Capacity (vph)	378	1307	306	1102	666	159	992	563	765	698
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.60	0.19	0.88	0.95	0.39	1.08	0.93	1.36	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



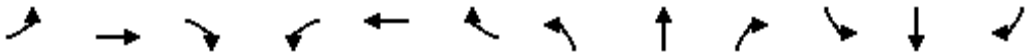
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	715	45	55	940	615	60	975	60	505	1010	300
Future Volume (vph)	325	715	45	55	940	615	60	975	60	505	1010	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.4		4.0	5.4	5.4	3.0	5.9		4.0	5.9	5.9
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3503		1803	3539	1470	1770	3571		3433	1881	1516
Flt Permitted	0.95	1.00		0.25	1.00	1.00	0.11	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3503		482	3539	1470	197	3571		3433	1881	1516
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	335	737	46	57	969	634	62	1005	62	521	1041	309
RTOR Reduction (vph)	0	3	0	0	0	208	0	3	0	0	0	83
Lane Group Flow (vph)	335	780	0	57	969	426	62	1064	0	521	1041	226
Confl. Peds. (#/hr)	45		10	10		45	10		20	20		10
Heavy Vehicles (%)	1%	2%	0%	0%	2%	2%	2%	0%	0%	2%	1%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases				4		4	2					6
Actuated Green, G (s)	14.3	51.1		49.7	42.9	42.9	42.4	36.8		22.0	54.2	54.2
Effective Green, g (s)	15.3	52.1		51.7	43.9	43.9	44.4	37.8		23.0	55.2	55.2
Actuated g/C Ratio	0.11	0.37		0.37	0.31	0.31	0.32	0.27		0.16	0.39	0.39
Clearance Time (s)	5.7	6.4		5.0	6.4	6.4	4.0	6.9		5.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	378	1303		251	1109	460	136	964		563	741	597
v/s Ratio Prot	c0.10	0.22		0.01	0.27		0.02	0.30		c0.15	c0.55	
v/s Ratio Perm				0.07		c0.29	0.12					0.15
v/c Ratio	0.89	0.60		0.23	0.87	0.93	0.46	1.10		0.93	1.40	0.38
Uniform Delay, d1	61.5	35.5		29.4	45.4	46.5	38.0	51.1		57.7	42.4	30.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.31	1.50	2.08
Incremental Delay, d2	21.2	0.7		0.5	7.8	24.6	2.4	61.7		2.9	182.9	0.2
Delay (s)	82.7	36.2		29.8	53.3	71.1	40.5	112.8		78.3	246.6	62.9
Level of Service	F	D		C	D	E	D	F		E	F	E
Approach Delay (s)		50.2			59.3			108.9			169.4	
Approach LOS		D			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	102.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	53	388	453	648
v/c Ratio	0.06	0.47	0.59	0.84
Control Delay	2.3	19.9	22.5	33.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.3	19.9	22.5	33.6
Queue Length 50th (m)	0.5	46.1	60.0	101.8
Queue Length 95th (m)	2.1	76.5	70.9	115.6
Internal Link Dist (m)	146.6	179.3	180.3	263.4
Turn Bay Length (m)				
Base Capacity (vph)	899	851	839	848
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.46	0.54	0.76

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	35	10	65	250	15	0	340	45	20	530	0
Future Volume (vph)	0	35	10	65	250	15	0	340	45	20	530	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			0.98			1.00	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1842			1862			1822			1896	
Flt Permitted		1.00			0.93			1.00			0.97	
Satd. Flow (perm)		1842			1750			1822			1851	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	41	12	76	294	18	0	400	53	24	624	0
RTOR Reduction (vph)	0	6	0	0	2	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	47	0	0	386	0	0	447	0	0	648	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	3%	0%	0%	0%	0%
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		41.4			41.4			36.6			36.6	
Effective Green, g (s)		42.4			42.4			37.6			37.6	
Actuated g/C Ratio		0.47			0.47			0.42			0.42	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		867			824			761			773	
v/s Ratio Prot		0.03						0.25				
v/s Ratio Perm					c0.22						c0.35	
v/c Ratio		0.05			0.47			0.59			0.84	
Uniform Delay, d1		12.9			16.2			20.2			23.5	
Progression Factor		0.17			1.00			1.00			1.00	
Incremental Delay, d2		0.1			1.9			1.2			7.9	
Delay (s)		2.3			18.1			21.4			31.4	
Level of Service		A			B			C			C	
Approach Delay (s)		2.3			18.1			21.4			31.4	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

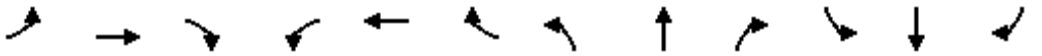
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	105	125	75	180	270	210
Future Volume (Veh/h)	105	125	75	180	270	210
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	118	140	84	202	303	236
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			258		558	188
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			258		558	188
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		34	72
cM capacity (veh/h)			1318		461	857

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	258	286	539
Volume Left	0	84	303
Volume Right	140	0	236
cSH	1700	1318	578
Volume to Capacity	0.15	0.06	0.93
Queue Length 95th (m)	0.0	1.6	95.9
Control Delay (s)	0.0	2.7	49.4
Lane LOS		A	E
Approach Delay (s)	0.0	2.7	49.4
Approach LOS			E

Intersection Summary			
Average Delay	25.3		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	48	1144	64	1399	181	202	85	112	53
v/c Ratio	0.18	0.48	0.23	0.65	0.70	0.52	0.44	0.30	0.14
Control Delay	6.6	8.0	13.7	14.6	46.7	33.0	19.0	13.8	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	8.0	13.7	14.6	46.7	33.0	19.0	13.8	3.7
Queue Length 50th (m)	2.3	44.7	5.5	89.5	30.5	29.8	7.3	7.5	1.3
Queue Length 95th (m)	6.6	70.4	15.3	127.8	49.9	47.8	21.3	18.6	4.6
Internal Link Dist (m)		585.1		130.4		189.6		92.5	
Turn Bay Length (m)	45.0		30.0				25.0		25.0
Base Capacity (vph)	268	2385	280	2160	338	497	249	487	467
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	1	0	0	9	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.48	0.23	0.65	0.54	0.41	0.34	0.23	0.11

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	970	105	60	1210	105	170	145	45	80	105	50
Future Volume (vph)	45	970	105	60	1210	105	170	145	45	80	105	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3480		1801	3491		1759	1818		1805	1827	1516
Flt Permitted	0.11	1.00		0.24	1.00		0.68	1.00		0.49	1.00	1.00
Satd. Flow (perm)	213	3480		456	3491		1268	1818		937	1827	1516
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	48	1032	112	64	1287	112	181	154	48	85	112	53
RTOR Reduction (vph)	0	8	0	0	6	0	0	14	0	0	0	42
Lane Group Flow (vph)	48	1136	0	64	1393	0	181	188	0	85	112	11
Confl. Peds. (#/hr)	5		5	5		5	5					5
Confl. Bikes (#/hr)												5
Heavy Vehicles (%)	2%	2%	1%	0%	2%	1%	2%	1%	0%	0%	4%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	60.5	60.5		52.9	52.9		17.5	17.5		17.5	17.5	17.5
Effective Green, g (s)	61.5	61.5		53.9	53.9		18.5	18.5		18.5	18.5	18.5
Actuated g/C Ratio	0.68	0.68		0.60	0.60		0.21	0.21		0.21	0.21	0.21
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	225	2378		273	2090		260	373		192	375	311
v/s Ratio Prot	0.01	c0.33			c0.40			0.10			0.06	
v/s Ratio Perm	0.13			0.14			c0.14			0.09		0.01
v/c Ratio	0.21	0.48		0.23	0.67		0.70	0.51		0.44	0.30	0.04
Uniform Delay, d1	8.0	6.7		8.4	12.0		33.1	31.7		31.2	30.3	28.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.41	0.41	1.22
Incremental Delay, d2	0.5	0.7		2.0	1.7		7.9	1.1		1.5	0.4	0.0
Delay (s)	8.5	7.4		10.4	13.8		41.0	32.8		14.2	12.9	35.0
Level of Service	A	A		B	B		D	C		B	B	C
Approach Delay (s)		7.4			13.6			36.7			18.0	
Approach LOS		A			B			D			B	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	290	0	0	545	0	0
Future Volume (Veh/h)	290	0	0	545	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	315	0	0	592	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	402					
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			315		907	315
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			279		889	279
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1246		304	737

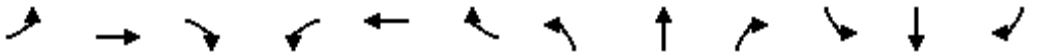
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	315	592	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.19	0.35	0.06
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	290	0	0	545	0	0
Future Volume (Veh/h)	290	0	0	545	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	315	0	0	592	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			315		907	315
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			315		907	315
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1245		306	725

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	315	592	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1245	1700
Volume to Capacity	0.19	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	35	0	0	250	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	35	0	0	250	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	38	0	0	272	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		313			152							
pX, platoon unblocked												
vC, conflicting volume	272			38			310	310	38	310	310	272
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	272			38			310	310	38	310	310	272
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1291			1572			642	605	1034	642	605	767

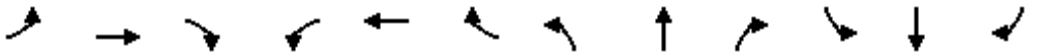
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	38	272	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1291	1572	1700	1700
Volume to Capacity	0.00	0.00	0.25	0.16
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	16.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	38	147	272
v/c Ratio	0.04	0.21	0.19
Control Delay	6.8	33.0	0.3
Queue Delay	0.0	0.0	0.0
Total Delay	6.8	33.0	0.3
Queue Length 50th (m)	0.3	13.1	0.0
Queue Length 95th (m)	m4.8	23.6	0.0
Internal Link Dist (m)		150.5	264.2
Turn Bay Length (m)	30.0		
Base Capacity (vph)	974	1297	1793
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.04	0.11	0.15

Intersection Summary

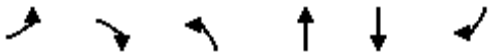
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	0	0	0	0	0	0	135	0	0	0	250
Future Volume (vph)	35	0	0	0	0	0	0	135	0	0	0	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0							5.0			5.0	
Lane Util. Factor	1.00							0.95			0.95	
Frt	1.00							1.00			0.85	
Flt Protected	0.95							1.00			1.00	
Satd. Flow (prot)	1770							3539			3008	
Flt Permitted	0.76							1.00			1.00	
Satd. Flow (perm)	1410							3539			3008	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	0	0	0	0	0	0	147	0	0	0	272
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	218	0
Lane Group Flow (vph)	38	0	0	0	0	0	0	147	0	0	54	0
Turn Type	Perm			Perm			pm+pt	NA		pm+pt	NA	
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	61.2							16.8			16.8	
Effective Green, g (s)	62.2							17.8			17.8	
Actuated g/C Ratio	0.69							0.20			0.20	
Clearance Time (s)	6.0							6.0			6.0	
Vehicle Extension (s)	3.0							3.0			3.0	
Lane Grp Cap (vph)	974							699			594	
v/s Ratio Prot								c0.04			0.02	
v/s Ratio Perm	c0.03											
v/c Ratio	0.04							0.21			0.09	
Uniform Delay, d1	4.4							30.2			29.5	
Progression Factor	0.98							1.15			1.00	
Incremental Delay, d2	0.1							0.1			0.1	
Delay (s)	4.4							34.9			29.6	
Level of Service	A							C			C	
Approach Delay (s)		4.4			0.0			34.9			29.6	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

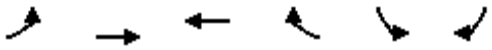
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.08	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

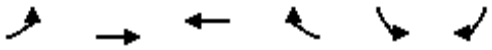
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	420	310	350	0	10	645
Future Volume (Veh/h)	420	310	350	0	10	645
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	457	337	380	0	11	701
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		182				
pX, platoon unblocked						
vC, conflicting volume	380				1462	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	380				1462	190
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	61				85	14
cM capacity (veh/h)	1175				73	820

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	457	168	168	253	127	712
Volume Left	457	0	0	0	0	11
Volume Right	0	0	0	0	0	701
cSH	1175	1700	1700	1700	1700	708
Volume to Capacity	0.39	0.10	0.10	0.15	0.07	1.01
Queue Length 95th (m)	15.0	0.0	0.0	0.0	0.0	132.9
Control Delay (s)	10.0	0.0	0.0	0.0	0.0	59.5
Lane LOS	A					F
Approach Delay (s)	5.8			0.0		59.5
Approach LOS						F

Intersection Summary			
Average Delay	24.9		
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		



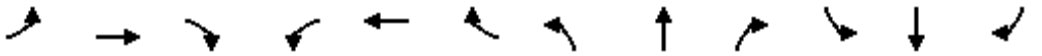
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	330	350	0	0	0
Future Volume (Veh/h)	0	330	350	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	359	380	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			141			
pX, platoon unblocked	1.00				1.00	1.00
vC, conflicting volume	380				560	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	379				558	188
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1176				459	821

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	0	180	180	253	127	0	0
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.11	0.11	0.15	0.07	0.26	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A	A
Approach Delay (s)	0.0			0.0		0.0	
Approach LOS						A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT
Lane Group Flow (vph)	147	217	380
v/c Ratio	0.18	0.07	0.13
Control Delay	6.6	4.9	4.0
Queue Delay	0.0	0.0	0.0
Total Delay	6.6	4.9	4.0
Queue Length 50th (m)	0.0	0.0	0.1
Queue Length 95th (m)	23.4	13.7	16.1
Internal Link Dist (m)		117.0	103.5
Turn Bay Length (m)	100.0		
Base Capacity (vph)	814	2941	2941
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.18	0.07	0.13

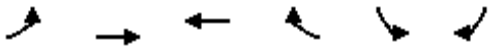
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	200	0	0	350	0	0	0	0	0	0	0
Future Volume (vph)	135	200	0	0	350	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0							
Lane Util. Factor	1.00	0.95			0.95							
Frt	1.00	1.00			1.00							
Flt Protected	0.95	1.00			1.00							
Satd. Flow (prot)	1770	3539			3539							
Flt Permitted	0.53	1.00			1.00							
Satd. Flow (perm)	981	3539			3539							
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	217	0	0	380	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	147	217	0	0	380	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	67.2	67.2			67.2							
Effective Green, g (s)	68.2	68.2			68.2							
Actuated g/C Ratio	0.76	0.76			0.76							
Clearance Time (s)	6.0	6.0			6.0							
Vehicle Extension (s)	3.0	3.0			3.0							
Lane Grp Cap (vph)	743	2681			2681							
v/s Ratio Prot		0.06			0.11							
v/s Ratio Perm	c0.15											
v/c Ratio	0.20	0.08			0.14							
Uniform Delay, d1	3.1	2.8			3.0							
Progression Factor	1.00	1.00			0.81							
Incremental Delay, d2	0.6	0.1			0.1							
Delay (s)	3.7	2.9			2.5							
Level of Service	A	A			A							
Approach Delay (s)		3.2			2.5			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	200	350	0	0	0
Future Volume (Veh/h)	0	200	350	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	217	380	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		127	245			
pX, platoon unblocked	1.00				1.00	1.00
vC, conflicting volume	380				488	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	378				487	188
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1176				509	821

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	72	145	253	127	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1176	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.09	0.15	0.07	0.44	0.08
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS					A	A
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	207	353	435	326
v/c Ratio	0.10	0.17	0.76	0.56
Control Delay	8.1	10.5	35.6	21.5
Queue Delay	0.0	0.0	0.5	0.0
Total Delay	8.1	10.5	36.0	21.5
Queue Length 50th (m)	7.6	14.9	68.3	31.2
Queue Length 95th (m)	8.2	27.2	78.8	43.7
Internal Link Dist (m)	221.4	48.5	92.5	315.1
Turn Bay Length (m)				
Base Capacity (vph)	2004	2029	804	828
Starvation Cap Reductn	0	0	103	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.17	0.62	0.39

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	170	20	0	325	0	20	380	0	0	300	0
Future Volume (vph)	0	170	20	0	325	0	20	380	0	0	300	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.98			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		3483			3539			1858			1863	
Flt Permitted		1.00			1.00			0.97			1.00	
Satd. Flow (perm)		3483			3539			1809			1863	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	185	22	0	353	0	22	413	0	0	326	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	199	0	0	353	0	0	435	0	0	326	0
Turn Type		NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		50.6			50.6			27.4			27.4	
Effective Green, g (s)		51.6			51.6			28.4			28.4	
Actuated g/C Ratio		0.57			0.57			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1996			2029			570			587	
v/s Ratio Prot		0.06			c0.10						0.18	
v/s Ratio Perm								c0.24				
v/c Ratio		0.10			0.17			0.76			0.56	
Uniform Delay, d1		8.7			9.1			27.8			25.6	
Progression Factor		0.86			1.00			0.98			0.73	
Incremental Delay, d2		0.1			0.2			5.8			1.1	
Delay (s)		7.6			9.3			33.1			19.7	
Level of Service		A			A			C			B	
Approach Delay (s)		7.6			9.3			33.1			19.7	
Approach LOS		A			A			C			B	

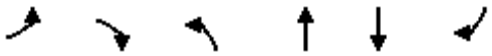
Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.15	0.07	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

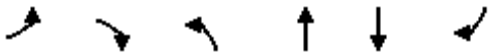
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.07	0.00	0.04
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

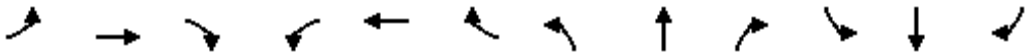
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1023	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.10	0.00	0.09
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

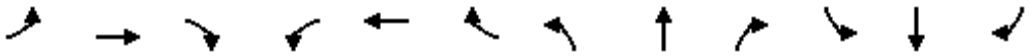
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	35	0	0	240	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	35	0	0	240	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	38	0	0	261	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					43							
pX, platoon unblocked												
vC, conflicting volume	261			38			299	299	38	299	299	261
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	261			38			299	299	38	299	299	261
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1303			1572			653	613	1034	653	613	778

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	38	261	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1303	1572	1700	1700
Volume to Capacity	0.00	0.00	0.07	0.12
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	16.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		40										
pX, platoon unblocked												
vC, conflicting volume	0			0			0	0	0	0	0	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			0	0	0	0	0	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1623			1623			1023	896	1085	1023	896	1085

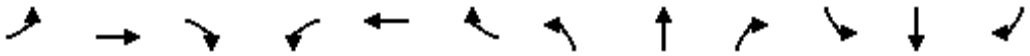
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.11	0.14
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	0.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.13	0.17	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

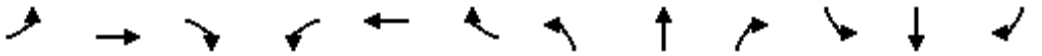
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	101	338	697	56	475	146	995	798	247	1980	51
v/c Ratio	0.12	0.37	0.96	0.94	0.09	0.77	0.85	0.48	0.77	0.80	0.90	0.07
Control Delay	28.9	58.5	73.4	74.1	34.7	30.7	67.6	30.6	19.6	38.5	43.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	28.9	58.5	73.4	74.1	34.7	30.7	67.6	30.6	19.9	38.5	43.6	0.2
Queue Length 50th (m)	6.1	27.0	60.0	103.4	11.6	68.3	27.3	93.2	90.3	37.7	193.4	0.0
Queue Length 95th (m)	13.5	46.3	#123.5	#139.8	22.6	118.0	#66.7	67.8	226.2	#66.5	216.4	0.0
Internal Link Dist (m)		361.1			497.8			251.4			315.2	
Turn Bay Length (m)	80.0			165.0		15.0				85.0		80.0
Base Capacity (vph)	288	271	351	752	599	619	171	2075	1042	310	2204	684
Starvation Cap Reductn	0	0	0	0	0	0	0	0	32	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.37	0.96	0.93	0.09	0.77	0.85	0.48	0.79	0.80	0.90	0.07

Intersection Summary

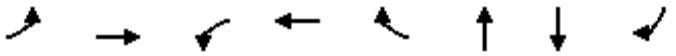
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	100	335	690	55	470	145	985	790	245	1960	50
Future Volume (vph)	35	100	335	690	55	470	145	985	790	245	1960	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.8	5.8	4.7	5.8	5.8	3.0	5.1	5.1	3.0	5.1	5.1
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	1.00	1.00	0.91
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1659	1863	1568	3367	1827	1410	1719	4988	1513	1787	5085	1383
Flt Permitted	0.72	1.00	1.00	0.95	1.00	1.00	0.07	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	1258	1863	1568	3367	1827	1410	127	4988	1513	359	5085	1383
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	35	101	338	697	56	475	146	995	798	247	1980	51
RTOR Reduction (vph)	0	0	122	0	0	157	0	0	419	0	0	29
Lane Group Flow (vph)	35	101	216	697	56	318	146	995	379	247	1980	22
Confl. Peds. (#/hr)	35					35	35		10	10		35
Heavy Vehicles (%)	3%	2%	3%	4%	4%	4%	5%	4%	3%	1%	2%	6%
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Actuated Green, G (s)	26.1	20.5	20.5	30.0	44.9	44.9	64.6	56.1	56.1	69.2	58.4	58.4
Effective Green, g (s)	28.1	21.5	21.5	31.0	45.9	45.9	66.6	57.1	57.1	71.2	59.4	59.4
Actuated g/C Ratio	0.20	0.15	0.15	0.22	0.33	0.33	0.48	0.41	0.41	0.51	0.42	0.42
Clearance Time (s)	5.7	6.8	6.8	5.7	6.8	6.8	4.0	6.1	6.1	4.0	6.1	6.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	271	286	240	745	598	462	168	2034	617	302	2157	586
v/s Ratio Prot	0.01	0.05		c0.21	0.03		c0.06	0.20		c0.07	c0.39	
v/s Ratio Perm	0.02		c0.14			0.23	0.35		0.25	0.35		0.02
v/c Ratio	0.13	0.35	0.90	0.94	0.09	0.69	0.87	0.49	0.61	0.82	0.92	0.04
Uniform Delay, d1	45.7	53.0	58.2	53.5	32.6	40.8	35.2	30.7	32.7	21.9	38.0	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.22	1.00	3.48	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.8	32.9	18.9	0.1	4.2	28.7	0.7	3.5	15.6	7.7	0.1
Delay (s)	45.9	53.8	91.1	72.4	32.7	45.1	71.6	31.3	117.4	37.5	45.7	23.7
Level of Service	D	D	F	E	C	D	E	C	F	D	D	C
Approach Delay (s)		79.8			60.0			69.8			44.3	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	58.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		

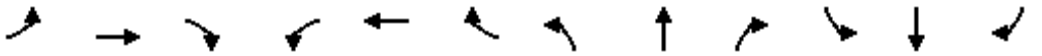
c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	5	232	190	191	206	2170	1985	5
v/c Ratio	0.02	0.59	0.92	0.92	0.50	0.66	0.58	0.00
Control Delay	33.6	45.7	97.3	98.2	27.3	14.5	20.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	45.7	97.3	98.2	27.3	14.5	20.8	0.0
Queue Length 50th (m)	1.1	53.0	56.6	56.9	26.2	97.8	166.3	0.0
Queue Length 95th (m)	4.2	70.2	#98.4	#98.4	50.5	111.9	m180.2	m0.0
Internal Link Dist (m)		327.0		348.8		307.3	251.4	
Turn Bay Length (m)								
Base Capacity (vph)	252	557	243	243	471	3308	3433	1074
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.42	0.78	0.79	0.44	0.66	0.58	0.00

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	225	370	0	200	0	1720	385	0	1925	5
Future Volume (vph)	5	0	225	370	0	200	0	1720	385	0	1925	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		6.0	6.0	6.0		6.0			6.0	6.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.91			0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		0.99			1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1805	1599		1649	1649	1568		4822			5036	1543
Flt Permitted	0.41	1.00		0.55	0.55	1.00		1.00			1.00	1.00
Satd. Flow (perm)	784	1599		963	963	1568		4822			5036	1543
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	0	232	381	0	206	0	1773	397	0	1985	5
RTOR Reduction (vph)	0	23	0	0	0	79	0	21	0	0	0	2
Lane Group Flow (vph)	5	209	0	190	191	128	0	2149	0	0	1985	3
Confl. Peds. (#/hr)							10		5	5		10
Heavy Vehicles (%)	0%	0%	1%	4%	0%	3%	0%	4%	4%	0%	3%	0%
Turn Type	pm+pt	NA		Perm	NA	Perm		NA			NA	Perm
Protected Phases	3	8			4			2			6	
Permitted Phases	8			4		4						6
Actuated Green, G (s)	35.5	35.5		29.1	29.1	29.1		90.5			90.5	90.5
Effective Green, g (s)	36.5	36.5		30.1	30.1	30.1		91.5			91.5	91.5
Actuated g/C Ratio	0.26	0.26		0.22	0.22	0.22		0.65			0.65	0.65
Clearance Time (s)	5.0	7.0		7.0	7.0	7.0		7.0			7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	221	416		207	207	337		3151			3291	1008
v/s Ratio Prot	0.00	c0.13						c0.45			0.39	
v/s Ratio Perm	0.01			0.20	c0.20	0.08						0.00
v/c Ratio	0.02	0.50		0.92	0.92	0.38		0.68			0.60	0.00
Uniform Delay, d1	38.9	44.0		53.7	53.8	47.0		15.2			13.9	8.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.98			1.56	1.00
Incremental Delay, d2	0.0	1.0		40.0	41.4	0.7		1.0			0.3	0.0
Delay (s)	38.9	45.0		93.7	95.2	47.7		15.8			22.0	8.4
Level of Service	D	D		F	F	D		B			C	A
Approach Delay (s)		44.9			78.0			15.8			22.0	
Approach LOS		D			E			B			C	

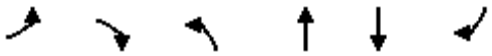
Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	903	679	1378	2122
v/c Ratio	0.60	0.97	0.59	0.89
Control Delay	31.8	66.7	22.9	37.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	31.8	66.7	22.9	37.1
Queue Length 50th (m)	101.1	189.7	56.8	231.7
Queue Length 95th (m)	122.8	#275.6	62.8	136.9
Internal Link Dist (m)	190.2		56.8	307.3
Turn Bay Length (m)				
Base Capacity (vph)	1520	702	2343	2389
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.97	0.59	0.89

Intersection Summary

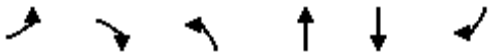
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	885	665	0	1350	2080	0
Future Volume (vph)	885	665	0	1350	2080	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		4940	5036	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		4940	5036	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	903	679	0	1378	2122	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	903	678	0	1378	2122	0
Confl. Peds. (#/hr)			10			10
Heavy Vehicles (%)	2%	2%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	2	
Permitted Phases		4				
Actuated Green, G (s)	60.6	60.6		65.4	65.4	
Effective Green, g (s)	61.6	61.6		66.4	66.4	
Actuated g/C Ratio	0.44	0.44		0.47	0.47	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1510	696		2342	2388	
v/s Ratio Prot	0.26			0.28	c0.42	
v/s Ratio Perm		c0.43				
v/c Ratio	0.60	0.97		0.59	0.89	
Uniform Delay, d1	29.8	38.4		26.8	33.4	
Progression Factor	1.00	1.00		0.82	0.97	
Incremental Delay, d2	0.6	27.5		0.8	4.5	
Delay (s)	30.4	65.9		22.7	36.8	
Level of Service	C	E		C	D	
Approach Delay (s)	45.7			22.7	36.8	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

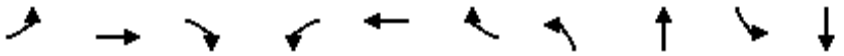
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	195	0	1330	2060	655
Future Volume (Veh/h)	0	195	0	1330	2060	655
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	210	0	1430	2215	704
Pedestrians	10					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				198	81	
pX, platoon unblocked	0.70	0.61	0.61			
vC, conflicting volume	3054	1100	2929			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	787	0	1937			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	68	100			
cM capacity (veh/h)	230	653	187			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	210	477	477	477	886	886	1147
Volume Left	0	0	0	0	0	0	0
Volume Right	210	0	0	0	0	0	704
cSH	653	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.32	0.28	0.28	0.28	0.52	0.52	0.67
Queue Length 95th (m)	11.1	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	13.1	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	13.1	0.0			0.0		
Approach LOS	B						

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	73.4%	ICU Level of Service		D
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	603	907	242	134	222	93	139	1160	330	1897
v/c Ratio	0.82	0.88	0.46	0.63	0.42	0.22	0.85	0.73	0.99	0.97
Control Delay	61.5	58.0	16.6	47.5	56.5	1.2	65.6	44.1	83.0	53.2
Queue Delay	2.3	49.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	107.4	17.3	47.5	56.5	1.2	65.6	44.1	83.0	53.2
Queue Length 50th (m)	86.4	130.3	18.0	23.6	30.7	0.0	30.2	86.7	~86.4	155.7
Queue Length 95th (m)	104.8	157.6	44.1	#47.5	46.0	0.0	m#46.2	m99.9	m#112.7	m#224.9
Internal Link Dist (m)		97.1			158.4			292.1		174.2
Turn Bay Length (m)	130.0			50.0			120.0		55.0	
Base Capacity (vph)	841	1083	545	212	534	418	164	1589	333	1952
Starvation Cap Reductn	127	340	101	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	1.22	0.55	0.63	0.42	0.22	0.85	0.73	0.99	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

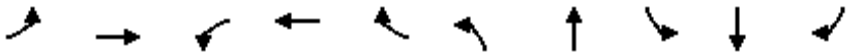
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	585	880	235	130	215	90	135	1090	35	320	1400	440
Future Volume (vph)	585	880	235	130	215	90	135	1090	35	320	1400	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0		3.0	6.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3273	3610	1447	1735	3438	1553	1671	5009		1736	4826	
Flt Permitted	0.95	1.00	1.00	0.18	1.00	1.00	0.09	1.00		0.10	1.00	
Satd. Flow (perm)	3273	3610	1447	335	3438	1553	159	5009		186	4826	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	603	907	242	134	222	93	139	1124	36	330	1443	454
RTOR Reduction (vph)	0	0	113	0	0	79	0	2	0	0	40	0
Lane Group Flow (vph)	603	907	129	134	222	14	139	1158	0	330	1857	0
Confl. Peds. (#/hr)			5	5			15		5	5		15
Heavy Vehicles (%)	7%	0%	9%	4%	5%	4%	8%	3%	3%	4%	2%	4%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2			6		
Actuated Green, G (s)	30.4	39.2	39.2	32.8	20.8	20.8	51.7	43.3		67.8	54.4	
Effective Green, g (s)	31.4	40.2	40.2	34.8	21.8	21.8	53.7	44.3		68.8	55.4	
Actuated g/C Ratio	0.22	0.29	0.29	0.25	0.16	0.16	0.38	0.32		0.49	0.40	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	5.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.5	4.0	4.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	734	1036	415	213	535	241	162	1584		329	1909	
v/s Ratio Prot	c0.18	c0.25		0.06	0.06		0.06	0.23		c0.15	0.38	
v/s Ratio Perm			0.09	0.10		0.01	0.27			c0.34		
v/c Ratio	0.82	0.88	0.31	0.63	0.41	0.06	0.86	0.73		1.00	0.97	
Uniform Delay, d1	51.6	47.5	39.0	43.4	53.3	50.4	34.6	42.6		41.6	41.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.27	0.99		1.34	1.08	
Incremental Delay, d2	7.4	8.4	0.4	6.0	0.7	0.1	23.8	1.9		38.5	10.5	
Delay (s)	59.0	55.9	39.5	49.4	54.1	50.5	67.7	44.0		94.3	55.2	
Level of Service	E	E	D	D	D	D	E	D		F	E	
Approach Delay (s)		54.7			51.9			46.6			61.0	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	55.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

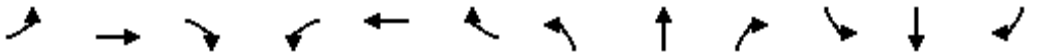
c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	276	537	135	422	646	52	500	724	797	422
v/c Ratio	0.81	0.70	0.52	0.58	0.95	0.25	0.47	0.90	0.83	0.47
Control Delay	80.3	54.0	38.0	52.3	39.0	20.1	40.9	72.3	42.5	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.3	54.0	38.0	52.3	39.0	20.1	40.9	72.3	42.5	17.1
Queue Length 50th (m)	41.5	73.4	26.4	56.4	60.7	6.5	63.0	113.7	148.4	34.6
Queue Length 95th (m)	#66.7	94.4	42.8	74.2	#143.0	12.9	81.6	m121.6	m162.1	m40.0
Internal Link Dist (m)		551.4		604.3			115.4		292.1	
Turn Bay Length (m)	85.0		85.0		75.0	40.0		85.0		
Base Capacity (vph)	340	809	277	825	709	211	1067	825	959	903
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.66	0.49	0.51	0.91	0.25	0.47	0.88	0.83	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



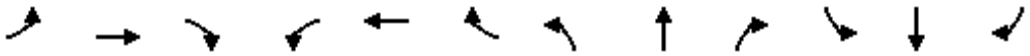
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	450	65	130	405	620	50	410	70	695	765	405
Future Volume (vph)	265	450	65	130	405	620	50	410	70	695	765	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.4		4.0	5.4	5.4	3.0	5.9		4.0	5.9	5.9
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3367	3330		1731	3438	1483	1768	3430		3400	1881	1498
Flt Permitted	0.95	1.00		0.26	1.00	1.00	0.18	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3367	3330		471	3438	1483	335	3430		3400	1881	1498
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	276	469	68	135	422	646	52	427	73	724	797	422
RTOR Reduction (vph)	0	9	0	0	0	367	0	10	0	0	0	141
Lane Group Flow (vph)	276	528	0	135	422	279	52	490	0	724	797	281
Confl. Peds. (#/hr)	25		15	15		25	20		10	10		20
Heavy Vehicles (%)	4%	6%	3%	4%	5%	4%	2%	2%	6%	3%	1%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases				4		4	2					6
Actuated Green, G (s)	13.2	30.7		40.4	28.6	28.6	47.8	42.2		32.0	69.6	69.6
Effective Green, g (s)	14.2	31.7		42.4	29.6	29.6	49.8	43.2		33.0	70.6	70.6
Actuated g/C Ratio	0.10	0.23		0.30	0.21	0.21	0.36	0.31		0.24	0.50	0.50
Clearance Time (s)	5.7	6.4		5.0	6.4	6.4	4.0	6.9		5.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	341	754		257	726	313	186	1058		801	948	755
v/s Ratio Prot	c0.08	0.16		0.05	0.12		0.01	0.14		c0.21	c0.42	
v/s Ratio Perm				0.11		c0.19	0.09					0.19
v/c Ratio	0.81	0.70		0.53	0.58	0.89	0.28	0.46		0.90	0.84	0.37
Uniform Delay, d1	61.6	49.8		37.6	49.6	53.7	31.8	39.0		52.0	29.9	21.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.22	1.20	2.13
Incremental Delay, d2	13.2	3.0		1.9	1.2	25.7	0.8	1.5		8.1	5.1	0.8
Delay (s)	74.8	52.7		39.5	50.8	79.3	32.6	40.5		71.3	40.8	45.9
Level of Service	E	D		D	D	E	C	D		E	D	D
Approach Delay (s)		60.2			64.9			39.8			53.3	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	56.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	155	213	259	241
v/c Ratio	0.12	0.23	0.67	0.64
Control Delay	1.5	5.9	38.2	39.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.5	5.9	38.2	39.7
Queue Length 50th (m)	1.4	11.5	40.5	40.3
Queue Length 95th (m)	4.5	19.6	57.4	56.6
Internal Link Dist (m)	146.6	179.3	180.3	263.4
Turn Bay Length (m)				
Base Capacity (vph)	1249	945	807	802
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.23	0.32	0.30

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	95	40	100	85	0	0	180	45	10	200	0
Future Volume (vph)	0	95	40	100	85	0	0	180	45	10	200	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			1.00			0.97			1.00	
Flt Protected		1.00			0.97			1.00			1.00	
Satd. Flow (prot)		1824			1746			1795			1843	
Flt Permitted		1.00			0.77			1.00			0.98	
Satd. Flow (perm)		1824			1390			1795			1807	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	109	46	115	98	0	0	207	52	11	230	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	0	145	0	0	213	0	0	245	0	0	241	0
Heavy Vehicles (%)	0%	0%	0%	11%	0%	0%	50%	3%	3%	0%	3%	0%
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.2			60.2			17.8			17.8	
Effective Green, g (s)		61.2			61.2			18.8			18.8	
Actuated g/C Ratio		0.68			0.68			0.21			0.21	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1240			945			374			377	
v/s Ratio Prot		0.08						c0.14				
v/s Ratio Perm					c0.15						0.13	
v/c Ratio		0.12			0.23			0.65			0.64	
Uniform Delay, d1		5.0			5.4			32.6			32.5	
Progression Factor		0.27			0.81			1.00			1.00	
Incremental Delay, d2		0.2			0.6			4.1			3.5	
Delay (s)		1.6			5.0			36.7			36.0	
Level of Service		A			A			D			D	
Approach Delay (s)		1.6			5.0			36.7			36.0	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	40	190	95	150	110	20
Future Volume (Veh/h)	40	190	95	150	110	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	49	232	116	183	134	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			281		580	165
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			281		580	165
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		69	97
cM capacity (veh/h)			1282		435	872

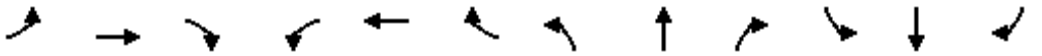
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	281	299	158
Volume Left	0	116	134
Volume Right	232	0	24
cSH	1700	1282	471
Volume to Capacity	0.17	0.09	0.34
Queue Length 95th (m)	0.0	2.4	11.7
Control Delay (s)	0.0	3.6	16.5
Lane LOS		A	C
Approach Delay (s)	0.0	3.6	16.5
Approach LOS			C

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	27	951	43	620	250	157	130	190	27
v/c Ratio	0.08	0.55	0.21	0.35	0.54	0.23	0.60	0.55	0.08
Control Delay	14.5	16.2	17.8	14.5	22.5	12.5	37.5	32.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	16.2	17.8	14.5	22.5	12.5	37.5	32.0	0.5
Queue Length 50th (m)	2.5	55.5	4.2	33.6	30.5	12.7	19.7	28.1	0.0
Queue Length 95th (m)	8.0	82.7	12.8	51.4	44.8	23.6	m35.4	45.6	m0.0
Internal Link Dist (m)		585.1		130.4		189.6		92.5	
Turn Bay Length (m)	45.0		30.0				25.0		25.0
Base Capacity (vph)	339	1773	214	1794	462	768	325	522	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.54	0.20	0.35	0.54	0.20	0.40	0.36	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	655	220	40	525	45	230	85	60	120	175	25
Future Volume (vph)	25	655	220	40	525	45	230	85	60	120	175	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		3.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.96		1.00	0.99		1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1649	3332		1752	3424		1733	1754		1694	1881	1524
Flt Permitted	0.37	1.00		0.22	1.00		0.42	1.00		0.66	1.00	1.00
Satd. Flow (perm)	649	3332		411	3424		768	1754		1172	1881	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	712	239	43	571	49	250	92	65	130	190	27
RTOR Reduction (vph)	0	34	0	0	7	0	0	30	0	0	0	22
Lane Group Flow (vph)	27	917	0	43	613	0	250	127	0	130	190	5
Confl. Peds. (#/hr)	5					5	5		5	5		5
Heavy Vehicles (%)	9%	4%	5%	3%	4%	3%	4%	0%	2%	6%	1%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	45.0	45.0		45.0	45.0		33.0	33.0		15.6	15.6	15.6
Effective Green, g (s)	46.0	46.0		46.0	46.0		34.0	34.0		16.6	16.6	16.6
Actuated g/C Ratio	0.51	0.51		0.51	0.51		0.38	0.38		0.18	0.18	0.18
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	331	1703		210	1750		444	662		216	346	281
v/s Ratio Prot		c0.28			0.18		c0.09	0.07			0.10	
v/s Ratio Perm	0.04			0.10			c0.12			0.11		0.00
v/c Ratio	0.08	0.54		0.20	0.35		0.56	0.19		0.60	0.55	0.02
Uniform Delay, d1	11.2	14.8		12.0	13.1		20.7	18.8		33.7	33.3	30.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.83	0.83	1.00
Incremental Delay, d2	0.5	1.2		2.2	0.6		1.6	0.1		4.0	1.5	0.0
Delay (s)	11.7	16.1		14.2	13.7		22.3	18.9		32.0	29.0	30.1
Level of Service	B	B		B	B		C	B		C	C	C
Approach Delay (s)		15.9			13.7			21.0			30.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	145	0	20	195	0	130
Future Volume (Veh/h)	145	0	20	195	0	130
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	158	0	22	212	0	141
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	402					
pX, platoon unblocked						
vC, conflicting volume			158		414	158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			158		414	158
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	84
cM capacity (veh/h)			1422		585	887

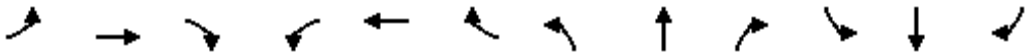
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	158	234	141
Volume Left	0	22	0
Volume Right	0	0	141
cSH	1700	1422	887
Volume to Capacity	0.09	0.02	0.16
Queue Length 95th (m)	0.0	0.4	4.5
Control Delay (s)	0.0	0.8	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	0.8	9.8
Approach LOS			A

Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization		37.0%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	275	0	20	215	0	0
Future Volume (Veh/h)	275	0	20	215	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	299	0	22	234	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			299		577	299
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			299		577	299
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1262		470	741

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	299	256	0
Volume Left	0	22	0
Volume Right	0	0	0
cSH	1700	1262	1700
Volume to Capacity	0.18	0.02	0.00
Queue Length 95th (m)	0.0	0.4	0.0
Control Delay (s)	0.0	0.8	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.8	0.0
Approach LOS			A

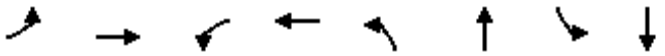
Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		31.2%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	105	0	10	130	5	0	15	30	70	80	45
Future Volume (Veh/h)	0	105	0	10	130	5	0	15	30	70	80	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	114	0	11	141	5	0	16	33	76	87	49
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		313			152							
pX, platoon unblocked												
vC, conflicting volume	146			114			372	282	114	320	280	144
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	146			114			372	282	114	320	280	144
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	97	96	87	86	95
cM capacity (veh/h)	1436			1475			491	622	939	595	624	904

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	114	157	49	212
Volume Left	0	11	0	76
Volume Right	0	5	33	49
cSH	1436	1475	805	660
Volume to Capacity	0.00	0.01	0.06	0.32
Queue Length 95th (m)	0.0	0.2	1.6	11.1
Control Delay (s)	0.0	0.6	9.8	13.0
Lane LOS		A	A	B
Approach Delay (s)	0.0	0.6	9.8	13.0
Approach LOS			A	B

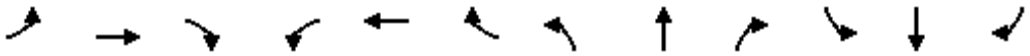
Intersection Summary				
Average Delay	6.3			
Intersection Capacity Utilization	38.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	234	184	92	147	27	521	33	135
v/c Ratio	0.27	0.19	0.11	0.16	0.10	0.68	0.29	0.18
Control Delay	7.3	4.5	6.2	0.9	15.2	22.1	35.0	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	4.5	6.2	0.9	15.2	22.1	35.0	6.0
Queue Length 50th (m)	14.0	0.0	4.7	0.0	3.8	52.0	5.1	0.3
Queue Length 95th (m)	28.8	15.7	12.1	2.3	m5.2	m59.2	13.2	7.1
Internal Link Dist (m)		18.8		15.5		150.5		264.2
Turn Bay Length (m)	30.0		30.0		30.0		30.0	
Base Capacity (vph)	899	982	809	928	386	1100	162	1032
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.19	0.11	0.16	0.07	0.47	0.20	0.13

Intersection Summary

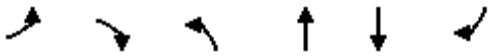
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	5	165	85	0	135	25	475	5	30	5	120
Future Volume (vph)	215	5	165	85	0	135	25	475	5	30	5	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		3.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		1.00	0.85		1.00	1.00		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1591		1770	1583		1770	3534		1770	3028	
Flt Permitted	0.62	1.00		0.64	1.00		0.67	1.00		0.28	1.00	
Satd. Flow (perm)	1161	1591		1195	1583		1241	3534		521	3028	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	234	5	179	92	0	147	27	516	5	33	5	130
RTOR Reduction (vph)	0	79	0	0	71	0	0	1	0	0	102	0
Lane Group Flow (vph)	234	105	0	92	76	0	27	520	0	33	33	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	59.4	49.4		51.4	45.4		18.6	18.6		18.6	18.6	
Effective Green, g (s)	60.4	50.4		53.4	46.4		19.6	19.6		19.6	19.6	
Actuated g/C Ratio	0.67	0.56		0.59	0.52		0.22	0.22		0.22	0.22	
Clearance Time (s)	4.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	853	890		753	816		270	769		113	659	
v/s Ratio Prot	c0.03	0.07		0.01	0.05			c0.15			0.01	
v/s Ratio Perm	c0.15			0.06			0.02			0.06		
v/c Ratio	0.27	0.12		0.12	0.09		0.10	0.68		0.29	0.05	
Uniform Delay, d1	5.7	9.3		7.9	11.1		28.1	32.3		29.4	27.8	
Progression Factor	1.17	1.75		1.06	1.81		0.56	0.62		1.00	1.00	
Incremental Delay, d2	0.2	0.3		0.1	0.2		0.1	1.3		1.4	0.0	
Delay (s)	6.8	16.6		8.4	20.3		15.8	21.2		30.8	27.9	
Level of Service	A	B		A	C		B	C		C	C	
Approach Delay (s)		11.1			15.7			20.9			28.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

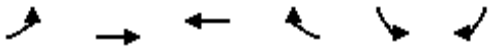
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	170	40	20	195	0
Future Volume (Veh/h)	0	170	40	20	195	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	185	43	22	212	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	320	212	212			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	320	212	212			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	78	97			
cM capacity (veh/h)	652	828	1358			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	185	65	212
Volume Left	0	43	0
Volume Right	185	0	0
cSH	828	1358	1700
Volume to Capacity	0.22	0.03	0.12
Queue Length 95th (m)	6.8	0.8	0.0
Control Delay (s)	10.6	5.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.6	5.2	0.0
Approach LOS	B		

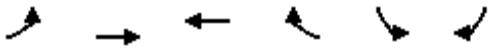
Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	225	850	130	0	40	300
Future Volume (Veh/h)	225	850	130	0	40	300
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	245	924	141	0	43	326
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		182				
pX, platoon unblocked					0.79	
vC, conflicting volume	141				1093	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	141				587	70
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				85	67
cM capacity (veh/h)	1440				289	978

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	245	462	462	94	47	369
Volume Left	245	0	0	0	0	43
Volume Right	0	0	0	0	0	326
cSH	1440	1700	1700	1700	1700	765
Volume to Capacity	0.17	0.27	0.27	0.06	0.03	0.48
Queue Length 95th (m)	4.9	0.0	0.0	0.0	0.0	21.2
Control Delay (s)	8.0	0.0	0.0	0.0	0.0	14.0
Lane LOS	A					B
Approach Delay (s)	1.7			0.0		14.0
Approach LOS						B

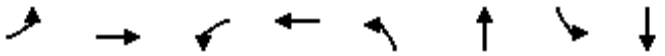
Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	930	115	50	210	15
Future Volume (Veh/h)	0	930	115	50	210	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1011	125	54	228	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			141			
pX, platoon unblocked						
vC, conflicting volume	179				658	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	179				658	90
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				43	98
cM capacity (veh/h)	1394				398	951

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	0	506	506	83	96	228	16
Volume Left	0	0	0	0	0	228	0
Volume Right	0	0	0	0	54	0	16
cSH	1700	1700	1700	1700	1700	398	951
Volume to Capacity	0.00	0.30	0.30	0.05	0.06	0.57	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	27.7	0.4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	25.5	8.9
Lane LOS						D	A
Approach Delay (s)	0.0			0.0		24.5	
Approach LOS						C	

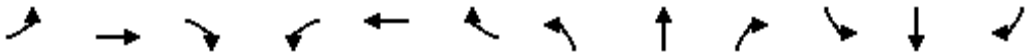
Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	478	756	92	233	5	21	190	87
v/c Ratio	0.92	0.52	0.51	0.25	0.01	0.04	0.27	0.05
Control Delay	47.6	21.1	35.7	16.7	21.6	12.2	19.9	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	21.1	35.7	16.7	21.6	12.2	19.9	17.8
Queue Length 50th (m)	69.9	56.0	15.2	10.6	0.6	0.6	18.1	3.9
Queue Length 95th (m)	#109.4	64.0	23.4	17.8	3.2	5.9	49.4	12.7
Internal Link Dist (m)		117.0		103.5		51.5		150.5
Turn Bay Length (m)	100.0		30.0		30.0		40.0	
Base Capacity (vph)	517	1608	211	1099	422	547	693	1685
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.47	0.44	0.21	0.01	0.04	0.27	0.05

Intersection Summary

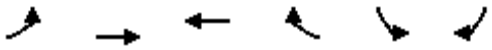
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	675	20	85	155	60	5	5	15	175	75	5
Future Volume (vph)	440	675	20	85	155	60	5	5	15	175	75	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		5.0	5.0		5.0	5.0		3.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	0.95	
Frt	1.00	1.00		1.00	0.96		1.00	0.89		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3524		1770	3391		1770	1650		1770	3509	
Flt Permitted	0.54	1.00		0.36	1.00		0.70	1.00		0.67	1.00	
Satd. Flow (perm)	1004	3524		680	3391		1300	1650		1257	3509	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	734	22	92	168	65	5	5	16	190	82	5
RTOR Reduction (vph)	0	2	0	0	48	0	0	11	0	0	3	0
Lane Group Flow (vph)	478	754	0	92	185	0	5	10	0	190	84	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.8	35.8		22.8	22.8		28.3	28.3		42.2	42.2	
Effective Green, g (s)	36.8	36.8		23.8	23.8		29.3	29.3		43.2	43.2	
Actuated g/C Ratio	0.41	0.41		0.26	0.26		0.33	0.33		0.48	0.48	
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	495	1440		179	896		423	537		665	1684	
v/s Ratio Prot	c0.11	0.21			0.05			0.01		c0.03	0.02	
v/s Ratio Perm	c0.29			0.14			0.00			c0.10		
v/c Ratio	0.97	0.52		0.51	0.21		0.01	0.02		0.29	0.05	
Uniform Delay, d1	24.5	20.0		28.2	25.8		20.5	20.6		13.7	12.5	
Progression Factor	1.00	1.00		0.90	0.89		1.00	1.00		1.39	1.38	
Incremental Delay, d2	31.5	1.4		10.2	0.5		0.1	0.1		0.2	0.0	
Delay (s)	56.0	21.4		35.6	23.6		20.6	20.7		19.2	17.2	
Level of Service	E	C		D	C		C	C		B	B	
Approach Delay (s)		34.8			27.0			20.6			18.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



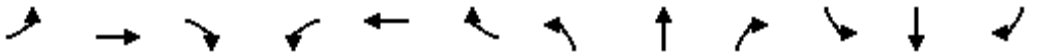
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	850	140	60	330	160
Future Volume (Veh/h)	15	850	140	60	330	160
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	924	152	65	359	174
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		127	245			
pX, platoon unblocked					0.84	
vC, conflicting volume	217				678	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	217				246	108
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				40	81
cM capacity (veh/h)	1350				601	924

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	324	616	101	116	359	174
Volume Left	16	0	0	0	359	0
Volume Right	0	0	0	65	0	174
cSH	1350	1700	1700	1700	601	924
Volume to Capacity	0.01	0.36	0.06	0.07	0.60	0.19
Queue Length 95th (m)	0.3	0.0	0.0	0.0	31.5	5.5
Control Delay (s)	0.5	0.0	0.0	0.0	19.5	9.8
Lane LOS	A				C	A
Approach Delay (s)	0.2		0.0		16.3	
Approach LOS					C	

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1277	228	169	288
v/c Ratio	0.60	0.11	0.37	0.78
Control Delay	11.4	7.1	25.7	38.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.4	7.1	25.7	38.3
Queue Length 50th (m)	51.3	6.6	21.6	51.2
Queue Length 95th (m)	62.3	14.7	32.2	74.9
Internal Link Dist (m)	221.4	55.1	92.5	315.1
Turn Bay Length (m)				
Base Capacity (vph)	2134	2129	743	600
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.60	0.11	0.23	0.48

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	990	185	0	170	40	30	125	0	130	135	0
Future Volume (vph)	0	990	185	0	170	40	30	125	0	130	135	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.98			0.97			1.00			1.00	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		3456			3439			1845			1818	
Flt Permitted		1.00			1.00			0.90			0.73	
Satd. Flow (perm)		3456			3439			1673			1352	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1076	201	0	185	43	33	136	0	141	147	0
RTOR Reduction (vph)	0	12	0	0	15	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1265	0	0	213	0	0	169	0	0	288	0
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		54.3			54.3			23.7			23.7	
Effective Green, g (s)		55.3			55.3			24.7			24.7	
Actuated g/C Ratio		0.61			0.61			0.27			0.27	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2123			2113			459			371	
v/s Ratio Prot		c0.37			0.06							
v/s Ratio Perm								0.10			c0.21	
v/c Ratio		0.60			0.10			0.37			0.78	
Uniform Delay, d1		10.6			7.1			26.4			30.1	
Progression Factor		0.87			1.00			0.94			0.81	
Incremental Delay, d2		1.2			0.1			0.5			9.8	
Delay (s)		10.4			7.2			25.3			34.1	
Level of Service		B			A			C			C	
Approach Delay (s)		10.4			7.2			25.3			34.1	
Approach LOS		B			A			C			C	

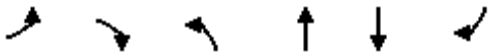
Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	195	130	0	20	20	0
Future Volume (Veh/h)	195	130	0	20	20	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	212	141	0	22	22	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	55	11			22	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	55	11			22	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	87			99	
cM capacity (veh/h)	940	1070			1593	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	353	22	22
Volume Left	212	0	22
Volume Right	141	22	0
cSH	988	1700	1593
Volume to Capacity	0.36	0.01	0.01
Queue Length 95th (m)	13.1	0.0	0.3
Control Delay (s)	10.7	0.0	7.3
Lane LOS	B		A
Approach Delay (s)	10.7	0.0	7.3
Approach LOS	B		

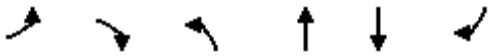
Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	195	20	0	0	20
Future Volume (Veh/h)	0	195	20	0	0	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	212	22	0	0	22
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	55	11	22			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	55	11	22			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	80	99			
cM capacity (veh/h)	940	1070	1593			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	212	22	22
Volume Left	0	22	0
Volume Right	212	0	22
cSH	1070	1593	1700
Volume to Capacity	0.20	0.01	0.01
Queue Length 95th (m)	5.9	0.3	0.0
Control Delay (s)	9.2	7.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	7.3	0.0
Approach LOS	A		

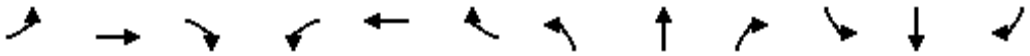
Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	125	35	40	365	0
Future Volume (Veh/h)	20	125	35	40	365	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	136	38	43	397	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	516	397	397			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	516	397	397			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	79	97			
cM capacity (veh/h)	502	652	1162			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	158	81	397
Volume Left	22	38	0
Volume Right	136	0	0
cSH	626	1162	1700
Volume to Capacity	0.25	0.03	0.23
Queue Length 95th (m)	8.0	0.8	0.0
Control Delay (s)	12.7	4.0	0.0
Lane LOS	B	A	
Approach Delay (s)	12.7	4.0	0.0
Approach LOS	B		

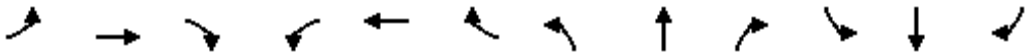
Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	195	0	25	95	20	0	0	115	75	0	45
Future Volume (Veh/h)	10	195	0	25	95	20	0	0	115	75	0	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	212	0	27	103	22	0	0	125	82	0	49
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					43							
pX, platoon unblocked												
vC, conflicting volume	125			212			451	413	212	527	402	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	125			212			451	413	212	527	402	114
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			100	100	85	79	100	95
cM capacity (veh/h)	1462			1358			481	515	828	384	522	939

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	223	152	125	131
Volume Left	11	27	0	82
Volume Right	0	22	125	49
cSH	1462	1358	828	493
Volume to Capacity	0.01	0.02	0.15	0.27
Queue Length 95th (m)	0.2	0.5	4.2	8.5
Control Delay (s)	0.4	1.5	10.1	14.9
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	1.5	10.1	14.9
Approach LOS			B	B

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	36.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	5	15	10	20	10	90	0	30	135	0	110
Future Volume (Veh/h)	20	5	15	10	20	10	90	0	30	135	0	110
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	5	16	11	22	11	98	0	33	147	0	120
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		40										
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	33			21			226	112	13	140	114	28
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33			13			219	104	4	132	107	28
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			85	100	97	82	100	89
cM capacity (veh/h)	1579			1597			639	765	1073	797	763	1048

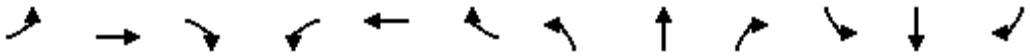
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	43	44	131	267
Volume Left	22	11	98	147
Volume Right	16	11	33	120
cSH	1579	1597	711	893
Volume to Capacity	0.01	0.01	0.18	0.30
Queue Length 95th (m)	0.3	0.2	5.4	10.1
Control Delay (s)	3.8	1.9	11.2	10.7
Lane LOS	A	A	B	B
Approach Delay (s)	3.8	1.9	11.2	10.7
Approach LOS			B	B

Intersection Summary				
Average Delay	9.4			
Intersection Capacity Utilization	25.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	145	25	20	30	10	80
Future Volume (Veh/h)	145	25	20	30	10	80
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	158	27	22	33	11	87
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	148	38			55	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	148	38			55	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	97			99	
cM capacity (veh/h)	839	1033			1550	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	185	55	98
Volume Left	158	0	11
Volume Right	27	33	0
cSH	862	1700	1550
Volume to Capacity	0.21	0.03	0.01
Queue Length 95th (m)	6.5	0.0	0.2
Control Delay (s)	10.3	0.0	0.9
Lane LOS	B		A
Approach Delay (s)	10.3	0.0	0.9
Approach LOS	B		

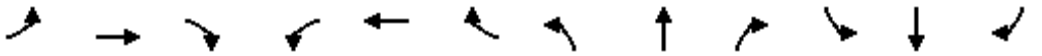
Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	103	119	299	809	155	376	304	1768	928	263	1211	119
v/c Ratio	0.42	0.59	0.78	0.98	0.29	0.65	0.82	0.89	0.96	0.88	0.67	0.21
Control Delay	36.0	71.1	28.5	80.0	40.5	18.7	50.3	49.5	30.2	67.2	41.0	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1	0.0	0.0	0.0
Total Delay	36.0	71.1	28.5	80.0	40.5	18.7	50.3	49.5	52.4	67.2	41.0	1.3
Queue Length 50th (m)	19.4	33.6	16.8	121.7	35.6	29.1	75.9	142.8	116.3	59.2	112.1	0.0
Queue Length 95th (m)	31.5	53.7	50.6	#164.7	53.7	64.4	m79.1	m143.8	m113.7	#127.7	133.4	1.6
Internal Link Dist (m)		361.1			497.8			251.4			315.2	
Turn Bay Length (m)	80.0			165.0		15.0				85.0		80.0
Base Capacity (vph)	247	255	422	824	580	607	393	1984	970	300	1818	580
Starvation Cap Reductn	0	0	0	0	0	0	0	0	84	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.47	0.71	0.98	0.27	0.62	0.77	0.89	1.05	0.88	0.67	0.21

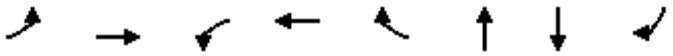
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	115	290	785	150	365	295	1715	900	255	1175	115
Future Volume (vph)	100	115	290	785	150	365	295	1715	900	255	1175	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.8	5.8	4.7	5.8	5.8	3.0	5.1	5.1	3.0	5.1	5.1
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.86	1.00	1.00	0.95	1.00	1.00	0.81
Flpb, ped/bikes	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1685	1881	1599	3467	1881	1388	1787	5136	1525	1805	5085	1300
Flt Permitted	0.66	1.00	1.00	0.95	1.00	1.00	0.11	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1168	1881	1599	3467	1881	1388	200	5136	1525	152	5085	1300
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	103	119	299	809	155	376	304	1768	928	263	1211	119
RTOR Reduction (vph)	0	0	212	0	0	186	0	0	382	0	0	77
Lane Group Flow (vph)	103	119	87	809	155	190	304	1768	546	263	1211	43
Confl. Peds. (#/hr)	55					55	80		15	15		80
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	1%	1%	1%	0%	2%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Actuated Green, G (s)	22.0	14.1	14.1	32.3	38.5	38.5	75.0	53.1	53.1	66.9	49.0	49.0
Effective Green, g (s)	24.0	15.1	15.1	33.3	39.5	39.5	76.0	54.1	54.1	68.9	50.0	50.0
Actuated g/C Ratio	0.17	0.11	0.11	0.24	0.28	0.28	0.54	0.39	0.39	0.49	0.36	0.36
Clearance Time (s)	5.7	6.8	6.8	5.7	6.8	6.8	4.0	6.1	6.1	4.0	6.1	6.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	233	202	172	824	530	391	369	1984	589	297	1816	464
v/s Ratio Prot	0.03	c0.06		c0.23	0.08		c0.14	0.34		c0.12	0.24	
v/s Ratio Perm	0.05		0.05			0.14	0.31		c0.36	0.32		0.03
v/c Ratio	0.44	0.59	0.50	0.98	0.29	0.49	0.82	0.89	0.93	0.89	0.67	0.09
Uniform Delay, d1	51.2	59.5	58.9	53.0	39.3	41.8	34.6	40.2	41.1	41.8	38.0	29.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.40	1.17	1.67	1.00	1.00	1.00
Incremental Delay, d2	1.3	4.3	2.3	26.7	0.3	1.0	4.7	2.2	9.2	25.4	2.0	0.4
Delay (s)	52.5	63.8	61.2	79.8	39.6	42.8	53.3	49.2	77.7	67.1	39.9	30.3
Level of Service	D	E	E	E	D	D	D	D	E	E	D	C
Approach Delay (s)		60.1			64.8			58.5			43.7	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	56.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



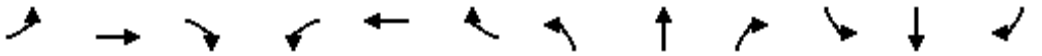
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	27	287	239	234	362	3026	1426	16
v/c Ratio	0.09	0.54	0.94	0.99	0.75	1.01	0.47	0.02
Control Delay	28.4	37.8	92.7	105.2	47.1	33.1	17.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	37.8	92.7	105.2	47.1	33.1	17.0	0.0
Queue Length 50th (m)	4.9	56.9	69.5	69.3	77.3	~368.5	57.8	0.0
Queue Length 95th (m)	11.6	85.1	#123.0	#125.6	115.9	#384.9	m64.8	m0.0
Internal Link Dist (m)		327.0		348.8		307.3	251.4	
Turn Bay Length (m)								
Base Capacity (vph)	305	609	275	257	521	3009	3006	884
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.47	0.87	0.91	0.69	1.01	0.47	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	5	265	440	5	340	0	2530	315	0	1340	15
Future Volume (vph)	25	5	265	440	5	340	0	2530	315	0	1340	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		6.0	6.0	6.0		6.0			6.0	6.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.91			0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1805	1604		1681	1688	1583		5025			5036	1437
Flt Permitted	0.41	1.00		0.52	0.48	1.00		1.00			1.00	1.00
Satd. Flow (perm)	781	1604		919	856	1583		5025			5036	1437
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	5	282	468	5	362	0	2691	335	0	1426	16
RTOR Reduction (vph)	0	20	0	0	0	48	0	10	0	0	0	7
Lane Group Flow (vph)	27	267	0	239	234	314	0	3016	0	0	1426	9
Confl. Peds. (#/hr)							15		10	10		15
Heavy Vehicles (%)	0%	0%	1%	2%	0%	2%	0%	1%	1%	0%	3%	6%
Turn Type	pm+pt	NA		Perm	NA	Perm		NA			NA	Perm
Protected Phases	3	8			4			2			6	
Permitted Phases	8			4		4						6
Actuated Green, G (s)	45.2	45.2		37.7	37.7	37.7		80.8			80.8	80.8
Effective Green, g (s)	46.2	46.2		38.7	38.7	38.7		81.8			81.8	81.8
Actuated g/C Ratio	0.33	0.33		0.28	0.28	0.28		0.58			0.58	0.58
Clearance Time (s)	4.5	7.0		7.0	7.0	7.0		7.0			7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	286	529		254	236	437		2936			2942	839
v/s Ratio Prot	0.00	c0.17						c0.60			0.28	
v/s Ratio Perm	0.03			0.26	c0.27	0.20						0.01
v/c Ratio	0.09	0.50		0.94	0.99	0.72		1.03			0.48	0.01
Uniform Delay, d1	32.6	37.7		49.5	50.5	45.7		29.1			16.9	12.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.57			0.98	1.00
Incremental Delay, d2	0.1	0.8		40.5	56.0	5.6		21.1			0.3	0.0
Delay (s)	32.7	38.5		90.0	106.5	51.3		37.6			16.8	12.2
Level of Service	C	D		F	F	D		D			B	B
Approach Delay (s)		38.0			77.9			37.6			16.8	
Approach LOS		D			E			D			B	

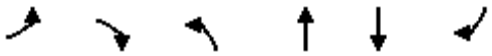
Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	108.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	1058	600	1942	1795
v/c Ratio	0.76	0.94	0.75	0.69
Control Delay	40.0	62.7	34.4	19.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	40.0	62.7	34.4	19.2
Queue Length 50th (m)	132.6	161.2	189.0	90.6
Queue Length 95th (m)	158.9	#237.6	m166.0	113.1
Internal Link Dist (m)	190.2		56.8	307.3
Turn Bay Length (m)				
Base Capacity (vph)	1436	659	2602	2602
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.74	0.91	0.75	0.69

Intersection Summary

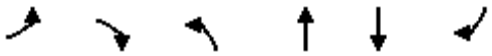
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1005	570	0	1845	1705	0
Future Volume (vph)	1005	570	0	1845	1705	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3467	1583		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3467	1583		5085	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1058	600	0	1942	1795	0
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	1058	596	0	1942	1795	0
Confl. Peds. (#/hr)			25			25
Heavy Vehicles (%)	1%	2%	0%	2%	2%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	2	
Permitted Phases		4				
Actuated Green, G (s)	55.3	55.3		70.7	70.7	
Effective Green, g (s)	56.3	56.3		71.7	71.7	
Actuated g/C Ratio	0.40	0.40		0.51	0.51	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1394	636		2604	2604	
v/s Ratio Prot	0.31			c0.38	0.35	
v/s Ratio Perm		c0.38				
v/c Ratio	0.76	0.94		0.75	0.69	
Uniform Delay, d1	36.0	40.1		27.0	25.8	
Progression Factor	1.00	1.00		1.21	0.68	
Incremental Delay, d2	2.4	21.3		1.1	1.3	
Delay (s)	38.4	61.4		33.6	18.8	
Level of Service	D	E		C	B	
Approach Delay (s)	46.8			33.6	18.8	
Approach LOS	D			C	B	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

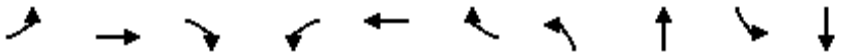
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	130	0	1850	1695	530
Future Volume (Veh/h)	0	130	0	1850	1695	530
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	138	0	1968	1803	564
Pedestrians	20					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				198	81	
pX, platoon unblocked	0.81	0.73	0.73			
vC, conflicting volume	2761	903	2387			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1055	0	1617			
tC, single (s)	6.8	7.1	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	82	100			
cM capacity (veh/h)	179	768	294			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	138	656	656	656	721	721	925
Volume Left	0	0	0	0	0	0	0
Volume Right	138	0	0	0	0	0	564
cSH	768	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.18	0.39	0.39	0.39	0.42	0.42	0.54
Queue Length 95th (m)	5.2	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.7	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	10.7	0.0			0.0		
Approach LOS	B						

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	59.8%	ICU Level of Service		B
Analysis Period (min)	15			



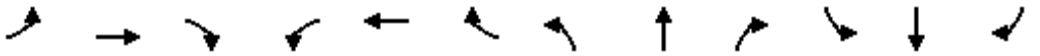
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	979	412	144	93	490	253	253	1067	196	1680
v/c Ratio	1.03	0.36	0.26	0.32	1.00	0.67	1.01	0.64	0.71	1.06
Control Delay	87.1	37.5	6.3	28.9	100.9	25.4	91.8	46.8	43.0	79.5
Queue Delay	26.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.7	37.5	6.3	28.9	100.9	25.4	91.8	46.8	43.0	79.5
Queue Length 50th (m)	~157.5	48.4	0.0	15.3	~76.3	17.3	~68.0	86.0	35.5	~192.1
Queue Length 95th (m)	#200.2	63.6	15.9	26.5	#115.5	48.7	m#92.4	m102.7	m55.4	#219.7
Internal Link Dist (m)		97.1			158.4			292.1		174.2
Turn Bay Length (m)	130.0			50.0			120.0		55.0	
Base Capacity (vph)	947	1160	559	295	489	379	250	1668	294	1579
Starvation Cap Reductn	228	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.36	0.36	0.26	0.32	1.00	0.67	1.01	0.64	0.67	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

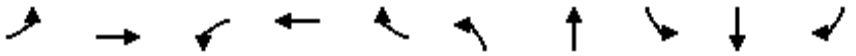
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	950	400	140	90	475	245	245	1000	35	190	1240	390
Future Volume (vph)	950	400	140	90	475	245	245	1000	35	190	1240	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	7.0		3.0	6.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	3610	1436	1782	3610	1599	1719	5103		1752	4899	
Flt Permitted	0.95	1.00	1.00	0.51	1.00	1.00	0.09	1.00		0.16	1.00	
Satd. Flow (perm)	3400	3610	1436	957	3610	1599	155	5103		295	4899	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	979	412	144	93	490	253	253	1031	36	196	1278	402
RTOR Reduction (vph)	0	0	98	0	0	162	0	3	0	0	40	0
Lane Group Flow (vph)	979	412	46	93	490	91	253	1064	0	196	1640	0
Confl. Peds. (#/hr)			20	20			15		15	15		15
Heavy Vehicles (%)	3%	0%	6%	0%	0%	1%	5%	1%	0%	3%	0%	4%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2			6		
Actuated Green, G (s)	38.0	44.0	44.0	30.0	18.0	18.0	60.7	45.7		56.3	43.0	
Effective Green, g (s)	39.0	45.0	45.0	32.0	19.0	19.0	62.7	45.7		58.3	44.0	
Actuated g/C Ratio	0.28	0.32	0.32	0.23	0.14	0.14	0.45	0.33		0.42	0.31	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	5.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.5	4.0	4.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	947	1160	461	295	489	217	248	1665		271	1539	
v/s Ratio Prot	c0.29	0.11		0.03	c0.14		c0.12	0.21		0.07	0.33	
v/s Ratio Perm			0.03	0.04		0.06	c0.34			0.23		
v/c Ratio	1.03	0.36	0.10	0.32	1.00	0.42	1.02	0.64		0.72	1.07	
Uniform Delay, d1	50.5	36.4	33.3	44.0	60.5	55.4	43.8	40.1		28.5	48.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.32	1.13		1.43	0.92	
Incremental Delay, d2	38.3	0.2	0.1	0.7	41.2	1.8	45.7	1.0		6.7	39.5	
Delay (s)	88.8	36.6	33.4	44.7	101.7	57.2	103.6	46.4		47.5	83.5	
Level of Service	F	D	C	D	F	E	F	D		D	F	
Approach Delay (s)		69.6			81.9			57.4			79.7	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	72.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	105.2%	ICU Level of Service	G
Analysis Period (min)	15		

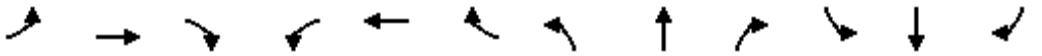
c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	335	531	98	598	634	62	783	521	624	314
v/c Ratio	0.84	0.45	0.27	0.58	0.96	0.28	0.78	0.92	0.80	0.41
Control Delay	79.6	37.0	24.1	44.4	50.5	24.2	51.4	79.0	58.5	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.6	37.0	24.1	44.4	50.5	24.2	51.4	79.0	58.5	27.1
Queue Length 50th (m)	50.4	61.4	15.9	76.1	101.6	9.4	109.5	82.5	134.6	40.1
Queue Length 95th (m)	#77.7	79.7	27.5	96.0	#184.6	18.1	135.2	m81.4	m133.1	m39.3
Internal Link Dist (m)		551.4		604.3			115.4		292.1	
Turn Bay Length (m)	85.0		85.0		75.0	40.0		85.0		
Base Capacity (vph)	398	1220	378	1102	681	221	1020	568	789	771
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.44	0.26	0.54	0.93	0.28	0.77	0.92	0.79	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



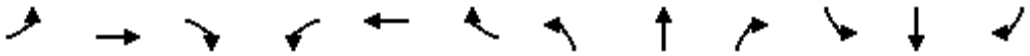
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	470	45	95	580	615	60	590	170	505	605	305
Future Volume (vph)	325	470	45	95	580	615	60	590	170	505	605	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.4		4.0	5.4	5.4	3.0	5.9		4.0	5.9	5.9
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3486		1799	3539	1470	1769	3461		3433	1881	1516
Flt Permitted	0.95	1.00		0.39	1.00	1.00	0.21	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3486		747	3539	1470	392	3461		3433	1881	1516
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	335	485	46	98	598	634	62	608	175	521	624	314
RTOR Reduction (vph)	0	5	0	0	0	230	0	19	0	0	0	137
Lane Group Flow (vph)	335	526	0	98	598	404	62	764	0	521	624	177
Confl. Peds. (#/hr)	45		10	10		45	10		20	20		10
Heavy Vehicles (%)	1%	2%	0%	0%	2%	2%	2%	0%	0%	2%	1%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases				4		4	2					6
Actuated Green, G (s)	15.1	46.1		49.3	39.8	39.8	44.5	38.9		22.2	56.5	56.5
Effective Green, g (s)	16.1	47.1		51.3	40.8	40.8	46.5	39.9		23.2	57.5	57.5
Actuated g/C Ratio	0.12	0.34		0.37	0.29	0.29	0.33	0.28		0.17	0.41	0.41
Clearance Time (s)	5.7	6.4		5.0	6.4	6.4	4.0	6.9		5.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	398	1172		352	1031	428	195	986		568	772	622
v/s Ratio Prot	c0.10	0.15		0.02	0.17		0.01	0.22		c0.15	c0.33	
v/s Ratio Perm				0.08		c0.27	0.09					0.12
v/c Ratio	0.84	0.45		0.28	0.58	0.94	0.32	0.78		0.92	0.81	0.29
Uniform Delay, d1	60.7	36.3		29.8	42.3	48.5	33.9	45.9		57.5	36.4	27.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.22	1.47	3.16
Incremental Delay, d2	14.8	0.3		0.4	0.8	29.4	0.9	5.9		8.4	3.2	0.4
Delay (s)	75.5	36.6		30.3	43.1	77.9	34.9	51.9		78.5	56.8	87.3
Level of Service	E	D		C	D	E	C	D		E	E	F
Approach Delay (s)		51.6			58.7			50.6			71.1	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	59.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	53	441	329	371
v/c Ratio	0.05	0.43	0.64	0.78
Control Delay	1.7	10.5	31.4	41.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.7	10.5	31.4	41.4
Queue Length 50th (m)	0.4	30.8	48.6	62.1
Queue Length 95th (m)	1.8	76.6	62.3	77.2
Internal Link Dist (m)	146.6	179.3	180.3	263.4
Turn Bay Length (m)				
Base Capacity (vph)	1129	1023	811	758
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.43	0.41	0.49

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	35	10	110	250	15	0	210	70	20	295	0
Future Volume (vph)	0	35	10	110	250	15	0	210	70	20	295	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			0.97			1.00	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1842			1851			1796			1894	
Flt Permitted		1.00			0.89			1.00			0.90	
Satd. Flow (perm)		1842			1674			1796			1706	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	41	12	129	294	18	0	247	82	24	347	0
RTOR Reduction (vph)	0	5	0	0	1	0	0	17	0	0	0	0
Lane Group Flow (vph)	0	48	0	0	440	0	0	312	0	0	371	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	3%	0%	0%	0%	0%
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		54.0			54.0			24.0			24.0	
Effective Green, g (s)		55.0			55.0			25.0			25.0	
Actuated g/C Ratio		0.61			0.61			0.28			0.28	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1125			1023			498			473	
v/s Ratio Prot		0.03						0.17				
v/s Ratio Perm					c0.26						c0.22	
v/c Ratio		0.04			0.43			0.63			0.78	
Uniform Delay, d1		7.0			9.2			28.4			30.0	
Progression Factor		0.22			0.86			1.00			1.00	
Incremental Delay, d2		0.1			1.3			2.5			8.3	
Delay (s)		1.6			9.2			30.9			38.3	
Level of Service		A			A			C			D	
Approach Delay (s)		1.6			9.2			30.9			38.3	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

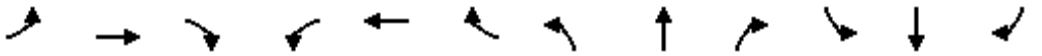
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	105	110	75	100	295	115
Future Volume (Veh/h)	105	110	75	100	295	115
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	118	124	84	112	331	129
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			242		460	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			242		460	180
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		37	85
cM capacity (veh/h)			1336		526	865

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	242	196	460
Volume Left	0	84	331
Volume Right	124	0	129
cSH	1700	1336	591
Volume to Capacity	0.14	0.06	0.78
Queue Length 95th (m)	0.0	1.6	58.3
Control Delay (s)	0.0	3.7	29.2
Lane LOS		A	D
Approach Delay (s)	0.0	3.7	29.2
Approach LOS			D

Intersection Summary			
Average Delay	15.8		
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	48	697	64	893	181	192	112	101	53
v/c Ratio	0.11	0.30	0.14	0.43	0.68	0.49	0.55	0.27	0.14
Control Delay	6.0	6.4	12.4	11.5	44.8	31.4	31.8	22.7	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	6.0	6.4	12.4	11.5	44.8	31.7	31.8	22.7	1.5
Queue Length 50th (m)	2.3	21.4	5.2	43.8	30.5	27.9	11.2	9.9	0.1
Queue Length 95th (m)	7.2	38.6	14.9	73.5	48.1	43.7	18.5	16.4	0.9
Internal Link Dist (m)		585.1		130.4		189.6		92.5	
Turn Bay Length (m)	45.0		30.0				25.0		25.0
Base Capacity (vph)	439	2370	452	2133	347	504	266	495	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	70	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.29	0.14	0.42	0.52	0.44	0.42	0.20	0.11

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	550	105	60	680	160	170	135	45	105	95	50
Future Volume (vph)	45	550	105	60	680	160	170	135	45	105	95	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1769	3442		1797	3424		1759	1815		1805	1827	1516
Flt Permitted	0.26	1.00		0.39	1.00		0.69	1.00		0.52	1.00	1.00
Satd. Flow (perm)	477	3442		731	3424		1281	1815		985	1827	1516
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	48	585	112	64	723	170	181	144	48	112	101	53
RTOR Reduction (vph)	0	15	0	0	19	0	0	14	0	0	0	42
Lane Group Flow (vph)	48	682	0	64	874	0	181	178	0	112	101	11
Confl. Peds. (#/hr)	5		5	5		5	5					5
Confl. Bikes (#/hr)												5
Heavy Vehicles (%)	2%	2%	1%	0%	2%	1%	2%	1%	0%	0%	4%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	60.2	60.2		52.1	52.1		17.8	17.8		17.8	17.8	17.8
Effective Green, g (s)	61.2	61.2		53.1	53.1		18.8	18.8		18.8	18.8	18.8
Actuated g/C Ratio	0.68	0.68		0.59	0.59		0.21	0.21		0.21	0.21	0.21
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	397	2340		431	2020		267	379		205	381	316
v/s Ratio Prot	0.01	c0.20			c0.26			0.10			0.06	
v/s Ratio Perm	0.08			0.09			c0.14			0.11		0.01
v/c Ratio	0.12	0.29		0.15	0.43		0.68	0.47		0.55	0.27	0.04
Uniform Delay, d1	5.5	5.7		8.3	10.2		32.8	31.2		31.8	29.8	28.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.72	0.75	0.33
Incremental Delay, d2	0.1	0.3		0.7	0.7		6.7	0.9		2.9	0.4	0.0
Delay (s)	5.6	6.1		9.0	10.8		39.5	32.1		25.8	22.8	9.5
Level of Service	A	A		A	B		D	C		C	C	A
Approach Delay (s)		6.0			10.7			35.7			21.4	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	160	0	75	310	0	40
Future Volume (Veh/h)	160	0	75	310	0	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	0	82	337	0	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	402					
pX, platoon unblocked						
vC, conflicting volume			174		675	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			174		675	174
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		100	95
cM capacity (veh/h)			1403		395	869

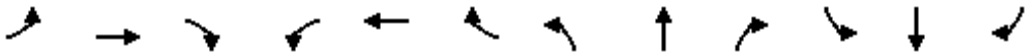
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	174	419	43
Volume Left	0	82	0
Volume Right	0	0	43
cSH	1700	1403	869
Volume to Capacity	0.10	0.06	0.05
Queue Length 95th (m)	0.0	1.5	1.2
Control Delay (s)	0.0	2.0	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	2.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	200	0	70	385	0	0
Future Volume (Veh/h)	200	0	70	385	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	217	0	76	418	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			217		787	217
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			217		787	217
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		100	100
cM capacity (veh/h)			1353		340	823

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	217	494	0
Volume Left	0	76	0
Volume Right	0	0	0
cSH	1700	1353	1700
Volume to Capacity	0.13	0.06	0.00
Queue Length 95th (m)	0.0	1.4	0.0
Control Delay (s)	0.0	1.7	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	1.7	0.0
Approach LOS			A

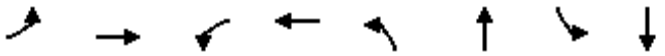
Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	55	0	20	275	20	0	90	50	25	25	20
Future Volume (Veh/h)	5	55	0	20	275	20	0	90	50	25	25	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	60	0	22	299	22	0	98	54	27	27	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		313			152							
pX, platoon unblocked												
vC, conflicting volume	321			60			460	435	60	527	424	310
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	321			60			460	435	60	527	424	310
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	81	95	93	95	97
cM capacity (veh/h)	1239			1544			470	505	1005	367	512	730

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	65	343	152	76
Volume Left	5	22	0	27
Volume Right	0	22	54	22
cSH	1239	1544	614	486
Volume to Capacity	0.00	0.01	0.25	0.16
Queue Length 95th (m)	0.1	0.3	7.8	4.4
Control Delay (s)	0.6	0.6	12.8	13.8
Lane LOS	A	A	B	B
Approach Delay (s)	0.6	0.6	12.8	13.8
Approach LOS			B	B

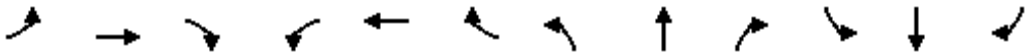
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	42.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	92	87	43	65	109	244	136	413
v/c Ratio	0.13	0.10	0.06	0.06	0.28	0.34	0.30	0.41
Control Delay	13.9	5.3	15.3	0.1	23.3	32.6	18.6	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	5.3	15.3	0.1	23.3	32.6	18.6	4.5
Queue Length 50th (m)	5.5	0.1	3.1	0.0	18.0	20.7	18.2	1.8
Queue Length 95th (m)	21.8	10.7	m11.8	m0.0	22.1	30.0	22.3	11.6
Internal Link Dist (m)		18.8		15.5		150.5		264.2
Turn Bay Length (m)	30.0		30.0		30.0		30.0	
Base Capacity (vph)	710	905	697	1148	389	1284	447	1361
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.10	0.06	0.06	0.28	0.19	0.30	0.30

Intersection Summary

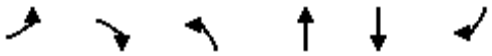
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	15	65	40	0	60	100	185	40	125	20	360
Future Volume (vph)	85	15	65	40	0	60	100	185	40	125	20	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		3.0	5.0		3.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.85		1.00	0.97		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1635		1770	1583		1770	3446		1770	3037	
Flt Permitted	0.71	1.00		0.70	1.00		0.45	1.00		0.52	1.00	
Satd. Flow (perm)	1331	1635		1305	1583		839	3446		970	3037	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	16	71	43	0	65	109	201	43	136	22	391
RTOR Reduction (vph)	0	34	0	0	31	0	0	25	0	0	300	0
Lane Group Flow (vph)	92	53	0	43	34	0	109	219	0	136	113	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	46.3	46.3		46.3	46.3		25.4	17.7		30.0	20.0	
Effective Green, g (s)	47.3	47.3		47.3	47.3		27.4	18.7		32.0	21.0	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.30	0.21		0.36	0.23	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	699	859		685	831		345	716		442	708	
v/s Ratio Prot		0.03			0.02		0.03	0.06		c0.04	0.04	
v/s Ratio Perm	c0.07			0.03			0.07			c0.07		
v/c Ratio	0.13	0.06		0.06	0.04		0.32	0.31		0.31	0.16	
Uniform Delay, d1	10.9	10.5		10.5	10.4		23.2	30.2		20.3	27.5	
Progression Factor	0.96	0.90		1.06	1.00		1.31	1.25		1.00	1.00	
Incremental Delay, d2	0.4	0.1		0.2	0.1		0.5	0.2		0.4	0.1	
Delay (s)	10.8	9.5		11.3	10.4		31.0	37.9		20.7	27.6	
Level of Service	B	A		B	B		C	D		C	C	
Approach Delay (s)		10.2			10.8			35.7			25.9	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

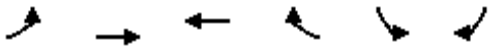
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	75	95	80	70	0
Future Volume (Veh/h)	0	75	95	80	70	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	82	103	87	76	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	369	76	76			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	369	76	76			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	93			
cM capacity (veh/h)	589	985	1523			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	82	190	76
Volume Left	0	103	0
Volume Right	82	0	0
cSH	985	1523	1700
Volume to Capacity	0.08	0.07	0.04
Queue Length 95th (m)	2.2	1.7	0.0
Control Delay (s)	9.0	4.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.0	4.3	0.0
Approach LOS	A		

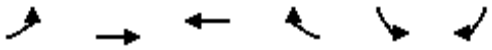
Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	280	335	375	0	10	405
Future Volume (Veh/h)	280	335	375	0	10	405
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	304	364	408	0	11	440
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		182				
pX, platoon unblocked						
vC, conflicting volume	408				1198	204
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	408				1198	204
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	74				92	45
cM capacity (veh/h)	1147				131	803

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	304	182	182	272	136	451
Volume Left	304	0	0	0	0	11
Volume Right	0	0	0	0	0	440
cSH	1147	1700	1700	1700	1700	714
Volume to Capacity	0.26	0.11	0.11	0.16	0.08	0.63
Queue Length 95th (m)	8.6	0.0	0.0	0.0	0.0	36.2
Control Delay (s)	9.3	0.0	0.0	0.0	0.0	18.3
Lane LOS	A					C
Approach Delay (s)	4.2			0.0		18.3
Approach LOS						C

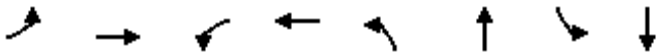
Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	61.5%	ICU Level of Service		B
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	345	365	250	90	10
Future Volume (Veh/h)	10	345	365	250	90	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	375	397	272	98	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			141			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	669				742	334
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	572				649	224
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				74	99
cM capacity (veh/h)	957				382	748

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	11	188	188	265	404	98	11
Volume Left	11	0	0	0	0	98	0
Volume Right	0	0	0	0	272	0	11
cSH	957	1700	1700	1700	1700	382	748
Volume to Capacity	0.01	0.11	0.11	0.16	0.24	0.26	0.01
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	8.1	0.4
Control Delay (s)	8.8	0.0	0.0	0.0	0.0	17.6	9.9
Lane LOS	A					C	A
Approach Delay (s)	0.3			0.0		16.9	
Approach LOS						C	

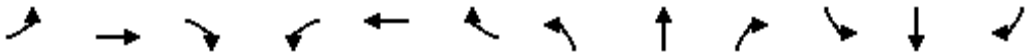
Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	190	288	33	679	82	103	82	55
v/c Ratio	0.36	0.11	0.04	0.27	0.31	0.27	0.32	0.08
Control Delay	10.5	5.8	5.4	4.4	30.9	15.5	35.0	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	5.8	5.4	4.4	30.9	15.5	35.0	20.8
Queue Length 50th (m)	9.3	5.7	1.1	12.2	13.9	8.1	14.4	2.8
Queue Length 95th (m)	36.7	17.5	m3.3	21.2	22.3	18.1	27.3	9.0
Internal Link Dist (m)		117.0		103.5		51.5		150.5
Turn Bay Length (m)	100.0		30.0				40.0	
Base Capacity (vph)	527	2588	787	2547	550	737	528	1380
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.11	0.04	0.27	0.15	0.14	0.16	0.04

Intersection Summary

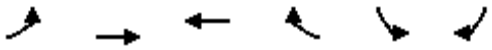
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	255	10	30	520	105	75	45	50	75	30	20
Future Volume (vph)	175	255	10	30	520	105	75	45	50	75	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	0.95	
Frt	1.00	0.99		1.00	0.97		1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3519		1770	3450		1770	1716		1770	3327	
Flt Permitted	0.38	1.00		0.58	1.00		0.72	1.00		0.69	1.00	
Satd. Flow (perm)	716	3519		1072	3450		1340	1716		1286	3327	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	277	11	33	565	114	82	49	54	82	33	22
RTOR Reduction (vph)	0	2	0	0	10	0	0	44	0	0	18	0
Lane Group Flow (vph)	190	286	0	33	669	0	82	59	0	82	37	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	63.0	63.0		63.0	63.0		15.0	15.0		15.0	15.0	
Effective Green, g (s)	64.0	64.0		64.0	64.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.71	0.71		0.71	0.71		0.18	0.18		0.18	0.18	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	509	2502		762	2453		238	305		228	591	
v/s Ratio Prot		0.08			0.19			0.03			0.01	
v/s Ratio Perm	c0.27			0.03			0.06			c0.06		
v/c Ratio	0.37	0.11		0.04	0.27		0.34	0.19		0.36	0.06	
Uniform Delay, d1	5.1	4.1		3.9	4.7		32.4	31.5		32.5	30.8	
Progression Factor	1.00	1.00		0.75	0.70		1.00	1.00		1.13	1.23	
Incremental Delay, d2	2.1	0.1		0.1	0.3		0.9	0.3		1.0	0.0	
Delay (s)	7.2	4.2		3.0	3.5		33.3	31.8		37.7	37.8	
Level of Service	A	A		A	A		C	C		D	D	
Approach Delay (s)		5.4			3.5			32.5			37.7	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



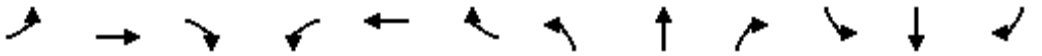
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	325	585	230	120	70
Future Volume (Veh/h)	55	325	585	230	120	70
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	353	636	250	130	76
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		127	245			
pX, platoon unblocked	0.89				0.89	0.89
vC, conflicting volume	886				1058	443
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	626				819	129
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				50	90
cM capacity (veh/h)	847				259	799

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	178	235	424	462	130	76
Volume Left	60	0	0	0	130	0
Volume Right	0	0	0	250	0	76
cSH	847	1700	1700	1700	259	799
Volume to Capacity	0.07	0.14	0.25	0.27	0.50	0.10
Queue Length 95th (m)	1.8	0.0	0.0	0.0	20.8	2.5
Control Delay (s)	3.7	0.0	0.0	0.0	32.0	10.0
Lane LOS	A				D	A
Approach Delay (s)	1.6		0.0		23.9	
Approach LOS					C	

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	473	897	369	222
v/c Ratio	0.24	0.46	0.82	0.42
Control Delay	9.2	13.3	40.7	17.1
Queue Delay	0.0	0.0	0.3	0.0
Total Delay	9.2	13.3	41.0	17.1
Queue Length 50th (m)	21.7	45.6	46.5	19.6
Queue Length 95th (m)	33.7	76.1	97.9	27.2
Internal Link Dist (m)	221.4	48.5	92.5	315.1
Turn Bay Length (m)				
Base Capacity (vph)	1950	1950	611	721
Starvation Cap Reductn	0	0	36	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.24	0.46	0.64	0.31

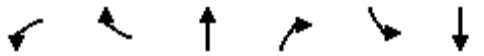
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	360	75	0	680	145	130	210	0	40	165	0
Future Volume (vph)	0	360	75	0	680	145	130	210	0	40	165	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.97			0.97			1.00			1.00	
Flt Protected		1.00			1.00			0.98			0.99	
Satd. Flow (prot)		3447			3446			1828			1845	
Flt Permitted		1.00			1.00			0.74			0.87	
Satd. Flow (perm)		3447			3446			1375			1625	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	391	82	0	739	158	141	228	0	43	179	0
RTOR Reduction (vph)	0	15	0	0	16	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	458	0	0	881	0	0	369	0	0	222	0
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		49.5			49.5			28.5			28.5	
Effective Green, g (s)		50.5			50.5			29.5			29.5	
Actuated g/C Ratio		0.56			0.56			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1934			1933			450			532	
v/s Ratio Prot		0.13			c0.26							
v/s Ratio Perm								c0.27			0.14	
v/c Ratio		0.24			0.46			0.82			0.42	
Uniform Delay, d1		10.0			11.6			27.8			23.6	
Progression Factor		0.85			1.00			0.96			0.66	
Incremental Delay, d2		0.3			0.8			10.7			0.5	
Delay (s)		8.8			12.4			37.5			16.1	
Level of Service		A			B			D			B	
Approach Delay (s)		8.8			12.4			37.5			16.1	
Approach LOS		A			B			D			B	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

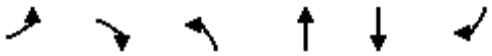
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	40	0	115	75	0
Future Volume (Veh/h)	70	40	0	115	75	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	43	0	125	82	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	226	62			125	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	226	62			125	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	96			94	
cM capacity (veh/h)	719	1002			1462	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	119	125	82
Volume Left	76	0	82
Volume Right	43	125	0
cSH	801	1700	1462
Volume to Capacity	0.15	0.07	0.06
Queue Length 95th (m)	4.2	0.0	1.4
Control Delay (s)	10.3	0.0	7.6
Lane LOS	B		A
Approach Delay (s)	10.3	0.0	7.6
Approach LOS	B		

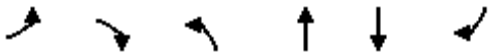
Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	70	80	0	0	70
Future Volume (Veh/h)	0	70	80	0	0	70
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	76	87	0	0	76
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	212	38	76			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	212	38	76			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	94			
cM capacity (veh/h)	732	1034	1523			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	76	87	76
Volume Left	0	87	0
Volume Right	76	0	76
cSH	1034	1523	1700
Volume to Capacity	0.07	0.06	0.04
Queue Length 95th (m)	1.9	1.5	0.0
Control Delay (s)	8.8	7.5	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	7.5	0.0
Approach LOS	A		

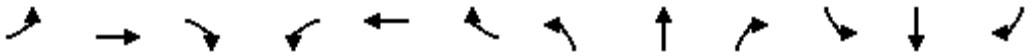
Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	60	120	165	130	15
Future Volume (Veh/h)	10	60	120	165	130	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	65	130	179	141	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	588	149	157			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	588	149	157			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	93	91			
cM capacity (veh/h)	428	898	1423			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	76	309	157
Volume Left	11	130	0
Volume Right	65	0	16
cSH	775	1423	1700
Volume to Capacity	0.10	0.09	0.09
Queue Length 95th (m)	2.6	2.4	0.0
Control Delay (s)	10.2	3.7	0.0
Lane LOS	B	A	
Approach Delay (s)	10.2	3.7	0.0
Approach LOS	B		

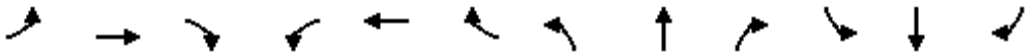
Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	85	0	90	280	80	0	0	60	20	0	25
Future Volume (Veh/h)	45	85	0	90	280	80	0	0	60	20	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	92	0	98	304	87	0	0	65	22	0	27
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					43							
pX, platoon unblocked	0.95						0.95	0.95		0.95	0.95	0.95
vC, conflicting volume	391			92			760	777	92	798	734	348
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	336			92			724	741	92	763	695	290
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			93			100	100	93	92	100	96
cM capacity (veh/h)	1165			1503			288	294	965	262	312	714

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	141	489	65	49
Volume Left	49	98	0	22
Volume Right	0	87	65	27
cSH	1165	1503	965	402
Volume to Capacity	0.04	0.07	0.07	0.12
Queue Length 95th (m)	1.1	1.7	1.7	3.3
Control Delay (s)	3.1	2.0	9.0	15.2
Lane LOS	A	A	A	C
Approach Delay (s)	3.1	2.0	9.0	15.2
Approach LOS			A	C

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	43.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	20	55	35	10	50	45	0	10	45	0	45
Future Volume (Veh/h)	105	20	55	35	10	50	45	0	10	45	0	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	22	60	38	11	54	49	0	11	49	0	49
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		40										
pX, platoon unblocked				0.94			0.94	0.94	0.94	0.94	0.94	
vC, conflicting volume	65			82			443	421	52	405	424	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	65			0			374	351	0	334	354	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			98			90	100	99	91	100	95
cM capacity (veh/h)	1537			1524			482	486	1019	533	484	1034

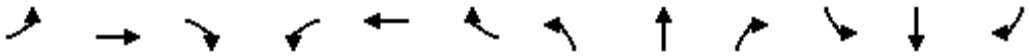
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	196	103	60	98
Volume Left	114	38	49	49
Volume Right	60	54	11	49
cSH	1537	1524	534	703
Volume to Capacity	0.07	0.02	0.11	0.14
Queue Length 95th (m)	1.9	0.6	3.0	3.9
Control Delay (s)	4.6	2.9	12.6	10.9
Lane LOS	A	A	B	B
Approach Delay (s)	4.6	2.9	12.6	10.9
Approach LOS			B	B

Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	28.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	75	10	130	130	20	25
Future Volume (Veh/h)	75	10	130	130	20	25
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	11	141	141	22	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	282	212			282	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	282	212			282	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	99			98	
cM capacity (veh/h)	695	829			1280	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	93	282	49
Volume Left	82	0	22
Volume Right	11	141	0
cSH	709	1700	1280
Volume to Capacity	0.13	0.17	0.02
Queue Length 95th (m)	3.6	0.0	0.4
Control Delay (s)	10.8	0.0	3.6
Lane LOS	B		A
Approach Delay (s)	10.8	0.0	3.6
Approach LOS	B		

Intersection Summary			
Average Delay		2.8	
Intersection Capacity Utilization		30.6%	ICU Level of Service A
Analysis Period (min)		15	



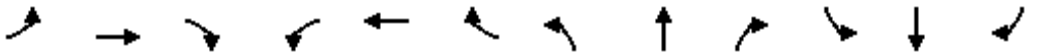
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	182	338	697	101	475	146	1763	798	247	3606	51
v/c Ratio	0.12	0.67	0.96	0.94	0.17	0.79	0.86	0.85	0.82	1.19	1.64	0.07
Control Delay	28.9	69.9	73.4	74.1	35.6	35.5	45.3	16.7	8.2	156.8	317.4	0.2
Queue Delay	0.0	0.0	54.8	59.0	0.0	0.0	0.0	0.0	2.4	0.0	0.4	0.0
Total Delay	28.9	69.9	128.2	133.1	35.6	35.5	45.3	16.7	10.6	156.8	317.8	0.2
Queue Length 50th (m)	6.1	50.9	60.0	103.4	21.5	78.3	24.2	130.4	91.5	~70.7	~554.5	0.0
Queue Length 95th (m)	13.5	78.4	#123.5	#139.8	36.9	#138.7	m14.8	m77.8	m17.8	#127.7	#574.4	0.0
Internal Link Dist (m)		361.1			497.8			251.4			315.2	
Turn Bay Length (m)	80.0			165.0		15.0				85.0		80.0
Base Capacity (vph)	282	271	351	752	599	598	169	2073	978	207	2204	684
Starvation Cap Reductn	0	0	0	0	0	0	0	0	89	0	0	0
Spillback Cap Reductn	0	0	224	564	0	0	0	0	0	0	285	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.67	2.66	3.71	0.17	0.79	0.86	0.85	0.90	1.19	1.88	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

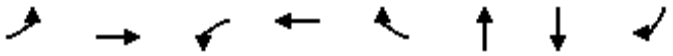
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	180	335	690	100	470	145	1745	790	245	3570	50
Future Volume (vph)	35	180	335	690	100	470	145	1745	790	245	3570	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.8	5.8	4.7	5.8	5.8	3.0	5.1	5.1	3.0	5.1	5.1
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.97	1.00	1.00	0.91
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1668	1863	1568	3367	1827	1410	1719	4988	1513	1787	5085	1383
Flt Permitted	0.69	1.00	1.00	0.95	1.00	1.00	0.07	1.00	1.00	0.07	1.00	1.00
Satd. Flow (perm)	1215	1863	1568	3367	1827	1410	127	4988	1513	126	5085	1383
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	35	182	338	697	101	475	146	1763	798	247	3606	51
RTOR Reduction (vph)	0	0	122	0	0	136	0	0	354	0	0	29
Lane Group Flow (vph)	35	182	216	697	101	339	146	1763	444	247	3606	22
Confl. Peds. (#/hr)	35					35	35		10	10		35
Heavy Vehicles (%)	3%	2%	3%	4%	4%	4%	5%	4%	3%	1%	2%	6%
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Actuated Green, G (s)	26.1	20.5	20.5	30.0	44.9	44.9	64.4	56.1	56.1	69.4	58.6	58.6
Effective Green, g (s)	28.1	21.5	21.5	31.0	45.9	45.9	66.4	57.1	57.1	71.4	59.6	59.6
Actuated g/C Ratio	0.20	0.15	0.15	0.22	0.33	0.33	0.47	0.41	0.41	0.51	0.43	0.43
Clearance Time (s)	5.7	6.8	6.8	5.7	6.8	6.8	4.0	6.1	6.1	4.0	6.1	6.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	265	286	240	745	598	462	165	2034	617	204	2164	588
v/s Ratio Prot	0.01	0.10		c0.21	0.06		0.06	0.35		c0.10	c0.71	
v/s Ratio Perm	0.02		c0.14			0.24	0.36		0.29	0.51		0.02
v/c Ratio	0.13	0.64	0.90	0.94	0.17	0.73	0.88	0.87	0.72	1.21	1.67	0.04
Uniform Delay, d1	45.7	55.6	58.2	53.5	33.5	41.6	36.4	38.0	34.7	42.4	40.2	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.40	0.44	0.84	1.00	1.00	1.00
Incremental Delay, d2	0.2	4.6	32.9	18.9	0.1	5.9	5.5	0.5	0.7	131.4	301.9	0.1
Delay (s)	45.9	60.2	91.1	72.4	33.6	47.6	56.3	17.0	29.9	173.8	342.1	23.6
Level of Service	D	E	F	E	C	D	E	B	C	F	F	C
Approach Delay (s)		78.1			60.0			23.0			327.3	
Approach LOS		E			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	173.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	122.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



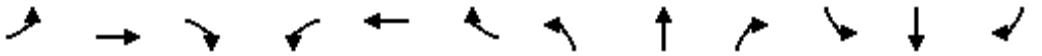
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	5	232	340	340	381	3887	5304	5
v/c Ratio	0.02	0.42	1.02	1.02	0.68	1.38	1.82	0.01
Control Delay	30.0	33.6	101.3	101.3	39.7	195.9	396.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	33.6	101.3	101.3	39.7	195.9	396.1	0.0
Queue Length 50th (m)	1.0	45.0	102.5	102.5	74.1	~549.6	~847.9	0.0
Queue Length 95th (m)	4.2	70.2	#199.8	#199.8	#139.0	m#520.2	m#537.8	m0.0
Internal Link Dist (m)		327.0		348.8		307.3	251.4	
Turn Bay Length (m)								
Base Capacity (vph)	271	557	333	333	557	2814	2913	922
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.42	1.02	1.02	0.68	1.38	1.82	0.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	225	660	0	370	0	3070	700	0	5145	5
Future Volume (vph)	5	0	225	660	0	370	0	3070	700	0	5145	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		6.0	6.0	6.0		6.0			6.0	6.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.91			0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		0.99			1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1805	1599		1649	1649	1568		4819			5036	1543
Flt Permitted	0.30	1.00		0.60	0.60	1.00		1.00			1.00	1.00
Satd. Flow (perm)	576	1599		1047	1047	1568		4819			5036	1543
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	0	232	680	0	381	0	3165	722	0	5304	5
RTOR Reduction (vph)	0	20	0	0	0	58	0	28	0	0	0	2
Lane Group Flow (vph)	5	212	0	340	340	323	0	3859	0	0	5304	3
Confl. Peds. (#/hr)							10		5	5		10
Heavy Vehicles (%)	0%	0%	1%	4%	0%	3%	0%	4%	4%	0%	3%	0%
Turn Type	pm+pt	NA		Perm	NA	Perm		NA			NA	Perm
Protected Phases	3	8			4			2			6	
Permitted Phases	8			4		4						6
Actuated Green, G (s)	50.0	50.0		43.6	43.6	43.6		76.0			76.0	76.0
Effective Green, g (s)	51.0	51.0		44.6	44.6	44.6		77.0			77.0	77.0
Actuated g/C Ratio	0.36	0.36		0.32	0.32	0.32		0.55			0.55	0.55
Clearance Time (s)	5.0	7.0		7.0	7.0	7.0		7.0			7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	230	582		333	333	499		2650			2769	848
v/s Ratio Prot	0.00	c0.13						0.80			c1.05	
v/s Ratio Perm	0.01			c0.32	0.32	0.21						0.00
v/c Ratio	0.02	0.36		1.02	1.02	0.65		1.46			1.92	0.00
Uniform Delay, d1	30.1	32.6		47.7	47.7	41.0		31.5			31.5	14.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.80			1.32	1.00
Incremental Delay, d2	0.0	0.4		54.8	54.8	2.9		205.4			412.1	0.0
Delay (s)	30.1	33.0		102.5	102.5	43.8		230.8			453.6	14.2
Level of Service	C	C		F	F	D		F			F	B
Approach Delay (s)		33.0			81.4			230.8			453.2	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	323.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	146.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

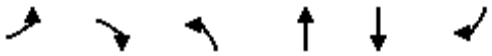
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	1663	1179	2321	3842
v/c Ratio	1.09	1.68	1.00	1.62
Control Delay	90.5	341.3	26.5	306.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	90.5	341.3	26.5	306.6
Queue Length 50th (m)	~281.3	~501.0	79.6	~587.2
Queue Length 95th (m)	#325.0	#585.6	m53.5	m211.0
Internal Link Dist (m)	190.2		56.8	307.3
Turn Bay Length (m)				
Base Capacity (vph)	1520	701	2328	2374
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.09	1.68	1.00	1.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

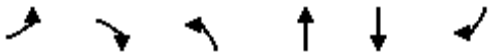
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1630	1155	0	2275	3765	0
Future Volume (vph)	1630	1155	0	2275	3765	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		4940	5036	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		4940	5036	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	1663	1179	0	2321	3842	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1663	1179	0	2321	3842	0
Confl. Peds. (#/hr)			10			10
Heavy Vehicles (%)	2%	2%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	2	
Permitted Phases		4				
Actuated Green, G (s)	61.0	61.0		65.0	65.0	
Effective Green, g (s)	62.0	62.0		66.0	66.0	
Actuated g/C Ratio	0.44	0.44		0.47	0.47	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1520	701		2328	2374	
v/s Ratio Prot	0.48			0.47	c0.76	
v/s Ratio Perm		c0.74				
v/c Ratio	1.09	1.68		1.00	1.62	
Uniform Delay, d1	39.0	39.0		36.9	37.0	
Progression Factor	1.00	1.00		0.56	0.99	
Incremental Delay, d2	53.3	313.1		5.0	278.4	
Delay (s)	92.3	352.1		25.6	315.2	
Level of Service	F	F		C	F	
Approach Delay (s)	200.0			25.6	315.2	
Approach LOS	F			C	F	

Intersection Summary			
HCM 2000 Control Delay	204.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.65		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	154.3%	ICU Level of Service	H
Analysis Period (min)	15		

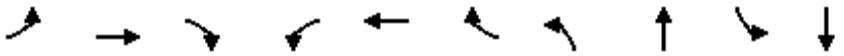
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	195	0	2255	3750	655
Future Volume (Veh/h)	0	195	0	2255	3750	655
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	210	0	2425	4032	704
Pedestrians	10					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				198	81	
pX, platoon unblocked	0.69	0.53	0.53			
vC, conflicting volume	5202	1706	4746			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2528	0	4961			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	63	100			
cM capacity (veh/h)	16	569	10			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	210	808	808	808	1613	1613	1510
Volume Left	0	0	0	0	0	0	0
Volume Right	210	0	0	0	0	0	704
cSH	569	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.37	0.48	0.48	0.48	0.95	0.95	0.89
Queue Length 95th (m)	13.5	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	15.0	0.0			0.0		
Approach LOS	B						

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	105.9%	ICU Level of Service	G	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	603	943	242	134	268	93	139	2077	330	3052
v/c Ratio	0.82	0.90	0.46	0.63	0.49	0.22	0.86	1.30	1.05	1.56
Control Delay	61.5	59.6	16.9	47.5	57.6	1.2	70.5	178.8	77.7	285.2
Queue Delay	2.3	48.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	108.3	17.6	47.5	57.6	1.2	70.5	178.8	77.7	285.2
Queue Length 50th (m)	86.4	137.3	18.7	23.6	37.6	0.0	29.0	~279.7	~93.2	~455.5
Queue Length 95th (m)	104.8	165.6	44.9	#48.1	54.9	0.0	m#43.5	m#307.2	m49.1	m175.2
Internal Link Dist (m)		97.1			158.4			292.1		174.2
Turn Bay Length (m)	130.0			50.0			120.0		55.0	
Base Capacity (vph)	841	1083	543	213	549	424	161	1593	314	1957
Starvation Cap Reductn	127	336	101	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	1.26	0.55	0.63	0.49	0.22	0.86	1.30	1.05	1.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

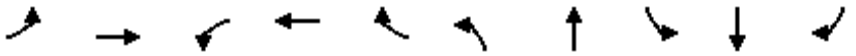
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	585	915	235	130	260	90	135	1980	35	320	2520	440
Future Volume (vph)	585	915	235	130	260	90	135	1980	35	320	2520	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0		3.0	6.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3273	3610	1447	1735	3438	1553	1671	5021		1736	4923	
Flt Permitted	0.95	1.00	1.00	0.18	1.00	1.00	0.09	1.00		0.08	1.00	
Satd. Flow (perm)	3273	3610	1447	326	3438	1553	159	5021		154	4923	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	603	943	242	134	268	93	139	2041	36	330	2598	454
RTOR Reduction (vph)	0	0	111	0	0	78	0	1	0	0	18	0
Lane Group Flow (vph)	603	943	131	134	268	15	139	2076	0	330	3034	0
Confl. Peds. (#/hr)			5	5			15		5	5		15
Heavy Vehicles (%)	7%	0%	9%	4%	5%	4%	8%	3%	3%	4%	2%	4%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2			6		
Actuated Green, G (s)	30.4	39.8	39.8	33.4	21.4	21.4	51.4	43.3		67.2	54.1	
Effective Green, g (s)	31.4	40.8	40.8	35.4	22.4	22.4	53.4	44.3		68.2	55.1	
Actuated g/C Ratio	0.22	0.29	0.29	0.25	0.16	0.16	0.38	0.32		0.49	0.39	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	5.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.5	4.0	4.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	734	1052	421	213	550	248	158	1588		311	1937	
v/s Ratio Prot	c0.18	c0.26		0.06	0.08		0.06	0.41		c0.16	c0.62	
v/s Ratio Perm			0.09	0.10		0.01	0.28			0.36		
v/c Ratio	0.82	0.90	0.31	0.63	0.49	0.06	0.88	1.31		1.06	1.57	
Uniform Delay, d1	51.6	47.6	38.7	43.1	53.6	49.9	35.5	47.9		45.4	42.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.20	0.99		1.24	1.12	
Incremental Delay, d2	7.4	10.0	0.4	6.0	0.9	0.1	31.0	141.7		34.7	255.2	
Delay (s)	59.0	57.6	39.1	49.1	54.5	50.0	73.7	189.2		90.9	302.9	
Level of Service	E	E	D	D	D	D	E	F		F	F	
Approach Delay (s)		55.6			52.2			182.0			282.2	
Approach LOS		E			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	188.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	118.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



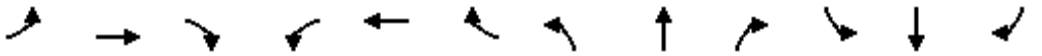
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	276	849	135	698	646	52	823	724	1286	422
v/c Ratio	0.87	1.01	0.64	0.85	0.96	0.33	0.82	0.90	1.40	0.51
Control Delay	87.8	84.6	44.8	61.5	45.9	24.4	54.5	73.2	215.6	23.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.8	84.6	44.8	61.5	45.9	24.4	54.5	73.2	215.6	23.2
Queue Length 50th (m)	41.5	~139.8	26.4	102.8	81.9	6.5	118.6	114.8	~499.2	50.8
Queue Length 95th (m)	#66.7	#183.9	44.2	#127.8	#167.1	12.9	145.3	m80.5	m#171.0	m31.5
Internal Link Dist (m)		551.4		604.3			115.4		292.1	
Turn Bay Length (m)	85.0		85.0		75.0	40.0		85.0		
Base Capacity (vph)	319	842	227	825	670	157	1000	825	917	821
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	1.01	0.59	0.85	0.96	0.33	0.82	0.88	1.40	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



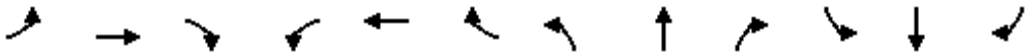
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	750	65	130	670	620	50	720	70	695	1235	405
Future Volume (vph)	265	750	65	130	670	620	50	720	70	695	1235	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.4		4.0	5.4	5.4	3.0	5.9		4.0	5.9	5.9
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3367	3358		1735	3438	1483	1770	3473		3400	1881	1498
Flt Permitted	0.95	1.00		0.12	1.00	1.00	0.10	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3367	3358		217	3438	1483	186	3473		3400	1881	1498
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	276	781	68	135	698	646	52	750	73	724	1286	422
RTOR Reduction (vph)	0	5	0	0	0	315	0	5	0	0	0	91
Lane Group Flow (vph)	276	844	0	135	698	331	52	818	0	724	1286	331
Confl. Peds. (#/hr)	25		15	15		25	20		10	10		20
Heavy Vehicles (%)	4%	6%	3%	4%	5%	4%	2%	2%	6%	3%	1%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases				4		4	2					6
Actuated Green, G (s)	12.3	33.9		44.3	32.6	32.6	44.7	39.1		32.0	66.5	66.5
Effective Green, g (s)	13.3	34.9		46.3	33.6	33.6	46.7	40.1		33.0	67.5	67.5
Actuated g/C Ratio	0.10	0.25		0.33	0.24	0.24	0.33	0.29		0.24	0.48	0.48
Clearance Time (s)	5.7	6.4		5.0	6.4	6.4	4.0	6.9		5.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	319	837		209	825	355	136	994		801	906	722
v/s Ratio Prot	c0.08	c0.25		0.06	0.20		0.02	0.24		c0.21	c0.68	
v/s Ratio Perm				0.15		0.22	0.11					0.22
v/c Ratio	0.87	1.01		0.65	0.85	0.93	0.38	0.82		0.90	1.42	0.46
Uniform Delay, d1	62.5	52.5		37.1	50.7	52.1	36.8	46.6		52.0	36.2	24.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.38	1.21	1.62
Incremental Delay, d2	20.9	33.3		6.7	8.0	31.0	1.8	7.7		1.5	189.3	0.2
Delay (s)	83.4	85.9		43.8	58.7	83.1	38.6	54.3		73.4	233.0	39.1
Level of Service	F	F		D	E	F	D	D		E	F	D
Approach Delay (s)		85.3			68.0			53.4			151.9	
Approach LOS		F			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	103.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	118.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	155	213	391	413
v/c Ratio	0.14	0.26	0.70	0.75
Control Delay	2.3	10.6	33.4	36.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.3	10.6	33.4	36.6
Queue Length 50th (m)	1.8	15.8	60.8	67.1
Queue Length 95th (m)	5.7	41.4	76.7	83.7
Internal Link Dist (m)	146.6	179.3	180.3	263.4
Turn Bay Length (m)				
Base Capacity (vph)	1081	811	811	808
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.26	0.48	0.51

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	95	40	100	85	0	0	295	45	10	350	0
Future Volume (vph)	0	95	40	100	85	0	0	295	45	10	350	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			1.00			0.98			1.00	
Flt Protected		1.00			0.97			1.00			1.00	
Satd. Flow (prot)		1824			1746			1812			1844	
Flt Permitted		1.00			0.77			1.00			0.99	
Satd. Flow (perm)		1824			1384			1812			1819	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	109	46	115	98	0	0	339	52	11	402	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	143	0	0	213	0	0	383	0	0	413	0
Heavy Vehicles (%)	0%	0%	0%	11%	0%	0%	50%	3%	3%	0%	3%	0%
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		51.8			51.8			26.2			26.2	
Effective Green, g (s)		52.8			52.8			27.2			27.2	
Actuated g/C Ratio		0.59			0.59			0.30			0.30	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1070			811			547			549	
v/s Ratio Prot		0.08						0.21				
v/s Ratio Perm					c0.15						c0.23	
v/c Ratio		0.13			0.26			0.70			0.75	
Uniform Delay, d1		8.3			9.1			27.8			28.4	
Progression Factor		0.25			0.91			1.00			1.00	
Incremental Delay, d2		0.3			0.8			4.0			5.8	
Delay (s)		2.4			9.0			31.8			34.1	
Level of Service		A			A			C			C	
Approach Delay (s)		2.4			9.0			31.8			34.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	40	240	95	270	165	35
Future Volume (Veh/h)	40	240	95	270	165	35
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	49	293	116	329	201	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			342		756	196
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			342		756	196
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		41	95
cM capacity (veh/h)			1217		341	838

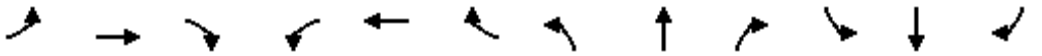
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	342	445	244
Volume Left	0	116	201
Volume Right	293	0	43
cSH	1700	1217	381
Volume to Capacity	0.20	0.10	0.64
Queue Length 95th (m)	0.0	2.5	34.2
Control Delay (s)	0.0	2.9	29.8
Lane LOS		A	D
Approach Delay (s)	0.0	2.9	29.8
Approach LOS			D

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	27	1473	43	1082	250	212	130	255	27
v/c Ratio	0.16	0.81	0.52	0.59	0.71	0.33	0.57	0.66	0.07
Control Delay	15.0	22.1	44.6	16.3	32.6	18.9	32.3	32.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	22.1	44.6	16.3	32.6	18.9	32.3	32.1	0.3
Queue Length 50th (m)	2.3	102.3	4.6	63.0	33.5	24.1	19.3	39.8	0.0
Queue Length 95th (m)	8.6	#173.1	#24.3	97.4	#47.8	37.5	m26.3	m54.1	m0.0
Internal Link Dist (m)		585.1		130.4		189.6		92.5	
Turn Bay Length (m)	45.0		30.0				25.0		25.0
Base Capacity (vph)	173	1827	82	1847	353	753	309	522	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.81	0.52	0.59	0.71	0.28	0.42	0.49	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	1135	220	40	950	45	230	135	60	120	235	25
Future Volume (vph)	25	1135	220	40	950	45	230	135	60	120	235	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		3.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1653	3381		1752	3444		1734	1791		1694	1881	1524
Flt Permitted	0.19	1.00		0.08	1.00		0.33	1.00		0.63	1.00	1.00
Satd. Flow (perm)	323	3381		153	3444		597	1791		1115	1881	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	1234	239	43	1033	49	250	147	65	130	255	27
RTOR Reduction (vph)	0	16	0	0	3	0	0	19	0	0	0	21
Lane Group Flow (vph)	27	1457	0	43	1079	0	250	193	0	130	255	6
Confl. Peds. (#/hr)	5					5	5		5	5		5
Heavy Vehicles (%)	9%	4%	5%	3%	4%	3%	4%	0%	2%	6%	1%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	47.2	47.2		47.2	47.2		30.8	30.8		17.5	17.5	17.5
Effective Green, g (s)	48.2	48.2		48.2	48.2		31.8	31.8		18.5	18.5	18.5
Actuated g/C Ratio	0.54	0.54		0.54	0.54		0.35	0.35		0.21	0.21	0.21
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	172	1810		81	1844		341	632		229	386	313
v/s Ratio Prot		c0.43			0.31		c0.08	0.11			0.14	
v/s Ratio Perm	0.08			0.28			c0.18			0.12		0.00
v/c Ratio	0.16	0.81		0.53	0.59		0.73	0.30		0.57	0.66	0.02
Uniform Delay, d1	10.6	17.1		13.6	14.1		22.7	21.1		32.2	32.9	28.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.81	0.81	1.00
Incremental Delay, d2	1.9	3.9		22.7	1.4		7.9	0.3		2.3	3.0	0.0
Delay (s)	12.5	21.0		36.3	15.5		30.6	21.4		28.2	29.6	28.5
Level of Service	B	C		D	B		C	C		C	C	C
Approach Delay (s)		20.8			16.3			26.4			29.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	260	0	20	345	0	130
Future Volume (Veh/h)	260	0	20	345	0	130
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	283	0	22	375	0	141
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	402					
pX, platoon unblocked			0.93		0.93	0.93
vC, conflicting volume			283		702	283
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			194		643	194
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	82
cM capacity (veh/h)			1285		401	790

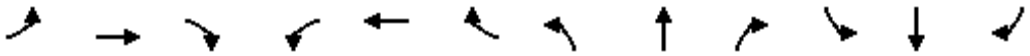
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	283	397	141
Volume Left	0	22	0
Volume Right	0	0	141
cSH	1700	1285	790
Volume to Capacity	0.17	0.02	0.18
Queue Length 95th (m)	0.0	0.4	5.2
Control Delay (s)	0.0	0.6	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	0.6	10.5
Approach LOS			B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	390	0	20	365	0	0
Future Volume (Veh/h)	390	0	20	365	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	424	0	22	397	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			424		865	424
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			424		865	424
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1135		318	630

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	424	419	0
Volume Left	0	22	0
Volume Right	0	0	0
cSH	1700	1135	1700
Volume to Capacity	0.25	0.02	0.00
Queue Length 95th (m)	0.0	0.5	0.0
Control Delay (s)	0.0	0.6	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.6	0.0
Approach LOS			A

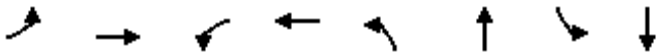
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	105	0	10	130	5	0	15	30	70	80	45
Future Volume (Veh/h)	0	105	0	10	130	5	0	15	30	70	80	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	114	0	11	141	5	0	16	33	76	87	49
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		313			152							
pX, platoon unblocked												
vC, conflicting volume	146			114			372	282	114	320	280	144
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	146			114			372	282	114	320	280	144
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	97	96	87	86	95
cM capacity (veh/h)	1436			1475			491	622	939	595	624	904

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	114	157	49	212
Volume Left	0	11	0	76
Volume Right	0	5	33	49
cSH	1436	1475	805	660
Volume to Capacity	0.00	0.01	0.06	0.32
Queue Length 95th (m)	0.0	0.2	1.6	11.1
Control Delay (s)	0.0	0.6	9.8	13.0
Lane LOS		A	A	B
Approach Delay (s)	0.0	0.6	9.8	13.0
Approach LOS			A	B

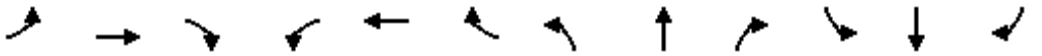
Intersection Summary				
Average Delay	6.3			
Intersection Capacity Utilization	38.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	234	184	92	147	27	521	33	135
v/c Ratio	0.27	0.19	0.11	0.16	0.10	0.68	0.29	0.18
Control Delay	7.2	4.4	6.1	0.9	15.1	22.1	35.0	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	4.4	6.1	0.9	15.1	22.1	35.0	6.0
Queue Length 50th (m)	14.0	0.0	4.9	0.0	3.7	52.1	5.1	0.3
Queue Length 95th (m)	28.1	14.2	12.1	2.3	m5.4	m59.2	13.2	7.1
Internal Link Dist (m)		18.8		15.5		150.5		264.2
Turn Bay Length (m)	30.0		30.0		30.0		30.0	
Base Capacity (vph)	899	982	809	928	386	1100	162	1032
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.19	0.11	0.16	0.07	0.47	0.20	0.13

Intersection Summary

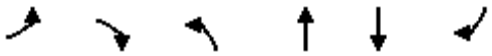
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	5	165	85	0	135	25	475	5	30	5	120
Future Volume (vph)	215	5	165	85	0	135	25	475	5	30	5	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		3.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		1.00	0.85		1.00	1.00		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1591		1770	1583		1770	3534		1770	3028	
Flt Permitted	0.62	1.00		0.64	1.00		0.67	1.00		0.28	1.00	
Satd. Flow (perm)	1161	1591		1195	1583		1241	3534		521	3028	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	234	5	179	92	0	147	27	516	5	33	5	130
RTOR Reduction (vph)	0	79	0	0	71	0	0	1	0	0	102	0
Lane Group Flow (vph)	234	105	0	92	76	0	27	520	0	33	33	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	59.4	49.4		51.4	45.4		18.6	18.6		18.6	18.6	
Effective Green, g (s)	60.4	50.4		53.4	46.4		19.6	19.6		19.6	19.6	
Actuated g/C Ratio	0.67	0.56		0.59	0.52		0.22	0.22		0.22	0.22	
Clearance Time (s)	4.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	853	890		753	816		270	769		113	659	
v/s Ratio Prot	c0.03	0.07		0.01	0.05			c0.15			0.01	
v/s Ratio Perm	c0.15			0.06			0.02			0.06		
v/c Ratio	0.27	0.12		0.12	0.09		0.10	0.68		0.29	0.05	
Uniform Delay, d1	5.7	9.3		7.9	11.1		28.1	32.3		29.4	27.8	
Progression Factor	1.16	1.69		1.05	1.67		0.56	0.62		1.00	1.00	
Incremental Delay, d2	0.2	0.3		0.1	0.2		0.1	1.3		1.4	0.0	
Delay (s)	6.8	16.1		8.3	18.8		15.7	21.2		30.8	27.9	
Level of Service	A	B		A	B		B	C		C	C	
Approach Delay (s)		10.9			14.7			20.9			28.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

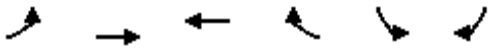
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	170	40	20	195	0
Future Volume (Veh/h)	0	170	40	20	195	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	185	43	22	212	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	320	212	212			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	320	212	212			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	78	97			
cM capacity (veh/h)	652	828	1358			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	185	65	212
Volume Left	0	43	0
Volume Right	185	0	0
cSH	828	1358	1700
Volume to Capacity	0.22	0.03	0.12
Queue Length 95th (m)	6.8	0.8	0.0
Control Delay (s)	10.6	5.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.6	5.2	0.0
Approach LOS	B		

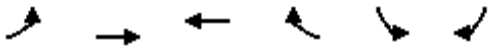
Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	370	850	130	0	40	455
Future Volume (Veh/h)	370	850	130	0	40	455
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	402	924	141	0	43	495
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		182				
pX, platoon unblocked					0.78	
vC, conflicting volume	141				1407	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	141				969	70
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	72				70	49
cM capacity (veh/h)	1440				142	978

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	402	462	462	94	47	538
Volume Left	402	0	0	0	0	43
Volume Right	0	0	0	0	0	495
cSH	1440	1700	1700	1700	1700	665
Volume to Capacity	0.28	0.27	0.27	0.06	0.03	0.81
Queue Length 95th (m)	9.2	0.0	0.0	0.0	0.0	66.7
Control Delay (s)	8.5	0.0	0.0	0.0	0.0	29.3
Lane LOS	A					D
Approach Delay (s)	2.6			0.0		29.3
Approach LOS						D

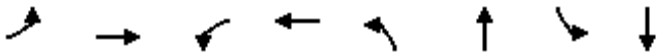
Intersection Summary				
Average Delay	9.5			
Intersection Capacity Utilization	64.4%	ICU Level of Service		C
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	930	115	50	210	15
Future Volume (Veh/h)	0	930	115	50	210	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1011	125	54	228	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			141			
pX, platoon unblocked						
vC, conflicting volume	179				658	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	179				658	90
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				43	98
cM capacity (veh/h)	1394				398	951

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	0	506	506	83	96	228	16
Volume Left	0	0	0	0	0	228	0
Volume Right	0	0	0	0	54	0	16
cSH	1700	1700	1700	1700	1700	398	951
Volume to Capacity	0.00	0.30	0.30	0.05	0.06	0.57	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	27.7	0.4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	25.5	8.9
Lane LOS						D	A
Approach Delay (s)	0.0			0.0		24.5	
Approach LOS						C	

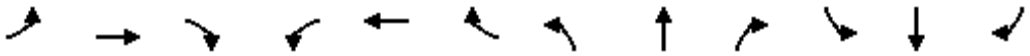
Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	478	756	92	233	5	21	190	87
v/c Ratio	0.92	0.52	0.51	0.25	0.01	0.04	0.27	0.05
Control Delay	47.6	21.1	39.5	19.2	21.6	12.2	19.8	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	21.1	39.5	19.2	21.6	12.2	19.8	17.6
Queue Length 50th (m)	69.9	56.0	12.7	10.6	0.6	0.6	18.3	4.0
Queue Length 95th (m)	#109.4	64.0	29.8	23.2	3.2	5.9	49.5	12.7
Internal Link Dist (m)		117.0		103.5		51.5		150.5
Turn Bay Length (m)	100.0		30.0		30.0		40.0	
Base Capacity (vph)	517	1608	211	1099	422	547	693	1685
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.47	0.44	0.21	0.01	0.04	0.27	0.05

Intersection Summary

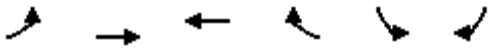
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	675	20	85	155	60	5	5	15	175	75	5
Future Volume (vph)	440	675	20	85	155	60	5	5	15	175	75	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		5.0	5.0		5.0	5.0		3.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	0.95	
Frt	1.00	1.00		1.00	0.96		1.00	0.89		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3524		1770	3391		1770	1650		1770	3509	
Flt Permitted	0.54	1.00		0.36	1.00		0.70	1.00		0.67	1.00	
Satd. Flow (perm)	1004	3524		680	3391		1300	1650		1257	3509	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	734	22	92	168	65	5	5	16	190	82	5
RTOR Reduction (vph)	0	2	0	0	48	0	0	11	0	0	3	0
Lane Group Flow (vph)	478	754	0	92	185	0	5	10	0	190	84	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.8	35.8		22.8	22.8		28.3	28.3		42.2	42.2	
Effective Green, g (s)	36.8	36.8		23.8	23.8		29.3	29.3		43.2	43.2	
Actuated g/C Ratio	0.41	0.41		0.26	0.26		0.33	0.33		0.48	0.48	
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	495	1440		179	896		423	537		665	1684	
v/s Ratio Prot	c0.11	0.21			0.05			0.01		c0.03	0.02	
v/s Ratio Perm	c0.29			0.14			0.00			c0.10		
v/c Ratio	0.97	0.52		0.51	0.21		0.01	0.02		0.29	0.05	
Uniform Delay, d1	24.5	20.0		28.2	25.8		20.5	20.6		13.7	12.5	
Progression Factor	1.00	1.00		1.04	1.04		1.00	1.00		1.38	1.36	
Incremental Delay, d2	31.5	1.4		10.2	0.5		0.1	0.1		0.2	0.0	
Delay (s)	56.0	21.4		39.5	27.2		20.6	20.7		19.1	17.0	
Level of Service	E	C		D	C		C	C		B	B	
Approach Delay (s)		34.8			30.7			20.6			18.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



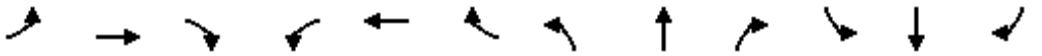
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	850	140	60	330	160
Future Volume (Veh/h)	15	850	140	60	330	160
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	924	152	65	359	174
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		127	245			
pX, platoon unblocked					0.84	
vC, conflicting volume	217				678	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	217				246	108
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				40	81
cM capacity (veh/h)	1350				601	924

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	324	616	101	116	359	174
Volume Left	16	0	0	0	359	0
Volume Right	0	0	0	65	0	174
cSH	1350	1700	1700	1700	601	924
Volume to Capacity	0.01	0.36	0.06	0.07	0.60	0.19
Queue Length 95th (m)	0.3	0.0	0.0	0.0	31.5	5.5
Control Delay (s)	0.5	0.0	0.0	0.0	19.5	9.8
Lane LOS	A				C	A
Approach Delay (s)	0.2		0.0		16.3	
Approach LOS					C	

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1277	228	278	407
v/c Ratio	0.69	0.12	0.45	0.86
Control Delay	14.6	10.2	18.5	39.3
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	14.6	10.2	18.7	39.3
Queue Length 50th (m)	45.9	8.5	27.5	74.8
Queue Length 95th (m)	66.7	17.3	37.2	104.1
Internal Link Dist (m)	221.4	55.1	92.5	315.1
Turn Bay Length (m)				
Base Capacity (vph)	1854	1851	765	588
Starvation Cap Reductn	0	0	121	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.69	0.12	0.43	0.69

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	990	185	0	170	40	30	225	0	130	245	0
Future Volume (vph)	0	990	185	0	170	40	30	225	0	130	245	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.98			0.97			1.00			1.00	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		3456			3439			1852			1831	
Flt Permitted		1.00			1.00			0.93			0.71	
Satd. Flow (perm)		3456			3439			1723			1323	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1076	201	0	185	43	33	245	0	141	266	0
RTOR Reduction (vph)	0	15	0	0	19	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1262	0	0	209	0	0	278	0	0	407	0
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		46.9			46.9			31.1			31.1	
Effective Green, g (s)		47.9			47.9			32.1			32.1	
Actuated g/C Ratio		0.53			0.53			0.36			0.36	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1839			1830			614			471	
v/s Ratio Prot		c0.37			0.06							
v/s Ratio Perm								0.16			c0.31	
v/c Ratio		0.69			0.11			0.45			0.86	
Uniform Delay, d1		15.5			10.5			22.2			26.9	
Progression Factor		0.74			1.00			0.76			0.80	
Incremental Delay, d2		2.0			0.1			0.5			14.9	
Delay (s)		13.6			10.6			17.5			36.4	
Level of Service		B			B			B			D	
Approach Delay (s)		13.6			10.6			17.5			36.4	
Approach LOS		B			B			B			D	

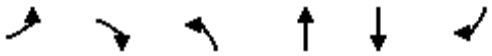
Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	195	130	0	20	20	0
Future Volume (Veh/h)	195	130	0	20	20	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	212	141	0	22	22	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	55	11			22	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	55	11			22	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	87			99	
cM capacity (veh/h)	940	1070			1593	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	353	22	22
Volume Left	212	0	22
Volume Right	141	22	0
cSH	988	1700	1593
Volume to Capacity	0.36	0.01	0.01
Queue Length 95th (m)	13.1	0.0	0.3
Control Delay (s)	10.7	0.0	7.3
Lane LOS	B		A
Approach Delay (s)	10.7	0.0	7.3
Approach LOS	B		

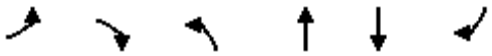
Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	195	20	0	0	20
Future Volume (Veh/h)	0	195	20	0	0	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	212	22	0	0	22
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	55	11	22			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	55	11	22			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	80	99			
cM capacity (veh/h)	940	1070	1593			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	212	22	22
Volume Left	0	22	0
Volume Right	212	0	22
cSH	1070	1593	1700
Volume to Capacity	0.20	0.01	0.01
Queue Length 95th (m)	5.9	0.3	0.0
Control Delay (s)	9.2	7.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	7.3	0.0
Approach LOS	A		

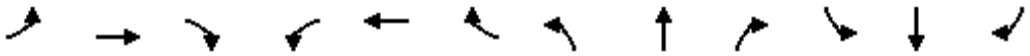
Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	125	35	40	365	0
Future Volume (Veh/h)	20	125	35	40	365	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	136	38	43	397	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	516	397	397			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	516	397	397			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	79	97			
cM capacity (veh/h)	502	652	1162			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	158	81	397
Volume Left	22	38	0
Volume Right	136	0	0
cSH	626	1162	1700
Volume to Capacity	0.25	0.03	0.23
Queue Length 95th (m)	8.0	0.8	0.0
Control Delay (s)	12.7	4.0	0.0
Lane LOS	B	A	
Approach Delay (s)	12.7	4.0	0.0
Approach LOS	B		

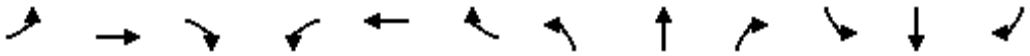
Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	195	0	25	95	20	0	0	115	75	0	45
Future Volume (Veh/h)	10	195	0	25	95	20	0	0	115	75	0	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	212	0	27	103	22	0	0	125	82	0	49
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					43							
pX, platoon unblocked												
vC, conflicting volume	125			212			451	413	212	527	402	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	125			212			451	413	212	527	402	114
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			100	100	85	79	100	95
cM capacity (veh/h)	1462			1358			481	515	828	384	522	939

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	223	152	125	131
Volume Left	11	27	0	82
Volume Right	0	22	125	49
cSH	1462	1358	828	493
Volume to Capacity	0.01	0.02	0.15	0.27
Queue Length 95th (m)	0.2	0.5	4.2	8.5
Control Delay (s)	0.4	1.5	10.1	14.9
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	1.5	10.1	14.9
Approach LOS			B	B

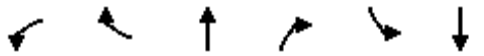
Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	36.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	5	15	10	20	10	90	0	30	135	0	110
Future Volume (Veh/h)	20	5	15	10	20	10	90	0	30	135	0	110
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	5	16	11	22	11	98	0	33	147	0	120
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		40										
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	33			21			226	112	13	140	114	28
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33			13			219	104	4	132	107	28
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			85	100	97	82	100	89
cM capacity (veh/h)	1579			1597			639	765	1073	797	763	1048

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	43	44	131	267
Volume Left	22	11	98	147
Volume Right	16	11	33	120
cSH	1579	1597	711	893
Volume to Capacity	0.01	0.01	0.18	0.30
Queue Length 95th (m)	0.3	0.2	5.4	10.1
Control Delay (s)	3.8	1.9	11.2	10.7
Lane LOS	A	A	B	B
Approach Delay (s)	3.8	1.9	11.2	10.7
Approach LOS			B	B

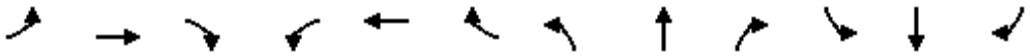
Intersection Summary				
Average Delay	9.4			
Intersection Capacity Utilization	25.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	145	25	20	30	10	80
Future Volume (Veh/h)	145	25	20	30	10	80
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	158	27	22	33	11	87
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	148	38			55	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	148	38			55	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	97			99	
cM capacity (veh/h)	839	1033			1550	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	185	55	98
Volume Left	158	0	11
Volume Right	27	33	0
cSH	862	1700	1550
Volume to Capacity	0.21	0.03	0.01
Queue Length 95th (m)	6.5	0.0	0.2
Control Delay (s)	10.3	0.0	0.9
Lane LOS	B		A
Approach Delay (s)	10.3	0.0	0.9
Approach LOS	B		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		



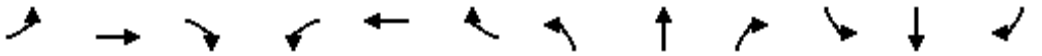
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	103	216	299	809	278	376	304	3211	928	263	2160	119
v/c Ratio	0.40	0.87	0.72	0.98	0.48	0.72	0.89	1.62	1.14	1.03	1.26	0.21
Control Delay	33.8	90.8	24.1	80.0	42.8	34.4	52.7	312.1	96.6	103.0	161.6	1.4
Queue Delay	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.4	0.0	1.6	0.0
Total Delay	33.8	90.8	25.3	80.0	42.8	34.4	52.7	312.1	97.0	103.0	163.2	1.4
Queue Length 50th (m)	18.4	62.3	16.5	121.7	65.8	61.3	78.4	~488.9	~194.1	~67.3	~297.8	0.0
Queue Length 95th (m)	31.5	#107.2	51.0	#164.7	94.5	102.0	m37.8	m141.7	m52.4	#125.6	#327.2	1.6
Internal Link Dist (m)		361.1			497.8			251.4			315.2	
Turn Bay Length (m)	80.0			165.0		15.0				85.0		80.0
Base Capacity (vph)	260	255	421	824	580	528	363	1984	812	256	1712	557
Starvation Cap Reductn	0	0	0	0	0	0	0	0	51	0	0	0
Spillback Cap Reductn	0	0	30	0	0	0	0	0	0	0	605	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.85	0.76	0.98	0.48	0.71	0.84	1.62	1.22	1.03	1.95	0.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

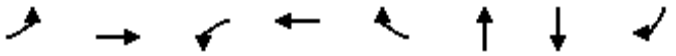
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	210	290	785	270	365	295	3115	900	255	2095	115
Future Volume (vph)	100	210	290	785	270	365	295	3115	900	255	2095	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.8	5.8	4.7	5.8	5.8	3.0	5.1	5.1	3.0	5.1	5.1
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.86	1.00	1.00	0.95	1.00	1.00	0.81
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1716	1881	1599	3467	1881	1388	1787	5136	1525	1805	5085	1300
Flt Permitted	0.59	1.00	1.00	0.95	1.00	1.00	0.08	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1063	1881	1599	3467	1881	1388	150	5136	1525	161	5085	1300
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	103	216	299	809	278	376	304	3211	928	263	2160	119
RTOR Reduction (vph)	0	0	206	0	0	101	0	0	223	0	0	79
Lane Group Flow (vph)	103	216	93	809	278	275	304	3211	705	263	2160	40
Confl. Peds. (#/hr)	55					55	80		15	15		80
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	1%	1%	1%	0%	2%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Actuated Green, G (s)	25.4	17.5	17.5	32.3	41.9	41.9	71.6	53.1	53.1	60.7	46.2	46.2
Effective Green, g (s)	27.4	18.5	18.5	33.3	42.9	42.9	72.6	54.1	54.1	62.7	47.2	47.2
Actuated g/C Ratio	0.20	0.13	0.13	0.24	0.31	0.31	0.52	0.39	0.39	0.45	0.34	0.34
Clearance Time (s)	5.7	6.8	6.8	5.7	6.8	6.8	4.0	6.1	6.1	4.0	6.1	6.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	249	248	211	824	576	425	339	1984	589	254	1714	438
v/s Ratio Prot	0.03	c0.11		c0.23	0.15		0.14	c0.63		c0.11	0.42	
v/s Ratio Perm	0.05		0.06			0.20	0.32		0.46	0.35		0.03
v/c Ratio	0.41	0.87	0.44	0.98	0.48	0.65	0.90	1.62	1.20	1.04	1.26	0.09
Uniform Delay, d1	48.2	59.6	56.0	53.0	39.5	42.0	43.4	42.9	42.9	43.6	46.4	31.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.28	1.19	1.36	1.00	1.00	1.00
Incremental Delay, d2	1.1	26.6	1.5	26.7	0.6	3.4	3.2	278.5	90.0	66.0	122.0	0.4
Delay (s)	49.3	86.2	57.5	79.8	40.2	45.4	58.8	329.4	148.3	109.6	168.4	32.2
Level of Service	D	F	E	E	D	D	E	F	F	F	F	C
Approach Delay (s)		66.1			63.4			273.1			155.9	
Approach LOS		E			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	192.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	124.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



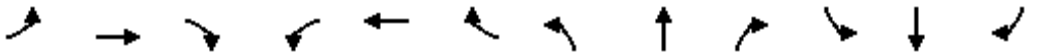
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	27	287	420	415	665	5489	3707	16
v/c Ratio	0.12	0.49	1.33	1.41	1.18	1.99	1.35	0.02
Control Delay	28.2	37.5	207.0	238.5	136.7	468.1	178.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	28.2	37.5	207.0	238.5	136.7	468.1	178.7	0.0
Queue Length 50th (m)	4.9	64.1	~175.1	~178.0	~231.5	~913.5	~518.4	0.0
Queue Length 95th (m)	11.6	92.9	#246.4	#249.2	#309.4	m#595.2	m#426.3	m0.0
Internal Link Dist (m)		327.0		348.8		307.3	251.4	
Turn Bay Length (m)								
Base Capacity (vph)	222	590	315	295	562	2756	2751	815
Starvation Cap Reductn	0	0	0	0	0	0	150	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.49	1.33	1.41	1.18	1.99	1.43	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	5	265	775	10	625	0	4590	570	0	3485	15
Future Volume (vph)	25	5	265	775	10	625	0	4590	570	0	3485	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0		6.0	6.0	6.0		6.0			6.0	6.0
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00		0.91			0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1805	1604		1681	1688	1583		5026			5036	1437
Flt Permitted	0.22	1.00		0.55	0.51	1.00		1.00			1.00	1.00
Satd. Flow (perm)	424	1604		967	903	1583		5026			5036	1437
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	5	282	824	11	665	0	4883	606	0	3707	16
RTOR Reduction (vph)	0	0	0	0	0	44	0	11	0	0	0	7
Lane Group Flow (vph)	27	287	0	420	415	621	0	5478	0	0	3707	9
Confl. Peds. (#/hr)							15		10	10		15
Heavy Vehicles (%)	0%	0%	1%	2%	0%	2%	0%	1%	1%	0%	3%	6%
Turn Type	pm+pt	NA		Perm	NA	Perm		NA			NA	Perm
Protected Phases	3	8			4			2			6	
Permitted Phases	8			4		4						6
Actuated Green, G (s)	52.3	52.3		44.8	44.8	44.8		73.7			73.7	73.7
Effective Green, g (s)	53.3	53.3		45.8	45.8	45.8		74.7			74.7	74.7
Actuated g/C Ratio	0.38	0.38		0.33	0.33	0.33		0.53			0.53	0.53
Clearance Time (s)	4.5	7.0		7.0	7.0	7.0		7.0			7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	200	610		316	295	517		2681			2687	766
v/s Ratio Prot	0.00	c0.18						c1.09			0.74	
v/s Ratio Perm	0.05			0.43	c0.46	0.39						0.01
v/c Ratio	0.14	0.47		1.33	1.41	1.20		2.04			1.38	0.01
Uniform Delay, d1	30.1	32.7		47.1	47.1	47.1		32.6			32.6	15.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.85			0.60	1.00
Incremental Delay, d2	0.3	0.6		168.3	202.2	107.6		469.6			171.0	0.0
Delay (s)	30.4	33.3		215.4	249.3	154.7		497.2			190.6	15.3
Level of Service	C	C		F	F	F		F			F	B
Approach Delay (s)		33.0			197.9			497.2			189.8	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	339.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	171.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

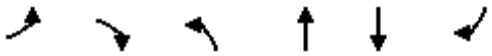
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	1947	921	3453	3184
v/c Ratio	1.36	1.41	1.36	1.25
Control Delay	198.7	224.8	188.8	144.0
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	198.7	224.8	189.0	144.0
Queue Length 50th (m)	~383.0	~358.6	~495.7	~422.0
Queue Length 95th (m)	#425.7	#440.9	m#441.3	m195.7
Internal Link Dist (m)	190.2		56.8	307.3
Turn Bay Length (m)				
Base Capacity (vph)	1436	655	2542	2542
Starvation Cap Reductn	0	0	136	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.36	1.41	1.44	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

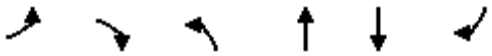
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1850	875	0	3280	3025	0
Future Volume (vph)	1850	875	0	3280	3025	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3467	1583		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3467	1583		5085	5085	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1947	921	0	3453	3184	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1947	921	0	3453	3184	0
Confl. Peds. (#/hr)			25			25
Heavy Vehicles (%)	1%	2%	0%	2%	2%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	2	
Permitted Phases		4				
Actuated Green, G (s)	57.0	57.0		69.0	69.0	
Effective Green, g (s)	58.0	58.0		70.0	70.0	
Actuated g/C Ratio	0.41	0.41		0.50	0.50	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1436	655		2542	2542	
v/s Ratio Prot	0.56			c0.68	0.63	
v/s Ratio Perm		c0.58				
v/c Ratio	1.36	1.41		1.36	1.25	
Uniform Delay, d1	41.0	41.0		35.0	35.0	
Progression Factor	1.00	1.00		0.80	0.92	
Incremental Delay, d2	164.8	191.8		162.1	114.0	
Delay (s)	205.8	232.8		189.9	146.0	
Level of Service	F	F		F	F	
Approach Delay (s)	214.5			189.9	146.0	
Approach LOS	F			F	F	

Intersection Summary			
HCM 2000 Control Delay	182.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	126.2%	ICU Level of Service	H
Analysis Period (min)	15		

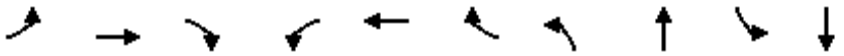
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	130	0	3280	3055	530
Future Volume (Veh/h)	0	130	0	3280	3055	530
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	138	0	3489	3250	564
Pedestrians	20					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				198	81	
pX, platoon unblocked	0.66	0.51	0.51			
vC, conflicting volume	4715	1385	3834			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1579	0	3181			
tC, single (s)	6.8	7.1	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	74	100			
cM capacity (veh/h)	67	529	49			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	138	1163	1163	1163	1300	1300	1214
Volume Left	0	0	0	0	0	0	0
Volume Right	138	0	0	0	0	0	564
cSH	529	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.26	0.68	0.68	0.68	0.76	0.76	0.71
Queue Length 95th (m)	8.3	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	14.2	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	14.2	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		



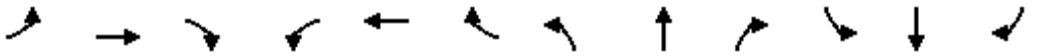
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	979	459	144	93	546	253	253	1923	196	2701
v/c Ratio	1.03	0.40	0.26	0.32	1.12	0.67	1.01	1.14	0.81	1.70
Control Delay	87.1	38.2	6.3	29.1	130.4	26.7	84.3	109.8	44.4	347.1
Queue Delay	26.6	1.2	0.0	0.0	0.0	1.5	0.0	3.4	0.0	0.0
Total Delay	113.7	39.4	6.3	29.1	130.4	28.2	84.3	113.2	44.4	347.1
Queue Length 50th (m)	~157.5	54.7	0.0	15.3	~95.7	18.7	~67.3	~237.3	43.9	~419.1
Queue Length 95th (m)	#200.2	71.0	15.9	26.5	#134.3	50.4	m#65.8	m#218.0	m32.5	m#292.4
Internal Link Dist (m)		97.1			158.4			292.1		174.2
Turn Bay Length (m)	130.0			50.0			120.0		55.0	
Base Capacity (vph)	947	1160	559	290	489	375	250	1691	251	1591
Starvation Cap Reductn	228	468	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	34	0	912	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.36	0.66	0.26	0.32	1.12	0.74	1.01	2.47	0.78	1.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

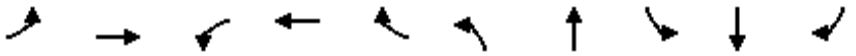
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	950	445	140	90	530	245	245	1830	35	190	2230	390
Future Volume (vph)	950	445	140	90	530	245	245	1830	35	190	2230	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0		3.0	6.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	3610	1436	1784	3610	1599	1719	5118		1752	5006	
Flt Permitted	0.95	1.00	1.00	0.49	1.00	1.00	0.09	1.00		0.09	1.00	
Satd. Flow (perm)	3400	3610	1436	916	3610	1599	157	5118		168	5006	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	979	459	144	93	546	253	253	1887	36	196	2299	402
RTOR Reduction (vph)	0	0	98	0	0	158	0	1	0	0	18	0
Lane Group Flow (vph)	979	459	46	93	546	95	253	1922	0	196	2683	0
Confl. Peds. (#/hr)			20	20			15		15	15		15
Heavy Vehicles (%)	3%	0%	6%	0%	0%	1%	5%	1%	0%	3%	0%	4%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2			6		
Actuated Green, G (s)	38.0	44.0	44.0	30.0	18.0	18.0	60.2	45.2		56.8	43.0	
Effective Green, g (s)	39.0	45.0	45.0	32.0	19.0	19.0	62.2	46.2		58.8	44.0	
Actuated g/C Ratio	0.28	0.32	0.32	0.23	0.14	0.14	0.44	0.33		0.42	0.31	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	5.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.5	4.0	4.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	947	1160	461	289	489	217	248	1688		238	1573	
v/s Ratio Prot	c0.29	0.13		0.03	c0.15		c0.12	0.38		0.09	c0.54	
v/s Ratio Perm			0.03	0.04		0.06	0.34			0.26		
v/c Ratio	1.03	0.40	0.10	0.32	1.12	0.44	1.02	1.14		0.82	1.71	
Uniform Delay, d1	50.5	36.9	33.3	43.9	60.5	55.6	43.7	46.9		37.1	48.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.40	1.09		1.28	1.12	
Incremental Delay, d2	38.3	0.2	0.1	0.8	76.6	1.9	35.7	64.7		2.2	317.8	
Delay (s)	88.8	37.2	33.4	44.7	137.1	57.5	96.7	115.8		49.7	371.8	
Level of Service	F	D	C	D	F	E	F	F		D	F	
Approach Delay (s)		68.8			104.9			113.6			350.0	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	193.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	125.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



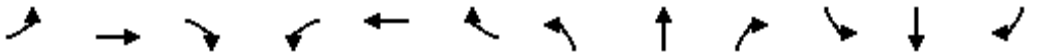
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	335	845	98	995	634	62	1180	521	1062	314
v/c Ratio	0.89	0.69	0.40	0.92	0.96	0.39	1.20	0.93	1.39	0.45
Control Delay	86.3	42.9	26.8	60.1	51.1	28.9	144.4	77.3	220.2	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	42.9	26.8	60.1	51.1	28.9	144.4	77.3	220.2	35.8
Queue Length 50th (m)	50.4	110.4	15.9	146.4	109.9	9.4	~221.1	83.1	~407.8	51.8
Queue Length 95th (m)	#77.7	136.4	27.5	#184.8	#194.0	18.1	#266.3	m53.1	m146.7	m29.5
Internal Link Dist (m)		551.4		604.3			115.4		292.1	
Turn Bay Length (m)	85.0		85.0		75.0	40.0		85.0		
Base Capacity (vph)	378	1218	266	1102	666	158	980	563	764	697
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.69	0.37	0.90	0.95	0.39	1.20	0.93	1.39	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



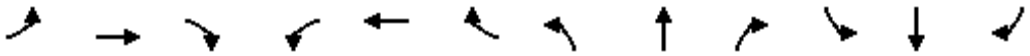
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	775	45	95	965	615	60	975	170	505	1030	305
Future Volume (vph)	325	775	45	95	965	615	60	975	170	505	1030	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.4		4.0	5.4	5.4	3.0	5.9		4.0	5.9	5.9
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3506		1804	3539	1470	1770	3511		3433	1881	1516
Flt Permitted	0.95	1.00		0.19	1.00	1.00	0.10	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3506		352	3539	1470	193	3511		3433	1881	1516
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	335	799	46	98	995	634	62	1005	175	521	1062	314
RTOR Reduction (vph)	0	3	0	0	0	210	0	10	0	0	0	82
Lane Group Flow (vph)	335	842	0	98	995	424	62	1170	0	521	1062	232
Confl. Peds. (#/hr)	45		10	10		45	10		20	20		10
Heavy Vehicles (%)	1%	2%	0%	0%	2%	2%	2%	0%	0%	2%	1%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases				4		4	2					6
Actuated Green, G (s)	14.3	47.5		51.5	42.0	42.0	43.3	37.7		22.0	55.1	55.1
Effective Green, g (s)	15.3	48.5		53.5	43.0	43.0	45.3	38.7		23.0	56.1	56.1
Actuated g/C Ratio	0.11	0.35		0.38	0.31	0.31	0.32	0.28		0.16	0.40	0.40
Clearance Time (s)	5.7	6.4		5.0	6.4	6.4	4.0	6.9		5.0	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	378	1214		243	1086	451	136	970		563	753	607
v/s Ratio Prot	c0.10	0.24		0.03	0.28		0.02	0.33		c0.15	c0.56	
v/s Ratio Perm				0.12		c0.29	0.13					0.15
v/c Ratio	0.89	0.69		0.40	0.92	0.94	0.46	1.21		0.93	1.41	0.38
Uniform Delay, d1	61.5	39.4		29.8	46.8	47.2	37.6	50.6		57.7	42.0	29.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.30	1.49	2.05
Incremental Delay, d2	21.2	1.7		1.1	11.8	27.9	2.4	102.5		2.9	185.4	0.2
Delay (s)	82.7	41.1		30.9	58.6	75.1	40.1	153.2		78.0	247.9	60.9
Level of Service	F	D		C	E	E	D	F		E	F	E
Approach Delay (s)		52.9			63.1			147.5			170.3	
Approach LOS		D			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	112.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	112.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	53	441	482	648
v/c Ratio	0.06	0.55	0.64	0.87
Control Delay	2.3	21.1	24.5	37.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.3	21.1	24.5	37.0
Queue Length 50th (m)	0.4	62.0	64.6	102.3
Queue Length 95th (m)	1.9	93.8	83.9	128.2
Internal Link Dist (m)	146.6	179.3	180.3	263.4
Turn Bay Length (m)				
Base Capacity (vph)	899	810	822	824
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.54	0.59	0.79

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	35	10	110	250	15	0	340	70	20	530	0
Future Volume (vph)	0	35	10	110	250	15	0	340	70	20	530	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			0.98			1.00	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1842			1851			1811			1896	
Flt Permitted		1.00			0.89			1.00			0.97	
Satd. Flow (perm)		1842			1668			1811			1835	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	41	12	129	294	18	0	400	82	24	624	0
RTOR Reduction (vph)	0	6	0	0	2	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	47	0	0	439	0	0	473	0	0	648	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	3%	0%	0%	0%	0%
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		42.2			42.2			35.8			35.8	
Effective Green, g (s)		43.2			43.2			36.8			36.8	
Actuated g/C Ratio		0.48			0.48			0.41			0.41	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		884			800			740			750	
v/s Ratio Prot		0.03						0.26				
v/s Ratio Perm					c0.26						c0.35	
v/c Ratio		0.05			0.55			0.64			0.86	
Uniform Delay, d1		12.5			16.5			21.3			24.3	
Progression Factor		0.18			1.01			1.00			1.00	
Incremental Delay, d2		0.1			2.7			1.8			10.1	
Delay (s)		2.4			19.5			23.1			34.5	
Level of Service		A			B			C			C	
Approach Delay (s)		2.4			19.5			23.1			34.5	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	105	165	75	180	415	210
Future Volume (Veh/h)	105	165	75	180	415	210
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	118	185	84	202	466	236
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			303		580	210
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			303		580	210
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		0	72
cM capacity (veh/h)			1269		446	832

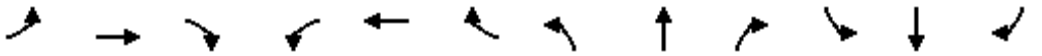
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	303	286	702
Volume Left	0	84	466
Volume Right	185	0	236
cSH	1700	1269	529
Volume to Capacity	0.18	0.07	1.33
Queue Length 95th (m)	0.0	1.7	242.7
Control Delay (s)	0.0	2.8	183.1
Lane LOS		A	F
Approach Delay (s)	0.0	2.8	183.1
Approach LOS			F

Intersection Summary			
Average Delay	100.2		
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	48	1149	64	1457	181	261	112	144	53
v/c Ratio	0.19	0.49	0.23	0.68	0.74	0.66	0.74	0.37	0.14
Control Delay	7.0	8.3	14.0	15.5	50.6	38.4	49.1	23.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Total Delay	7.0	8.3	14.0	15.5	50.6	39.0	49.1	23.1	1.4
Queue Length 50th (m)	2.4	46.5	5.6	98.1	30.6	41.3	17.0	13.2	0.0
Queue Length 95th (m)	6.6	71.1	15.4	137.1	51.4	63.0	#39.4	19.9	m1.1
Internal Link Dist (m)		585.1		130.4		189.6		92.5	
Turn Bay Length (m)	45.0		30.0				25.0		25.0
Base Capacity (vph)	249	2362	273	2131	308	497	191	487	467
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	55	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.49	0.23	0.68	0.59	0.59	0.59	0.30	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	975	105	60	1210	160	170	200	45	105	135	50
Future Volume (vph)	45	975	105	60	1210	160	170	200	45	105	135	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3480		1801	3469		1760	1833		1805	1827	1516
Flt Permitted	0.10	1.00		0.24	1.00		0.62	1.00		0.38	1.00	1.00
Satd. Flow (perm)	188	3480		448	3469		1157	1833		718	1827	1516
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	48	1037	112	64	1287	170	181	213	48	112	144	53
RTOR Reduction (vph)	0	8	0	0	10	0	0	9	0	0	0	42
Lane Group Flow (vph)	48	1141	0	64	1447	0	181	252	0	112	144	11
Confl. Peds. (#/hr)	5		5	5		5	5					5
Confl. Bikes (#/hr)												5
Heavy Vehicles (%)	2%	2%	1%	0%	2%	1%	2%	1%	0%	0%	4%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	59.9	59.9		52.5	52.5		18.1	18.1		18.1	18.1	18.1
Effective Green, g (s)	60.9	60.9		53.5	53.5		19.1	19.1		19.1	19.1	19.1
Actuated g/C Ratio	0.68	0.68		0.59	0.59		0.21	0.21		0.21	0.21	0.21
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	204	2354		266	2062		245	389		152	387	321
v/s Ratio Prot	0.01	c0.33			c0.42			0.14			0.08	
v/s Ratio Perm	0.15			0.14			c0.16			0.16		0.01
v/c Ratio	0.24	0.48		0.24	0.70		0.74	0.65		0.74	0.37	0.04
Uniform Delay, d1	8.9	7.0		8.6	12.7		33.1	32.4		33.1	30.3	28.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.72	0.70	0.29
Incremental Delay, d2	0.6	0.7		2.1	2.0		11.1	3.7		15.6	0.6	0.0
Delay (s)	9.5	7.7		10.8	14.7		44.2	36.0		39.3	21.9	8.2
Level of Service	A	A		B	B		D	D		D	C	A
Approach Delay (s)		7.8			14.6			39.4			25.9	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	290	0	75	545	0	40
Future Volume (Veh/h)	290	0	75	545	0	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	315	0	82	592	0	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	402					
pX, platoon unblocked			0.99		0.99	0.99
vC, conflicting volume			315		1071	315
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			307		1068	307
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		100	94
cM capacity (veh/h)			1245		228	728

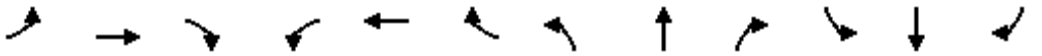
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	315	674	43
Volume Left	0	82	0
Volume Right	0	0	43
cSH	1700	1245	728
Volume to Capacity	0.19	0.07	0.06
Queue Length 95th (m)	0.0	1.7	1.5
Control Delay (s)	0.0	1.7	10.3
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	10.3
Approach LOS			B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	330	0	70	620	0	0
Future Volume (Veh/h)	330	0	70	620	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	359	0	76	674	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			359		1185	359
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			359		1185	359
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		100	100
cM capacity (veh/h)			1200		196	685

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	359	750	0
Volume Left	0	76	0
Volume Right	0	0	0
cSH	1700	1200	1700
Volume to Capacity	0.21	0.06	0.00
Queue Length 95th (m)	0.0	1.6	0.0
Control Delay (s)	0.0	1.6	0.0
Lane LOS		A	A
Approach Delay (s)	0.0	1.6	0.0
Approach LOS			A

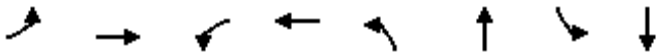
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	55	0	20	275	20	0	90	50	25	25	20
Future Volume (Veh/h)	5	55	0	20	275	20	0	90	50	25	25	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	60	0	22	299	22	0	98	54	27	27	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		313			152							
pX, platoon unblocked												
vC, conflicting volume	321			60			460	435	60	527	424	310
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	321			60			460	435	60	527	424	310
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	81	95	93	95	97
cM capacity (veh/h)	1239			1544			470	505	1005	367	512	730

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	65	343	152	76
Volume Left	5	22	0	27
Volume Right	0	22	54	22
cSH	1239	1544	614	486
Volume to Capacity	0.00	0.01	0.25	0.16
Queue Length 95th (m)	0.1	0.3	7.8	4.4
Control Delay (s)	0.6	0.6	12.8	13.8
Lane LOS	A	A	B	B
Approach Delay (s)	0.6	0.6	12.8	13.8
Approach LOS			B	B

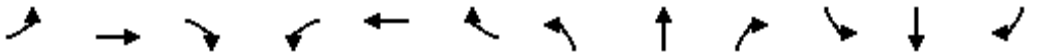
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	42.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	92	87	43	65	109	244	136	413
v/c Ratio	0.13	0.10	0.06	0.06	0.28	0.34	0.30	0.41
Control Delay	13.3	4.9	15.1	0.1	25.4	34.3	18.6	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	4.9	15.1	0.1	25.4	34.3	18.6	4.5
Queue Length 50th (m)	5.4	0.0	3.3	0.0	17.4	20.5	18.2	1.8
Queue Length 95th (m)	m18.8	m8.4	m11.7	m0.0	23.9	29.5	22.3	11.6
Internal Link Dist (m)		18.8		15.5		150.5		264.2
Turn Bay Length (m)	30.0		30.0		30.0		30.0	
Base Capacity (vph)	710	905	697	1148	389	1284	447	1361
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.10	0.06	0.06	0.28	0.19	0.30	0.30

Intersection Summary

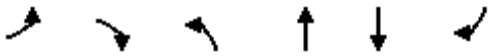
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	15	65	40	0	60	100	185	40	125	20	360
Future Volume (vph)	85	15	65	40	0	60	100	185	40	125	20	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		3.0	5.0		3.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.85		1.00	0.97		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1635		1770	1583		1770	3446		1770	3037	
Flt Permitted	0.71	1.00		0.70	1.00		0.45	1.00		0.52	1.00	
Satd. Flow (perm)	1331	1635		1305	1583		839	3446		970	3037	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	16	71	43	0	65	109	201	43	136	22	391
RTOR Reduction (vph)	0	34	0	0	31	0	0	25	0	0	300	0
Lane Group Flow (vph)	92	53	0	43	34	0	109	219	0	136	113	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	46.3	46.3		46.3	46.3		25.4	17.7		30.0	20.0	
Effective Green, g (s)	47.3	47.3		47.3	47.3		27.4	18.7		32.0	21.0	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.30	0.21		0.36	0.23	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	699	859		685	831		345	716		442	708	
v/s Ratio Prot		0.03			0.02		0.03	0.06		c0.04	0.04	
v/s Ratio Perm	c0.07			0.03			0.07			c0.07		
v/c Ratio	0.13	0.06		0.06	0.04		0.32	0.31		0.31	0.16	
Uniform Delay, d1	10.9	10.5		10.5	10.4		23.2	30.2		20.3	27.5	
Progression Factor	0.92	0.83		1.05	1.00		1.44	1.32		1.00	1.00	
Incremental Delay, d2	0.4	0.1		0.2	0.1		0.5	0.2		0.4	0.1	
Delay (s)	10.4	8.8		11.2	10.4		33.9	39.9		20.7	27.6	
Level of Service	B	A		B	B		C	D		C	C	
Approach Delay (s)		9.6			10.7			38.1			25.9	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

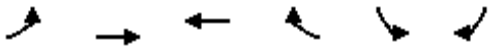
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	75	95	80	70	0
Future Volume (Veh/h)	0	75	95	80	70	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	82	103	87	76	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	369	76	76			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	369	76	76			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	93			
cM capacity (veh/h)	589	985	1523			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	82	190	76
Volume Left	0	103	0
Volume Right	82	0	0
cSH	985	1523	1700
Volume to Capacity	0.08	0.07	0.04
Queue Length 95th (m)	2.2	1.7	0.0
Control Delay (s)	9.0	4.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.0	4.3	0.0
Approach LOS	A		

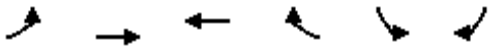
Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	445	335	375	0	10	690
Future Volume (Veh/h)	445	335	375	0	10	690
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	484	364	408	0	11	750
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		182				
pX, platoon unblocked						
vC, conflicting volume	408				1558	204
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	408				1558	204
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	58				82	7
cM capacity (veh/h)	1147				60	803

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	484	182	182	272	136	761
Volume Left	484	0	0	0	0	11
Volume Right	0	0	0	0	0	750
cSH	1147	1700	1700	1700	1700	680
Volume to Capacity	0.42	0.11	0.11	0.16	0.08	1.12
Queue Length 95th (m)	17.1	0.0	0.0	0.0	0.0	181.4
Control Delay (s)	10.4	0.0	0.0	0.0	0.0	95.1
Lane LOS	B					F
Approach Delay (s)	5.9			0.0		95.1
Approach LOS						F

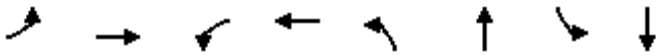
Intersection Summary				
Average Delay	38.4			
Intersection Capacity Utilization	88.3%	ICU Level of Service		E
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	345	365	250	90	10
Future Volume (Veh/h)	10	345	365	250	90	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	375	397	272	98	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			141			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	669				742	334
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	572				649	224
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				74	99
cM capacity (veh/h)	957				382	748

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	11	188	188	265	404	98	11
Volume Left	11	0	0	0	0	98	0
Volume Right	0	0	0	0	272	0	11
cSH	957	1700	1700	1700	1700	382	748
Volume to Capacity	0.01	0.11	0.11	0.16	0.24	0.26	0.01
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	8.1	0.4
Control Delay (s)	8.8	0.0	0.0	0.0	0.0	17.6	9.9
Lane LOS	A					C	A
Approach Delay (s)	0.3			0.0		16.9	
Approach LOS						C	

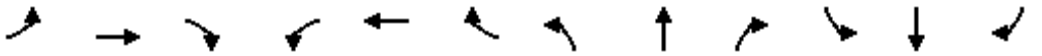
Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	190	288	33	679	82	103	82	55
v/c Ratio	0.36	0.11	0.04	0.27	0.31	0.27	0.32	0.08
Control Delay	10.5	5.8	12.2	11.1	30.9	15.5	34.5	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	5.8	12.2	11.1	30.9	15.5	34.5	20.4
Queue Length 50th (m)	9.3	5.7	3.0	37.1	13.9	8.1	14.5	2.8
Queue Length 95th (m)	36.7	17.5	m4.8	m37.3	22.3	18.1	27.3	9.0
Internal Link Dist (m)		117.0		103.5		51.5		150.5
Turn Bay Length (m)	100.0		30.0				40.0	
Base Capacity (vph)	527	2588	787	2547	550	737	528	1380
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.11	0.04	0.27	0.15	0.14	0.16	0.04

Intersection Summary

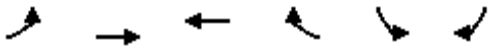
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	255	10	30	520	105	75	45	50	75	30	20
Future Volume (vph)	175	255	10	30	520	105	75	45	50	75	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	0.95	
Frt	1.00	0.99		1.00	0.97		1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3519		1770	3450		1770	1716		1770	3327	
Flt Permitted	0.38	1.00		0.58	1.00		0.72	1.00		0.69	1.00	
Satd. Flow (perm)	716	3519		1072	3450		1340	1716		1286	3327	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	277	11	33	565	114	82	49	54	82	33	22
RTOR Reduction (vph)	0	2	0	0	10	0	0	44	0	0	18	0
Lane Group Flow (vph)	190	286	0	33	669	0	82	59	0	82	37	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	63.0	63.0		63.0	63.0		15.0	15.0		15.0	15.0	
Effective Green, g (s)	64.0	64.0		64.0	64.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.71	0.71		0.71	0.71		0.18	0.18		0.18	0.18	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	509	2502		762	2453		238	305		228	591	
v/s Ratio Prot		0.08			0.19			0.03			0.01	
v/s Ratio Perm	c0.27			0.03			0.06			c0.06		
v/c Ratio	0.37	0.11		0.04	0.27		0.34	0.19		0.36	0.06	
Uniform Delay, d1	5.1	4.1		3.9	4.7		32.4	31.5		32.5	30.8	
Progression Factor	1.00	1.00		1.72	1.81		1.00	1.00		1.11	1.20	
Incremental Delay, d2	2.1	0.1		0.1	0.2		0.9	0.3		1.0	0.0	
Delay (s)	7.2	4.2		6.8	8.7		33.3	31.8		37.1	36.9	
Level of Service	A	A		A	A		C	C		D	D	
Approach Delay (s)		5.4			8.6			32.5			37.0	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	325	585	230	120	70
Future Volume (Veh/h)	55	325	585	230	120	70
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	353	636	250	130	76
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		127	245			
pX, platoon unblocked	0.85				0.85	0.85
vC, conflicting volume	886				1058	443
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	503				705	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				56	92
cM capacity (veh/h)	896				293	918

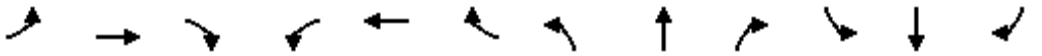
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	178	235	424	462	130	76
Volume Left	60	0	0	0	130	0
Volume Right	0	0	0	250	0	76
cSH	896	1700	1700	1700	293	918
Volume to Capacity	0.07	0.14	0.25	0.27	0.44	0.08
Queue Length 95th (m)	1.7	0.0	0.0	0.0	17.3	2.2
Control Delay (s)	3.6	0.0	0.0	0.0	26.8	9.3
Lane LOS	A				D	A
Approach Delay (s)	1.5		0.0		20.3	
Approach LOS					C	

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	473	897	554	369
v/c Ratio	0.31	0.58	0.88	0.49
Control Delay	15.3	20.6	32.0	12.5
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	15.3	20.6	32.1	12.5
Queue Length 50th (m)	31.4	61.9	59.3	26.5
Queue Length 95th (m)	35.3	84.3	#148.7	36.0
Internal Link Dist (m)	221.4	48.5	92.5	315.1
Turn Bay Length (m)				
Base Capacity (vph)	1618	1619	658	782
Starvation Cap Reductn	0	0	3	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.29	0.55	0.85	0.47

Intersection Summary

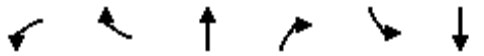
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	360	75	0	680	145	130	380	0	40	300	0
Future Volume (vph)	0	360	75	0	680	145	130	380	0	40	300	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.97			0.97			1.00			1.00	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		3447			3446			1839			1852	
Flt Permitted		1.00			1.00			0.76			0.90	
Satd. Flow (perm)		3447			3446			1414			1682	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	391	82	0	739	158	141	413	0	43	326	0
RTOR Reduction (vph)	0	19	0	0	20	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	454	0	0	877	0	0	554	0	0	369	0
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		38.9			38.9			39.1			39.1	
Effective Green, g (s)		39.9			39.9			40.1			40.1	
Actuated g/C Ratio		0.44			0.44			0.45			0.45	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1528			1527			630			749	
v/s Ratio Prot		0.13			c0.25							
v/s Ratio Perm								c0.39			0.22	
v/c Ratio		0.30			0.57			0.88			0.49	
Uniform Delay, d1		16.1			18.7			22.7			17.7	
Progression Factor		0.94			1.00			0.71			0.59	
Incremental Delay, d2		0.5			1.6			12.4			0.5	
Delay (s)		15.6			20.3			28.5			11.0	
Level of Service		B			C			C			B	
Approach Delay (s)		15.6			20.3			28.5			11.0	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

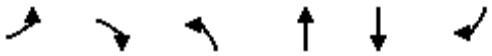
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	40	0	115	75	0
Future Volume (Veh/h)	70	40	0	115	75	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	43	0	125	82	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	226	62			125	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	226	62			125	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	96			94	
cM capacity (veh/h)	719	1002			1462	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	119	125	82
Volume Left	76	0	82
Volume Right	43	125	0
cSH	801	1700	1462
Volume to Capacity	0.15	0.07	0.06
Queue Length 95th (m)	4.2	0.0	1.4
Control Delay (s)	10.3	0.0	7.6
Lane LOS	B		A
Approach Delay (s)	10.3	0.0	7.6
Approach LOS	B		

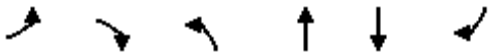
Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	70	80	0	0	70
Future Volume (Veh/h)	0	70	80	0	0	70
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	76	87	0	0	76
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	212	38	76			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	212	38	76			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	94			
cM capacity (veh/h)	732	1034	1523			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	76	87	76
Volume Left	0	87	0
Volume Right	76	0	76
cSH	1034	1523	1700
Volume to Capacity	0.07	0.06	0.04
Queue Length 95th (m)	1.9	1.5	0.0
Control Delay (s)	8.8	7.5	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	7.5	0.0
Approach LOS	A		

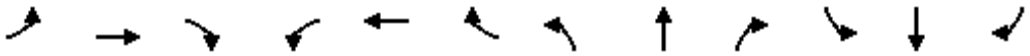
Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	60	120	165	130	15
Future Volume (Veh/h)	10	60	120	165	130	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	65	130	179	141	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	588	149	157			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	588	149	157			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	93	91			
cM capacity (veh/h)	428	898	1423			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	76	309	157
Volume Left	11	130	0
Volume Right	65	0	16
cSH	775	1423	1700
Volume to Capacity	0.10	0.09	0.09
Queue Length 95th (m)	2.6	2.4	0.0
Control Delay (s)	10.2	3.7	0.0
Lane LOS	B	A	
Approach Delay (s)	10.2	3.7	0.0
Approach LOS	B		

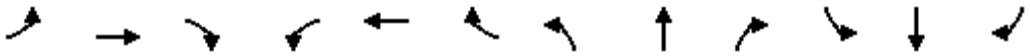
Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	85	0	90	280	80	0	0	60	20	0	25
Future Volume (Veh/h)	45	85	0	90	280	80	0	0	60	20	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	92	0	98	304	87	0	0	65	22	0	27
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					43							
pX, platoon unblocked	0.95						0.95	0.95		0.95	0.95	0.95
vC, conflicting volume	391			92			760	777	92	798	734	348
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	336			92			724	741	92	763	695	290
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			93			100	100	93	92	100	96
cM capacity (veh/h)	1165			1503			288	294	965	262	312	714

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	141	489	65	49
Volume Left	49	98	0	22
Volume Right	0	87	65	27
cSH	1165	1503	965	402
Volume to Capacity	0.04	0.07	0.07	0.12
Queue Length 95th (m)	1.1	1.7	1.7	3.3
Control Delay (s)	3.1	2.0	9.0	15.2
Lane LOS	A	A	A	C
Approach Delay (s)	3.1	2.0	9.0	15.2
Approach LOS			A	C

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	43.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	20	55	35	10	50	45	0	10	45	0	45
Future Volume (Veh/h)	105	20	55	35	10	50	45	0	10	45	0	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	22	60	38	11	54	49	0	11	49	0	49
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		40										
pX, platoon unblocked				0.94			0.94	0.94	0.94	0.94	0.94	
vC, conflicting volume	65			82			443	421	52	405	424	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	65			0			374	351	0	334	354	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			98			90	100	99	91	100	95
cM capacity (veh/h)	1537			1524			482	486	1019	533	484	1034

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	196	103	60	98
Volume Left	114	38	49	49
Volume Right	60	54	11	49
cSH	1537	1524	534	703
Volume to Capacity	0.07	0.02	0.11	0.14
Queue Length 95th (m)	1.9	0.6	3.0	3.9
Control Delay (s)	4.6	2.9	12.6	10.9
Lane LOS	A	A	B	B
Approach Delay (s)	4.6	2.9	12.6	10.9
Approach LOS			B	B

Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	28.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	75	10	130	130	20	25
Future Volume (Veh/h)	75	10	130	130	20	25
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	11	141	141	22	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	282	212			282	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	282	212			282	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	99			98	
cM capacity (veh/h)	695	829			1280	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	93	282	49
Volume Left	82	0	22
Volume Right	11	141	0
cSH	709	1700	1280
Volume to Capacity	0.13	0.17	0.02
Queue Length 95th (m)	3.6	0.0	0.4
Control Delay (s)	10.8	0.0	3.6
Lane LOS	B		A
Approach Delay (s)	10.8	0.0	3.6
Approach LOS	B		

Intersection Summary			
Average Delay		2.8	
Intersection Capacity Utilization		30.6%	ICU Level of Service
Analysis Period (min)		15	