

Transportation Impact Study

PROPOSED MIXED-USE DEVELOPMENT

925 Main Street West and
150 Longwood Road South
HAMILTON, ONTARIO

June 2026
Project No: NT-23-099

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CONSULTING ENGINEERS

NextEng Consulting Group Inc.

June 16, 2026

Attention: David Horwood

925 Main Street West (Hamilton) Limited
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**Re: Transportation Impact Study Update
Proposed Mixed-Use Development
925 Main Street West and 150 Longwood Road South, City of Hamilton
Our Project No. NT-23-099**

NexTrans Consulting Engineers (a Division of NextEng Consulting Group Inc.) is pleased to present the enclosed Transportation Impact Study for the above noted site in support of an Official Plan and Zoning By-law Amendment Applications for a proposed mixed-use development.

The subject site is located at 925 Main Street West and 150 Longwood Road South, at the south-west corner of the Main Street West and Longwood Road intersection, in the City of Hamilton. The proposed development is located adjacent to the future Main Street West LRT Station at the intersection of Main Street West and Longwood Road. The subject site is currently vacant. The proposed development consists of two high-rise buildings to be connected by a podium, with a total of 635 residential dwelling units and 321.71 m² (3,463 ft²) of ground related commercial area gross floor area. As part of the redevelopment of the site and future LRT, only one right-in/right-out access is provided onto Main Street West to service the proposed development. The proposed development will also provide a total of 435 vehicle parking spaces and 511 bicycle parking spaces, to accommodate the proposed development.

The Transportation Impact Study, which is prepared in accordance with the City's Transportation Impact Study Guidelines, concludes that the proposed development can adequately be accommodated by the existing transportation network, existing Hamilton Transit service, as well as the recommended Transportation Demand Management measures and incentives recommended in this report.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NexTrans Consulting Engineers

A Division of NextEng Consulting Group Inc.

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Report Submission Record

Identification	Date	Description of issued and/or revision
Final Report	June 16, 2026	Official Plan and Zoning By-law Amendment

EXECUTIVE SUMMARY

NexTrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by 925 Main Street West (Hamilton) Limited (the 'Client') to undertake a Transportation Impact Study in support of an Official Plan and Zoning By-law Amendment Applications for a proposed mixed-use development. The subject site is located at 925 Main Street West and 150 Longwood Road South, at the south-west corner of the Main Street West and Longwood Road intersection, in the City of Hamilton. The proposed development is located adjacent to the future Main Street West LRT Station at the intersection of Main Street West and Longwood Road.

Proposed Development and Site Trip Generation

The subject site is currently vacant. The proposed development consists of two high-rise buildings to be connected by a podium, with a total of 635 residential dwelling units and 321.71 m² (3,463 ft²) of ground related commercial area gross floor area. The proposed development is expected to generate:

- 159 total two-way auto trips (54 inbound and 105 outbound) and 188 total two-way auto trips (105 inbound and 83 outbound) during the morning and afternoon peak hours, respectively; and
- 95 total two-way transit trips (32 inbound and 63 outbound) and 44 total two-way transit trips (25 inbound and 19 outbound) during the morning and afternoon peak hours, respectively

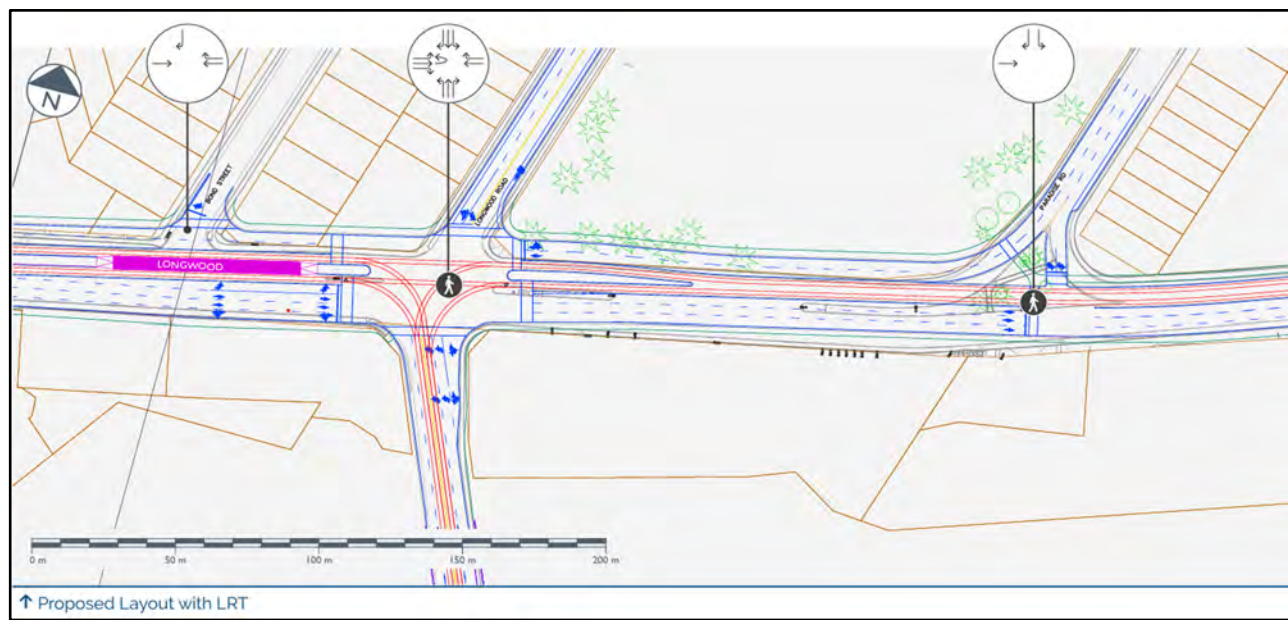
Proposed Development Access

Currently, the existing site has four full moves access directly onto Main Street West and one onto Longwood Road. As part of the proposed development and given the future Main Street West LRT design, these existing accesses will be closed and only one right-in/right-out access is provided onto Main Street West, at approximately 70 m west of Longwood Road. Based on the findings of this Study and NexTrans' assessment, the following lane configurations are recommended for each site access:

- One inbound lane (3.5 m width) and one outbound lane (3.5 m width); and
- One eastbound shared through/right lane

The analysis indicates the existing site accesses are expected to operate at acceptable levels of service with negligible delays or queues. The recommended lane configurations are sufficient and no improvements are required. **Figure E1** illustrates the proposed Main Street West lane configurations with the future LRT project.

Figure E1 – Proposed Main Street West Lane Configurations with LRT



[Access Corner Clearance](#)

As part of the proposed development, one right-in/right-out access is provided onto Main Street West, about 70m west of Longwood Road.

As per Figure 8.8.2 (Suggested Minimum Corner Clearances to Accesses or Public Lanes at Major Intersections) of the 2017 Transportation Association of Canada Geometric Design Guidelines, the suggested minimum corner clearance for the proposed site access from Longwood Road is 25 m. As the proposed corner clearance for Longwood Road access is approximately 70 m, therefore, the suggested minimum requirements are met.

[Access Clear Throat](#)

In accordance with TAC 2017, the clear throat length or set-back distance which is measured from the ends of the driveway curb return radii at the roadway and the point of first conflict on-site. In accordance with the Table 8.9.3 (TAC 2017), the suggested minimum clear throat length for a site access intersecting with a collector road is 25m with apartment land use (greater than 200 units, the proposed development consists of 635 units). The proposed development provides a clear throat length of approximately 35 m for the proposed access onto Main Street W, therefore, the suggested minimum requirements are met.

[Auto Mode Assessment](#)

The intersection performance analysis indicates that under the existing, 2030 future background and 2030 future total conditions, all intersections considered in the analysis are expected to operate at acceptable levels of service, with the exception of the Main Street West/Hwy 403 Off-Ramp. This intersection is expected to operate at higher delay and queues due to heavy turning movement volumes. However, with traffic signal timing plan optimization, this intersection is expected to operate at acceptable levels of service. No physical improvements are required to accommodate the proposed development beyond the improvements identified as part of the Hamilton LRT.

[Walking](#)

Under the existing conditions, sidewalks are available on both sides of Main Street West, Bond Street South, Paisley Avenue South and Longwood Road South north of Main Street West. Sidewalk is only available on the east side of Longwood Road South, south of Main Street West. Sidewalks are also available on both sides of the streets for other public roads in the area. Our site visit and desktop assessment indicate that the existing sidewalks are generally in good condition; therefore, no improvements are required at this time without major disruption to the area. The majority of the sidewalk in the area has approximately 1.5 m width to less than 2.0 m width. It appears that these sidewalks were designed based on the previous standards that may or may not meet today's requirements.

With the fully implemented Accelerated Plan in the next five year, the existing pedestrian network in the area will be improved to Level of Service C or D, with cycling facilities will be separated from pedestrian facilities where the volumes for both modes are high. As illustrated in the proposed site plan, the following design is recommended for the proposed development:

- Provide a minimum of 2.0 m width sidewalk along the frontage of the site on Main Street W;
- Provide a minimum of 0.5 m buffer between the sidewalk and the curb lane;
- Provide sufficient illumination along the frontage of the site, where appropriate; and
- Provide a minimum of 2.0 m sidewalk width internal to the site

[Cycling](#)

Currently, dedicated cycling lanes are available on Main Street West between Macklin Street South and west of Frid Street, King Street West, Longwood Road South north of Main Street West, Sterling Street, Sanders Boulevard, Dundurn Street South and Main Street West south of Osler Drive. There are also signed cycling routes and paved multi-trails in the area.

With the fully implemented Accelerated Plan in the next five year, the existing cycling network will be improved to Level of Service C or D, with additional cycling facilities and it will be separated from pedestrian facilities where the volumes for both modes are high.

The following design is recommended for the proposed development:

- Provide sufficient lands and per the Hamilton LRT project requirements to accommodate future cycling facility along Main Street West as per the Hamilton LRT project and the City of Hamilton Accelerated Active Transportation Implementation Plan (November 2023);
- Provide sufficient illumination along the frontage of the site, where appropriate;
- Provide 511 bicycle parking spaces, with 66 short-term and 445 long-term spaces; and
- Provide a bicycle repair station at a convenient location

Transit Mode Assessment

The area is current serviced by several existing HSR Transit Bus Routes 1 King, 5 Delaware, 6 Aberdeen, 10 B-Line and 51 University. It should also be noted that the proposed development is located adjacent to all of these stops, as well as the future LRT Stop at Main Street West and Longwood Road South. The review and analysis indicate that the proposed development will contribute a healthy transit ridership for the existing Hamilton transit system in the area.

The proposed development is expected to generate 95 total two-way transit trips (32 inbound and 63 outbound) and 44 total two-way transit trips (25 inbound and 19 outbound) during the morning and afternoon peak hours, respectively. With both comprehensive existing HSR Transit service in the area and the future Hamilton LRT line, these transit trips can be accommodated and no additional improvements are required.

Vehicle Parking Review

Based on the City's By-Law No. 05-200, the parking requirements is 0.05 spaces + 2 spaces per unit for visitor and 0 per unit for residential and for retail/commercial use, therefore 33 parking spaces are required total. The maximum parking permitted is 635 spaces (1.00 spaces per unit).

Based on the analysis provided in this Study Update, the proposed development only needs to provide 33 spaces, however, the proposed development provides 435 vehicle parking spaces, which exceeds the minimum Zoning By-law requirement and represents a significant reduction of approximately 32% vehicle parking spaces from the maximum allowable in the Zoning By-law. Our analysis indicates that this recommended reduction is required and necessary to support TDM and future Hamilton LRT ridership.

Bicycle Parking Review

Based on the applicable Zoning By-law, the proposed development is required to provide a total of 509 bicycle parking spaces with 64 short-term and 445 long-term. The proposed development will provide a total of 511 residential bicycle parking spaces with 66 short-term and 445 long-term spaces, which slightly exceeds the Zoning By-law requirements. This provision will encourage future residents to use active mode of transportation to and from the proposed development. This provision will also support the recommended vehicle parking rates provided in this Study.

Transportation Demand Management Measures and Incentives

The Report identifies and recommends appropriate Transportation Demand Management measures and incentives to support active transportation and transit, to meet the objectives and requirements in the City of Hamilton's TDM for Development Report.

Loading Requirement

The proposed development provides two on-site loading areas, one is for Tower A and one is for Tower B. AutoTURN software was used generate turning movement templates and to demonstrate the turning movement requirements for garbage pick-up and delivery vehicles at the proposed loading area and site access.

Study Conclusions and Recommendations

Based on the findings of this Study, the following recommendations are provided:

- The proposed development implements the TDM measures and incentives identified in this report to support active transportation and transit and to reduce the numbers of single-occupant-vehicle trips to and from the proposed development;
- The proposed development only requires to provide a parking rate of 0.05 + 2 spaces for visitor, 0 spaces/unit for residential and for retail/commercial use.". The proposed development provides a total of 435 vehicle parking spaces, inclusive of Type A barrier-free and Type B barrier-free spaces, as well as visitor/retail spaces.
- The proposed development provides a total of 511 residential bicycle parking spaces, including 66 short-term and 445 long-term spaces to encourage sustainable mode of transportation and reduce the numbers of single-occupant-vehicle trips;
- Implement the comprehensive internal sidewalk network as illustrated in this Study; and
- No additional physical improvements for the area at this time to accommodate the proposed development, under the future background and future total conditions.

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Appendix H – Proposed Site Plan

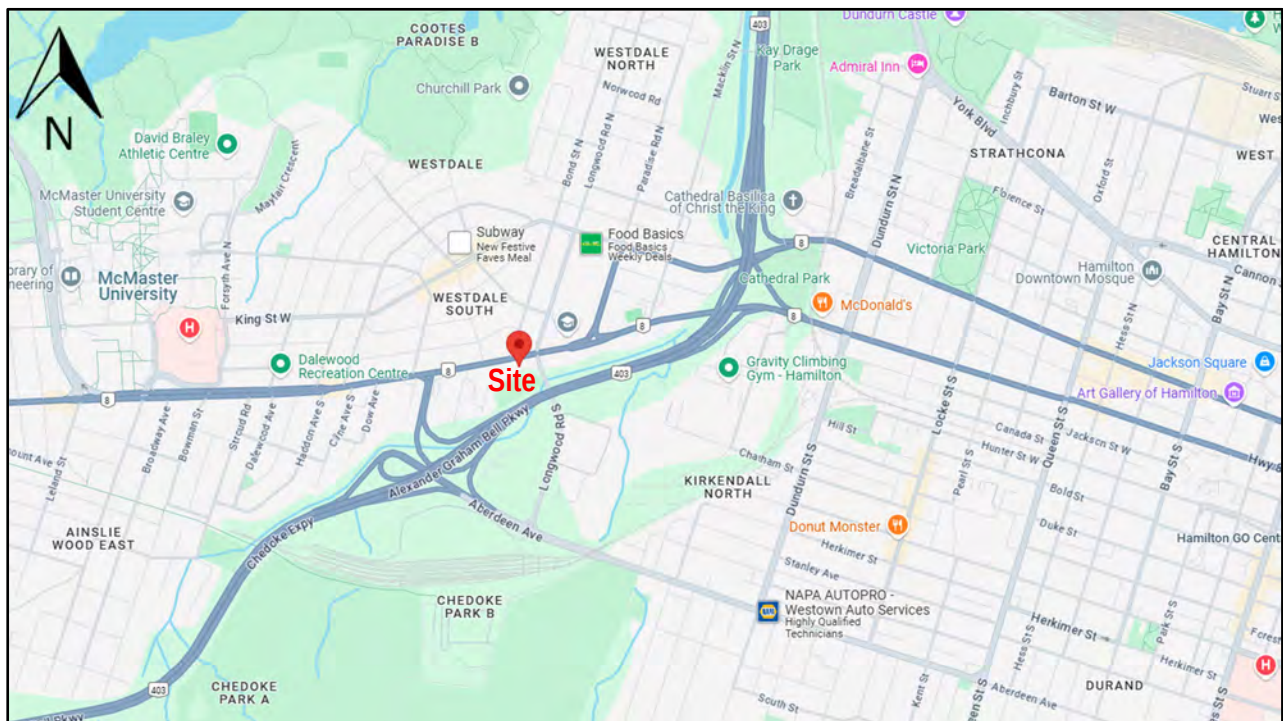
1.0 INTRODUCTION

NexTrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by 925 Main Street West (Hamilton) Limited (the 'Client') to undertake a Transportation Impact Study in support of an Official Plan and Zoning By-law Amendment Applications for a proposed mixed-use development.

The subject site is located at 925 Main Street West and 150 Longwood Road South, at the south-west corner of the Main Street West and Longwood Road intersection, in the City of Hamilton. The proposed development is located adjacent to the future Main Street West LRT Station at the intersection of Main Street West and Longwood Road. The location of the proposed development is illustrated in **Figure 1**.

This Study was conducted in consistent with the City of Hamilton Transportation Impact Study Guidelines. It should be noted that the study terms of reference that are included in **Appendix A** have been submitted to the City of Hamilton. However, NexTrans has not received any comments in time for the preparation of this Study. Any comments from the City of Hamilton will be addressed as part of the future site plan submission.

Figure 1 – Proposed Development Location



Source: Google Map

The subject site is currently vacant. The proposed development consists of two high-rise buildings to be connected by a podium, with a total of 635 residential dwelling units and 321.71 m² (3,463 ft²) of ground related commercial area gross floor area.

Currently, the existing site has four full moves access directly onto Main Street West and one onto Longwood Road. As part of the proposed development and given the future Main Street West LRT design, these existing accesses will be closed and only one right-in/right-out access is provided onto Main Street West, at approximately 70 m west of Longwood Road. The proposed development will also provide a total of 435 vehicle parking spaces and 511 residential bicycle parking spaces, inclusive of short-term and long-term spaces, to accommodate the proposed development.

Figure 2 illustrates the proposed development site plan. Please see **Appendix H** for larger site plan and stats.

Figure 2A – Proposed Site Plan

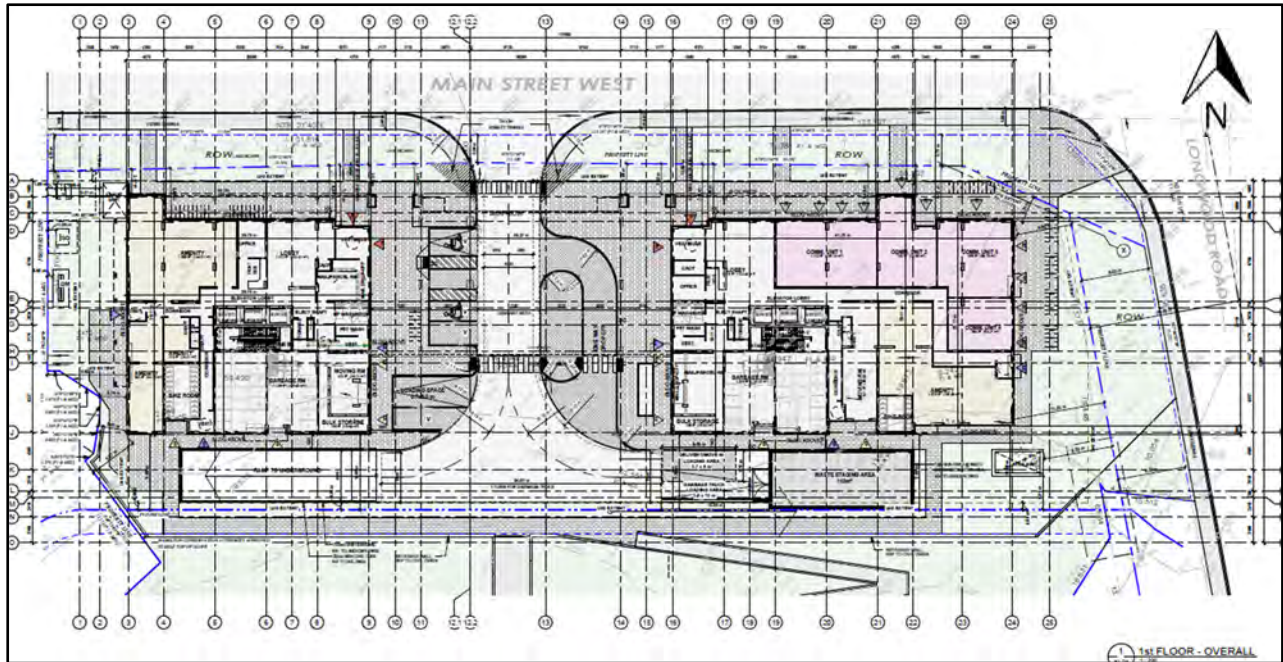


Figure 2B – Proposed Site Rendering



2.0 TRANSPORTATION PLANNING CONTEXT IN THE AREA

2.3. Existing Area Context

NexTrans has conducted a comprehensive review of the area. The proposed development is located only about 2.0 km from the Downtown Hamilton, about less than 1.5 km from McMaster University.

There are existing rental apartment buildings along Main Street West east and west of the site. The proposed development is also surrounded by existing low-rise residential communities to the north and south-west. There are several schools and community centres to the north of the site.

2.4. Existing Land Use Context and Amenities

The subject site is located at the intersection of two busy arterial road and collector road, Main Street West and Longwood Road South. Both of these streets accommodate both residential traffic and commercial traffic that services the inter-city traffic. In general, the area is currently surrounded by many amenities such as shopping centre, grocery stores, banks, restaurants, automotive services, schools, community parks, places of worship and employment.

The review and analysis indicate that the proposed development presents good transportation planning and is suitable for this area given the complete transportation context, community amenities and maximizing the potential of the existing under-utilized land use that will help addressing housing shortage in the City of Hamilton.

2.5. Transportation Planning Context

As the existing area today is developed based on the traditional urban sprawl planning with low-rise residential and big box stores where residents will have to drive to school, work, or shopping. It is anticipated that the majority of the mode of transportation in this area would be driving private cars even though there is a great existing transit system servicing by HSR Transit System.

The analysis indicate that the proposed development is very compact and is different from traditional urban sprawl, will contribute a healthy transit ridership for the existing Hamilton transit system and the future Hamilton LRT in the area and provide more housing options for the residents. This type of development should be encouraged and embraced in the City of Hamilton. As part of this Study, NexTrans will provide appropriate recommendations that the proposed development can implement to continue to contribute positively to the area and community.

2.6. Future Hamilton Light-Rail-Transit (LRT)

Based on the information obtained from www.ontario.ca, it is our understanding that the Ontario government is issuing a Request for Qualifications (RFQ) for the Hamilton Light Rail Transit (LRT), bringing the province one step closer to getting shovels in the ground on major construction for a key transit project that will carry 50,000 daily riders across one of Ontario's fastest-growing cities.

The Hamilton LRT project brings 14 kilometres of fast, frequent light-rail-transit (LRT) through Hamilton's downtown core connecting you from Eastgate to McMaster University along King Street and Main Street. Modern light rail service will connect key areas, destinations, and institutions along Main Street, King Street and Queenston Road. It will also feature direct connections to GO Transit and HSR bus service.

Figure 3 illustrates the future Hamilton Light-Rail-Transit (LRT) project map and stations.

Figure 3 – Future Hamilton Light-Rail-Transit (LRT) Project



Source: www.metrolinx.com

3.0 ESTABLISHING MULTIMODAL LEVEL OF SERVICE

3.1. Definition and Methodology

The level of service definitions is specific to each area due to existing physical conditions, constraints and context. There are many desirable and inspirational requirements for each type of facility. However, the expectations must be realistic and suitable for the context of the area, especially in the City of Hamilton where there are environmental constraints and other competing interests such as the Fruitland-Wiona Secondary Plan visions and objectives.

Given that the study area is going through significant changes, missing gaps and links are expected as these will be completed by the future secondary plan areas, background developments and the City's capital projects. In addition, as the area will be implemented in multiple phases, depending on the market demand conditions, some of these gaps and missing links will be there for a longer period of time. This is beyond the control of one single development or area. Therefore, it is collectively the responsibilities of the City of Hamilton to include these missing links and gaps in future capital plan projects so that a larger network can be implemented on the external transportation road network. The proposed development will work with the City to transition these improvements to minimize any potential throw-way costs.

For the purposes of this assessment, we consulted the following documents to provide guidance to the proposed development:

- Ontario Traffic Council Multimodal Level of Service (MMLOS) methodology (**Tables 1 and 2**); and
- The City of Hamilton Complete Streets Design Guidelines

It should be noted that this Transportation Master Plan Study is a high-level study that is similar to the City of Hamilton Complete Streets Design Guidelines that will set target for each mode of transportation.

3.2. Setting Targets

It is our understanding that the Ontario Traffic Council Multimodal Level of Service (MMLOS) Guidelines provide a framework for practitioners to consider and document the context in which transportation projects occur, including, but not limited to, considerations of land-use, public realm, equity, climate change and other environmental considerations. However, these targets are often determined by the community needs and constraints, as well as engineering judgement as one size does not fit all.

It is also our understanding that Ontario Traffic Council Multimodal Level of Service (MMLOS) Guidelines also provide flexible tools so that majority of scenarios should result in scores approaching the middle of the range for each gradation as the maximum target is not always achievable due to many reasons, and life-cycle cost is one of the most important considerations. As such, the targets and scores of LOS of A and F should be infrequent due to the reasons noted above as LOS A is not always achievable and LOS F is not acceptable.

Similarly, it is our understanding of the City of Hamilton Complete Streets Design Guidelines is that the Complete Streets approach recognizes that there is no one-size-fits-all solution to street design, as different streets have different priorities, depending on the street's location, context, and role within the transportation system. Complete Streets takes an overall street typology approach that considers the needs of all road users and recognizes the importance of streets not only as conduits to move from one place to another, but also as public spaces and an integral component of the public realm.

The target for each mode of transportation will be discussed and established in **Section 7** of this Study that provides recommendations for the proposed secondary plan area and provides guidance for the proposed development.

Table 1 – Recommended Multimodal Level of Service Targets (OTC MMLOS)

LOS Grade	LOS A	LOS B	LOS C	LOS D	LOS E	LOS F
Transportation Mode	Provides the highest quality experience for a given mode	Provides a high-quality experience for a given mode	Provides a good-quality experience for a given mode	Provides a moderate-quality experience for a given mode	Provides just above the minimal targeted standard for a given mode	Provides the minimal targeted standard for a given mode
Pedestrians	• Pedestrians always have sufficient space to walk or roll in a social manner that is removed from traffic nuisance • Crossing distance and delay at intersections is always optimized for pedestrians • Crossing locations are always located with sufficient frequency to minimize detour	• Pedestrians very often have sufficient space to walk or roll in a social manner that is removed from traffic nuisance • Crossing distance and delay at intersections is very often optimized for pedestrians • Crossing locations are very often located with sufficient frequency to minimize detour	• Pedestrians often have sufficient space to walk or roll in a social manner that is removed from traffic nuisance • Crossing distance and delay at intersections is often optimized for pedestrians • Crossing locations are often located with sufficient frequency to minimize detour	• Pedestrians occasionally have sufficient space to walk or roll in a social manner that is removed from traffic nuisance • Crossing distance and delay at intersections is occasionally optimized for pedestrians • Crossing locations are occasionally located with sufficient frequency to minimize detour	• Pedestrians rarely have sufficient space to walk or roll in a social manner that is removed from traffic nuisance • Crossing distance and delay at intersections is rarely optimized for pedestrians • Crossing locations are rarely located with sufficient frequency to minimize detour	• Pedestrians do not have sufficient space to walk or roll in a social manner that is removed from traffic nuisance • Crossing distance and delay at intersections is not optimized for pedestrians • Crossing locations are not located with sufficient frequency to minimize detour
Cyclists	• Cyclists always have sufficient space to ride in a social manner that is removed from traffic nuisance • Delay at intersections is always optimized for cyclists • Exposure to conflict at intersections is always minimized	• Cyclists very often have sufficient space to ride in a social manner that is removed from traffic nuisance • Delay at intersections is very often optimized for cyclists • Exposure to conflict at intersections is very often minimized	• Cyclists often have sufficient space to ride in a social manner that is removed from traffic nuisance • Delay at intersections is often optimized for cyclists • Exposure to conflict at intersections is often minimized	• Cyclists occasionally have sufficient space to ride in a social manner that is removed from traffic nuisance • Delay at intersections is occasionally optimized for cyclists • Exposure to conflict at intersections is occasionally minimized	• Cyclists rarely have sufficient space to ride in a social manner that is removed from traffic nuisance • Delay at intersections is rarely optimized for cyclists • Exposure to conflict at intersections is rarely minimized	• Cyclists do not have sufficient space to ride in a social manner that is removed from traffic nuisance • Delay at intersections is not optimized for cyclists • Exposure to conflict at intersections is not minimized
Transit	• Transit riders' experience is always seamless and attractive	• Transit riders' experience is very often seamless and attractive	• Transit riders' experience is often seamless and attractive • Transit vehicles are occasionally	• Transit riders' experience is occasionally seamless and attractive	• Transit riders' experience is rarely seamless and attractive	• Transit riders' experience is not seamless or attractive • Transit vehicles are almost always

	- Transit vehicles are never impeded by other traffic - The pedestrian environment leading to transit stops provides the highest quality experience	- Transit vehicles are rarely impeded by other traffic - The pedestrian environment leading to transit stops provides a high-quality experience	- impeded by other traffic - The pedestrian environment leading to transit stops provides a medium-quality experience	- Transit vehicles are often impeded by other traffic - The pedestrian environment leading to transit stops provides a low-quality experience	- Transit vehicles are very often impeded by other traffic - The pedestrian environment leading to transit stops provides the minimal acceptable experience	- impeded by other traffic - The pedestrian environment leading to transit stops is non-existent
Trucks	- Driver is always able to navigate turns with minimal concern for infringing on other lanes or facilities - Drivers never experience delay due to congestion	- Driver is very often able to navigate turns with minimal concern for infringing on other lanes or facilities - Drivers rarely experience delay due to congestion	- Driver is often able to navigate turns with minimal concern for infringing on other lanes or facilities - Drivers occasionally experience delay due to congestion	- Driver is occasionally able to navigate turns with minimal concern for infringing on other lanes or facilities - Drivers often experience delay due to congestion	- Driver is rarely able to navigate turns with minimal concern for infringing on other lanes or facilities - Drivers very often experience delay due to congestion	- Driver is not able to navigate turns with minimal concern for infringing on other lanes or facilities - Drivers almost always experience delay due to congestion
Cars	- Drivers never experience delay due to congestion - Parking and loading options are always available where appropriate - Dedicated turn lanes are always provided when warranted	- Drivers rarely experience delay due to congestion - Parking and loading options are very often available where appropriate - Dedicated turn lanes are very often provided when warranted	- Drivers occasionally experience delay due to congestion - Parking and loading options are often available where appropriate - Dedicated turn lanes are often provided when warranted	- Drivers often experience delay due to congestion - Parking and loading options are occasionally available where appropriate - Dedicated turn lanes are occasionally provided when warranted	- Drivers very often experience delay due to congestion - Parking and loading options are rarely available where appropriate - Dedicated turn lanes are rarely provided when warranted	- Drivers almost always experience delay due to congestion - Parking and loading options are not available - Dedicated turn lanes are not provided when warranted

Table 2 – Level of Service Criteria (OTC MMLOS)

LOS Grade	Measure	Weight	LOS A	LOS B	LOS C	LOS D	LOS E	LOS F
Pedestrians	Pedestrian Facility Width (m)	33%	> 3.0	2.6 - 3.0	2.1 - 2.5	1.8 - 2.0	1.5 - 1.7	< 1.5
	Pedestrian Buffer Width (m)	33%	> 2.5	2.1 - 2.5	1.6 - 2.0	1.3 - 1.5	1.0 - 1.2	< 1.0
	Max Distance between Controlled Crossings (m)	33%	200 ³	201 - 230	231 - 260	261 - 290	291 - 320	> 320
Cyclists	Bike Facility Width per Direction (m)	33%	> 2.4	2.2 - 2.4	1.9 - 2.1	1.6 - 1.8	1.2 - 1.5	< 1.2
	Bike Buffer Width (m)	33%	Has physical measures and buffer width > 1.0	Has physical measure and buffer width is 0.50 - 1.0	n/a ¹	Has physical measures and buffer width is 0.30 - 0.49 OR Has no physical measures and width is ≥ 0.50	n/a ¹	No physical measures and buffer width is < 0.50
	Conflicts with Other Modes (In-lane conflicts and crossing point conflicts)	33%	Two "Low" conflict indicators	One "Low" conflict indicator and one "Moderate" conflict indicator	Two "Moderate" conflict indicators	One "Low" conflict indicator and one "High" conflict indicator	One "Moderate" conflict indicator and one "High" conflict indicator	Two "High" conflict indicators
Buses	Transit Facility Type	33%	Dedicated lanes	Intersection priority measures	n/a ¹	Mixed traffic with >1 lane/direction	n/a ¹	Mixed traffic with 1 lane
	Transit Passenger Amenities	33%	Abundance of passenger amenities such as shelters, seating, shade trees, etc.	Moderate presence of passenger amenities such as shelters, seating, shade trees, etc.	n/a ¹	Low presence of passenger amenities such as shelters, seating, shade trees, etc.	n/a ¹	No presence of passenger amenities such as shelters, seating, shade trees, etc.
	Pedestrian Level of Service	33%	A	B	C	D	E	F
Trucks	Width of the Curb Lane (m)	50%	> 4.0	3.9 - 4.0	3.7 - 3.8	3.4 - 3.6	n/a ¹	< 3.4
	Car Level of Service	50%	A	B	C	D	E	F
Cars	Mid-Block V/C ratio	50%	< 0.60	0.60 - 0.69	0.70 - 0.79	0.80 - 0.89	0.90 - 0.99	> 1.0
	Curb Lane Conflicts (conflicts/km)	50%	None	1 - 2	3 - 4	5 - 6	7 - 8	9 +

Notes:

1. For some measures, only a limited number of LOS scores are possible. The ones that cannot be obtained for that metric are marked as "n/a."
2. For mixed AT facilities where pedestrians and cyclists share the operating space (e.g. multi-use paths, etc.) the facility should be scored based on the PED and BIKE metrics independently and the resulting scores discounted by one grade (ex: B -> C). This reflects the negative impact to the pedestrian and cycling experience that results from sharing the same operating space. It is noted that in areas of high pedestrian and bicycle activity that mixed-facilities should be avoided when possible.
3. Note there are also disadvantages to controlled crossings that are too close to one another which can result in collisions between vehicles and pedestrians. Refer to OTM Book 15 for further information on this.

4.0 EXISTING TRANSPORTATION CONDITIONS

4.1. Site Walk Score

NexTrans has reviewed the walk score for the subject site using the information in www.walkscore.com website. **Table 3** below summarizes the walk score for the subject site.

Table 3 – Walk Score for 925 Main Street West

Mode	Score	Description
Walking	87	Very Walkable – Most errands can be accomplished on foot
Public Transit	63	Good Transit – Many nearby public transportation options
Cycling	77	Very Bikeable – Biking is convenient for most trips

As indicated in the table above, the subject site has good access to walking, cycling and transit. Most daily errands do not require a car. Therefore, the future residents in the proposed development do not need a car for work, school or discretionary trips.

4.2. Existing Road Network Assessment

As indicated, the subject site is located at 925 Main Street West and 150 Longwood Road South, at the south-west corner of the Main Street West and Longwood Road intersection, in the City of Hamilton. The description of the existing road network in the study area is summarized in **Table 4** below.

Table 4 – Summary of the Existing Road Network in the Study Area

Road Name	Jurisdiction	No. of Lanes (Typical)	Speed Limit (By-law 22-028)	Road Type (OP Schedule C)	Sidewalk/Cycling
Main Street West	City of Hamilton	6	50 km/h	Major Arterial	Sidewalks are on both sides of the road, no cycling lanes
Longwood Road South	City of Hamilton	4	40 km/h	Collector Road	Sidewalks on both sides north of Main Street West and sidewalk is only on the east side south of Main Street West, no cycling lanes
Bond Street South	City of Hamilton	2	40 km/h	Local Road	Sidewalks on both sides of the street, no cycling lanes
Paisley Avenue South	City of Hamilton	2	40 km/h	Local Road	Sidewalks on both sides of the street, no cycling lanes
Hwy 403/ Chedoke Expressway	MTO	3 lanes per direction	100 km/h	Expressway	NA

4.3. Walking Mode Assessment

Under the existing conditions, sidewalks are available on both sides of Main Street West, Bond Street South, Paisley Avenue South and Longwood Road South north of Main Street West. Sidewalk is only available on the east side of Longwood Road South, south of Main Street West. Sidewalks are also available on both sides of the streets for other public roads in the area.

Our site visit and desktop assessment indicate that the existing sidewalks are generally in good condition; therefore, no improvements are required at this time without major disruption to the area. The majority of the sidewalk in the area has approximately 1.5 m width to less than 2.0 m width.

It appears that these sidewalks were designed based on the previous standards that may or may not meet today's requirements. Based on the criteria outlined in **Tables 1** and **2**, the area currently has a Level of Service D or E, given that most of the sidewalk width in the area is between 1.5 to less than 2.0 m with minimum buffer. **Figure 4** illustrates the existing and future amenities that are located within walking distance to the proposed development.

Figure 4 – Existing and Future Amenities Within Walking Distance in the Study Area



Source: KNYMH Architect

4.4. Cycling Mode Assessment

Currently, dedicated cycling lanes are available on Main Street West between Macklin Street South and west of Frid Street, King Street West, Longwood Road South north of Main Street West, Sterling Street, Sanders Boulevard, Dundurn Street South and Main Street West south of Osler Drive. There are also signed cycling routes and paved multi-trails in the area. The review and analysis indicate that the cycling network is sufficient at this time. Based on the criteria outlined in **Tables 1** and **2**, the area currently has a Level of Service C or D. **Figure 5** illustrates the existing active transportation

network in the study area.

4.5. Existing Hamilton Transit (HSR) System

The area is current serviced by several existing HSR Transit Bus Routes 1 King, 5 Delaware, 6 Aberdeen, 10 B-Line and 51 University. It should also be noted that the proposed development is located adjacent to all of these stops, as well as the future LRT Stop at Main Street West and Longwood Road South. **Figures 6A, 6B and 6C** illustrate the existing HSR Transit Bus Routes in the study area. The review and analysis indicate that the proposed development will contribute a healthy transit ridership for the existing Hamilton transit system in the area. Below are the bus route descriptions based on the information provided on the Hamilton Transit Website (<https://www.hamilton.ca/hsr-bus-schedules-fares>):

- **Route 1 King** – The King route travels generally in the east - west direction from University Plaza to Eastgate Square. The service frequency is approximately 15-minute during the weekday peak periods and approximately 30-minute during the weekend peak periods.
- **Route 5 Delaware** – The Delaware route travels generally in the east - west direction from King/Hwy 8 to Head Street Loop (5A), Pirie Street (5B) or Meadowlands Terminal (5C). This service runs 7 days a week from the early morning until after midnight. The service frequency is approximately 20-minute during the weekday peak periods and approximately 24-minute during the weekend peak periods.
- **Route 6 Aberdeen** – The Aberdeen route travels generally in the north - south to east – west then north – south directions from the King William to the Princess Point Loop. This service runs 7 days a week from the early morning until after midnight. The service frequency is approximately 20-minute during the weekday peak periods and approximately 30-minute during the weekend peak periods.
- **Route 10 B-Line** – The B-Line route travels generally in the east -west direction from the University Plaza to Eastgate Square. This service runs 7 days a week from the early morning until after midnight. The service frequency is approximately 10-minute during the weekday peak periods and approximately 20-minute during the weekend peak periods.
- **Route 51 University** – The University route travels generally in the east – west direction from the GO Centre to the West Hamilton Loop. This service runs 7 days a week from the early morning until after midnight. The service frequency is approximately 10-minute during the weekday peak periods and approximately 30-minute during the weekend peak periods.

Figure 5 – Existing Cycling Network in the Study Area



Source: Google Map/City of Hamilton Cycling Map

Figure 6A – Existing Hamilton Transit Routes 1, 10 and 51

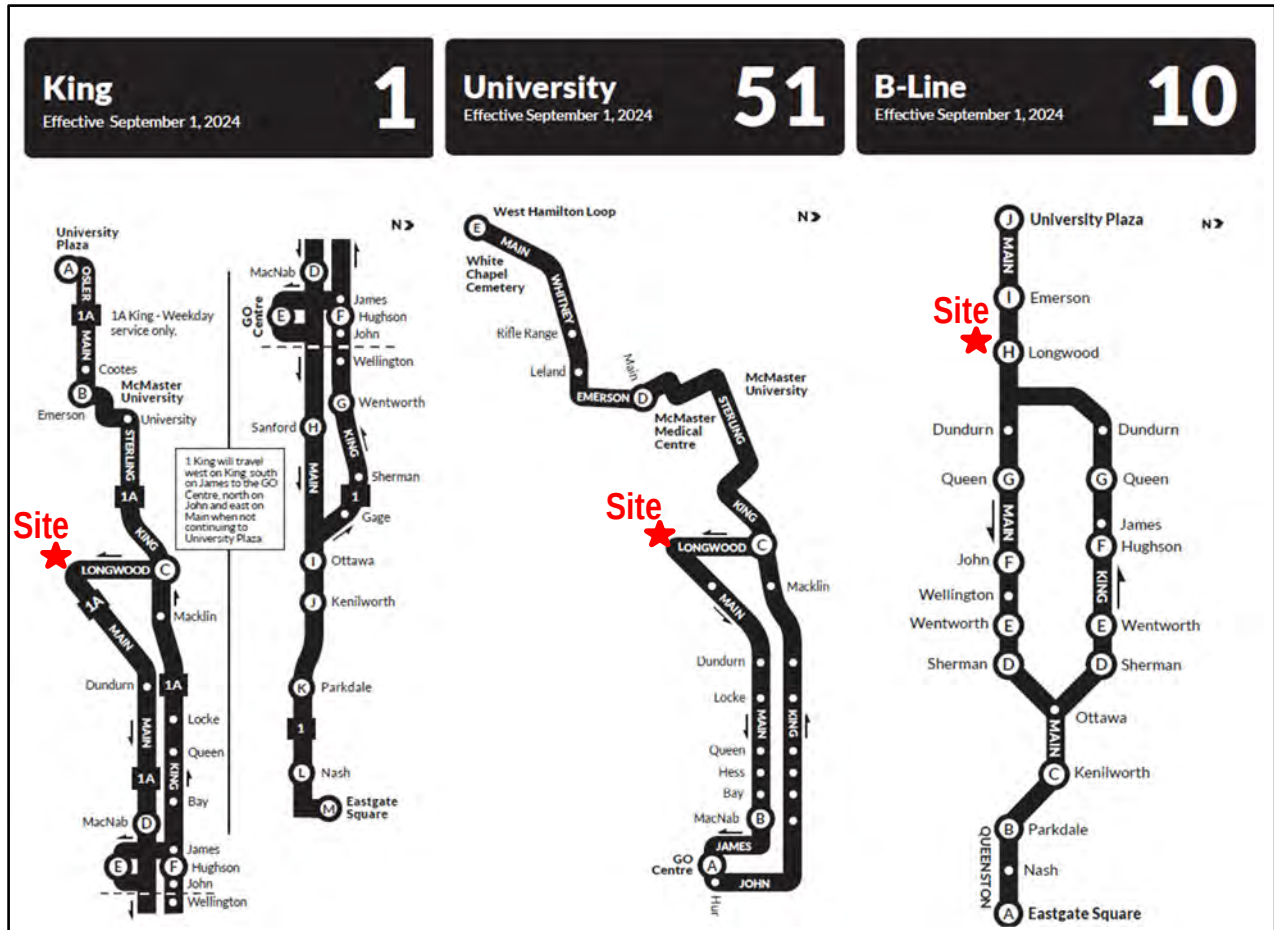
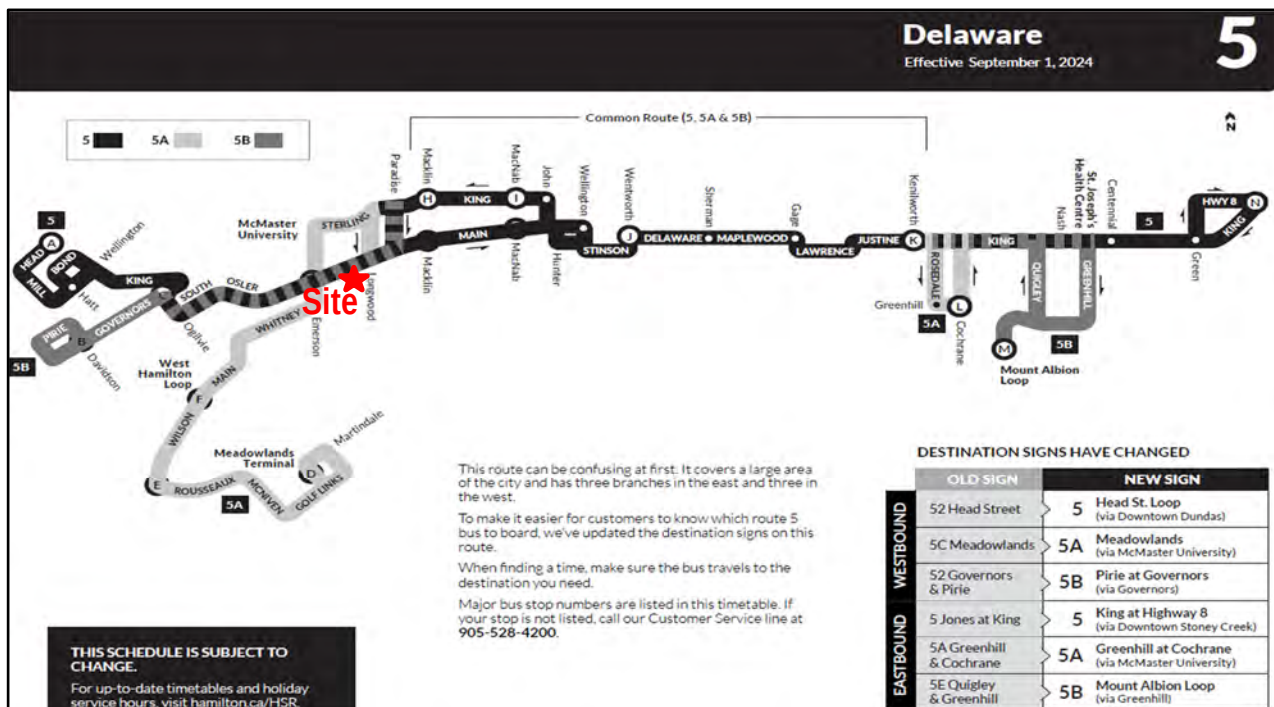
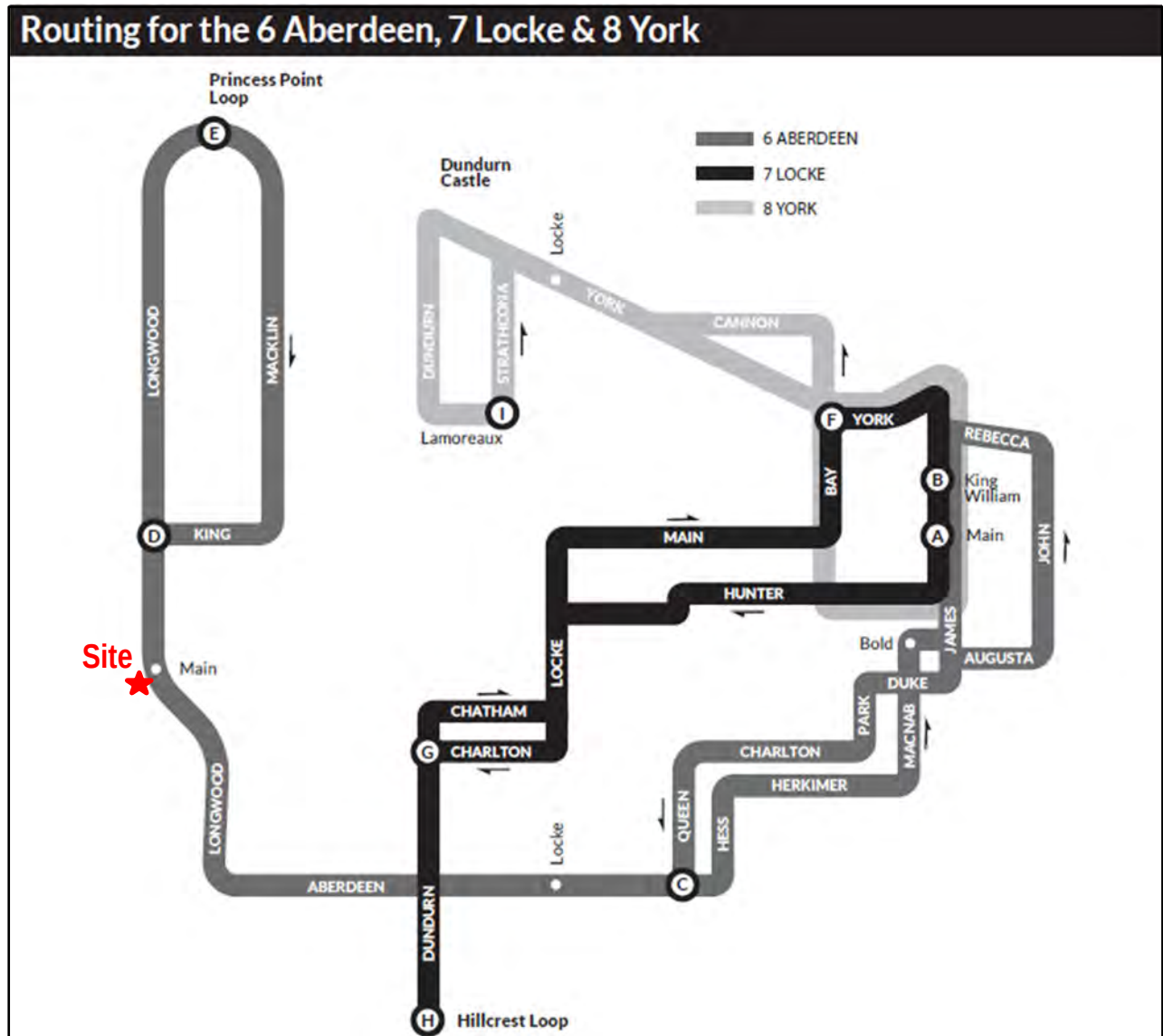


Figure 6B – Existing Hamilton Transit Route 5



Source: Hamilton Transit website

Figure 6C – Existing Hamilton Transit Route 6



Source: Hamilton Transit website

Based on the criteria outlined in **Tables 1** and **2**, the area currently has a transit Level of Service B or E, given that the area is only need the completion of the Hamilton LRT project.

4.6. Auto Mode Assessment

4.6.1. Existing Intersection Configurations and Traffic Control

Figure 7 illustrates the existing lane configurations and traffic control devices for the intersections considered in the analysis.

4.6.2. Existing Traffic Volumes

Existing traffic volumes at the study area intersections were undertaken by Spectrum on Wednesday March 20, 2024 during the morning (7:00 a.m. to 10:00 a.m.) and afternoon (4:00 p.m. to 7:00 p.m.) peak periods for the study area intersection. The Turning movement counts are summarized in **Appendix B**. The existing volumes are illustrated in **Figure 8**.

4.6.3. Intersection Performance

The existing volumes in **Figure 8** were analyzed using Synchro Version 12 software. The methodology of the software follows the procedures described and outlined in the Highway Capacity Manual, HCM 2000, published by the Transportation Research Board. It should be noted that the printouts for unsignalized intersections are based on HCM outputs and the results for signalized intersections are based on Synchro so that queues and more detailed information are provided. The signal timing plans for the signalized intersections were obtained from the City of Hamilton and incorporated into the analysis. The results are provided in **Appendix C** and summarized in **Table 5**.

Figure 7 – Existing Lane Configuration and Traffic Control

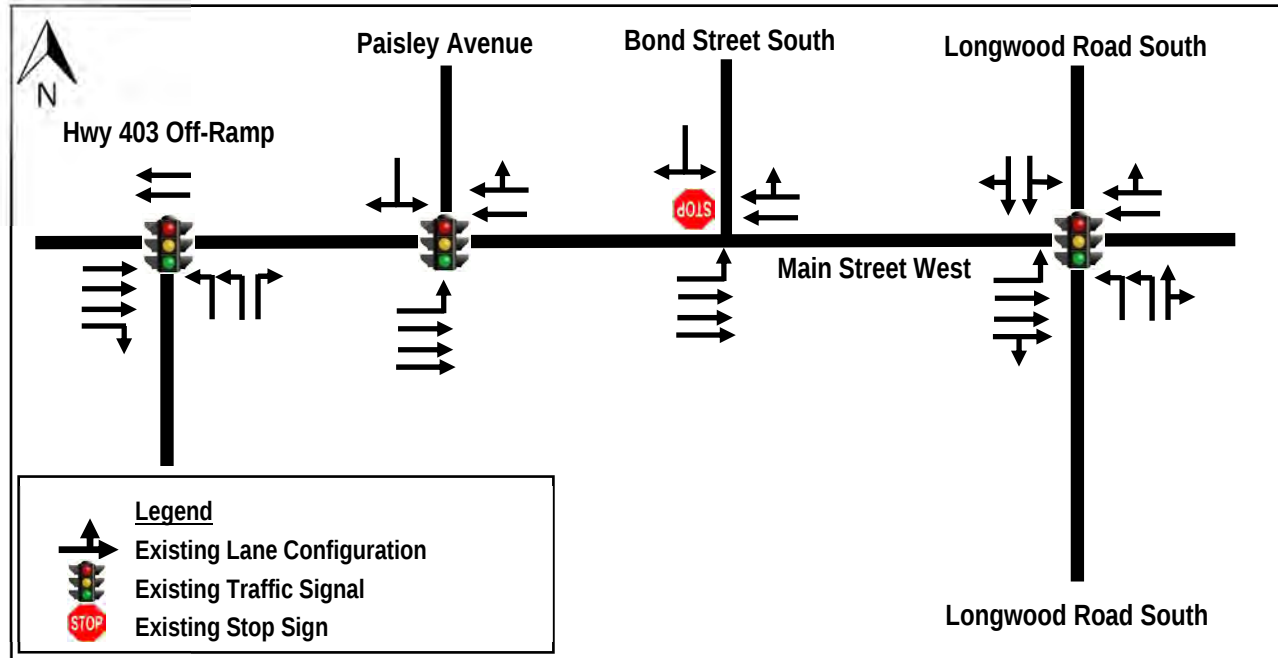
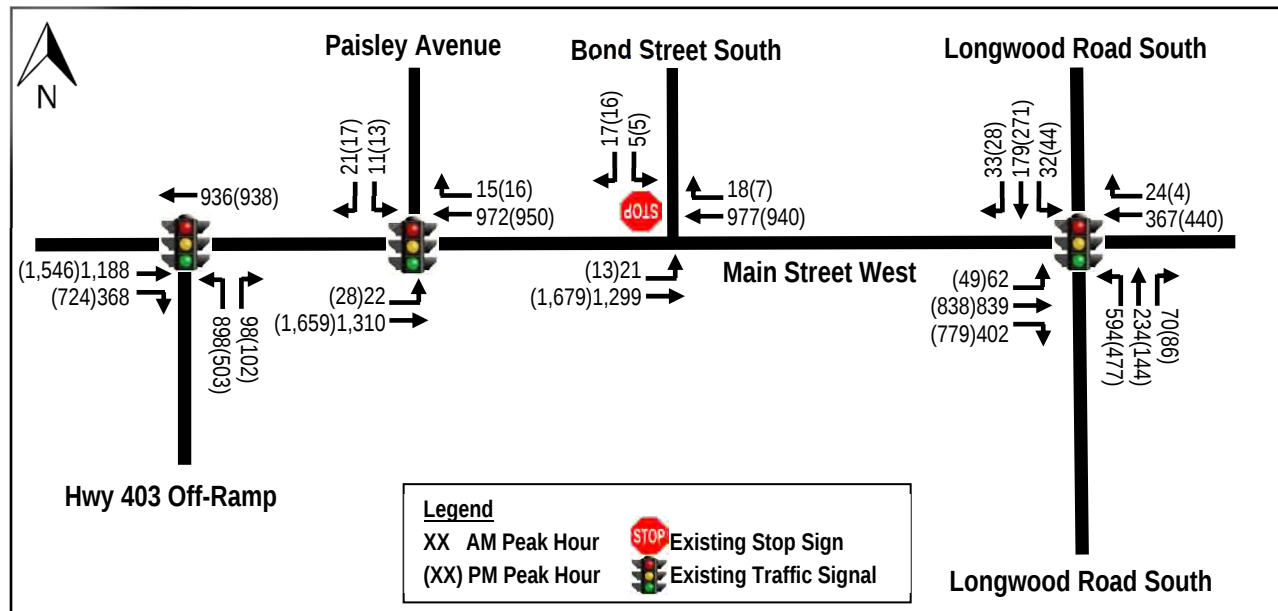


Figure 8 – Existing Traffic Volumes



Based on the intersection capacity analysis, under the existing traffic conditions, all intersections considered in the analysis are currently operating at acceptable levels of service with no critical movements. No signal timing optimization or physical improvements are required under the existing conditions.

Table 5 – Existing Intersection Performance

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Main Street West/ Longwood Road South (signalized)	Overall	C (0.82)	22		C (0.77)	27		
	EB – L	A (0.14)	2	2	B (0.12)	17	14	~60
	EB – TR	A (0.55)	1	2	B (0.90)	19	118	~160
	WB – TR	B (0.24)	18	44	B (0.28)	18	48	~300
	NB – L	D (0.82)	54	88	D (0.77)	50	68	~40
	NB – TR	C (0.46)	27	70	B (0.34)	20	44	~300
	SB – LTR	E (0.72)	59	44	D (0.75)	54	53	~300
Main Street West/ Hwy 403 Off-Ramp (signalized)	Overall	D (0.97)	53		D (0.94)	43		
	EB – T	D (0.91)	53	134	D (0.86)	42	171	~300
	EB – R	A (0.64)	9	29	C (0.87)	21	139	~160
	WB – T	E (0.94)	60	163	E (0.94)	58	157	~160
	NB – L	E (0.97)	65	155	D (0.77)	54	75	~100
	NB – R	C (0.24)	25	28	B (0.18)	15	22	~300
Main Street West/ Paisley Avenue South (signalized)	Overall	A (0.33)	2		A (0.39)	4		
	EB – L	A (0.05)	0	0	A (0.06)	2	3	~55
	EB – T	A (0.31)	2	4	A (0.39)	2	36	~500
	WB – TR	A (0.33)	1	8	A (0.34)	7	71	~45
	SB – LR	C (0.21)	30	13	C (0.19)	30	12	~55
Main Street West/ Bond Street South (unsignalized)	EB – L	A (0.03)	11	1	A (0.02)	10	1	~60
	EB – T	A (0.27)	0	0	A (0.36)	0	0	~80
	WB – TR	A (0.41)	0	0	A (0.41)	0	0	~70
	SB – LR	C (0.07)	16	2	B (0.06)	15	1	~80

5.0 FUTURE BACKGROUND CONDITIONS

5.1. Analysis Horizon

For the purposes of this assessment, 2030 analysis horizon has been carried out for the study analysis. This provision is consistent with the City of Hamilton's Traffic Impact Study Guidelines.

5.2. Walking Mode Assessment

5.2.1. Existing Cycling Facilities

Under the existing conditions, sidewalks are available on both sides of Main Street West, Bond Street South, Paisley Avenue South and Longwood Road South north of Main Street West. Sidewalk is only available on the east side of Longwood Road South, south of Main Street West. Sidewalks are also available on both sides of the streets for other public roads in the area. Our site visit and desktop assessment indicate that the existing sidewalks are generally in good condition; therefore, no improvements are required at this time without major disruption to the area. The majority of the sidewalk in the area has approximately 1.5 m width to less than 2.0 m width. It appears that these sidewalks were designed based on the previous standards that may or may not meet today's requirements.

5.2.2. Accelerated Plan 2024-2028 (Pedestrian)

We have reviewed the City of Hamilton's Accelerated Active Transportation Implementation Plan (November 2023). It is our understanding that this Plan provides a blueprint for completing additional active transportation projects in a shorter time period, with a focus on cycling projects, including multi-use paths and trails. In the next five years (2024 to 2028), this plan aims to deliver 140 km of new and upgraded cycling, pedestrian and trails projects at a total estimated cost of \$60,000,000 dollars over the next five years. It is our understanding that some of which represents previously committed dollars and some of which will be requested through the capital budget process over the next five years. It is also our understanding that Hamilton staff have done preliminary work to identify projects where there may be an opportunity to address sidewalk gaps while delivering cycling facilities. For example, on higher-volume streets where there are no sidewalks, a separated cycling facility may be provided such as a boulevard multi-use path where both pedestrian and

cycling can share the facility. As individual projects work their way through the Feasibility Plan stage, staff will monitor for opportunities where an Accelerated Active Transportation Plan project may be able to address a pedestrian gap on one or both sides of a particular street.

With the fully implemented Accelerated Plan in the next five year, the existing pedestrian network in the area will be improved to Level of Service C or D, with cycling facilities will be separated from pedestrian facilities where the volumes for both modes are high.

5.3. Cycling Mode Assessment

5.3.1. Existing Cycling Facilities

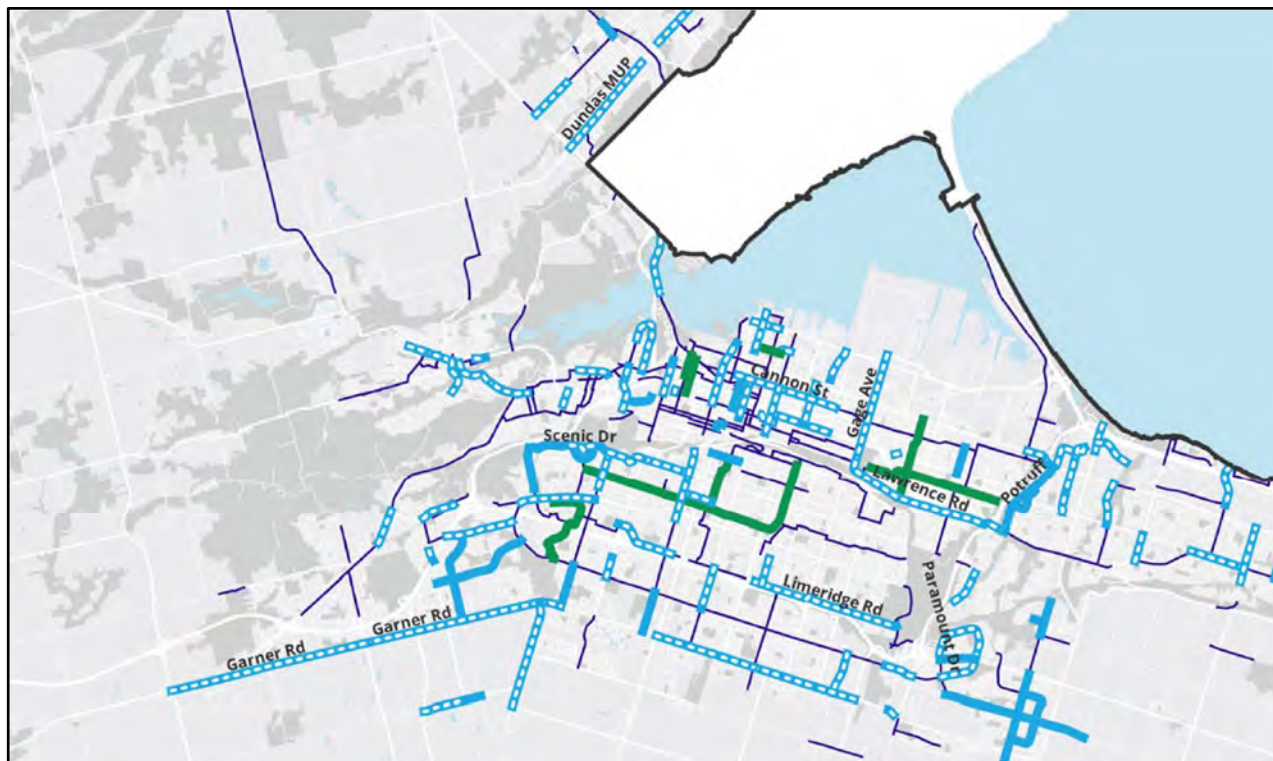
As indicated in Section 3 of this Study, currently, dedicated cycling lanes are available on Main Street West between Macklin Street South and west of Frid Street, King Street West, Longwood Road South north of Main Street West, Sterling Street, Sanders Boulevard, Dundurn Street South and Main Street West south of Osler Drive. There are also signed cycling routes and paved multi-trails in the area.

5.3.2. Accelerated Plan 2024-2028 (Cycling)

As indicated, we have reviewed the City of Hamilton's Accelerated Active Transportation Implementation Plan (November 2023). It is our understanding that the Accelerated Active Transportation Plan is the pre-cursor to the Integrated Active Transportation Plan (ATP) which will consolidate the Cycling Master Plan, Pedestrian Mobility Plan and Recreational Trails Master Plan. The Accelerated Plan provides a roadmap for the next five years, and the Integrated Active Transportation Plan will present a 10-year plan, consolidated with future construction projects.

Figure 9 illustrates the proposed Accelerated Plan cycling plan for the next five years. With the fully implemented Accelerated Plan in the next five year, the existing cycling network will be improved to Level of Service C or D, with additional cycling facilities and it will be separated from pedestrian facilities where the volumes for both modes are high.

Figure 9 – Accelerated Plan (Full Program) 2024- 2028



Source: Hamilton Accelerated Active Transportation Implementation Plan (November 2023)

5.4. Transit Mode Assessment

5.4.1. Existing Transit Network and Service

The area is current serviced by several existing HSR Transit Bus Routes 1 King, 5 Delaware, 6 Aberdeen, 10 B-Line and 51 University. It should also be noted that the proposed development is located adjacent to all of these stops, as well as the future LRT Stop at Main Street West and Longwood Road South. The review and analysis indicate that the proposed development will contribute a healthy transit ridership for the existing Hamilton transit system in the area.

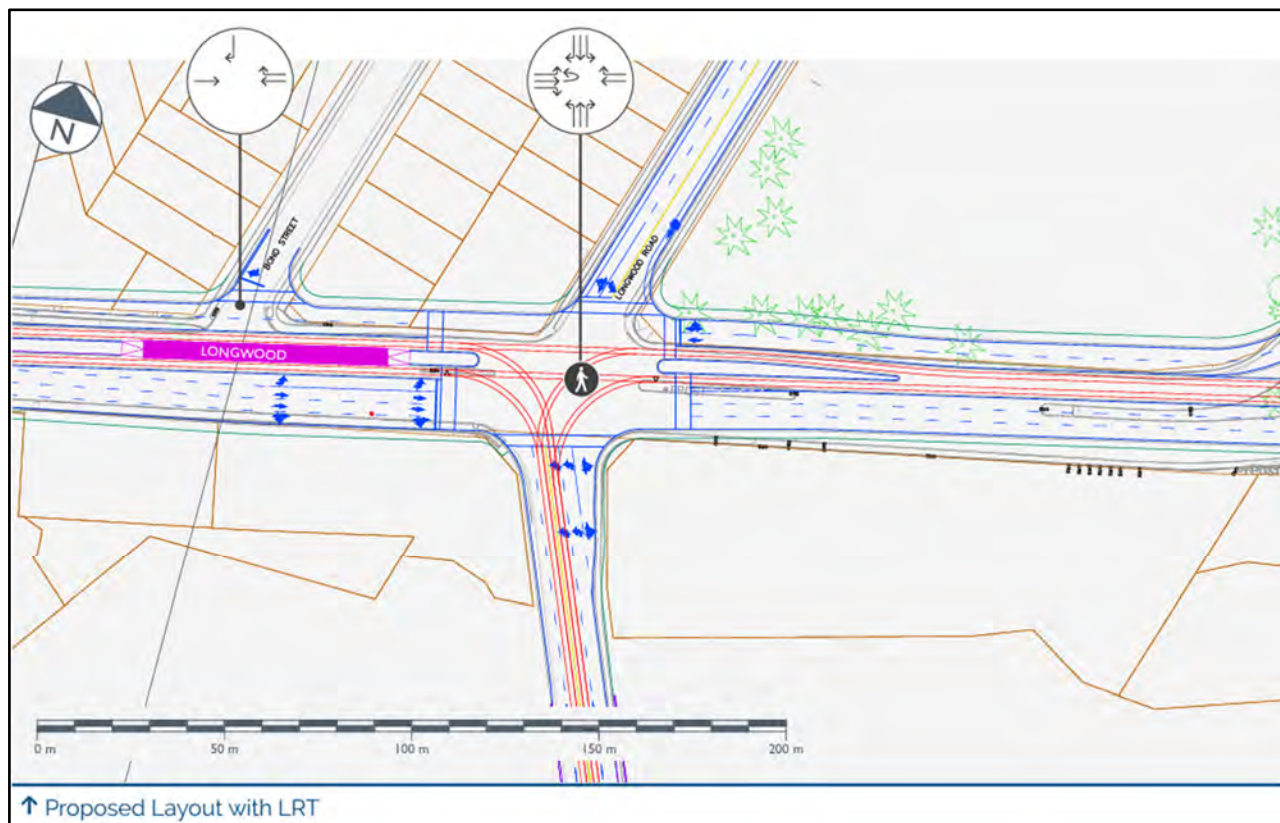
5.4.2. Future Hamilton Light-Rail-Transit

Based on the information obtained from www.ontario.ca, it is our understanding that the Ontario government is issuing a Request for Qualifications (RFQ) for the Hamilton Light Rail Transit (LRT), bringing the province one step closer to getting shovels in the ground on major construction for a key transit project that will carry 50,000 daily riders across one of Ontario's fastest-growing cities.

The Hamilton LRT project brings 14 kilometres of fast, frequent light-rail-transit (LRT) through Hamilton's downtown core connecting you from Eastgate to McMaster University along King Street and Main Street. Modern light rail service will connect key areas, destinations, and institutions along Main Street, King Street and Queenston Road. It will also feature direct connections to GO Transit and HSR bus service. **Figure 10** illustrates the proposed Main Street West Lane configurations with the future LRT project.

Our previous assessment indicates that the area is already well-served by HSR Transit System. Based on the criteria outlined in **Tables 1** and **2**, the area currently has a transit Level of Service B or E, given that the area is only need the completion of the Hamilton LRT project. With the completion of the Hamilton LRT project, the Level of Service is expected to be A under the study horizon considered in the analysis as this is the highest level of transit infrastructure that can be provided for the area next 10 to 20 years.

Figure 10 – Proposed Main Street West Lane Configurations with LRT

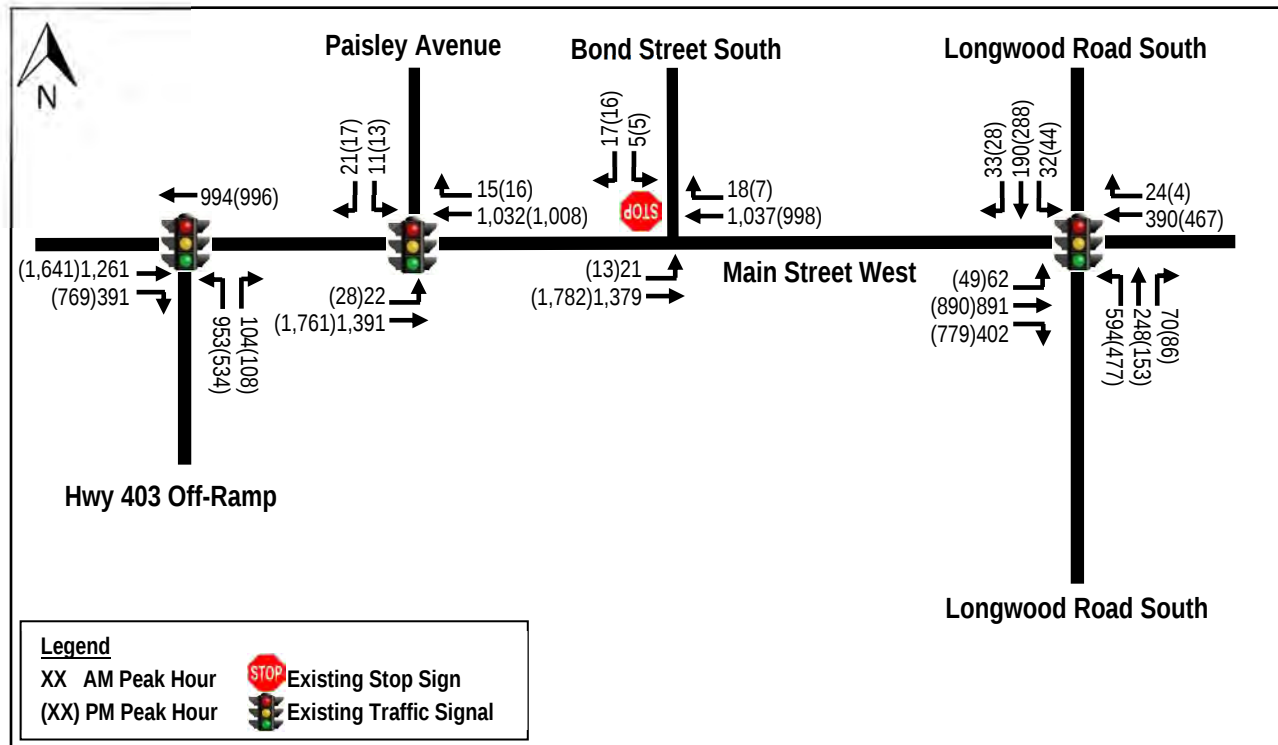


5.5. Auto Mode Assessment

5.5.1. Future Background Corridor Growth

Based on the City of Hamilton's requirement, a 1% per annum compounded growth rate will be applied to through movements for the horizon year indicated above. This is equivalent to 6% or more of total growth from 2024 to 2030 for the through traffic on Main Street West, Longwood Road South and Hwy 403 off-ramp. **Figure 11** illustrates the 2030 background through corridor traffic growth volumes based on the background through traffic growth noted above.

Figure 11 – 2030 Background Through Corridor Traffic Growth



5.5.2. Background Development Applications

A comprehensive review of the active developments located within the study area was conducted based on the information extracted from the City of Hamilton development application portal (<https://www.hamilton.ca/development/planning-applications/development-applications-mapping>). This review indicates that there are a few active development applications in the area such as:

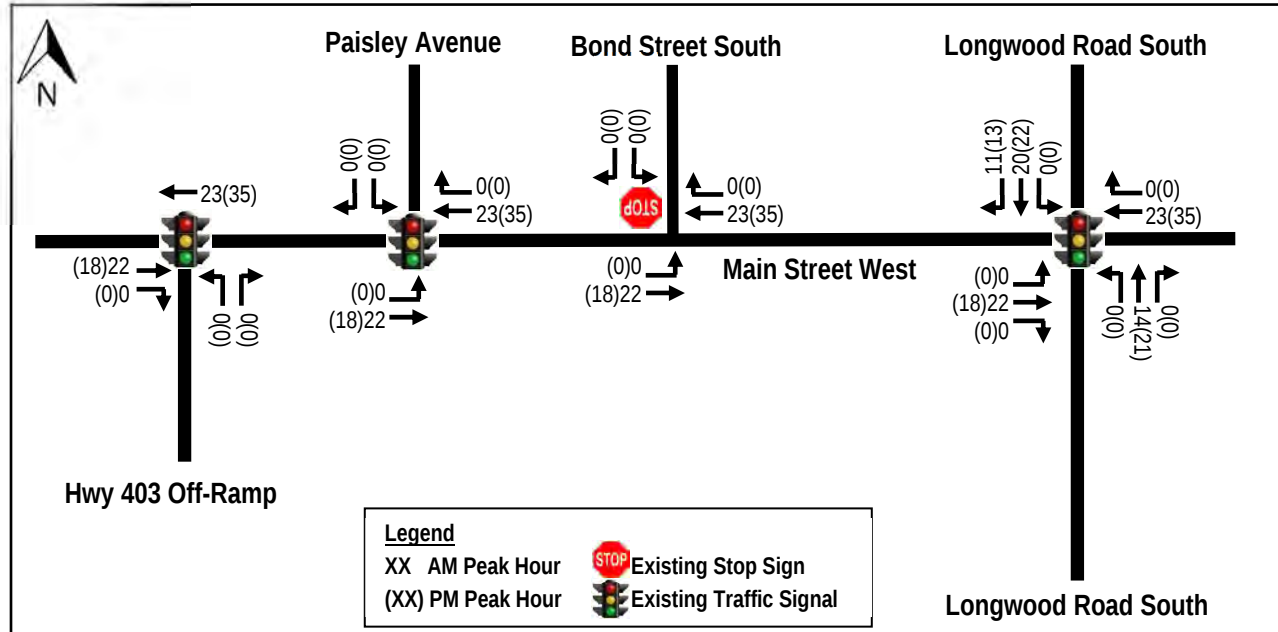
- 906 Main Street W – proposed 448.5 m² of commercial space, 25 dwelling units and 28 parking spaces
- 1107 Main Street W – Proposed 15-storeys building with 265 units, 189 parking spaces, 20,385 m² of commercial and 563 m² of retail use
- 270 Longwood Road South – 7-storey hotel with 162 guest suites

For the purposes of this assessment, the site trip generations were estimated using the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition. The following land use categories fitted curve equations and average rates were utilized, where appropriate:

- Land Use Code 222 "Multifamily Housing Mid-Rise Not Close to Rail Transit – General Urban/Suburban"
- Land Use Code 231 "Mid-Rise Residential with Ground-Floor Commercial – Center City Core"; and
- Land Use Code 310 "Hotel General Urban/Suburban".

The detailed calculations are outlined in **Appendix D**. The trip distribution and trip assignment are based on the 2016 Transportation Tomorrow Survey data outlined in **Appendix F**. It is anticipated that the 1% background compounded growth rate (or a total of more than 6%) would capture all trips from other minor background development applications. **Figure 12** illustrates the background development traffic volumes in the immediate area.

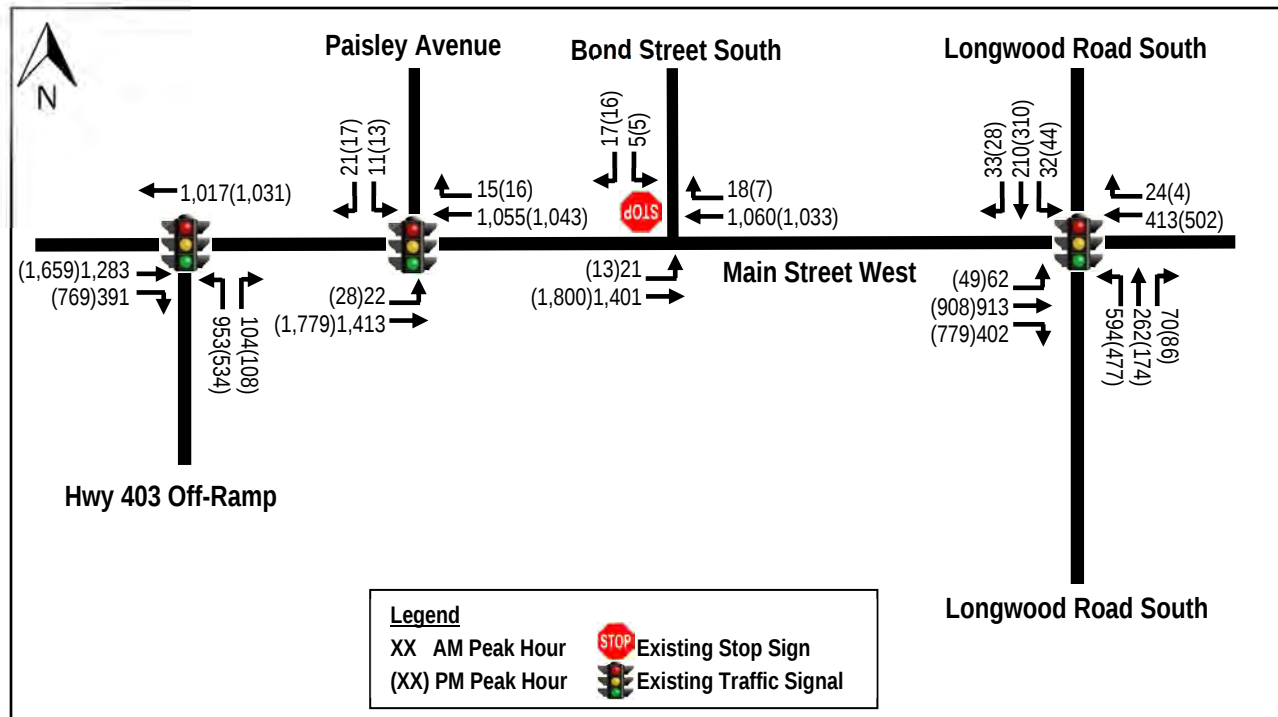
Figure 12 – Background Development Traffic Volumes



5.5.3. 2030 Future Background Traffic Volumes

Figure 13 illustrates the 2030 future background traffic volumes by adding **Figure 11** (background traffic growth) and **Figure 12** (background development traffic volumes).

Figure 13 – 2030 Future Background Traffic Volumes



5.5.4. Intersection Performance

The estimated 2030 future background traffic volumes are illustrated in **Figure 13** and were analyzed using Synchro Version 12 software. The detailed calculations are provided in **Appendix E** and summarized in **Table 6**.

Table 6 – 2030 Future Background Intersection Performance

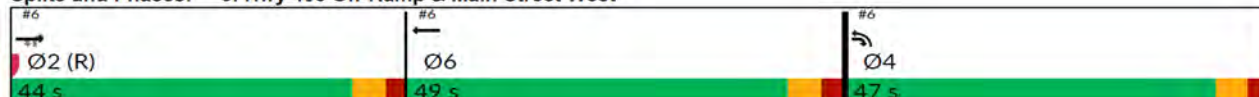
Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Main Street West/ Longwood Road South (signalized)	Overall	C (0.82)	22		C (0.79)	29		
	EB – L	A (0.16)	3	2	B (0.14)	17	14	~60
	EB – TR	A (0.63)	2	3	C (0.92)	21	129	~160
	WB – TR	B (0.28)	19	50	B (0.32)	20	55	~300
	NB – L	D (0.82)	54	88	D (0.77)	50	68	~40
	NB – TR	C (0.49)	28	78	C (0.37)	21	52	~300
	SB – LTR	E (0.76)	61	50	D (0.79)	55	60	~300
Main Street West/ Hwy 403 Off-Ramp (signalized)	Overall	E (1.02)	65		D (1.02)	53		
	EB – T	E (1.01)	70	155	D (0.95)	51	197	~300
	EB – R	B (0.68)	12	40	C (0.94)	31	165	~160
	WB – T	E (1.01)	73	186	E (1.02)	74	183	~160
	NB – L	E (1.02)	77	170	D (0.79)	54	79	~100
	NB – R	C (0.33)	27	37	B (0.20)	16	24	~300
Main Street West/ Hwy 403 Off-Ramp (signalized) <i>With Signal Optimization</i>	Overall	E (0.99)	64		D (0.96)	52		
	EB – T	E (0.98)	71	171	D (0.86)	45	178	~300
	EB – R	A (0.45)	3	13	C (0.91)	27	179	~160
	WB – T	E (0.99)	74	203	E (0.95)	67	197	~160
	NB – L	E (0.99)	75	189	F (0.96)	86	115	~100
	NB – R	C (0.26)	31	35	B (0.18)	14	23	~300
Main Street West/ Paisley Avenue South (signalized)	Overall	A (0.37)	3		A (0.42)	4		
	EB – L	A (0.06)	0	0	A (0.07)	2	3	~55
	EB – T	A (0.36)	3	7	A (0.42)	3	40	~500
	WB – TR	A (0.37)	2	9	A (0.37)	6	72	~45
	SB – LR	D (0.27)	35	17	C (0.19)	30	12	~55
Main Street West/ Bond Street South (unsignalized)	EB – L	B (0.04)	11	1	B (0.02)	11	1	~60
	EB – T	A (0.30)	0	0	A (0.39)	0	0	~80
	WB – TR	A (0.44)	0	0	A (0.45)	0	0	~70
	SB – LR	C (0.07)	16	2	C (0.06)	16	2	~80

Based on the intersection capacity analysis, under the future background conditions without LRT, all intersections considered in the analysis are expected to operate at acceptable levels of service, with the exception of the Main Street West/Hwy 403 Off-Ramp. This is expected as the turning movements are quite high.

However, with the signal timing plan optimization provided in this Study (table above), the intersection is expected to operate at acceptable levels of service. No physical improvements are required under this horizon year. The anticipated signal timing optimization plans are illustrated below:

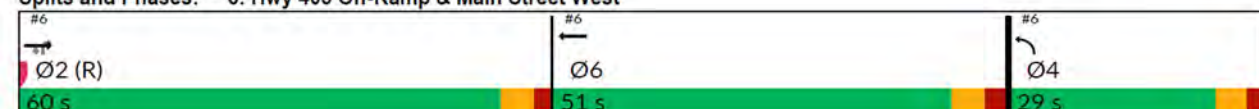
AM Peak

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West



PM Peak

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West



It should be noted that the LRT scenario will be assessed under the future total conditions and it is most likely that the LRT will not be completed in in operation by 2030. Therefore, it is more appropriate to assess LRT under the future total conditions with the site traffic to ensure that the site traffic can be accommodated without physical improvements.

6.0 SITE TRAFFIC

6.1. Proposed Development

The subject site is currently vacant. The proposed development consists of two high-rise buildings to be connected by a podium, with a total of 635 residential dwelling units and 321.71 m² (3,463 ft²) of ground related commercial area gross floor area.

Currently, the existing site has four full moves access directly onto Main Street West and one onto Longwood Road. As part of the proposed development and given the future Main Street West LRT design, these existing accesses will be closed and only one right-in/right-out access is provided onto Main Street West, at approximately 70 m west of Longwood Road.

6.2. Site Trip Generation

The trip generation forecasts were undertaken using the information contained in the *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE). For the purposes of this assessment, the ITE Land Use Codes (LUC) 222 “Multifamily Housing High-Rise General Urban/Suburban” fitted curve equations and average rates have been utilized for the proposed development, where appropriate. The site trip generation is summarized in **Table 7**. It should be noted that since the transit trip generation does not have directional split, similar directional split for auto trips were used as in general, the directional split should be similar for both modes.

Given that the proposed four ground related commercial units are small and intended to service the proposed buildings and surrounding residents within walking distance, therefore, it is anticipated that this use will not generate significant amount of auto trips. Additionally, NexTrans will provide a comparison with the land use with first floor commercial uses.

Table 7 – Site Traffic Trip Generation

ITE Land Use	Magnitude (units)	Parameters	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise) LUC 222 Not Close to Rail Transit - General Urban/Suburban	635 units	Trip Rates AM - T = 0.22(X) + 18.85 PM - T = 0.26(X) + 23.12	0.09	0.16	0.25	0.17	0.13	0.30
		Total Auto Trips	54	105	159	105	83	188
		Average Rates (equations are not available)	0.05	0.10	0.15	0.04	0.03	0.07
		Total Transit Trips	32	63	95	25	19	44
Total Auto Trips			54	105	159	105	83	188
Total Transit Trips			32	63	95	25	19	44

It is anticipated that the proposed development is expected to generate:

- 159 total two-way auto trips (54 inbound and 105 outbound) and 188 total two-way auto trips (105 inbound and 83 outbound) during the morning and afternoon peak hours, respectively; and
- 95 total two-way transit trips (32 inbound and 63 outbound) and 44 total two-way transit trips (25 inbound and 19 outbound) during the morning and afternoon peak hours, respectively

For comparison purposes, NexTrans has also reviewed the ITE Land Use Codes (LUC) 232 “Multifamily Housing High-Rise General Urban/Suburban with first floor commercial (1k-25k)”. The site trip generation is summarized in **Table 8**. Similar to above, since the directional split information is not available, similar directional splits for auto trips noted in **Table 8** were used for the purposes of this assessment.

Table 8 – Site Traffic Trip Generation with First Floor Commercial Use

ITE Land Use	Magnitude (units)	Parameters	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise) LUC 232 with first floor commercial (1k-25k) - General Urban/Suburban	635 units and 3,463 ft² retail	Trip Rates (average rates - equations are not available)	0.11	0.20	0.31	0.12	0.09	0.21
		Total Auto Trips	67	130	197	74	59	133
		Average Rates (equations are not available)	0.07	0.13	0.20	0.06	0.05	0.11
		Total Transit Trips	43	84	127	39	31	70
Total Auto Trips			67	130	197	74	59	133
Total Transit Trips			43	84	127	39	31	70

It is anticipated that the proposed development is expected to generate:

- 197 total two-way auto trips (67 inbound and 130 outbound) and 133 total two-way auto trips (74 inbound and 59 outbound) during the morning and afternoon peak hours, respectively; and
- 127 total two-way transit trips (43 inbound and 84 outbound) and 70 total two-way transit trips (39 inbound and 31 outbound) during the morning and afternoon peak hours, respectively

In comparison, the trip generation methodologies outline in **Tables 7** and **Table 8**, it is noted that:

- During the morning peak hour, **Table 7** generates 40 less two-way trips than **Table 8**;
- During the afternoon peak your, **Table 7** generates 55 more auto trips than **Table 8**;
- **Table 7** generates a total of 347 trips, **Table 8** generates a total of 330 trips

Therefore, to be conservative, the methodologies in **Table 7** will be utilized for intersection performance analysis as it will generate 17 more vehicles than the methodologies in **Table 8**.

6.3. Site Trip Distribution Based on Existing Site

The 2016 Transportation Tomorrow Survey (TTS) data was reviewed for Traffic Zones 5174, 5180, 5185 and 5192 in order to estimate the general trip distribution for the proposed development.

The detailed analysis is included in **Appendix F**. **Table 9** summarizes general distribution based on the 2016 TTS data for the proposed development, with **Table 10** summarizing the site traffic assignment. It should be noted that the auto site trip distribution and assignment have been taken into consideration the TTS information, existing intersection operations and capacity constraints.

Table 9 – Trip Distribution for Residential Component

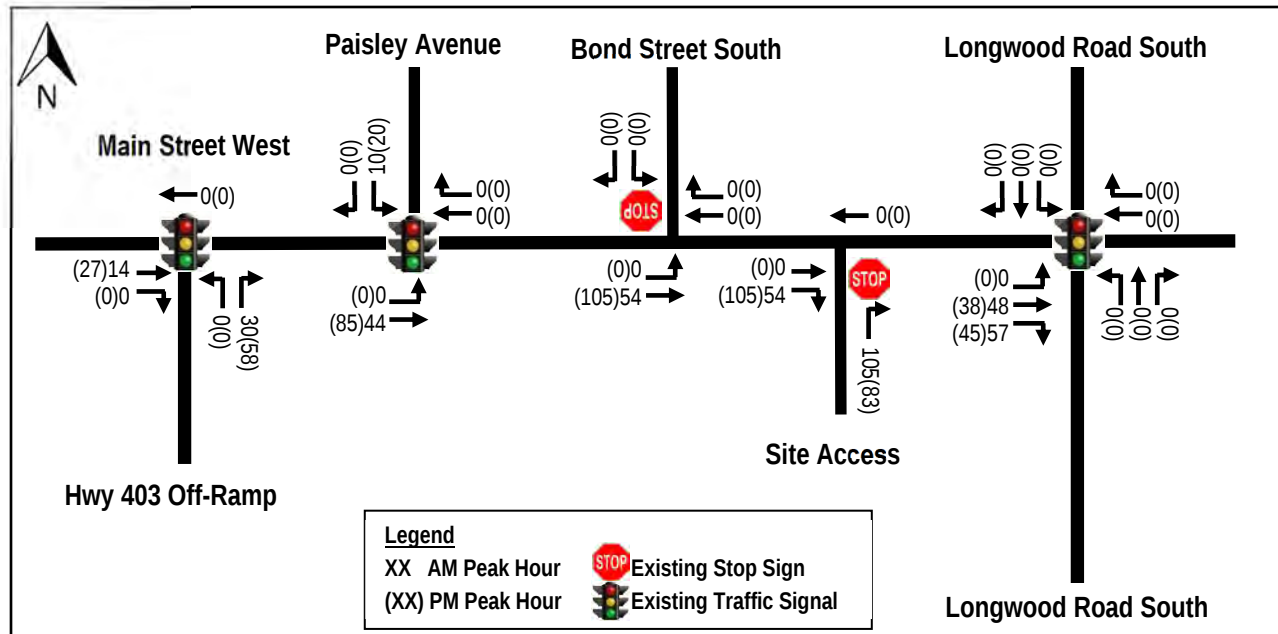
Category	Toronto	Peel Region	Halton Region	Hamilton & Area	Niagara Region	Others
Auto	0%	22%	33%	38%	0%	7%
Transit	4%	12%	0%	84%	0%	0%

Table 10 – Site Trip Distribution

General Direction (To/From)	Auto	Transit
North	58%	28%
South	8%	29%
East	24%	35%
West	10%	8%
Total	100%	100%

Figure 14 illustrates the proposed development generated traffic volumes for the proposed development.

Figure 14 – Site Traffic Volumes



7.0 FUTURE TOTAL CONDITIONS

7.1. Walking Mode Assessment

7.1.1. Target Design Element for Walking Mode

Walking is the most common mode of transportation. As soon as you get off a car or a bus, you are a pedestrian. Walking is an affordable, accessible and most convenient form of transportation, if the network is complete and designed properly. Walking not only promotes physical activity and social interaction; it is also emissions-free and making it a climate-friendly and healthy mode of travel. The proposed development will promote walking mode by providing the following design elements:

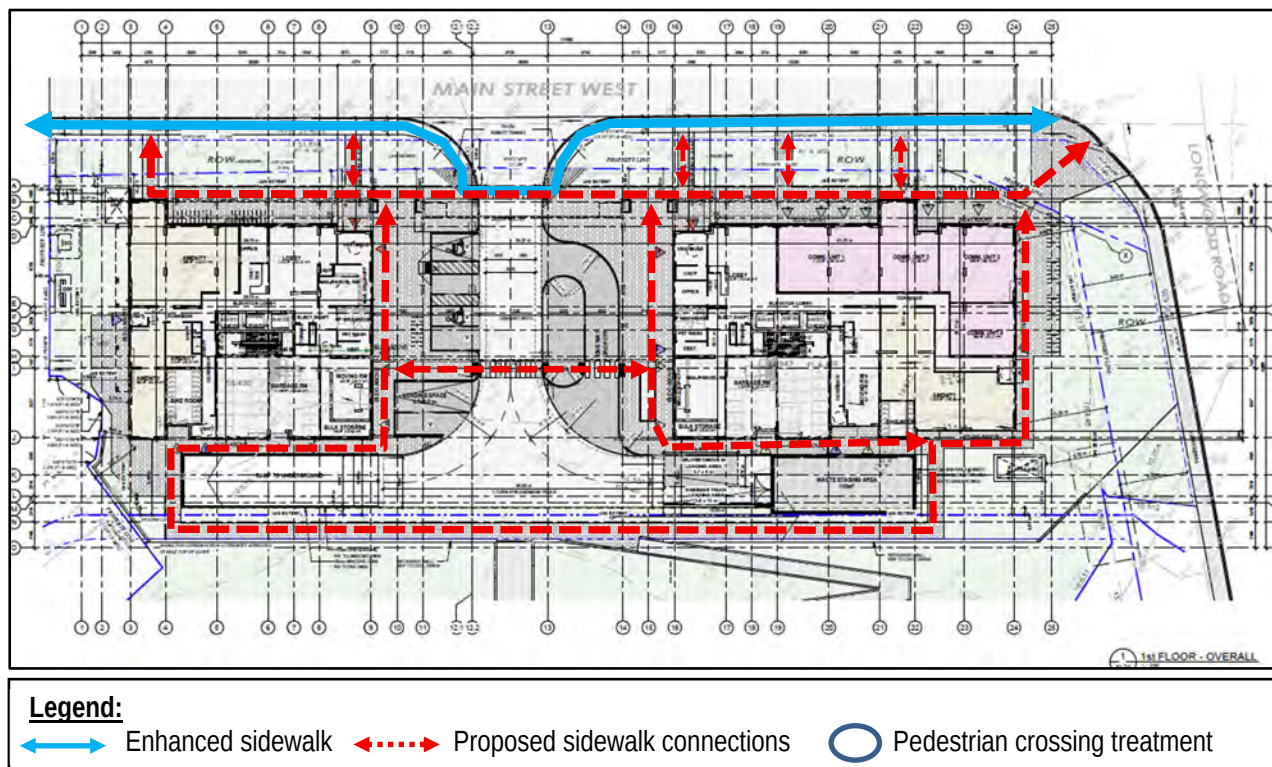
- Mixed-use development with both residential and commercial uses on the same site;
- Provide wider boulevard and building setback to provide additional space for streetscaping, sidewalk and buffer;
- The proposed development only proposed one right-in/right-out access onto Main Street West. Right-in/right-out access is one of the most restrictive access type and it will eliminate the majority of the turning movement conflicts with pedestrians; and
- Security and safety (i.e. illumination)

There are other guidance and resource that available in the Design of Public Spaces Standards under the Ontario Integrated Accessibility Standards regulations, Ontario Traffic Manual (OTM) Book 15: Pedestrian Crossing Treatments, the National Association of City Transportation Officials' (NACTO) Urban Street Design Guide, and NACTO's Designing Streets for Kids Guide. For the purpose of this assessment, the City of Hamilton Complete Streets Design Guidelines recommendations are utilized for the proposed development. **Table 11** summarizes the pedestrian facility design target for the proposed development. However, it is should be noted that these parameters and requirements may be modified at the appropriate stage of the Hamilton LRT design to accommodate the local context and design objectives of the largest transit project in the City of Hamilton.

Figure 15 illustrates the proposed development internal sidewalk network.

Table 11 – Pedestrian Design Target

Element	Target Value	Minimum Value
Buffer Zone	1.0 m	0.5 m
Street Tree / Furniture Zone	2.0 m to 3.0 m	1.75 m
Walkway Zone	1.8 m to 2.0 or more	1.8 m
Frontage Zone	Varies	0.5 m

Figure 15 – Proposed Development Internal Sidewalk Network


7.1.2. Assessment

As illustrated in **Figure 15**, the following design is recommended for the proposed development:

- Provide a minimum of 2.0 m width sidewalk along the frontage of the site on Main Street W;
- Provide a minimum of 0.5 m buffer between the sidewalk and the curb lane;
- Provide sufficient illumination along the frontage of the site, where appropriate; and
- Provide a minimum of 2.0 m sidewalk width internal to the site

7.2. Cycling Mode Assessment

7.2.1. Target Design Element for Cycling Mode

Similar to walking mode, cycling mode is also one of the most affordable and accessible form of transportation. It promotes physical activity and social interaction, and is emissions-free, making it a climate-friendly and healthy mode of travel. The proposed development will promote walking mode by providing the following design elements:

- Mixed-use development with both residential and commercial uses on the same site;
- Provide wider boulevard and building setback to provide additional space for streetscaping, sidewalk and buffer;

- The proposed development only proposed one right-in/right-out access onto Main Street West. Right-in/right-out access is one of the most restrictive access types and it will eliminate the majority of the turning movement conflicts with pedestrians; and
- Security and safety (i.e. illumination)

For the purpose of this assessment, the City of Hamilton Complete Streets Design Guidelines recommendations are utilized in this Study. **Table 12** summarizes the cycling facility design target. However, it should be noted that these parameters and requirements may be modified at the appropriate stage of the proposed development to accommodate the local context and design objectives such as the requirements of the Hamilton LRT project.

Table 12 – Cycling Facility Design Target

Element	Target Value	Minimum Value
Design Parameters for In-boulevard Cycling Facilities		
Buffer Zone	1.0 m	0.5 m
Cycle track (one-way)	2.0 m	1.5 to 1.8 m
Cycle track (two-way)	3.5 m	2.4 to 3.0 m
Multi-use path	3.5 to 4.0 m	3.0 m
Pedestrian walkway	See pedestrian realm section. When abutting a cycle track, apply shorelines (see Urban Braille standards) or separate with a short height curb.	
Design Parameters for On-street Cycling Facilities		
Painted buffer	1.0 m	0.3 m
Bike lane	1.8 m	1.2 to 15 m
Contraflow bike lane	2.0 m	1.5 -1.8 m
Advisory bike lane	1.8 to 2.0 m	1.5 m
Two-way travel lane	3.0 to 4.0 or 4.0 to 5.7 m	2.7 m
Rural paved shoulder	1.5 to 2.0 m plus 0.5 to 1.5 m buffer	1.2 m

7.2.2. Assessment

The following design is recommended for the proposed development:

- Provide sufficient lands and per the Hamilton LRT project requirements to accommodate future cycling facility along Main Street West as per the Hamilton LRT project and the City of Hamilton Accelerated Active Transportation Implementation Plan (November 2023);
- Provide sufficient illumination along the frontage of the site, where appropriate;
- Provide 511 residential bicycle parking spaces, with 66 short-term and 445 long-term spaces; and
- Provide one bicycle repair station at a convenient location. The proposed location will be provided as part of the future site plan.

7.3. Transit Mode Assessment

7.3.1. Target Design Element for Transit Mode

Unlike walking and cycling modes, transit mode can reach much longer distance to and from the proposed development. It is still more affordable than driving a private vehicle and relative easier to plan and implement, depending on the type of transit facility. However, in order to make transit more attractive mode of transportation, transit should be efficient, reliable, user friendly, and provide access to all major destinations in Hamilton.

The most important transit project in the area, and in the City of Hamilton, is the future Hamilton LRT project. It will bring 14 kilometres of fast, frequent light-rail-transit (LRT) through Hamilton's downtown core connecting you from Eastgate to McMaster University along King Street and Main Street. Modern light rail service will connect key areas, destinations, and institutions along Main Street, King Street and Queenston Road. It will also feature direct connections to GO Transit and HSR bus service.

The area is currently serviced by several existing HSR Transit Bus Routes 1 King, 5 Delaware, 6 Aberdeen, 10 B-Line and 51 University. It should also be noted that the proposed development is located adjacent to all of these stops, as well as the future LRT Stop at Main Street West and Longwood Road South. The review and analysis indicate that the proposed development will contribute a healthy transit ridership for the existing Hamilton transit system in the area. The proposed development will promote walking mode by providing the following design elements:

- Mixed-use development with both residential and commercial uses on the same site;
- Provide wider boulevard and building setback to provide additional space for streetscaping, sidewalk and buffer;
- Provide direct access for pedestrians from the proposed development to the future LRT Station; and
- Security and safety (i.e. illumination)

For the purpose of this assessment, the City of Hamilton Complete Streets Design Guidelines recommendations are utilized in this Study. **Table 13** summarizes the transit amenity design target. However, it is noted that these parameters and requirements may be modified at the appropriate stage of the proposed development to accommodate the local context and design objectives, especially the requirements of the Hamilton LRT project.

Table 13 – Transit Amenity Design Target

Element	Target Value	Minimum Value
Platform length	9.0 to 15.0 m	9.0 m
Centre median stop width	3.2 to 3.5 m	1.5 m (plus ramp) 2.0 m (where level boarding is provided)
Island boarding stop width	3.0 to 3.5 m	2.5 m
Transit shelter and street furniture clearance from bikeway	0.5 m	0.3 m
Clearance width along traffic curb edge	1.8 m	0.5 m
Curbside transit stop width	3.0 m	2.5 m

7.3.2. Assessment

As indicated in Section 5 of this Study, the proposed development is expected to generate 95 total two-way transit trips (32 inbound and 63 outbound) and 44 total two-way transit trips (25 inbound and 19 outbound) during the morning and afternoon peak hours, respectively.

With both comprehensive existing HSR Transit service in the area and the future Hamilton LRT line, these transit trips can be accommodated and no additional improvements are required.

As indicated previously, there is a significant increase in the amount of space along the frontage of the site along both Main Street West (south side) and Longwood Road South (west side). These additional spaces provide larger area for pedestrians to wait for transit vehicles. This space will meet the target value of 3.0 m for the curbside transit stop width. It should be noted that the platform and centre median stop width for the Hamilton LRT are beyond the control of the proposed development. These design targets are the responsibility of Metrolinx and the City of Hamilton.

7.4. Auto Mode Assessment

7.4.1. Future Total Traffic Volumes

The estimated future total traffic volumes (future background traffic volumes plus site generated traffic volumes) are illustrated in **Figure 16**.

As Hamilton LRT project will be implemented in the future, could be just right after the 2030 horizon, for the purposes of this assessment, it is assumed that the LRT will be in place by 2030. Therefore, both the proposed development and Bond Street South will be operated as right-in/right-out only. For this reason, some of the existing left turning traffic to and from Bond Street South will be diverted to Paisley Avenue South as this intersection will be remained as signalized to facilitate pedestrian crossing Main Street South. **Figure 17** illustrates the reassigned Bond Street South left turning traffic.

Figure 16 – 2030 Future Total Traffic Volumes

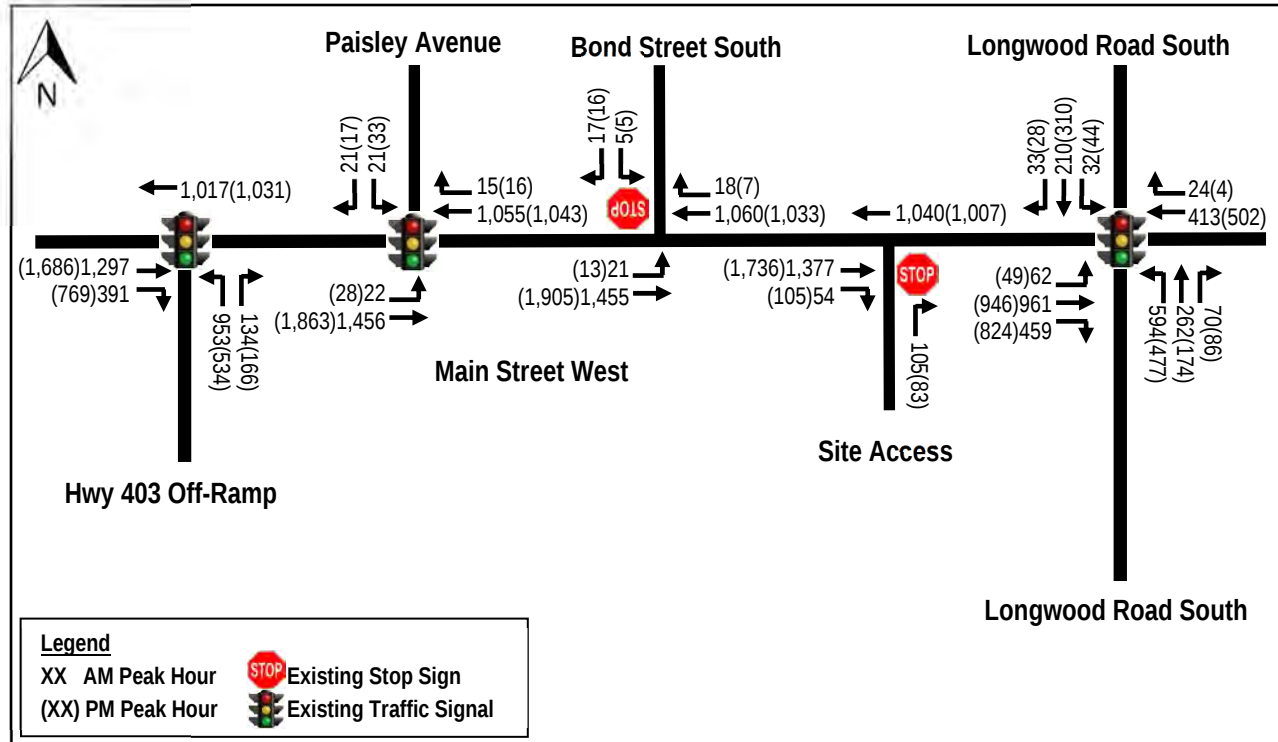
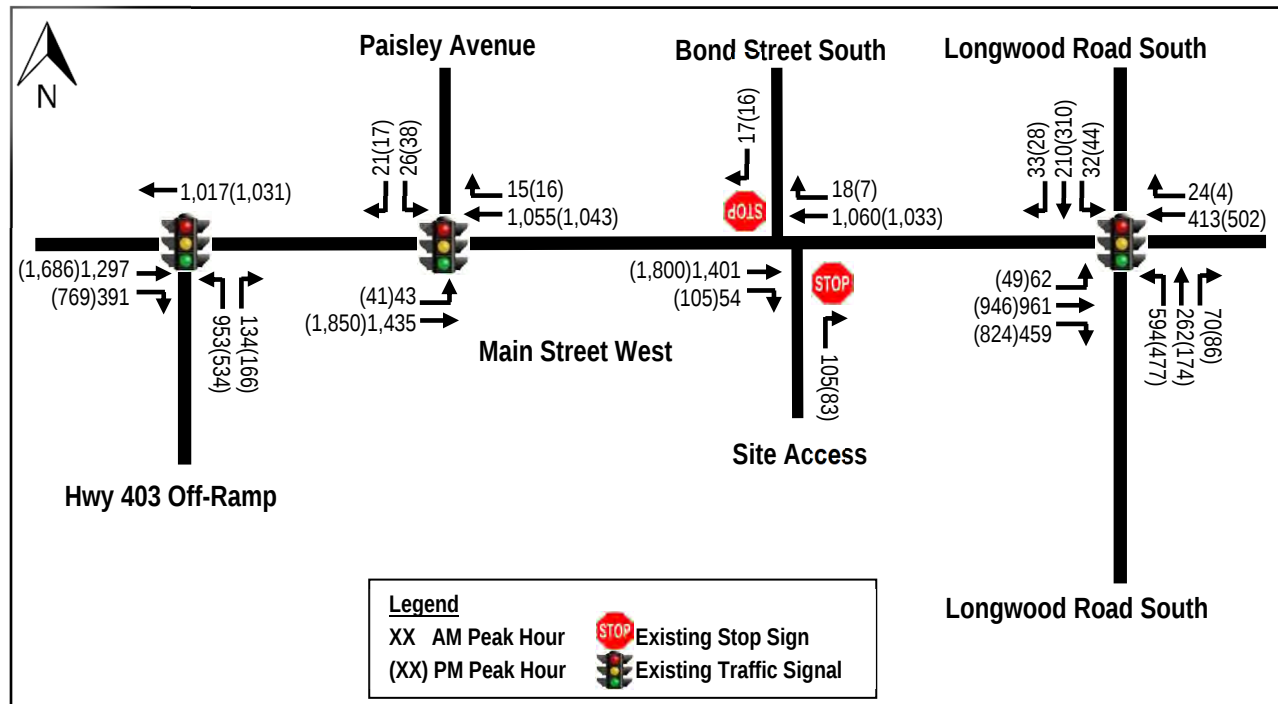


Figure 17 – 2030 Future Total Traffic Volumes with Hamilton LRT



7.4.2. Intersection Performance

The future total traffic volumes illustrated in **Figures 17 and 18** were analyzed using Synchro Version 12 software. The detailed calculations are provided in **Appendix G** and summarized in **Table 14** without LRT and **Tables 15** with LRT operation in place.

It should be noted that for the purposes of this assessment, all left turn along Main Street West at signalized intersections will be fully protected under the LRT scenario. The existing unsignalized intersection will be

Table 14 – 2030 Future Total Intersection Performance without LRT

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Main Street West/ Longwood Road South (signalized)	Overall	C (0.82)	23		C (0.79)	29		
	EB – L	A (0.16)	4	3	B (0.14)	17	13	~60
	EB – TR	A (0.63)	3	8	C (0.97)	22	140	~160
	WB – TR	B (0.28)	19	50	B (0.32)	20	55	~300
	NB – L	D (0.82)	54	88	D (0.77)	50	68	~40
	NB – TR	C (0.49)	28	78	C (0.37)	21	52	~300
	SB – LTR	E (0.76)	61	50	D (0.79)	55	60	~300
Main Street West/ Hwy 403 Off-Ramp (signalized)	Overall	E (1.02)	65		D (1.02)	53		
	EB – T	E (1.01)	70	155	D (0.97)	54	202	~300
	EB – R	B (0.68)	12	40	C (0.94)	32	168	~160
	WB – T	E (1.01)	73	186	E (1.02)	74	183	~160
	NB – L	E (1.02)	77	170	D (0.79)	54	79	~100
	NB – R	C (0.33)	27	37	B (0.30)	16	34	~300
Main Street West/ Hwy 403 Off-Ramp (signalized) With Signal Optimization	Overall	E (0.97)	77		D (0.95)	49		
	EB – T	E (0.97)	76	193	D (0.91)	47	175	~300
	EB – R	C (0.81)	29	98	C (0.91)	24	162	~160
	WB – T	F (0.97)	101	224	E (0.95)	61	184	~160
	NB – L	E (0.97)	77	207	E (0.94)	78	106	~100
	NB – R	D (0.33)	38	49	B (0.28)	14	31	~300
Main Street West/ Paisley Avenue South (signalized)	Overall	A (0.37)	3		A (0.46)	6		
	EB – L	A (0.06)	0	0	A (0.07)	3	3	~55
	EB – T	A (0.36)	3	7	A (0.46)	3	46	~500
	WB – TR	A (0.37)	2	9	A (0.38)	8	72	~45
	SB – LR	D (0.27)	35	17	D (0.30)	38	19	~55
Main Street West/ Bond Street South (unsignalized)	EB – L	B (0.04)	11	1	B (0.02)	11	1	~60
	EB – TR	B (0.30)	0	0	B (0.41)	0	0	~80
	WB – TR	B (0.44)	0	0	B (0.45)	0	0	~70
	SB – LR	C (0.07)	16	2	B (0.05)	13	1	~80
Main Street West/ Site RIRO Access (unsignalized)	EB – TR	A (0.34)	0	0	A (0.45)	0	0	~60
	WB – T	B (0.33)	0	0	A (0.33)	0	0	~70
	NB – R	B (0.17)	12	5	B (0.14)	11	4	~15

Based on the intersection capacity analysis, under the future total conditions without the LRT (business as usual), all intersections considered in the analysis are expected to operate at acceptable levels of service, with the exception of the Main Street West/Hwy 403 Off-Ramp. This is expected as the turning movements are quite high.

However, with the signal timing plan optimization provided in this Study (table above), the intersection is expected to operate at acceptable levels of service. No physical improvements are required under this horizon year. The anticipated signal timing optimization plans are illustrated below:

AM Peak

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West



PM Peak

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West



The proposed site right-in/right-out access is expected to operate at acceptable levels of service with minimum delays or queues.

Table 15 – 2030 Future Total Intersection Performance with LRT

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour			Available Storage Length (m)
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)	
Main Street West/ Longwood Road South (signalized)	Overall	C (0.82)	26		C (0.81)	30		
	EB – L	F (0.50)	96	30	E (0.42)	57	21	~60
	EB – TR	A (0.64)	3	9	C (0.95)	20	129	~160
	WB – TR	C (0.34)	28	62	C (0.39)	27	63	~300
	NB – L	D (0.82)	54	88	D (0.79)	53	71	~40
	NB – TR	C (0.49)	27	77	C (0.38)	22	56	~300
	SB – LTR	E (0.75)	60	50	E (0.81)	57	61	~300
Main Street West/ Hwy 403 Off-Ramp (signalized)	Overall	E (1.02)	64		D (1.02)	53		
	EB – T	E (1.01)	70	155	D (0.97)	54	202	~300
	EB – R	B (0.68)	12	40	C (0.94)	32	168	~160
	WB – T	E (1.01)	67	177	E (1.02)	74	183	~160
	NB – L	E (1.02)	77	170	D (0.79)	54	79	~100
	NB – R	C (0.33)	27	37	B (0.30)	16	34	~300
Main Street West/ Hwy 403 Off-Ramp (signalized) With Signal Optimization	Overall	E (0.97)	77		D (0.95)	49		
	EB – T	E (0.97)	76	193	D (0.91)	47	175	~300
	EB – R	C (0.81)	29	98	C (0.91)	24	162	~160
	WB – T	F (0.97)	101	224	E (0.95)	61	184	~160
	NB – L	E (0.97)	77	207	E (0.94)	78	106	~100
	NB – R	D (0.33)	38	49	B (0.28)	14	31	~300
Main Street West/ Paisley Avenue South (signalized)	Overall	A (0.42)	7		A (0.46)	8		
	EB – L	E (0.37)	69	13	D (0.33)	54	20	~55
	EB – T	A (0.35)	3	6	A (0.46)	3	47	~500
	WB – TR	A (0.42)	9	107	B (0.42)	12	81	~45
	SB – LR	D (0.30)	38	18	D (0.32)	40	21	~55
Main Street West/ Bond Street South (unsignalized)	EB – L	B (0.29)	0	0	B (0.39)	0	0	~60
	EB – TR	B (0.29)	0	0	B (0.39)	0	0	~80
	WB – TR	B (0.44)	0	0	B (0.45)	0	0	~70
	SB – LR	B (0.03)	12	1	B (0.03)	11	1	~80
Main Street West/ Site RIRO Access (unsignalized)	EB – TR	B (0.35)	0	0	B (0.47)	0	0	~60
	WB – T	B (0.33)	0	0	B (0.33)	0	0	~70
	NB – R	B (0.17)	12	5	B (0.14)	12	4	~15

Based on the intersection capacity analysis, under the future total conditions with LRT in operation, all intersections considered in the analysis are expected to operate at acceptable levels of service, with the exception of the Main Street West/Hwy 403 Off-Ramp. This is expected as the turning movements are quite high.

However, with the signal timing plan optimization provided in this Study (table above), the intersection is expected to operate at acceptable levels of service. No physical improvements are required under this horizon year. The anticipated signal timing optimization plans are illustrated below:

AM Peak

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West



PM Peak

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West



The proposed site right-in/right-out access is expected to operate at acceptable levels of service with minimum delays or queues.

8.0 SITE PLAN REVIEW AND ASSESSMENT

8.1. Loading Requirement

The proposed development provides two on-site loading areas, one is for Building A and one is for Building B. These on-site loading areas are provided approximately at the middle of the buildings, adjacent to the underground parking entrances for the respective building. AutoTURN software has been utilized to generate the vehicle turning movement templates and demonstrate the turning movement requirements for garbage pick-up and other types of vehicles at the proposed loading areas and at the site. **Figures 20, 21 and 22** illustrate the vehicles turning movements.

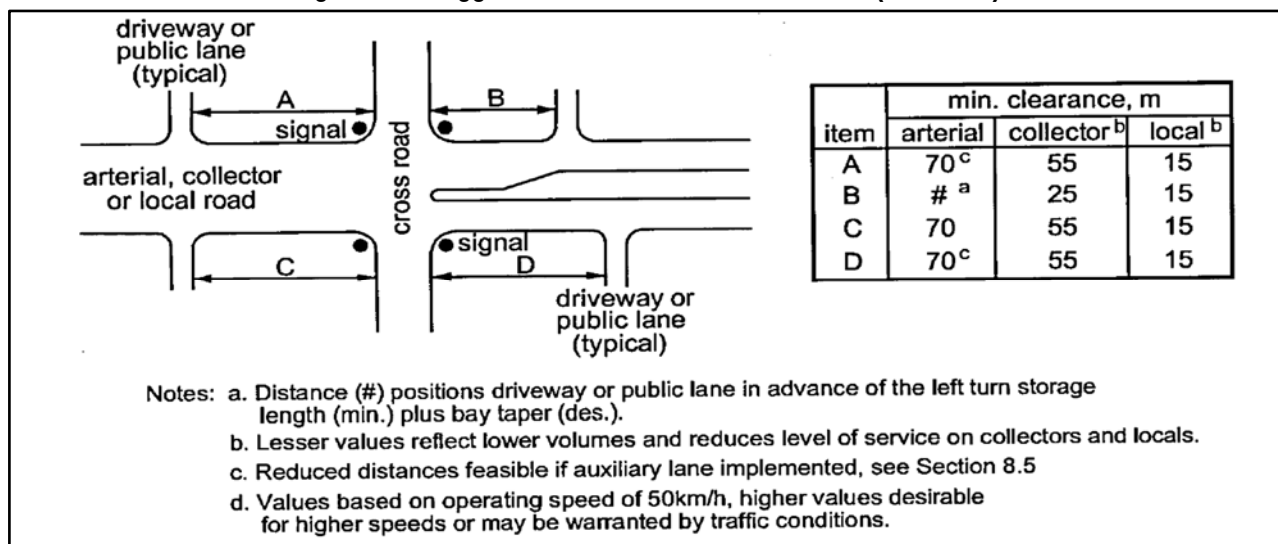
8.2. Driveway Location and Configuration

Currently, the existing site has four full moves access directly onto Main Street West and one onto Longwood Road. As part of the proposed development and given the future Main Street West LRT design, these existing accesses will be closed and only one right-in/right-out access is provided onto Main Street West, at approximately 70 m west of Longwood Road. Based on the findings of this Study and NexTrans' assessment, the following lane configurations are recommended for each site access:

- 7.5m width driveway throat as per the City's requirements (One inbound lane and one outbound lane; and
- One eastbound shared through/right lane

As per Figure 8.8.2 (Suggested Minimum Corner Clearances to Accesses or Public Lanes at Major Intersections) of the 2017 Transportation Association of Canada Geometric Design Guidelines (**Figure 18**), the suggested minimum corner clearance for the proposed site access from Longwood Road is 25 m. As the proposed corner clearance for Longwood Road access is approximately 70 m, therefore, the suggested minimum requirements are met.

Figure 18 – Suggested Minimum Corner Clearance (TAC 2017)



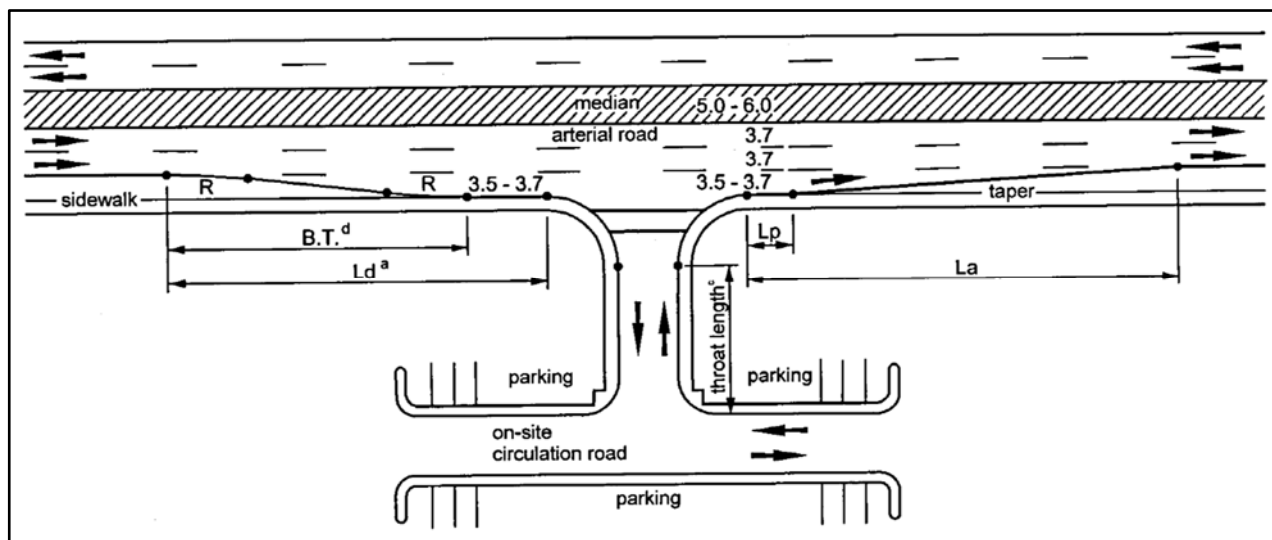
(Source: TAC 2017 Figure 8.8.2)

8.3. Clear Throat Length

In accordance with TAC 2017, the clear throat length or set-back distance which is measured from the ends of the driveway curb return radii at the roadway and the point of first conflict on-site. In accordance with the Table 8.9.3 (TAC 2017), the suggested minimum clear throat length for a site access intersecting with a collector road is 25m with apartment

land use (greater than 200 units, the proposed development consists of 635 units). The proposed development provides a clear throat length of approximately 35 m for the proposed access onto Main Street W, therefore, the suggested minimum requirements are met. **Figure 19** illustrates the TAC 2017 clear throat length definition.

Figure 19 – Clear Throat Length



Source: TAC 2017 Figure 8.5.2

8.4. Traffic Calming

NexTrans has reviewed the context of the area and conditions along Main Street West and Longwood Road South. Given that both of these streets are functioning as arterial roads that carrying inter-city traffic, therefore, it is not appropriate to provide traffic calming measures. In addition, as the Hamilton LRT will be going through detailed design exercise, all traffic calming and safety measures will be considered in the corridor design to ensure consistency.

From the proposed development design perspective, as long as the target level of service design noted in Section 7 of this Study, these objectives will be met.

9.0 VEHICLE PARKING ASSESSMENT

9.1. Vehicle Parking Requirement

The current Zoning By-law No. 05-200 Section (although not yet fully in force) has been reviewed and applied in the analysis. The subject lands are located in the Parking Rate Area 1. **Table 16** summarizes the City's Zoning By-law No. 05-200 vehicle parking requirements for the proposed development.

Table 16 – Zoning By-law No. 05-200 Parking Rate Area 1

Type	No. Unit	Minimum Parking Rates	Maximum Parking Rates	Minimum Spaces	Maximum Spaces
Residential	635 units	No minimum requirement	1.00 space/unit	0 spaces	635 spaces
Visitor	635 units	2 spaces + 0.05 spaces/unit	(inclusive of resident and visitor)	33 spaces	
Retail		No parking requirement			
Total Parking Spaces Required (Minimum and Maximum)				33 spaces	635 spaces

Based on the City's By-Law No. 05-200, the parking requirements is 0 per unit for residential and 0.05 spaces + 2 spaces per unit for visitor, therefore 33 parking spaces are required total. The maximum parking permitted is 635 spaces (1.00 spaces per unit). Based on the recommendations of this Study Update and comprehensive justifications provided, the proposed development only needs to provide 33 spaces, however, the proposed development provides 435 vehicle

parking spaces, inclusive of visitor, residential and retail parking spaces, which exceeds the minimum Zoning By-law requirement but with a reduction of 32% vehicle parking spaces from the maximum allowable in the Zoning By-law. Our analysis indicates that this recommended reduction is required and necessary to support TDM and future Hamilton LRT ridership. The recommended vehicle parking rates are provided in **Table 17** below.

Table 17 – Provided Parking Requirement for the Proposed Development

Type	Magnitude (Units)	Ratio	Parking Spaces
Residential	635 units	0.63 spaces/unit	402 spaces
Visitor	635 units	0.05 + 2 spaces/unit	33 spaces
Retail	321.71 m ²	0 spaces	0 spaces
Total			435 spaces

Based on the table noted above, the proposed development provides a total of 435 vehicle parking spaces. This is higher than the minimum of 33 vehicle parking spaces, but significantly less (about 32%) than the maximum allowable vehicle parking spaces.

10.0 BICYCLE PARKING ASSESMENT

The current Zoning By-law No. 05-200 (although not yet fully in force) has been reviewed and applied in the analysis for the bicycle parking requirement. The subject lands are located in the bicycle Parking Rate Area 1. **Table 18** summarizes the City's Zoning By-law No. 05-200 bicycle parking requirements for the proposed development.

Table 18 – Zoning By-law No. 05-200 Bicycle Parking Requirement

Land Use	No. of Unit/GFA	Short-Term Spaces	Long-Term Spaces	Total
Residential	635 units	0.10 spaces/dwelling unit	0.70 spaces	509 spaces
		64 spaces	445 spaces	

Based on the applicable Zoning By-law noted above, the proposed development is required to provide a total of 509 bicycle parking spaces with 64 short-term and 445 long-term. The proposed development will provide a total of 511 residential bicycle parking spaces with 66 short-term and 445 long-term spaces, which slightly exceeds the Zoning By-law requirements. This provision will encourage future residents to use active mode of transportation to and from the proposed development. This provision will also support the recommended vehicle parking rates provided in this Study.

11.0 TRANSPORTATION DEMAND MANAGEMENT ASSESSMENT

11.1. City of Hamilton's TDM for Development (June, 2015)

The City of Hamilton's TDM for Development Report (June, 2015) has been reviewed and consulted to prepare the TDM requirement for the proposed development. In order to address the City's requirements, the following TDM recommendations are provided to support the proposed development. Transportation Demand Management (TDM) is a coordinated series of actions aimed at maximizing the people moving capability of the transportation system. According to the City's TDM Report, the main objectives of TDM are:

- Shifting travel modes (e.g. walking, cycling, taking transit or carpooling instead of driving alone);
- Reducing the number of trips people must make (e.g. destinations and activities such as work and shopping, near each other); and,
- Travelling more efficiently (e.g. making trips outside of peak hours).

Potential TDM measures may include but not limited to: TDM supportive land use, bicycle and pedestrian programs and facilities, public transit improvements, preferential treatments for buses and high occupancy vehicles (if applicable), ridesharing, and employee incentives.

11.1.1. Increase Density and Compact Site Design

As indicated in previous sections of this report, The subject site is currently vacant. The proposed development consists of one 26-storey tower and one 29-storey tower connected via a 6-storey podium, with a total of 635 residential dwelling units and approximately 321.71 m² (3,463 ft²) of ground related commercial area gross floor area. This is a very compact residential development and design that meet the City's requirements because it does not include low-rise housing units. It also displaces an underutilized vacant land.

11.1.2. Site Design Elements

It is NexTrans' understanding that the proposed development has been designed to include the following design elements:

- The proposed development will provide a comprehensive network of internal sidewalk and connections to Main Street West;
- Provide bicycle parking spaces for both residents and visitors at convenient locations; and
- Provide a bicycle repair station at a convenient location

Our analysis indicates that these compact design elements will help facilitate the pedestrian and cyclist movements in efficient and safe manner.

11.1.3. Sidewalks and Pathways

The proposed development provides continuous sidewalks internally along the frontage of the new building and connect to Main Street West, as illustrated the proposed site plan.

11.1.4. Bicycle Parking (Long-term and Short-term)

Based on the applicable Zoning By-law requirement, the proposed development requires a total of 509 bicycle parking spaces (64 short-term and 445 long-term spaces). The proposed development will exceed this requirement by providing a total of 511 residential bicycle parking spaces, with 66 short-term and 445 long-term spaces. This provision will encourage future residents to use active mode of transportation to and from the proposed development. This provision will also support the recommended vehicle parking reduction noted above.

11.1.5. Direct Connections to Transit

The proposed development is located adjacent to several existing bus routes and the future Hamilton LRT. These routes have good service frequency, which is excellent for the area. The proposed development has direct connections to these bus stops.

11.1.6. Opportunities for Reduced Parking Requirements

Based on the City's By-Law No. 05-200, the parking requirements is 0 per unit for residential and 0.05 spaces + 2 spaces per unit, therefore 33 parking spaces are required total. The maximum parking permitted is 635 spaces (1.00 spaces per unit). Based on the recommendations of this Study Update and comprehensive justifications provided, the proposed development only needs to provide 33 spaces, however, the proposed development provides 435 vehicle parking spaces, which exceeds the minimum Zoning By-law requirement and represents a significant reduction of approximately 32% vehicle parking spaces from the maximum allowable in the Zoning By-law. Our analysis indicates that this recommended reduction is required and necessary to support TDM and future Hamilton LRT ridership.

11.1.7. Unbundle Parking

As parking is the best TDM incentive for resident to take alternative mode of transportation, it is recommended that the proposed development unbundle the parking sale from the unit.

11.1.8. On-Site Carshare Vehicle(s) and Parking Spot(s)

Based on our understanding, the carshare service will be evaluated by a carshare provider company before any service can be signed or granted. Our experiences working in various jurisdictions in the Greater Toronto and Hamilton Area, carshare service need wider client base, often more than just the subject development. For example, it will need to service several buildings in the area to make the service economically feasible.

Based on our research, there are currently total of 7 carshare service locations in the City of Hamilton. Out of seven locations, six locations are located in the vicinity of the McMaster University campus along Main Street corridor. There is only one is located at Mohawk College, however, it is permanently closed at this time. Therefore, based on the assessment noted above, carshare operation may not be economically viable for the proposed development and it may require much more developments in the area to make this operation economically viable to provide carshare service. To address the City's comment, NexTrans recommends that the proposed development protect and provide at least one carshare space, in the event that a carshare service is economically viable in the future.

11.1.9. On-Site Bikeshare

Our analysis and experience indicate that bikeshare is not required at this location for the horizon year considered in the analysis. Bikeshare may be reviewed and considered as part of the Hamilton LRT project, or the Accelerated Cycling project for the 2024-2028 plan.

11.1.10. Wayfinding Signage

Given that the proposed development is an infill development located at the corner of two major roadways, Main Street West and Longwood Road South, therefore, wayfinding signage is not required for the proposed development as it is visible to the public, visitors and future residents living in the buildings.

11.1.11. Travel Planning Tools and Support for Development of a School Travel Plan

It is recommended that the proposed development contact and coordinate with the Hamilton-Wentworth District School Board for any potential school travel plan in the area.

11.1.12. Opportunities for Transit Passes, Carshare Memberships, or Bikeshare Memberships

Our review and analysis of the proposed development context indicate that this incentive is not required for this area given the existing context. In addition, as the proposed development is a compact and efficient housing unit design, it will attract young professionals and young family that will use active mode of transportation to make housing more affordable as they can work from home and do not need to drive that often.

11.1.13. Proposed Monitoring Evaluation of TDM Measures

Based on our previous experience, monitoring and evaluation of TDM measure are important but very onerous for the owner. Given the comprehensive analysis provided in this Study, it is concluded that TDM measures and incentives provided in this report are sufficient and appropriate, as such, monitoring for the proposed development is not required.

11.2. Recommended TDM Measures and Incentives for the Proposed Development

Based on the review of the context of the proposed development in relation to the TDM requirements by the City of Hamilton, a number of TDM measures and incentives are identified for the proposed development to consider, given the limited transit service and active transportation network in the area. **Table 19** summarizes the recommended TDM measures and incentives.

Table 19 – Recommended TDM Measures for the Proposed Development

Category	TDM Initiative required by the City or suggested by NexTrans	Recommended Actions	Responsibility
Cycling	- Visible, well-lit, short-term bicycle parking for visitors (above minimum provisions or recommendations) - Secure, indoor bicycle parking storage spaces for tenants/residents - Ensure development connects to bicycle network	Provide 66 short-term bicycle parking spaces and 445 long-term bicycle parking spaces at convenient and secured location	Applicant
Walking	- Safe, attractive and direct walkways for pedestrians linking building entrances with public sidewalks and with key destinations such as schools - Enhanced pedestrian amenities on-site (benches, landscaping, lighting)	Provide direct sidewalk connection to Main Street West	Applicant
Transit	- Enhance walking routes between main building entrance(s) and transit stops/stations - Bicycle parking located at or near transit stops - Implement transit priority measures (queue jump lanes, traffic signal priority, bus only lanes)	Provide direct connections from the proposed development to the sidewalks on Main Street West that connect to the existing transit stops and future Hamilton LRT Station	Applicant
Parking	- Reduced minimum parking requirements based on proximity to transit - Shared parking with nearby developments or on-street spaces - Unbundle parking costs from unit costs	- Unbundle parking sell with the unit - Reduce the number of vehicle parking spaces from 635 spaces to only 435 spaces (about 32% reduction)	Applicant
Information Brochure/ Letter	Provide an information brochure/letter for each residential unit that include HSR Transit System schedules, GO Transit schedules, cycling maps and community maps.	Provide a brochure (or a letter) to new residents that include all website links to Hamilton Transit System schedules, community maps and cycling maps. The information package can be distributed at the sale office.	Applicant
Transit Incentive	Provide transit incentives	Not required	Applicant

12.0 CONCLUSIONS / FINDINGS

12.1. Study Conclusions

The findings and conclusions of the analysis are as follows:

- The proposed development is expected to generate:
 - 159 total two-way auto trips (54 inbound and 105 outbound) and 188 total two-way auto trips (105 inbound and 83 outbound) during the morning and afternoon peak hours, respectively; and
 - 95 total two-way transit trips (32 inbound and 63 outbound) and 44 total two-way transit trips (25 inbound and 19 outbound) during the morning and afternoon peak hours, respectively
- Based on the intersection capacity analysis, under the existing, 2030 future background and 2030 future total conditions, all intersections considered in the analysis are expected to operate at acceptable levels of service, with the exception of the Main Street West/Hwy 403 Off-Ramp. This intersection is expected to operate at higher delay and queues due to heavy turning movement volumes. However, with traffic signal timing plan optimization, this intersection is expected to operate at acceptable levels of service. No physical improvements are required to accommodate the proposed development beyond the improvements identified as part of the Hamilton LRT.
- The area is current serviced by several existing HSR Transit Bus Routes 1 King, 5 Delaware, 6 Aberdeen, 10 B-Line and 51 University. It should also be noted that the proposed development is located adjacent to all of these stops, as well as the future LRT Stop at Main Street West and Longwood Road South. The review and

analysis indicate that the proposed development will contribute a healthy transit ridership for the existing Hamilton transit system in the area.

The proposed development is expected to generate 95 total two-way transit trips (32 inbound and 63 outbound) and 44 total two-way transit trips (25 inbound and 19 outbound) during the morning and afternoon peak hours, respectively. With both comprehensive existing HSR Transit service in the area and the future Hamilton LRT line, these transit trips can be accommodated and no additional improvements are required.

- Based on the City's By-Law No. 05-200, the parking requirements is 0 per unit for residential and 0.05 spaces + 2 spaces per unit, therefore 33 parking spaces are required total. The maximum parking permitted is 635 spaces (1.00 spaces per unit). Based on the analysis provided in this Study Update and comprehensive justifications provided, the proposed development only needs to provide 33 spaces, however, the proposed development provides 435 vehicle parking spaces, which exceeds the minimum Zoning By-law requirement and represents a significant reduction of approximately 32% vehicle parking spaces from the maximum allowable in the Zoning By-law. Our analysis indicates that this recommended reduction is required and necessary to support TDM and future Hamilton LRT ridership.
- Based on the applicable Zoning By-law, the proposed development is required to provide a total of 509 residential bicycle parking spaces with 64 short-term and 445 long-term spaces. The proposed development will provide a total of 511 residential bicycle parking spaces with 66 short-term and 445 long-term spaces, which slightly exceeds the Zoning By-law requirement. This provision will encourage future residents to use active mode of transportation to and from the proposed development. This provision will also support the recommended vehicle parking rates provided in this Study.
- The proposed development provides two on-site loading areas, one is for Tower A and one is for Tower B. AutoTURN software was used generate turning movement templates and to demonstrate the turning movement requirements for garbage pick-up and delivery vehicles at the proposed loading area and site access.

12.2. Study Recommendations

Based on the findings of this Study, the following recommendations are provided:

- The proposed development implements the TDM measures and incentives identified in this report to support active transportation and transit and to reduce the numbers of single-occupant-vehicle trips to and from the proposed development;
- The proposed development only requires to provide a parking rate of 0.05 + 2 spaces for visitor, 0 spaces/unit for residential and for retail/commercial use.". The proposed development provides a total of 435 vehicle parking spaces, inclusive of Type A barrier-free and Type B barrier-free spaces, as well as visitor/retail spaces.
- The proposed development provides a total of 511 residential bicycle parking spaces, including 66 short-term and 445 long-term spaces to encourage sustainable mode of transportation and reduce the numbers of single-occupant-vehicle trips;
- Implement the comprehensive internal sidewalk network as illustrated in this Study; and
- No additional physical improvements for the area at this time to accommodate the proposed development, under the future background and future total conditions.

BENCHMARK

REVISIONS

STAMP

nextrans
CONSULTING ENGINEERS

Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6V8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:

Residential Development

925 Main Street
City of Hamilton

DRAWING TITLE:

AutoTURN Analysis
MSU TAC-2017

DESIGN BY:

CHECKED BY: R.P.

DRAWN BY:

SCALE: NTS

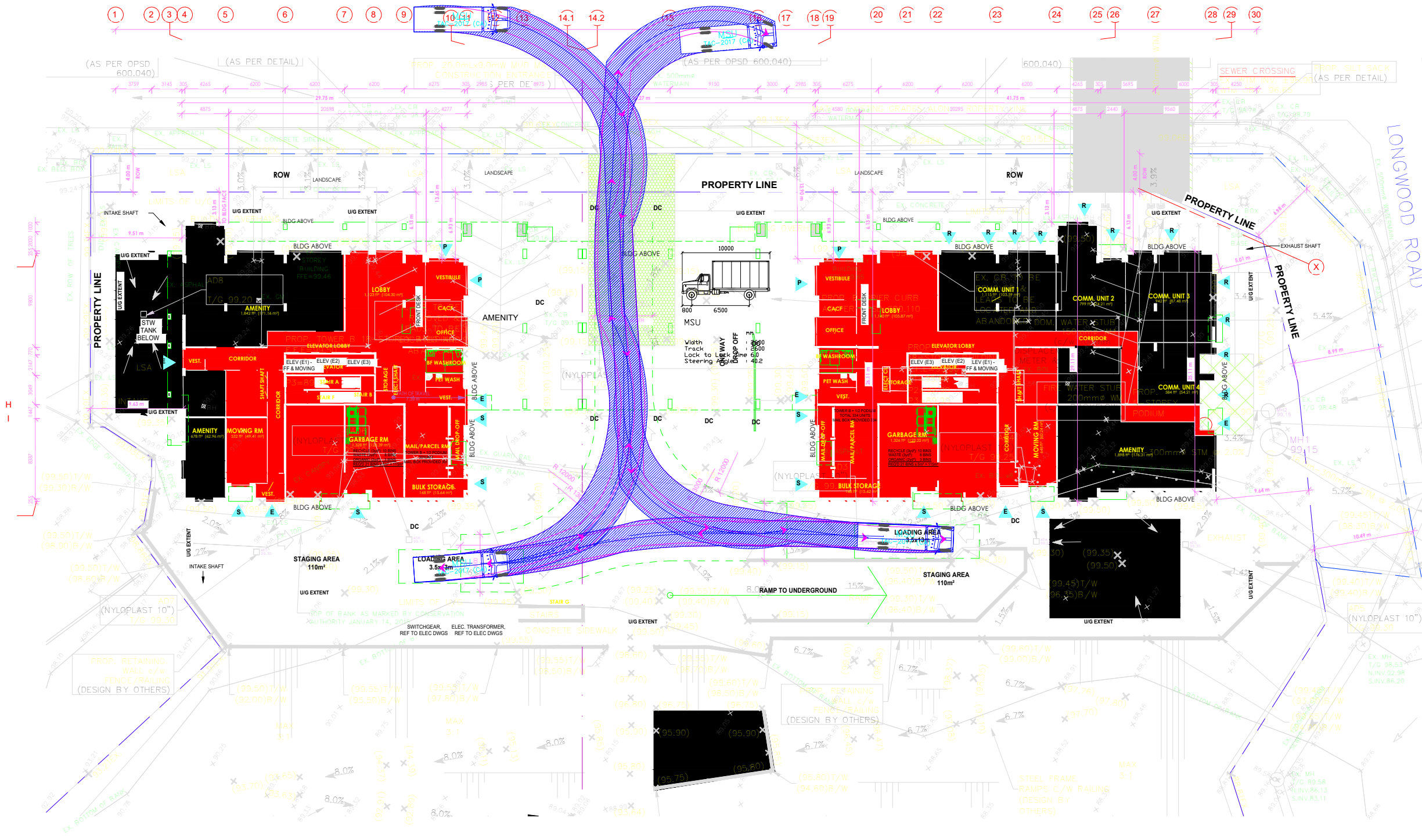
DATE: February 27, 2026

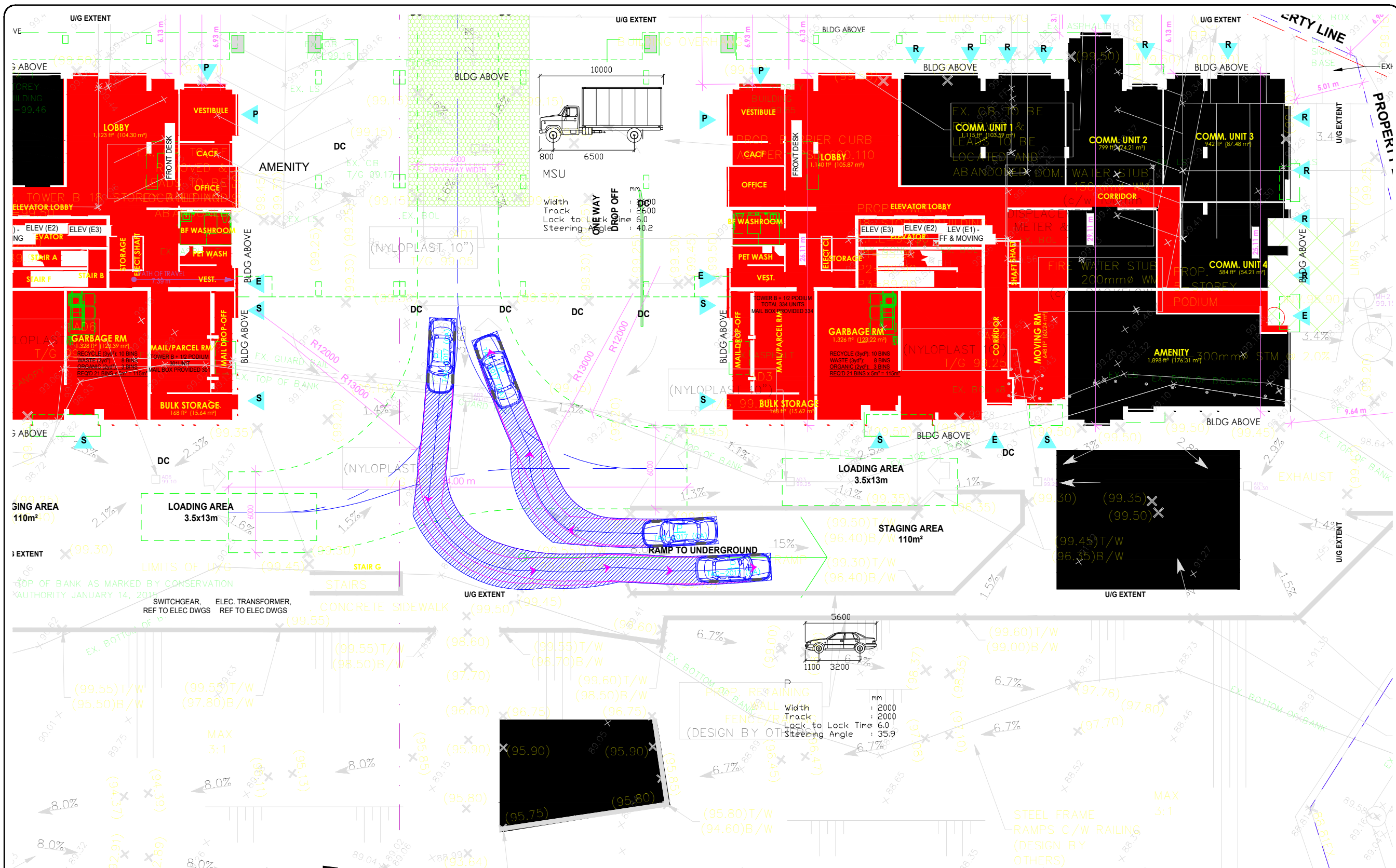
PROJECT NO.

NT-23-099

DRAWING NO.

Figure 21





KEY PLAN

BENCHMARK

REVISIONS					
NO.	REVISION	DATE	BY		

STAMP



PROJECT NAME: _____

Residential Development

925 Main Street
City of Hamilton

DRAWING TITLE:

AutoTURN Analysis
P TAC-2017

DESIGN BY:	DATE: February 27, 2026
CHECKED BY: R.P.	PROJECT NO.
DRAWN BY:	NT-23-099
SCALE: NTS	DRAWING NO.

Appendix A

**City of Hamilton Pre-Consultation Comments and
Submitted Terms of Reference**



Hamilton

November 1, 2023

Attention: Sean Kenney, Manager – Site Plan, Heritage & Urban Design
Chris Hampson-Curtis, Planner II, Heritage & Urban Design

Prepared By: Matthew Radaelli, Project Manager, Transportation Planning

Reviewed By: Domenic Di Flavio, Transportation Planning

SUBJECT: 925 Main Street West & 150 Longwood Road South, Hamilton (Ward 1)
DA-18-193 (Previous Files: FC-14-085, UHOPA-16-011 & ZAC-16-029)

- Special Conditions of Site Plan Approval – **REQUIRED**
- Transportation Assessment – **NOT REQUIRED**
- Transportation Demand Management Measures – **REQUIRED**
- Infrastructure Improvements – **INFORMATION ONLY**
- Right-of-Way Dedications – **DEFERRED**
- Daylighting Triangle Dedications – **DEFERRED**
- Site Plan – **REVISIONS REQUIRED**

Documents Reviewed

- *SITE PLAN*, Drawing #A0.01, Revision #3, dated August 25, 2023.
- *UNDERGROUND LEVEL 1*, Drawing #A1.20, Revision #3, dated August 25, 2023.
- *UNDERGROUND LEVEL 2*, Drawing #A1.21, Revision #3, dated August 25, 2023.
- *UNDERGROUND LEVEL 3*, Drawing #A1.22, Revision #3, dated August 25, 2023.
- *1ST FLOOR PLAN*, Drawing #A1.23, Revision #3, dated August 25, 2023.

Background Information

The original site plans through FC-14-085, UHOPA-16-11 & ZAC-16-029 were circulated and separate comments provided by Corridor Management, Public Works and Transportation Management, Public Works. As of January 2018, Development Application related duties of those sections of Public Works have been combined under Transportation Planning and Parking, Planning and Economic Development.

Special Conditions of Site Plan Approval – Required

1. As a condition of Special Condition of Site Plan, prior to application for any building permits, a letter certifying the design of the proposed parking ramps will



be required and signed by a Licenced Architect or Engineer, to the satisfaction of the Manager, Transportation Planning.

Transportation Assessment – Not Required

2. Transportation Planning has previously waived the submission of a Transportation Impact Study (TIS) as of comments dated April 9, 2020.

Transportation Demand Management Measures – Required

Measures Required:

3. The site plan statistics indicates a total of 513 long-term bicycle parking spaces that are proposed within underground parking levels 1-3 and split between the 1st - 6th floor elevations. The actual site plans indicate a discrepancy between this number and the actual number long-term bicycle parking provided as it only appears as though the 1st level of the site proposed actual bicycle parking storage.

The site plan and site statistics are required to be revised in order to indicate the required number of long-term bicycle parking as per the City of Hamilton Comprehensive Zoning By-law 05-200 Section 5: Parking, and shall indicate the differences between long-term bicycle parking storage and 'Lockers' to be provided for residents.

Additional Measures Recommended:

4. Transportation Planning recommends the provision of additional Transportation Demand Management (TDM) measures including but not limited to:
 - a. Provide visible, well-lit, short-term bicycle parking for visitors, preferably near the main building entrance.
 - b. Provide enhanced on-site pedestrian amenities (e.g., benches, landscaping, lighting).
 - c. Join the City's Smart Commute program by providing alternative transportation initiatives to help foster vibrant and complete communities and reducing the number of required parking spaces for tenants/employees. For more information, go to <https://smartcommute.ca/hamilton/membership/>.

Infrastructure Improvements – Information Only

5. The Applicant is to conform with the *Building Transit Faster Act* regarding all works associated with the right-of-way in conjunction with future Hamilton LRT works along Main Street West. The Applicant is advised to consult with the City of Hamilton LRT Office and Metrolinx regarding future construction requirements.



Right-of-Way Dedications – Deferred

6. Ongoing discussions are currently being held between City of Hamilton LRT Office, Metrolinx and the Applicant in order to determine the ultimate right-of-way dedications requirements. As such, Transportation Planning defers all comments related to right-of-way requirements to the City of Hamilton LRT Office and Metrolinx accordingly.

Daylighting Triangle Dedications – Deferred

7. Ongoing discussions are currently being held between City of Hamilton LRT Office, Metrolinx and the Applicant in order to determine the ultimate daylighting triangle requirements. As such, Transportation Planning defers all comments related to right-of-way requirements to the City of Hamilton LRT Office and Metrolinx accordingly.

Site Plan – Revisions Required

Transportation Demand Management Options Report

The following revision is required:

8. The site plan statistics indicates a total of 513 long-term bicycle parking spaces that are proposed within underground parking levels 1-3 and split between the 1st - 6th floor elevations. The actual site plans indicate a discrepancy between this number and the actual number long-term bicycle parking provided as it only appears as though the 1st level of the site proposed actual bicycle parking storage.

The site plan and site statistics are required to be revised in order to indicate the required number of long-term bicycle parking as per the City of Hamilton Comprehensive Zoning By-law 05-200 Section 5: Parking, and shall indicate the differences between long-term bicycle parking storage and 'Lockers' to be provided for residents.

Driveways & Sightlines

The following revisions are required:

9. Without setting precedent, Transportation Planning does not require the proposed right-in/right-out island to be constructed as the centre of Main Street West will be blocked as a result of the future Light Rail Transit (LRT) infrastructure.

Transportation Planning will accept full-movements at the proposed driveway access to Main Street West under temporary conditions prior to beginning of construction associated with the Hamilton LRT project. The existing centre left-turn lane along Main Street West (**Figure 1**) without concerns.

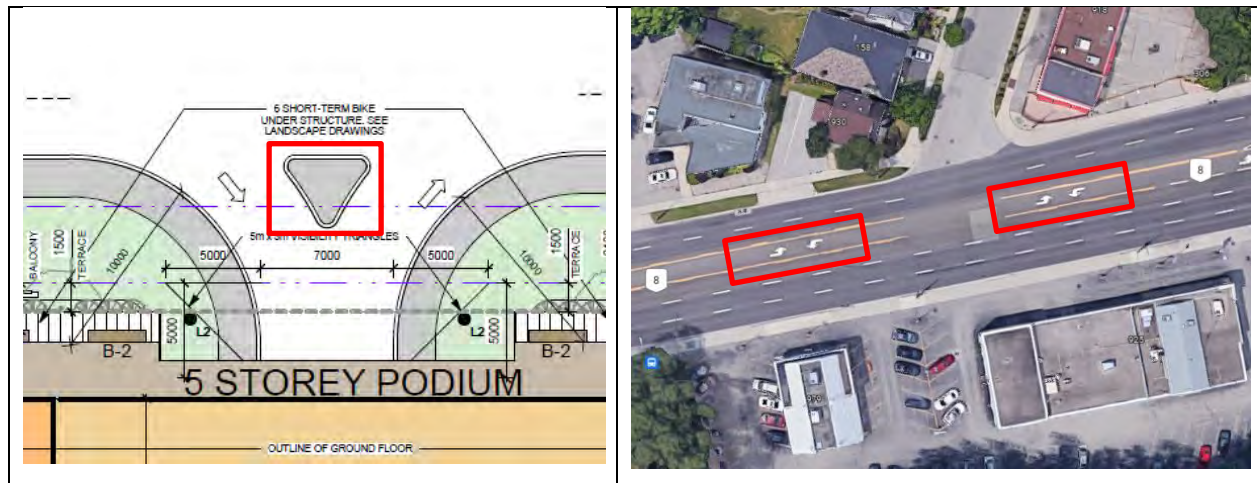


Figure 1 – Proposed Right-in/Right-out Island and Existing Centre Left-turn lane along Main St W

10. For two-way operation onto municipal road, the proposed driveway access width shall be 7.5 metres at the ultimate property line with a minimum curve radius of 6.0 metres. The proposed driveway access shall be revised in order to reduce the width and radii of the driveway at the ultimate property line due to the revisions required to remove the right-in/right-out concrete island proposed.

The driveway radii shall be reduced as much as possible to the minimum of 6.0 metres while still allowing for heavy vehicles to enter/exit the site within encroachments or limitations.

11. The orientation of the required 5 metre x 5 metre visibility triangles is incorrectly illustrated on *SITE PLAN*, Drawing #A0.01. Visibility triangles are required to be revised to the correct orientation as illustrated in **Figure 2**. It shall be noted that no object or mature vegetation can exceed a height of 0.6 metres above the corresponding perpendicular centreline elevation of the adjacent street within the visibility triangle area.

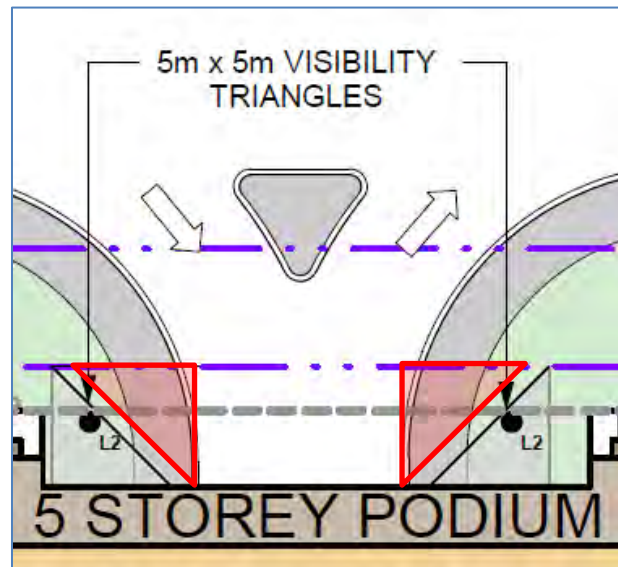


Figure 2 – 5 m x 5 m Visibility Triangle Orientation

Internal Circulation

The following revisions are required:

12. The location of the proposed barrier free parking as illustrated in **Figure 3** appears to have limited accessibility due to the location of structural columns as well as concrete curbing. Revisions to the design and location of the accessible barrier free parking is required in subsequent submissions.

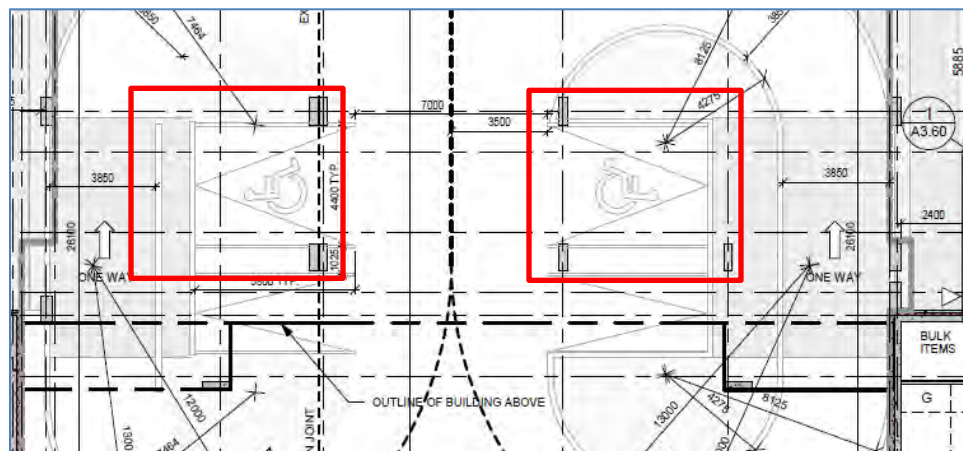


Figure 3 – Barrier Free Parking Area

13. Transportation Planning notes that a maximum grade percentage of 10% is required as per City of Hamilton Comprehensive Development Guidelines for underground parking ramps. The site plan indicates grades in excess of the 10% maximum. Due to ramp grades not conforming to City Development Guidelines, as a condition of Special Condition of Site Plan, prior to application for any



building permits, a letter certifying the design of the ramp will be required and signed by a Licenced Architect or Engineer, to the satisfaction of the Manager, Transportation Planning.

14. A turning plan is required to indicate the complete movements of a heavy loading/waste collection vehicle entering the site in a forward manner, maneuvering into the proposed loading/waste collection area, and exiting the site in a forward manner without any conflicts or encroachments.

Right-of-way Dedications

Information Only:

15. The ultimate right-of-way dedications required along Main Street West and Longwood Road South shall be clearly indicated and illustrated on the site plan, subject to the requirements identified by City of Hamilton LRT Office and Metrolinx. It shall be noted that the underground parking levels shall not encroach within the ultimate municipal right-of-way limits.

Daylighting Triangle Dedications

Information Only:

16. The required daylighting triangle dedication at the intersection of Main Street West & Longwood Road South shall be clearly indicated and illustrated on the site plan, subject to the requirements identified by City of Hamilton LRT Office and Metrolinx. It shall be noted that the underground parking levels shall not encroach within the daylighting triangle.

Should you have any questions, please email tplanning@hamilton.ca, referencing:
925 Main Street West & 150 Longwood Road South – DA-18-193 (Ward 1)
Transportation Planning Response

cc: Development Engineering Approvals
Chris McCafferty, Senior Project Manager, Engineering and Design (LRT)



Hamilton

PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Planning Division
71 Main Street West, 5th Floor
Hamilton, Ontario, L8P 4Y5
Phone: 905-546-2424 x2719 Fax: 905-546-4202
www.hamilton.ca

October 24, 2023

FILE: DA-18-193
FOLDER: 18-123280-00 SPCA
ATTENTION OF: Liam Tapp
TELEPHONE NO: (905) 546-2424
EXTENSION: 8664

Jana Kelemen
Manager, Heritage and Urban Design
Development Planning
Planning Division

Attention: Chris Hampson-Curtis

Re: Zoning District: "TOC1, 703" Holding H31 & "P5, 703"
File Number: DA-18 - 193
Address: 925 MAIN STREET WEST & 150 LONGWOOD ROAD SOUTH, HAM

The above, under cover of your letter dated September 27, 2023, has been examined.

COMMENTS:

1. The applicants previously received conditional approval for the site plan application on November 15, 2018 and an Addendum to the Conditional Approval was provided on April 11, 2023.

Further to the above noted submission details, the current submission provides revised plans for the proposed mixed use development consisting of two tower elements, connected at the base by a six storey podium, having a maximum height of 53.0 metres (18 storeys), 5,869.23 square metres of commercial floor space at grade, and 331 vehicular parking spaces and 261 bicycle parking spaces located in a three level underground parking garage.

2. The proposed Mixed Use development containing a Multiple Dwelling is permitted under Hamilton Zoning By-Law 05-200 and defined as follows:

Multiple Dwelling – shall mean a building or part thereof containing three or more dwelling units but shall not include a street townhouse dwelling or semi-detached dwelling.

Additionally, the specific proposed Commercial component has not been indicated and as such the use cannot be confirmed to be permitted.

3. As per Zoning By-Law Amendment 18-257 the following shall apply:

a) *Notwithstanding Section 3: Definitions, **Main Street West** shall be deemed the front lot line.*

b) *Notwithstanding Section 4.23 d), all buildings and structures located on a property shall be setback a minimum of 3.0 m from a (P5) Zone Boundary, except below grade which shall be setback a minimum of 0.0 m from the (P5) Zone Boundary.*

- *It appears that the proposed building and the underground parking is setback greater than the required 3.0 m from the "P5" zone boundary on the south.*

c) *Notwithstanding Section 5.2 b) iii), where a wall or any other obstruction is located abutting or within any parking space within an above ground or underground parking structure, the minimum width of a parking space shall be increased by 0.3 m; except for where a column is located abutting or within any parking space within an above ground or underground parking structure, the minimum width of a parking space shall be increased by 0.1 m*

d) *Notwithstanding Section 5.6 c) i. and 5.7 c) i. and e), the following shall apply:*

i. *Residential Use (s):*

Lodging House

- A) *1 parking space for each 8.3 persons accommodated or designed for accommodation.*
- B) *A minimum of 5 short term bicycle parking spaces shall be provided.*
- C) *A minimum of 0.5 long term bicycle parking spaces per unit shall be provided.*

A Lodging House is defined under Hamilton Zoning By-Law 05-200 as follows:

Lodging House - *Shall mean a dwelling containing one or more lodging units designed to accommodate four or more residents. The residents may share common areas of the dwelling other than the lodging units, and do not appear to function as a household. This shall not include a long term care facility, hospital, hotel or any residential care facility licensed; approved or supervised under any general or specific Act. This shall include but not be limited to, student residences and convents.*

e) *In addition to Subsection 7.5.1, the following use shall also be permitted:*

i. *Recreation*

A minimum of 0.5 long term bicycle parking spaces per unit shall be provided.

4. Please be advised that a portion of this property is within an area regulated by Hamilton Conservation Authority. Please contact (905) 525-2181 prior to any development.

5. Be advised, the proposed Development is subject to Holding Provision H31. The following Conditions are required to be satisfied prior to development on the lands Municipally known as 925 Main Street West and 150 Logwood Road South, and Zoned as TOC1, 703, H31:

(a) *The Owner enters into a conditional building permit agreement with respect to completing a Record of Site Condition or a signed Record of Site Condition (RSC) being submitted to the City of Hamilton and the Ministry of the Environment, Conservation and Parks (MECP) for 925 Main Street West. This RSC must be to the satisfaction of the Director of Planning and Chief Planner, including a notice of acknowledgement of the RSC by the MECP, and submission of the City of Hamilton's current RSC administration fee.*

(b) The Owner acquires the lands at 150 Longwood Road South required to implement the proposed development and merges the lands on title with 925 Main Street West, to the satisfaction of the Director of Planning and Chief Planner.

6. Construction of the proposed development is subject to the issuance of a building permit in the normal manner. Be advised that Ontario Building Code regulations may require specific setbacks and construction types.
7. All new signs proposed for this development must comply with the regulations contained within Hamilton Sign By-law 10-197. A building permit(s) is required for all signage.
8. All new fencing proposed for this development must comply with the regulations contained within Hamilton Fence By-law 10-142.
9. The designer shall ensure that the fire access route conforms to the Ontario Building Code.
10. The proposed development has been reviewed and compared to the standards of the "TOC1, 703" zone as indicated in the following chart:

	Required By By-Law	Provided	Conforming/ Non-Conforming
Section 11.1.1.1– Restricted Uses			
Restriction of Uses within a Building [as per section 11.1.1.1(i) of Hamilton Zoning By-law 05-200]	1. The finished floor elevation of any dwelling unit shall be a minimum of 0.9 m above grade; and 2. Notwithstanding Subsection 11.1.1.1(i)1. above, one dwelling unit(s) shall be permitted in a basement or cellar.	No dwelling units indicated on first floor or within parking garage	Conforms
Residential Care Facility [as per section 11.1.1.1(ii) of Hamilton Zoning By-law 05-200]	1. Maximum Capacity for Residential Care Facility is 20 residents.	Not proposed	N/A
Emergency Shelter [as per section 11.1.1.1(iii) of Hamilton Zoning By-law 05-200]	1. Maximum Capacity for Emergency Shelter is 50 residents.	Not Proposed	N/A
Emergency Shelter and Residential Care Facility [as per section 11.1.1.1(iv) of Hamilton Zoning By-law 05-200]	1. Except as provided for in Subsection 2, every Emergency Shelter and Residential Care Facility shall be situated on a lot having a minimum radial separation distance of 300.0 metres from any lot line of such lot measured to the lot line of any other lot occupied by a Residential Care Facility Emergency Shelter, Corrections Residence or Correctional Facility.	Not proposed	N/A

	Required By By-Law	Provided	Conforming/ Non-Conforming
	2. Where the radial separation distance from the lot line of an Emergency Shelter or Residential Care Facility existing on the date of passing of this By-law is less than 300 metres to the lot line of any other lot occupied by an existing Residential Care Facility, Emergency Shelter, Corrections Residence, or Correctional Facility, either of the existing Residential Care Facility or Emergency Shelter may be expanded or redeveloped to accommodate not more than the permitted number of residents permitted by the Zone in which it is located.		
Section 11.1.3– TOC1 Requirements			
Building Setback from a Street Line [as per section 11.1.3(a) iii) & iv) of Hamilton Zoning By-law 05-200] <i>[as per amending By-law 18-257 – 703. f) i), ii)]</i>	iii) Notwithstanding Section i) above, a minimum setback of 6.0 metres for that portion of a building providing an access driveway to a garage.	iii) 4.1 m to the closest part of the building facing Main St. W.; however, garage is located internal to the site and access driveway does not lead directly from the garage to the street.	Conforms
	iv) Section i) above, shall not apply for any portion of a building that exceeds the requirement established in Section 11.1.3 g) ii) and iii) below.	Notwithstanding Clause	N/A
	f) Notwithstanding Subsection 11.1.3 a) i) and ii), c), d) ii) and iii), and g) iii) and v), the following special provisions shall apply: i) Minimum Building Setback from Main Street West A) 0.0 m for any portion of a building up to 22.0 m in height, including to the hypotenuse of the daylight triangle.	3.1 m provided abutting Main St. W. for the portion of the building up to 5 storeys and 19.050 m in height as indicated on the Ste Stats & Schematic Section B.	Conforms
	A) 6.1 m for any portion of a building greater than 22.0 m in height.	6.1 m for that portion of the building >22.0 m in height provided abutting Main St. W. Note: Portion of Tower A and Tower B appear to be setback 5.12 metres. But indicated as Architectural features	Conforms
	ii) Minimum Building Setback from Longwood Road South	2.953 m setback from the 5 storey podium to the	Conforms

	Required By By-Law	Provided	Conforming/ Non-Conforming
	<i>A) 0.0 m for any portion of a building up to 22.0 m in height, including to the hypotenuse of the daylight South triangle.</i>	hypotenuse of the daylight triangle	
	<i>B) 15.0 m for any portion of a building greater than 22.0 m in height, except 8.8 m to the hypotenuse of the daylight triangle.</i>	17.60 m setback provided from the 18 storey Tower A Note: No details provided from the 18 Storey Tower B to the hypotenuse of the daylight triangle	Unable to Determine Compliance
Minimum Rear Yard <i>[as per section 11.1.3(b) of Hamilton Zoning By-law 05-200]</i>	7.5 metres;	Greater than 7.5 m provided on the southerly lot line.	Conforms
Minimum Interior Side Yard <i>[as per amending By-law 18-257 – 703. f) iii)]</i>	<i>f) Notwithstanding Subsection 11.1.3 a) i) and ii), c), d) ii) and iii), and g) iii) and v), the following special provisions shall apply:</i> <i>iii) Minimum Interior Side Yard:</i> <i>A) 0.9 m for any portion of a building up to 22.0 m in height when abutting a Residential Zone.</i>	3.139 m westerly side setback provided;	Conforms
	<i>A) 4.0 m for any portion of a building greater than 22.0 m in height when abutting a Residential Zone.</i>	3.139 m westerly side setback provided (abutting E district)	Does not Comply
Building Height <i>[as per section 11.1.3(d) i), iv), of Hamilton Zoning By-law 05-200]</i> <i>[as per amending By-law 18-257 – 703. f) iv)]</i>	i) Minimum 11.0 metres; and, iv) In addition to the definition of Building Height, any wholly enclosed or partially enclosed amenity area, or any portion of a building designed to provide access to a rooftop amenity area shall be permitted to project above the uppermost point of the building, subject to the following regulations: A. The total floor area of the wholly enclosed or partially enclosed structure belonging to an amenity area, or portion of a building designed to provide access to a rooftop amenity area shall not exceed 10% of the floor area of the storey directly beneath;	58.85 metres iv) Amenity Area proposed above 18 floor within mechanical penthouse/ roof of 18 th floor Insufficient Information Provided Note: Applicant shall provide floor area for portion of building providing access to the Amenity Area above the 18th storey. Includes Elevator Lobby area and all elevators provided for Resident usage to the mechanical penthouse	Conforms Unable to Determine Compliance

	Required By By-Law	Provided	Conforming/ Non-Conforming
	B. The wholly enclosed or partially enclosed amenity area, or portion of a building designed to provide access to a rooftop amenity area shall be setback a minimum of 3.0 metres from the exterior walls of the storey directly beneath; and,	Insufficient Information Provided Note: Applicant shall provide setback distance for Exterior Amenity area from exterior walls of floor 18	Unable to Determine Compliance
	C. The wholly enclosed or partially enclosed amenity area, or portion of a building designed to provide access to a rooftop amenity area shall not be greater than 3.0 metres in vertical distance from the uppermost point of the building to the uppermost point of the rooftop enclosure.	Mechanical penthouse indicated to be 6 metres in height Note: Amenity Area access is shared with Mechanical Penthouse storey. Any portion of the proposed Amenity Area access shall conform to the requirements of this Section	Does not Comply
	f) Notwithstanding Subsection 11.1.3 a) i) and ii), c), d) ii) and iii), and g) iii) and v), the following special provisions shall apply: iv) Building Height A) Maximum 22.0 m for the podium.	A maximum of 18.3 m in height is shown for the 5 storey podium as shown on the Site Stats & Schematic Section drawing SP200 dated July 28, 2022.	Conforms
	B) Maximum 56.0 m for “Tower A” as shown on Figure 21 of Schedule F – Special Figures.	58.85 metres	Does not Comply
	C) Maximum 62.0 for “Tower B” as shown on Figure 21 of Schedule F – Special figures is 62.0 m.	58.85 metres	Conforms
Built Form for New Development [as per section 11.1.3(g) of Hamilton Zoning By-law 05-200] [as per amending By-law 18-257 – 703. f) iv)]	In the case of buildings constructed after the effective date of this By-law excluding any alterations to façade, windows or doors, after the effective date of this by-law: i) Rooftop mechanical equipment shall be located and/or screened from view of any abutting street.	Insufficient Information Provided Note: Outdoor Generator appears to be located behind 0.6 m high parapet wall, however it is unclear if generator is height than wall and would be visible from the abutting street. In addition, it appears to be gaps in the parapet wall which may allow the proposed outdoor	Unable to Determine Compliance

	Required By By-Law	Provided	Conforming/ Non-Conforming
		generator to be visible to the street.	
	ii) For an interior lot or a through lot the minimum width of the ground floor façade facing the front lot line shall be greater than or equal to 75% of the measurement of the front lot line.	This is a corner lot.	N/A
	iv) In addition to Subsection 11.1.3 g) ii) and iii), the minimum width of the ground floor façade facing the front and flankage lot lines shall exclude access driveways and any required yards within a lot line abutting a street.	Insufficient Information Provided	Unable to Determine Compliance
	vi) No parking, stacking lanes, or aisles shall be located between the required building façade and the front lot line or flankage lot line.	No parking is provided between the required building façade and the front lot line or flankage lot line.	Conforms
	vii) All principal entrances shall face the street and be accessible from the building façade with direct access from the public sidewalk.	Principal entry for the apartment and commercial use are provided facing the street (Main Street East) and appear to be accessible from the building façade with direct access from the public sidewalk.	Conforms
	viii) Notwithstanding the definition of planting strip, a sidewalk shall be permitted where required by Section vi) above.	A walkway is shown abutting Main Street East.	Conforms
	ix) Notwithstanding Subsection 11.1.3, for properties designated under the Ontario Heritage Act, any alternative building design or building materials approved through the issuance of a Heritage Permit shall be deemed to comply with this Subsection.	Not designated Heritage	N/A

	Required By By-Law	Provided	Conforming/ Non-Conforming
	<i>f) Notwithstanding Subsection 11.1.3 a) i) and ii), c), d) ii) and iii), and g) iii) and v), the following special provisions shall apply:</i> <i>v) Built Form for New Development:</i> <i>A) Maximum of two 6.0 m wide driveways shall be permitted for ingress and egress.</i>	One access driveway provided facing Main Street East having a maximum of 7.0 m in width.	Conforms
	<i>B) For a corner lot the minimum width of the ground floor façade facing the front lot line shall be greater than or equal to 50 % of the measurement of the front lot line abutting the street, and the minimum width of the ground floor façade facing the flankage lot line shall be greater than or equal to 25 % of the measurement of the flankage lot line abutting the street</i>	Insufficient Information Provided	Unable to Determine Compliance
Minimum Amenity Area for Dwelling Units and Multiple Dwellings [as per section 11.1.3(h) of Hamilton Zoning By-law 05-200]	On a lot containing more than 10 dwelling units, the following Minimum Amenity Area requirements shall be provided: i) An area of 4.0 square metres for each dwelling unit less than 50 square metres; Note: Vestibules and hallways have been indicated on Site Plan, however these do not meet the definition of an Amenity Area. The applicant shall confirm Amenity Area calculation does not include those areas not defined as such.	A total of 3191.8 m² of Amenity Area has been indicated i) Insufficient Information Provided Note: Applicant has indicated suites to have a maximum/ minimum area allotment with some suites having a minimum of 50m² and below and some units being above 50m². Specific unit count based on GFA requirements shall be provided accordingly	Unable to determine compliance
	ii) An area of 6.0 square metres for each dwelling unit more than 50 square metres; Note: Vestibules and hallways have been indicated on Site Plan, however these do not meet the	Insufficient Information Provided Note: Applicant has indicated suites to have a maximum/ minimum area allotment with some suites having a minimum of 50m² and	Unable to determine compliance

	Required By By-Law	Provided	Conforming/ Non-Conforming
	definition of an Amenity Area. The applicant shall confirm Amenity Area calculation does not include those areas not defined as such.	below and some units being above 50m ² . Specific unit count based on GFA requirements shall be provided accordingly	
	iii) In addition to the definition of Amenity Area, an Amenity Area located outdoors shall be unobstructed and shall be at or above the surface, and exposed to light and air and may include balconies and patios; and,	Outdoor Amenity Areas appear to be provided unobstructed and exposed to sunlight	Conforms
	iv) In addition to the definition of Amenity Area, the required Amenity Area shall be provided exclusively for the residential component and shall be functionally separated from public areas associated with any commercial component.	Provided	Conforms
Visual Barrier [as per section 11.1.3(i) of Hamilton Zoning By-law 05-200]	i) A visual barrier shall be required along <u>any lot line abutting a</u> Downtown D5 Zone, Institutional Zone or Residential Zone in accordance with the requirements of Section 4.19 of this Bylaw. ii) Notwithstanding i) above, no visual barrier(s) shall be permitted between the building façade and the street.	This property abuts a residential zone on the westerly lot line(s) No details of a visual barrier provided on the site plan for the portion of the lot abutting a residential zone to the west.	Does not Comply
Outdoor Storage [as per section 11.1.3(j) of Hamilton Zoning By-law 05-200]	i) No outdoor storage of goods, materials, or equipment shall be permitted. ii) Notwithstanding Section i) above, the display of goods or materials for retail purposes accessory to a retail use shall only be permitted in a front yard or flankage yard.	No details of outdoor storage being proposed	N/A
Parking - <i>In accordance with the requirements of Section 5 of Hamilton Zoning By-law 05-200</i>			
Parking Location [as per section 5.1 a) i) of Hamilton Zoning By-law 05-200]	Required parking facilities shall be located on the same lot as the use requiring the parking.	Parking provided on the lot where the use requiring the parking is located.	Conforms
Parking Location from Street Line [as per section 5.1 a) v)]	v) Unless otherwise regulated in this By-law, parking spaces and aisles, giving direct access to abutting parking spaces, excluding driveways extending directly from the street, shall be subject to the following:	Parking above ground is located greater than 3.0 m from a street line.	Conforms

	Required By By-Law	Provided	Conforming/ Non-Conforming
<i>of Hamilton Zoning By-law 05-200]</i>	a) Shall not be located within 3.0 metres of a street line,		
	b) Shall provide a 3.0-metre-wide planting strip being required and permanently maintained between the street line and the said parking spaces or aisle, except for that portion of a lot line abutting the Red Hill Valley Parkway and the Lincoln Alexander Parkway; and,	No parking is provided abutting the street along Main Street East or Longwood Road.	N/A
	c) Where a Planting Strip is provided, as per b) above, any architectural wall or feature within the Planting Strip shall be limited to a maximum height of 0.6 metres.	None provided	N/A
Parking Multiple Dwellings <i>[as per section 5.1 a) d) of Hamilton Zoning By-law 05-200]</i>	On a lot containing a multiple dwelling: i) With the exception of any visitor parking required by Section 5.6, required parking for multiple dwellings shall not be located between the façade and the front lot line or between the façade and flankage lot line. In no case shall any parking be located within the required front yard or required flankage yard or within 3.0 metres of a street line.	No parking is provided between the façade of the proposed building and the front lot line	Conforms
	ii) Visitor parking may be permitted between the façade and a street provided that no more than 50% of the front yard shall be used for visitor parking and access to such parking.	No visitor parking is provided between the façade and Main Street East.	N/A
Design Standards <i>[as per section 5.2 a) of Hamilton Zoning By-law 05-200]</i>	Where a parking lot is situated <u>on a lot which abuts a Residential Zone</u> , Settlement Residential (S1) Zone, Downtown D5 or Downtown D6 Zone, a visual barrier shall be provided and maintained along that portion of the lot line that abuts a Residential Zone, Settlement Residential (S1) Zone, Downtown D5 Zone or Downtown D6 Zone i) A minimum 1.5 metre wide landscape strip which shall contain a visual barrier in accordance with Section 4.19 of this By-law.	The location of the proposed above ground parking is not located abutting a residential district.	N/A
Design Standards <i>[as per section 5.2 b) of Hamilton Zoning By-law 05-200]</i>	Unless permitted by another regulation in this By-law, parking space sizes shall be: i) Minimum 2.8 metres in width and 5.8 metres in length;	TYP. 2.8m x 5.8m	Conforms

	Required By By-Law	Provided	Conforming/ Non-Conforming
<i>Updated Interpretation re: Amending By-law No. 21-189 (October 13, 2021)</i> <i>Increase in parking space size</i> <i>Section 5.2b) ii)</i> <i>Updated October 26, 2021.</i> <i>Pursuant to Section 5.2 b) ii) in Appendix "C" – Section 5: Parking of Amending By-law No. 21-189 (which is Not Final and Binding), the following interpretation has been made for an increase in parking space size in a parking structure (above ground, underground and in an individual attached garage):</i> <i>The parking space size interpretation that has been made and that applies going forward is that 0.3 metres is to be provided on both sides if the parking space is abutting a wall, column, or any other obstruction on both sides. Therefore, the requirement in such a scenario is $2.8m + 0.3m + 0.3m$ for a total width of 3.4m</i>	ii) Where a wall, column, or any other obstruction is located abutting or within any parking space within an above ground or underground parking structure, the minimum width of a parking space shall be increased by 0.3 metres for each wall, column, or obstruction;	Parking spaces do not abut a wall Note: parking space appear to directly abut a wall along the perimeter of the underground parking garage. As per ZBA 18-257, Section 5.2 b) iii) has been notwithstanding in its entirety and replaced with the amendment below. As such, the 0.3 metre increase shall be applicable to all parking spaces which directly abut a wall	Conforms
	iii) <u>Notwithstanding Section 5.2 b) iii), where a wall or any other obstruction is located abutting or within any parking space within an above ground or underground parking structure, the minimum width of a parking space shall be increased by 0.3 m; except for where a column is located abutting or within any parking space within an above ground or underground parking structure, the minimum width of a parking space shall be increased by 0.1 m.</u>	Insufficient Information Provided Note: Columns appear to be directly abutting parking spaces, however no measurement has been provided to indicate if 0.1 m has been provided	Unable to Determine Compliance
	iv) The length of each parking space in an attached garage of a dwelling unit shall be increased by an equivalent length of the step, steps or stairwell that extends into the parking space;	Steps not indicated in parking spaces	Conforms

	Required By By-Law	Provided	Conforming/ Non-Conforming
	v) Notwithstanding Subsection iv), an open stairway may project into the length of the required parking space not more than 0.75 metres provided the height of the stairway does not exceed 0.5 metres;	Steps not indicated in parking spaces	N/A
	vi) Notwithstanding Subsection i) herein, where 10 or more parking spaces are required on a lot, the minimum parking space size of not more than 10% of such required parking spaces shall be a width of 2.6 metres and a length of 5.5 metres, provided that any such parking space is clearly identified as being reserved for the parking of small cars only; and,	Insufficient Information Provided Note: Insufficient information provided to determine parking requirement	Unable to Determine Compliance
	vii) Notwithstanding Subsection b) ii) and iii), light standards, including the base, located at the intersection of 4 parking spaces shall not be considered as an obstruction.	Underground parking, light standards not indicated	N/A
Design Standards Means of Ingress and Egress <i>[as per section 5.2 c) of Hamilton Zoning By-law 05-200]</i>	All required parking shall be provided as follows: i) With adequate means of ingress and egress to and from the street or laneway without the necessity of moving any other motor vehicle, except that the accessibility to a maximum of one of the required parking spaces for a single detached dwelling may be obstructed by another motor vehicle with normal public use of the street or laneway. Any parking lot shall provide for ingress and egress of vehicles to and from a street in a forward motion only.	Parking is provided with adequate means of ingress and egress to and from the street without moving any other motor vehicle and in a forward motion.	Conforms

	Required By By-Law	Provided	Conforming/ Non-Conforming
	ii) Shall be arranged so as to not interfere with normal public use of the street or laneway;	Does not encroach into public area	Conforms
	iii) Shall be accessed by means of an access driveway: 1. Located on the lot; or, 2. Located party on the lot in the case of a mutual driveway; or, 3. By means of a Right-of-Way.	Access driveway/ aisle located on lot	Conforms
	iv) Any parking lot shall provide for ingress and egress of vehicles to and from a street in a forward motion only.	Two way drive aisle proposed to street	Conforms
Design Standards Surface parking <i>[as per section 5.2 e) ii) of Hamilton Zoning By-law 05-200]</i>	ii) Parking Lots in All Zones, except the Rural Classification Zones: a) Shall be designed and maintained with stable surfaces such as asphalt, concrete or other hard-surfaced material.	Insufficient Information Provided	Unable to determine compliance
Designed Standards Barrier Free Size <i>[as per section 5.2 f) of Hamilton Zoning By-law 05-200]</i>	Notwithstanding Subsection b) herein, in the case of a barrier free parking, each parking space shall have a minimum width of 4.4 metres and a minimum length of 5.8 metres.	4.4 m in width by 5.8 m in length provided.	Conforms
Minimum Aisle Width <i>[as per section 5.2 i) of Hamilton Zoning By-law 05-200]</i>	90° parking Angle Degree – One Way and Two-Way Aisle: 6.0 m and 3.0 m for one way traffic	Minimum of 6.0 m aisle width provided for a two-way aisle width. 3.86 m aisle for one way traffic	Conforms
Location of Loading Facilities <i>[as per section 5.2.1 of Hamilton Zoning By-law 05-200]</i>	The location of loading doors and associated loading facilities shall be subject to the following: a) Shall not be permitted within a Front Yard; b) Shall not be permitted in any yard abutting a street, except where screened from view by a Visual Barrier in accordance with Section 4.19 of this By-law; and,	a) Not within the front yard. b) Loading is provided within the building.	Conforms Conforms

	Required By By-Law	Provided	Conforming/ Non-Conforming												
	c) Shall not be permitted in a required yard abutting a Residential Zone or an Institutional Zone and shall be screened from view by a Visual Barrier in accordance with Section 4.19 of this By-law.	c) Not provided with a required yard	Conforms												
Barrier Free Parking <i>[as per section 5.5 of Hamilton Zoning By-law 05-200]</i> <i>Per Section 5.5 c): Where the application of the parking standards in Section a) above results in a numeric fraction, fractions shall be rounded down to the nearest whole number.</i>	The total number or required parking spaces has not been provided as the proposed commercial use has not been identified. 201 – 1000 spaces: Min. 2 spaces + 2 % of the total number of required parking spaces; and	A total of 6 barrier free parking spaces provided on site.	Unable to determine compliance												
Minimum Required Parking <i>[as per section 5.6 c) of Hamilton Zoning By-law 05-200]</i>	<table><tr><td colspan="3"> <u>Commercial</u> Insufficient Information provided to determine parking requirement for Commercial use; note a specific Commercial use is required to determine parking requirements </td></tr><tr><td> <u>Multiple Dwelling</u> </td><td> <u>Minimum.</u> </td><td> <u>Maximum</u> </td></tr><tr><td> i) Dwelling Units less than 50.0 square metres in gross floor area </td><td> 0.3 per unit </td><td> 1,25 per unit </td></tr><tr><td colspan="3"> Applicant has indicated suites to have a maximum/ minimum area allotment with some suites having a minimum of 50m² and below and some units being above 50m². Specific unit count based on GFA requirements shall be provided accordingly </td></tr></table>	<u>Commercial</u> Insufficient Information provided to determine parking requirement for Commercial use; note a specific Commercial use is required to determine parking requirements			<u>Multiple Dwelling</u>	<u>Minimum.</u>	<u>Maximum</u>	i) Dwelling Units less than 50.0 square metres in gross floor area	0.3 per unit	1,25 per unit	Applicant has indicated suites to have a maximum/ minimum area allotment with some suites having a minimum of 50m² and below and some units being above 50m². Specific unit count based on GFA requirements shall be provided accordingly			Insufficient Information Provided	Unable to Determine Compliance
<u>Commercial</u> Insufficient Information provided to determine parking requirement for Commercial use; note a specific Commercial use is required to determine parking requirements															
<u>Multiple Dwelling</u>	<u>Minimum.</u>	<u>Maximum</u>													
i) Dwelling Units less than 50.0 square metres in gross floor area	0.3 per unit	1,25 per unit													
Applicant has indicated suites to have a maximum/ minimum area allotment with some suites having a minimum of 50m² and below and some units being above 50m². Specific unit count based on GFA requirements shall be provided accordingly															

	Required By By-Law			Provided	Conforming/ Non-Conforming
	ii) Dwelling Units greater than 50.0 square metres in gross floor area				
	1 – 14 units	0.7 per unit.	1.25 per unit.		
	Applicant has indicated suites to have a maximum/ minimum area allotment with some suites having a minimum of 50m ² and below and some units being above 50m ² . Specific unit count based on GFA requirements shall be provided accordingly				
Bicycle parking Short Term Per Amending By-Law No. 18-257 2. d)	<i>Notwithstanding Section 5.7 c) i. and e), the following shall apply:</i> <i>B) minimum of 5 short term bicycle parking spaces shall be provided</i> Commercial Uses not listed above – 5 per commercial use Note: As per ZBA 18-257, only Section 5.7 c) i) has been notwithstanding. As such, Section 5.7 c) ii) remains applicable to this development. Please note, the specific type of commercial use has not been indicated. Should multiple uses be proposed (i.e. restaurant, retail, personal service) each separate use shall require 5 short term bicycle spaces. In addition, the Gross Floor Area has not been indicated for individual commercial uses and is required to determine if short term bicycle parking is required			12 short-term bicycle parking spaces have been provided above grade. Insufficient information provided Note: Commercial use and GFA required to determine bicycle parking	Unable to Determine Compliance
Bicycle parking Long Term Per Amending By-Law No. 18-257 2. d)	<i>Notwithstanding Section 5.7 c) i. and e), the following shall apply:</i> <i>A) A minimum of 0.5 long term bicycle parking spaces per unit shall be provided</i> Breakdown: 460 (units) x 0.5 = 230 spaces			373 as per site statistics table	Unable to determine compliance

	Required By By-Law	Provided	Conforming/ Non-Conforming
Accessory Building - <i>In accordance with the requirements of Section 4.8 of Hamilton Zoning By-law 05-200</i>			
Yard Encroachment <i>[as per section 4.6 of Hamilton Zoning By-law 05-200]</i>	a) The usual projections of window sills, chimney breasts, belt courses, cornices, eaves, troughs and other similar architectural features, ductwork, venting and other similar appurtenances may be permitted in any required yard, provided that no such feature shall project more than 0.6 metres into the required yard, or to a maximum of half the distance of the required yard, whichever is the lesser;	Tower A and B architecture feature projects 0.98 m into required yard for a building above 22 metres	Does not Comply
	d) A porch, deck or canopy may encroach into any required yard to a maximum of 1.5 metres, or to a maximum of half the distance of the required yard, whichever is the lesser;	Canopy not within required interior side yard; no minimum front or flankage yard below 22 metres	Conforms
	e) A balcony may encroach into any required yard to a maximum of 1.0 metres, except into a required side yard of not more than one-third of its width or 1.0 metres, whichever is the lesser; and,	Balconies indicated to be 0.8 metres into required yard above 22 metres Note: Applicant shall be consistent with defined terms; Terrace is not a defined term under Hamilton Zoning By-Law 05-200. Applicant shall confirm intent of proposed feature as a defined term.	Conforms
Accessory buildings <i>[as per section 4.8 of Hamilton Zoning By-law 05-200]</i>	An accessory Building may only be erected or used in accordance with the following: Please see Section 4.8 for additional regulations	None proposed	N/A
Outdoor Commercial Patios <i>[as per section 4.20 and Schedule E of Hamilton Zoning By-law 05-200]</i>	a) <u>Design Requirements</u> i) Outdoor Commercial Patios shall be designed and used to accommodate seating of customers.	Insufficient Information Provided Note: Applicant shall clearly indicate seating provided for customers	Unable to Determine Compliance
	b) <u>Seating Capacity Requirements</u>	Insufficient Information Provided	Unable to Determine Compliance

	Required By By-Law	Provided	Conforming/ Non-Conforming
	i) An Outdoor Commercial Patio shall be limited to a seated capacity of a minimum of 1.10 square metres of patio area per person.	Note: Applicant shall provide Outdoor Patio Details	
	c) <u>Location Requirements:</u> i) shall be set back a minimum of 5.0 metres from any residential zone; ii) shall not obstruct a driveway, parking aisle or fire route; and, iii) iii) may occupy required parking spaces. As per Schedule E Section 6. A)	Outdoor Patio indicated 2.303 m to Residential Zone along Westerly Lot Line	Does not Comply
Special Setbacks <i>[as per section 4.23 d) and Schedule E of Hamilton Zoning By-law 05-200]</i> Per Amending By-Law No. 18-257 2. b)	Notwithstanding Section 4.23 d), all building and structures located on a property shall be setback a minimum of 3.0 metres from a (P5) Zone boundary, except below grade which shall be setback a minimum of 0.0 metres from the (P5) Zone boundary.	Insufficient Information Provided Note: Applicant shall provide P5 boundary and setbacks	Unable to Determine Compliance

Yours truly



For the Manager of Zoning & Committee of Adjustment



BY EMAIL ONLY

City of Hamilton
71 Main Street West, 5th Floor
Hamilton, ON
L8P 4Y5

Attention: Chris Hampson-Curtis, Planner - Site Plan
via email: Chris.Hampson-Curtis@hamilton.ca

October 20, 2023

**RE: 925 Main Street West and 150 Longwood Road South
Site Plan Application
DA-18-193**

Dear Chris Hampson-Curtis:

Metrolinx received notice of the municipal circulation on September 28, 2023, for the subject proposal and is pleased to provide comments for the revised site plan application.

LOCATION AND PROXIMITY TO TRANSIT INFRASTRUCTURE

The subject lands are adjacent to the alignment of the future Hamilton Light Rail Transit (HaLRT) that connects McMaster University in the west end of Hamilton to Eastgate in the east and is being designated to operate at surface level within the right-of-way of Main Street West.

COMMENTS AND CONDITIONS

Metrolinx has no objection to the proposed development concept, in principle. Intensification along transit corridors is encouraged where it is implemented in a coordinated and orderly manner, conforming to and being consistent with provincial, regional, and local planning policies. As the development is in proximity to the future HaLRT, Metrolinx has reviewed the application and considered how the construction of the proposed development may impact the implementation of the future HaLRT. Our comments and conditions for the applicant to address as part of the planning process can be found below.

SITE PLAN APPLICATION

Metrolinx is required to protect the delivery and ultimate operation of the planned HaLRT. Architectural plans and technical studies provided in the planning circulation for the development were reviewed for Metrolinx to assess and identify high-level potential conflicts

with the concept design of HaLRT. Metrolinx has advanced the concept design to a level where it is possible to understand and evaluate the relationship between the corridor and the development to an extent. Comments and conditions pertaining to the site plan are set out below:

1. It should be noted all construction staging work required on Main Street West and Longwood Road South must be removed from the LRT corridor before 2025.
2. It should be noted the Storm Drainage Area Plan should be coordinated with the LRT construction works.
3. The appropriate City staff should review the updated Environmental Noise Assessment to confirm the model includes the future LRT as background noise according to the latest operational plan.
4. Temporary easements may be required during LRT construction. Construction coordination may be required depending on timing of construction for the LRT and the development.
5. Regarding public utilities, the proposed water service should connect to the watermain on the near side of the road. The proposed water service location currently conflicts with the LRT catch basin location. Horizontal water service location should be coordinated with the LRT design.
6. The proposed private utility services (electrical, gas and telecom) are not found on the site servicing plan. The proposed private utility services (electrical, telecommunication and gas) should be serviced from Longwood Road South. No new service connection should be provided from Main Street West.
7. It should be noted any streetscaping proposed within Main Street West and Longwood Road South right-of-way (such as sod, trees, concrete sidewalk, walkways) conflict with LRT design. Depending on timing, the streetscaping will be removed and reconstructed as part of the LRT construction.
8. It is noted the proposed building is very close to the property line. The building should not have doors opening onto the municipal right of way. It should also be noted the entrance from Main Street West will need to be reconstructed as part of the LRT construction.
9. The development should match the existing grades at the property line. The grading and erosion control plan appears to match existing grades at the back of sidewalk.
10. The excavation shoring plan appears to show caissons and tiebacks are contained within site property. No tiebacks should be within the City's ROW on Main Street West or Longwood Road South. Since the development is in close proximity to the LRT construction, adequate measures must be taken to minimize the risk of ground movement.

11. Metrolinx will be looking to review more detailed versions of the Construction and Traffic Management Plans. Additional information regarding the development's construction timing, phasing and construction staging setups will be needed in order for Metrolinx to assess the level of impacts (if any) with the LRT construction activities and any coordination required between the projects.
12. Please clarify if a Transportation Impact Study will be included in future submissions. While not necessarily a direct impact on the future LRT operations, Metrolinx would nevertheless still be interested to understand the future impacts of the projected additional traffic demands from the development on the adjacent road network. Modifications to the road network operations could still have implications affecting LRT operations (e.g. signal timing changes, roadway capacity needs, etc).
13. The following Metrolinx Advisory Clause shall be inserted into all rental agreement(s), and/or offers of purchase and sale or lease and condominium declaration(s) for each unit of the Lands/Property:
 - a. *Please be advised that this property is located within the project study area and footprint of the Hamilton Light Rail Transit (LRT) project. The proximity of the proposed development lands ("development"), to the Metrolinx Hamilton Light Rail Transit (LRT) works, may result in noise, vibration, electromagnetic interference, stray current, smoke and particular matter, transmissions (collectively referred to as "interferences") to the development.*
 - b. *It has been advised by Metrolinx to apply reasonable attenuation/mitigation measures with respect to the level of the interferences on and in the development.*
 - c. *An Environmental Project Report Addendum (2017) has been completed to assess how existing environmental conditions may be affected and controlled as a result of the project, including but not limited to noise and vibration, traffic and transportation, and the natural environment. To learn more about potential project outcomes in relation to your property, please refer to:*
 - i. *the Hamilton LRT Environmental Project Report (EPR) Addendum - Amended, available at <https://www.hamilton.ca/sites/default/files/2022-08/lrt-environmental-project-report-addendum-2017.pdf>*
 - ii. <https://www.metrolinx.com/en/projects-and-programs/hamilton-lrt>
14. Please note that the owner shall be responsible for all costs associated with the preparation and registration of agreements/undertakings/easement/warning clauses, as determined appropriate by, and to the satisfaction of, Metrolinx.

Corridor Development Permit Process

1. The Building Transit Faster Act (July 8, 2020) enables Metrolinx to design and deliver Priority Transit Projects (PTPs) faster, inclusive of the **HaLRT**, a new transit corridor planned for this vicinity. Metrolinx is currently in the process of designing and procuring for the delivery of this transit project, as well as implementing new

coordination measures and tools stemming from the corridor control provisions of the Building Transit Faster Act, to engage more effectively with the City of Hamilton and development community at large pertaining to these PTPs. A component of these new tools is the requirement for the development proponent to apply to Metrolinx to obtain a Corridor Development Permit (CDP) where development projects fall within a transit project's corridor control lands, prior to receiving a building permit from the City of Hamilton. The intent of the CDP is to protect for the design and delivery of PTPs, while concurrently working with and supporting other planned and active projects in the area. As such, there will be construction coordination required between the **HaLRT** and that of the development lands, to be resolved through a CDP. Metrolinx will continue to work with the City and the applicant collaboratively to support both projects being constructed in a timely manner. More information on the CDP process can be found online **here**. Metrolinx staff is open to further discussions about the above items directly with the applicant, should there be any questions at this time.

2. It should be noted the subject site is located within the CDP review zone. The Applicant should make arrangements to apply for CDP for the development.

It is recommended that the Applicant take the above information into consideration, and to reach out to Metrolinx (development.coordinator@metrolinx.com) as the design progresses.

CONCLUSION

Given the above comments and conditions, the applicant should engage Metrolinx throughout the planning process to ensure that Metrolinx comments are appropriately addressed. Metrolinx staff are open to meeting with the applicant outside the planning process to discuss any of the enclosed remarks if the applicant so desires. Metrolinx looks forward to engagement with the applicant over this proposal. It is kindly requested that Metrolinx be circulated future revisions of the subject application for review and commenting purposes. Should you have any questions regarding the above, please email me at tayo.apampa@metrolinx.com.

Sincerely,

Tayo Apampa
Project Manager, Third Party Project Review
Metrolinx
T: 647-223-6676



cc:

Metrolinx

Daniel Brent, Manager-Adjacent Development Review, TPPR, Metrolinx
Joyce Sandoval, Project Analyst, TPPR, Metrolinx
Danielle Bury, Director, HaLRT, Metrolinx
Trevor Horzelenberg, Senior Manager, Municipal, HaLRT, Metrolinx
Tishya Modwal, Development Coordinator, Heavy Rail (Existing Stations)
Shaimaa Tantawy, Manager, Development, Heavy Rail (Existing Stations)
Ulrica Ho, Sponsor, Hamilton LRT
Michele Colley, Sponsor Office Manager, Hamilton LRT
Tommy Wong, Manager, Traffic & Transportation
Kirsten Lewis, Senior Manager, Rapid Transit - Operations Delivery

City of Hamilton LRT Office

Abdul Shaikh
Chris McCaferty
Farhad Shahla
Ana Cruceru
Engineering General Email Inbox

Memorandum

To: Jana Kelemen
Manager, Heritage and Urban Design
Development Planning

From: Aaron Inrig, P.Eng.
Development Coordinator
Development Engineering

Phone: (905) 546 - 2424 Ext. 4196

Date: November 8, 2023 **File:** DA-18-193

Subject: **Site Plan Control Application by Plaza Imports Limited (c/o John LeCluse) for Lands Located at 925 Main Street West & 150 Longwood Road South, Hamilton (Ward 1)**

The revised proposal is to construct a new mixed-use multiple dwelling with a five - six storey podium and two towers with each of the towers totalling eighteen stories in height. A total of 457 residential units are proposed within the building and 545 square metres of commercial. The proposal includes one driveway access from Main Street West and 331 Parking spaces. Development Engineering has reviewed the submission made with your memo dated September 27, 2023 and provides the following comments as they relate to the Standard Conditions of Site Plan Approval for the above subject application.

The following documents & drawings were submitted for review:

- Site Plan, Architectural Plans – KNYMH (August 25, 2023)
- Construction Management Plan – Lanhack Consultants Inc. (August 29, 2023)
- Water Usage Assessment – S. Llewellyn & Associates Ltd. (July 27, 2023)
- Fire Flow Estimate – S. Llewellyn & Associates Ltd. (July 27, 2023)
- Wastewater Generation Assessment – S. Llewellyn & Associates Ltd. (July 27, 2023)
- Stormwater Management Report – S. Llewellyn & Associates Ltd. (July 2023)
- Watermain Hydraulic Analysis – C3 Water Inc. (September 20, 2023)
- Geotechnical Investigation – Landtek Limited (August 24, 2023)
- Hydrogeological Investigation Report – Landtek Limited (June 7, 2023)
- Civil Plans – S. Llewellyn & Associates Ltd. (September 15, 2023)
- Shoring Drawings – Tarra Engineering & Structural Consultants Inc. (August 10, 2023)

Comments:

- Submit the 2023 Grading Inspection Fee of **\$4,231.85** (HST inclusive).
- Submit the 2023 Servicing Drawing Review Fee of **\$970.00** (no HST).
- Submit the 2023 Construction Management Plan Review Fee of **\$6,655.00** (no HST).
- Fees can be paid by credit card over the phone by contacting X2822 or by mailing/dropping off a cheque to City Hall to the attention of Aaron Inrig, Growth Management Division, 6th floor.
- See attached Shoring Agreement preparation letter.
- See attached External Works Agreement preparation letter.

Shoring Drawings:

- To our understanding, there are no shoring encroachments to the municipal right-of-way except for two shoring piles at the intersection of Main and Longwood which appear to be partially located within the daylighting triangle. An Encroachment Agreement will be required through the City's Corridor Management section. Contact Encroachment@hamilton.ca for more information. Note that the encroaching piles shall be cut down 2.5m from grade when shoring becomes redundant and this shall be noted on the shoring drawings. Please confirm if it would be possible to shift these partially encroaching shoring piles to remove the encroachment since it appears to be very minor.
- There are proposed tiebacks encroaching onto the adjacent privately-owned property at 981 Main Street West (Columbia International College). Please provide signed consent from Columbia International College to confirm that they have no objection to the proposed tiebacks encroaching onto their land.
- There is underground hydro within the right-of-way on Main Street West and Longwood Road which should be added to the plan and cross-sections.
- Submit a Vibration Study identifying the anticipated zone of influence due to vibration during construction of the shoring system, monitoring and mitigation measures and any recommended pre-construction conditions surveys for existing structures/infrastructure located within.

Hydrogeological Report:

- Section 5.3 of the Hydrogeological Report indicates a zone of influence of about 19m for the proposed temporary dewatering during construction and recommends pre-construction condition surveys for properties/structures within. Please submit these surveys prior to the start of construction.

- The report recommends monitoring measures which will be the responsibility of the owner to follow.
- Section 6.0 of the report provides a mitigation plan which will be the responsibility of the owner to follow.
- We note that the report indicates that permanent long-term dewatering will not be required since the underground structure will be waterproofed.

Construction Management Plan:

- Provide a sample letter to be sent to local residents in the event of disturbances to the surrounding lands, businesses, residents, etc. due to construction.

Water Servicing (Public Works – Hamilton Water)

Water Demands:

- The maximum day domestic water usage for the development, based on the approximate fixture unit approach, has been calculated as 35.1 L/s. This calculation is acceptable.

Required Fire Flow:

- The required fire flow (RFF) has been calculated as 9000 L/min (150 L/s) using the Ontario Building Code (OBC) Fire Protection Water Supply Guideline.
- This calculation was based on a building footprint of 2700 m², a building height of 64 m, a water supply coefficient of 23, and a spatial coefficient of 1.5.
- **Please note that the building floor area, building height, building materials, occupancy and exposure distances should be checked to be compliant with the RFF calculations at the site plan approval and building permit stages.**
- The City's target available fire flow (AFF) for commercial and multi-residential land uses is 150 L/s.

Available Fire Flow:

- Hydrant testing completed by SCG Flowmetrix on August 10, 2023, at hydrant HA40H006 and HA40H007 on Main Street West resulted in a theoretical available flow of 8192 USGPM (516.8 L/s) at 20 psi.

Watermain Hydraulic Analysis:

- The results identify that sufficient flow and pressure is available to meet the demands of the development and that the development will not adversely impact the flows and pressures available within the pressure district.

- As such, the municipal water system has the capacity to provide the required domestic demand for the development, as described above. We are satisfied with the information as provided.

Sanitary and Minor Storm Servicing (Public Works – Hamilton Water)

- No comments.

Source Water Protection (Public Works – Hamilton Water)

- Source Protection Planning understands that the planned development is proposing to construct a high-rise structure comprising of two 18-storey residential towers with a 6-storey podium and 3 levels of underground parking. We have reviewed the applicant's Geotechnical Investigation (Landtek, August 24, 2023) and Hydrogeological Investigation Report (Landtek, June 7, 2023). In Section 4.2.6 of the Hydrogeology Report (Water Management and Discharge Plan), the applicant acknowledges they understand a sewer discharge permit will be required prior to discharging of groundwater during the construction period.
- Our comments are as follows:
 - o Based on Appendix E (Dewatering Calculations) of the Hydrogeology Report, we understand that the dewatering calculations was completed using the average K-value of 5.636×10^{-7} m/sec. As per Section 3.12, this average K-value is calculated from the single well response testing of two wells screened in the silt deposits underneath the site.
 - o Based on the appended borehole logs, and Section 3.9 of the Hydrogeology Report, deposits of sandy silt, silty sand and sand were also encountered prevalently during the subsurface investigation, and the excavation during the construction period is also expected to extend through these more porous deposits. The applicant's consultant shall provide rationale for why a K-value more representative of the more porous deposits (i.e., sand) is not incorporated into the hydrogeological conceptualization for the dewatering calculations.
 - o Source Protection Planning agrees with the applicant's consultant recommendation to "bathtub" the proposed structure. We would request the applicant to provide sealed design drawings demonstrating this intent.
 - o **Note to Development Engineering:** Please ensure the applicant's intent to bathtub the proposed structure is captured into the Construction Management Plan prior to issuing the foundation permit.
 - o In Section 4.2.4 of the Hydrogeology Report, the applicant's consultant has noted an Environmental Activity and Sector Registry (EASR) will be required to permit dewatering during the construction period. We request the applicant to provide Source Protection Planning a copy of the EASR registration for our records.

- o Section 4.3.3 of the Hydrogeology Report summarizes the results of the Phase Two ESA completed for the site, which identifies the presence of soil and groundwater contamination onsite against the Ministry of Environment, Conservation and Parks (MECP) Table 3 Site Condition Standards (SCS) for Residential / Parkland / Institutional (RPI) use. The monitoring, mitigation and contingency plan outlined in the report did not discuss how these impacts would be monitored and mitigated during construction dewatering activities, and we request the applicant's consultant to provide additional details on this.
- o The Monitoring Plan in Section 5.0 of the Hydrogeology Report did not include monitoring of groundwater quality during the construction period. We would request the applicant's consultant to provide more information on groundwater quality monitoring as part of the monitoring plan.

Status of Conditions of Site Plan Approval:

2. PRIOR TO THE COMMENCEMENT OF ANY GRADING ON THE SITE

Erosion and Siltation Control

- (a) To show all erosion and siltation control features in detail on a Grading and Drainage Control Plan hereinafter described in Section 3(b); to the satisfaction of the City's Manager of Engineering Approvals; and to implement all such erosion and siltation control measures. The Owner further agrees to maintain all such measures to the satisfaction of the City's Manager of Development Engineering until the site has been fully developed as determined by the City's Manager of Development Planning, Heritage and Design. – ***cleared***

3. PRIOR TO THE ISSUANCE OF ANY FOUNDATION PERMITS

- (a) Satisfy all pre-grading conditions set out in Section 2 above. – ***cleared***

Grading and Drainage Control

- 3. (b) i) To prepare a detailed Grading and Drainage Control Plan showing drainage details for the subject property, abutting properties and public rights-of-way so as to ensure compatible drainage, and to show thereon all existing and proposed connections to the municipal storm sewer to provide for that drainage i.e. catch basins/leads etc. to the satisfaction of the City's Manager of Development Engineering. – ***outstanding***
- ii) To pay a fee of **\$3,745.00 + HST** (or current rate at time of payment) for the final inspection of all aboveground features, such as but not limited to, landscaping, drainage, roads, driveways, noise barriers/fencing, lighting, etc., to the satisfaction of the City's Manager of Development Engineering. – ***outstanding***

Storm Water Management Design

3. (c) To submit to the satisfaction of the City's Manager of Development Engineering detailed engineering design for storm water management or to receive from the said Manager an exemption from this requirement. – ***outstanding (will be cleared once grading plan is approved)***

3. PRIOR TO THE ISSUANCE OF ANY BUILDING PERMITS

Site Servicing Plan

3. (k) i) To submit to the City's Manager of Development Engineering Approvals a satisfactory Site Servicing Plan and pay the applicable drawing review fee based on the approved User Fees Schedule for the year that the Servicing Plans are submitted for review. – ***outstanding***
- ii) To pay for and obtain the required Site Servicing Permits, the cost of which will be calculated based on the approved servicing design. – ***outstanding***

Wastewater Assessment

3. (s) To submit a wastewater generation assessment to the satisfaction of the City of Hamilton Public Works Department using Part 8 of the latest edition of the Code and Guide for Sewage Systems to establish an updated equivalent population density. – ***recommend clearance***

Water Service Assessment

3. (t) To submit a water service assessment to the satisfaction of the City Public Works Department which tabularizes the expected occupancy and provides a water demand estimation, and needed fire flow calculation based on City of Hamilton Policy PW19096. – ***recommend clearance***

Storm Drainage Area Plan

3. (u) To submit a storm drainage area plan that clearly illustrates the extent of the property that will contribute surface water and ground water by direct connection to the existing systems. The plan must also illustrate where runoff from the remainder of the subject property if applicable, will be directed and/or collected. Appropriate runoff coefficients are to be assigned for the consideration and records of the Public Works Department. – ***recommend clearance***

SPECIAL CONDITIONS (PRIOR TO APPLICATION FOR ANY BUILDING/FOUNDATION PERMITS)

1. That the Owner submit a set of Shoring Plans prepared by a Licensed Professional Engineer showing the proposed shoring design and location of any existing municipal services and utilities within the municipal right-of-way as well as any existing adjacent privately-owned utilities, services and structures, all to the satisfaction of the City's Manager of Development Approvals. – ***outstanding***
2. That the Owner enters into with the City of Hamilton, a Shoring Agreement to address construction of the shoring system and further satisfy all requirements of

the City based on the design of the proposed shoring system, to the satisfaction of the City's Manager of Development Approvals. – **outstanding**

3. That the Owner submit a Ground Settlement Study by a Licensed Professional to identify any potential ground/soil settlement and anticipated effects on the surrounding lands and structures which may arise as a result of any temporary groundwater dewatering during construction. Ground settlement mitigation measures/strategies shall be discussed and identified in the study, to the satisfaction of the City's Manager of Development Approvals. – **recommend clearance**
4. That the Owner submit a Vibration Study/Analysis by a Licensed Professional to assess the impacts of vibration on the surrounding lands and structures as a result of construction of the shoring system as well as vibration monitoring and mitigation strategies, all to the satisfaction of the City's Manager of Development Approvals. – **outstanding**

SPECIAL CONDITIONS - PRIOR TO THE ISSUANCE OF ANY BUILDING PERMITS

1. That the Owner submit a Watermain Hydraulic Analysis, identifying the modelled system pressures at pressure district (PD2) level under various boundary conditions and demand scenarios if it cannot be demonstrated that there is adequate service for the proposed development within the existing municipal system based on hydrant tests, to the satisfaction of the City's Manager of Development Approvals. – **recommend clearance**
2. That the Owner submit a comprehensive Construction Management Plan addressing: Construction Details/Management, Traffic Management, and Public Communication, and pay the CMP Review Fee for the current year, to the satisfaction of the City's Manager of Development Approvals. – **outstanding**
3. That the Owner submits Geotechnical and Hydrogeological Briefs conducted by a qualified professional (P.Eng, P.Geo) that discusses soil/groundwater conditions to properly characterize potential dewatering needs. This brief should discuss seasonal high groundwater levels, excavation depths, dewatering calculations (on a L/s and L/day basis), and if dewatering is required, groundwater quality sampling to compare against Sewer Use Bylaw criteria, all to the satisfaction of the City's Manager of Development Approvals. – **outstanding**
4. The Owner enter into an External Works Agreement with the City of Hamilton for the construction of any/all proposed works external to the site including but not limited to laybys, curb, and sidewalks to the satisfaction of the Manager of Development Engineering Approvals. – **outstanding. The proposed sidewalks on the municipal right-of-way will require the Owner to enter into an External Works Agreement with the City of Hamilton. Detailed design and location of sidewalks to be reviewed and approved. Upon approval of**

Subject: (DA-18-193) 925 Main Street West & 150 Longwood
Road South, Hamilton
1st Development Engineering Comments

November 8, 2023
Page 8 of 8

proposed sidewalk, the Owner will be required to enter into an External Works Agreement with the City of Hamilton.

Please provide a detailed **response letter** addressing the above comments for the next engineering submission.

Should you have any questions please contact me at 905-546-2424 x4196 or by email at Aaron.Inrig@hamilton.ca

Aaron Inrig, P.Eng.
Development Coordinator
Development Engineering

cc. Zivko Panovski, P.Eng., Senior Engineer – Development Engineering

From: Sam Nguyen <sam@nextrans.ca>

Sent: Wednesday, September 27, 2024 3:32 PM

To: Transportation Planning <Transportation.Planning@hamilton.ca>

Subject: Terms of Reference for 925 Main Street West and 150 Longwood Road South, City of Hamilton

Importance: High

External Email: Use caution with links and attachments

Good afternoon,

We have been retained to undertake a TIS to support the proposed student resident development located at 925 Main Street West and 150 Longwood Road South, in the City of Hamilton. The following is a proposed scope of the TIS that takes into consideration the City's Traffic Impact Study Guidelines. It is a bit urgent; can you please help me expedited on this project? I am appreciated your help.

1. Study Area intersection:

- a. Main Street W / Longwood Road S (signalized);
- b. Main Street W / Bond Street S (unsignalized);
- c. Main Street W / Paisley Avenue S (signalized);
- d. Main Street W / Hwy 403 off-ramp and on-ramp (signalized);
- e. Main Street W / Existing Site Access
- f. Proposed site access

2. Horizon Year

- a. Analysis horizon year 2030 (*as per the City's TIS guidelines*)

3. Background Developments and Growth Rate

- a. Background corridor through traffic growth – 2% as per City typical requirements and to account for any background developments
- b. Please let us know if any proposed background developments in the area
<https://www.hamilton.ca/develop-property/planning-applications/development-applications-mapping>
- c. Please send us any available TIS for the background developments in the area

4. Trip Generation

- a. ITE Trip Generation Manual 11th Edition

5. Trip Distribution

- a. Extract 2016 TTS data based on the surrounding traffic zones or use existing trip distribution, where appropriate
- b. Use existing traffic turning movement counts for site traffic assignment, where appropriate

6. Future Total Assessment

- a. The following tasks will be conducted for the future total conditions:
 - Future Total Traffic Assessment for Auto Mode (using existing signal timing and optimize as necessary) *(use existing signal timings. If optimized timings are provided, they are to be provided in addition to the existing signal timings)*
 - Future non-auto mode assessment
 - Proposed development access assessment
 - Vehicular and Bicycle Parking Assessment
 - Internal Site Circulation and loading assessment

7. Transit, Active Transportation and TDM

- a. Conduct a review of the existing and proposed future transit network in the area. Based on these findings, appropriate recommendations will be provided to ensure adequate walking distances to/from the proposed development to transit stations/stops.
- b. Review the existing and proposed future active transportation network in the area. Based on these findings, Nextrans will identify missing gaps and additional interconnections and connections from the proposed development to adjacent land uses, the City facilities, as well as to transit stations/stops.
- c. A Transportation Demand Management (TDM) assessment will be undertaken to identify specific measures and programs to reduce single-occupant-vehicle trips to/from the proposed development. These TDM measures and programs may include but not limited to, Carpooling, Auto Share, Bike racks, Parking management strategies, etc. The TDM report will be completed and included as part of this Study for submission purposes submitted in accordance with the City requirements.
 - *Short-term bicycle parking within the property limits as per the City of Hamilton Zoning By-Law 05-200 for the proposed land use type;*
 - *Long-term bicycle parking that is secure and shielded from the elements as per the City of Hamilton Zoning By-Law 05-200 for the proposed land use type;*

8. Parking Justification Study if necessary

Trang Nguyen (Sam)
Transportation Analyst

o: 905-503-2563 ext. 207
e: sam@nextrans.ca
w: www.nextrans.ca

NexTrans Consulting Engineers

A Division of NextEng Consulting Group Inc.

520 Industrial Parkway South, Suite 201

Aurora ON L4G 6W8

Appendix B

Existing Traffic Data and Signal Timing Plans

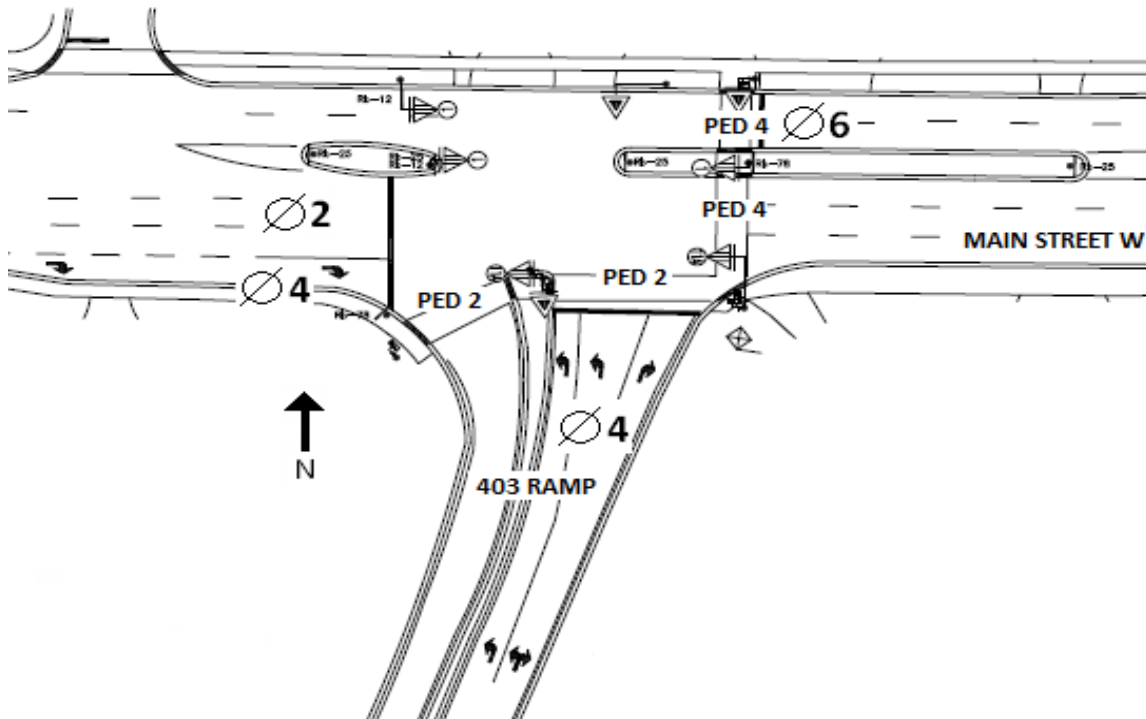
City of Hamilton - Traffic Traffic Signal Controller Timing Data

Intersection: **HWY 403 & Main**Controller Type: **3000E**

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Programmed By: JC

Installed By:

Date: 11-Nov-2016Date: **11-Nov-16** $\phi 1:$

φ2: Main - EB, South Xwalk

$\phi 3$:

φ4: HWY 403 - NB, East Xwalk & Main EB RTA

φ5:

φ6: Main - WB

$\phi 7$:

φ8: No Output

Flash Operation:

Red: Main

Red: HWY 403

PHASE RECALLS/MODES; CNA, INH MAX, PED OPTIONS, etc. (MM-3-1-2-2)

ONLY 1 PLAN PER UNIT

(X = ENABLE)																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE RECALLS	CNA 1		X		X		X		X								
	CNA 2																
	CNA 3																
	CNA 4																
	WRM		X		X		X		X								
	INH MAX																
	PED RECY																
	FL WALK																
	FDW->YEL																
	FDW->RED																
	COND PED																

PHASE TIMES (MM-3-1-3-PGDN, etc.)

USE 1 TO ALL 4 TIMING PLANS

		TP1															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE TIMES	Initial		30		20		30		20								
	Passage																
	Yellow		3.7		3.7		3.7		3.7								
	Red		2.5		2.0		2.5		2.0								
	Walk		12		12		12		12								
	Ped Clr		16		9		16		9								
	Max 1		60		50		60		50								
	Max 2																
	Mx 3 Lim																
	Mx 3 Adh																
	TBR																
	TTR																
	Min Gap																
	AI/Act																
	Max In																

		TP2															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE TIMES	Initial		20		10		20		10								
	Passage																
	Yellow		3.7		3.7		3.7		3.7								
	Red		2.5		2.0		2.5		2.0								
	Walk		12		12		12		12								
	Ped Clr		16		9		16		9								
	Max 1		75		55		75		55								
	Max 2																
	Mx 3 Lim																
	Mx 3 Adh																
	TBR																
	TTR																
	Min Gap																
	AI/Act																
	Max In																

		TP3															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE TIMES	Initial		20		10		20		10								
	Passage																
	Yellow		3.7		3.7		3.7		3.7								
	Red		2.5		2.0		2.5		2.0								
	Walk		12		12		12		12								
	Ped Clr		16		9		16		9								
	Max 1		75		50		75		50								
	Max 2																
	Mx 3 Lim																
	Mx 3 Adh																
	TBR																
	TTR																
	Min Gap																
	AI/Act																
	Max In																

		TP4															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE TIMES	Initial		20		10		20		10								
	Passage																
	Yellow		3.7		3.7		3.7		3.7								
	Red		2.5		2.0		2.5		2.0								
	Walk		12		12		12		12								
	Ped Clr		16		9		16		9								
	Max 1		50		50		50		50								
	Max 2																
	Mx 3 Lim																
	Mx 3 Adh																
	TBR																
	TTR																
	Min Gap																
	AI/Act																
	Max In																

DUAL ENTRY ENABLE:	Y	Y/N: Y=Enable Dual Entry. Note this is only one setting even though it appears on each controller screen.
--------------------	----------	---

PG1	PH/CALLS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DUAL ENTRY ASSIGN- MENTS	1																
	2						X										
	3																
	4								X								
	5																
	6		X														
	7																
	8				X												

SELECTION SOURCE (MM-3-2-2)

Entries determine how parameters get selected

Cycle Source:	0	0=TOD, 1=CL, 2=INT
Split Source:	0	0=TOD, 1=CL, 2=INT
Offset Source:	0	0=TOD, 1=CL, 2=INT

Free Source:	0	0=TOD, 1=CL, 2=INT
Flash Source:	0	0=TOD, 1=CL, 2=INT
Inter-TOD Revert:	255	0-255 SECS

TOD = Time of day control by internal clock, CL = Closed loop (comm), INT = Interconnect. Inter-TOD Revert is time allowed after failed interconnect before unit reverts to TOD (Time Base) control.

COORD BASIC OPTIONS (MM-3-2-3)

Reference to End (vs. begin) of Main St.:	N	Y/N: Y = Offset references to end of main st. green. N = Beginning of Main st. green.
Use % (vs. secs) for Phase Allocation:	N	Y/N: Y = Phase allocations loaded as percent of 100. N = Allocations in seconds.
Use % (vs. secs) for Offset Entry:	N	Y/N: Y = Offset loaded as percent of 100. N = Offset loaded in seconds.
Use Fixed (vs. floating) Force Offs:	Y	Y/N: Y = Force offs are fixed to cycle. N=Force offs like max times, begin with green.
Permissive Type:	1	0-2: 0=Yield, 1= Single, 2= Multiple. See Permissives note below

C/S TO TIMING PLAN (MM-3-2-9-6)**USE THIS CHART WHEN 4 SPLITS/CYCLE = Y**

	CYCLE	1	2	3	4	5	6
SPLIT TO TIME PLAN	SPLIT 1	1	2	3	4		
	SPLIT 2						
	SPLIT 3						
	SPLIT 4						

(0-4 = TIME PLAN IMPLEMENTED
WHEN SPLIT IN EFFECT)

CYCLES & OFFSETS (MM-3-2-4)**NOTE:** FIRST SPECIFY OFFSET SEEKING MODE AND 4 SPLITS CYCLE MODE (ENHANCED OPTIONS, OPERATING MODES)

CYCLE & OFFSETS	Cycle #	1/1	2/1	3/1	4/1		
	Length	90	120	110	80		
	Offset 1	55	50	25	37		Secs
	Offset 2						
	Offset 3						
	Offset 4						
	Offset 5						
	Max Dwell	32	32	32			

COORD PHASES (MM-3-2-5)

	CYCLE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
COORD PHASES	1-1		X				X										
	2-1		X				X										
	3-1		X				X										
	4-1		X				X										

HWY 403 / Main
PHASE ALLOCATION (MM-3-2-6)

CONTROLLER DATA

8/27/2021

ENTRY IN:	Secs	% or Secs: Not a controller entry--for reference only. Controller entry is under
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PHASE ALLO- CATION	PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	C1 S1		53		37		53		37								
	C1 S2																
	C1 S3																
	C1 S4																
	C2 S1		70		50		70		50								
	C2 S2																
	C2 S3																
	C2 S4																
	C3 S1		69		41		69		41								
	C3 S2																
	C3 S3																
	C3 S4																
	C4 S1		41		39		41		39								
	C4 S2																
	C4 S3																
	C4 S4																

OFFSET SEEKING MODE (MM-3-2-7)

Offset Seeking Mode:	0
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Mode

- 0 Add only, cycle times 20% slow only to get in sync
- 1 Dwell, cycle timer stops at cycle 0 up to max dwell time to get in step
- 2 Short Route, cycle times 20% fast or slow--whichever gets in step fastest

DAY PLANS (MM-3-3-1-#)

	HH	MM	CIRCUIT PLAN	C	O	S	CKT	ON/OFF
1	00	00					11(FRE)	OFF
	00	00		4	1	1		
	06	00		1	1	1		
	23	00		4	1	1		
2	00	00					11(FRE)	OFF
	00	00		4	1	1		
	06	00		2	1	1		
	10	00		1	1	1		
	14	30		3	1	1		
	18	30		1	1	1		
	23	00		4	1	1		

WEEK PLANS (MM-3-3-3)

Plan	SUN	MON	TUE	WED	THU	FRI	SAT
1	1	2	2	2	2	2	1
2							
3							
4							
5							

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date: Tuesday, April 5, 2022



Hamilton

Prepared Date: Friday, September 6, 2024

Completed By: AK

Checked By: BL

Location:

Main Street @ Longwood Road South

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	Time Period (s)		
							MAX = Green only, SPLITS = G+A+R		
			WALK	PED CLR			AM SPLITS	OFF SPLITS	PM SPLITS
1									
2	Main Street - EB (South X-Walk)	30	10	25	3.3	3.4	60	45	53
3									
4	Longwood Road South - NB (East X-Walk)	10	10	19	3.3	3	60	45	57
5									
6	Main Street - WB (North X-Walk)	30	10	14	3.3	3.4	60	45	53
7	Longwood Road South - NB Prot LT	10			3	1.5	36	24	30
8	Longwood Road South - SB	10			3.3	3	24	21	27

Notes/Remarks

Signal operation type - Fixed Time with NBLT Actuated

Time (Weekdays)	Operation	Peak	Cycle (s)	Offset (s)
6:00 - 10:00	COORD	AM	120	70
10:00-14:30, 18:30-6:00	COORD	OFF	90	65
14:30 - 18:30	COORD	PM	110	45

CITY OF HAMILTON									
Traffic Signal Timing Plan									
Database Date:		Wednesday, March 23, 2022			Prepared Date:		Friday, September 6, 2024		
					Completed By:		AK		
					Checked By:		BL		
Location:				Main Street @ Paisley Avenue South					
Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	Time Period (s) MAX = Green only, SPLITS = G+A+R		
			WALK	PED CLR			AM SPLITS	OFF SPLITS	PM SPLITS
1									
2	Main Street - EB	30			3.3	2.4	87	57	77
3									
4	Paisley Avenue South - East X-Walk	10	12	16	3	2	33	33	33
5									
6	Main Street - WB	30			3.3	2.4	87	57	77
7									
8	Paisley Avenue South - Timings Only	10	12	16	3	2	33	33	33
Notes/Remarks Signal operation type - Semi Actuated									
			Time (Weekdays)		Operation	Peak	Cycle (s)	Offset (s)	
			6:00 - 10:00		COORD	AM	120	41	
			10:00-14:30, 18:30-6:00		COORD	OFF	90	60	
			14:30 - 18:30		COORD	PM	110	13	



Turning Movement Count (1 . MAIN ST WEST & HIGHWAY 403 OFF-RAMP AND ON-RAMP)

Start Time	Westbound MAIN ST WEST					Northbound HIGHWAY 403 OFF-RAMP AND ON-RAMP					Eastbound MAIN ST WEST					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	141	0	0	1	141	13	111	0	2	124	114	148	0	0	262	527	
07:15:00	148	0	0	6	148	15	125	0	3	140	89	211	0	0	300	588	
07:30:00	177	0	0	1	177	19	134	0	7	153	78	244	0	0	322	652	
07:45:00	216	0	0	6	216	20	203	0	10	223	83	266	0	0	349	788	2555
08:00:00	254	0	0	16	254	23	237	0	15	260	100	291	0	0	391	905	2933
08:15:00	257	0	0	8	257	21	213	0	35	234	88	308	0	0	396	887	3232
08:30:00	191	0	0	7	191	23	228	0	33	251	90	306	0	0	396	838	3418
08:45:00	234	0	0	1	234	31	220	0	26	251	90	283	0	0	373	858	3488
09:00:00	241	0	0	3	241	31	202	0	10	233	58	238	0	0	296	770	3353
09:15:00	240	0	0	4	240	23	182	0	2	205	68	273	0	0	341	786	3252
09:30:00	202	0	0	1	202	18	154	0	12	172	70	216	0	0	286	660	3074
09:45:00	215	0	0	4	215	21	144	0	5	165	70	227	0	0	297	677	2893
BREAK																	
16:00:00	214	0	0	1	214	19	135	0	54	154	152	339	0	0	491	859	
16:15:00	222	0	0	3	222	35	141	0	24	176	187	374	0	0	561	959	
16:30:00	207	0	0	7	207	19	127	0	17	146	200	423	0	0	623	976	
16:45:00	258	0	0	2	258	24	105	0	5	129	180	388	0	0	568	955	3749
17:00:00	251	0	0	4	251	24	130	0	21	154	157	361	0	0	518	923	3813
17:15:00	223	0	0	5	223	15	114	0	17	129	161	407	0	0	568	920	3774
17:30:00	228	0	0	3	228	17	126	0	18	143	148	356	0	0	504	875	3673
17:45:00	202	0	0	5	202	16	124	0	9	140	124	282	0	0	406	748	3466
18:00:00	210	0	0	0	210	21	123	0	8	144	101	286	0	0	387	741	3284
18:15:00	200	0	0	5	200	15	156	0	12	171	111	300	0	0	411	782	3146
18:30:00	219	0	0	1	219	18	141	0	7	159	127	264	0	0	391	769	3040
18:45:00	167	0	0	3	167	12	142	0	4	154	120	269	0	0	389	710	3002
Grand Total	5117	0	0	97	5117	493	3717	0	356	4210	2766	7060	0	0	9826	19153	-
Approach%	100%	0%	0%		-	11.7%	88.3%	0%		-	28.1%	71.9%	0%		-	-	-
Totals %	26.7%	0%	0%		26.7%	2.6%	19.4%	0%		22%	14.4%	36.9%	0%		51.3%	-	-
Heavy	184	0	0		-	43	145	0		-	103	201	0		-	-	-
Heavy %	3.6%	0%	0%		-	8.7%	3.9%	0%		-	3.7%	2.8%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.37 °C)

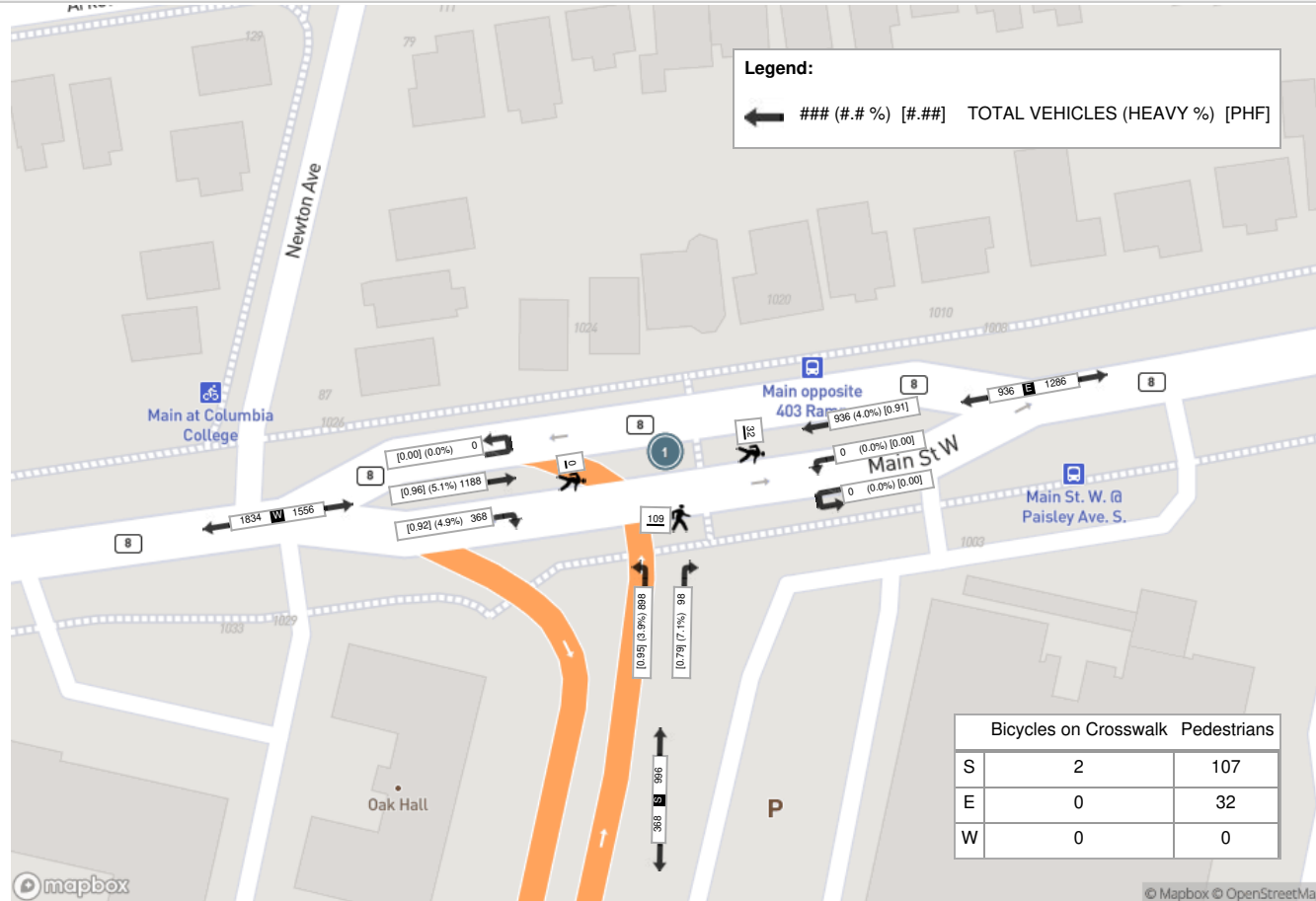
Start Time	Westbound MAIN ST WEST					Northbound HIGHWAY 403 OFF-RAMP AND ON-RAMP					Eastbound MAIN ST WEST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:00:00	254	0	0	16	254	23	237	0	15	260	100	291	0	0	391	905
08:15:00	257	0	0	8	257	21	213	0	35	234	88	308	0	0	396	887
08:30:00	191	0	0	7	191	23	228	0	33	251	90	306	0	0	396	838
08:45:00	234	0	0	1	234	31	220	0	26	251	90	283	0	0	373	858
Grand Total	936	0	0	32	936	98	898	0	109	996	368	1188	0	0	1556	3488
Approach%	100%	0%	0%		-	9.8%	90.2%	0%		-	23.7%	76.3%	0%		-	-
Totals %	26.8%	0%	0%		26.8%	2.8%	25.7%	0%		28.6%	10.6%	34.1%	0%		44.6%	-
PHF	0.91	0	0		0.91	0.79	0.95	0		0.96	0.92	0.96	0		0.98	-
Heavy	37	0	0		37	7	35	0		42	18	61	0		79	-
Heavy %	4%	0%	0%		4%	7.1%	3.9%	0%		4.2%	4.9%	5.1%	0%		5.1%	-
Lights	899	0	0		899	91	863	0		954	350	1127	0		1477	-
Lights %	96%	0%	0%		96%	92.9%	96.1%	0%		95.8%	95.1%	94.9%	0%		94.9%	-
Single-Unit Trucks	8	0	0		8	3	12	0		15	2	21	0		23	-
Single-Unit Trucks %	0.9%	0%	0%		0.9%	3.1%	1.3%	0%		1.5%	0.5%	1.8%	0%		1.5%	-
Buses	28	0	0		28	4	18	0		22	13	35	0		48	-
Buses %	3%	0%	0%		3%	4.1%	2%	0%		2.2%	3.5%	2.9%	0%		3.1%	-
Articulated Trucks	1	0	0		1	0	5	0		5	3	5	0		8	-
Articulated Trucks %	0.1%	0%	0%		0.1%	0%	0.6%	0%		0.5%	0.8%	0.4%	0%		0.5%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	32	-	-	-	-	107	-	-	-	-	0	-	-
Pedestrians%	-	-	-	22.7%	-	-	-	-	75.9%	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	1.4%	-	-	-	-	0%	-	-



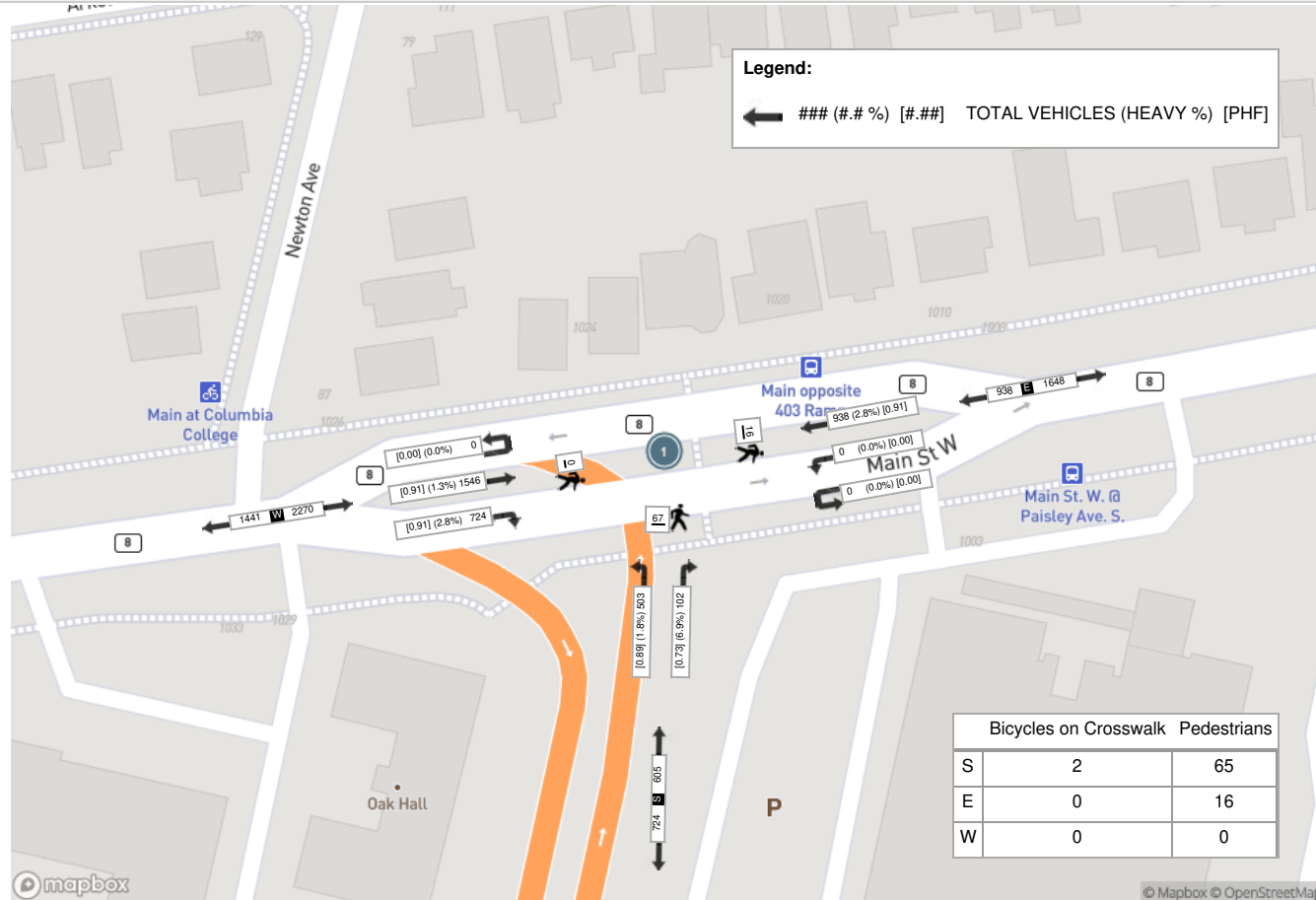
Peak Hour: 04:15 PM - 05:15 PM Weather: Light Shower Snow (0.03 °C)

Start Time	Westbound MAIN ST WEST					Northbound HIGHWAY 403 OFF-RAMP AND ON-RAMP					Eastbound MAIN ST WEST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:15:00	222	0	0	3	222	35	141	0	24	176	187	374	0	0	561	959
16:30:00	207	0	0	7	207	19	127	0	17	146	200	423	0	0	623	976
16:45:00	258	0	0	2	258	24	105	0	5	129	180	388	0	0	568	955
17:00:00	251	0	0	4	251	24	130	0	21	154	157	361	0	0	518	923
Grand Total	938	0	0	16	938	102	503	0	67	605	724	1546	0	0	2270	3813
Approach%	100%	0%	0%		-	16.9%	83.1%	0%		-	31.9%	68.1%	0%		-	-
Totals %	24.6%	0%	0%		24.6%	2.7%	13.2%	0%		15.9%	19%	40.5%	0%		59.5%	-
PHF	0.91	0	0		0.91	0.73	0.89	0		0.86	0.91	0.91	0		0.91	-
Heavy	26	0	0		26	7	9	0		16	20	20	0		40	-
Heavy %	2.8%	0%	0%		2.8%	6.9%	1.8%	0%		2.6%	2.8%	1.3%	0%		1.8%	-
Lights	912	0	0		912	95	494	0		589	704	1526	0		2230	-
Lights %	97.2%	0%	0%		97.2%	93.1%	98.2%	0%		97.4%	97.2%	98.7%	0%		98.2%	-
Single-Unit Trucks	7	0	0		7	1	3	0		4	9	4	0		13	-
Single-Unit Trucks %	0.7%	0%	0%		0.7%	1%	0.6%	0%		0.7%	1.2%	0.3%	0%		0.6%	-
Buses	19	0	0		19	6	6	0		12	10	16	0		26	-
Buses %	2%	0%	0%		2%	5.9%	1.2%	0%		2%	1.4%	1%	0%		1.1%	-
Articulated Trucks	0	0	0		0	0	0	0		0	1	0	0		1	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.1%	0%	0%		0%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	16	-	-	-	-	65	-	-	-	-	0	-	-
Pedestrians%	-	-	-	19.3%	-	-	-	-	78.3%	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	2.4%	-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.37 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Shower Snow (0.03 °C)





Turning Movement Count (3 . MAIN STREET WEST & BOND STREET SOUTH)

Start Time	Southbound BOND ST S						Westbound MAIN ST W						Northbound SOUTH DRIVEWAY						Eastbound MAIN ST W						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	0	0	2	3	0	151	0	0	0	151	0	0	0	0	6	0	0	175	0	0	0	175	329		
07:15:00	3	0	0	0	1	3	1	142	0	0	0	143	0	0	0	0	3	0	0	231	1	0	0	232	378		
07:30:00	3	0	1	0	3	4	3	181	0	0	0	184	0	0	0	0	7	0	0	277	6	0	0	283	471		
07:45:00	4	0	0	0	4	4	1	226	0	0	0	227	0	0	0	0	12	0	0	261	17	0	0	278	509	1687	
08:00:00	6	0	0	0	10	6	5	271	0	0	0	276	0	0	0	0	7	0	0	325	7	0	0	332	614	1972	
08:15:00	4	0	0	0	9	4	2	260	0	0	0	262	0	0	0	0	6	0	0	329	6	0	0	335	601	2195	
08:30:00	3	0	3	0	4	6	7	206	0	0	0	213	0	0	0	0	7	0	0	349	3	0	0	352	571	2295	
08:45:00	4	0	2	0	3	6	4	240	0	0	0	244	0	0	0	0	3	0	0	296	5	0	0	301	551	2337	
09:00:00	7	0	0	0	3	7	1	245	0	0	0	246	0	0	0	0	3	0	0	278	8	0	0	286	539	2262	
09:15:00	6	0	2	0	3	8	3	236	0	0	1	239	0	0	0	0	6	0	0	293	3	0	0	296	543	2204	
09:30:00	3	0	3	0	4	6	0	201	0	0	0	201	0	0	0	0	6	0	0	248	1	0	0	249	456	2089	
09:45:00	5	0	2	0	2	7	1	211	0	1	0	213	0	0	0	0	3	0	0	237	3	0	0	240	460	1998	
BREAK																											
16:00:00	6	0	1	0	2	7	3	220	0	0	0	223	0	0	0	0	10	0	0	372	4	0	0	376	606		
16:15:00	4	0	1	0	5	5	2	233	0	0	0	235	0	0	0	0	8	0	0	414	3	0	0	417	657		
16:30:00	3	0	3	0	6	6	4	209	0	0	0	213	0	0	0	0	3	0	0	462	1	2	0	465	684		
16:45:00	3	0	0	0	4	3	1	262	0	0	0	263	0	0	0	0	4	0	0	405	2	0	0	407	673	2620	
17:00:00	6	0	1	0	4	7	0	236	0	0	0	236	0	0	0	0	10	0	0	398	5	0	0	403	646	2660	
17:15:00	4	0	1	0	8	5	4	217	0	0	0	221	0	0	0	0	4	0	0	415	3	0	0	418	644	2647	
17:30:00	5	0	1	0	3	6	2	237	0	0	0	239	0	0	0	0	4	0	0	366	7	0	0	373	618	2581	
17:45:00	2	0	2	0	3	4	1	207	0	0	0	208	0	0	0	0	0	0	0	296	6	0	0	302	514	2422	
18:00:00	2	0	0	0	4	2	1	204	0	0	0	205	0	0	0	0	3	0	0	297	9	0	0	306	513	2289	
18:15:00	3	0	2	0	1	5	1	192	0	0	0	193	0	0	0	0	5	0	0	322	2	0	0	324	522	2167	
18:30:00	4	0	2	0	1	6	2	209	0	0	0	211	0	0	0	0	4	0	0	273	5	0	0	278	495	2044	
18:45:00	6	0	0	0	1	6	1	159	0	0	0	160	0	0	0	0	2	0	0	292	1	0	0	293	459	1989	
Grand Total	99	0	27	0	90	126	50	5155	0	1	1	5206	0	0	0	0	126	0	0	7611	108	2	0	7721	13053	-	
Approach%	78.6%	0%	21.4%	0%	-	-	1%	99%	0%	0%	-	-	0%	0%	0%	0%	-	-	0%	98.6%	1.4%	0%	-	-	-	-	
Totals %	0.8%	0%	0.2%	0%	-	1%	0.4%	39.5%	0%	0%	-	39.9%	0%	0%	0%	0%	-	0%	0%	58.3%	0.8%	0%	-	59.2%	-	-	
Heavy	2	0	0	0	-	-	1	204	0	0	-	-	0	0	0	0	-	-	0	271	1	0	-	-	-	-	
Heavy %	2%	0%	0%	0%	-	-	2%	4%	0%	0%	-	-	0%	0%	0%	0%	-	0%	3.6%	0.9%	0%	-	-	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.37 °C)

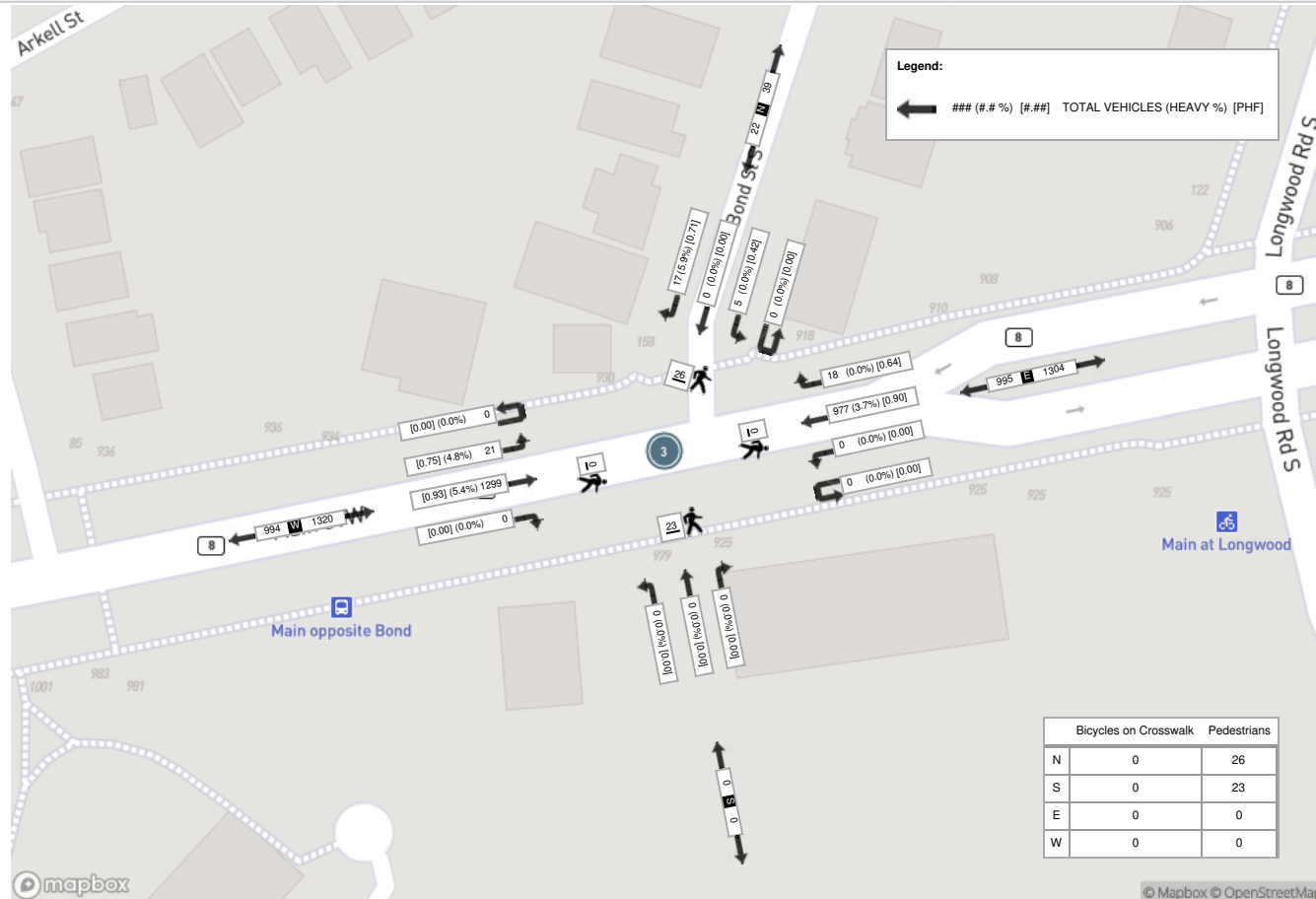
Start Time	Southbound BOND ST S						Westbound MAIN ST W						Northbound SOUTH DRIVEWAY						Eastbound MAIN ST W						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	6	0	0	0	10	6	5	271	0	0	0	276	0	0	0	0	7	0	0	325	7	0	0	332	614
08:15:00	4	0	0	0	9	4	2	260	0	0	0	262	0	0	0	0	6	0	0	329	6	0	0	335	601
08:30:00	3	0	3	0	4	6	7	206	0	0	0	213	0	0	0	0	7	0	0	349	3	0	0	352	571
08:45:00	4	0	2	0	3	6	4	240	0	0	0	244	0	0	0	0	3	0	0	296	5	0	0	301	551
Grand Total	17	0	5	0	26	22	18	977	0	0	0	995	0	0	0	0	23	0	0	1299	21	0	0	1320	2337
Approach%	77.3%	0%	22.7%	0%		-	1.8%	98.2%	0%	0%		-	0%	0%	0%	0%		-	0%	98.4%	1.6%	0%		-	-
Totals %	0.7%	0%	0.2%	0%		0.9%	0.8%	41.8%	0%	0%		42.6%	0%	0%	0%	0%		0%	0%	55.6%	0.9%	0%		56.5%	-
PHF	0.71	0	0.42	0		0.92	0.64	0.9	0	0		0.9	0	0	0	0		0	0	0.93	0.75	0		0.94	-
Heavy	1	0	0	0		1	0	36	0	0		36	0	0	0	0		0	0	70	1	0		71	-
Heavy %	5.9%	0%	0%	0%		4.5%	0%	3.7%	0%	0%		3.6%	0%	0%	0%	0%		0%	0%	5.4%	4.8%	0%		5.4%	-
Lights	16	0	5	0		21	18	941	0	0		959	0	0	0	0		0	0	1229	20	0		1249	-
Lights %	94.1%	0%	100%	0%		95.5%	100%	96.3%	0%	0%		96.4%	0%	0%	0%	0%		0%	0%	94.6%	95.2%	0%		94.6%	-
Single-Unit Trucks	1	0	0	0		1	0	7	0	0		7	0	0	0	0		0	0	21	0	0		21	-
Single-Unit Trucks %	5.9%	0%	0%	0%		4.5%	0%	0.7%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	1.6%	0%	0%		1.6%	-
Buses	0	0	0	0		0	0	28	0	0		28	0	0	0	0		0	0	44	1	0		45	-
Buses %	0%	0%	0%	0%		0%	0%	2.9%	0%	0%		2.8%	0%	0%	0%	0%		0%	0%	3.4%	4.8%	0%		3.4%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	5	0	0		5	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	-
Pedestrians	-	-	-	-	26	-	-	-	-	-	0	-	-	-	-	-	23	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	53.1%	-	-	-	-	-	0%	-	-	-	-	-	46.9%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



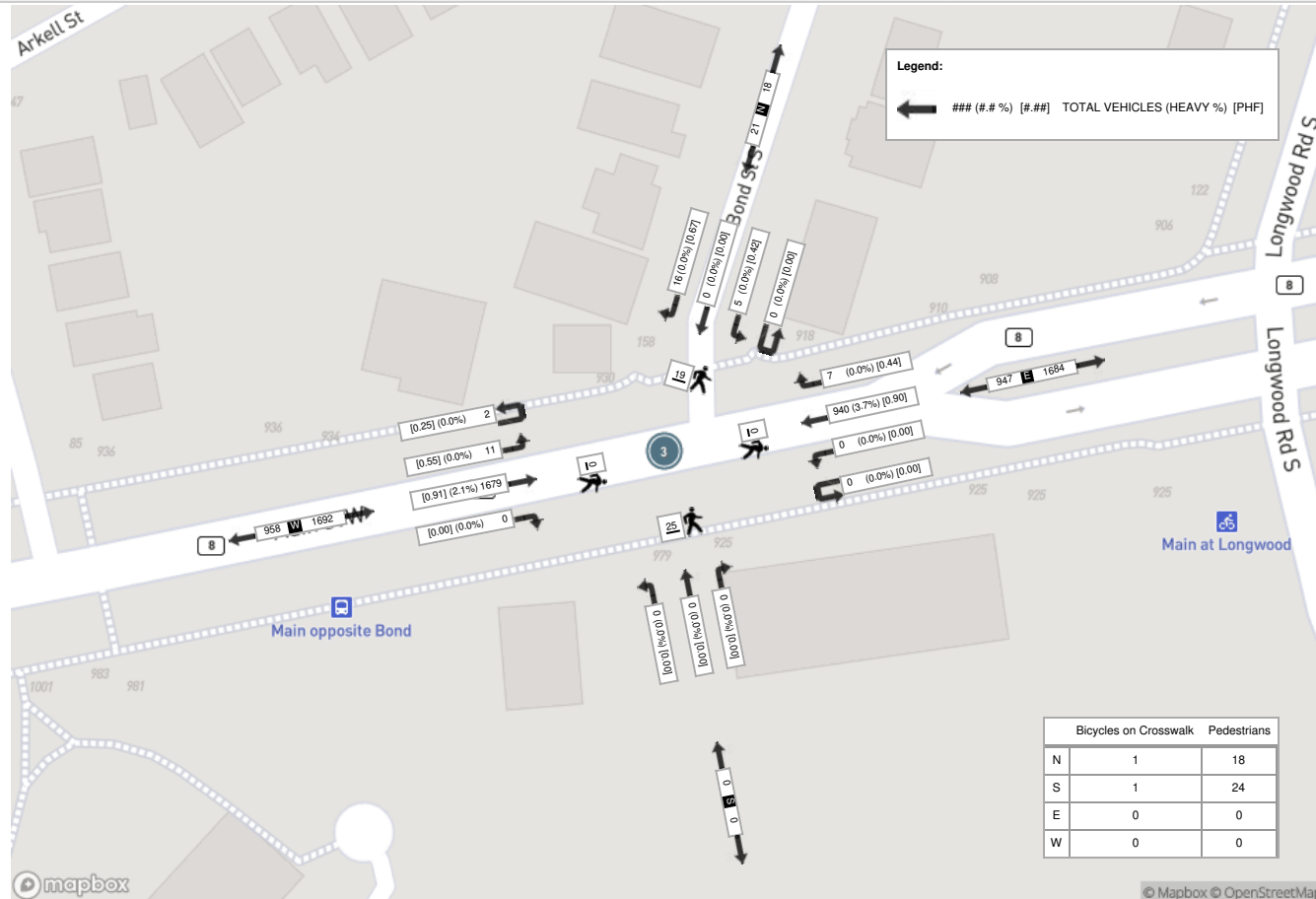
Peak Hour: 04:15 PM - 05:15 PM Weather: Light Shower Snow (0.03 °C)

Start Time	Southbound BOND ST S						Westbound MAIN ST W						Northbound SOUTH DRIVEWAY						Eastbound MAIN ST W						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	4	0	1	0	5	5	2	233	0	0	0	235	0	0	0	0	8	0	0	414	3	0	0	417	657
16:30:00	3	0	3	0	6	6	4	209	0	0	0	213	0	0	0	0	3	0	0	462	1	2	0	465	684
16:45:00	3	0	0	0	4	3	1	262	0	0	0	263	0	0	0	0	4	0	0	405	2	0	0	407	673
17:00:00	6	0	1	0	4	7	0	236	0	0	0	236	0	0	0	0	10	0	0	398	5	0	0	403	646
Grand Total	16	0	5	0	19	21	7	940	0	0	0	947	0	0	0	0	25	0	0	1679	11	2	0	1692	2660
Approach%	76.2%	0%	23.8%	0%		-	0.7%	99.3%	0%	0%		-	0%	0%	0%	0%		-	0%	99.2%	0.7%	0.1%		-	-
Totals %	0.6%	0%	0.2%	0%		0.8%	0.3%	35.3%	0%	0%		35.6%	0%	0%	0%	0%		0%	0%	63.1%	0.4%	0.1%		63.6%	-
PHF	0.67	0	0.42	0		0.75	0.44	0.9	0	0		0.9	0	0	0	0		0	0	0.91	0.55	0.25		0.91	-
Heavy	0	0	0	0		0	0	35	0	0		35	0	0	0	0		0	0	35	0	0		35	-
Heavy %	0%	0%	0%	0%		0%	0%	3.7%	0%	0%		3.7%	0%	0%	0%	0%		0%	0%	2.1%	0%	0%		2.1%	-
Lights	16	0	5	0		21	7	905	0	0		912	0	0	0	0		0	0	1644	11	2		1657	-
Lights %	100%	0%	100%	0%		100%	100%	96.3%	0%	0%		96.3%	0%	0%	0%	0%		0%	0%	97.9%	100%	100%		97.9%	-
Single-Unit Trucks	0	0	0	0		0	0	8	0	0		8	0	0	0	0		0	0	5	0	0		5	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	-
Buses	0	0	0	0		0	0	27	0	0		27	0	0	0	0		0	0	30	0	0		30	-
Buses %	0%	0%	0%	0%		0%	0%	2.9%	0%	0%		2.9%	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.8%	-
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	-	-	-	-	18	-	-	-	-	-	0	-	-	-	-	-	24	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	40.9%	-	-	-	-	-	0%	-	-	-	-	-	54.5%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	2.3%	-	-	-	-	-	0%	-	-	-	-	-	2.3%	-	-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.37 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Shower Snow (0.03 °C)





Turning Movement Count (4 . MAIN STREET WEST & LONGWOOD ROAD SOUTH)

Start Time	Southbound LONGWOOD RD S						Westbound MAIN ST W						Northbound LONGWOOD RD S						Eastbound MAIN ST W						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	4	25	4	0	1	33	4	69	0	0	0	73	10	23	72	0	7	105	48	122	3	0	0	173	384	
07:15:00	0	25	4	0	3	29	5	55	0	0	0	60	12	30	92	0	2	134	72	144	13	0	0	229	452	
07:30:00	2	38	6	0	5	46	5	81	0	0	0	86	27	42	99	0	6	168	89	165	22	0	0	276	576	
07:45:00	9	47	8	0	4	64	22	93	0	0	0	115	30	63	130	0	10	223	63	174	33	0	0	270	672	2084
08:00:00	13	52	12	0	13	77	10	105	0	0	0	115	23	66	155	0	12	244	99	191	24	0	0	314	750	2450
08:15:00	7	52	7	0	6	66	7	97	0	0	0	104	14	51	157	0	6	222	100	228	11	0	0	339	731	2729
08:30:00	6	41	5	0	4	52	4	89	0	0	0	93	9	56	119	0	7	184	112	211	6	0	0	329	658	2811
08:45:00	7	34	8	0	5	49	3	76	0	0	0	79	24	61	163	0	3	248	91	209	21	0	0	321	697	2836
09:00:00	6	59	6	0	4	71	6	83	0	0	0	89	21	55	145	0	3	221	91	197	16	0	0	304	685	2771
09:15:00	9	62	9	0	3	80	2	80	0	0	0	82	14	45	146	0	7	205	99	136	20	0	0	255	622	2662
09:30:00	5	50	11	0	3	66	1	95	0	0	0	96	17	24	111	0	6	152	101	132	11	0	0	244	558	2562
09:45:00	8	37	9	0	2	54	2	56	0	0	0	58	15	44	130	0	3	189	81	145	11	0	0	237	538	2403
BREAK																										
16:00:00	1	88	15	0	2	104	1	105	0	0	0	106	17	38	111	0	9	166	184	173	6	0	0	363	739	
16:15:00	8	77	11	0	3	96	0	114	0	0	0	114	13	36	117	0	9	166	176	218	15	0	0	409	785	
16:30:00	8	82	8	0	8	98	1	98	5	0	0	104	24	36	108	0	3	168	210	224	7	0	0	441	811	
16:45:00	7	62	14	0	5	83	0	111	0	0	0	111	31	41	140	0	5	212	194	205	13	0	0	412	818	3153
17:00:00	5	50	11	0	7	66	3	112	0	0	0	115	18	31	112	0	10	161	199	191	14	0	0	404	746	3160
17:15:00	6	72	6	0	8	84	3	105	0	0	0	108	10	32	116	0	3	158	196	212	13	0	0	421	771	3146
17:30:00	9	57	9	0	1	75	1	117	0	0	0	118	18	40	112	0	5	170	151	196	14	0	0	361	724	3059
17:45:00	6	38	8	0	4	52	1	101	0	0	0	102	13	35	100	0	2	148	116	160	17	0	0	293	595	2836
18:00:00	7	49	6	0	8	62	5	81	0	0	0	86	18	36	104	0	3	158	115	167	17	0	0	299	605	2695
18:15:00	11	44	14	0	1	69	1	81	0	0	0	82	20	39	107	0	5	166	125	186	17	1	0	329	646	2570
18:30:00	9	63	6	0	2	78	3	73	0	0	0	76	20	41	133	0	4	194	114	153	8	0	0	275	623	2469
18:45:00	4	32	11	0	6	47	1	50	0	0	0	51	20	32	99	0	2	151	107	168	11	0	0	286	535	2409
Grand Total	157	1236	208	0	108	1601	91	2127	5	0	0	2223	438	997	2878	0	132	4313	2933	4307	343	1	0	7584	15721	-
Approach%	9.8%	77.2%	13%	0%		-	4.1%	95.7%	0.2%	0%		-	10.2%	23.1%	66.7%	0%		-	38.7%	56.8%	4.5%	0%		-	-	-
Totals %	1%	7.9%	1.3%	0%		10.2%	0.6%	13.5%	0%	0%		14.1%	2.8%	6.3%	18.3%	0%		27.4%	18.7%	27.4%	2.2%	0%		48.2%	-	-
Heavy	2	40	89	0		-	2	143	0	0		-	9	24	67	0		-	63	200	8	0		-	-	-
Heavy %	1.3%	3.2%	42.8%	0%		-	2.2%	6.7%	0%	0%		-	2.1%	2.4%	2.3%	0%		-	2.1%	4.6%	2.3%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.37 °C)

Start Time	Southbound LONGWOOD RD S						Westbound MAIN ST W						Northbound LONGWOOD RD S						Eastbound MAIN ST W						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	13	52	12	0	13	77	10	105	0	0	0	115	23	66	155	0	12	244	99	191	24	0	0	314	750
08:15:00	7	52	7	0	6	66	7	97	0	0	0	104	14	51	157	0	6	222	100	228	11	0	0	339	731
08:30:00	6	41	5	0	4	52	4	89	0	0	0	93	9	56	119	0	7	184	112	211	6	0	0	329	658
08:45:00	7	34	8	0	5	49	3	76	0	0	0	79	24	61	163	0	3	248	91	209	21	0	0	321	697
Grand Total	33	179	32	0	28	244	24	367	0	0	0	391	70	234	594	0	28	898	402	839	62	0	0	1303	2836
Approach%	13.5%	73.4%	13.1%	0%		-	6.1%	93.9%	0%	0%		-	7.8%	26.1%	66.1%	0%		-	30.9%	64.4%	4.8%	0%		-	-
Totals %	1.2%	6.3%	1.1%	0%		8.6%	0.8%	12.9%	0%	0%		13.8%	2.5%	8.3%	20.9%	0%		31.7%	14.2%	29.6%	2.2%	0%		45.9%	-
PHF	0.63	0.86	0.67	0		0.79	0.6	0.87	0	0		0.85	0.73	0.89	0.91	0		0.91	0.9	0.92	0.65	0		0.96	-
Heavy	1	10	16	0		27	0	27	0	0		27	4	4	8	0		16	12	58	1	0		71	-
Heavy %	3%	5.6%	50%	0%		11.1%	0%	7.4%	0%	0%		6.9%	5.7%	1.7%	1.3%	0%		1.8%	3%	6.9%	1.6%	0%		5.4%	-
Lights	32	169	16	0		217	24	340	0	0		364	66	229	586	0		881	390	781	61	0		1232	-
Lights %	97%	94.4%	50%	0%		88.9%	100%	92.6%	0%	0%		93.1%	94.3%	97.9%	98.7%	0%		98.1%	97%	93.1%	98.4%	0%		94.6%	-
Single-Unit Trucks	0	0	0	0		0	0	3	0	0		3	2	0	3	0		5	5	16	1	0		22	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	2.9%	0%	0.5%	0%		0.6%	1.2%	1.9%	1.6%	0%		1.7%	-
Buses	1	10	16	0		27	0	23	0	0		23	1	4	5	0		10	4	40	0	0		44	-
Buses %	3%	5.6%	50%	0%		11.1%	0%	6.3%	0%	0%		5.9%	1.4%	1.7%	0.8%	0%		1.1%	1%	4.8%	0%	0%		3.4%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	1	0	0	0		1	3	2	0	0		5	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	1.4%	0%	0%	0%		0.1%	0.7%	0.2%	0%	0%		0.4%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.1%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	28	-	-	-	-	-	0	-	-	-	-	-	27	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	50%	-	-	-	-	-	0%	-	-	-	-	-	48.2%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	1.8%	-	-	-	-	-	0%	-	-



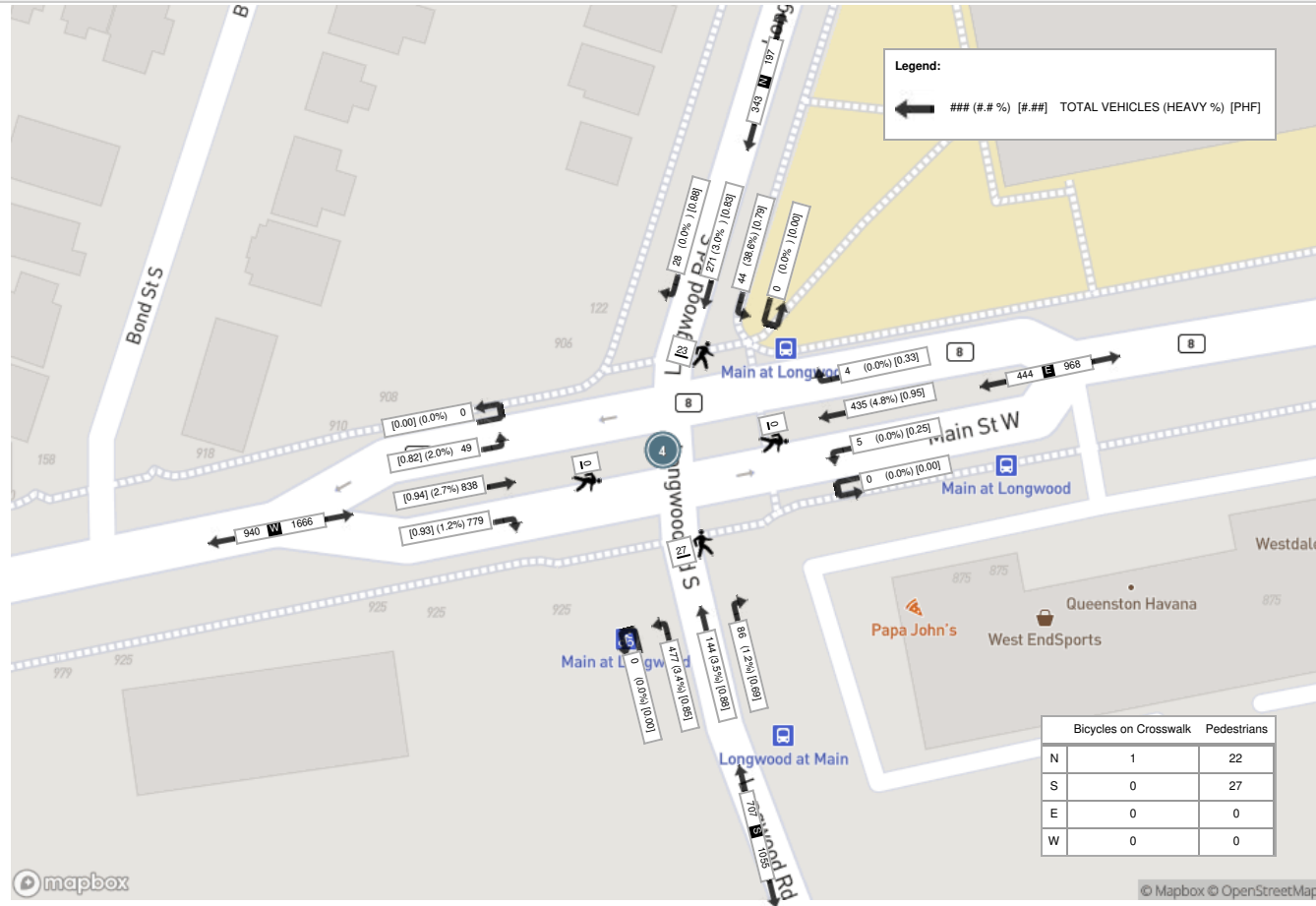
Peak Hour: 04:15 PM - 05:15 PM Weather: Light Shower Snow (0.03 °C)

Start Time	Southbound LONGWOOD RD S						Westbound MAIN ST W						Northbound LONGWOOD RD S						Eastbound MAIN ST W						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	8	77	11	0	3	96	0	114	0	0	0	114	13	36	117	0	9	166	176	218	15	0	0	409	785
16:30:00	8	82	8	0	8	98	1	98	5	0	0	104	24	36	108	0	3	168	210	224	7	0	0	441	811
16:45:00	7	62	14	0	5	83	0	111	0	0	0	111	31	41	140	0	5	212	194	205	13	0	0	412	818
17:00:00	5	50	11	0	7	66	3	112	0	0	0	115	18	31	112	0	10	161	199	191	14	0	0	404	746
Grand Total	28	271	44	0	23	343	4	435	5	0	0	444	86	144	477	0	27	707	779	838	49	0	0	1666	3160
Approach%	8.2%	79%	12.8%	0%		-	0.9%	98%	1.1%	0%		-	12.2%	20.4%	67.5%	0%		-	46.8%	50.3%	2.9%	0%		-	-
Totals %	0.9%	8.6%	1.4%	0%		10.9%	0.1%	13.8%	0.2%	0%		14.1%	2.7%	4.6%	15.1%	0%		22.4%	24.7%	26.5%	1.6%	0%		52.7%	-
PHF	0.88	0.83	0.79	0		0.88	0.33	0.95	0.25	0		0.97	0.69	0.88	0.85	0		0.83	0.93	0.94	0.82	0		0.94	-
Heavy	0	8	17	0		25	0	21	0	0		21	1	5	16	0		22	9	23	1	0		33	-
Heavy %	0%	3%	38.6%	0%		7.3%	0%	4.8%	0%	0%		4.7%	1.2%	3.5%	3.4%	0%		3.1%	1.2%	2.7%	2%	0%		2%	-
Lights	28	263	27	0		318	4	414	5	0		423	85	139	461	0		685	770	815	48	0		1633	-
Lights %	100%	97%	61.4%	0%		92.7%	100%	95.2%	100%	0%		95.3%	98.8%	96.5%	96.6%	0%		96.9%	98.8%	97.3%	98%	0%		98%	-
Single-Unit Trucks	0	4	0	0		4	0	5	0	0		5	0	1	2	0		3	0	4	1	0		5	-
Single-Unit Trucks %	0%	1.5%	0%	0%		1.2%	0%	1.1%	0%	0%		1.1%	0%	0.7%	0.4%	0%		0.4%	0%	0.5%	2%	0%		0.3%	-
Buses	0	3	17	0		20	0	16	0	0		16	1	4	14	0		19	9	19	0	0		28	-
Buses %	0%	1.1%	38.6%	0%		5.8%	0%	3.7%	0%	0%		3.6%	1.2%	2.8%	2.9%	0%		2.7%	1.2%	2.3%	0%	0%		1.7%	-
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0.4%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	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%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	22	-	-	-	-	-	0	-	-	-	-	-	27	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	44%	-	-	-	-	-	0%	-	-	-	-	-	54%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	2%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.37 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Shower Snow (0.03 °C)





Turning Movement Count (2 . MAIN STREET WEST & PAISLEY AVENUE SOUTH)

Start Time	Southbound PAISLEY AVE S					Westbound MAIN ST W					Eastbound MAIN ST W					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	4	0	3	4	0	156	0	1	156	165	4	0	0	169	329	
07:15:00	0	2	0	1	2	1	143	0	4	144	230	1	0	0	231	377	
07:30:00	2	1	0	1	3	2	178	0	3	180	273	2	0	0	275	458	
07:45:00	2	3	0	3	5	4	231	0	7	235	287	5	0	0	292	532	1696
08:00:00	5	4	0	8	9	5	276	0	18	281	323	5	0	1	328	618	1985
08:15:00	7	1	0	2	8	2	253	0	14	255	339	6	0	0	345	608	2216
08:30:00	7	4	0	3	11	3	212	0	6	215	329	0	0	0	329	555	2313
08:45:00	2	2	0	1	4	5	231	0	14	236	319	11	0	0	330	570	2351
09:00:00	9	5	0	10	14	2	256	0	40	258	281	16	0	0	297	569	2302
09:15:00	9	2	0	4	11	1	238	0	14	239	295	7	0	0	302	552	2246
09:30:00	2	2	0	3	4	2	205	0	17	207	237	1	0	0	238	449	2140
09:45:00	2	4	0	3	6	1	209	0	6	210	247	6	0	0	253	469	2039
BREAK																	
16:00:00	6	6	0	4	12	3	219	0	20	222	364	5	0	0	369	603	
16:15:00	2	1	0	7	3	3	227	0	20	230	415	7	0	0	422	655	
16:30:00	4	2	0	3	6	6	223	1	12	230	448	7	0	0	455	691	
16:45:00	4	4	0	1	8	6	249	0	4	255	404	9	0	1	413	676	2625
17:00:00	7	6	0	4	13	1	251	0	6	252	392	5	0	0	397	662	2684
17:15:00	7	5	0	4	12	4	210	0	12	214	421	5	0	0	426	652	2681
17:30:00	2	2	0	2	4	4	232	0	13	236	361	5	0	0	366	606	2596
17:45:00	6	5	0	2	11	4	222	0	10	226	297	10	0	0	307	544	2464
18:00:00	7	9	0	3	16	5	187	0	7	192	300	6	0	0	306	514	2316
18:15:00	10	7	0	2	17	5	193	0	8	198	311	1	0	0	312	527	2191
18:30:00	13	5	0	2	18	4	210	2	9	216	276	9	0	0	285	519	2104
18:45:00	3	7	0	7	10	3	154	0	17	157	283	2	0	0	285	452	2012
Grand Total	118	93	0	83	211	76	5165	3	282	5244	7597	135	0	2	7732	13187	-
Approach%	55.9%	44.1%	0%	-	-	1.4%	98.5%	0.1%	-	-	98.3%	1.7%	0%	-	-	-	-
Totals %	0.9%	0.7%	0%	-	1.6%	0.6%	39.2%	0%	-	39.8%	57.6%	1%	0%	-	58.6%	-	-
Heavy	1	0	0	-	-	2	211	0	-	-	269	1	0	-	-	-	-
Heavy %	0.8%	0%	0%	-	-	2.6%	4.1%	0%	-	-	3.5%	0.7%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.37 °C)

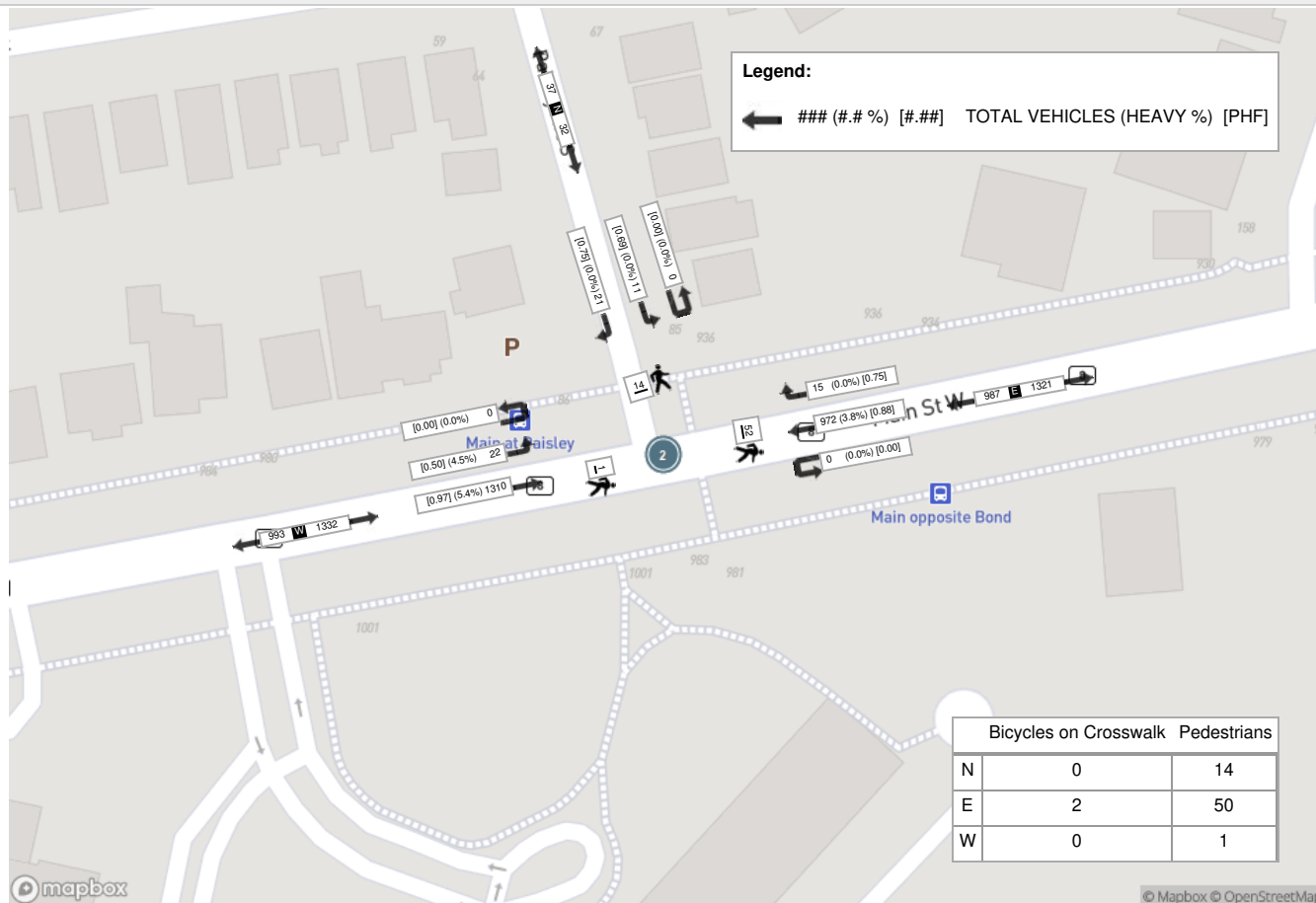
Start Time	Southbound PAISLEY AVE S					Westbound MAIN ST W					Eastbound MAIN ST W					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	5	4	0	8	9	5	276	0	18	281	323	5	0	1	328	618
08:15:00	7	1	0	2	8	2	253	0	14	255	339	6	0	0	345	608
08:30:00	7	4	0	3	11	3	212	0	6	215	329	0	0	0	329	555
08:45:00	2	2	0	1	4	5	231	0	14	236	319	11	0	0	330	570
Grand Total	21	11	0	14	32	15	972	0	52	987	1310	22	0	1	1332	2351
Approach%	65.6%	34.4%	0%		-	1.5%	98.5%	0%		-	98.3%	1.7%	0%		-	-
Totals %	0.9%	0.5%	0%		1.4%	0.6%	41.3%	0%		42%	55.7%	0.9%	0%		56.7%	-
PHF	0.75	0.69	0		0.73	0.75	0.88	0		0.88	0.97	0.5	0		0.97	-
Heavy	0	0	0		0	0	37	0		37	71	1	0		72	-
Heavy %	0%	0%	0%		0%	0%	3.8%	0%		3.7%	5.4%	4.5%	0%		5.4%	-
Lights	21	11	0		32	15	935	0		950	1239	21	0		1260	-
Lights %	100%	100%	0%		100%	100%	96.2%	0%		96.3%	94.6%	95.5%	0%		94.6%	-
Single-Unit Trucks	0	0	0		0	0	8	0		8	21	1	0		22	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0.8%	0%		0.8%	1.6%	4.5%	0%		1.7%	-
Buses	0	0	0		0	0	28	0		28	45	0	0		45	-
Buses %	0%	0%	0%		0%	0%	2.9%	0%		2.8%	3.4%	0%	0%		3.4%	-
Articulated Trucks	0	0	0		0	0	1	0		1	5	0	0		5	-
Articulated Trucks %	0%	0%	0%		0%	0%	0.1%	0%		0.1%	0.4%	0%	0%		0.4%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	14	-	-	-	-	50	-	-	-	-	1	-	-
Pedestrians%	-	-	-	20.9%	-	-	-	-	74.6%	-	-	-	-	1.5%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	3%	-	-	-	-	0%	-	-



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Shower Snow (0.03 °C)

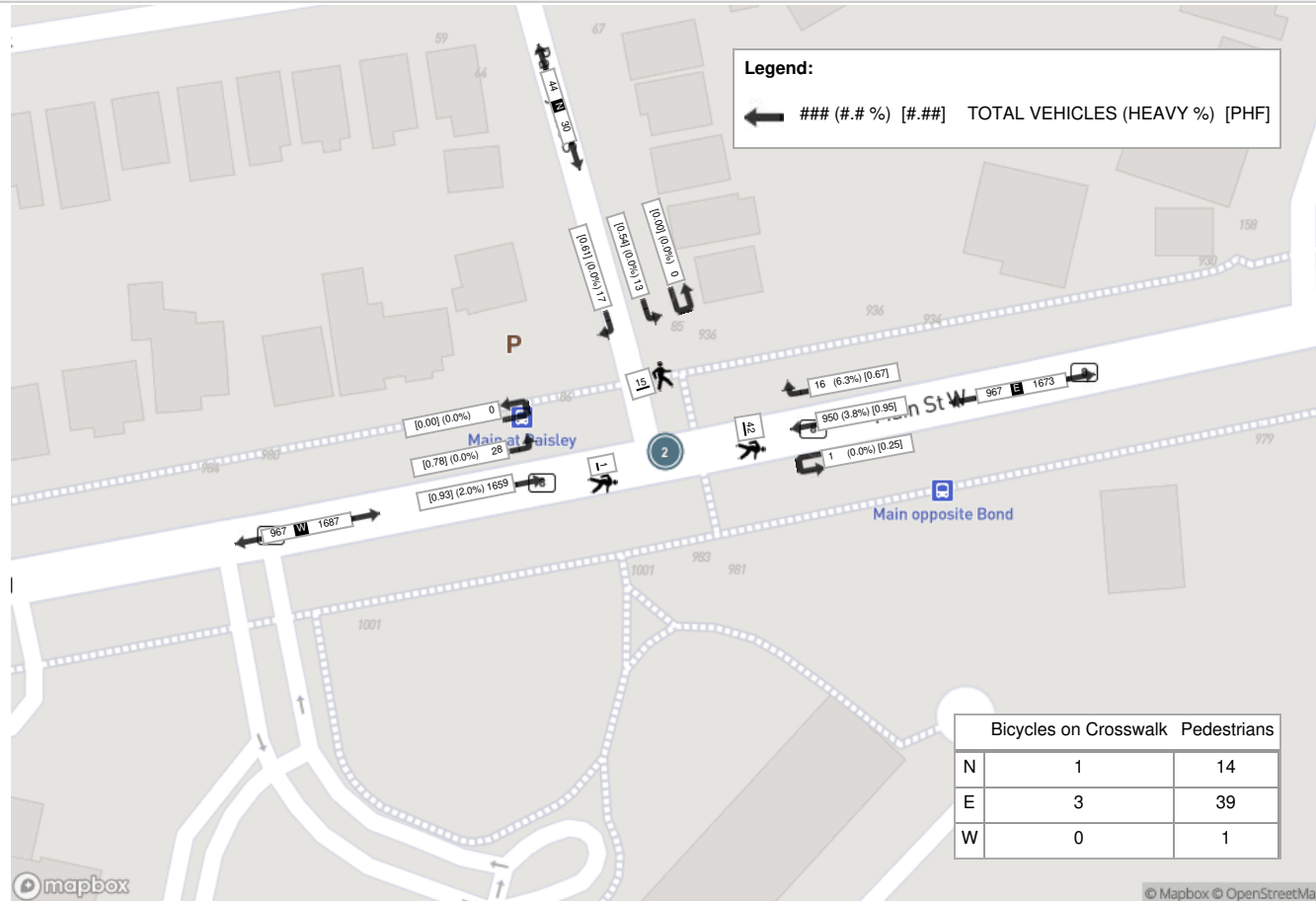
Start Time	Southbound PAISLEY AVE S					Westbound MAIN ST W					Eastbound MAIN ST W					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	2	1	0	7	3	3	227	0	20	230	415	7	0	0	422	655
16:30:00	4	2	0	3	6	6	223	1	12	230	448	7	0	0	455	691
16:45:00	4	4	0	1	8	6	249	0	4	255	404	9	0	1	413	676
17:00:00	7	6	0	4	13	1	251	0	6	252	392	5	0	0	397	662
Grand Total	17	13	0	15	30	16	950	1	42	967	1659	28	0	1	1687	2684
Approach%	56.7%	43.3%	0%		-	1.7%	98.2%	0.1%		-	98.3%	1.7%	0%		-	-
Totals %	0.6%	0.5%	0%		1.1%	0.6%	35.4%	0%		36%	61.8%	1%	0%		62.9%	-
PHF	0.61	0.54	0		0.58	0.67	0.95	0.25		0.95	0.93	0.78	0		0.93	-
Heavy	0	0	0		0	1	36	0		37	33	0	0		33	-
Heavy %	0%	0%	0%		0%	6.3%	3.8%	0%		3.8%	2%	0%	0%		2%	-
Lights	17	13	0		30	15	914	1		930	1626	27	0		1653	-
Lights %	100%	100%	0%		100%	93.8%	96.2%	100%		96.2%	98%	96.4%	0%		98%	-
Single-Unit Trucks	0	0	0		0	1	7	0		8	5	0	0		5	-
Single-Unit Trucks %	0%	0%	0%		0%	6.3%	0.7%	0%		0.8%	0.3%	0%	0%		0.3%	-
Buses	0	0	0		0	0	29	0		29	28	0	0		28	-
Buses %	0%	0%	0%		0%	0%	3.1%	0%		3%	1.7%	0%	0%		1.7%	-
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	0	0		0	0	0	0		0	0	1	0		1	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	3.6%	0%		0.1%	-
Pedestrians	-	-	-	14	-	-	-	-	39	-	-	-	-	1	-	-
Pedestrians%	-	-	-	24.1%	-	-	-	-	67.2%	-	-	-	-	1.7%	-	-
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	3	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	1.7%	-	-	-	-	5.2%	-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (0.37 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	14
E	2	50
W	0	1

Peak Hour: 04:15 PM - 05:15 PM Weather: Light Shower Snow (0.03 °C)



Appendix C

Existing Traffic Level of Service Calculations

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	62	839	402	0	367	24	594	234	70	32	179	33
Future Volume (vph)	62	839	402	0	367	24	594	234	70	32	179	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4572	0	0	3305	0	3429	1762	0	0	3123	0
Flt Permitted	0.502						0.950				0.849	
Satd. Flow (perm)	890	4572	0	0	3305	0	3429	1762	0	0	2668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		130			7			16			12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.3			142.9			232.0			149.2	
Travel Time (s)		6.7			10.3			16.7			10.7	
Confl. Peds. (#/hr)	28		28	28		28						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	7%	3%	0%	7%	0%	1%	2%	6%	50%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	1293	0	0	407	0	619	317	0	0	253	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	60.0	60.0			60.0		36.0	60.0		24.0	24.0	
Total Split (%)	50.0%	50.0%			50.0%		30.0%	50.0%		20.0%	20.0%	
Maximum Green (s)	53.3	53.3			53.3		31.5	53.7		17.7	17.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	60.6	60.6			60.6		26.5	46.4			15.4	
Actuated g/C Ratio	0.51	0.51			0.51		0.22	0.39			0.13	
v/c Ratio	0.14	0.55			0.24		0.82	0.46			0.72	
Control Delay (s/veh)	2.3	1.2			18.1		53.6	27.3			59.4	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	2.3	1.2			18.1		53.6	27.3			59.4	
LOS	A	A			B		D	C			E	
Approach Delay (s/veh)		1.2			18.1			44.7			59.4	
Approach LOS		A			B			D			E	
Queue Length 50th (m)	0.8	1.5			29.1		72.2	52.2			30.2	
Queue Length 95th (m)	1.6	1.6			44.3		88.1	70.4			44.4	
Internal Link Dist (m)		69.3			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	449	2371			1671		900	797			405	
Starvation Cap Reductn	0	0			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.14	0.55			0.24		0.69	0.40			0.62	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 70 (58%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 22.3

Intersection LOS: C

Intersection Capacity Utilization 92.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Longwood Road South & Main Street West

#3 	#3 
Ø2 (R)	Ø4
60 s	60 s
#3 	#3 
Ø6	Ø7
60 s	36 s
	#3 
	Ø8
	24 s

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	1188	368	0	936	898	98
Future Volume (vph)	1188	368	0	936	898	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	4885	1521	0	3433	3330	1493
Flt Permitted					0.950	
Satd. Flow (perm)	4885	1166	0	3433	3330	1431
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		376				32
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		109	109			32
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	4%	4%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1212	376	0	955	916	100
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	38.0	38.0		42.0	40.0	38.0
Total Split (%)	31.7%	31.7%		35.0%	33.3%	31.7%
Maximum Green (s)	32.3	32.3		35.8	34.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	32.7	32.7		35.5	34.2	32.7
Actuated g/C Ratio	0.27	0.27		0.30	0.29	0.27
v/c Ratio	0.91	0.64		0.94	0.97	0.24
Control Delay (s/veh)	53.4	9.0		60.0	64.8	25.0
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	53.4	9.0		60.0	64.8	25.0
LOS	D	A		E	E	C
Approach Delay (s/veh)	42.9			60.0	60.9	
Approach LOS	D			E	E	
Queue Length 50th (m)	105.9	0.0		127.3	113.1	13.0
Queue Length 95th (m)	#133.5	28.9		#162.6	#154.8	28.3
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1331	591		1024	951	413
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.91	0.64		0.93	0.96	0.24

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 50 (42%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay (s/veh): 52.6

Intersection LOS: D

Intersection Capacity Utilization 61.4%

ICU Level of Service B

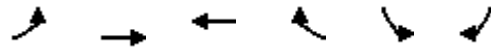
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

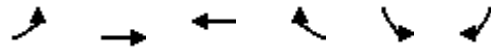
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
→	←	↖
Ø2 (R)	Ø6	Ø4
38 s	42 s	40 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	1310	972	15	11	21
Future Volume (vph)	22	1310	972	15	11	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1700	4885	3426	0	1681	0
Flt Permitted	0.278				0.984	
Satd. Flow (perm)	495	4885	3426	0	1644	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3		22	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	14			14	52	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	1351	1017	0	33	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	87.0	87.0	87.0		33.0	
Total Split (%)	72.5%	72.5%	72.5%		27.5%	
Maximum Green (s)	81.3	81.3	81.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	107.6	107.6	107.6		10.0	
Actuated g/C Ratio	0.90	0.90	0.90		0.08	
v/c Ratio	0.05	0.31	0.33		0.21	
Control Delay (s/veh)	0.2	1.7	1.0		29.9	
Queue Delay	0.0	0.0	0.2		0.0	
Total Delay (s/veh)	0.2	1.7	1.2		29.9	
LOS	A	A	A		C	
Approach Delay (s/veh)		1.7	1.2		29.9	
Approach LOS		A	A		C	
Queue Length 50th (m)	0.1	1.1	6.7		2.4	
Queue Length 95th (m)	m0.0	m3.5	7.7		12.5	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	443	4379	3071		409	
Starvation Cap Reductn	0	0	1028		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.05	0.31	0.50		0.08	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 41 (34%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.33

Intersection Signal Delay (s/veh): 1.9

Intersection LOS: A

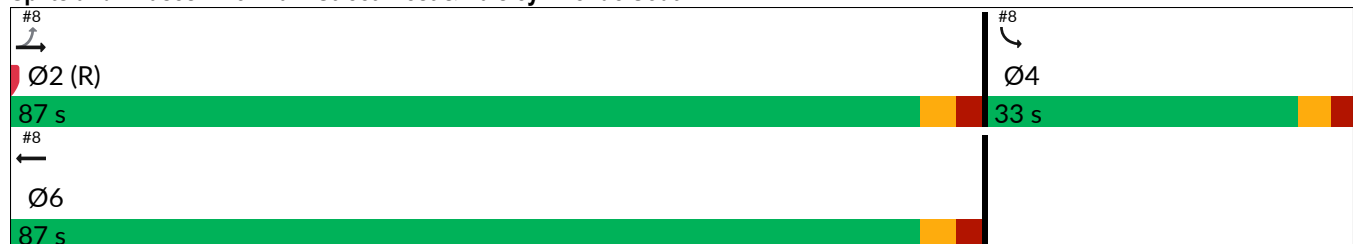
Intersection Capacity Utilization 45.1%

ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		  	 		 		
Traffic Volume (veh/h)	21	1299	977	18	5	17	
Future Volume (Veh/h)	21	1299	977	18	5	17	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Hourly flow rate (vph)	22	1382	1039	19	5	18	
Pedestrians					26		
Lane Width (m)					3.5		
Walking Speed (m/s)					1.1		
Percent Blockage					2		
Right turn flare (veh)							
Median type		None	None				
Median storage veh							
Upstream signal (m)		94	93				
pX, platoon unblocked	0.94				0.96	0.94	
vC, conflicting volume	1084				1579	555	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	963				1232	400	
tC, single (s)	4.2				6.8	7.0	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.4	
p0 queue free %	97				97	97	
cM capacity (veh/h)	636				157	541	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	22	461	461	461	693	365	23
Volume Left	22	0	0	0	0	0	5
Volume Right	0	0	0	0	0	19	18
cSH	636	1700	1700	1700	1700	1700	353
Volume to Capacity	0.03	0.27	0.27	0.27	0.41	0.21	0.07
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	0.0	1.6
Control Delay (s/veh)	10.9	0.0	0.0	0.0	0.0	0.0	15.9
Lane LOS	B						C
Approach Delay (s/veh)	0.2				0.0		15.9
Approach LOS							C
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			37.6%		ICU Level of Service		A
Analysis Period (min)			15				

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	838	779	0	440	4	477	144	86	44	271	28
Future Volume (vph)	49	838	779	0	440	4	477	144	86	44	271	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4608	0	0	3396	0	3362	1724	0	0	3266	0
Flt Permitted	0.470						0.950				0.865	
Satd. Flow (perm)	843	4608	0	0	3396	0	3362	1724	0	0	2842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		264			1			37			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.3			142.9			232.0			149.2	
Travel Time (s)		6.7			10.3			16.7			10.7	
Confl. Peds. (#/hr)	23		27	27		23						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	1%	0%	5%	0%	3%	4%	1%	39%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	1667	0	0	458	0	492	237	0	0	353	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	53.0	53.0			53.0		30.0	57.0		27.0	27.0	
Total Split (%)	48.2%	48.2%			48.2%		27.3%	51.8%		24.5%	24.5%	
Maximum Green (s)	46.3	46.3			46.3		25.5	50.7		20.7	20.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	53.6	53.6			53.6		21.0	43.4			17.9	
Actuated g/C Ratio	0.49	0.49			0.49		0.19	0.39			0.16	
v/c Ratio	0.12	0.90dr			0.28		0.77	0.34			0.75	
Control Delay (s/veh)	16.7	19.0			18.4		50.3	19.7			53.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	16.7	19.1			18.4		50.3	19.7			53.6	
LOS	B	B			B		D	B			D	
Approach Delay (s/veh)		19.0			18.4			40.3			53.6	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	3.9	87.2			31.2		53.1	29.7			38.4	
Queue Length 95th (m)	13.6	118.4			47.8		67.9	43.9			53.4	
Internal Link Dist (m)		69.3			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	410	2379			1654		779	814			540	
Starvation Cap Reductn	0	43			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.12	0.71			0.28		0.63	0.29			0.65	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 45 (41%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay (s/veh): 27.4

Intersection LOS: C

Intersection Capacity Utilization 80.1%

ICU Level of Service D

Analysis Period (min) 15

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Longwood Road South & Main Street West

#3 	#3 
Ø2 (R)	Ø4
53 s	57 s
#3 	#3 
Ø6	Ø7
53 s	30 s
	#3 
	Ø8
	27 s

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	1546	724	0	938	503	102
Future Volume (vph)	1546	724	0	938	503	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	5079	1551	0	3466	3395	1493
Flt Permitted					0.950	
Satd. Flow (perm)	5079	1328	0	3466	3395	1462
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		577				59
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		67	67			16
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	0%	3%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1578	739	0	957	513	104
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	38.0	38.0		42.0	40.0	38.0
Total Split (%)	31.7%	31.7%		35.0%	33.3%	31.7%
Maximum Green (s)	32.3	32.3		35.8	34.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	43.5	43.5		35.4	23.5	43.5
Actuated g/C Ratio	0.36	0.36		0.30	0.20	0.36
v/c Ratio	0.86	0.87		0.94	0.77	0.18
Control Delay (s/veh)	41.8	20.9		57.8	53.8	14.5
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	41.8	20.9		57.8	53.8	14.5
LOS	D	C		E	D	B
Approach Delay (s/veh)	35.1			57.8	47.2	
Approach LOS	D			E	D	
Queue Length 50th (m)	126.5	39.3		117.7	60.4	7.4
Queue Length 95th (m)	#171.2	#138.6		#157.1	74.8	21.8
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1841	849		1034	970	567
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.86	0.87		0.93	0.53	0.18

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 50 (42%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay (s/veh): 42.6

Intersection LOS: D

Intersection Capacity Utilization 62.7%

ICU Level of Service B

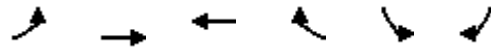
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

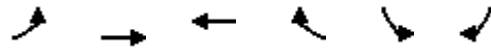
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
←	←	↖
Ø2 (R)	Ø6	Ø4
38 s	42 s	40 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	1659	950	16	13	17
Future Volume (vph)	28	1659	950	16	13	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1785	5029	3420	0	1699	0
Flt Permitted	0.278				0.979	
Satd. Flow (perm)	519	5029	3420	0	1662	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3		18	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	15			15	42	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	1746	1017	0	32	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	77.0	77.0	77.0		33.0	
Total Split (%)	70.0%	70.0%	70.0%		30.0%	
Maximum Green (s)	71.3	71.3	71.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	97.6	97.6	97.6		10.0	
Actuated g/C Ratio	0.89	0.89	0.89		0.09	
v/c Ratio	0.06	0.39	0.34		0.19	
Control Delay (s/veh)	2.3	2.3	6.5		30.0	
Queue Delay	0.0	0.1	0.1		0.0	
Total Delay (s/veh)	2.3	2.4	6.6		30.0	
LOS	A	A	A		C	
Approach Delay (s/veh)		2.4	6.6		30.0	
Approach LOS		A	A		C	
Queue Length 50th (m)	1.0	30.9	60.4		2.8	
Queue Length 95th (m)	2.6	36.0	70.8		12.1	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	460	4461	3034		445	
Starvation Cap Reductn	0	1270	719		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.06	0.55	0.44		0.07	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 41 (37%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.39

Intersection Signal Delay (s/veh): 4.2

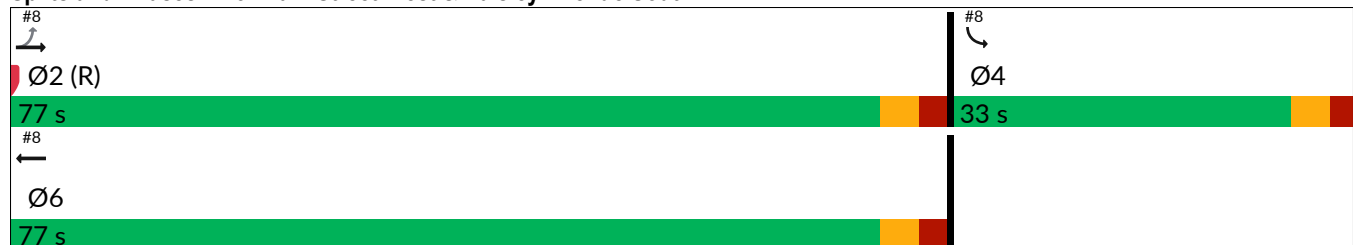
Intersection LOS: A

Intersection Capacity Utilization 49.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		  	 		 		
Traffic Volume (veh/h)	13	1679	940	7	5	16	
Future Volume (Veh/h)	13	1679	940	7	5	16	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly flow rate (vph)	14	1845	1033	8	5	18	
Pedestrians					25		
Lane Width (m)					3.5		
Walking Speed (m/s)					1.1		
Percent Blockage					2		
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (m)		94	93				
pX, platoon unblocked	0.93				0.96	0.93	
vC, conflicting volume	1066				1705	546	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	911				1171	349	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	98				97	97	
cM capacity (veh/h)	684				173	591	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	14	615	615	615	689	352	23
Volume Left	14	0	0	0	0	0	5
Volume Right	0	0	0	0	0	8	18
cSH	684	1700	1700	1700	1700	1700	387
Volume to Capacity	0.02	0.36	0.36	0.36	0.41	0.21	0.06
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	0.0	1.4
Control Delay (s/veh)	10.4	0.0	0.0	0.0	0.0	0.0	14.9
Lane LOS	B						B
Approach Delay (s/veh)	0.1				0.0		14.9
Approach LOS							B
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			42.4%		ICU Level of Service		A
Analysis Period (min)			15				

Appendix D

Background Development Trip Generation

1107 Main Street West

ITE Land Use	Magnitude (units)	Parameters	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise) LUC 222 Not Close to Rail Transit - General Urban/Suburban	265	Trip Rates AM - $T = 0.22(X) + 18.85$ PM - $T = 0.26(X) + 23.12$	0.1	0.19	0.29	0.2	0.15	0.35
		Total Auto Trips	26	51	77	52	40	92

906 Main Street West

ITE Land Use	Magnitude (units)	Parameters	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Mid-Rise Residential with Ground-Floor Commercial (Center City Core)	25	Trip Rates Average Rates	0.76	0.76	1.52	0.94	0.93	1.87
		Total Auto Trips	19	19	38	24	23	47

270 Longwood Road South

ITE Land Use	Magnitude (units)	Parameters	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Hotel LUC (310) General Urban/Suburban	162	Trip Rates AM - $T = 0.50(X) - 7.45$ PM - $T = 0.74(X) - 27.89$	0.26	0.20	0.46	0.29	0.28	0.57
		Total Auto Trips	41	33	74	47	45	92

Appendix E

Future Background Level of Service Calculations

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	62	961	459	0	413	24	594	262	70	32	210	33
Future Volume (vph)	62	961	459	0	413	24	594	262	70	32	210	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4577	0	0	3309	0	3429	1768	0	0	3147	0
Flt Permitted	0.468						0.950				0.853	
Satd. Flow (perm)	832	4577	0	0	3309	0	3429	1768	0	0	2701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			6			15			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		61.0			142.9			232.0			149.2	
Travel Time (s)		4.4			10.3			16.7			10.7	
Confl. Peds. (#/hr)	28		28	28		28						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	7%	3%	0%	7%	0%	1%	2%	6%	50%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	1479	0	0	455	0	619	346	0	0	286	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	60.0	60.0			60.0		36.0	60.0		24.0	24.0	
Total Split (%)	50.0%	50.0%			50.0%		30.0%	50.0%		20.0%	20.0%	
Maximum Green (s)	53.3	53.3			53.3		31.5	53.7		17.7	17.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	59.5	59.5			59.5		26.5	47.5				16.4
Actuated g/C Ratio	0.50	0.50			0.50		0.22	0.40				0.14
v/c Ratio	0.16	0.63			0.28		0.82	0.49				0.76
Control Delay (s/veh)	2.7	2.1			19.0		53.6	27.6				61.1
Queue Delay	0.0	0.1			0.0		0.0	0.0				0.0
Total Delay (s/veh)	2.7	2.1			19.0		53.6	27.6				61.1
LOS	A	A			B		D	C				E
Approach Delay (s/veh)		2.2			19.0			44.2				61.1
Approach LOS		A			B			D				E
Queue Length 50th (m)	0.8	2.1			34.0		72.2	57.4				34.6
Queue Length 95th (m)	1.8	2.7			49.6		88.1	78.3				50.3
Internal Link Dist (m)		37.0			118.9			208.0				125.2
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	412	2335			1644		900	799				414
Starvation Cap Reductn	0	87			0		0	0				0
Spillback Cap Reductn	0	0			0		0	0				0
Storage Cap Reductn	0	0			0		0	0				0
Reduced v/c Ratio	0.16	0.66			0.28		0.69	0.43				0.69

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 70 (58%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 22.2

Intersection LOS: C

Intersection Capacity Utilization 94.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Longwood Road South & Main Street West

#3 	#3 
Ø2 (R)	Ø4
60 s	60 s
#3 	#3 
Ø6	Ø7
60 s	36 s
	#3 
	Ø8
	24 s

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↘	↑
Traffic Volume (vph)	1297	391	0	1017	953	134
Future Volume (vph)	1297	391	0	1017	953	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	4885	1521	0	3433	3330	1493
Flt Permitted					0.950	
Satd. Flow (perm)	4885	1166	0	3433	3330	1431
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		371				41
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		109	109			32
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	4%	4%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1323	399	0	1038	972	137
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	38.0	38.0		42.0	40.0	38.0
Total Split (%)	31.7%	31.7%		35.0%	33.3%	31.7%
Maximum Green (s)	32.3	32.3		35.8	34.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	32.3	32.3		35.8	34.3	32.3
Actuated g/C Ratio	0.27	0.27		0.30	0.29	0.27
v/c Ratio	1.01	0.68		1.01	1.02	0.33
Control Delay (s/veh)	70.3	11.8		73.2	77.4	26.9
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	70.3	11.8		73.2	77.4	26.9
LOS	E	B		E	E	C
Approach Delay (s/veh)	56.7			73.2	71.1	
Approach LOS	E			E	E	
Queue Length 50th (m)	~120.2	5.2		~142.9	~129.3	18.8
Queue Length 95th (m)	#154.6	39.8		#185.8	#170.0	37.4
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1314	584		1024	951	415
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	1.01	0.68		1.01	1.02	0.33

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 50 (42%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay (s/veh): 65.3

Intersection LOS: E

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

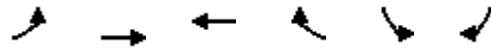
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

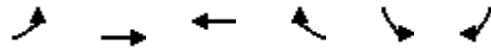
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
←	←	↖
Ø2 (R)	Ø6	Ø4
38 s	42 s	40 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	1456	1055	15	21	21
Future Volume (vph)	22	1456	1055	15	21	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1700	4885	3426	0	1708	0
Flt Permitted	0.250				0.976	
Satd. Flow (perm)	445	4885	3426	0	1651	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			2		22	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	14			14	52	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	1501	1103	0	44	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	87.0	87.0	87.0		33.0	
Total Split (%)	72.5%	72.5%	72.5%		27.5%	
Maximum Green (s)	81.3	81.3	81.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	103.4	103.4	103.4		10.1	
Actuated g/C Ratio	0.86	0.86	0.86		0.08	
v/c Ratio	0.06	0.36	0.37		0.27	
Control Delay (s/veh)	0.2	2.9	1.7		35.4	
Queue Delay	0.0	0.1	0.2		0.0	
Total Delay (s/veh)	0.2	3.0	1.9		35.4	
LOS	A	A	A		D	
Approach Delay (s/veh)		2.9	1.9		35.4	
Approach LOS		A	A		D	
Queue Length 50th (m)	0.1	1.2	8.2		4.9	
Queue Length 95th (m)	m0.0	m6.6	9.4		16.5	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	383	4208	2951		415	
Starvation Cap Reductn	0	1058	941		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.06	0.48	0.55		0.11	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 41 (34%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.37

Intersection Signal Delay (s/veh): 3.0

Intersection LOS: A

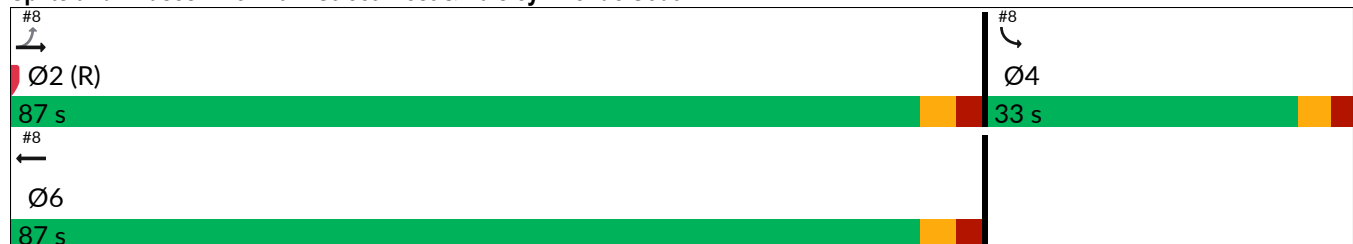
Intersection Capacity Utilization 47.4%

ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	21	1455	1060	18	5	17	
Future Volume (Veh/h)	21	1455	1060	18	5	17	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Hourly flow rate (vph)	22	1548	1128	19	5	18	
Pedestrians					26		
Lane Width (m)					3.5		
Walking Speed (m/s)					1.1		
Percent Blockage					2		
Right turn flare (veh)							
Median type		None	None				
Median storage veh							
Upstream signal (m)		94	93				
pX, platoon unblocked	0.93				0.96	0.93	
vC, conflicting volume	1173				1724	600	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1033				1264	415	
tC, single (s)	4.2				6.8	7.0	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.4	
p0 queue free %	96				97	97	
cM capacity (veh/h)	591				148	522	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	22	516	516	516	752	395	23
Volume Left	22	0	0	0	0	0	5
Volume Right	0	0	0	0	0	19	18
cSH	591	1700	1700	1700	1700	1700	337
Volume to Capacity	0.04	0.30	0.30	0.30	0.44	0.23	0.07
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	0.0	1.7
Control Delay (s/veh)	11.3	0.0	0.0	0.0	0.0	0.0	16.4
Lane LOS	B						C
Approach Delay (s/veh)	0.2				0.0		16.4
Approach LOS							C
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			39.9%		ICU Level of Service		A
Analysis Period (min)			15				

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	49	908	779	0	502	4	477	174	86	44	310	28
Future Volume (vph)	49	908	779	0	502	4	477	174	86	44	310	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4623	0	0	3396	0	3362	1733	0	0	3283	0
Flt Permitted	0.427						0.950				0.866	
Satd. Flow (perm)	768	4623	0	0	3396	0	3362	1733	0	0	2860	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		243			1			30			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.3			142.9			232.0			149.2	
Travel Time (s)		6.7			10.3			16.7			10.7	
Confl. Peds. (#/hr)	23		27	27		23						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	1%	0%	5%	0%	3%	4%	1%	39%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	1739	0	0	522	0	492	268	0	0	394	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	53.0	53.0			53.0		30.0	57.0		27.0	27.0	
Total Split (%)	48.2%	48.2%			48.2%		27.3%	51.8%		24.5%	24.5%	
Maximum Green (s)	46.3	46.3			46.3		25.5	50.7		20.7	20.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	52.5	52.5			52.5		21.0	44.5			19.0	
Actuated g/C Ratio	0.48	0.48			0.48		0.19	0.40			0.17	
v/c Ratio	0.14	0.92dr			0.32		0.77	0.37			0.79	
Control Delay (s/veh)	17.3	21.0			19.5		50.3	20.8			54.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	17.3	21.1			19.5		50.3	20.8			54.6	
LOS	B	C			B		D	C			D	
Approach Delay (s/veh)		21.0			19.5			39.9			54.6	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	3.9	98.2			37.4		53.1	35.3			42.8	
Queue Length 95th (m)	13.8	128.9			54.8		67.9	51.6			59.8	
Internal Link Dist (m)		69.3			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	366	2332			1620		779	814			550	
Starvation Cap Reductn	0	31			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.14	0.76			0.32		0.63	0.33			0.72	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 45 (41%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 28.7

Intersection LOS: C

Intersection Capacity Utilization 81.9%

ICU Level of Service D

Analysis Period (min) 15

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Longwood Road South & Main Street West

#3 	#3 
Ø2 (R)	Ø4
53 s	57 s
#3 	#3 
Ø6	Ø7
53 s	30 s
	#3 
	Ø8
	27 s

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	1659	769	0	1031	534	108
Future Volume (vph)	1659	769	0	1031	534	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	5079	1551	0	3466	3395	1493
Flt Permitted					0.950	
Satd. Flow (perm)	5079	1328	0	3466	3395	1462
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		572				58
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		67	67			16
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	0%	3%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1693	785	0	1052	545	110
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	38.0	38.0		42.0	40.0	38.0
Total Split (%)	31.7%	31.7%		35.0%	33.3%	31.7%
Maximum Green (s)	32.3	32.3		35.8	34.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	42.0	42.0		35.8	24.6	42.0
Actuated g/C Ratio	0.35	0.35		0.30	0.21	0.35
v/c Ratio	0.95	0.94		1.02	0.79	0.20
Control Delay (s/veh)	51.3	30.7		74.3	53.5	15.9
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	51.3	30.7		74.3	53.5	15.9
LOS	D	C		E	D	B
Approach Delay (s/veh)	44.8			74.3	47.2	
Approach LOS	D			E	D	
Queue Length 50th (m)	142.6	63.0		~137.8	64.2	8.7
Queue Length 95th (m)	#196.7	#164.9		#183.0	78.7	24.1
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1779	837		1034	970	549
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.95	0.94		1.02	0.56	0.20

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 50 (42%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay (s/veh): 52.6

Intersection LOS: D

Intersection Capacity Utilization 64.9%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

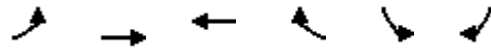
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

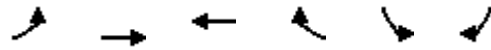
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
←	←	↖
Ø2 (R)	Ø6	Ø4
38 s	42 s	40 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	1779	1043	16	13	17
Future Volume (vph)	28	1779	1043	16	13	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1785	5029	3423	0	1699	0
Flt Permitted	0.249				0.979	
Satd. Flow (perm)	466	5029	3423	0	1662	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3		18	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	15			15	42	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	1873	1115	0	32	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	77.0	77.0	77.0		33.0	
Total Split (%)	70.0%	70.0%	70.0%		30.0%	
Maximum Green (s)	71.3	71.3	71.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	97.6	97.6	97.6		10.0	
Actuated g/C Ratio	0.89	0.89	0.89		0.09	
v/c Ratio	0.07	0.42	0.37		0.19	
Control Delay (s/veh)	2.4	2.4	6.1		30.0	
Queue Delay	0.0	0.1	0.1		0.0	
Total Delay (s/veh)	2.4	2.5	6.2		30.0	
LOS	A	A	A		C	
Approach Delay (s/veh)		2.5	6.2		30.0	
Approach LOS		A	A		C	
Queue Length 50th (m)	1.0	34.5	61.6		2.8	
Queue Length 95th (m)	2.7	40.0	71.7		12.1	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	413	4461	3037		445	
Starvation Cap Reductn	0	1217	598		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.07	0.58	0.46		0.07	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 41 (37%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay (s/veh): 4.2

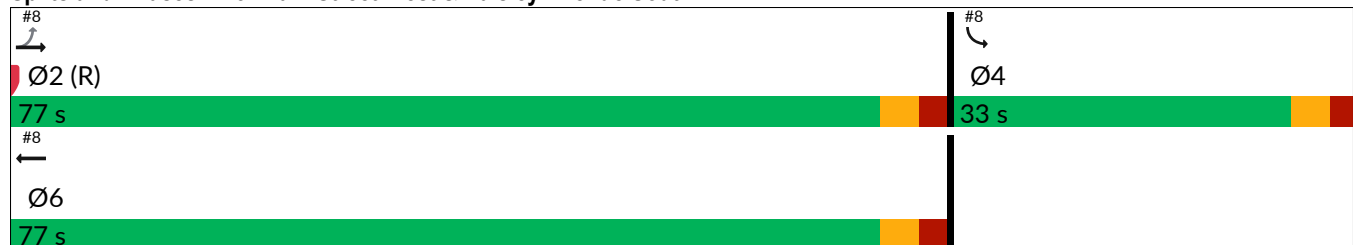
Intersection LOS: A

Intersection Capacity Utilization 52.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		  	 		 		
Traffic Volume (veh/h)	13	1800	1033	7	5	16	
Future Volume (Veh/h)	13	1800	1033	7	5	16	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly flow rate (vph)	14	1978	1135	8	5	18	
Pedestrians					25		
Lane Width (m)					3.5		
Walking Speed (m/s)					1.1		
Percent Blockage					2		
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (m)		94	93				
pX, platoon unblocked	0.91				0.95	0.91	
vC, conflicting volume	1168				1851	597	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	987				1227	359	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	98				97	97	
cM capacity (veh/h)	630				158	572	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	14	659	659	659	757	386	23
Volume Left	14	0	0	0	0	0	5
Volume Right	0	0	0	0	0	8	18
cSH	630	1700	1700	1700	1700	1700	365
Volume to Capacity	0.02	0.39	0.39	0.39	0.45	0.23	0.06
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	0.0	1.5
Control Delay (s/veh)	10.8	0.0	0.0	0.0	0.0	0.0	15.5
Lane LOS	B						C
Approach Delay (s/veh)	0.1				0.0		15.5
Approach LOS							C
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			44.8%		ICU Level of Service		A
Analysis Period (min)			15				

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	62	913	402	0	413	24	594	262	70	32	210	33
Future Volume (vph)	62	913	402	0	413	24	594	262	70	32	210	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4585	0	0	3309	0	3429	1768	0	0	3147	0
Flt Permitted	0.468						0.950				0.853	
Satd. Flow (perm)	832	4585	0	0	3309	0	3429	1768	0	0	2701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		119			6			15			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.3			142.9			232.0			149.2	
Travel Time (s)		6.7			10.3			16.7			10.7	
Confl. Peds. (#/hr)	28		28	28		28						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	7%	3%	0%	7%	0%	1%	2%	6%	50%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	1370	0	0	455	0	619	346	0	0	286	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	60.0	60.0			60.0		36.0	60.0		24.0	24.0	
Total Split (%)	50.0%	50.0%			50.0%		30.0%	50.0%		20.0%	20.0%	
Maximum Green (s)	53.3	53.3			53.3		31.5	53.7		17.7	17.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	59.5	59.5			59.5		26.5	47.5				16.4
Actuated g/C Ratio	0.50	0.50			0.50		0.22	0.40				0.14
v/c Ratio	0.16	0.59			0.28		0.82	0.49				0.76
Control Delay (s/veh)	18.0	19.8			19.0		53.6	27.6				61.1
Queue Delay	0.0	0.0			0.0		0.0	0.0				0.0
Total Delay (s/veh)	18.0	19.8			19.0		53.6	27.6				61.1
LOS	B	B			B		D	C				E
Approach Delay (s/veh)		19.7			19.0			44.2				61.1
Approach LOS		B			B			D				E
Queue Length 50th (m)	8.5	80.2			34.0		72.2	57.4				34.6
Queue Length 95th (m)	19.0	104.5			49.6		88.1	78.3				50.3
Internal Link Dist (m)		69.3			118.9			208.0				125.2
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	412	2334			1644		900	799				414
Starvation Cap Reductn	0	0			0		0	0				0
Spillback Cap Reductn	0	0			0		0	0				0
Storage Cap Reductn	0	0			0		0	0				0
Reduced v/c Ratio	0.16	0.59			0.28		0.69	0.43				0.69

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 70 (58%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 30.9

Intersection LOS: C

Intersection Capacity Utilization 94.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Longwood Road South & Main Street West

#3 	#3 
Ø2 (R)	Ø4
60 s	60 s
#3 	#3 
Ø6	Ø7
60 s	36 s
	#3 
	Ø8
	24 s

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↘	↑
Traffic Volume (vph)	1283	391	0	1017	953	104
Future Volume (vph)	1283	391	0	1017	953	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	4885	1521	0	3433	3330	1493
Flt Permitted					0.950	
Satd. Flow (perm)	4885	968	0	3433	3330	1421
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		399				27
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		109	109			32
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	4%	4%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1309	399	0	1038	972	106
Turn Type	NA	pm+ov		NA	Prot	Perm
Protected Phases	2	4		6	4	
Permitted Phases		2				2
Detector Phase	2	4		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	10.0		20.0	10.0	20.0
Minimum Split (s)	34.0	27.0		36.2	27.0	34.0
Total Split (s)	44.0	47.0		49.0	47.0	44.0
Total Split (%)	31.4%	33.6%		35.0%	33.6%	31.4%
Maximum Green (s)	38.3	41.3		42.8	41.3	38.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	None		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	9.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	38.3	79.6		42.8	41.3	38.3
Actuated g/C Ratio	0.27	0.57		0.31	0.30	0.27
v/c Ratio	0.98	0.45		0.99	0.99	0.26
Control Delay (s/veh)	70.5	2.8		73.5	75.2	31.3
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	70.5	2.8		73.5	75.2	31.3
LOS	E	A		E	E	C
Approach Delay (s/veh)	54.7			73.5	70.9	
Approach LOS	D			E	E	
Queue Length 50th (m)	137.6	0.0		155.6	142.8	17.9
Queue Length 95th (m)	#171.0	12.7		#203.2	#188.8	35.1
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1336	885		1049	982	408
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.98	0.45		0.99	0.99	0.26

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay (s/veh): 64.4

Intersection LOS: E

Intersection Capacity Utilization 65.2%

ICU Level of Service C

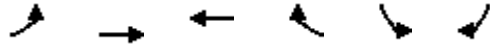
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

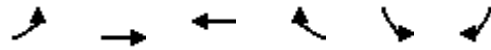
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
←	←	↘
Ø2 (R)	Ø6	Ø4
44 s	49 s	47 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	1413	1055	15	11	21
Future Volume (vph)	22	1413	1055	15	11	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1700	4885	3426	0	1681	0
Flt Permitted	0.253				0.984	
Satd. Flow (perm)	450	4885	3426	0	1644	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			2		22	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	14			14	52	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	1457	1103	0	33	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	87.0	87.0	87.0		33.0	
Total Split (%)	72.5%	72.5%	72.5%		27.5%	
Maximum Green (s)	81.3	81.3	81.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	107.6	107.6	107.6		10.0	
Actuated g/C Ratio	0.90	0.90	0.90		0.08	
v/c Ratio	0.06	0.33	0.36		0.21	
Control Delay (s/veh)	2.1	1.9	1.3		29.9	
Queue Delay	0.0	0.1	0.2		0.0	
Total Delay (s/veh)	2.1	2.1	1.5		29.9	
LOS	A	A	A		C	
Approach Delay (s/veh)		2.1	1.5		29.9	
Approach LOS		A	A		C	
Queue Length 50th (m)	0.8	24.5	8.2		2.4	
Queue Length 95th (m)	2.2	28.7	9.4		12.5	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	403	4379	3071		409	
Starvation Cap Reductn	0	1494	943		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.06	0.51	0.52		0.08	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 41 (34%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.36

Intersection Signal Delay (s/veh): 2.2

Intersection LOS: A

Intersection Capacity Utilization 47.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Main Street West & Paisley Avenue South

#8 ↘ Ø2 (R)	#8 ↘ Ø4
87 s	33 s
#8 ← Ø6	
87 s	

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	21	1401	1060	18	5	17	
Future Volume (Veh/h)	21	1401	1060	18	5	17	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Hourly flow rate (vph)	22	1490	1128	19	5	18	
Pedestrians					26		
Lane Width (m)					3.5		
Walking Speed (m/s)					1.1		
Percent Blockage					2		
Right turn flare (veh)							
Median type		None	None				
Median storage veh							
Upstream signal (m)		94	93				
pX, platoon unblocked	0.93				0.96	0.93	
vC, conflicting volume	1173				1704	600	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1033				1303	415	
tC, single (s)	4.2				6.8	7.0	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.4	
p0 queue free %	96				96	97	
cM capacity (veh/h)	591				139	522	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	22	497	497	497	752	395	23
Volume Left	22	0	0	0	0	0	5
Volume Right	0	0	0	0	0	19	18
cSH	591	1700	1700	1700	1700	1700	327
Volume to Capacity	0.04	0.29	0.29	0.29	0.44	0.23	0.07
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	0.0	1.7
Control Delay (s/veh)	11.3	0.0	0.0	0.0	0.0	0.0	16.9
Lane LOS	B						C
Approach Delay (s/veh)	0.2				0.0		16.9
Approach LOS							C
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			39.9%		ICU Level of Service		A
Analysis Period (min)			15				

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	49	908	779	0	502	4	477	174	86	44	310	28
Future Volume (vph)	49	908	779	0	502	4	477	174	86	44	310	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4623	0	0	3396	0	3362	1733	0	0	3283	0
Flt Permitted	0.427						0.950				0.866	
Satd. Flow (perm)	768	4623	0	0	3396	0	3362	1733	0	0	2860	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		243			1			30			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		93.3			142.9			232.0			149.2	
Travel Time (s)		6.7			10.3			16.7			10.7	
Confl. Peds. (#/hr)	23		27	27		23						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	1%	0%	5%	0%	3%	4%	1%	39%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	1739	0	0	522	0	492	268	0	0	394	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	53.0	53.0			53.0		30.0	57.0		27.0	27.0	
Total Split (%)	48.2%	48.2%			48.2%		27.3%	51.8%		24.5%	24.5%	
Maximum Green (s)	46.3	46.3			46.3		25.5	50.7		20.7	20.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effect Green (s)	52.5	52.5			52.5		21.0	44.5			19.0	
Actuated g/C Ratio	0.48	0.48			0.48		0.19	0.40			0.17	
v/c Ratio	0.14	0.92dr			0.32		0.77	0.37			0.79	
Control Delay (s/veh)	17.3	21.0			19.5		50.3	20.8			54.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	17.3	21.1			19.5		50.3	20.8			54.6	
LOS	B	C			B		D	C			D	
Approach Delay (s/veh)		21.0			19.5			39.9			54.6	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	3.9	98.2			37.4		53.1	35.3			42.8	
Queue Length 95th (m)	13.8	128.9			54.8		67.9	51.6			59.8	
Internal Link Dist (m)		69.3			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	366	2332			1620		779	814			550	
Starvation Cap Reductn	0	31			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.14	0.76			0.32		0.63	0.33			0.72	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 45 (41%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 28.7

Intersection LOS: C

Intersection Capacity Utilization 81.9%

ICU Level of Service D

Analysis Period (min) 15

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Longwood Road South & Main Street West

#3 	#3 
Ø2 (R)	Ø4
53 s	57 s
#3 	#3 
Ø6	Ø7
53 s	30 s
	#3 
	Ø8
	27 s

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	1659	769	0	1031	534	108
Future Volume (vph)	1659	769	0	1031	534	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	5079	1551	0	3466	3395	1493
Flt Permitted					0.950	
Satd. Flow (perm)	5079	1291	0	3466	3395	1457
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		585				60
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		67	67			16
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	0%	3%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1693	785	0	1052	545	110
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	60.0	60.0		51.0	29.0	60.0
Total Split (%)	42.9%	42.9%		36.4%	20.7%	42.9%
Maximum Green (s)	54.3	54.3		44.8	23.3	54.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	54.3	54.3		44.6	23.5	54.3
Actuated g/C Ratio	0.39	0.39		0.32	0.17	0.39
v/c Ratio	0.86	0.91		0.95	0.96	0.18
Control Delay (s/veh)	44.9	26.6		64.6	85.6	14.3
Queue Delay	0.0	0.0		2.2	0.0	0.0
Total Delay (s/veh)	44.9	26.6		66.9	85.6	14.3
LOS	D	C		E	F	B
Approach Delay (s/veh)	39.1			66.9	73.7	
Approach LOS	D			E	E	
Queue Length 50th (m)	157.7	68.7		153.2	79.5	9.2
Queue Length 95th (m)	178.1	#178.9		#197.0	#115.3	22.8
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1969	858		1109	570	601
Starvation Cap Reductn	0	0		22	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.86	0.91		0.97	0.96	0.18

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay (s/veh): 51.5

Intersection LOS: D

Intersection Capacity Utilization 64.9%

ICU Level of Service C

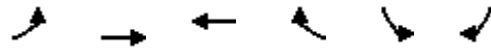
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

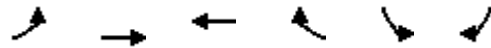
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
→ Ø2 (R)	← Ø6	↖ Ø4
60 s	51 s	29 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	1779	1043	16	13	17
Future Volume (vph)	28	1779	1043	16	13	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1785	5029	3423	0	1699	0
Flt Permitted	0.249				0.979	
Satd. Flow (perm)	466	5029	3423	0	1662	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3		18	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	15			15	42	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	1873	1115	0	32	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	77.0	77.0	77.0		33.0	
Total Split (%)	70.0%	70.0%	70.0%		30.0%	
Maximum Green (s)	71.3	71.3	71.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	97.6	97.6	97.6		10.0	
Actuated g/C Ratio	0.89	0.89	0.89		0.09	
v/c Ratio	0.07	0.42	0.37		0.19	
Control Delay (s/veh)	2.4	2.4	6.1		30.0	
Queue Delay	0.0	0.1	0.1		0.0	
Total Delay (s/veh)	2.4	2.5	6.2		30.0	
LOS	A	A	A		C	
Approach Delay (s/veh)		2.5	6.2		30.0	
Approach LOS		A	A		C	
Queue Length 50th (m)	1.0	34.5	61.6		2.8	
Queue Length 95th (m)	2.7	40.0	71.7		12.1	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	413	4461	3037		445	
Starvation Cap Reductn	0	1217	598		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.07	0.58	0.46		0.07	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 41 (37%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay (s/veh): 4.2

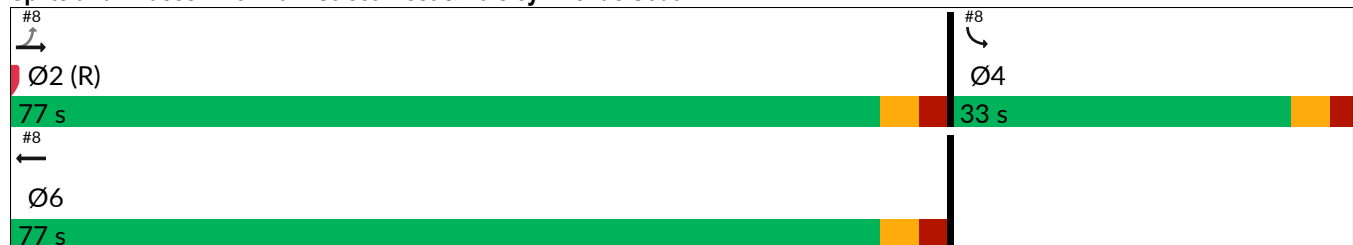
Intersection LOS: A

Intersection Capacity Utilization 52.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Main Street West & Paisley Avenue South



							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		  	 		 		
Traffic Volume (veh/h)	13	1800	1033	7	5	16	
Future Volume (Veh/h)	13	1800	1033	7	5	16	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly flow rate (vph)	14	1978	1135	8	5	18	
Pedestrians					25		
Lane Width (m)					3.5		
Walking Speed (m/s)					1.1		
Percent Blockage					2		
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (m)		94	93				
pX, platoon unblocked	0.91				0.95	0.91	
vC, conflicting volume	1168				1851	597	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	987				1227	359	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	98				97	97	
cM capacity (veh/h)	630				158	572	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	14	659	659	659	757	386	23
Volume Left	14	0	0	0	0	0	5
Volume Right	0	0	0	0	0	8	18
cSH	630	1700	1700	1700	1700	1700	365
Volume to Capacity	0.02	0.39	0.39	0.39	0.45	0.23	0.06
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	0.0	1.5
Control Delay (s/veh)	10.8	0.0	0.0	0.0	0.0	0.0	15.5
Lane LOS	B						C
Approach Delay (s/veh)	0.1				0.0		15.5
Approach LOS							C
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			44.8%		ICU Level of Service		A
Analysis Period (min)			15				

Appendix F

2016 Transportation Tomorrow Survey (TTS)

Data Analysis

Modes of Travel - AM Peak Periods

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

Filters:

Primary travel mode of trip - mode_prime In B C D G J M P T U W
and
2006 GTA zone of household - gta06_hhld In 5174 5180 5185 5192
and
Start time of trip - start_time In 600-900
and
Type of dwelling unit - dwell_type In 2 3

Trip 2016

Table:

Mode of Transportation/Traffic Zones	5174	5180	5192	Total	Percentage
Transit excluding GO rail	32	0	371	403	32%
Auto driver	95	303	167	565	45%
GO rail only	0	0	16	16	1%
Auto passenger	45	0	0	45	4%
Walk	225	0	0	225	18%
Total	397	303	554	1254	100%

Modes of Travel - PM Peak Periods

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

Filters:

Primary travel mode of trip - mode_prime In B C D G J M P T U W
and
2006 GTA zone of household - gta06_hhld In 5174 5180 5185 5192
and
Start time of trip - start_time In 1500-1900
and
Type of dwelling unit - dwell_type In 2 3

Trip 2016

Table:

Mode of Transportation/Traffic Zones	5174	5180	5192	Total	Percentage
Transit excluding GO rail	160	0	381	541	24%
Cycle	0	44	33	77	3%
Auto driver	244	517	255	1016	45%
GO rail only	0	0	16	16	1%
Auto passenger	45	133	15	193	9%
Walk	350	0	51	401	18%
Total	799	694	751	2244	100%

Auto Trip Distribution - External Hamilton

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig

Column: Planning district of destination - pd_dest

Filters:

Primary travel mode of trip - mode_prime In D

M

P

T

U

and

2006 GTA zone of household - gta06_hhld In 5174

5180

5185

5192

and

Start time of trip - start_time In 600-900

and

Type of dwelling unit - dwell_type In 2

3

Trip 2016

Table:

Traffic Zones	Mississauga	Burlington	Hamilton	External
5174	0	72	68	0
5180	84	130	44	44
5192	51	0	99	0
5203	0	0	17	0
	135	202	228	44
	22%	33%	37%	7%

609

Auto Trip Distribution - Internal Hamilton

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

Primary travel mode of trip - mode_prime In D M P T U
and

2006 GTA zone of household - gta06_hhld In 5174 5180 5185 5192
and

Start time of trip - start_time In 600-900
and

Type of dwelling unit - dwell_type In 2 3
and

Ward number of destination - ward_dest In 171-185

Trip 2016

Table:

Traffic Zones	5050	5097	5159	5184	5186	5192	5195	5203
5174	0	0	0	45	0	0	23	0
5180	0	0	44	0	0	0	0	0
5192	23	28	0	0	32	0	0	17
5203	0	0	0	0	0	17	0	0
	23	28	44	45	32	17	23	17
	10%	12%	19%	20%	14%	7%	10%	7%

Transit Trip Distribution - External Hamilton

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig

Column: Planning district of destination - pd_dest

Filters:

Primary travel mode of trip - mode_prime In B G J

and

2006 GTA zone of household - gta06_hhld In 5174 5180 5185 5192

and

Start time of trip - start_time In 600-900

and

Type of dwelling unit - dwell_type In 2 3

Trip 2016

Table:

Traffic Zones	PD 1 of Toronto	Burlington	Hamilton
5174	0	0	32
5192	16	51	321
	16	51	353
	4%	12%	84%

420

Transit Trip Distribution - Internal Hamilton

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

Primary travel mode of trip - mode_prime In B G J

and

2006 GTA zone of household - gta06_hhld In 5174 5180 5185 5192

and

Start time of trip - start_time In 600-900

and

Type of dwelling unit - dwell_type In 2 3

and

Ward number of destination - ward_dest In 171-185

Trip 2016

Table:

Traffic Zones	5066	5074	5126	5175	5182	5184	5186	5198
5174	0	0	0	32	0	0	0	0
5192	94	26	33	0	45	40	32	51
	94	26	33	32	45	40	32	51
	27%	7%	9%	9%	13%	11%	9%	14%

Appendix G

Future Total Level of Service Calculations

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	62	961	459	0	413	24	594	262	70	32	210	33
Future Volume (vph)	62	961	459	0	413	24	594	262	70	32	210	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4577	0	0	3309	0	3429	1768	0	0	3147	0
Flt Permitted	0.468						0.950				0.853	
Satd. Flow (perm)	832	4577	0	0	3309	0	3429	1768	0	0	2701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			6			15			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		61.0			142.9			232.0			149.2	
Travel Time (s)		4.4			10.3			16.7			10.7	
Confl. Peds. (#/hr)	28		28	28		28						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	7%	3%	0%	7%	0%	1%	2%	6%	50%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	1479	0	0	455	0	619	346	0	0	286	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	60.0	60.0			60.0		36.0	60.0		24.0	24.0	
Total Split (%)	50.0%	50.0%			50.0%		30.0%	50.0%		20.0%	20.0%	
Maximum Green (s)	53.3	53.3			53.3		31.5	53.7		17.7	17.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	59.5	59.5			59.5		26.5	47.5			16.4	
Actuated g/C Ratio	0.50	0.50			0.50		0.22	0.40			0.14	
v/c Ratio	0.16	0.63			0.28		0.82	0.49			0.76	
Control Delay (s/veh)	3.8	2.8			19.0		53.6	27.6			61.1	
Queue Delay	0.0	0.1			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	3.8	2.9			19.0		53.6	27.6			61.1	
LOS	A	A			B		D	C			E	
Approach Delay (s/veh)		2.9			19.0			44.2			61.1	
Approach LOS		A			B			D			E	
Queue Length 50th (m)	1.4	6.4			34.0		72.2	57.4			34.6	
Queue Length 95th (m)	2.9	7.9			49.6		88.1	78.3			50.3	
Internal Link Dist (m)		37.0			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	412	2335			1644		900	799			414	
Starvation Cap Reductn	0	91			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.16	0.66			0.28		0.69	0.43			0.69	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 70 (58%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 22.6

Intersection LOS: C

Intersection Capacity Utilization 94.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Longwood Road South & Main Street West

#3 	#3 
Ø2 (R)	Ø4
60 s	60 s
#3 	#3 
Ø6	Ø7
60 s	36 s
	#3 
	Ø8
	24 s

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↘	↑
Traffic Volume (vph)	1297	391	0	1017	953	134
Future Volume (vph)	1297	391	0	1017	953	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	4885	1521	0	3433	3330	1493
Flt Permitted					0.950	
Satd. Flow (perm)	4885	1166	0	3433	3330	1431
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		371				41
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		109	109			32
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	4%	4%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1323	399	0	1038	972	137
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	38.0	38.0		42.0	40.0	38.0
Total Split (%)	31.7%	31.7%		35.0%	33.3%	31.7%
Maximum Green (s)	32.3	32.3		35.8	34.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	32.3	32.3		35.8	34.3	32.3
Actuated g/C Ratio	0.27	0.27		0.30	0.29	0.27
v/c Ratio	1.01	0.68		1.01	1.02	0.33
Control Delay (s/veh)	70.3	11.8		73.2	77.4	26.9
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	70.3	11.8		73.2	77.4	26.9
LOS	E	B		E	E	C
Approach Delay (s/veh)	56.7			73.2	71.1	
Approach LOS	E			E	E	
Queue Length 50th (m)	~120.2	5.2		~142.9	~129.3	18.8
Queue Length 95th (m)	#154.6	39.8		#185.8	#170.0	37.4
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1314	584		1024	951	415
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	1.01	0.68		1.01	1.02	0.33

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 50 (42%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay (s/veh): 65.3

Intersection LOS: E

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

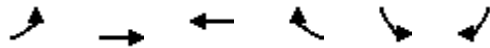
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

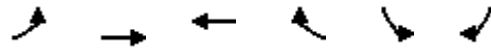
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
←	←	↖
Ø2 (R)	Ø6	Ø4
38 s	42 s	40 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	1456	1055	15	21	21
Future Volume (vph)	22	1456	1055	15	21	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1700	4885	3426	0	1708	0
Flt Permitted	0.250				0.976	
Satd. Flow (perm)	445	4885	3426	0	1651	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			2		22	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	14			14	52	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	1501	1103	0	44	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	87.0	87.0	87.0		33.0	
Total Split (%)	72.5%	72.5%	72.5%		27.5%	
Maximum Green (s)	81.3	81.3	81.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	103.4	103.4	103.4		10.1	
Actuated g/C Ratio	0.86	0.86	0.86		0.08	
v/c Ratio	0.06	0.36	0.37		0.27	
Control Delay (s/veh)	0.2	2.9	1.7		35.4	
Queue Delay	0.0	0.1	0.2		0.0	
Total Delay (s/veh)	0.2	3.0	1.9		35.4	
LOS	A	A	A		D	
Approach Delay (s/veh)		2.9	1.9		35.4	
Approach LOS		A	A		D	
Queue Length 50th (m)	0.1	1.2	8.2		4.9	
Queue Length 95th (m)	m0.0	m6.6	9.4		16.5	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	383	4208	2951		415	
Starvation Cap Reductn	0	1058	941		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.06	0.48	0.55		0.11	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 41 (34%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.37

Intersection Signal Delay (s/veh): 3.0

Intersection LOS: A

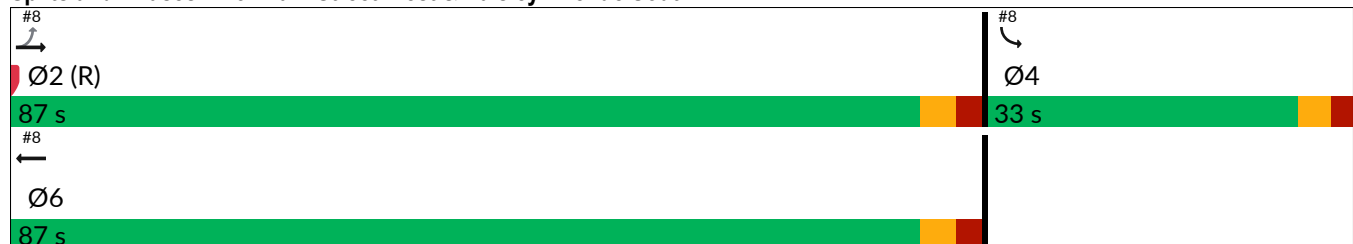
Intersection Capacity Utilization 47.4%

ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		  	 		 		
Traffic Volume (veh/h)	21	1455	1060	18	5	17	
Future Volume (Veh/h)	21	1455	1060	18	5	17	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Hourly flow rate (vph)	22	1548	1128	19	5	18	
Pedestrians					26		
Lane Width (m)					3.5		
Walking Speed (m/s)					1.1		
Percent Blockage					2		
Right turn flare (veh)							
Median type		None	None				
Median storage veh							
Upstream signal (m)		94	93				
pX, platoon unblocked	0.93				0.96	0.93	
vC, conflicting volume	1173				1724	600	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1033				1264	415	
tC, single (s)	4.2				6.8	7.0	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.4	
p0 queue free %	96				97	97	
cM capacity (veh/h)	591				148	522	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	22	516	516	516	752	395	23
Volume Left	22	0	0	0	0	0	5
Volume Right	0	0	0	0	0	19	18
cSH	591	1700	1700	1700	1700	1700	337
Volume to Capacity	0.04	0.30	0.30	0.30	0.44	0.23	0.07
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	0.0	1.7
Control Delay (s/veh)	11.3	0.0	0.0	0.0	0.0	0.0	16.4
Lane LOS	B						C
Approach Delay (s/veh)	0.2				0.0		16.4
Approach LOS							C
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			39.9%		ICU Level of Service		A
Analysis Period (min)			15				

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↱			↑↑		↱
Traffic Volume (veh/h)	1377	54	0	1040	0	104
Future Volume (Veh/h)	1377	54	0	1040	0	104
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1465	57	0	1106	0	111
Pedestrians					26	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					2	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	126			61		
pX, platoon unblocked			0.94		0.96	0.94
vC, conflicting volume			1548		2073	543
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1354		1645	283
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	83
cM capacity (veh/h)			472		86	660
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	586	586	350	553	553	111
Volume Left	0	0	0	0	0	0
Volume Right	0	0	57	0	0	111
cSH	1700	1700	1700	1700	1700	660
Volume to Capacity	0.34	0.34	0.21	0.33	0.33	0.17
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	4.6
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.6
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.6
Approach LOS						B
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			41.0%		ICU Level of Service	A
Analysis Period (min)			15			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	49	946	824	0	502	4	477	174	86	44	310	28
Future Volume (vph)	49	946	824	0	502	4	477	174	86	44	310	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4618	0	0	3396	0	3362	1733	0	0	3283	0
Flt Permitted	0.427						0.950				0.866	
Satd. Flow (perm)	768	4618	0	0	3396	0	3362	1733	0	0	2860	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		246			1			30			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		65.9			142.9			232.0			149.2	
Travel Time (s)		4.7			10.3			16.7			10.7	
Confl. Peds. (#/hr)	23		27	27		23						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	1%	0%	5%	0%	3%	4%	1%	39%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	1824	0	0	522	0	492	268	0	0	394	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	53.0	53.0			53.0		30.0	57.0		27.0	27.0	
Total Split (%)	48.2%	48.2%			48.2%		27.3%	51.8%		24.5%	24.5%	
Maximum Green (s)	46.3	46.3			46.3		25.5	50.7		20.7	20.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	52.5	52.5			52.5		21.0	44.5			19.0	
Actuated g/C Ratio	0.48	0.48			0.48		0.19	0.40			0.17	
v/c Ratio	0.14	0.97dr			0.32		0.77	0.37			0.79	
Control Delay (s/veh)	17.0	21.9			19.5		50.3	20.8			54.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	17.0	21.9			19.5		50.3	20.8			54.6	
LOS	B	C			B		D	C			D	
Approach Delay (s/veh)		21.8			19.5			39.9			54.6	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	4.1	107.6			37.4		53.1	35.3			42.8	
Queue Length 95th (m)	12.9	140.2			54.8		67.9	51.6			59.8	
Internal Link Dist (m)		41.9			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	366	2331			1620		779	814			550	
Starvation Cap Reductn	0	11			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.14	0.79			0.32		0.63	0.33			0.72	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 45 (41%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 29.0

Intersection LOS: C

Intersection Capacity Utilization 81.9%

ICU Level of Service D

Analysis Period (min) 15

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Longwood Road South & Main Street West

#3 	#3 
Ø2 (R)	Ø4
53 s	57 s
#3 	#3 
Ø6	Ø7
53 s	30 s
	#3 
	Ø8
	27 s

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	1686	769	0	1031	534	166
Future Volume (vph)	1686	769	0	1031	534	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	5079	1551	0	3466	3395	1493
Flt Permitted					0.950	
Satd. Flow (perm)	5079	1328	0	3466	3395	1462
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		563				90
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		67	67			16
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	0%	3%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1720	785	0	1052	545	169
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	38.0	38.0		42.0	40.0	38.0
Total Split (%)	31.7%	31.7%		35.0%	33.3%	31.7%
Maximum Green (s)	32.3	32.3		35.8	34.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	42.0	42.0		35.8	24.6	42.0
Actuated g/C Ratio	0.35	0.35		0.30	0.21	0.35
v/c Ratio	0.97	0.94		1.02	0.79	0.30
Control Delay (s/veh)	53.7	32.3		74.3	53.5	15.8
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	53.7	32.3		74.3	53.5	15.8
LOS	D	C		E	D	B
Approach Delay (s/veh)	47.0			74.3	44.6	
Approach LOS	D			E	D	
Queue Length 50th (m)	146.0	66.7		~137.8	64.2	13.4
Queue Length 95th (m)	#201.6	#168.1		#183.0	78.7	33.6
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1779	831		1034	970	570
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.97	0.94		1.02	0.56	0.30

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 50 (42%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay (s/veh): 53.3

Intersection LOS: D

Intersection Capacity Utilization 65.4%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

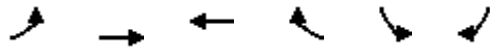
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

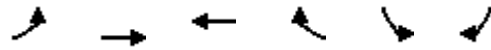
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
←	←	↖
Ø2 (R)	Ø6	Ø4
38 s	42 s	40 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	1863	1043	16	33	17
Future Volume (vph)	28	1863	1043	16	33	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1785	5029	3423	0	1734	0
Flt Permitted	0.246				0.968	
Satd. Flow (perm)	460	5029	3423	0	1678	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3		18	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	15			15	42	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	1961	1115	0	53	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	77.0	77.0	77.0		33.0	
Total Split (%)	70.0%	70.0%	70.0%		30.0%	
Maximum Green (s)	71.3	71.3	71.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	93.2	93.2	93.2		10.2	
Actuated g/C Ratio	0.85	0.85	0.85		0.09	
v/c Ratio	0.07	0.46	0.38		0.30	
Control Delay (s/veh)	2.6	3.2	7.9		38.4	
Queue Delay	0.0	0.2	0.1		0.0	
Total Delay (s/veh)	2.6	3.4	8.0		38.4	
LOS	A	A	A		D	
Approach Delay (s/veh)		3.4	8.0		38.4	
Approach LOS		A	A		D	
Queue Length 50th (m)	1.0	37.2	61.6		7.1	
Queue Length 95th (m)	2.8	46.0	72.1		19.1	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	390	4262	2902		454	
Starvation Cap Reductn	0	1173	595		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.07	0.63	0.48		0.12	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 41 (37%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay (s/veh): 5.6

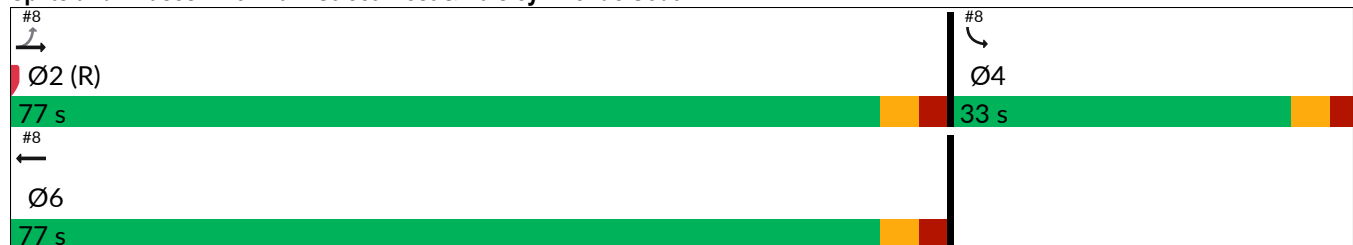
Intersection LOS: A

Intersection Capacity Utilization 53.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		  	 		 		
Traffic Volume (veh/h)	13	1905	1033	7	5	16	
Future Volume (Veh/h)	13	1905	1033	7	5	16	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly flow rate (vph)	14	2093	1135	8	5	18	
Pedestrians					25		
Lane Width (m)					3.5		
Walking Speed (m/s)					1.1		
Percent Blockage					2		
Right turn flare (veh)							
Median type		None	TWLTL				
Median storage (veh)			2				
Upstream signal (m)		94	93				
pX, platoon unblocked	0.91				0.93	0.91	
vC, conflicting volume	1168				1890	597	
vC1, stage 1 conf vol					1164		
vC2, stage 2 conf vol					726		
vCu, unblocked vol	987				1194	359	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)	2.2				3.5	3.3	
p0 queue free %	98				98	97	
cM capacity (veh/h)	630				279	572	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	14	698	698	698	757	386	23
Volume Left	14	0	0	0	0	0	5
Volume Right	0	0	0	0	0	8	18
cSH	630	1700	1700	1700	1700	1700	466
Volume to Capacity	0.02	0.41	0.41	0.41	0.45	0.23	0.05
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	0.0	1.2
Control Delay (s/veh)	10.8	0.0	0.0	0.0	0.0	0.0	13.1
Lane LOS	B						B
Approach Delay (s/veh)	0.1				0.0		13.1
Approach LOS							B
Intersection Summary							
Average Delay			0.1				
Intersection Capacity Utilization			46.8%		ICU Level of Service		A
Analysis Period (min)			15				

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Traffic Volume (veh/h)	1736	105	0	1007	0	83
Future Volume (Veh/h)	1736	105	0	1007	0	83
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.92	0.91
Hourly flow rate (vph)	1908	115	0	1107	0	91
Pedestrians					25	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					2	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh	2					
Upstream signal (m)	121			66		
pX, platoon unblocked			0.89		0.94	0.89
vC, conflicting volume			2048		2544	719
vC1, stage 1 conf vol					1991	
vC2, stage 2 conf vol					554	
vCu, unblocked vol			1748		1900	256
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	86
cM capacity (veh/h)			317		117	653
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	763	763	497	554	554	91
Volume Left	0	0	0	0	0	0
Volume Right	0	0	115	0	0	91
cSH	1700	1700	1700	1700	1700	653
Volume to Capacity	0.45	0.45	0.29	0.33	0.33	0.14
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	3.7
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.4
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.4
Approach LOS						B
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	62	961	459	0	413	24	594	262	70	32	210	33
Future Volume (vph)	62	961	459	0	413	24	594	262	70	32	210	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4577	0	0	3309	0	3429	1768	0	0	3147	0
Flt Permitted	0.468						0.950				0.853	
Satd. Flow (perm)	832	4577	0	0	3309	0	3429	1768	0	0	2701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			6			15			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		61.0			142.9			232.0			149.2	
Travel Time (s)		4.4			10.3			16.7			10.7	
Confl. Peds. (#/hr)	28		28	28		28						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	7%	3%	0%	7%	0%	1%	2%	6%	50%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	1479	0	0	455	0	619	346	0	0	286	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	60.0	60.0			60.0		36.0	60.0		24.0	24.0	
Total Split (%)	50.0%	50.0%			50.0%		30.0%	50.0%		20.0%	20.0%	
Maximum Green (s)	53.3	53.3			53.3		31.5	53.7		17.7	17.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	59.5	59.5			59.5		26.5	47.5				16.4
Actuated g/C Ratio	0.50	0.50			0.50		0.22	0.40				0.14
v/c Ratio	0.16	0.63			0.28		0.82	0.49				0.76
Control Delay (s/veh)	18.0	20.6			19.0		53.6	27.6				61.1
Queue Delay	0.0	0.1			0.0		0.0	0.0				0.0
Total Delay (s/veh)	18.0	20.7			19.0		53.6	27.6				61.1
LOS	B	C			B		D	C				E
Approach Delay (s/veh)		20.6			19.0			44.2				61.1
Approach LOS		C			B			D				E
Queue Length 50th (m)	8.5	90.4			34.0		72.2	57.4				34.6
Queue Length 95th (m)	19.3	116.7			49.6		88.1	78.3				50.3
Internal Link Dist (m)		37.0			118.9			208.0				125.2
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	412	2335			1644		900	799				414
Starvation Cap Reductn	0	91			0		0	0				0
Spillback Cap Reductn	0	0			0		0	0				0
Storage Cap Reductn	0	0			0		0	0				0
Reduced v/c Ratio	0.16	0.66			0.28		0.69	0.43				0.69

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 70 (58%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 31.0

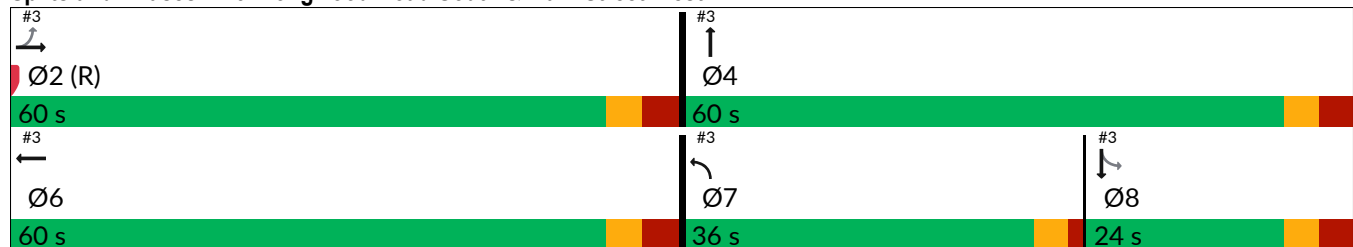
Intersection LOS: C

Intersection Capacity Utilization 94.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Longwood Road South & Main Street West



						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	1297	391	0	1017	953	134
Future Volume (vph)	1297	391	0	1017	953	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	4885	1521	0	3433	3330	1493
Flt Permitted					0.950	
Satd. Flow (perm)	4885	1047	0	3433	3330	1411
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		282				31
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		109	109			32
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	4%	4%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1323	399	0	1038	972	137
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	50.0	50.0		56.0	54.0	50.0
Total Split (%)	31.3%	31.3%		35.0%	33.8%	31.3%
Maximum Green (s)	44.3	44.3		49.8	48.3	44.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	44.5	44.5		49.8	48.1	44.5
Actuated g/C Ratio	0.28	0.28		0.31	0.30	0.28
v/c Ratio	0.97	0.81		0.97	0.97	0.33
Control Delay (s/veh)	75.6	29.1		75.5	77.0	37.8
Queue Delay	0.0	0.0		25.3	0.0	0.0
Total Delay (s/veh)	75.6	29.1		100.7	77.0	37.8
LOS	E	C		F	E	D
Approach Delay (s/veh)	64.9			100.7	72.2	
Approach LOS	E			F	E	
Queue Length 50th (m)	160.1	39.5		177.7	162.9	28.3
Queue Length 95th (m)	#193.2	#97.7		#223.9	#207.3	49.3
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1358	494		1068	1005	415
Starvation Cap Reductn	0	0		90	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.97	0.81		1.06	0.97	0.33

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 50 (31%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay (s/veh): 76.6

Intersection LOS: E

Intersection Capacity Utilization 65.2%

ICU Level of Service C

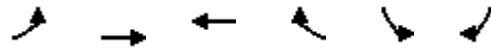
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

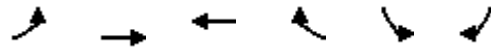
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
→ Ø2 (R)	← Ø6	↖ Ø4
50 s	56 s	54 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	1456	1055	15	21	21
Future Volume (vph)	22	1456	1055	15	21	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1700	4885	3426	0	1708	0
Flt Permitted	0.250				0.976	
Satd. Flow (perm)	445	4885	3426	0	1651	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			2		22	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	14			14	52	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	1501	1103	0	44	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	87.0	87.0	87.0		33.0	
Total Split (%)	72.5%	72.5%	72.5%		27.5%	
Maximum Green (s)	81.3	81.3	81.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	103.4	103.4	103.4		10.1	
Actuated g/C Ratio	0.86	0.86	0.86		0.08	
v/c Ratio	0.06	0.36	0.37		0.27	
Control Delay (s/veh)	2.3	2.5	1.7		35.4	
Queue Delay	0.0	0.2	0.2		0.0	
Total Delay (s/veh)	2.3	2.6	1.9		35.4	
LOS	A	A	A		D	
Approach Delay (s/veh)		2.6	1.9		35.4	
Approach LOS		A	A		D	
Queue Length 50th (m)	0.8	25.6	8.2		4.9	
Queue Length 95th (m)	2.3	30.4	9.4		16.5	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	383	4208	2951		415	
Starvation Cap Reductn	0	1471	941		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.06	0.55	0.55		0.11	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 41 (34%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.37

Intersection Signal Delay (s/veh): 2.9

Intersection LOS: A

Intersection Capacity Utilization 47.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Main Street West & Paisley Avenue South

#8 ↘ Ø2 (R)	#8 ↘ Ø4
87 s	33 s
#8 ← Ø6	
87 s	

HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		  	 		 		
Traffic Volume (veh/h)	21	1455	1060	18	5	17	
Future Volume (Veh/h)	21	1455	1060	18	5	17	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Hourly flow rate (vph)	22	1548	1128	19	5	18	
Pedestrians					26		
Lane Width (m)					3.5		
Walking Speed (m/s)					1.1		
Percent Blockage					2		
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (m)		94	93				
pX, platoon unblocked	0.93				0.96	0.93	
vC, conflicting volume	1173				1724	600	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1033				1264	415	
tC, single (s)	4.2				6.8	7.0	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.4	
p0 queue free %	96				97	97	
cM capacity (veh/h)	591				148	522	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	22	516	516	516	752	395	23
Volume Left	22	0	0	0	0	0	5
Volume Right	0	0	0	0	0	19	18
cSH	591	1700	1700	1700	1700	1700	337
Volume to Capacity	0.04	0.30	0.30	0.30	0.44	0.23	0.07
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	0.0	1.7
Control Delay (s/veh)	11.3	0.0	0.0	0.0	0.0	0.0	16.4
Lane LOS	B						C
Approach Delay (s/veh)	0.2				0.0		16.4
Approach LOS							C
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			39.9%		ICU Level of Service		A
Analysis Period (min)			15				

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↱			↑↑		↱
Traffic Volume (veh/h)	1377	54	0	1040	0	104
Future Volume (Veh/h)	1377	54	0	1040	0	104
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1465	57	0	1106	0	111
Pedestrians						26
Lane Width (m)						3.5
Walking Speed (m/s)						1.1
Percent Blockage						2
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	126			61		
pX, platoon unblocked			0.94			0.96 0.94
vC, conflicting volume			1548			2073 543
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1354			1645 283
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 83
cM capacity (veh/h)			472			86 660
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	586	586	350	553	553	111
Volume Left	0	0	0	0	0	0
Volume Right	0	0	57	0	0	111
cSH	1700	1700	1700	1700	1700	660
Volume to Capacity	0.34	0.34	0.21	0.33	0.33	0.17
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	4.6
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.6
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.6
Approach LOS						B
Intersection Summary						
Average Delay	0.5					
Intersection Capacity Utilization	41.0%			ICU Level of Service		A
Analysis Period (min)	15					

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	49	946	824	0	502	4	477	174	86	44	310	28
Future Volume (vph)	49	946	824	0	502	4	477	174	86	44	310	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4618	0	0	3396	0	3362	1733	0	0	3283	0
Flt Permitted	0.427						0.950				0.866	
Satd. Flow (perm)	768	4618	0	0	3396	0	3362	1733	0	0	2860	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		246			1			30			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		65.9			142.9			232.0			149.2	
Travel Time (s)		4.7			10.3			16.7			10.7	
Confl. Peds. (#/hr)	23		27	27		23						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	1%	0%	5%	0%	3%	4%	1%	39%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	1824	0	0	522	0	492	268	0	0	394	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	53.0	53.0			53.0		30.0	57.0		27.0	27.0	
Total Split (%)	48.2%	48.2%			48.2%		27.3%	51.8%		24.5%	24.5%	
Maximum Green (s)	46.3	46.3			46.3		25.5	50.7		20.7	20.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	52.5	52.5			52.5		21.0	44.5			19.0	
Actuated g/C Ratio	0.48	0.48			0.48		0.19	0.40			0.17	
v/c Ratio	0.14	0.97dr			0.32		0.77	0.37			0.79	
Control Delay (s/veh)	17.0	21.9			19.5		50.3	20.8			54.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	17.0	21.9			19.5		50.3	20.8			54.6	
LOS	B	C			B		D	C			D	
Approach Delay (s/veh)		21.8			19.5			39.9			54.6	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	4.1	107.6			37.4		53.1	35.3			42.8	
Queue Length 95th (m)	12.9	140.2			54.8		67.9	51.6			59.8	
Internal Link Dist (m)		41.9			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	366	2331			1620		779	814			550	
Starvation Cap Reductn	0	11			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.14	0.79			0.32		0.63	0.33			0.72	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 45 (41%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 29.0

Intersection LOS: C

Intersection Capacity Utilization 81.9%

ICU Level of Service D

Analysis Period (min) 15

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Longwood Road South & Main Street West

#3 	#3 
Ø2 (R)	Ø4
53 s	57 s
#3 	#3 
Ø6	Ø7
53 s	30 s
	#3 
	Ø8
	27 s

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↘	↑
Traffic Volume (vph)	1686	769	0	1031	534	166
Future Volume (vph)	1686	769	0	1031	534	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	5079	1551	0	3466	3395	1493
Flt Permitted					0.950	
Satd. Flow (perm)	5079	1309	0	3466	3395	1459
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		604				96
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		67	67			16
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	0%	3%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1720	785	0	1052	545	169
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	54.0	54.0		48.0	28.0	54.0
Total Split (%)	41.5%	41.5%		36.9%	21.5%	41.5%
Maximum Green (s)	48.3	48.3		41.8	22.3	48.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	48.6	48.6		41.6	22.3	48.6
Actuated g/C Ratio	0.37	0.37		0.32	0.17	0.37
v/c Ratio	0.91	0.91		0.95	0.94	0.28
Control Delay (s/veh)	46.7	24.3		60.6	78.0	13.8
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	46.7	24.3		60.6	78.0	13.8
LOS	D	C		E	E	B
Approach Delay (s/veh)	39.6			60.6	62.8	
Approach LOS	D			E	E	
Queue Length 50th (m)	153.5	54.6		141.3	72.9	13.0
Queue Length 95th (m)	174.7	#162.0		#184.3	#106.1	30.8
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1897	866		1114	582	605
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.91	0.91		0.94	0.94	0.28

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 50 (38%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay (s/veh): 48.7

Intersection LOS: D

Intersection Capacity Utilization 65.4%

ICU Level of Service C

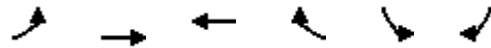
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

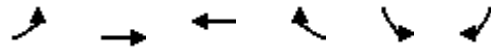
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
←	←	↖
Ø2 (R)	Ø6	Ø4
54 s	48 s	28 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	1863	1043	16	33	17
Future Volume (vph)	28	1863	1043	16	33	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1785	5029	3423	0	1734	0
Flt Permitted	0.246				0.968	
Satd. Flow (perm)	460	5029	3423	0	1678	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3		18	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	15			15	42	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	1961	1115	0	53	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	77.0	77.0	77.0		33.0	
Total Split (%)	70.0%	70.0%	70.0%		30.0%	
Maximum Green (s)	71.3	71.3	71.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	93.2	93.2	93.2		10.2	
Actuated g/C Ratio	0.85	0.85	0.85		0.09	
v/c Ratio	0.07	0.46	0.38		0.30	
Control Delay (s/veh)	2.6	3.2	7.9		38.4	
Queue Delay	0.0	0.2	0.1		0.0	
Total Delay (s/veh)	2.6	3.4	8.0		38.4	
LOS	A	A	A		D	
Approach Delay (s/veh)		3.4	8.0		38.4	
Approach LOS		A	A		D	
Queue Length 50th (m)	1.0	37.2	61.6		7.1	
Queue Length 95th (m)	2.8	46.0	72.1		19.1	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	390	4262	2902		454	
Starvation Cap Reductn	0	1173	595		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.07	0.63	0.48		0.12	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 41 (37%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay (s/veh): 5.6

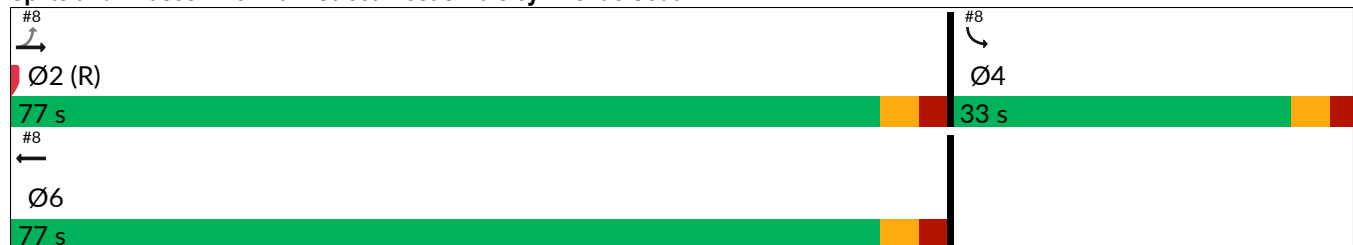
Intersection LOS: A

Intersection Capacity Utilization 53.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		  	 		 		
Traffic Volume (veh/h)	13	1905	1033	7	5	16	
Future Volume (Veh/h)	13	1905	1033	7	5	16	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly flow rate (vph)	14	2093	1135	8	5	18	
Pedestrians					25		
Lane Width (m)					3.5		
Walking Speed (m/s)					1.1		
Percent Blockage					2		
Right turn flare (veh)							
Median type		None	TWLTL				
Median storage veh			2				
Upstream signal (m)		94	93				
pX, platoon unblocked	0.91				0.93	0.91	
vC, conflicting volume	1168				1890	597	
vC1, stage 1 conf vol					1164		
vC2, stage 2 conf vol					726		
vCu, unblocked vol	987				1194	359	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)	2.2				3.5	3.3	
p0 queue free %	98				98	97	
cM capacity (veh/h)	630				279	572	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	14	698	698	698	757	386	23
Volume Left	14	0	0	0	0	0	5
Volume Right	0	0	0	0	0	8	18
cSH	630	1700	1700	1700	1700	1700	466
Volume to Capacity	0.02	0.41	0.41	0.41	0.45	0.23	0.05
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	0.0	1.2
Control Delay (s/veh)	10.8	0.0	0.0	0.0	0.0	0.0	13.1
Lane LOS	B						B
Approach Delay (s/veh)	0.1				0.0		13.1
Approach LOS							B
Intersection Summary							
Average Delay			0.1				
Intersection Capacity Utilization			46.8%		ICU Level of Service		A
Analysis Period (min)			15				

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↱			↑↑		↱
Traffic Volume (veh/h)	1736	105	0	1007	0	83
Future Volume (Veh/h)	1736	105	0	1007	0	83
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.92	0.91
Hourly flow rate (vph)	1908	115	0	1107	0	91
Pedestrians					25	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					2	
Right turn flare (veh)						
Median type	TWLT			None		
Median storage veh)	2					
Upstream signal (m)	121			66		
pX, platoon unblocked			0.89		0.94	0.89
vC, conflicting volume			2048		2544	719
vC1, stage 1 conf vol					1991	
vC2, stage 2 conf vol					554	
vCu, unblocked vol			1748		1900	256
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	86
cM capacity (veh/h)			317		117	653
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	763	763	497	554	554	91
Volume Left	0	0	0	0	0	0
Volume Right	0	0	115	0	0	91
cSH	1700	1700	1700	1700	1700	653
Volume to Capacity	0.45	0.45	0.29	0.33	0.33	0.14
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	3.7
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.4
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.4
Approach LOS						B
Intersection Summary						
Average Delay	0.3					
Intersection Capacity Utilization	47.8%		ICU Level of Service		A	
Analysis Period (min)	15					

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	62	961	459	0	413	24	594	262	70	32	210	33
Future Volume (vph)	62	961	459	0	413	24	594	262	70	32	210	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4577	0	0	3309	0	3429	1768	0	0	3147	0
Flt Permitted	0.950						0.950				0.854	
Satd. Flow (perm)	1685	4577	0	0	3309	0	3429	1768	0	0	2704	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		127			5			15			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		61.0			142.9			232.0			149.2	
Travel Time (s)		4.4			10.3			16.7			10.7	
Confl. Peds. (#/hr)	28		28	28		28						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	7%	3%	0%	7%	0%	1%	2%	6%	50%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	1479	0	0	455	0	619	346	0	0	286	0
Turn Type	Prot	NA			NA		Prot	NA		Perm	NA	
Protected Phases	5	2			6		7	4			8	
Permitted Phases										8		
Detector Phase	5	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	14.0	59.0			45.0		36.0	61.0		25.0	25.0	
Total Split (%)	11.7%	49.2%			37.5%		30.0%	50.8%		20.8%	20.8%	
Maximum Green (s)	9.5	52.3			38.3		31.5	54.7		18.7	18.7	
Yellow Time (s)	3.0	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	1.5	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	4.5	6.7			6.7		4.5	6.3			6.3	
Lead/Lag	Lead				Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes				Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Max			None		None	None		None	None	
Walk Time (s)		10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)		25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)		0			0			0		0	0	
Act Effct Green (s)	8.9	59.3			48.0		26.5	47.7			16.6	
Actuated g/C Ratio	0.07	0.49			0.40		0.22	0.40			0.14	
v/c Ratio	0.50	0.64			0.34		0.82	0.49			0.75	
Control Delay (s/veh)	96.0	3.0			28.1		53.6	27.3			60.2	
Queue Delay	0.0	0.1			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	96.0	3.1			28.1		53.6	27.3			60.2	
LOS	F	A			C		D	C			E	
Approach Delay (s/veh)		7.0			28.1			44.2			60.2	
Approach LOS		A			C			D			E	
Queue Length 50th (m)	16.4	7.1			42.8		72.2	57.4			34.6	
Queue Length 95th (m)	29.8	8.8			62.1		88.1	77.0			49.8	
Internal Link Dist (m)		37.0			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	143	2326			1326		900	814			433	
Starvation Cap Reductn	0	88			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.45	0.66			0.34		0.69	0.43			0.66	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 70 (58%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 25.7

Intersection LOS: C

Intersection Capacity Utilization 75.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Longwood Road South & Main Street West

 #3  Ø2 (R) 59 s		 #3  Ø4 61 s	
 #3 Ø5 14 s	 #3 Ø6 45 s	 #3 Ø7 36 s	 #3 Ø8 25 s

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	1297	391	0	1017	953	134
Future Volume (vph)	1297	391	0	1017	953	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	4885	1521	0	3433	3330	1493
Flt Permitted					0.950	
Satd. Flow (perm)	4885	1166	0	3433	3330	1431
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		371				41
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		109	109			32
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	4%	4%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1323	399	0	1038	972	137
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	38.0	38.0		42.0	40.0	38.0
Total Split (%)	31.7%	31.7%		35.0%	33.3%	31.7%
Maximum Green (s)	32.3	32.3		35.8	34.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	32.3	32.3		35.8	34.3	32.3
Actuated g/C Ratio	0.27	0.27		0.30	0.29	0.27
v/c Ratio	1.01	0.68		1.01	1.02	0.33
Control Delay (s/veh)	70.3	11.8		66.7	77.4	26.9
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	70.3	11.8		66.7	77.4	26.9
LOS	E	B		E	E	C
Approach Delay (s/veh)	56.7			66.7	71.1	
Approach LOS	E			E	E	
Queue Length 50th (m)	~120.2	5.2		~143.0	~129.3	18.8
Queue Length 95th (m)	#154.6	39.8		#177.0	#170.0	37.4
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1314	584		1024	951	415
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	1.01	0.68		1.01	1.02	0.33

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 50 (42%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay (s/veh): 63.5

Intersection LOS: E

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

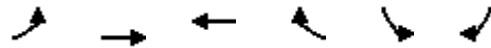
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

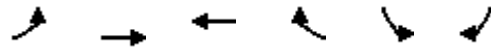
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
←	←	↖
Ø2 (R)	Ø6	Ø4
38 s	42 s	40 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	1435	1055	15	26	21
Future Volume (vph)	43	1435	1055	15	26	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1700	4885	3426	0	1716	0
Flt Permitted	0.950				0.973	
Satd. Flow (perm)	1689	4885	3426	0	1652	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			2		22	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	14			14	52	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	1479	1103	0	49	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases						
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	5.0	30.0	30.0		10.0	
Minimum Split (s)	11.0	35.7	35.7		33.0	
Total Split (s)	14.0	86.0	72.0		34.0	
Total Split (%)	11.7%	71.7%	60.0%		28.3%	
Maximum Green (s)	9.5	80.3	66.3		29.0	
Yellow Time (s)	3.0	3.3	3.3		3.0	
All-Red Time (s)	1.5	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.5	5.7	5.7		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	None	C-Max	None		None	
Walk Time (s)		12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effect Green (s)	8.5	103.3	92.3		10.1	
Actuated g/C Ratio	0.07	0.86	0.77		0.08	
v/c Ratio	0.37	0.35	0.42		0.30	
Control Delay (s/veh)	68.8	2.6	9.0		37.7	
Queue Delay	0.0	0.1	0.2		0.0	
Total Delay (s/veh)	68.8	2.7	9.2		37.7	
LOS	E	A	A		D	
Approach Delay (s/veh)		4.6	9.2		37.7	
Approach LOS		A	A		D	
Queue Length 50th (m)	11.6	1.2	92.1		6.0	
Queue Length 95th (m)	m13.1	m5.8	106.6		18.1	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	141	4205	2634		431	
Starvation Cap Reductn	0	1019	631		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.31	0.46	0.55		0.11	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 41 (34%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay (s/veh): 7.1

Intersection LOS: A

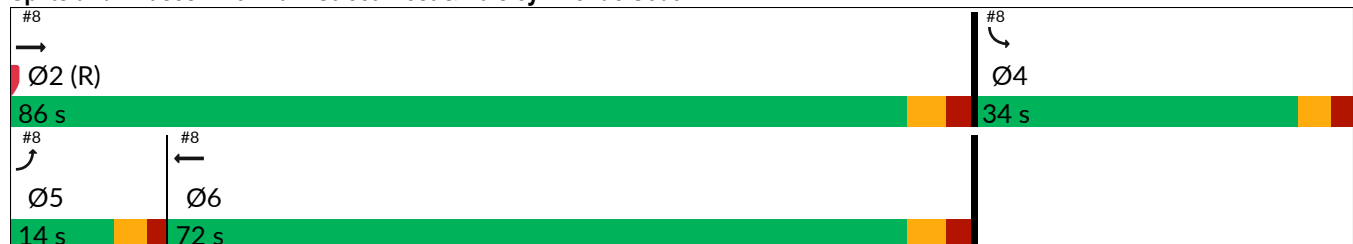
Intersection Capacity Utilization 53.5%

ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Volume (veh/h)	0	1401	1060	18	0	17
Future Volume (Veh/h)	0	1401	1060	18	0	17
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1490	1128	19	0	18
Pedestrians					26	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		94	93			
pX, platoon unblocked	0.91				0.94	0.91
vC, conflicting volume	1173				1660	600
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	997				1174	368
tC, single (s)	4.2				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	100				100	97
cM capacity (veh/h)	599				173	550
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	497	497	497	752	395	18
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	19	18
cSH	1700	1700	1700	1700	1700	550
Volume to Capacity	0.29	0.29	0.29	0.44	0.23	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.8
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.8
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.8
Approach LOS						B
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			39.9%		ICU Level of Service	A
Analysis Period (min)			15			

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↱			↑↑		↱↑
Traffic Volume (veh/h)	1401	54	0	1060	0	105
Future Volume (Veh/h)	1401	54	0	1060	0	105
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1490	57	0	1128	0	112
Pedestrians						26
Lane Width (m)						3.5
Walking Speed (m/s)						1.1
Percent Blockage						2
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	126			61		
pX, platoon unblocked			0.94			0.94
vC, conflicting volume			1573			2109
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1380			1658
tC, single (s)			4.1			6.8
tC, 2 stage (s)						
tF (s)			2.2			3.5
p0 queue free %			100			100
cM capacity (veh/h)			461			83
						652
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	596	596	355	564	564	112
Volume Left	0	0	0	0	0	0
Volume Right	0	0	57	0	0	112
cSH	1700	1700	1700	1700	1700	652
Volume to Capacity	0.35	0.35	0.21	0.33	0.33	0.17
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	4.7
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.7
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.7
Approach LOS						B
Intersection Summary						
Average Delay	0.5					
Intersection Capacity Utilization	41.5%			ICU Level of Service		A
Analysis Period (min)	15					

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	49	946	824	0	502	4	477	174	86	44	310	28
Future Volume (vph)	49	946	824	0	502	4	477	174	86	44	310	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4618	0	0	3396	0	3362	1733	0	0	3283	0
Flt Permitted	0.950						0.950				0.867	
Satd. Flow (perm)	1705	4618	0	0	3396	0	3362	1733	0	0	2864	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		263			1			28			6	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		65.9			142.9			232.0			149.2	
Travel Time (s)		4.7			10.3			16.7			10.7	
Confl. Peds. (#/hr)	23		27	27		23						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	1%	0%	5%	0%	3%	4%	1%	39%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	1824	0	0	522	0	492	268	0	0	394	0
Turn Type	Prot	NA			NA		Prot	NA		Perm	NA	
Protected Phases	5	2			6		7	4			8	
Permitted Phases										8		
Detector Phase	5	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	13.0	57.0			44.0		27.0	53.0		26.0	26.0	
Total Split (%)	11.8%	51.8%			40.0%		24.5%	48.2%		23.6%	23.6%	
Maximum Green (s)	8.5	50.3			37.3		22.5	46.7		19.7	19.7	
Yellow Time (s)	3.0	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	1.5	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	4.5	6.7			6.7		4.5	6.3			6.3	
Lead/Lag	Lead				Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes				Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Max			None		None	None		None	None	
Walk Time (s)		10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)		25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)		0			0			0		0	0	
Act Effect Green (s)	7.7	53.8			43.6		20.3	43.2			18.5	
Actuated g/C Ratio	0.07	0.49			0.40		0.18	0.39			0.17	
v/c Ratio	0.42	0.95dr			0.39		0.79	0.38			0.81	
Control Delay (s/veh)	56.9	20.0			26.5		52.9	22.3			57.3	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	56.9	20.0			26.5		52.9	22.3			57.3	
LOS	E	C			C		D	C			E	
Approach Delay (s/veh)		21.0			26.5			42.1			57.3	
Approach LOS		C			C			D			E	
Queue Length 50th (m)	9.3	106.9			46.9		53.1	35.6			42.8	
Queue Length 95th (m)	20.7	129.3			63.4		70.5	55.8			#61.4	
Internal Link Dist (m)		41.9			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	135	2391			1346		687	751			520	
Starvation Cap Reductn	0	13			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.38	0.77			0.39		0.72	0.36			0.76	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 45 (41%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 30.4

Intersection LOS: C

Intersection Capacity Utilization 79.1%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Longwood Road South & Main Street West

#3 → Ø2 (R) 57 s	#3 ← Ø6 44 s	#3 ↑ Ø4 53 s	#3 ↘ Ø7 27 s	#3 ↙ Ø8 26 s
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	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↘	↑
Traffic Volume (vph)	1686	769	0	1031	534	166
Future Volume (vph)	1686	769	0	1031	534	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	5079	1551	0	3466	3395	1493
Flt Permitted					0.950	
Satd. Flow (perm)	5079	1328	0	3466	3395	1462
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		563				90
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		67	67			16
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	0%	3%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1720	785	0	1052	545	169
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	38.0	38.0		42.0	40.0	38.0
Total Split (%)	31.7%	31.7%		35.0%	33.3%	31.7%
Maximum Green (s)	32.3	32.3		35.8	34.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	42.0	42.0		35.8	24.6	42.0
Actuated g/C Ratio	0.35	0.35		0.30	0.21	0.35
v/c Ratio	0.97	0.94		1.02	0.79	0.30
Control Delay (s/veh)	53.7	32.3		74.3	53.5	15.8
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	53.7	32.3		74.3	53.5	15.8
LOS	D	C		E	D	B
Approach Delay (s/veh)	47.0			74.3	44.6	
Approach LOS	D			E	D	
Queue Length 50th (m)	146.0	66.7		~137.8	64.2	13.4
Queue Length 95th (m)	#201.6	#168.1		#183.0	78.7	33.6
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1779	831		1034	970	570
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.97	0.94		1.02	0.56	0.30

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 50 (42%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay (s/veh): 53.3

Intersection LOS: D

Intersection Capacity Utilization 65.4%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

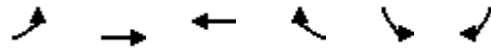
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

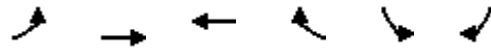
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
←	←	↖
Ø2 (R)	Ø6	Ø4
38 s	42 s	40 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	41	1850	1043	16	38	17
Future Volume (vph)	41	1850	1043	16	38	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1785	5029	3423	0	1740	0
Flt Permitted	0.950				0.967	
Satd. Flow (perm)	1774	5029	3423	0	1681	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			2		18	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	15			15	42	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	1947	1115	0	58	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases						
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	5.0	30.0	30.0		10.0	
Minimum Split (s)	11.0	35.7	35.7		33.0	
Total Split (s)	13.0	77.0	64.0		33.0	
Total Split (%)	11.8%	70.0%	58.2%		30.0%	
Maximum Green (s)	8.5	71.3	58.3		28.0	
Yellow Time (s)	3.0	3.3	3.3		3.0	
All-Red Time (s)	1.5	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.5	5.7	5.7		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	None	C-Max	None		None	
Walk Time (s)		12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effect Green (s)	8.1	93.1	84.8		10.3	
Actuated g/C Ratio	0.07	0.85	0.77		0.09	
v/c Ratio	0.33	0.46	0.42		0.32	
Control Delay (s/veh)	54.4	3.2	11.8		39.6	
Queue Delay	0.0	0.2	0.0		0.0	
Total Delay (s/veh)	54.4	3.4	11.9		39.6	
LOS	D	A	B		D	
Approach Delay (s/veh)		4.5	11.9		39.6	
Approach LOS		A	B		D	
Queue Length 50th (m)	8.9	36.8	69.0		8.1	
Queue Length 95th (m)	19.7	47.0	80.8		20.5	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	147	4258	2640		456	
Starvation Cap Reductn	0	1174	227		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.29	0.63	0.46		0.13	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 41 (37%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay (s/veh): 7.8

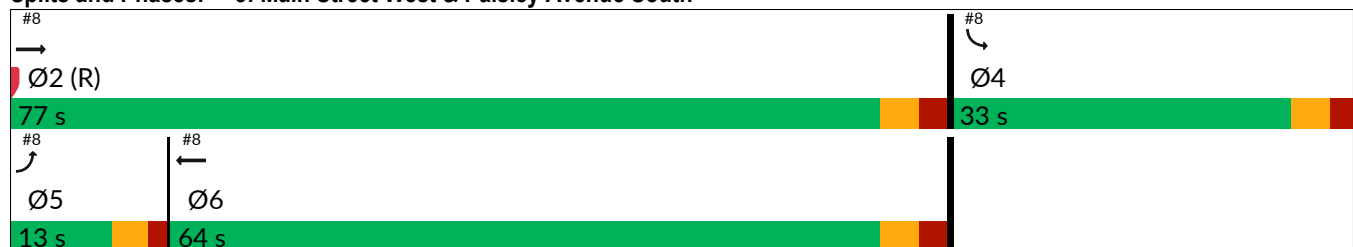
Intersection LOS: A

Intersection Capacity Utilization 53.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Volume (veh/h)	0	1800	1033	7	0	16
Future Volume (Veh/h)	0	1800	1033	7	0	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	1978	1135	8	0	18
Pedestrians					25	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh			2			
Upstream signal (m)		94	93			
pX, platoon unblocked	0.89				0.94	0.89
vC, conflicting volume	1168				1823	597
vC1, stage 1 conf vol					1164	
vC2, stage 2 conf vol					659	
vCu, unblocked vol	950				1063	311
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	97
cM capacity (veh/h)	639				290	604
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	659	659	659	757	386	18
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	8	18
cSH	1700	1700	1700	1700	1700	604
Volume to Capacity	0.39	0.39	0.39	0.45	0.23	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.7
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.1
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.1
Approach LOS						B
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			38.8%		ICU Level of Service	A
Analysis Period (min)			15			

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↱			↑↑		↱
Traffic Volume (veh/h)	1800	105	0	1033	0	83
Future Volume (Veh/h)	1800	105	0	1033	0	83
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.92	0.91
Hourly flow rate (vph)	1978	115	0	1135	0	91
Pedestrians					25	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					2	
Right turn flare (veh)						
Median type	TWLT			None		
Median storage veh)	2					
Upstream signal (m)	121			66		
pX, platoon unblocked			0.89		0.94	0.89
vC, conflicting volume			2118		2628	742
vC1, stage 1 conf vol					2061	
vC2, stage 2 conf vol					568	
vCu, unblocked vol			1817		1912	267
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	86
cM capacity (veh/h)			297		108	640
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	791	791	511	568	568	91
Volume Left	0	0	0	0	0	0
Volume Right	0	0	115	0	0	91
cSH	1700	1700	1700	1700	1700	640
Volume to Capacity	0.47	0.47	0.30	0.33	0.33	0.14
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	3.7
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.6
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.6
Approach LOS						B
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			49.0%		ICU Level of Service	A
Analysis Period (min)			15			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	62	961	459	0	413	24	594	262	70	32	210	33
Future Volume (vph)	62	961	459	0	413	24	594	262	70	32	210	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4573	0	0	3308	0	3429	1768	0	0	3147	0
Flt Permitted	0.950						0.950				0.853	
Satd. Flow (perm)	1679	4573	0	0	3308	0	3429	1768	0	0	2701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		118			5			14			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		61.0			142.9			232.0			149.2	
Travel Time (s)		4.4			10.3			16.7			10.7	
Confl. Peds. (#/hr)	28		28	28		28						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	7%	3%	0%	7%	0%	1%	2%	6%	50%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	1479	0	0	455	0	619	346	0	0	286	0
Turn Type	Prot	NA			NA		Prot	NA		Perm	NA	
Protected Phases	5	2			6		7	4			8	
Permitted Phases										8		
Detector Phase	5	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	15.0	64.0			49.0		39.0	66.0		27.0	27.0	
Total Split (%)	11.5%	49.2%			37.7%		30.0%	50.8%		20.8%	20.8%	
Maximum Green (s)	10.5	57.3			42.3		34.5	59.7		20.7	20.7	
Yellow Time (s)	3.0	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	1.5	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	4.5	6.7			6.7		4.5	6.3			6.3	
Lead/Lag	Lead				Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes				Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Max			None		None	None		None	None	
Walk Time (s)		10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)		25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)		0			0			0		0	0	
Act Effct Green (s)	9.5	66.1			54.3		28.6	50.9			17.8	
Actuated g/C Ratio	0.07	0.51			0.42		0.22	0.39			0.14	
v/c Ratio	0.51	0.62			0.33		0.82	0.49			0.76	
Control Delay (s/veh)	69.5	21.7			28.6		57.7	30.2			65.0	
Queue Delay	0.0	0.1			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	69.5	21.8			28.6		57.7	30.2			65.0	
LOS	E	C			C		E	C			E	
Approach Delay (s/veh)		23.8			28.6			47.8			65.0	
Approach LOS		C			C			D			E	
Queue Length 50th (m)	16.4	96.1			44.8		79.0	64.0			37.8	
Queue Length 95th (m)	32.0	128.1			66.2		94.3	81.9			53.2	
Internal Link Dist (m)		37.0			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	144	2383			1384		910	819			438	
Starvation Cap Reductn	0	147			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.45	0.66			0.33		0.68	0.42			0.65	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 70 (54%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 35.3

Intersection LOS: D

Intersection Capacity Utilization 75.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Longwood Road South & Main Street West

#3 → Ø2 (R) 64 s	#3 ↑ Ø4 66 s
#3 ↗ Ø5 15 s	#3 ← Ø6 49 s
#3 ↖ Ø7 39 s	#3 ↘ Ø8 27 s

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	1297	391	0	1017	953	134
Future Volume (vph)	1297	391	0	1017	953	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	4885	1521	0	3433	3330	1493
Flt Permitted					0.950	
Satd. Flow (perm)	4885	1047	0	3433	3330	1411
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		282				31
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		109	109			32
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	4%	4%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1323	399	0	1038	972	137
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	50.0	50.0		56.0	54.0	50.0
Total Split (%)	31.3%	31.3%		35.0%	33.8%	31.3%
Maximum Green (s)	44.3	44.3		49.8	48.3	44.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	44.5	44.5		49.8	48.1	44.5
Actuated g/C Ratio	0.28	0.28		0.31	0.30	0.28
v/c Ratio	0.97	0.81		0.97	0.97	0.33
Control Delay (s/veh)	75.6	29.1		75.5	77.0	37.8
Queue Delay	0.0	0.0		25.3	0.0	0.0
Total Delay (s/veh)	75.6	29.1		100.7	77.0	37.8
LOS	E	C		F	E	D
Approach Delay (s/veh)	64.9			100.7	72.2	
Approach LOS	E			F	E	
Queue Length 50th (m)	160.1	39.5		177.7	162.9	28.3
Queue Length 95th (m)	#193.2	#97.7		#223.9	#207.3	49.3
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1358	494		1068	1005	415
Starvation Cap Reductn	0	0		90	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.97	0.81		1.06	0.97	0.33

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 50 (31%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay (s/veh): 76.6

Intersection LOS: E

Intersection Capacity Utilization 65.2%

ICU Level of Service C

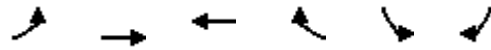
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

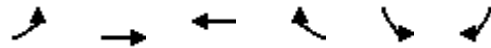
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6 → Ø2 (R) 50 s	#6 ← Ø6 56 s	#6 ↖ Ø4 54 s
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	1435	1055	15	26	21
Future Volume (vph)	43	1435	1055	15	26	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1700	4885	3426	0	1716	0
Flt Permitted	0.950				0.973	
Satd. Flow (perm)	1688	4885	3426	0	1647	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			2		22	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	14			14	52	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	1479	1103	0	49	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases						
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	5.0	30.0	30.0		10.0	
Minimum Split (s)	11.0	35.7	35.7		33.0	
Total Split (s)	17.0	95.0	78.0		35.0	
Total Split (%)	13.1%	73.1%	60.0%		26.9%	
Maximum Green (s)	12.5	89.3	72.3		30.0	
Yellow Time (s)	3.0	3.3	3.3		3.0	
All-Red Time (s)	1.5	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.5	5.7	5.7		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	None	C-Max	None		None	
Walk Time (s)		12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effect Green (s)	8.8	113.2	102.0		10.2	
Actuated g/C Ratio	0.07	0.87	0.78		0.08	
v/c Ratio	0.39	0.35	0.41		0.32	
Control Delay (s/veh)	66.9	2.3	10.4		41.2	
Queue Delay	0.0	0.2	0.2		0.0	
Total Delay (s/veh)	66.9	2.5	10.6		41.2	
LOS	E	A	B		D	
Approach Delay (s/veh)		4.4	10.6		41.2	
Approach LOS		A	B		D	
Queue Length 50th (m)	11.4	25.0	98.1		6.6	
Queue Length 95th (m)	23.6	31.0	112.3		19.2	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	163	4255	2688		412	
Starvation Cap Reductn	0	1618	692		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.27	0.56	0.55		0.12	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 41 (32%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay (s/veh): 7.6

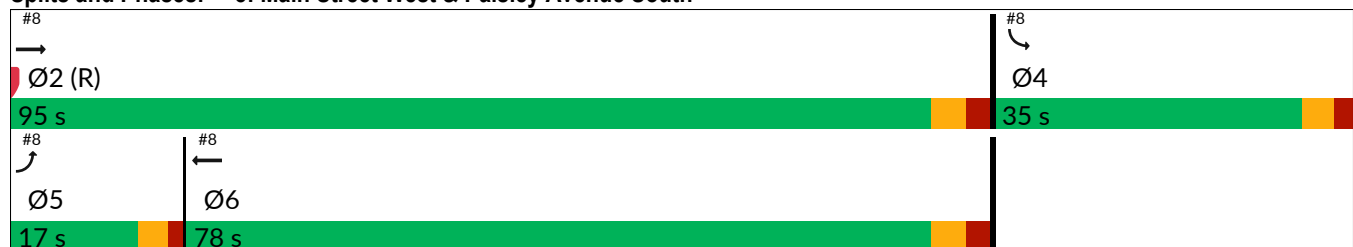
Intersection LOS: A

Intersection Capacity Utilization 53.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Volume (veh/h)	0	1401	1060	18	0	17
Future Volume (Veh/h)	0	1401	1060	18	0	17
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1490	1128	19	0	18
Pedestrians					26	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)		94	93			
pX, platoon unblocked	0.91				0.94	0.91
vC, conflicting volume	1173				1660	600
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1002				1203	374
tC, single (s)	4.2				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	100				100	97
cM capacity (veh/h)	598				166	547
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	497	497	497	752	395	18
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	19	18
cSH	1700	1700	1700	1700	1700	547
Volume to Capacity	0.29	0.29	0.29	0.44	0.23	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.8
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.8
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.8
Approach LOS						B
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			39.9%		ICU Level of Service	A
Analysis Period (min)			15			

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1401	54	0	1060	0	105
Future Volume (Veh/h)	1401	54	0	1060	0	105
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1490	57	0	1128	0	112
Pedestrians					26	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					2	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	126			61		
pX, platoon unblocked			0.94	0.94		0.94
vC, conflicting volume			1573	2109		551
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1395	1686		311
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		82
cM capacity (veh/h)			457	80		637
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	596	596	355	564	564	112
Volume Left	0	0	0	0	0	0
Volume Right	0	0	57	0	0	112
cSH	1700	1700	1700	1700	1700	637
Volume to Capacity	0.35	0.35	0.21	0.33	0.33	0.18
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	4.8
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.9
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0	11.9	
Approach LOS						B
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			41.5%	ICU Level of Service		A
Analysis Period (min)			15			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	49	946	824	0	502	4	477	174	86	44	310	28
Future Volume (vph)	49	946	824	0	502	4	477	174	86	44	310	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	60.0		0.0	0.0		0.0	40.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		2.5	2.5		2.5
Satd. Flow (prot)	1750	4618	0	0	3396	0	3362	1733	0	0	3283	0
Flt Permitted	0.427						0.950				0.866	
Satd. Flow (perm)	768	4618	0	0	3396	0	3362	1733	0	0	2860	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		246			1			30			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		65.9			142.9			232.0			149.2	
Travel Time (s)		4.7			10.3			16.7			10.7	
Confl. Peds. (#/hr)	23		27	27		23						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	1%	0%	5%	0%	3%	4%	1%	39%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	1824	0	0	522	0	492	268	0	0	394	0
Turn Type	Perm	NA			NA		Prot	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2									8		
Detector Phase	2	2			6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0			30.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.7	41.7			41.7		14.5	35.3		24.0	24.0	
Total Split (s)	53.0	53.0			53.0		30.0	57.0		27.0	27.0	
Total Split (%)	48.2%	48.2%			48.2%		27.3%	51.8%		24.5%	24.5%	
Maximum Green (s)	46.3	46.3			46.3		25.5	50.7		20.7	20.7	
Yellow Time (s)	3.3	3.3			3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	3.4	3.4			3.4		1.5	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.7	6.7			6.7		4.5	6.3			6.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max			None		None	None		None	None	
Walk Time (s)	10.0	10.0			10.0			10.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Don't Walk (s)	25.0	25.0			14.0			19.0		0.0	0.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	52.5	52.5			52.5		21.0	44.5			19.0	
Actuated g/C Ratio	0.48	0.48			0.48		0.19	0.40			0.17	
v/c Ratio	0.14	0.97dr			0.32		0.77	0.37			0.79	
Control Delay (s/veh)	17.1	21.9			19.5		50.3	20.8			54.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay (s/veh)	17.1	21.9			19.5		50.3	20.8			54.6	
LOS	B	C			B		D	C			D	
Approach Delay (s/veh)		21.8			19.5			39.9			54.6	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	4.1	107.9			37.4		53.1	35.3			42.8	
Queue Length 95th (m)	12.7	140.2			54.8		67.9	51.6			59.8	
Internal Link Dist (m)		41.9			118.9			208.0			125.2	
Turn Bay Length (m)	60.0						40.0					
Base Capacity (vph)	366	2331			1620		779	814			550	
Starvation Cap Reductn	0	11			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.14	0.79			0.32		0.63	0.33			0.72	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 45 (41%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 29.0

Intersection LOS: C

Intersection Capacity Utilization 81.9%

ICU Level of Service D

Analysis Period (min) 15

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Longwood Road South & Main Street West

#3 	#3 
Ø2 (R)	Ø4
53 s	57 s
#3 	#3 
Ø6	Ø7
53 s	30 s
	#3 
	Ø8
	27 s

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑		↑↑	↑↘	↑
Traffic Volume (vph)	1686	769	0	1031	534	166
Future Volume (vph)	1686	769	0	1031	534	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	20.0
Storage Lanes		1	0		2	1
Taper Length (m)		2.5	2.5		2.5	2.5
Satd. Flow (prot)	5079	1551	0	3466	3395	1493
Flt Permitted					0.950	
Satd. Flow (perm)	5079	1309	0	3466	3395	1459
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		604				96
Link Speed (k/h)	50			50	50	
Link Distance (m)	126.6			187.1	175.6	
Travel Time (s)	9.1			13.5	12.6	
Confl. Peds. (#/hr)		67	67			16
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	0%	3%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1720	785	0	1052	545	169
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2				2
Detector Phase	2	2		6	4	2
Switch Phase						
Minimum Initial (s)	20.0	20.0		20.0	10.0	20.0
Minimum Split (s)	34.0	34.0		36.2	27.0	34.0
Total Split (s)	54.0	54.0		48.0	28.0	54.0
Total Split (%)	41.5%	41.5%		36.9%	21.5%	41.5%
Maximum Green (s)	48.3	48.3		41.8	22.3	48.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	2.0	2.0		2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		6.2	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0
Recall Mode	C-Max	C-Max		None	None	C-Max
Walk Time (s)	12.0	12.0		12.0	12.0	12.0

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Flash Don't Walk (s)	16.0	16.0		16.0	9.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	48.6	48.6		41.6	22.3	48.6
Actuated g/C Ratio	0.37	0.37		0.32	0.17	0.37
v/c Ratio	0.91	0.91		0.95	0.94	0.28
Control Delay (s/veh)	46.7	24.3		60.6	78.0	13.8
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	46.7	24.3		60.6	78.0	13.8
LOS	D	C		E	E	B
Approach Delay (s/veh)	39.6			60.6	62.8	
Approach LOS	D			E	E	
Queue Length 50th (m)	153.5	54.6		141.3	72.9	13.0
Queue Length 95th (m)	174.7	#162.0		#184.3	#106.1	30.8
Internal Link Dist (m)	102.6			163.1	151.6	
Turn Bay Length (m)						20.0
Base Capacity (vph)	1897	866		1114	582	605
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.91	0.91		0.94	0.94	0.28

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 50 (38%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay (s/veh): 48.7

Intersection LOS: D

Intersection Capacity Utilization 65.4%

ICU Level of Service C

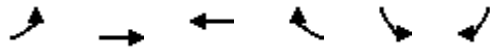
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

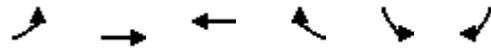
Queue shown is maximum after two cycles.

Splits and Phases: 6: Hwy 403 Off-Ramp & Main Street West

#6	#6	#6
←	←	↖
Ø2 (R)	Ø6	Ø4
54 s	48 s	28 s



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	41	1850	1043	16	38	17
Future Volume (vph)	41	1850	1043	16	38	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	40.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	2.5			2.5	2.5	2.5
Satd. Flow (prot)	1785	5029	3423	0	1740	0
Flt Permitted	0.246				0.967	
Satd. Flow (perm)	460	5029	3423	0	1681	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3		18	
Link Speed (k/h)		50	50		40	
Link Distance (m)		187.1	93.7		172.8	
Travel Time (s)		13.5	6.7		15.6	
Confl. Peds. (#/hr)	15			15	42	1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	1947	1115	0	58	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		10.0	
Minimum Split (s)	35.7	35.7	35.7		33.0	
Total Split (s)	77.0	77.0	77.0		33.0	
Total Split (%)	70.0%	70.0%	70.0%		30.0%	
Maximum Green (s)	71.3	71.3	71.3		28.0	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.4	2.4	2.4		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.7	5.7	5.7		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Minimum Gap (s)	3.0	3.0	3.0		3.0	
Time Before Reduce (s)	0.0	0.0	0.0		0.0	
Time To Reduce (s)	0.0	0.0	0.0		0.0	
Recall Mode	C-Max	C-Max	None		None	
Walk Time (s)	12.0	12.0	12.0		12.0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Don't Walk (s)	16.0	16.0	16.0		16.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effect Green (s)	93.1	93.1	93.1		10.3	
Actuated g/C Ratio	0.85	0.85	0.85		0.09	
v/c Ratio	0.11	0.46	0.38		0.32	
Control Delay (s/veh)	3.0	3.2	8.0		39.6	
Queue Delay	0.0	0.2	0.1		0.0	
Total Delay (s/veh)	3.0	3.4	8.1		39.6	
LOS	A	A	A		D	
Approach Delay (s/veh)		3.4	8.1		39.6	
Approach LOS		A	A		D	
Queue Length 50th (m)	1.5	36.8	61.6		8.1	
Queue Length 95th (m)	4.1	47.0	72.3		20.5	
Internal Link Dist (m)		163.1	69.7		148.8	
Turn Bay Length (m)	40.0					
Base Capacity (vph)	389	4258	2898		456	
Starvation Cap Reductn	0	1174	593		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.11	0.63	0.48		0.13	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 41 (37%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay (s/veh): 5.7

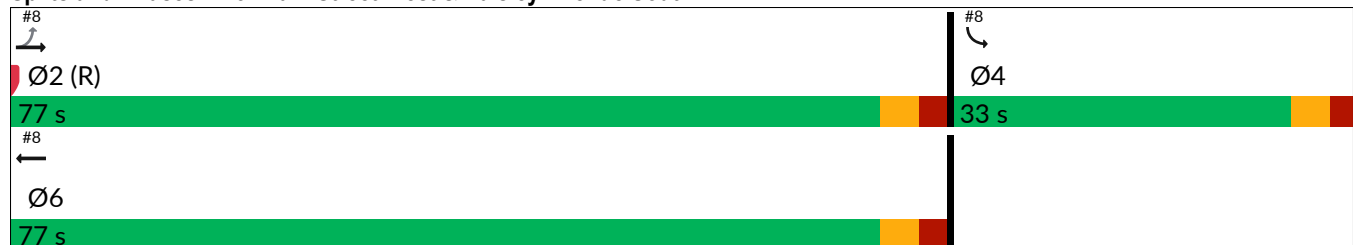
Intersection LOS: A

Intersection Capacity Utilization 53.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Main Street West & Paisley Avenue South



HCM Unsignalized Intersection Capacity Analysis
10: Main Street West & Bond Street South

03/23/2026

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Volume (veh/h)	0	1800	1033	7	0	16
Future Volume (Veh/h)	0	1800	1033	7	0	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	1978	1135	8	0	18
Pedestrians					25	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh			2			
Upstream signal (m)		94	93			
pX, platoon unblocked	0.91				0.93	0.91
vC, conflicting volume	1168				1823	597
vC1, stage 1 conf vol					1164	
vC2, stage 2 conf vol					659	
vCu, unblocked vol	987				1126	359
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	97
cM capacity (veh/h)	630				282	572
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	659	659	659	757	386	18
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	8	18
cSH	1700	1700	1700	1700	1700	572
Volume to Capacity	0.39	0.39	0.39	0.45	0.23	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.7
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.5
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.5
Approach LOS						B
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			38.8%		ICU Level of Service	A
Analysis Period (min)			15			

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↱			↑↑		↱
Traffic Volume (veh/h)	1800	105	0	1033	0	83
Future Volume (Veh/h)	1800	105	0	1033	0	83
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.92	0.91
Hourly flow rate (vph)	1978	115	0	1135	0	91
Pedestrians					25	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.1	
Percent Blockage					2	
Right turn flare (veh)						
Median type	TWLT			None		
Median storage veh)	2					
Upstream signal (m)	121			66		
pX, platoon unblocked			0.89		0.93	0.89
vC, conflicting volume			2118		2628	742
vC1, stage 1 conf vol					2061	
vC2, stage 2 conf vol					568	
vCu, unblocked vol			1817		1981	267
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	86
cM capacity (veh/h)			297		107	640
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	791	791	511	568	568	91
Volume Left	0	0	0	0	0	0
Volume Right	0	0	115	0	0	91
cSH	1700	1700	1700	1700	1700	640
Volume to Capacity	0.47	0.47	0.30	0.33	0.33	0.14
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	3.7
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	11.6
Lane LOS						B
Approach Delay (s/veh)	0.0			0.0		11.6
Approach LOS						B
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			49.0%	ICU Level of Service		A
Analysis Period (min)			15			

Appendix H

Proposed Site Plan

SHORT TERM - BIKE PARKING		
TYPE	LEVEL	QTY
RESIDENTIAL	GRADE	64
COMMERCIAL	GRADE	2

LOCKERS/BIKE STORAGE COUNT			
LEVEL	DIMENSIONS (mm)		QTY
	L	W	
UNDERGROUND LEVEL 4	1500	900	124
UNDERGROUND LEVEL 3	1500	900	124
UNDERGROUND LEVEL 2	1500	900	119
UNDERGROUND LEVEL 1	1500	900	79
TOTAL			446

TOTAL BREAKDOWN - SUITE SCHEDULE										
TYPE	AREA (m²)	AREA (ft²)	STUDIO	1BED UNIT	1BED+DEN	1BED+BED+2BA	2BED UNIT	2BED+2BA	2BED+DEN+2BA	3BED
TYPE A1	39.5 m²	426 ft²	49	0	0	0	0	0	0	49
TYPE B1	62.0 m²	667 ft²	0	166	0	0	0	0	0	166
TYPE C1	62.0 m²	665 ft²	0	0	117	0	0	0	0	117
TYPE D1	58.5 m²	630 ft²	0	0	0	61	0	0	0	61
TYPE E1	61.5 m²	660 ft²	0	0	0	0	14	0	0	14
TYPE G1	86.5 m²	930 ft²	0	0	0	0	155	10	0	165
TYPE J1	88.5 m²	951 ft²	0	0	0	0	0	0	0	63
TOTAL			49	166	117	61	14	155	10	63
OVERALL SUITES PERCENTAGE			7.72%		54.17%			28.19%		9.92%
										100.00%

Level	GFA	RESIDENTIAL AREA	COMMON AREA	AMENITY INDOOR	COMMERCIAL	EFFICIENCY
29th FLOOR	748.65 m²	633.46 m²	115.19 m²	0.00 m²	0.00 m²	84.61%
28th FLOOR	748.65 m²	633.46 m²	115.19 m²	0.00 m²	0.00 m²	84.61%
27th FLOOR	748.65 m²	633.46 m²	115.19 m²	0.00 m²	0.00 m²	84.61%
26th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
25th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
24th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
23rd FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
22nd FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
21st FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
20th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
19th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
18th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
17th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
16th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
15th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
14th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
13th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
12th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
11th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
10th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
9th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
8th FLOOR	1,497.30 m²	1,266.92 m²	230.38 m²	0.00 m²	0.00 m²	84.61%
7th FLOOR	1,497.30 m²	1,047.41 m²	231.15 m²	218.74 m²	0.00 m²	69.95%
6th FLOOR	2,124.35 m²	1,770.23 m²	354.12 m²	0.00 m²	0.00 m²	83.33%
5th FLOOR	2,557.19 m²	2,103.38 m²	453.80 m²	0.00 m²	0.00 m²	82.25%
4th FLOOR	2,555.71 m²	2,102.06 m²	453.65 m²	0.00 m²	0.00 m²	82.25%
3rd FLOOR	2,555.71 m²	2,102.06 m²	453.65 m²	0.00 m²	0.00 m²	82.25%
2nd FLOOR	2,555.71 m²	2,102.06 m²	453.65 m²	0.00 m²	0.00 m²	82.25%
1st FLOOR	1,858.80 m²	0.00 m²	1,121.71 m²	415.37 m²	321.71 m²	17.31%
TOTAL	46,399.50 m²	37,199.14 m²	8,244.54 m²	634.11 m²	321.71 m²	81.42%

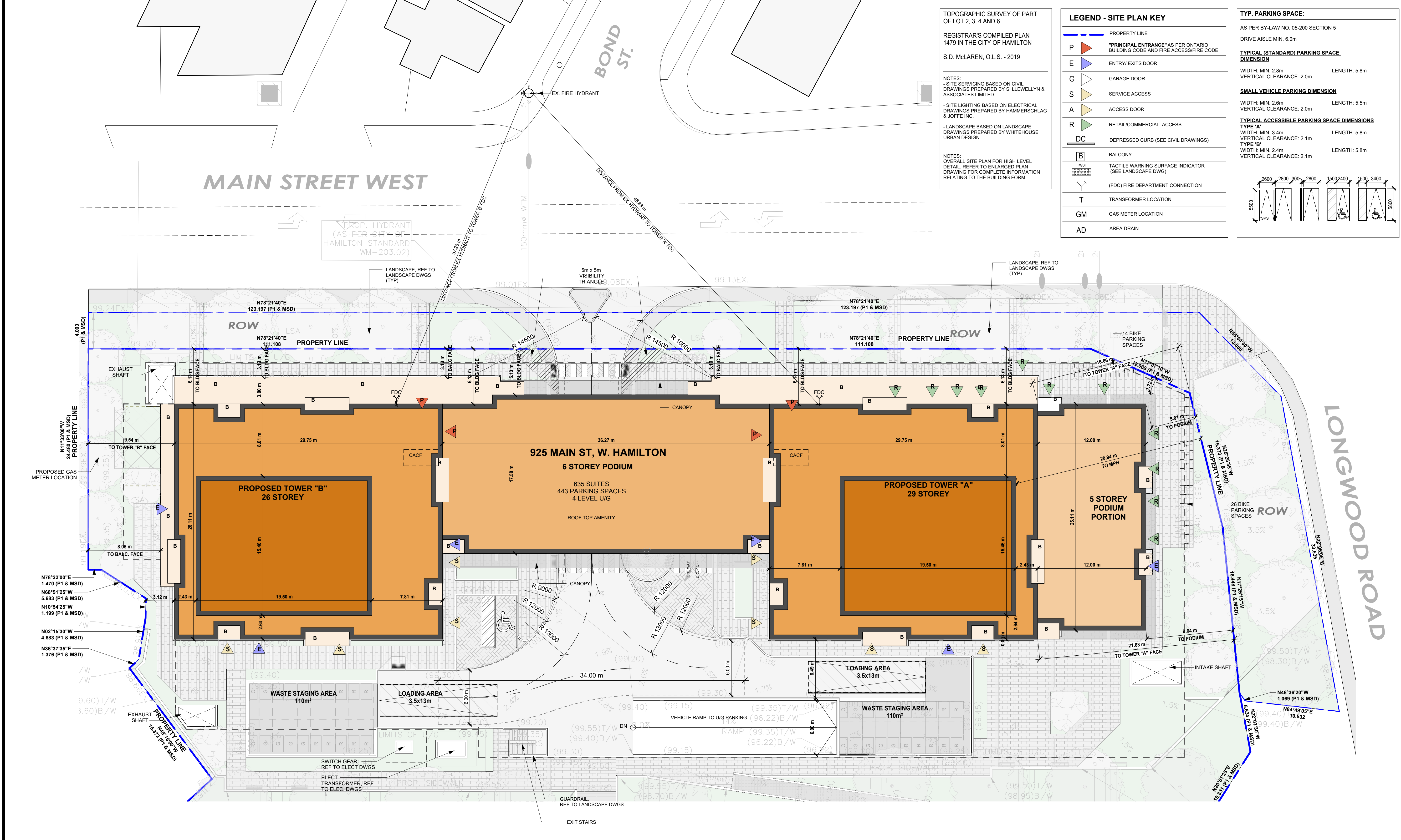
SUITE BREAKDOWN													
Level	Unit	STUDIO	1 B	1 B+D	2 B	2 B+D	3 B	TOTAL	% 1B	% 1B+D	% 2B	% 2B+D	% 3B
2nd FLOOR	1	8	10	9	2	4	34	23.53%	29.41%	26.47%	5.88%	11.76%	
3rd FLOOR	1	8	10	9	2	4	34	23.53%	29.41%	26.47%	5.88%	11.76%	
4th FLOOR	1	8	10	9	2	4	34	23.53%	29.41%	26.47%	5.88%	11.76%	
5th FLOOR	1	8	10	9	2	4	34	23.53%	29.41%	26.47%	5.88%	11.76%	
6th FLOOR	2	7	9	6	2	4	30	23.33%	30.00%	6.67%	13.33%		
7th FLOOR	2	4	6	4	0	2	18	22.22%	33.33%	22.22%	0.00%	11.11%	
8th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
9th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
10th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
11th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
12th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
13th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
14th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
15th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
16th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
17th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
18th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
19th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
20th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
21st FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
22nd FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
23rd FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
24th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
25th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
26th FLOOR	2	6	6	6	0	2	22	27.27%	27.27%	27.27%	0.00%	9.09%	
27th FLOOR	1	3	3	3	0	1	11	27.27%	27.27%	27.27%	0.00%	9.09%	
28th FLOOR	1	3	3	3	0	1	11	27.27%	27.27%	27.27%	0.00%	9.09%	
29th FLOOR	1	3	3	3	0	1	11	27.27%	27.27%	27.27%	0.00%	9.09%	
TOTAL		49	166	178	169	10	63	635	26.14%	28.03%	26.61%	1.57%	9.92%

27TH - 29TH FLOOR - SUITE SCHEDULE								
TYPE	AREA (min)	AREA (max)	STUDIO	1BED UNIT	1BED+DEN	2BED UNIT	2BED+DEN	3BED UNIT
TYPE A1	39.55 m²	39.55 m²	3	0	0	0	0	0
TYPE B1	46.88 m²	61.86 m²	0	9	0	0	0	0
TYPE C1	50.18 m²	61.75 m²	0	0	6	0	0	0
TYPE D1	50.29 m²	50.29 m²	0	0	3	0	0	0
TYPE G1	58.39 m²	64.38 m²	0	0	0	9	0	0
TYPE J1	87.16 m²	87.16 m²	0	0	0	0	3	3
GRAND TOTAL			3	9	9	9	0	3

8TH - 26TH FLOOR - SUITE SCHEDULE								
TYPE	AREA (min)	AREA (max)	STUDIO	1BED UNIT	1BED+DEN	2BED UNIT	2BED+DEN	3BED UNIT
TYPE A1	39.55 m²	39.55 m²	38	0	0	0	0	0
TYPE B1	46.88 m²	61.86 m²	0	114	0	0	0	0
TYPE C1	50.18 m²	61.75 m²	0	0	76	0	0	0
TYPE D1	50.29 m²	50.29 m²	0	0	38	0	0	0
TYPE G1	58.39 m²	64.38 m²	0	0	0	114	0	0
TYPE J1	87.16 m²	87.16 m²	0	0	0	0	38	38
GRAND TOTAL			38	114	114	114	0	38

7TH FLOOR - SUITE SCHEDULE								
TYPE	AREA (min)	AREA (max)	STUDIO	1BED UNIT	1BED+DEN	2BED UNIT	2BED+DEN	3BED UNIT
TYPE A1	39.55 m²	39.55 m²	2	0	0	0	0	0
TYPE B1	46.88 m²	61.86 m²	0	4	0	0	0	0
TYPE C1	50.18 m²	61.75 m²	0	0	4	0	0	0
TYPE D1	50.29 m²	50.29 m²	0	0	2	0	0	0
TYPE G1	62.04 m²	64.38 m²	0	0	0	4	0	0
TYPE J1	87.16 m²	87.16 m²	0	0	0	0	2	2
GRAND TOTAL			2	4	6	4	0	2

6TH FLOOR - SUITE SCHEDULE								
Name	AREA (min)	AREA (max)	STUDIO	1BED UNIT	1BED+DEN	2BED UNIT	2BED+DEN	3BED UNIT
TYPE A1	39.55 m²	426 ft²	2	0	0	0	0	0
TYPE B1	38.35 m²	666 ft²	0	7	0	0	0	0
TYPE C1	50.23 m²	649 ft²	0	0	7	0	0	0
TYPE D1	50.34 m²	542 ft²	0	0	2	0	0	0
TYPE E1	59.74 m²	643 ft²	0	0	0	2	0	



TOPOGRAPHIC SURVEY OF PART OF LOT 2, 3, 4 AND 6
REGISTRAR'S COMPILED PLAN 1479 IN THE CITY OF HAMILTON
S.D. McLAREN, O.L.S. - 2019

NOTES:
- SITE SERVICING BASED ON CIVIL DRAWINGS PREPARED BY S. LLEWELLYN & ASSOCIATES LIMITED.
- SITE LIGHTING BASED ON ELECTRICAL DRAWINGS PREPARED BY HAMMERSCHLAG & JOFFE INC.
- LANDSCAPE BASED ON LANDSCAPE DRAWINGS PREPARED BY WHITEHOUSE URBAN DESIGN.

NOTES:
OVERALL SITE PLAN FOR HIGH LEVEL DETAIL. REFER TO ENLARGED PLAN DRAWING FOR COMPLETE INFORMATION RELATING TO THE BUILDING FORM.

LEGEND - SITE PLAN KEY	
—	PROPERTY LINE
P	"PRINCIPAL ENTRANCE" AS PER ONTARIO BUILDING CODE AND FIRE ACCESS/FIRE CODE
E	ENTRY/ EXITS DOOR
G	GARAGE DOOR
S	SERVICE ACCESS
A	ACCESS DOOR
R	RETAIL/COMMERCIAL ACCESS
DC	DEPRESSED CURB (SEE CIVIL DRAWINGS)
B	BALCONY
TWB	TACTILE WARNING SURFACE INDICATOR (SEE LANDSCAPE DWG)
(FDC)	(FDC) FIRE DEPARTMENT CONNECTION
T	TRANSFORMER LOCATION
GM	GAS METER LOCATION
AD	AREA DRAIN

TYP. PARKING SPACE:	
AS PER BY-LAW NO. 05-200 SECTION 5	
DRIVE AISLE MIN. 6.0m	
TYPICAL (STANDARD) PARKING SPACE DIMENSION	
WIDTH: MIN. 2.8m	LENGTH: 5.8m
VERTICAL CLEARANCE: 2.0m	
SMALL VEHICLE PARKING DIMENSION	
WIDTH: MIN. 2.6m	LENGTH: 5.5m
VERTICAL CLEARANCE: 2.0m	
TYPICAL ACCESSIBLE PARKING SPACE DIMENSIONS	
TYPE 'A'	LENGTH: 5.8m
WIDTH: MIN. 3.4m	
VERTICAL CLEARANCE: 2.1m	
TYPE 'B'	LENGTH: 5.8m
WIDTH: MIN. 2.4m	
VERTICAL CLEARANCE: 2.1m	

CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND JOB CONDITIONS BEFORE PROCEEDING WITH WORK. ALL DRAWINGS MAY BE SUBJECT TO CHANGE DUE TO COMMENTS FROM MUNICIPAL DEPARTMENTS AND OTHER AGENCIES WITH AUTHORITY. ALL DIMENSIONS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETAINED AT THE COMPLETION OF THE WORK. THE CONTRACTOR WORKING FROM DRAWINGS NOT SPECIFICALLY MARKED FOR CONSTRUCTION MUST ASSUME FULL RESPONSIBILITY AND BEAR COSTS FOR ANY CORRECTIONS OR DAMAGES RESULTING FROM HIS OR HER WORK.

DRAWING SETS ISSUED	No.	DATE
ZBA SUBMISSION	1	2026-02-20

ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED

REVISIONS TO DRAWING	No.	DATE
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BUILDING PERMIT NUMBER:
NOT FOR CONSTRUCTION WITHOUT PERMIT
APPLICATION FILE NUMBER:



925 MAIN ST.

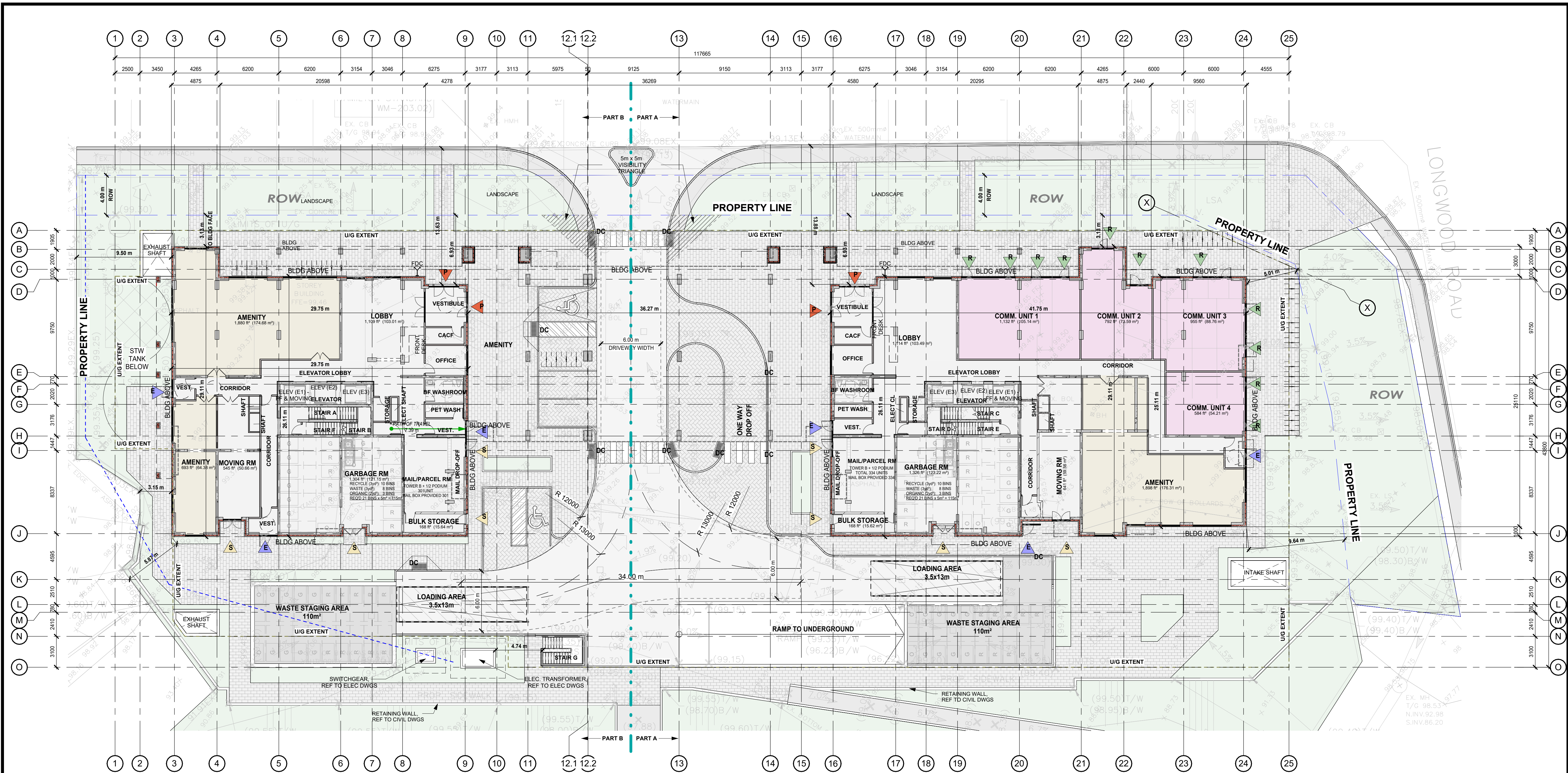
925 MAIN ST. HAMILTON, ON
DRAWING SHEET TITLE:

ENLARGED SITE PLAN

PROJECT NUMBER:
21009
PLOT DATE:
2026-02-20
DRAWING SHEET NUMBER:

A0.02

1 ENLARGED SITE PLAN
A0.02 1 : 200



1 1st FLOOR - OVERALL
A1.04 1:200

LEGEND - SITE PLAN KEY	
	PROPERTY LINE
	"PRINCIPAL ENTRANCE" AS PER ONTARIO BUILDING CODE AND FIRE ACCESS/FIRE CODE
	ENTRY/EXITS DOOR
	GARAGE DOOR
	SERVICE ACCESS
	ACCESS DOOR
	RETAIL/COMMERCIAL ACCESS
	DEPRESSED CURB (SEE CIVIL DRAWINGS)
	BALCONY
	TACTILE WARNING SURFACE INDICATOR (SEE LANDSCAPE DWG)
	(FDC) FIRE DEPARTMENT CONNECTION
	TRANSFORMER LOCATION
	GAS METER LOCATION
	AREA DRAIN

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925 MAIN ST.

925 MAIN ST. HAMILTON, ON

DRAWING SHEET TITLE:
1ST FLOOR PLAN - OVERALL

PROJECT NUMBER:
21009
PLOT DATE:
2026-02-20
DRAWING SHEET NUMBER:

A1.04