ARCADIS

Canada Lands Company
Société immobilière du Canada

Public Services and Procurement Canada
Services publics et Approvisionnement Canada

Tunney's Pasture – Site Servicing and Public Road Redevelopment

Transportation Impact Assessment - Step 4

June 30, 2025

TIA Plan Reports - Certification

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associate documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below:

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;

2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;

3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and

4. I am either a licensed[1] or registered[1] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☑ or transportation planning □.

[1] **License or registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.**

Dated at Ottawa this 30th day of June, 2025.
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Tunney's Pasture – Site Servicing and Public Road Redevelopment

Transportation Impact Assessment (TIA)

June 30, 2025

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Acronyms and Abbreviations

CLC	Canada Lands Company
DPA	Design Priority Area
GFA	Gross Floor Area
ITE	Institute of Transportation Engineers
MUP	Multi-use Path
MVE	Million Vehicles Entering
NCC	National Capital Commission
OP	Official Plan
PMTSA	Protected Major Transit Station Area
PSPC	Public Services & Procurement Canada
RMA	Roadway Modification Application
ROW	Right-of-Way
TAZ	Traffic Assessment Zone
TIA	Transportation Impact Assessment
TMP	Transportation Master Plan
TOD	Transportation-oriented Development
UDM	Urban Design Manual
v/c	Volume-to-capacity ratio

Executive Summary

Arcadis was retained by Canada Lands Company (CLC) and Public Services and Procurement Canada (PSPC) to undertake a Transportation Impact Assessment (TIA) in support of a Draft Plan of Subdivision application for the proposed mixed-use redevelopment of the existing Tunney's Pasture federal government campus. The subject property is approximately 49 hectares in overall land area and is generally bound by Kichi Zibi Mikan to the north, Parkdale Avenue to the east, Scott Street and the O-Train Line 1 corridor/Tunney's Pasture Station to the south, as well as the Champlain Park community to the west.

Land Use

Despite its proximity to a rapid transit station, Tunney's Pasture is presently a single-use, auto-oriented federal government employment campus, with approximately 3.5 million square feet of office/laboratory uses. As the subject site is transformed into a mixed-use, transit-oriented and 15-minute community, these existing uses will gradually decrease after Phase 1, while residential, local-serving commercial and potential school uses will be introduced incrementally throughout all 3 phases. At full build-out, the site could accommodate up to 9,000 residential dwelling units ranging from stacked townhomes to high-rise buildings, approximately 85,000 square feet of commercial floor area, while retaining only a third of the existing office space.

Development Phasing

For the purpose of long-term planning, it is assumed that the proposed development will be constructed over three general phases: Phase 1 (2038), Phase 2 (2042) and Phase 3 (2046). The full build-out of Tunney's Pasture is expected to align with the City's planning horizon of 2046.

Trip Generation and Mode Share

Based on traffic data collected at the onset of the study, the site historically generated roughly 4,000 to 5,000 person-trips prior to the COVID-19 pandemic, including approximately 2,000 vehicles per hour during weekday peak periods. As Tunney's Pasture is gradually redeveloped, this new community is expected to generate significantly more site activity, with up to 8,000 person-trips during the weekday peak hours at the various stages of development.

The site will generate the greatest volume of vehicular traffic by the completion of Phase 1, but will lessen over time as office space is replaced with new residential developments and the site becomes less reliant on private automobiles as a means of transportation. With consideration of the mode share targets established through this TIA process, total site-generated vehicle volumes of up to 2,500, 1,900 and 1,340 two-way trips in 2038, 2042 and 2046, respectively, are projected during the most constrained weekday peak, with the remaining person-trips divided amongst auto passenger, transit, walking and cycling.

Given the site's pre-pandemic traffic generation, the proposed development will result in a net-increase of approximately 410 two-way weekday peak hour trips in 2038, while net-decreases of about 210 and 790 vehicle trips are expected in 2042 and 2046, respectively. Dispersed amongst six access points, the site-generated traffic impacts are shown to be highest during Phase 1 on the immediate boundary street intersections, with impacts decreasing farther away from the site. As all of the existing office/laboratory uses will remain and approximately half of the residential units and commercial space will be built out, the completion of Phase 1 represents the peak traffic generation of the site, and thus the focus of this study. Upon full build-out, the site is expected to generate less vehicular traffic than it did prior to the COVID-19 pandemic. Furthermore, with a significant reduction in office space, the site will attract far fewer long-distance trips and provide relief to key regional access routes such as Parkdale Avenue to Highway 417, and the Champlain Bridge to Gatineau. In subsequent phases, office space will gradually decrease, while the remaining residential units and commercial space is built.

An 85% non-auto mode share target was established by the City of Ottawa for residential uses within transit-oriented developments, which is not a vast departure from approximately 69% of non-auto trips currently generated by high-rise residential uses across the entire Ottawa West Traffic Assessment Zone (TAZ) and given that the subject site is directly adjacent to Tunney's Pasture Station. This is a long-term target and not expected to be achieved until near the complete build-out of the site in 2046. The high non-auto mode share target established for this site is

supported by the proposed Complete Streets infrastructure of the new internal street network in combination with active transportation linkages planned throughout the site, a host of site-specific Transportation Demand Management (TDM) measures, as well as City initiatives including the LRT Stage 2 Western Extension and the Scott Street Complete Street upgrades.

Transportation Network Impacts

The existing travel patterns associated with Tunney's Pasture are a direct result of employer start and end times, with most trips being inbound in the morning and outbound in the afternoon. With the addition of residential land uses in Phase 1, an increase in site traffic generation of approximately 410 vehicle trips is expected. When considering that residential-based traffic patterns follow an opposing flow to office-based land uses, the vast majority of this additional traffic does not significantly exacerbate existing conditions and results in only a 5% increase (75 vehicle trips) in the peak direction of flow. To this end, the site's transformation from a traffic *generator* to a traffic *source* has the positive effect of utilizing available roadway capacity that is opposite from the peak direction of travel which mitigates operational impacts to the adjacent road network.

Comparison of Pre-Pandemic Site-Generated Traffic with Phase 1 Projections

Scenario	Vehicles – Weekday AM Peak Hour			Vehicles – Weekday PM Peak Hour		
	In	Out	Total	In	Out	Total
Phase 1 Site Traffic Projections[1]	1,274	589	1,863	877	1,548	2,425
Pre-Pandemic Site-Generated Traffic	1,495	570	2,065	542	1,473	2,015
Difference (%)	**-221 (-15%)**	**+19 (+3%)**	**-202 (-10%)**	**+335 (+62%)**	**+75 (+5%)**	**+410 (+20%)**

[1] Phase 1 traffic volume projections do not include 'pass-by trips'.

Parking

It is recognized that Phase 1 of the proposed development will involve the loss of parking for office/employment uses which may remain on-site through the redevelopment timeframe of Tunney's Pasture. Understanding the long-term transition of the site to maximize multi-modal transportation options, Canada Lands Company (CLC) is committed to working with the federal tenants at Tunney's Pasture to develop a Parking Management Strategy. This strategy will manage the remaining parking supply and work to satisfy the functional need of the office uses still existing on site without creating spillover demand to adjacent communities.

The Parking Management Strategy will review the implications of this loss of parking supply so that these effects can be better understood and mitigated accordingly, with consideration of the four main strategies outlined below:

1) Determine if the remaining land outside the property parcel that is being disposed to public market can adequately fulfill the office parking demand;
2) Determine if the parking demand currently accommodated by the surface parking lot can be served by other parking lots on the remaining office lands across the Tunney's Pasture site;
3) Determine if additional parking (surface or structured) on the remaining office lands across the Tunney's Pasture site is required; and
4) Establish whether Transportation Demand Management (TDM) measures are required to reduce parking demand in alignment with the remaining parking supply.

Near-Term Mitigation Measures

Based on a review of Existing conditions, the following near-term modifications were identified as being required to support Tunney's Pasture and strengthen the broader active transportation network within the study area at the onset of redevelopment:

- Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture
    - Optimize signal timing to reduce existing internal queue spillback experienced on the south leg.
- Parkdale & Scott
    - Optimize traffic signal timings to resolve constraints on the west leg of the intersection and to improve transit reliability through this intersection.
- Scott & Sir Frederick Banting/Ross
    - Upgrade the existing unsignalized intersection to a 'protected intersection'[1] configuration, maintaining the existing auxiliary lane arrangement. Signalization of this intersection aligns with the Scott Street CDP which also supports the prohibition of north-south through movements. This upgrade will provide a controlled active transportation crossing on this section of Scott Street to facilitate access to Tunney's Pasture Station.

Phase 1 Mitigation Measures

To address transportation operation and queuing constraints identified under Future (2038) Total Traffic conditions, the most constrained analysis scenario in this study, the following mitigation measures are proposed to accommodate the combined impacts of background and site-generated travel demands:

- Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture
    - Constraints identified under Existing conditions are not significantly exacerbated in Phase 1. Continue to optimize traffic signal timings; physical modifications are not recommended nor required.
- Parkdale & Colombine
    - Upgrade the existing unsignalized intersection to a signalized intersection with 'protected intersection' elements. This will provide an additional controlled crossing for active users on Parkdale Avenue north of Burnside Avenue which is supported by the Scott Street CDP.
    - Add left-turn lanes on the south and west legs of the intersection.
- Scott & Holland/Tunney's Pasture
    - To close the missing link in the cycling network, it is proposed to remove the existing right-turn lane on the north leg of the intersection and reallocate this space to develop a buffered bike lane. The existing through lane would become a shared through-right lane.
    - Regular signal optimization will support improved transit reliability within the study timeframe as well.
- Parkdale & Scott
    - Optimize traffic signal timings to resolve constraints on the west leg and south legs of the intersection and to improve transit reliability through this intersection.
- Scott & Goldenrod/Smirle
    - Incorporate traffic calming measures in support of the Scott Street CDP's objective to prohibit north-south through movements at this intersection.
- Based on the results of the MMLOS analysis, the City should implement the following measures during Phase 1 to support the Tunney's Pasture redevelopment and strengthen the broader active transportation network within the study area:
    - Boundary Street 'Protected Intersections': It is recommended that each of the major intersections along the Scott Street and Parkdale Avenue frontages of the site be upgraded to 'protected intersections'. Any geometric improvements required at site access intersections on either

[1] Protected Intersection: https://ottawa.ca/en/parking-roads-and-travel/road-safety/cyclists/cycling-facilities#section-a52229e0-0293-4b6e-8c35-70caa7addf7f

Parkdale Avenue or Scott Street to facilitate 'protected intersection' upgrades will be covered through a Roadway Modification Application (RMA).

- Parkdale Greenway: An active transportation corridor with separated space for cyclists and pedestrians on the west side of Parkdale Avenue and abutting the site should be introduced. This corridor is referred to as the 'Parkdale Greenway' in the Scott Street CDP.
    - Phase 1 – Parkdale Greenway (Northern site limits to just south of Burnside)

- Proposed Internal Active Transportation Connections (Developer-Funded with Repayment Mechanism)
    - Eglantine (at Tunney's Pasture) to Parkdale (at Burnside)
        - Providing a direct connection from Eglantine Driveway to Parkdale (at Burnside) and the Mechanicsville community further east.
    - Proposed mid-block connection east of Brooke Claxton Building
        - A proposed north-south active transportation connection linking Colombine Driveway to Goldenrod Driveway within a servicing easement.
    - Holland Avenue Cycling Infrastructure: The City should implement dedicated cycling infrastructure on Holland Avenue to provide a safe north-south active transportation corridor and divert cyclists from more congested parallel routes such as Parkdale Avenue and further encourage a shift away from automobile use for short trips. Holland Avenue will serve as an important north-south cycling route to support the redevelopment of Tunney's Pasture, given its alignment with the primary gateway to the site and continuous linear connectivity to the Central Experimental Farm's pathway system.
    - Transit: OC Transpo should consider reinstating local bus service within Tunney's Pasture, which is being removed through the City's New Ways to Bus initiative, and realign the route(s) to conform to the collector road hierarchy of the proposed internal street network. If local transit service is not available during the early stages of development, an early transit service agreement may be required with OC Transpo until regular service is warranted by community occupancy levels.

Phase 2 Mitigation Measures

The multi-modal transportation analysis undertaken for Phase 2 did not identify the need for any additional mitigation measures to support additional vehicular traffic beyond those identified for Phase 1, given that the initial phase of development is the most critical in terms of traffic generation.

Proposed Internal Active Transportation Connections

- Eglantine (at Goldenrod) to Sir Frederick Banting
    - This proposed active transportation connection will provide an east-west link between Goldenrod Driveway and Sir Frederick Banting Driveway and contribute to the formation of a broader connection further east to Parkdale (at Burnside) and the Mechanicsville community.
- Yarrow (at Goldenrod) to Sir Frederick Banting
    - This proposed active transportation connection will provide an east-west link between Goldenrod Driveway and provide a more direct connection between the southwest corner of the site and Yarrow Driveway and the rapid transit station.

Full Build-out Mitigation Measures

The mitigation strategy at full build-out will generally carry forward measures recommended in Phase 1, with the following notable change:

- Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture

  - Existing queue spillback constraints on the south leg identified under Existing and Phase 1 conditions will be resolved by full build-out, as on-site land uses evolve over time.

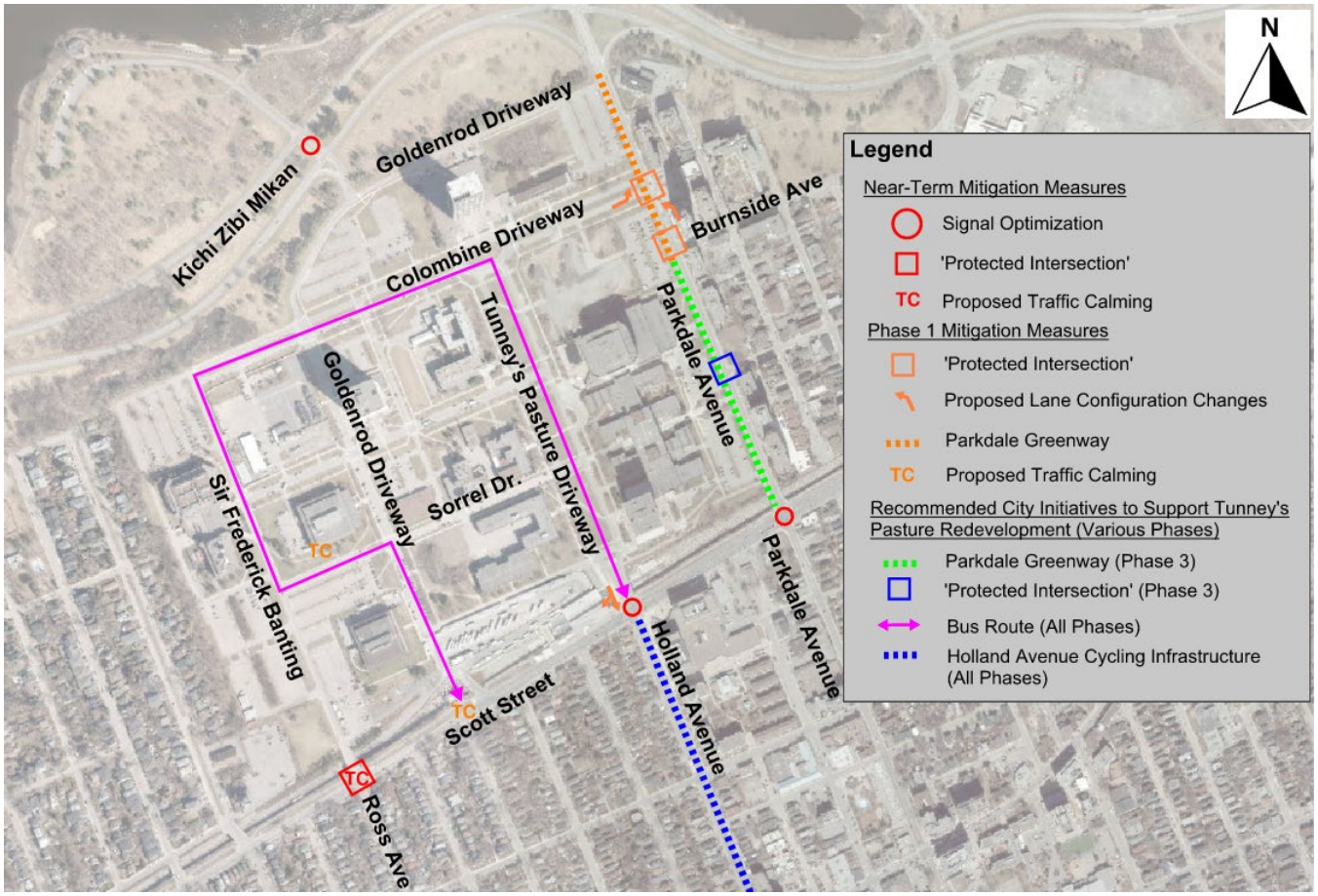
- Proposed Internal Active Transportation Connections
  - Sorrel (at Tunney's Pasture) to Parkdale (at Lyndale)
    - This connection is dependent on the removal of the Main Statistics Building and its alignment is dependent on the built from proposed for this property parcel.
  - Transitway and Parkdale Greenway (Burnside Avenue to Scott Street)
    - Upgrades to the existing pathway linking Tunney's Pasture Driveway to Scott Street to incorporate dedicated space for pedestrians and cyclists.
    - Implement the remainder of the Parkdale Greenway from just south of Burnside Avenue to Scott Street to accommodate bi-directional cycling facilities and a pedestrian facility on the west side of Parkdale Avenue.
  - Kichi Sibi Winter Trail/Scott Street Connector
    - Formalization of the existing trail along the western edge of the site, with linkages to Sir Frederick Banting and the Carleton Avenue underpass.

The remaining study area intersections not discussed in any of the above mitigation strategies were shown to operate at an acceptable Level of Service (LOS 'E') beyond the 2046 study horizon year, according to the transportation modelling conducted for this study.

Through the intersection capacity and queuing analysis conducted for this study, it was determined that a Roadway Modification Application (RMA) is required to accommodate off-site geometric modifications at the site access intersections to support the redevelopment of Tunney's Pasture, including Parkdale & Colombine, Parkdale & Burnside, Scott & Holland/Tunney's Pasture, Scott & Goldenrod/Smirle, as well as Scott & Sir Frederick Banting/Ross.

The following figure illustrates the mitigation measures outlined above.

Recommended Mitigation Measures



Supporting Technical Studies

The following technical studies are required to support the overall TIA process and are appended to this study:

- Monitoring Plan: This strategic planning document is intended to track various transportation-related aspects as the site is developed, such as verifying timelines to implement mitigation strategies noted previously, confirming whether mode share targets are being met, evaluating the effectiveness of the traffic calming measures implemented to support the site's redevelopment, as well as monitor on-site parking occupancy. If there is a disconnect between key TIA study parameters and observed data collected as part of the Monitoring Plan, this process provides an opportunity to intervene and correct course, as needed.
- Neighbourhood Traffic Calming Strategy: This study provides the City with potential solutions to mitigate any existing cut-through traffic issues within communities directly bordering Tunney's Pasture, including Mechanicsville, Hintonburg, Wellington Village and Champlain Park that may be exacerbated by the proposed development.

Based on the findings of this study, it is the overall opinion of Arcadis that the proposed development will integrate well with and can be safely accommodated by the adjacent transportation network, with consideration of the recommendations outlined above.

1 Introduction

Arcadis was retained by Canada Lands Company (CLC) and Public Services and Procurement Canada (PSPC) to undertake a Transportation Impact Assessment (TIA) in support of a Draft Plan of Subdivision application for the proposed mixed-use redevelopment of the existing Tunney's Pasture federal government campus.

In accordance with the City of Ottawa's Transportation Impact Assessment Guidelines (June 2017) and guideline revisions enacted in June 2023, the report is divided into three major components:

- **Step 1 - Screening** – Prior to the commencement of a TIA, an initial assessment of the proposed development is undertaken to establish the need for a comprehensive review of the site based on three triggers: Trip Generation, Location and Safety.
- **Step 2 - Scoping** – This component of the TIA report describes both the existing and planned conditions in the vicinity of the development and defines study parameters such as the study area, analysis periods and analysis years of the development. This section provides an opportunity to identify any scope exemptions that would eliminate elements of scope described in the TIA Guidelines but not relevant to the development proposal, based on consultation with City staff. As part of the final version of the TIA, the trip generation of the proposed development is also estimated, taking into consideration the existing and future context of the site.
- **Step 3 - Analysis** – This component describes the background network travel demand and documents the results of any analyses undertaken to ensure that the transportation related features of the proposed development are in conformance with prescribed technical standards and that its impacts on the transportation network are both sustainable and effectively managed. It also identifies a development strategy to ensure that what is being proposed is aligned with the City of Ottawa's policies and city-building objectives.

Dependent on the findings of this report, the complete submission of this Transportation Impact Assessment may require Functional Design Drawings of recommended roadway improvements to support a Roadway Modification Application (RMA). The submission may also require a post-development Monitoring Plan to track performance of the planned TIA Strategy. The need for these two elements will be confirmed through the analysis undertaken for this report.

1.1 Community Engagement

In 2021, Public Service and Procurement Canada (PSPC) partnered with CLC under a collaboration project to leverage the strengths of each organization to deliver the long-term vision of Tunney's Pasture that includes the site's transition from a federal employment centre into a mixed-use, sustainable, transit-oriented community. CLC is a self-financing federal Crown corporation specializing in real estate and development with a mandate to transform former Government of Canada properties and reintegrates them into local communities while ensuring their long-term goals. Since the launch of this collaboration project, CLC has been committed to working with the community to define amendments to the TPMP and proposed upgrades to the existing roadway and servicing infrastructure that support both federal priorities and future development.

A Communities' Perspective Group (CPG) was established at the onset of the Tunney's Pasture redevelopment to allow residents from adjacent communities and special interest groups with a forum to provide input for consideration of the project team. A subset of the CPG, referred to as 'CPG Stream 1', is involved in the TIA process.

The project team is committed to working with the CPG Stream 1 to develop solutions that mitigate the impact of the Tunney's Pasture redevelopment on the surrounding transportation network and community, though it does not set out to resolve existing community issues with respect to transportation. As Canada Lands Company (CLC) has a mandate to accelerate the delivery of housing, this community engagement process allows the project team to move ahead with various stages of the Draft Plan of Subdivision application, while receiving input from the CPG.

Over the course of the TIA process, three (3) touch-point meetings were proposed to allow for input/comment from the CPG Stream 1 members:

- Touchpoint 1 – TIA Terms of Reference (TOR) – December 2, 2024
- Touchpoint 2a – Neighbourhood Traffic Management Workshop (Mechanicsville) – January 8, 2025
- Touchpoint 2b – Neighbourhood Traffic Management Workshop (Hintonburg, Wellington Village & Champlain Park) – February 10, 2025
- Touchpoint 3 – Presentation of Preliminary TIA Conclusions & Recommendations – June 17, 2025

2 TIA Screening

An initial screening was completed to confirm the need for a Transportation Impact Assessment (TIA) by reviewing the following three triggers:

- **Trip Generation**: Based on the number of proposed dwelling units and the size of the proposed employment and commercial land uses, the minimum development size threshold has been exceeded and therefore the Trip Generation Trigger is satisfied.
- **Location**: The proposed development is located within a Design Priority Area (DPA), Transit-Oriented Development (TOD) zone, Hub and the Tunney's Pasture Protected Major Transit Station Area (PMTSA). As such, the Location Trigger is satisfied.
- **Safety**: A review of boundary street conditions was undertaken to determine if there is an elevated potential for safety concerns adjacent to the site with respect to the criteria included in the TIA Screening Form. Based on this review, the Safety Trigger is satisfied.

As the proposed development meets the Trip Generation, Location and Safety Triggers, the need to undertake a TIA is confirmed. The TIA Screening Form is provided in **Appendix A**.

3 Project Scoping

3.1 Proposed Development

3.1.1 Site Location

The subject property covers an area of approximately 49 hectares and is generally bound by Kichi Zibi Mikan to the north, Parkdale Avenue to the east, Scott Street and the O-Train Line 1 corridor/Tunney's Pasture Station to the south, as well as the Champlain Park community to the west.

The site presently accommodates approximately 10,000 federal government employees and is located entirely within the Tunney's Pasture Transit-Oriented Development (TOD) zone which currently serves as the western terminus of O-Train Line 1, Ottawa's east-west LRT network.

The subject site is located within four planning areas:

- Tunney's Pasture Mixed-Use Design Priority Area (DPA)
- Scott Street Secondary Plan (SP)/Scott Street Community Design Plan (CDP)
- Tunney's Pasture Transit-Oriented Development (TOD) Zone
- Scott Street Corridor Study

The site location and its surrounding context area are illustrated in **Exhibit 1** below.



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Tunney's Pasture - Site Servicing and Public Road Redevelopment
Transportation Impact Assessment

Exhibit 1
Site location (Context Area)

PROJECT No. 139833

SCALE: 0m 125m 250m

3.1.2 Land Use Details

Table 3-1 below summarizes the proposed land uses included in this development at full build-out. For reference, the site presently accommodates approximately 324,000 m^2 (3,487,507 ft^2) Gross Floor Area (GFA) of office/laboratory uses.

Table 3-1 – Land Use Statistics at Full Build-out

Land Use	Size
Commercial	~7,900 m^2 (~85,035 ft^2) GFA
Office/Laboratory	~93,723 m^2 (~1,008,826 ft^2) GFA
Residential	~9,000 dwelling units
Possible Institutional Use (Elementary School)	~750 students [1]

Notes:
GFA stands for 'Gross Floor Area'
[1] Assumed for the purposes of traffic-generation, though no schools have been confirmed.

The Draft Plan for the proposed development is presented in **Exhibit 2** below.

The subject site is presently zoned Mixed-Use Centre, according to GeoOttawa, and is located within an Evolving Neighbourhood and Hub in the 2022 Official Plan. The Evolving Neighbourhood overlay extends beyond the site and into adjacent communities, including Mechanicsville, Hintonburg, Wellington Village and a portion of Champlain Park.

The site presently serves exclusively as a federal government campus which is occupied by 13 buildings dedicated to various departments, including Statistics Canada, Health Canada, Natural Resources Canada and the Department of National Defence.

The proposed development will continue to provide transportation connections to the adjacent road network via six access intersections, including the following:

- Kichi Zībī Mīkan & Tunney's Pasture
- Parkdale & Goldenrod
- Parkdale & Colombine
- Scott & Holland
- Scott & Goldenrod
- Scott & Sir Frederick Banting/Ross

The Scott & Holland intersection will continue to serve as the primary gateway to the site for all travel modes, following the Tunney's Pasture redevelopment.



NORTH

Proposed Land Use w/ Draft Plan Phasing

- Site Boundary
- Draft Plan Phase 1
- Later Development Phases
- 22-24m ROW - Yarrow Woonerf

Proposed Land Use Designations	Area (ha)
Mixed-Use (Residential, Office, Retail, Community Use)	22.670
Open Space	3.175
Park	4.760
Lab/Office/Utility	6.671
Transit Station	0.636
Public Right-of-Way	11.217
TOTAL:	49.129

Site Statistics

Residential Units	9,000
Retail GFA	7,900m²
Office/Laboratory GFA	93,723m²
Community/School GFA	50,775m²
Students	3,200m²

Notes:
- Proposed road pattern by Arcadis IBI Group, July 2024.
- Plans are subject to change following NCC Board approvals.
- Site statistics are estimates and may change as the project evolves.

Location: TUNNEY'S PASTURE

Date: 2025-05-30 | Drafted By: SD

Scale: 0 100m — 1:1500 | North | ARCADIS

ARCADIS

Tunney's Pasture - Site Servicing and Public Road Redevelopment Transportation Impact Assessment

Exhibit 2 - Proposed Development

PROJECT No. 139833

SCALE: N.T.S.

3.1.3 Development Phasing

Conveyance to the City of Ottawa and reconstruction of the internal transportation network within Tunney's Pasture is anticipated to occur by 2030 and will establish the resulting property parcels which will then be built out over three primary phases, as outlined in **Table 3-2** below. The majority of these resulting property parcels will be sold and developed by others.

It should be emphasized that the full build-out timeline provided below is preliminary and subject to further refinement based on market conditions as development progresses.

Table 3-2 – Development Phasing

Phase	Anticipated Build-out/ Occupancy	Comments

Phase 1	2038	• Initial build-out phase
		• Represents ~50% build-out of residential and commercial uses
		• Existing office/laboratory GFA to be maintained throughout this phase
		• Total site statistics by end of Phase 1:
		  ○ Residential: 4,950 units
		  ○ Commercial GFA: ~4,230 m^2 (~45,431 ft^2) GFA
		  ○ Office/Lab GFA: ~324,000 m^2 (~3,487,507 ft^2) GFA
		  ○ Possible Elementary School: ~750 students (1 school) [1]

Phase 2	2042	• Interim build-out phase • Represents ~75% build-out of residential and commercial uses • Remaining office/laboratory GFA represents ~65% of existing
Phase 3	2046	• Full build-out/occupancy of the entire Tunney's Pasture redevelopment • Remaining office/lab GFA represents ~30% of existing

Note: GFA stands for 'Gross Floor Area'

[1] Assumed for the purposes of traffic-generation, though no schools have been confirmed.

It is important to note that the development of each block resulting from this Draft Plan of Subdivision will undergo a Site Plan Control (SPC) application, with individual Transportation Impact Assessments required for each application.

3.2 Existing Transportation Network

3.2.1 Existing Road Network

All major roadways and relevant local roads within the study context area are shown in **Exhibit 1** above.

Table 3-3 below summarizes the details of existing key roads within this study's Context Area which the highest potential to be impacted by the proposed development.

Table 3-3 – External Road Network

Name	Classification/ Official Plan Designation[1]	Jurisdiction	Orientation & Extents	Cross-section	ROW Protection [2] (m)	Ex. ROW [3] (m)	Speed Limit (km/h)
Parkdale Avenue	Arterial Road/ Minor Corridor	City of Ottawa	North-South, Kichi Zibi Mikan to Carling Ave	2- Lane Urban, undivided	26	~19	40
Scott Street	Arterial Road/ Mainstreet Corridor	City of Ottawa	East-West, Churchill Ave N to Albert St	2–Lane urban, undivided	26	~20	50
Holland Avenue	Major Collector Road/Minor Corridor	City of Ottawa	North-South, Scott St to Carling Ave	4- lane, urban, undivided	26	~24	50
Kichi Zibi Mikan	Parkway	Federally Owned Roadway	East-West, Carling Ave to Wellington St	4–lane urban, divided	N/A	varies	60
Ross Avenue	Local Road	City of Ottawa	North-South, Scott St to Wellington St W	2–lane urban, undivided	N/A	~18	30
Burnside Avenue	Local Road	City of Ottawa	East-West, Parkdale Ave to Slidell St	2-lane, urban, undivided	N/A	~18	40
Lyndale Avenue	Local Road	City of Ottawa	East-West, Parkdale Ave to Stonehurst Ave	2-lane, urban undivided	N/A	~15	40
Emmerson Avenue	Local Road	City of Ottawa	East-West, Parkdale Ave to Forward Ave	2-lane urban undivided	N/A	~18	40
Smirle Avenue	Local Road	City of Ottawa	North-South, Wellington St W to Scott St	2-lane urban undivided	N/A	~20	30

Notes:

1. *Roadway designation per Schedule B-2 of the 2022 Official Plan (OP). Note that only select roads are designated in the Official Plan.*
2. *ROW protection per Schedule C16 of the 2022 OP.*
3. *Existing ROW per GeoOttawa property parcel fabric.*

3.2.2 Existing Bicycle and Pedestrian Facilities

As illustrated in **Figure 3-1** below, there are a variety of existing internal active transportation and direct connections from either the site's boundary streets or federal lands to the north.

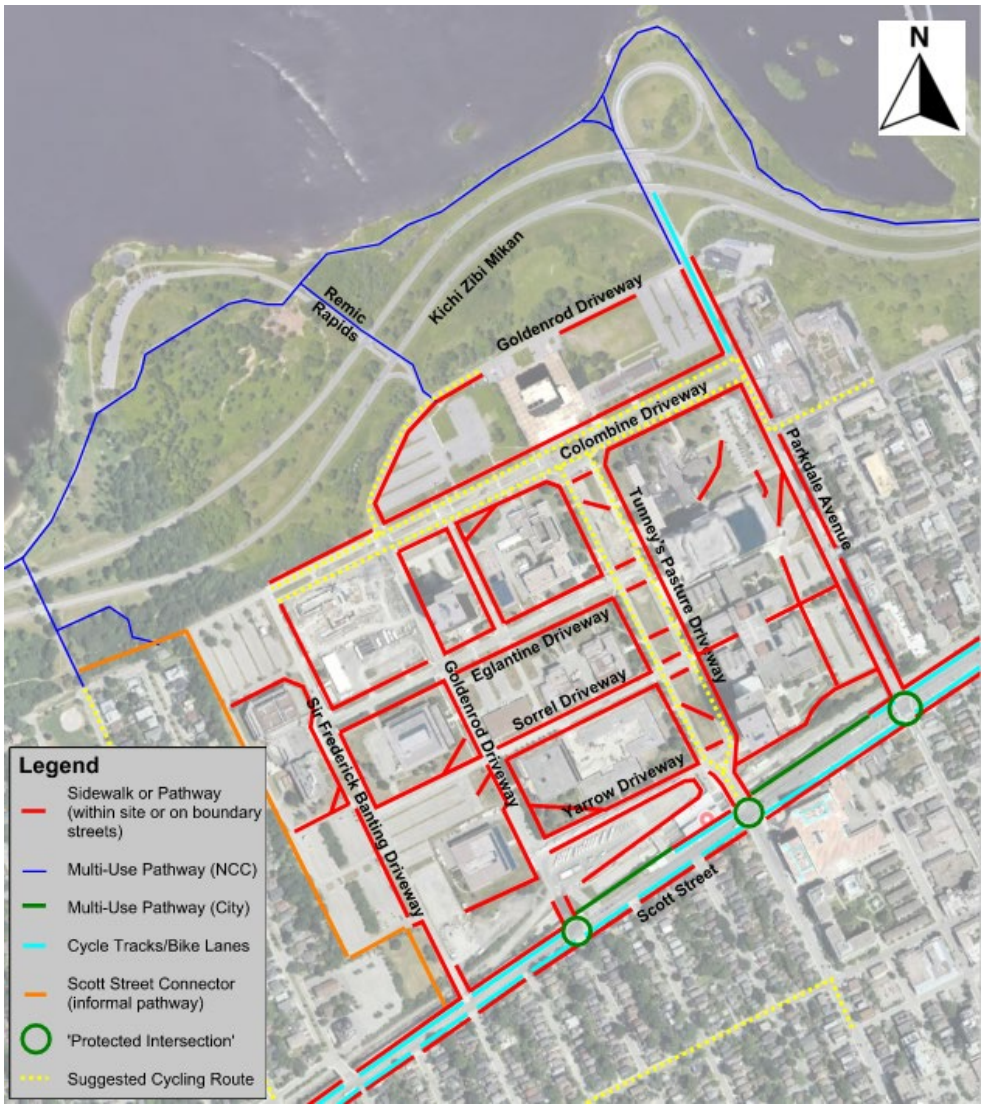
Several key pedestrian and cycling connections are highlighted below:

- Most of the internal street network within Tunney's Pasture presently has concrete sidewalks on both sides and some blocks have diagonal pathway linkages, primarily to provide more direct connections between surface parking lots and primary building entrances.
- Three (3) active transportation connections to the site currently exist via the Ottawa River Pathway system:
    - 1) Pathway linkage from Carleton Avenue Kichi Zibi Mikan underpass to the northwest corner of the site;

- 2) Multi-use pathway connection on the east side of the signalized Remic Rapids and Tunney's Pasture access intersection; and
- 3) Multi-use pathway on the west side of Parkdale Avenue which connects to the eastern terminus of Goldenrod Driveway.

- Scott Street has recently been reconstructed to accommodate raised eastbound cycle tracks from Churchill Avenue to Caroline Avenue, while improvements are being implemented in stages to the existing facilities on the north side. Upgrades to Scott Street will facilitate improved active transportation connectivity along the southern boundary of the site and within the vicinity of Tunney's Pasture Station.
- The Scott Street Connector currently extends from the Carleton Avenue Kichi Zibi Mikan underpass along the western edge of the site to provide a naturalized and informal pathway link between the northwestern edge corner of the site and Scott Street at Sir Frederick Banting Driveway.
- There are also isolated segments of on-road bike lanes on both sides of Parkdale Avenue north of Colombine Driveway to improve connectivity with the NCC existing pathway network to the north.

Figure 3-1 – Existing Active Transportation Facilities



3.2.3 Existing Transit Facilities and Service

Tunney's Pasture is currently served by OC Transpo and the Société de Transport de l'Outaouais (STO) transit agencies.

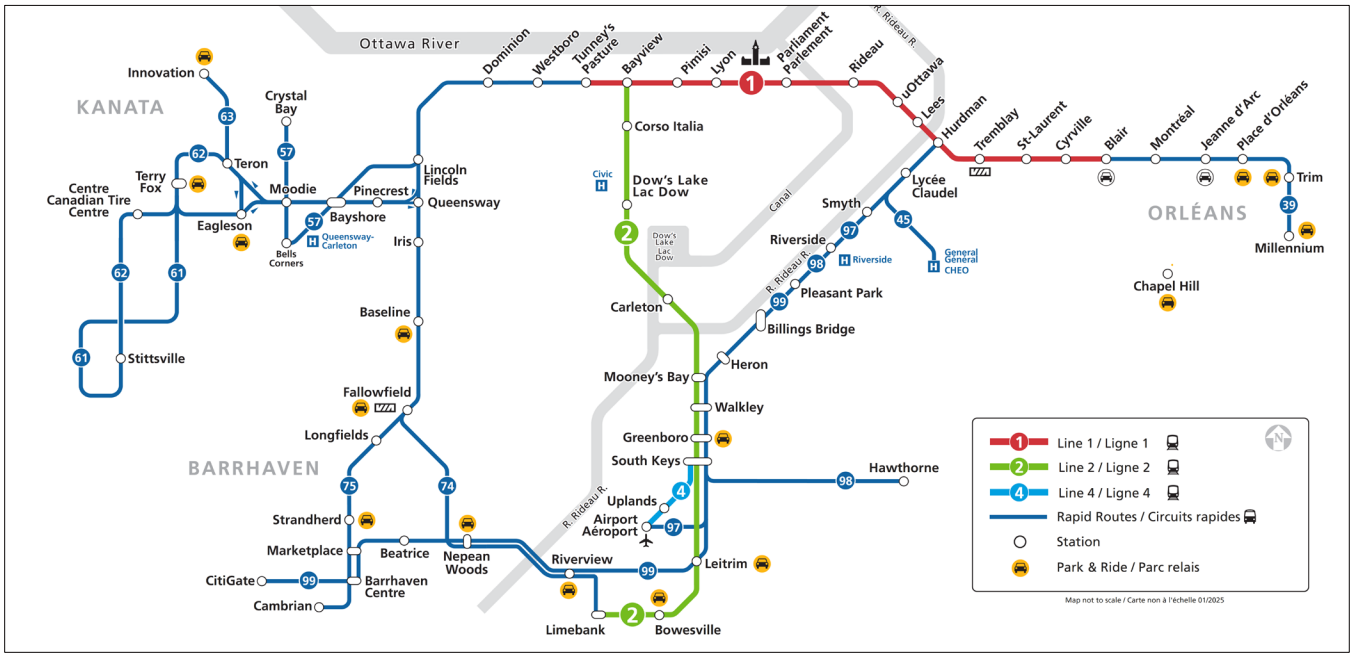
The proposed development lands are located adjacent to Tunney's Pasture Station, which is presently the western terminus of O-Train Line 1. As such, this transit hub currently functions as a major transfer point between LRT and other bus services including numerous local feeder routes and the City's Bus Rapid Transit (BRT) network further west.

A recent expansion of O-Train Line 2 further south to Riverside South, with a spur line branch serving the Ottawa International Airport (O-Train Line 4), was opened for full revenue service in late 2024.

The existing City-wide rapid network as it relates to O-Train Lines 1, 2 and 4 is illustrated in **Figure 3-2** below.

A Transit Proximity Study Map illustrating the radial distance to the Tunney's Pasture LRT Station platform, along with local OC Transpo and STO feeder routes and bus stop locations, is provided in **Appendix B**.

Figure 3-2 – City-wide Transit Network in relation to O-Train Line 1



Source: OC Transpo

3.2.3.1 OC Transpo & STO Routes

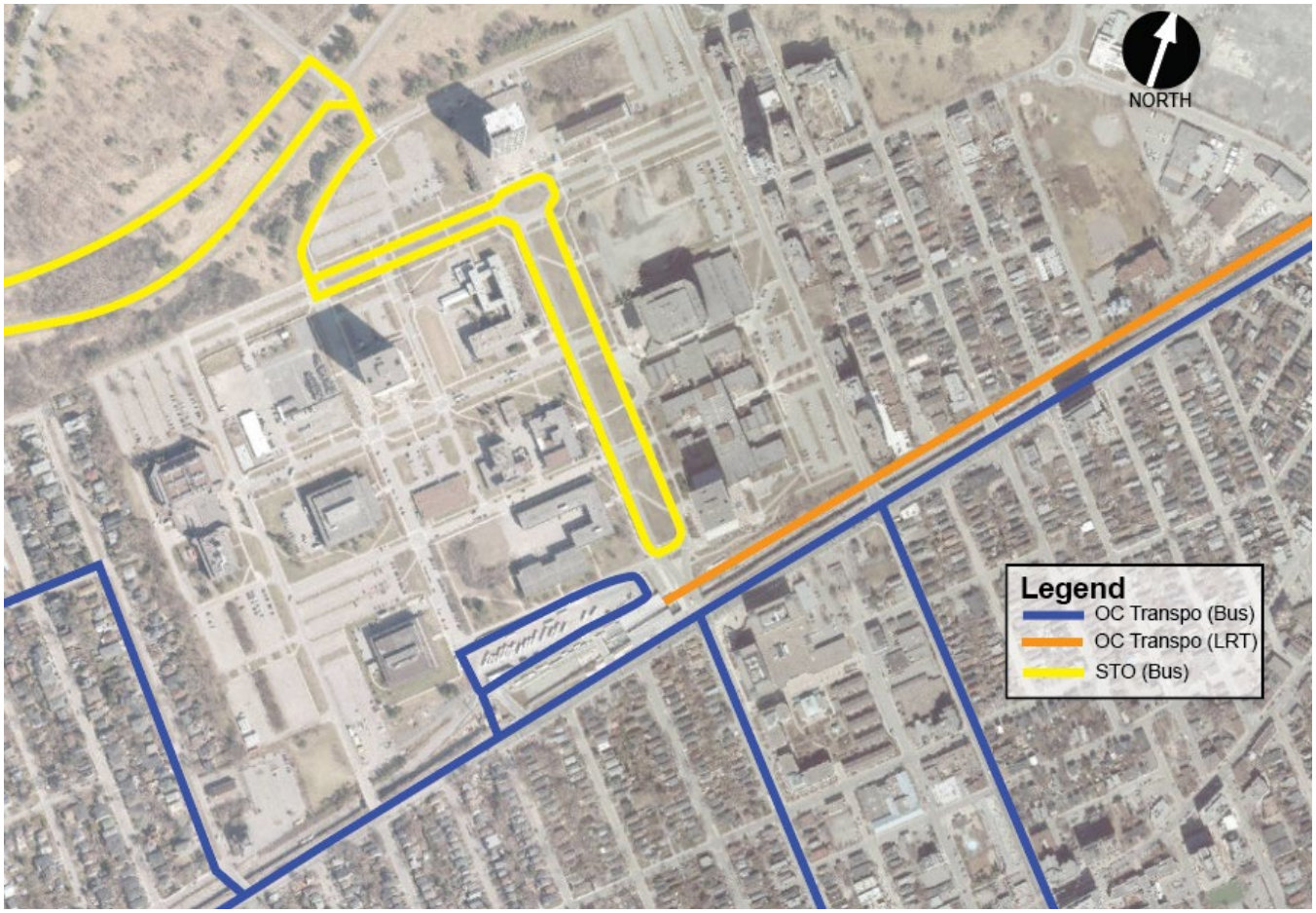
A total of 45 OC Transpo Routes pass through the Tunney's Pasture Station every weekday, consisting of the following service types:

- 6 Rapid (Bus) Routes which operate 7 days a week and provide direct connections between adjacent transitway stations.
- 7 Frequent (Bus) Routes which operate 7 days a week in all time periods with service every 15 minutes or less from 6am to 6pm on weekdays.
- 19 Connexion (Bus) Routes which operate on weekday peak periods only (Monday-Friday 6:00-9:00 am and 3:00-6:00 pm)
- 13 Local bus routes which serve adjacent communities including Champlain Park, Hintonburg and Wellington West.

STO bus routes 18, 28 and 58 provide direct connections between Gatineau and Tunney's Pasture, during weekday peak hours via the Champlain Bridge and Kichi Zibi Mikan.

Roads within the subject site or on the adjacent network that currently accommodate OC Transpo or STO transit routes are illustrated in **Figure 3-3** below.

Figure 3-3 – Existing OC Transpo Bus/LRT Routes & STO Bus Routes



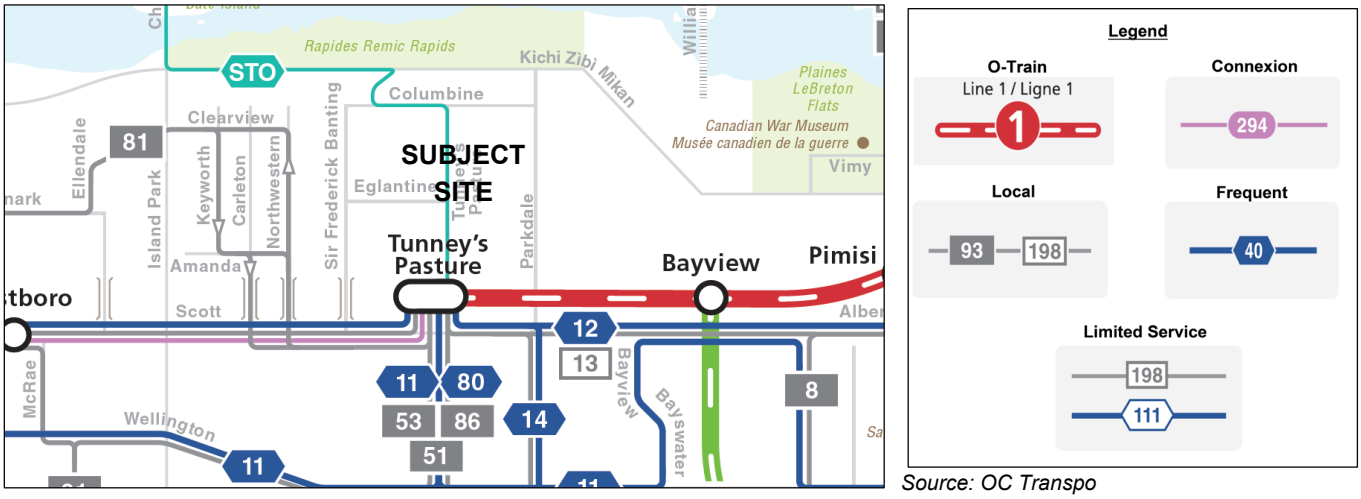
Source: Based on route maps from OC Transpo and STO websites

3.2.3.1 OC Transpo's New Ways to Bus Network

OC Transpo introduced significant changes to the existing bus network on April 27, 2025, an initiative referred to as 'New Ways to Bus'. Within the subject site, some routes that travel through Tunney's Pasture Station will either be replaced, realigned or new routes will be introduced. Notably, Route 54 which travelled through the site will be removed altogether.

An excerpt from the New Ways to Bus Network Map within the context area is shown in **Figure 3-4** below.

Figure 3-4 – New Ways to Bus Network Map



Source: OC Transpo

3.3 Planned Transportation Network

3.3.1 Future Road Network

The 2013 Transportation Master Plan (TMP) outlines future road network modifications required in the 2031 'Affordable Network'. A review of the TMP 'Affordable Network' indicates that there were no planned changes to the arterial road network within the broader area surrounding the proposed development.

Since the 2013 TMP, however, the redesign of Scott Street within the context area was undertaken which involved a phased approach to upgrade this arterial road and study area intersections with enhanced facilities for active transportation users. The eastbound bus lanes were removed to reallocate this ROW width as a green boulevard with street trees. This project is in the final stages of implementation.

It should also be acknowledged that the TMP is in the process of being updated and is generally divided into 2 parts:

- The 2023 Draft TMP Update (Part 1) was approved by City Council in the spring of 2023 and included Policies, Active Transportation Projects, as well as Transit Prioritization Frameworks. This key policy document also built on the 2022 Official Plan concept of a '15-minute neighbourhood'.
- The ongoing TMP Part 2 Update: Capital Infrastructure Plan, which is slated for completion in late 2025, involves a review of City-wide road infrastructure projects, including Transit Priority Corridors, Bus Rapid Transit (BRT) corridor, road widenings and extensions.

3.3.1.1 Modifications to the Street Network

Scott Street Community Design Plan (CDP)

The 2014 Scott Street CDP suggested a variety of potential ideas to guide the development of the transportation network within the CDP area, such as:

- Adding a northbound left-turn lane at the Parkdale Avenue and Scott Street intersection.
- Implementing a signalized intersection at the Scott Street & Sir Frederick Banting/Ross intersection, while prohibiting north-south traffic flow at Scott Street to deter cut-through traffic further south into Wellington Village.

- Converting Sir Frederick Banting Driveway, Colombine Driveway, and Tunney's Pasture Driveway into public streets, complete with appropriate sidewalk and bicycling infrastructure to provide alternatives to vehicle travel on Parkdale Avenue and Scott Street.
- Extending Goldenrod Driveway to intersect with Scott Street at a signalized intersection, while aiming to deter cut-through traffic into Smirle Avenue by prohibiting north-south traffic flow at Scott Street.

Tunney's Pasture Master Plan (TPMP) and Tunney's Pasture Urban Design Manual (UDM)

The Tunney's Pasture Master Plan (2014), referred to as the '2014 TPMP', proposed a three-tier hierarchy of streets: primary, secondary, and tertiary. Primary streets, such as Tunney's Pasture Driveway, Colombine Driveway, and Sir Frederick Banting Driveway, would serve as the main north-south and east-west spines, enhanced with bike lanes, high-quality landscaping, and safe pedestrian realms. Secondary streets would provide connectivity, street parking, and tree-lined sidewalks, while tertiary streets would offer access to larger blocks and site edges, enhancing overall site accessibility.

Since the 2014 TPMP, the City of Ottawa adopted a 'Complete Streets' approach which was carried forward to develop the typical cross-sections for each internal street presented in the Urban Design Manual for the Redevelopment of Tunney's Pasture (2024). Among other aspects, the road network hierarchy and network was reviewed and road classifications names were updated where possible to align with the City's terminology (e.g., local or collector), while tertiary streets were mostly removed to allow more flexibility for the introduction of a customized private street network tailored to the unique development needs of each parcel. Further discussion regarding the proposed street network is included in the 'New Streets Network' component of the TIA, located in Section 4.3.3, including proposed typical cross-section details for each internal street within Tunney's Pasture.

It should be noted as well that the Chardon Driveway extension from Colombine Driveway to Kichi Zībī Mīkan, which was contemplated as part of the 2014 TPMP, is no longer being considered at this time and the internal road network north of Colombine Driveway will retain its current alignment as part of the proposed Draft Plan.

3.3.2 Future Bicycle and Pedestrian Facilities

Scott Street is identified as a 'Cross-town Bikeway' through the study context area, with the objective of providing continuous connectivity over long distances for cyclists crossing the City.

The Active Transportation Projects policy document developed as part of the TMP Update (Part 1) identifies the need to investigate formal cycling facilities on Holland Avenue from Scott Street to Tyndall Street through a feasibility study.

Scott Street Community Design Plan (CDP) & Secondary Plan (SP)

As discussed previously, the Scott Street CDP and Secondary Plan policy documents were published by the City of Ottawa to guide the development of Tunney's Pasture and the surrounding area. Policy direction was provided in the Scott Street CDP framework which was further developed through the subsequent SP process.

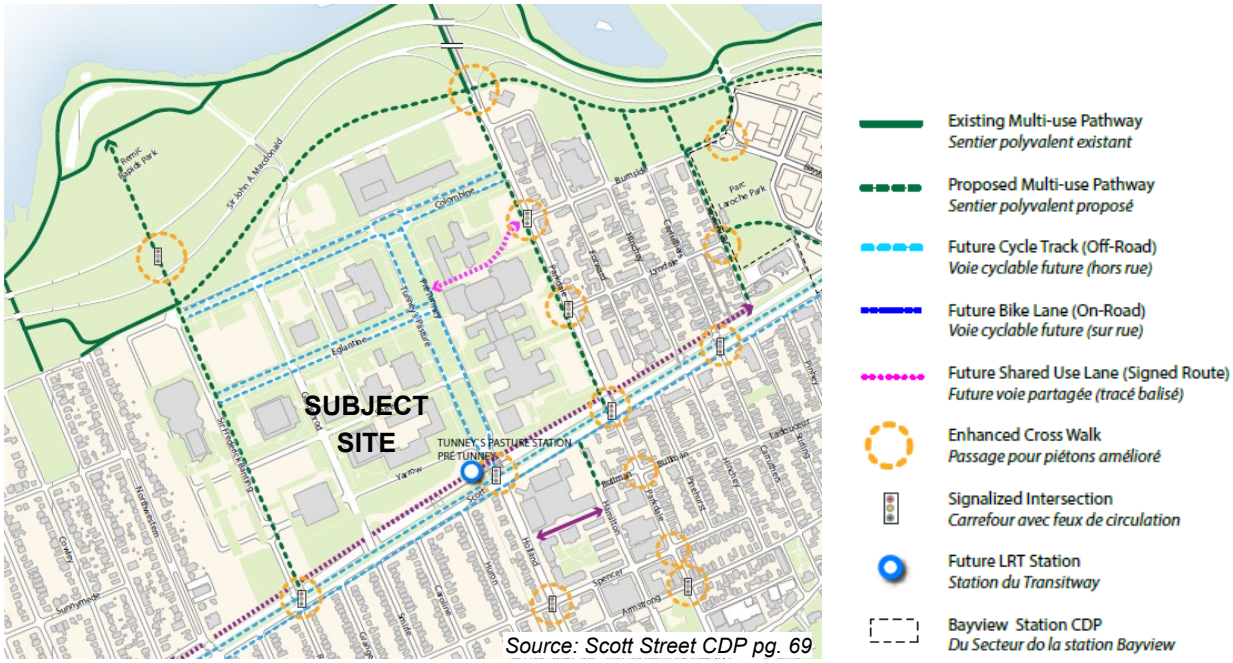
The Secondary Plan identified the need for enhancements to the Parkdale Avenue streetscape through the incorporation of dedicated cycling facilities within a parallel greenway north of Scott Street. The CDP provided additional details on this policy direction, envisioning a long-term plan for a future tree-lined multi-use pathway and linear park on the west side of Parkdale Avenue referred to as the 'Parkdale Greenway' which would significantly improve active transportation connectivity between Scott Street, Ottawa River Pathway network, as well as the subject site.

Burnside Avenue was envisioned as a 'complete street' in the Scott Street CDP, by accommodating two vehicular lanes, two bike lanes and landscaped boulevards with sidewalks and street trees on both sides.

It is also noteworthy that the Scott Street CDP recommended an 'enhanced crosswalk' on Parkdale Avenue at Goldenrod as a potential idea to address the lack of controlled active transportation crossings north of Burnside Avenue.

An excerpt from the Scott Street CDP illustrating these improvements is provided in **Figure 3-5** below.

Figure 3-5 – Scott Street CDP Proposed Pedestrian Network



Source: Scott Street CDP pg. 69

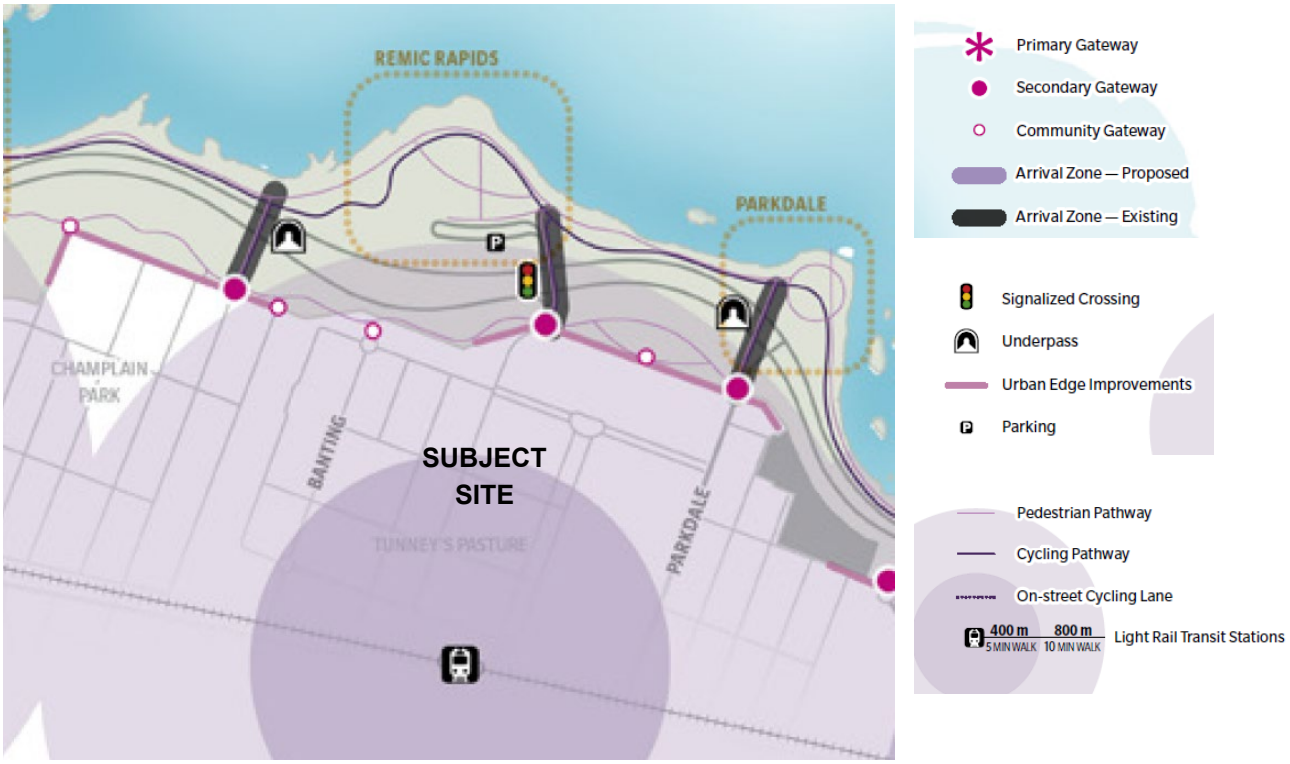
Scott Street Complete Street Upgrades

The City is in the final stages of converting Scott Street into a Complete Street through the upgrades to active transportation infrastructure, including wider sidewalks and grade-separated cycle tracks, a process which is substantially complete to the west of Tunney's Pasture and is well underway further east and adjacent to the site. Each signalized intersection is being converted to a 'protected intersection' with cross-rides for cyclists, while minor intersections will also include 'protected' elements.

Ottawa South Shore Riverfront Park Plan

The Ottawa River South Shore Riverfront Park Plan (NCC, 2018) envisions the potential long-term expansion of the pedestrian pathway network on the south side of Kichi Zibi Mikan, with possible Community Gateway connections to the subject development, as shown in **Figure 3-6** below.

Figure 3-6 – Potential Expansion of NCC Pathway Network north of Tunney's Pasture



Source: Ottawa River South Shore Riverfront Park Plan (2018), Section 4.4.1

3.3.3 Future Transit Facilities and Services

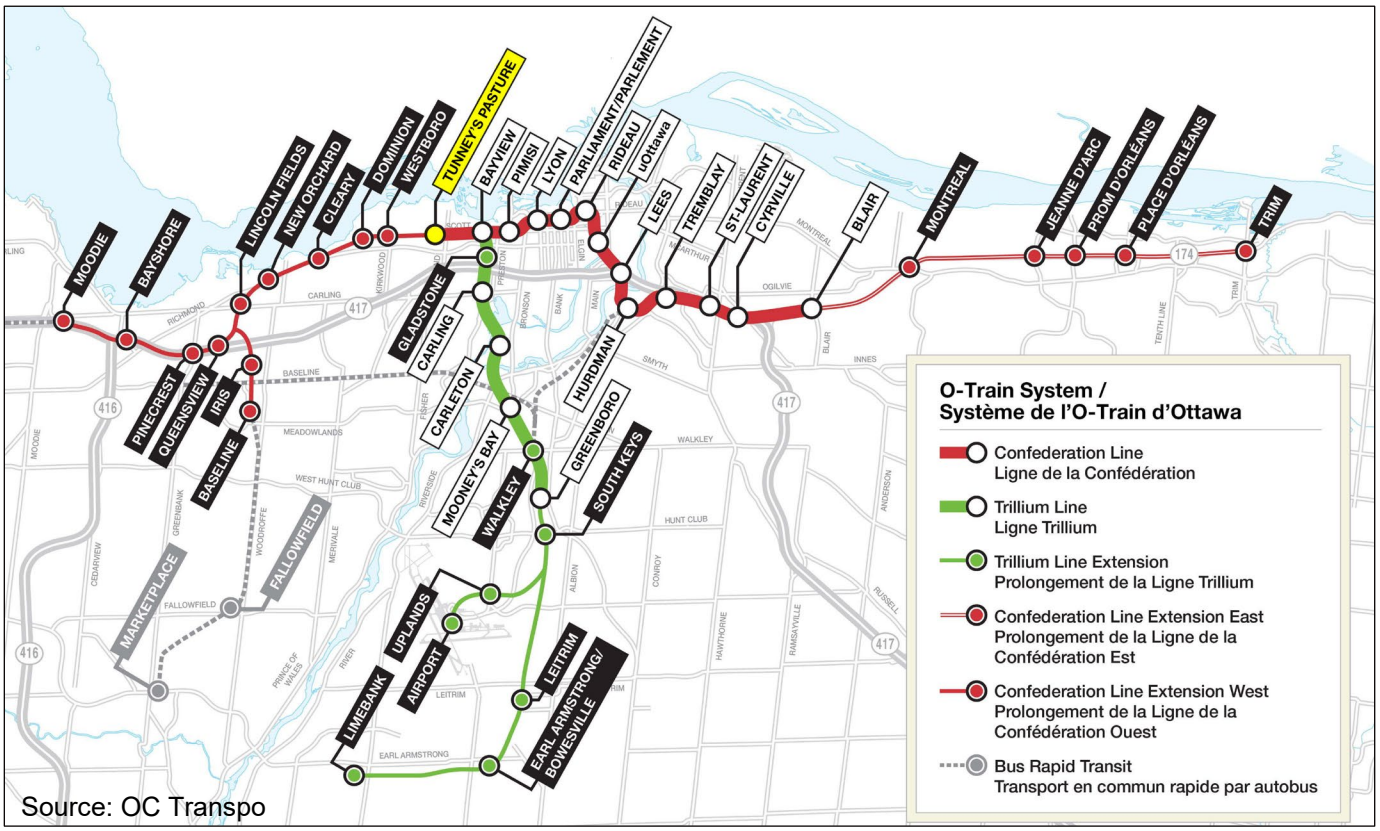
Within the context area, the 2013 Transportation Master Plan (TMP) '2031 Affordable Network' identifies Holland Avenue as a Transit Priority Corridor with Isolated Measures, while the TMP 'Network Concept' identifies the potential for a Transit Priority Corridor with Continuous Lanes. City technical staff have not indicated a proposed timeline for the implementation of either of these transit priority initiatives.

Construction of the LRT Stage 2 Western Extension is currently underway and is slated to open for full revenue service as early as 2026, expanding light rail service from its current terminus at Tunney's Pasture Station to Moodie Drive and Baseline Road.

Another notable planned expansion to the O-Train involves the opening of the O-Train Line 1 Eastern Extension to Trim Road which is slated to occur as soon as late 2025.

The Stage 2 LRT Rapid Transit Network is illustrated in **Figure 3-7** below.

Figure 3-7 – Stage 2-LRT Rapid Transit Network



3.4 Future Adjacent Developments

The City of Ottawa Transportation Impact Assessment (TIA) Guidelines specify that all significant developments proposed within the context area which are in the planning process, under construction (or completed after the collection of the traffic count data referenced in this report) or likely to occur within the study's horizon year must be identified and taken into consideration in the development of future background traffic projections.

Table 3-4 below summarizes the key details of all development applications of significance within the context area. Adjacent developments are illustrated in **Exhibit 3** below.

Table 3-4 – Future Adjacent Developments

Location	Description	Anticipated Build-out
99 Parkdale Avenue	28-storey apartment building with 240 dwelling units.	Construction Complete
159 Parkdale Avenue	31-storey building with 264 apartment units and ~119 m^2 commercial space.	Construction Complete
1560 Scott Street	29-storey building with 337 apartment units and ~80 m^2 GLA of commercial space.	2024[1]
274 Parkdale Avenue	28- & 32-storey buildings consisting of 499 residential units with ~3,593 m^2 of commercial space and ~3,593 m^2 of office space.	Unknown [1]
1546 Scott Street	25-storey mixed-use apartment building with 230 dwelling units & ~222 m^2 of commercial GLA.	2024[1]
1186-1194 Wellington Street West	18-storey mixed-use building with 240 residential units & ~1,172 m^2 ground floor retail.	2025[1]
Lazy Bay Commons 1-19 Kichi Zibi Mikan	Zoning permissions expanded to include up to 5 principal embassy buildings; Retention of ~24% greenspace	Unknown (long-term build-out)

Note: [1]The build-out date identified in the TIA has passed or can no longer realistically be met, however are assumed to be in place and occupied by the completion of Phase 1 in 2038.

Based on **Table 3-4** above, it is observed that over 1,800 residential units and approximately 5,500 square metres of commercial retail have been approved by the City within the context area, in recognition of the area's transit and active transportation infrastructure.

Lazy Bay Commons Development

In 2021, the NCC initiated a Zoning Bylaw Amendment (ZBLA) application to support the inclusion of embassy zoning permissions within the greenspace lands north of Burnside Avenue, referred to as the Lazy Bay Commons or 1-19 Kichi Zibi Mikan. Through a subsequent Ontario Land Tribunal (OLT) process, which concluded in mid-2023, it was determined that up to five principal embassy buildings (a reduction from the six buildings originally proposed) could potentially be constructed and approximately 24% of the lands would be retained as greenspace. This possible long-term plan was included in the list of future adjacent developments for further consideration in this study, given its potential significance on the boundary street intersections of the subject site. It is recognized, however, that significant uncertainty exists regarding a construction timeline or site-specific details for these lands which would need to be determined through future Site Plan Control (SPC) applications and that development on these lands could potentially occur beyond the 2046 planning horizon year of this TIA.



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Tunney's Pasture - Site Servicing and Public Road Redevelopment
Transportation Impact Assessment

Exhibit 3
Adjacent Developments (Context Area)

PROJECT No. 139833

SCALE: 0m 125m 250m

3.5 Time Periods

As the proposed development will consist of primarily residential and office land uses with street-level, neighbourhood commercial uses distributed around the core station area and throughout the site, traffic generated during the weekday morning and weekday afternoon peak periods will result in the most significant impact to traffic operations on the adjacent transportation network. The traffic analysis conducted for this study will therefore be limited to weekday morning and afternoon peak hours.

3.6 Study Horizon Year

In addition to Existing conditions, the following future analysis years anticipated for build-out milestones of the proposed development will be assessed in this study under Future Background and Future Total traffic scenarios:

- Year 2038: Build-out/occupancy of Phase 1
- Year 2042: Build-out/occupancy of Phases 1 & 2
- Year 2046: Full Build-out/occupancy of Proposed Development (Phases 1, 2 & 3)

As a result of the long-term redevelopment of this site, the study has aligned with the City of Ottawa's 2046 planning horizon with no further analysis beyond this time.

3.7 Study Area Intersections

With consideration of the information presented thus far, the following intersections have been identified as being most impacted by the proposed development and are consistent with the study area defined in the Tunney's Pasture Redevelopment Community Transportation Study (Parsons, 2018):

- Kichi Zībī Mīkan & Remic Rapids/Tunney's Pasture
- Goldenrod Driveway & Parkdale Avenue (right-in/right-out)
- *Parkdale Avenue & Colombine Driveway (higher likelihood of significant intersection upgrades)*
- Parkdale Avenue & Burnside Avenue
- Parkdale Avenue & Lyndale Avenue
- Scott Street & Parkdale Avenue
- Scott Street & Tunney's Pasture Driveway/Holland Avenue
- Scott Street & Goldenrod Driveway/Smirle Avenue
- *Scott Street & Sir Frederick Banting Driveway/Ross Avenue (higher likelihood of significant intersection upgrades)*

Based on the results of the trip generation exercise presented in Section 3.10, site-generated traffic impacts will be significantly reduced beyond the proposed site access intersections and boundary street intersections bordering the site. Motorists have a variety of options to access the broader regional road network, resulting in a significant dispersion of vehicular demand along arterial roads beyond the site's immediate boundary streets. The grid-like street pattern within the site, and access via signalized intersections within the context area, will optimize this dispersion over the broader arterial and regional road network. Furthermore, the significant investments in transit and active transportation infrastructure within the study area by the City of Ottawa will provide alternatives to those who currently travel by car and will support an incremental shift towards sustainable transportation modes.

Sustainable transportation trips will represent a significant proportion of the overall site generated traffic due to the proximity of this development to the Tunney's Pasture LRT Station in an area of the City which is already considered to be highly walkable/bikeable and will be further supported by a suite of Transportation Demand Management (TDM) measures through the incremental development of the subject site into a mixed-use, compact and transit-oriented development.

Peripheral Intersections

As described in subsequent sections of this study, a select number of intersections within the periphery or just outside the 1km context area will also be reviewed in a limited capacity to help identify constraints on the adjacent road network to determine a reasonable assignment site-generated traffic. Any additional analysis involving these peripheral intersections was limited to existing conditions to rationalize the assignment of site-generated trips associated with the proposed development. The downstream 'net new' site-generated traffic impacts at these additional intersections are illustrated in **Exhibit 6**, **Exhibit 7** and **Exhibit 8**.

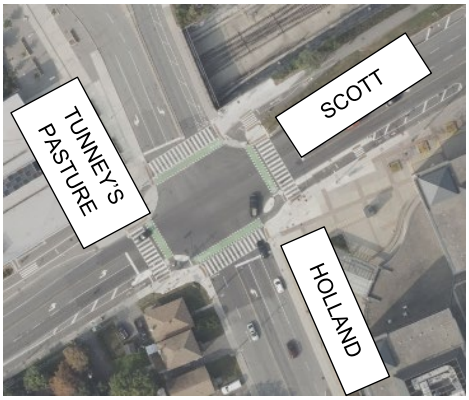
MMLOS

An intersection-based Multi-Modal Level of Service (MMLOS) will be conducted for all signalized study area intersections, as well as capacity analysis for all existing and proposed study area intersections (signalized or unsignalized) will be undertaken as part of this TIA. Note that peripheral intersections described above will be exempt from this MMLOS analysis.

In terms of segment-based MMLOS, since a Complete Street concept exists for Scott Street, a multi-modal evaluation of the corridor will not be required as part of this study for this corridor. As such, segment-based MMLOS analysis will be limited to Kichi Zibi Mikan and Parkdale Avenue along the site's frontage.

3.7.1 Intersection Descriptions

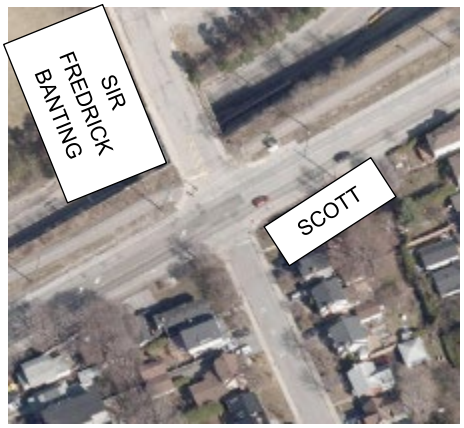
The following intersections have the greatest potential to be impacted by traffic generation from the subject site:



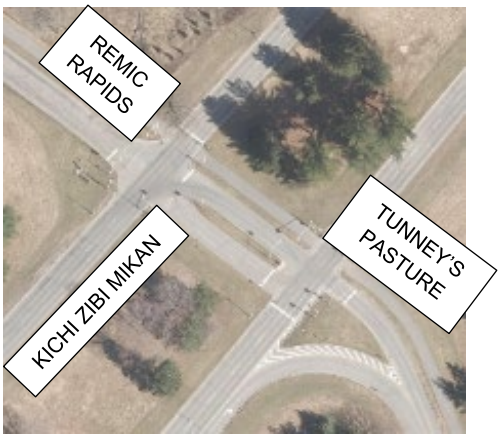
Scott Street & Holland Avenue/Tunney's Pasture Driveway is a four-legged, signalized intersection that has been upgraded to a 'protected intersection' with one through lane for mixed traffic provided on each approach. There are auxiliary left- and right-turn lanes provided on all approaches, with the exception of the eastbound approach, which consists of a shared thru/right and auxiliary left-turn lane configuration. Uni-directional 'cross-rides' have been provided on all approaches.



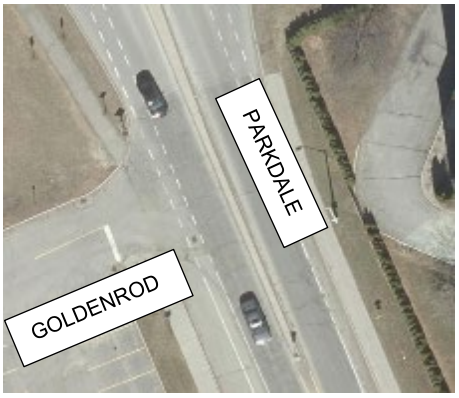
Parkdale Avenue & Scott Street is a four-legged, signalized intersection that has been upgraded to a 'protected intersection', in conjunction with the conversion of the eastbound transit lane to a green boulevard. The intersection now exists with one through lane on each approach, along with dedicated left-turn auxiliary lanes, with the exception of the northbound approach. A transit priority lane and signal exists on the westbound approach to give priority to transit vehicles.



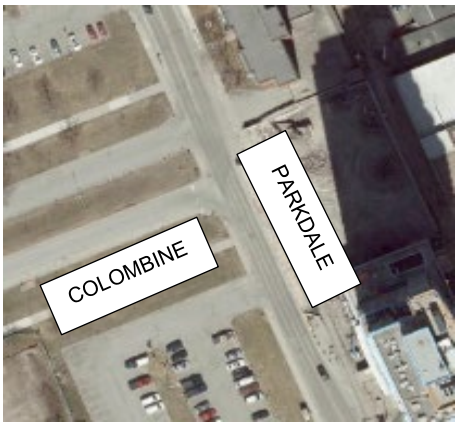
Sir Fredrick Banting Driveway/Ross Avenue & Scott Street is a four-legged, stop-controlled intersection with free flowing traffic in the east-west directions and a left-turn auxiliary lane on the westbound approach. A diverter island exists on the north leg, with the intent of limiting vehicular movements in/out of Sir Frederic Banting Dr. to right-in/right-out, as well as prohibiting north-south through movements.



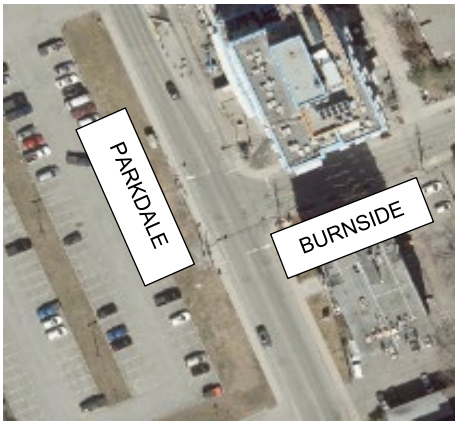
Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture consists of two signalized intersections separated by approximately 36 metres. A channelized right-turn auxiliary lane exists in the eastbound direction and westbound vehicles travelling on Kichi Zibi Mikan are prohibited from entering the Tunney's Pasture campus from this location.



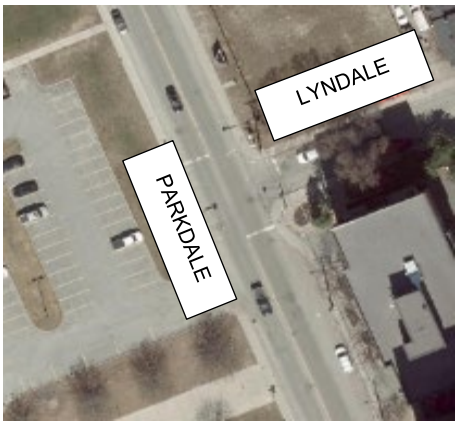
Goldenrod Driveway & Parkdale Avenue is an unsignalized intersection with stop control on the minor road. A raised concrete median extends through the intersection on Parkdale Avenue, limiting movements at Goldenrod Driveway to right-in/right-out.



Parkdale Avenue & Colombine Driveway is a three-legged, all-movements intersection with stop control on Colombine Driveway. A single travel lane is provided on each approach on Parkdale Avenue, while Colombine Driveway effectively provides two vehicular lanes at the approach and departure of the intersection separated by an approximate 9-metre median.



Parkdale Avenue & Burnside Avenue is a three-legged signalized intersection with a single, shared vehicle travel lane provided on each approach.



Parkdale Avenue & Lyndale Avenue is a three-legged, signalized intersection with a single, shared vehicle travel lane on each approach.

3.7.2 Existing Lane Configurations & Traffic Volumes

The following weekday morning and afternoon peak period turning movement counts were collected in May 2023, with the exception of Parkdale & Scott Street intersection which was counted in February 2025. All counts were conducted during the core working days (i.e. Tuesday to Thursday), after the federal government's mandate for federal civil servants to work from the office 2 to 3 days a week:

- Kichi Zibi Mikan Westbound & Remic Rapids
- Kichi Zibi Mikan Eastbound & Tunney's Pasture
- Parkdale Avenue & Goldenrod Driveway
- Parkdale Avenue & Emmerson Avenue
- Parkdale Avenue & Colombine Driveway

- Parkdale Avenue & Burnside Avenue
- Parkdale Avenue & Lyndale Avenue
- Parkdale Avenue & Scott Street
- Scott Street & Goldenrod Driveway/Smirle Avenue
- Scott Street & Sir Frederick Banting Driveway/Ross Avenue

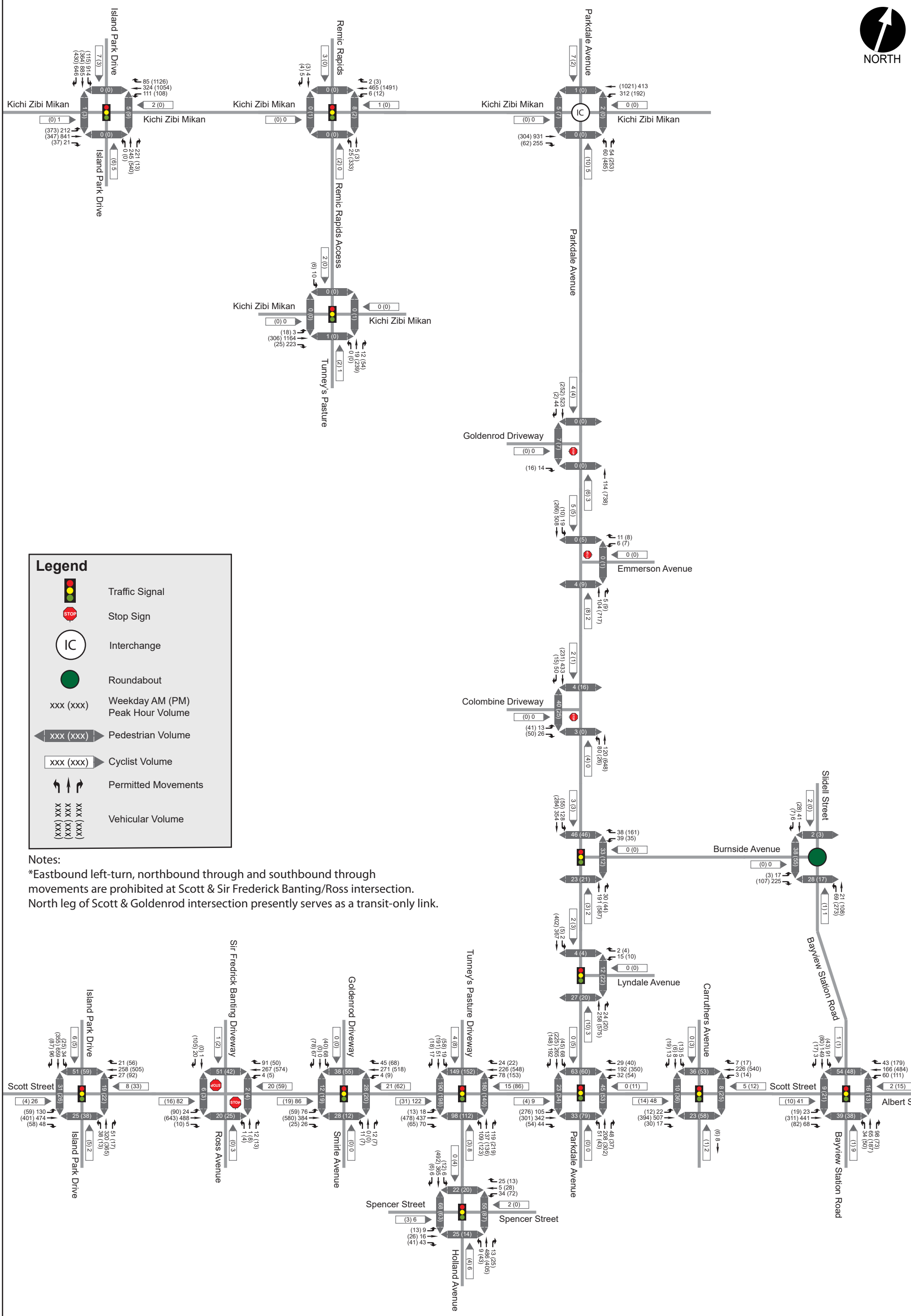
The Kichi Zibi Mikan interchange with Parkdale Avenue was counted to allow for adequate balancing with the adjacent intersections on Parkdale Avenue, however this interchange will not be included in the study area, given its freeflow operation.

Supplemental traffic data was collected in March/April 2025 for intersections on the periphery of the 1km context area to either inform the assignment of site-generated trips on the broader transportation network or to help identify existing cut-through traffic patterns in adjacent neighbourhoods. Based on feedback received from City technical staff, the following six strategic locations were included in this additional data collection exercise:

- Island Park & Kichi Zibi Mikan
- Island Park & Scott
- Holland & Spencer
- Scott & Carruthers
- Scott & Bayview Station/Albert
- Bayview & Burnside/Slidell

The pedestrian, cycling and vehicular volumes during the weekday morning and afternoon peak hours were extracted from the turning movement counts and are shown in **Exhibit 4**. The traffic count data is provided in **Appendix C**. The lane configurations and intersection controls for the study area and peripheral intersections are illustrated in **Exhibit 5**.

The trip generation methodology outlined in subsequent sections of this TIA provides an adjustment factor for site-generated traffic volumes to estimate the impact of office trips in future analysis scenarios. This adjustment factor provisions for further shifts in the Federal Government's policies towards in-office work over the timeframe of this study.



Legend

- Traffic Signal
- Stop Sign
- IC — Interchange
- Roundabout
- xxx (xxx) — Weekday AM (PM) Peak Hour Volume
- xxx (xxx) — Pedestrian Volume
- xxx (xxx) — Cyclist Volume
- Permitted Movements
- xxx (xxx) — Vehicular Volume

Notes:
*Eastbound left-turn, northbound through and southbound through movements are prohibited at Scott & Sir Frederick Banting/Ross intersection.
North leg of Scott & Goldenrod intersection presently serves as a transit-only link.

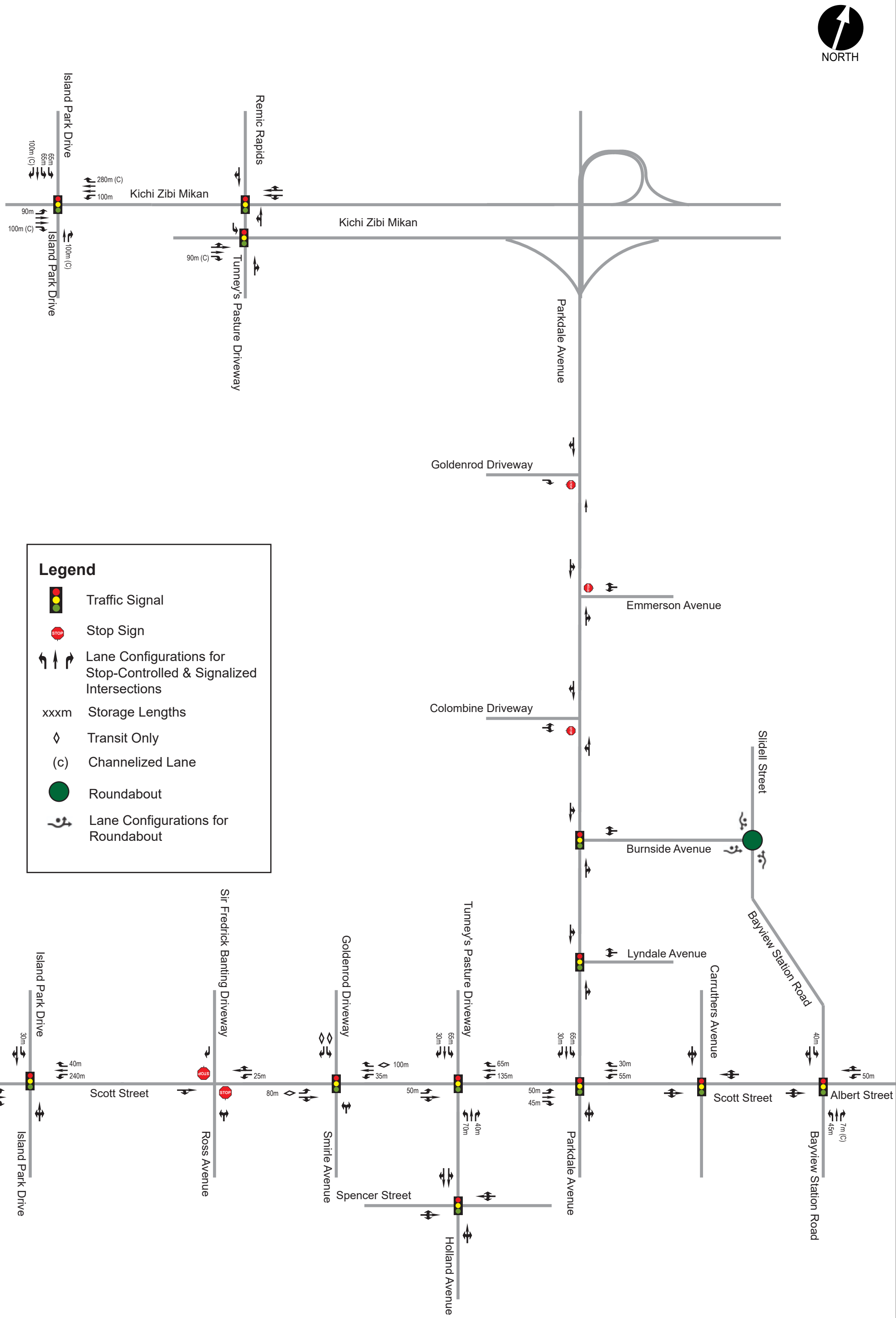
ARCADIS

Tunney's Pasture
Site Servicing & Piublic Road Redevelopment
Transportation Impact Assessment

Exhibit 4:
Existing Traffic Volumes

PROJECT No. 139833

SCALE: N.T.S.



Tunney's Pasture Site Servicing & Public Road Redevelopment Transportation Impact Assessment

Exhibit 5:
Existing Lane Configurations & Intersection Control

PROJECT No. 139833

SCALE: N.T.S.

3.7.3 Collision History

In accordance with the TIA Guidelines, a 5-year review of historical collision data on the boundary streets adjacent to the proposed development was conducted, based on the most recent available data available between January 1, 2016 and December 31, 2020.

The TIA Guidelines require a safety review if at least six collisions for any one movement or of a discernible pattern have occurred over a five-year period.

Table 3-5 below provides a summary of collisions by type for boundary street segment or study area intersection that met or exceeded the threshold six-collision threshold, as specified in the TIA Guidelines.

Table 3-5 – Historical Collisions by Type

Location	# Of Reported Collisions by Type									
	Approaching	Angle	Rear End	Sideswipe	Turning Movement	Single Motor Vehicle	Other	Pedestrian	Bicycle	Total
Intersections										
Holland Tunney's Pasture & Scott	-	1	**9**	**9**	**10**	1	-	2	1	**33**
KZM & Remic Rapids/ Tunney's Pasture	-	3	5	-	**6**	2	-	-	-	**16**
KZM EB Off-Ramp & Parkdale	-	-	5	-	-	1	-	-	-	**6**
Parkdale & Scott	1	**6**	**11**	5	4	2	1	-	3	**32**
Scott & Sir Frederick Banting/ Ross	-	1	-	2	1	-	-	-	2	**6**
Segments										
KZM EB - Island Park to Parkdale	-	-	**10**	2	1	5	1	-	-	**19**
KZM WB - Island Park to Parkdale	-	2	**20**	**12**	-	4	-	1	-	**39**
Parkdale - Lyndale to Scott	-	4	-	-	-	-	-	2	-	**6**
Scott – Parkdale to Tunney's Pasture Dr.	-	1	1	-	2	2	-	-	1	**7**

The results of the collision review indicates that the rear-end, sideswipe and turning movement collisions at the Scott & Holland/Tunney's Pasture intersection meet the threshold warranted for further review, while the frequency of angle, rear-end and turning movement collisions at the Parkdale & Scott intersection highlight these collision types as potential reoccurring patterns. There was also an exceedance of turning movement collisions relative to the City's threshold recorded at the Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture intersection. The above noted intersections will be reviewed in further detail in subsequent sections of this TIA.

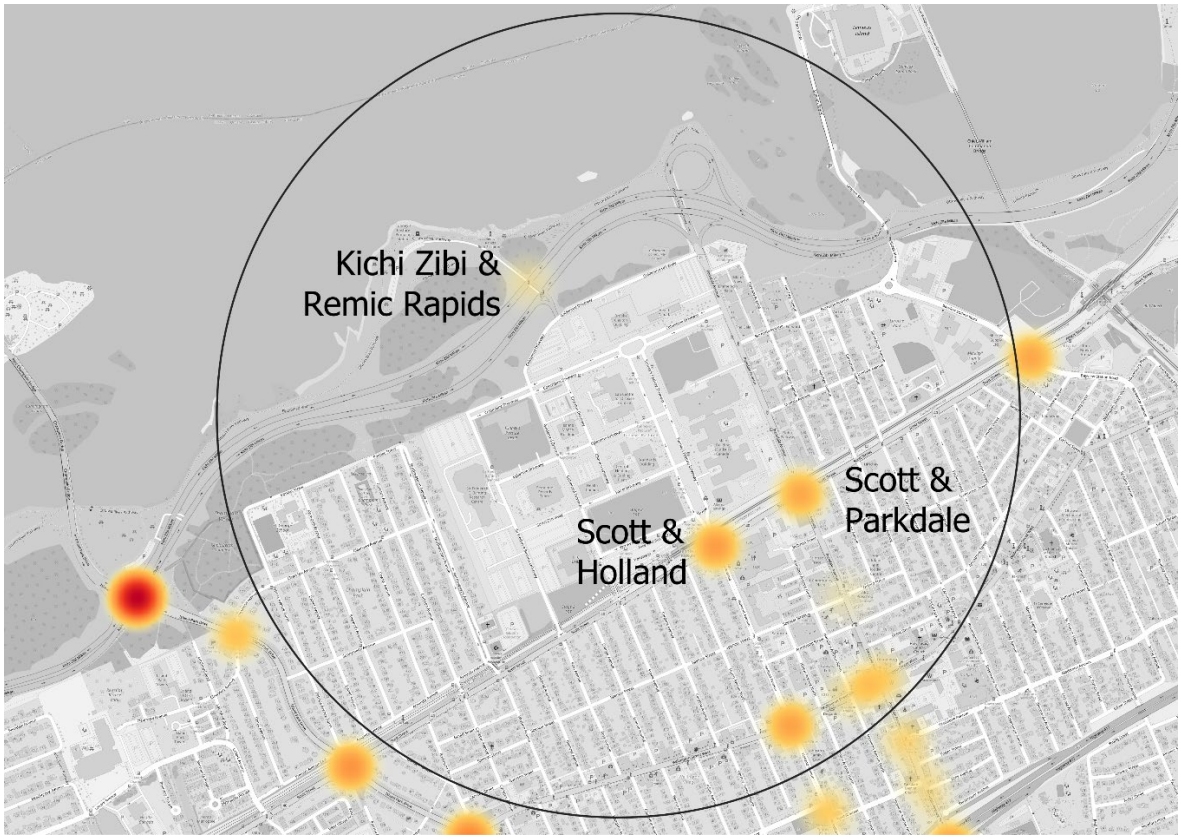
The only segments where a potential pattern of collision types was observed was along Kichi Zibi Mikan between Island Park Drive and Parkdale Avenue in both directions. Both of these segments reported high numbers of rear-end collisions, with side-swipe collisions being notable in the westbound direction as well. The contributing factors associated with these patterns and potential mitigation measures will be discussed in later sections of this report.

It should be noted that within the five (5) years of recorded collision data, there were 12 collisions involving pedestrians and cyclists. The factors contributing to these collisions will be explored further in later sections of this report.

Between 2016 and 2020, there was one fatal collision and 24 non-fatal injury collisions within the study area. The remaining 139 collisions resulted in property-damage only.

Intersections with a higher proportion of reported collisions have been emphasized within a 1km radius of the site, as shown in **Figure 3-8** below.

Figure 3-8 – Collision Heat Map for Context Area Intersections



Source: QGIS with collisions records from 2016 to 2020

Another method of evaluating the relative magnitude of collision frequency at one intersection compared to another is to quantify the average historical number of collisions relative to the daily volume of traffic entering the intersection. This is commonly expressed in terms of average number of collisions per Million Vehicles Entering (MVE) and a rate of greater than 1.0 is considered significant.

As the following intersections were noted as having the highest total number of collisions in the study area, their MVE was calculated.

- Scott & Holland/Tunney's Pasture: 0.89 collisions per MVE
- Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture: 0.39 collisions per MVE
- Parkdale & Scott: 0.77 collisions per MVE

As indicated above, none of the study area intersections have experienced more than 1.0 collisions per MVE and therefore number of reported collisions at these locations is not considered exceptional on a city-wide basis. The MVE is reported for context and does not provide any indication of severity, trends or patterns.

Detailed collision records are provided in **Appendix D**.

3.8 Existing Multi-Modal Level of Service

The following sections summarize the results of the Multi-Modal Level of Service (MMLOS) analysis conducted within the study area for pedestrians, cyclists, transit, public realm and auto under existing conditions. Details of the MMLOS analysis are provided in **Appendix E**.

The traffic operations analysis found in subsequent sections is for the weekday morning and afternoon peak hours. For the MMLOS analysis, Auto Level of Service (ALOS) is evaluated on a peak period basis (i.e. 2.5 hours) rather than a one-hour basis. To convert the peak hour results to peak period results, 0.84 and 0.92 conversion factors have been applied to the weekday morning and afternoon peak hour volume-to-capacity results, respectively, in accordance with the draft MMLOS Guidelines Update (March 2024) and the draft MMLOS analysis tool from April 2024. The final MMLOS Guidelines will be released at a later date.

3.8.1 Segment-Based MMLOS

Segment-based MMLOS results for boundary street segments adjacent to the subject site are provided in **Table 3-6** below.

Since a Complete Street design has already been established for Scott Street and is in the process of being implemented, segment-based Multi-Modal Level of Service (MMLOS) will not be required as part of this study for this southern boundary street. It should be noted as well that the 'Critical LOS' results represent gaps or deficiencies along a roadway segment and are provided for information purposes only. The 'Overall LOS' results were used for comparison against the 'Target LOS'.

It should be noted that Parkdale Avenue is not presently served by transit service along the site's frontage, therefore no Transit Level of Service (TLOS) for these segments was undertaken.

Table 3-6 – Segment-Based MMLOS Analysis Results: Existing Conditions

Segment	Travel Mode	Side	Overall LOS	Critical LOS	Target LOS	Deviation
Kichi Zibi Mikan, Island Park to Parkdale	Pedestrian	North	B	B	A	-1
		South	F	F		-5
	Bicycle	North	B	B	B	0
		South	E	E		-3
	Transit	North	E	-	E	0
		South	D			+1
	Public Realm	Both Sides	C	-	B	-1
Parkdale Avenue, Goldenrod to Burnside	Pedestrian	West	B	B	A	-1
		East	B	B		-1
	Bicycle	West	D	D	B	-2
		East	D	D		-2
	Public Realm	Both Sides	B	-	B	0
Parkdale Avenue, Burnside to Lyndale	Pedestrian	West	B	B	A	-1
		East	C	C		-2
	Bicycle	West	D	D	B	-2
		East	D	D		-2
	Public Realm	Both Sides	B	-	B	0
Parkdale Avenue, Lyndale to Scott	Pedestrian	West	B	B	A	-1
		East	C	C		-2
	Bicycle	West	D	D	B	-2
		East	D	D		-2
	Public Realm	Both Sides	B	-	B	0

The results of the segment-based MMLOS presented in **Table 3-6** above indicate that neither of the boundary streets meet the PLOS or BLOS targets due to the lack of separation between cyclists, pedestrians and motorized

traffic. Kichi Zibi Mikan falls short of attaining its Public Realm target due to the significant distance between controlled crossing locations and lack of pedestrian facilities on the south side of the corridor.

3.8.2 Intersection-Based MMLOS

The intersection-based MMLOS results for existing signalized study area intersections are summarized in **Table 3-7** below.

The 'Critical LOS' represents the worst-performing approach at each study area intersection and is provided for information purposes only. The 'Overall LOS' results were used for comparison against the 'Target LOS'.

Table 3-7 – Intersection-Based MMLOS Results: Existing Conditions

Intersection	Travel Mode	Overall LOS	Critical LOS	Target LOS	Deviation
Kichi Zibi Mikan & Tunney's Pasture/ Remic Rapids	Pedestrian (PLOS)	B	B	A	-1
	Bicycle (BLOS)	D	E	B	-3
	Transit (TLOS)	C	E	E	+2
	Auto (ALOS) [1]	C	E	E	+2
Parkdale & Burnside	Pedestrian (PLOS)	A	B	A	0
	Bicycle (BLOS)	B	C	B	-1
	Transit (TLOS)	A	B	E	+4
	Auto (ALOS) [1]	A	A	E	+4
Parkdale & Lyndale	Pedestrian (PLOS)	A	A	A	0
	Bicycle (BLOS)	B	C	B	-1
	Transit (TLOS)	B	C	E	+3
	Auto (ALOS) [1]	A	A	E	+4
Parkdale & Scott	Pedestrian (PLOS)	B	B	A	-1
	Bicycle (BLOS)	A	B	A	0
	Transit (TLOS)	B	D	B	0
	Auto (ALOS) [1]	D	-	E	+1
Scott & Holland/Tunney's Pasture	Pedestrian (PLOS)	B	C	A	-1
	Bicycle (BLOS)	B	B	A	-1
	Transit (TLOS)	C	D	B	-1
	Auto (ALOS) [1]	C	E	E	+2

Note: [1] Auto Level of Service (ALOS) is based on weekday peak period volumes in accordance with the draft MMLOS Guidelines (March 2024).

The results of the analysis presented in **Table 3-7** above indicate that the following intersections are 1 deviation point shy of achieving their target PLOS scores: Kichi Zibi Mikan & Tunney's Pasture/Remic Rapids, Parkdale & Scott, as well as Scott & Holland/Tunney's Pasture. These deficiencies can be attributed to longer cycle lengths and the number of travel lanes that pedestrians are required to cross.

The BLOS targets are not met at the Scott & Holland intersection based on the number of vehicles observed performing left-turning movements on the eastbound, northbound and southbound approaches, while the Kichi Zibi Mikan & Tunney's Pasture/Remic Rapids, Parkdale & Burnside and Parkdale & Lyndale intersections lack cycling infrastructure to facilitate the mobility of these users on all approaches.

All existing study area intersections meet the TLOS targets, with the exception of the Scott & Holland/Tunney's Pasture intersection. As there are continuous transit lanes on Scott Street in the westbound direction approaching Parkdale Avenue, the failing TLOS is due to the long delay for transit vehicles on the northbound and eastbound approaches.

Lastly, based on the weekday peak period volumes, all of the signalized study area intersections are presently meeting their respective Auto Level of Service (ALOS) targets.

3.9 Demand Rationalization

The purpose of this section is to rationalize future travel demands within the study area and periphery to account for potential capacity limitations in the transportation network and its ability to effectively accommodate the additional demand generated by a new development. The results of the demand rationalization exercise will be used to inform the existing capacity constraints of the adjacent road network and define the site-generated trip characteristics for the proposed development.

3.9.1 Existing Capacity Constraints

The intersection capacity analysis presented in the following sections employs locally-specific parameters, as described in the TIA Guidelines, and incorporates existing signal timing plans obtained from the City of Ottawa. A peak hour factor (PHF) of 0.90 has been considered in the analysis of existing conditions, as prescribed in the TIA Guidelines. The Synchro output files have been provided in **Appendix F**.

3.9.1.1 Study Area Intersections

Table 3-8 below summarizes the existing traffic operational performance of the study area intersections, based on Existing Traffic volumes.

Table 3-8 – Intersection Capacity Analysis: Existing Traffic (Study Area Intersections)

Study Area Intersection	Traffic Control	AM Peak		PM Peak	
		Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)	Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)
Kichi Zibi Mikan & Remic Rapids	Signalized	A (0.23)	WBTRL (0.23)	D (0.86)	**NBTL (0.99)**
Kichi Zibi Mikan & Tunney's Pasture	Signalized	A (0.51)	EBTL (0.55)	A (0.31)	NBTR (0.80)
Parkdale & Goldenrod (right-in/right-out)	Unsignalized	B (12.8s)	EBR (12.8s)	A (9.9s)	EBR (9.9s)
Parkdale & Emmerson	Unsignalized	B (11.0s)	WBRL (11.0s)	C (18.4s)	WBRL (18.4s)
Parkdale & Colombine	Unsignalized	C (16.2s)	EBRL (16.2s)	C (19.0s)	EBRL (19.0s)
Parkdale & Burnside	Signalized	A (0.49)	SBTL (0.49)	A (0.56)	WBRL (0.65)
Parkdale & Lyndale	Signalized	A (0.27)	SBTL (0.27)	A (0.41)	NBTR (0.41)
Parkdale & Scott	Signalized	A (0.52)	NBTRL (0.58)	C (0.75)	WBT (0.83)
Scott & Holland/Tunney's Pasture	Signalized	B (0.63)	NBL (0.74)	D (0.87)	EBTR (0.88)
Scott & Goldenrod/Smirle	Signalized	A (0.39)	SBL (0.68)	A (0.48)	SBL (0.55)
Scott & Sir Frederick Banting/Ross	Unsignalized	B (13.8s)	NBTRL (13.8s)	**F (51.2s)**	**NBTRL (51.2s)**

Based on the results in **Table 3-8** above, all study area intersections are currently operating at an acceptable Level of Service (i.e. LOS 'E' or better), with the exception of the stop-controlled intersection of Scott & Sir Frederick Banting/Ross during the weekday afternoon peak hour. Non-compliant vehicle turning movements, including the northbound through and eastbound left-turning movements are contributing to this failing Level of Service. Potential upgrades to this intersection to improve safety for all modes were investigated through this TIA process and will be presented in subsequent sections of this study.

It should be noted that the northbound through-left movement at the Kichi Zibi Mikan & Remic Rapids access intersection is approaching its theoretical capacity (i.e. LOS 'E') during the weekday afternoon peak hour, while queue spillback is shown to be in the order of 105 metres, significantly exceeding the 55-metre separation distance to the first internal intersection at Goldenrod & Tunney's Pasture.

According to the results of the existing conditions analysis, the eastbound left-turn movement at Parkdale & Scott is presently experiencing 95th percentile queue lengths of approximately 65 metres during the constrained weekday afternoon peak hour, exceeding the 50 metres of existing parallel lane length by approximately 2 vehicle lengths.

The northbound right-turn at the Scott & Holland/Tunney's Pasture intersection is presently experiencing 95th percentile queue lengths of approximately 87 metres during the weekday afternoon peak hour which is significantly greater than the 40 metres of existing parallel lane length.

3.9.1.2 Peripheral Intersections

Table 3-9 below summarizes the existing traffic operational performance beyond the study area at the periphery of the 1km context area, based on Existing Traffic volumes.

Table 3-9 – Intersection Capacity Analysis: Existing Traffic (Peripheral Intersections)

Peripheral Intersection	Traffic Control	AM Peak		PM Peak	
		Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)	Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)
Island Park & Kichi Zibi Mikan	Signalized	E (0.91)	WBL (1.02)	F (1.01)	WBT (1.07)
Island Park & Scott	Signalized	E (0.95)	EBT (1.03)	C (0.73)	WBT (0.86)
Holland & Spencer	Signalized	A (0.42)	NBTRL (0.42)	A (0.49)	WBTRL (0.66)
Scott & Carruthers	Signalized	A (0.44)	EBTRL (0.44)	A (0.41)	WBTRL (0.43)
Scott & Bayview Station/Albert	Signalized	A (0.53)	SBTR (0.55)	B (0.64)	WBTR (0.64)
Bayview & Burnside/Slidell	Roundabout	A (5.8s)	EB (5.8s)	A (7.1s)	NB (7.1s)

Based on the results presented in **Table 3-9** above, the Island Park & Kichi Zibi Mikan intersection is shown to experience capacity or queuing issues on the eastbound left-turn, westbound left-turn, northbound through and southbound through movements during the weekday morning peak hour, while the eastbound left-turn, westbound through/right-turn movements and northbound through movements experienced constrained conditions during the weekday afternoon peak hour.

The Island Park & Scott intersection is also operating slightly above its theoretical capacity on the eastbound through movement during the weekday morning peak hour.

The above noted constraints identified at the peripheral study area intersections were an important consideration in the assignment of future trips on the surrounding road network.

3.9.1.3 Parkdale Avenue

North of Scott Street, peak direction traffic volumes of up to 750 vehicles per hour have been observed on Parkdale Avenue. South of Scott Street, this diminishes to approximately 300 to 400 vehicles per hour which is well within the capacity of a two-lane road. Despite these relatively low directional volumes, the portion of Parkdale Avenue between Bullman Street and Highway 417 does become congested and slow-moving during the weekday morning peak period. Additionally, during the weekday afternoon peak period this congestion extends from Kichi Zibi Mikan to Highway 417. Closely-spaced intersections with high pedestrian crossing volumes and an abundance of private driveways result in a slow throughput along this corridor. This roadway also provides the shortest direct route between interchanges at Kichi Zibi Mikan and Highway 417, thereby attracting regional pass-through traffic. The presence of a major employment node (Tunney's Pasture) further exacerbates the need for regional traffic to enter the community from these major roadway systems.

3.9.1.4 Island Park Drive

Traffic count data collected on Island Park Drive for this study indicates that peak direction volumes on this north-south arterial road are in the order of 800 to 1,000 vehicles during the weekday morning peak hour from Kichi Zibi Mikan to Scott Street. Volumes of this magnitude are an indicator that this two-lane road is approaching its capacity during this most constrained weekday peak hour.

3.9.2 Adjustment to Backgrounds Network Demands

Under existing or historical conditions, an analysis of observed (i.e., processed) volumes cannot result in a condition that is over an intersection's theoretical capacity (i.e., v/c > 1.0). In situations where projected traffic demand results in volumes that exceed capacity, it is reasonable to assume that the traffic demand will either spread out over a greater period of time (i.e., peak spreading) or shift to alternatives modes of transportation such as transit. In the analysis of future conditions, a peak hour factor (PHF) of 1.0 will be utilized in accordance with the City of Ottawa TIA Guidelines. It is also standard practice that signal timing optimization will occur on a regular basis.

The proportion of heavy vehicles has been reviewed and adjusted on Scott Street to account for the significant reduction in OC Transpo buses for future scenarios that will require access to the bus loop after the opening of the LRT Stage 2 Western Extension for full revenue service, based on the assumption that 'Rapid' and 'Connexion' routes to the west will be eliminated or significantly reduced as this transit hub changes from its current role as a terminus station.

The results of the intersection capacity analysis under Future Background Traffic conditions are presented in Section 4.10.3.1.

3.9.3 Adjustments to Development Generated Demand

The proposed development will be accessed from the adjacent boundary street road network via six external access intersections, including three locations on Scott Street, two locations on Parkdale Avenue and one location on Kichi Zibi Mikan.

The assignment of site-generated traffic has considered movements with projected capacity or queuing constraints identified at the study area intersections under Future Background Traffic conditions to which site-generated traffic is likely contribute. It is noteworthy that some intersections will experience improved operations under Future Background Traffic conditions relative to Existing conditions, as a result of 'peak spreading'.

The following queuing and capacity constraints were identified through Future Background Traffic conditions (refer to Section 4.10.3.1):

- Kichi Zibi Mikan & Tunney's Pasture/Remic Rapids
  - Northbound through/left queuing constraints
- Scott & Holland/Tunney's Pasture
  - Northbound right-turn queuing constraints
- Parkdale & Scott
  - Eastbound left-turn queuing constraints

It is acknowledged as well that both Parkdale Avenue and Island Park Drive have long experienced congested conditions during the weekday peak periods and therefore the constraints associated with these north-south arterial routes were factored into the routing of site-generated traffic, along with the queuing and capacity constraints noted above under Future Background Traffic conditions. As congestion on both Parkdale Avenue and Island Park Drive is highly directional during the weekday peak periods, it should be noted that there is available capacity in the opposing directions. The proposed transformation of Tunney's Pasture from a traffic destination to a lesser traffic origin is an important consideration in the assignment of future trips on the surrounding road network, along with

the constraints identified at the peripheral intersections under Existing conditions and the study area intersections under Future Background Traffic conditions.

Although not specifically identified as a constraint under Future Background Traffic conditions, it is important to recognize that the recently-reinstated northbound shared lane configuration at the Parkdale & Scott Street intersection limits the capacity of this approach and its ability to accommodate additional traffic. As such, the sensitivity of this approach was taken into consideration when assigning site-generated trips and it was recognized that traffic will seek out alternative and more efficient routes whenever possible.

3.10 Development Generated Traffic

3.10.1 Trip Generation Methodology

The trip generation methodology followed a multi-step process:

1. **Estimate Person-Trips:** The first step was to estimate the number of person trips generated by each land use. For residential land uses, person trips are estimated for the peak period (7-9:30am and 3:30-6pm) as whole. In contrast, for non-residential land uses person trips are estimated for the peak hour (60 minutes) only.
2. **Apply Reduction Factors:** The second step was to estimate how many trips remain internal to the site (e.g., trips from residential buildings to commercial land uses within the site), how much existing traffic will be reduced due to office building removals, and what percentage of commercial traffic will be from existing traffic on the adjacent streets that is diverted into the site.
3. **Subdivide Trips by Mode:** The third step was to establish mode share targets for each land use and calculate the number of peak hour person-trips by travel modes.
4. **Distribute and Assign Trips:** The final step was to use the number of vehicle-trips calculated in the preceding step and distribute and assign that traffic to the surrounding road network.

3.10.2 Person Trip Generation

3.10.2.1 Residential Peak Period Person Trip Generation

The 2020 TRANS Trip Generation Summary Report provides Ottawa-specific trip generation rates for residential land uses. These trip generation rates estimate the number of person-trips that residential buildings will generate during the 2.5-hour peak periods in the weekday morning and afternoon (i.e., 7-9:30am and 3:30-6pm). All residential units within the proposed development are anticipated to be housed in buildings 3 storeys or higher and therefore, these fall under the category of 'high-rise multi-family' housing, as defined in the 2020 TRANS Trip Generation Summary Report.

The resulting number of site-generated peak period person-trips for the proposed residential land uses is summarized in **Table 3-10** below. For reference, the weekday morning peak period is from 7:00-9:30am, while the weekday afternoon peak period is from 3:30-6:00pm.

Table 3-10 – Residential Peak Period Person-Trip Generation

PHASE	LAND USE	SIZE	PERIOD	PERSON TRIPS (PPP) [1]		
				IN	OUT	TOTAL
1	Multi-Family Residential (High-Rise) [2]	4,950 units	AM	1,228	2,732	3,960
			PM	2,584	1,871	4,455
1 & 2	Multi-Family Residential (High-Rise) [2]	6,975 units	AM	1,730	3,850	5,580
			PM	3,641	2,637	6,278
1, 2 & 3	Multi-Family Residential (High-Rise) [2]	9,000 units	AM	2,232	4,968	7,200
			PM	4,698	3,402	8,100

Notes: [1] ppp = persons per period

[2] The 2020 TRANS Trip Generation Summary Report defines 'high-rise' as being 3 or more storeys.

3.10.2.2 Non-Residential Peak Hour Person-Trip Generation

The ITE Trip Generation Manual (11th Edition) provides trip generation rates for a large variety of land uses based on data collected throughout North America. Unlike the TRANS trip generation rates, however, these rates only estimate the number of vehicle-trips generated during the peak hour (i.e., a 60-minute period rather than a 2.5-hour period) and a 1.28 conversion factor is applied to convert these vehicle-trips into person-trips. The ITE trip generation rates were used to estimate the person-trips generated by the commercial land uses.

For office/employment uses, a local trip generation rate was developed based on existing turning movement counts collected at the site access intersections in May 2023. This rate also captured the directional splits (i.e. proportion of inbound and outbound movements) which were determined to be more balanced than the closest comparable land use in the ITE Trip Generation Manual (750: Office Park) and more reflective of the unique travel patterns resulting from a blend of both office and laboratory uses on-site.

For the purposes of this study, an adjustment factor of 1.5 was applied to site-generated traffic count data observed in May 2023 to estimate the impact of a potential return to office for the Federal workforce of 4-5 days per week. Since Federal employees were only in-office 2-3 days per week when the site traffic data was collected, the application of this adjustment factor yields similar overall traffic generation to pre-pandemic conditions, as documented in the 2018 Tunney's Pasture Redevelopment Community Transportation Study (Parsons, 2018).

For the possible elementary school, peak hour person-trips were calculated using a first-principles approach based on a student population of 750 students and an estimated 61 staff (i.e., teachers, custodians, etc.), and accounts for trips associated with parents/guardians picking up and dropping off students.

A summary of the methodology followed to derive the local trip generation rates for the office and possible school uses is provided in **Appendix G**.

Table 3-11 below summarize the peak hour person-trips generated by each land use per development phase.

Table 3-11 – Non-Residential Peak Hour Person Trips

Land Use [1]	Size (Approx. GFA[2] or Students)	Period	Phase 1 (2038)			Phase 2 (2042)			Phase 3 (2046)		
			In	Out	Total	In	Out	Total	In	Out	Total
821: Shopping Plaza w/ Supermarket (40-150k)	2038: ~4,230 m^2 2042: ~6,065 m^2 2046: ~7,900 m^2	AM	128	78	206	183	112	295	238	146	384
		PM	288	311	599	380	413	793	474	513	987
Office/ Laboratory (Local Rate)	2038: ~324,000 m^2 2042: ~208,860 m^2 2046: ~93,723 m^2	AM	2,648	746	3,395	1,707	482	2,189	766	216	982
		PM	1,474	3,281	4,755	950	2,115	3,065	426	949	1,375
Elementary School (First Principles)	2038, 2042 & 2046: 750 students	AM	1,169	358	1,528	1,169	358	1,528	1,169	358	1,528
		PM	75	97	172	75	97	172	75	97	172
TOTAL		**AM**	**3,901**	**1,171**	**5,072**	**3,031**	**944**	**3,975**	**2,160**	**717**	**2,877**
		PM	**1,812**	**3,634**	**5,446**	**1,389**	**2,589**	**3,978**	**968**	**1,543**	**2,511**

Notes:
[1] Land use codes from the ITE Trip Generation Manual (11th Edition) are provided for commercial and institutional uses.
[2] 'GFA' stands for Gross Floor Area.

3.10.3 Trip Reduction Factors

3.10.3.1 Deduction of Existing Development Trips

The site is currently occupied by single-use federal government buildings, the majority of which are planned to be repurposed or demolished gradually after Phase 1 of the build-out timeframe of the subject lands to contribute to the site's transformation into a mixed-use community.

Post-pandemic site-generated traffic from turning movement count data collected at the study area intersections was removed from the existing traffic volumes, based on existing traffic patterns and logical routing of trips reflective of the surrounding road hierarchy. The trips associated with the office/laboratory Gross Floor Area (GFA) anticipated to remain in each phase are summarized in **Table 3-15** below and were reassigned to the adjacent road network to reflect the incremental shift towards more sustainable modes of transportation relative to existing conditions. Further details regarding the distribution and assignment of site-generated trips are outlined in subsequent sections of this study.

3.10.3.2 Pass-By Trips

Based on the ITE Trip Generation Handbook (3rd Edition) for the 'Shopping Plaza' land use (821), it was assumed that 40% of commercial vehicle-trips will be pass-by trips in 2038, 2042 and 2046, respectively. This pass-by rate is only applicable during the weekday afternoon peak hours and decreases over time as the relative proportion of residential units increase.

Relevant extracts from the ITE Trip Generation Handbook are provided in **Appendix G**.

3.10.3.3 Synergy/Internalization

Synergy/internalization occurs when developments contain two or more compatible land uses. These compatible land uses attract trips from each other and therefore some of the person-trip generation of the site is fulfilled internally, reducing the overall number of new trips generated.

Based on data for the Ottawa West Traffic Assessment Zone (TAZ) from the 2011 NCR Household Origin-Destination Survey (January 2013), it is estimated that approximately 7% of weekday morning trips from residential

land uses would be destined for the possible elementary school within the site and thus would have no impact on the external road network.

Internal trips between the residential, commercial and office land uses within the subject lands were estimated using the NCHRP 8-51 Internal Trip Capture Estimation Tool. Separate internalization calculations were completed for each phase of development and the results are provided in **Appendix G**.

3.10.4 Mode Share Targets

The current City of Ottawa non-auto of mode share target of 85% for residential uses in TOD zones is even more aggressive than the 75% target assumed in the 2018 Community Transportation Study (Parsons, 2018). This places a strong reliance on the need for effective Transportation Demand Management (TDM) measures and the timely build-out of sustainable transportation infrastructure within the surrounding area. The proposed Tunney's Pasture development is unique to Ottawa in that it will be a major purpose-built Transit-Oriented Development and a complete mixed-use community catering to future residents who can embrace a more sustainable lifestyle, unlike anything that exists in Ottawa at present. It is for this reason a high non-auto target has been set. It is important to note that this target of 85% is a long-term target and not expected to be met until Phase 3 and full-buildout of this mixed-use, 15-minute community. This study therefore assumes a linear interpolation between the existing high-rise residential mode share of 69% observed within Ottawa West in 2011 and the 85% target in the year 2046.

A 12% cycling mode share target was adopted for residential uses in 2046 to recognize the high-quality cycling provided within the study area and to align with the 2013 Ottawa Cycling Plan target for the Inner Urban Area. In terms of active trips to/from work, 2021 Census data provided by City of Ottawa technical staff indicates that approximately 7% and 29% of work trips presently occur by cycling or active trips (both walking and cycling) and therefore this data was considered in determining appropriate mode share targets for office uses. Commercial and office land use mode share targets for 2046 were otherwise determined based on the relative difference between the existing mode share and 2046 targets for residential uses, while mode share targets for interim analysis years (i.e. 2038 & 2042) were interpolated.

The mode share targets for elementary school students were based on the mode share data provided in the Ottawa Student Transportation Association (OSTA) Transportation Survey Overview Report (2022), with appropriate adjustment factors applied to account for the unique travel characteristics of residents within the Ottawa West TAZ. School staff were assumed to follow similar mode share characteristics as office employees.

Existing mode share values for residential, commercial and office land uses are presented in **Table 3-12** below, while mode share targets for each respective land use are presented in **Table 3-13** below and were applied for all future analysis years in this study.

Table 3-12 – Existing Mode Share

Travel Mode	Residential [1,2]	Commercial [2]	Office/Employment	Elementary School Students
Auto Driver	31%	53%	54%	-
Auto Passenger	11%	14%	8%	12%
Transit	34%	11%	28%	-
Bicycle	5%	3%	5%	2%
Walk	20%	21%	5%	26%
School Bus	-	-	-	60%
Total	**100%**	**100%**	**100%**	**100%**

Notes: [1] Mode share values extracted from the 2020 TRANS Trip Generation Summary Report for 'high-rise' residential uses which are defined as being 3 or more storeys.

[2] Existing residential and commercial mode shares shown above are the average of the AM and PM mode shares.

Source: 2020 TRANS Trip Generation Summary Report and OSTA Transportation Survey Overview Report (2022)

Table 3-13 – Mode Share Targets

Travel Mode	2038 Mode Share Targets				2042 Mode Share Targets				2046 Mode Share Targets			
	Res.	Com.	Emp.	Stu.	Res.	Com.	Emp.	Stu.	Res.	Com.	Emp.	Stu.
Auto Driver	19%	40%	41%	-	17%	38%	39%	-	15%	36%	37%	-
Auto Passenger	6%	10%	6%	12%	6%	9%	6%	12%	5%	9%	6%	12%
Transit	43%	20%	24%	-	44%	22%	24%	-	46%	23%	23%	-
Bicycle	11%	4%	8%	2%	11%	4%	8%	2%	12%	4%	9%	2%
Walk	21%	26%	21%	26%	22%	27%	23%	26%	22%	28%	25%	26%
School Bus	-	-	-	60%	-	-	-	60%	-	-	-	60%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Notes: Res. stands for 'residential'; com. stands for 'commercial'; emp. stands for office/employment; stu. stands for elementary school student.

3.10.5 Total Trip Generation by Mode

Table 3-14 below summarize the number of person-trips per mode generated by the proposed development for each phase of development, with reduction factors applied for both pass-by and internal trips as discussed in the preceding sections. The residential peak period (2.5 hour) person trip volumes from **Table 3-10** above were converted into peak hour (1 hour) person trips using mode-specific conversion factors from the 2020 TRANS Trip Generation Summary Report.

For every student auto passenger, walk and bicycle trip, it was assumed that there was one inbound and outbound trip generated by a parent/guardian accompanying the student. Auto driver trips for commercial uses were also divided into 'new' and 'pass-by' trips.

The site historically generated roughly 4,000 to 5,000 person-trips prior to the COVID-19 pandemic, including approximately 2,000 vehicles per hour during weekday peak periods. By contrast, the proposed development represents a significant increase in person-trip generation, resulting in the order of 6,500 to 7,600 person-trips per weekday peak hour. Despite the increase in person-trips over the three phases of development, a significant reduction in office land uses and changes in mode share over the development timeframe will result in fewer automobile trips at full buildout than at the completion of Phase 1.

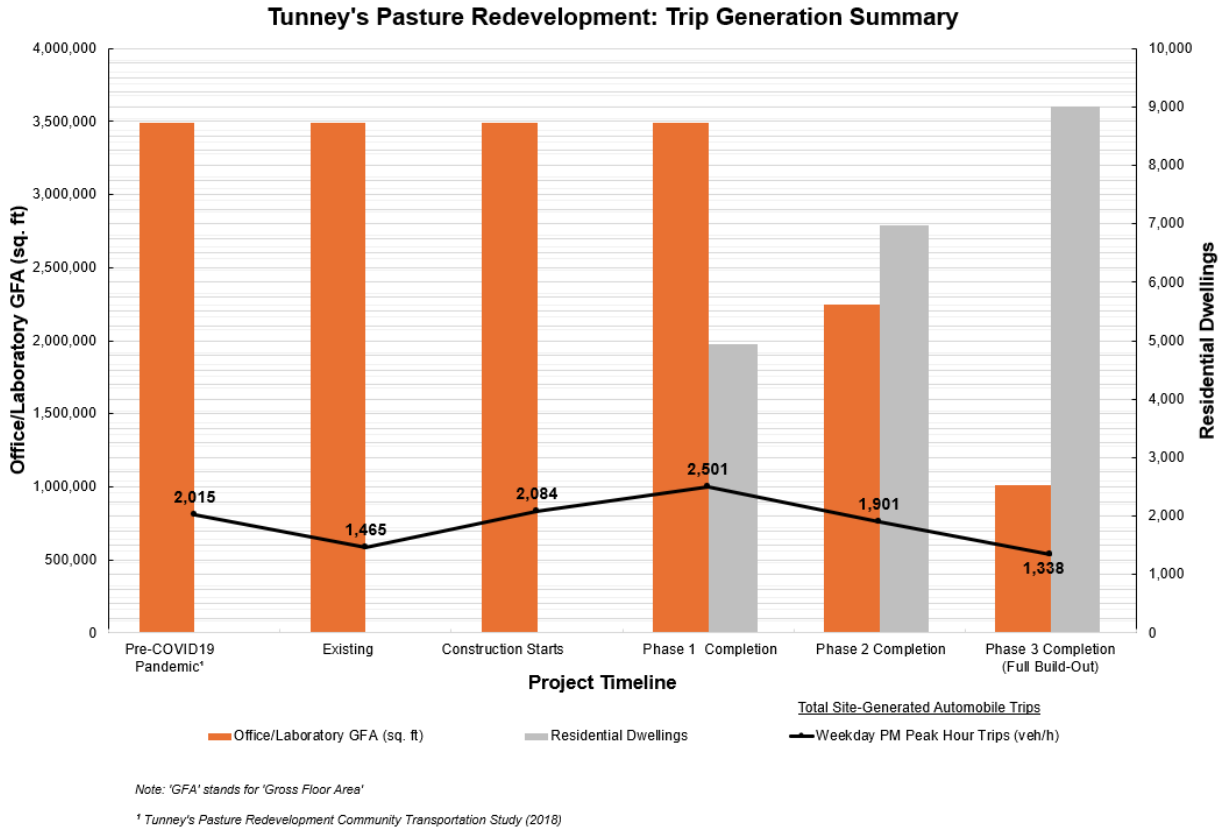
Table 3-14 – Peak Hour Person-Trips by Mode

PHASE	MODE	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 1 (2038)	Auto Driver	1,274	589	**1,863**	915	1,586	**2,501**
	New Trips	*1,274*	*589*	***1,863***	*877*	*1,548*	***2,425***
	Pass-By	*0*	*0*	***0***	*38*	*38*	***76***
	Auto Passenger	272	112	**384**	170	260	**429**
	Transit	884	715	**1,599**	847	1,158	**2,005**
	Cycling	308	218	**526**	244	356	**600**
	Walking	1,032	604	**1,636**	626	932	**1,558**
	School Bus	392	0	**392**	0	0	**0**
	Internal	397	397	**794**	224	224	**448**
	Total Person Trips	**4,559**	**2,635**	**7,194**	**3,026**	**4,516**	**7,542**
	Auto Driver	894	539	**1,433**	762	1,140	**1,901**

PHASE	MODE	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phases 1 & 2 (2042)	*New Trips*	894	539	**1,433**	714	1,092	**1,805**
	Pass-By	0	0	**0**	48	48	**96**
	Auto Passenger	231	128	**359**	170	215	**384**
	Transit	790	928	**1,718**	965	1,061	**2,026**
	Cycling	265	266	**531**	259	305	**564**
	Walking	945	711	**1,656**	685	847	**1,532**
	School Bus	392	0	**392**	0	0	**0**
	Internal	445	445	**890**	267	267	**534**
	Total Person Trips	**3,962**	**3,017**	**6,979**	**3,108**	**3,835**	**6,943**
Phases 1, 2 & 3 (2046)	Auto Driver	559	492	**1,052**	611	727	**1,338**
	New Trips	*559*	*492*	***1,052***	554	670	***1,224***
	Pass-By	*0*	*0*	***0***	*57*	*57*	***114***
	Auto Passenger	186	126	**312**	154	158	**312**
	Transit	717	1,194	**1,911**	1,114	980	**2,094**
	Cycling	245	346	**591**	299	280	**579**
	Walking	827	807	**1,634**	716	711	**1,427**
	School Bus	392	0	**392**	0	0	**0**
	Internal	443	443	**886**	298	298	**596**
	Total Person Trips	**3,369**	**3,408**	**6,777**	**3,192**	**3,154**	**6,346**

Figure 3-9 below illustrates the relationship between office/laboratory Gross Floor Area (GFA), residential dwelling unit count and the total site-generated automobile trip generation during the most constrained weekday peak hour from pre-pandemic to full-build-out conditions in 2046. Total site-generated traffic volumes will experience an overall moderate increase relative to pre-pandemic observations by 2038, the highest traffic-generating scenario. Thereafter, site-generated vehicle volumes will continue to decline with the decrease in office uses on-site and the incremental shift towards more sustainable modes. At full build-out in 2046, the site will generate far fewer automobile trips during the weekday afternoon peak hour than it did prior to the COVID-19 pandemic.

Figure 3-9 – Tunney's Pasture Redevelopment: Trip Generation Summary



3.10.6 'Net New' Site-Generated Trips

'Net New Site-Generated Trips (Relative to Post-Pandemic Site Traffic Volumes)

'Net new' site-generated trips relative to the post-pandemic traffic count data collected as part of this study are presented below. As discussed previously, 'new auto trips' includes trips from office/laboratory buildings that will be retained. 'Pass-by' trips are not included in the 'net new' trips, as they are already present on the adjacent road network and will simply detour into the site before continuing on their route, rather than being new traffic that is added to the adjacent roads. For each phase of development, a summary of 'net new' site-generated trips has been provided in **Table 3-15** below.

Table 3-15 – 'Net 'New' Site-Generated Trips (Relative to Post-pandemic Traffic Volumes)

PHASE	TRIP TYPE	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 1	Overall Auto Trips	1,274	589	**1,863**	915	1,586	**2,501**
	Pass-By (Auto)	*0*	*0*	***0***	*38*	*38*	***76***
	New Auto Trips	*1,274*	*589*	***1,863***	*877*	*1,548*	***2,425***
	Existing Site Traffic [1]	-814	-232	**-1,046**	-510	-960	**-1,470**
	'Net New' Auto Trips	460	357	**817**	367	588	**955**
Phases 1 & 2	Overall Auto Trips	894	539	**1,433**	762	1,140	**1,901**
	Pass-By (Auto)	*0*	*0*	***0***	*48*	*48*	***96***
	New Auto Trips	*894*	*539*	***1,433***	*714*	*1092*	***1,805***
	Existing Site Traffic [1]	-814	-232	**-1,046**	-510	-960	**-1,470**
	'Net New' Auto Trips	80	307	**387**	204	132	**335**
Phases 1, 2 & 3	Overall Auto Trips	559	492	**1,052**	611	727	**1,338**
	Pass-By (Auto)	*0*	*0*	***0***	*57*	*57*	***114***
	New Auto Trips	559	492	**1,052**	*554*	*670*	***1,224***
	Existing Site Traffic [1]	-814	-232	**-1,046**	-510	-960	**-1,470**
	'Net New' Auto Trips	-255	260	**6**	44	-290	**-246**

Note: [1] Based on turning movement count data collected in May 2023, with volumes adjusted to include impacts of additional site access driveways on Parkdale Ave. No adjustment factors were applied to existing volumes relating to remote work.

'Net New Site-Generated Trips (Relative to Pre-Pandemic Site Traffic Volumes)

For the sake of comparison, the volume of 'net new' site-generated trips relative to pre-pandemic traffic count data collected as part of the 2018 Tunney's Pasture Redevelopment Community Transportation Study (CTS, 2018) is presented as well. For each phase of development, a summary of 'net new' site-generated trips has been provided in **Table 3-16** below.

Table 3-16 – 'Net 'New' Site-Generated Trips (Relative to Pre-pandemic Traffic Volumes)

PHASE	TRIP TYPE	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 1	Overall Auto Trips	1,274	589	**1,863**	915	1,586	**2,501**
	Pass-By (Auto)	*0*	*0*	***0***	*38*	*38*	***76***
	New Auto Trips	*1,274*	*589*	***1,863***	*877*	*1,548*	***2,425***
	Pre-Pandemic Site Traffic [1]	-1,495	-570	**-2,065**	-542	-1,473	**-2,015**
	'Net New' Auto Trips (Pre-Pandemic Comparison)	-221	19	**-202**	335	75	**410**
Phases 1 & 2	Overall Auto Trips	894	539	**1,433**	762	1,140	**1,901**
	Pass-By (Auto)	*0*	*0*	***0***	*48*	*48*	***96***
	New Auto Trips	*894*	*539*	***1,433***	*714*	*1,092*	***1,805***
	Pre-Pandemic Site Traffic [1]	-1,495	570	**-2,065**	-542	-1,473	**-2,015**
	'Net New' Auto Trips (Pre-Pandemic Comparison)	-601	-31	**-632**	172	-381	**-210**
Phases 1, 2 & 3	Overall Auto Trips	559	492	**1,052**	611	727	**1,338**
	Pass-By (Auto)	*0*	*0*	***0***	*57*	*57*	***114***
	New Auto Trips	*559*	*492*	***1,052***	*554*	*670*	***1,224***
	Pre-Pandemic Site Traffic [1]	-1,495	570	**-2,065**	-542	-1,473	**-2,015**
	'Net New' Auto Trips (Pre-Pandemic Comparison)	-936	-78	**-1,013**	12	-803	**-791**

Note: [1] Traffic observations from the Tunney's Pasture Redevelopment Community Transportation Study (2018)

As indicated in **Table 3-16** above, the proposed development will result in a net-increase of approximately 410 two-way weekday peak hour trips in 2038, while net-decreases of about 210 and 791 vehicle trips are expected in 2042 and 2046, respectively, with the removal of pre-pandemic trips.

3.10.7 Trip Distribution and Assignment

The distribution of external residential trips will generally align with commuter travel patterns, taking into consideration existing network capacity constraints noted previously in Section 3.9.3. Based on travel patterns associated with trips from the Ottawa West Traffic Assessment Zone (TAZ) as identified in the 2011 O-D Survey, existing travel patterns from turning movement counts and the configuration of the higher-order road network surrounding the subject site, external residential trips have been distributed as follows:

- 45% to/from the South
  - 30% via Holland Avenue
  - 10% via Parkdale Avenue
  - 5% via Island Park Drive
- 35% to/from the East
  - 20% via Kichi Zibi Mikan
  - 10% via Scott Street
  - 5% via Parkdale Avenue to Highway 417
- 20% to/from the West
  - 10% via Kichi Zibi Mikan

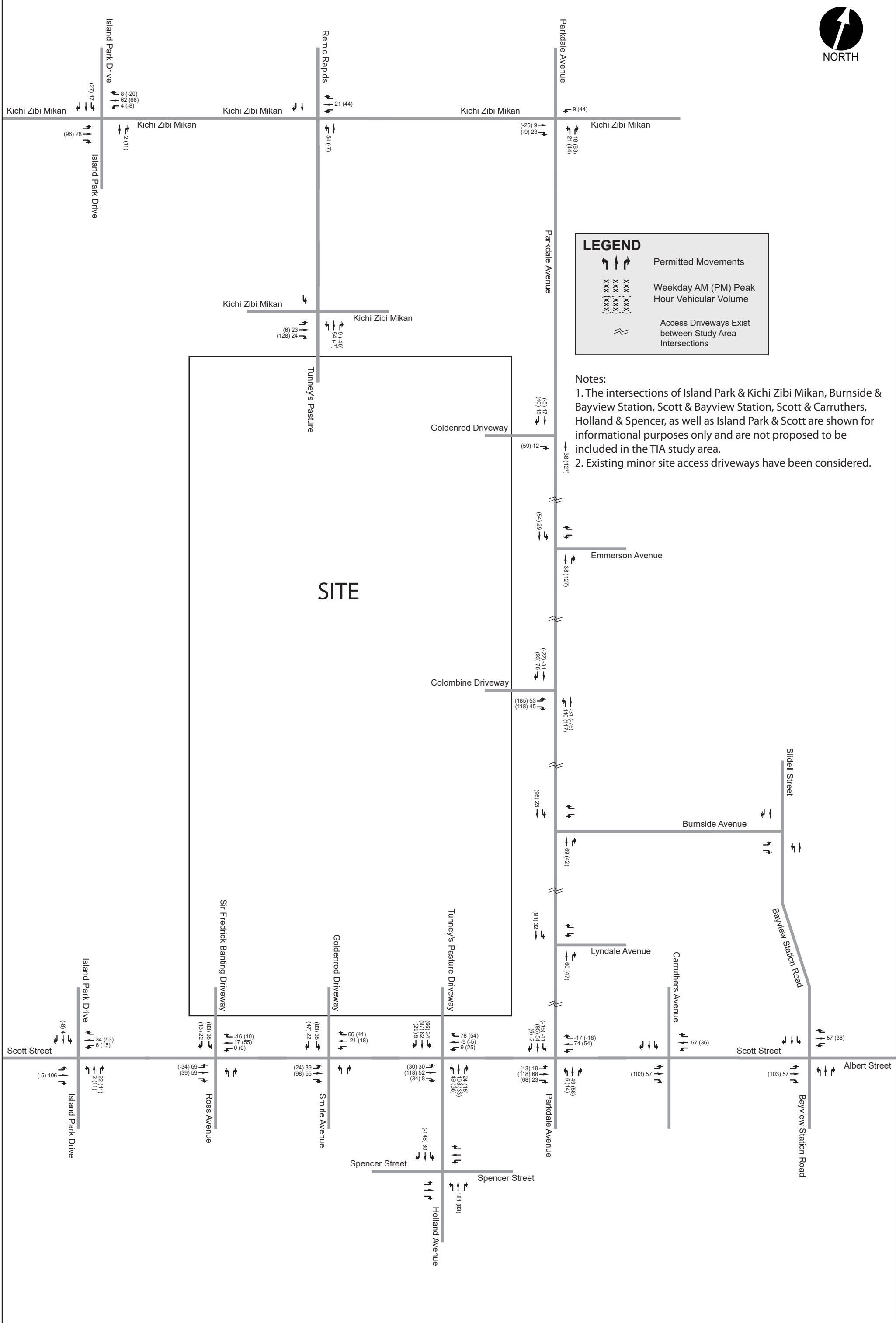
  - 5% via Parkdale Avenue to Highway 417
  - 5% via Scott Street

Based on a logical routing of trips, external non-residential trips will generally follow the distribution of trips to the Ottawa West TAZ identified in the 2011 O-D Survey, with consideration also given to traffic patterns derived from turning movement count data, network capacity constraints and the configuration of the adjacent road network. External non-residential trips have therefore been distributed as follows:

- 10% to/from the North
  - 5% via Island Park Drive
  - 5% via Kichi Zibi Mikan to Gatineau
- 35% to/from the South
  - 25% via Holland Avenue
  - 5% via Parkdale Avenue
  - 5% via Island Park Drive
- 20% to/from the East
  - 10% via Scott Street
  - 5% via Kichi Zibi Mikan
  - 5% via Parkdale Avenue to Highway 417
- 35% to/from the West
  - 20% via Kichi Zibi Mikan
  - 10% via Scott Street
  - 5% via Parkdale Avenue to Highway 417

Applying the estimated number of new auto trips to the above distributions, future 'net new' site-generated traffic volumes are illustrated in 2038, 2042 and 2046 relative to post-pandemic site traffic volume data collected at each of the study area and peripheral intersections in **Exhibit 6**, **Exhibit 7** and **Exhibit 8**, respectively.

In order to present passenger car equivalent (PCE) site-generated traffic volumes, it is assumed that school buses have 48 students per bus and that a school bus is equivalent to 2.0 passenger cars.



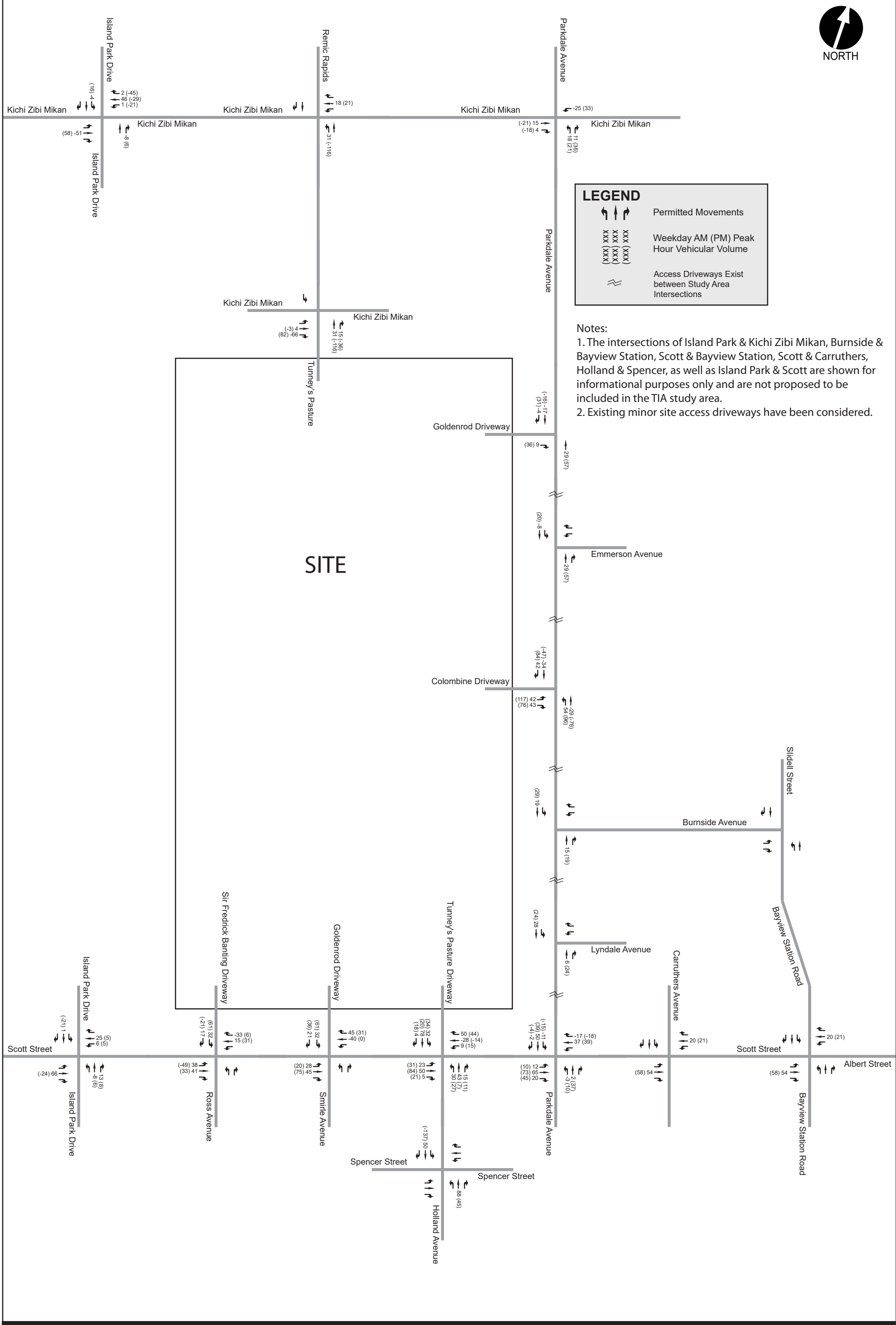
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Tunney's Pasture
Site Servicing & Piublic Road Redevelopment

Exhibit 6:
'Net New' Site-Generated Traffic
(Phase 1 - 2038)

PROJECT No. 139833

SCALE: N.T.S.



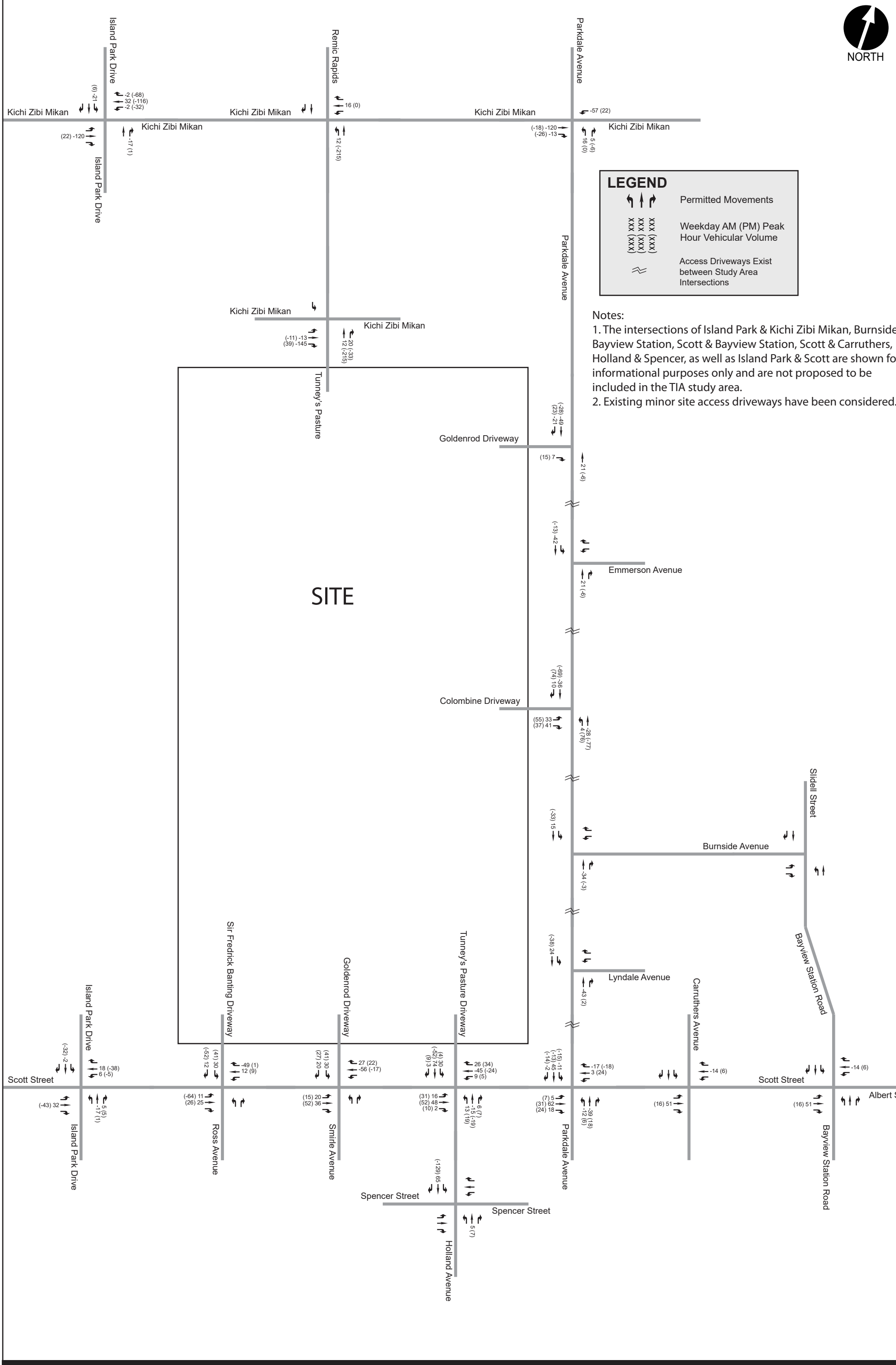
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Exhibit 7:
'Net New' Site-Generated Traffic
(Phase 1 & 2 - 2042)

PROJECT No. 139833

SCALE: N.T.S.



Notes:
1. The intersections of Island Park & Kichi Zibi Mikan, Burnside & Bayview Station, Scott & Bayview Station, Scott & Carruthers, Holland & Spencer, as well as Island Park & Scott are shown for informational purposes only and are not proposed to be included in the TIA study area.
2. Existing minor site access driveways have been considered.

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Tunney's Pasture
Site Servicing & Piublic Road Redevelopment

Exhibit 8:
'Net New' Site-Generated Traffic
(Phase 1, 2 & 3 - 2046)

PROJECT No. 139833

SCALE: N.T.S.

3.11 Exemptions Review

The exemption considerations, per the TIA Guidelines, and applicability in this study are summarized in **Table 3-17** below.

Table 3-17 – Exemptions Review

TIA MODULE	ELEMENT	EXEMPTION CONSIDERATIONS	REQUIRED
DESIGN REVIEW COMPONENT			
4.1 Development Design	4.1.2 Circulation and Access	• Only required for site plans	✗
	4.1.3 New Street Networks	• Only required for plans of subdivision	✓
4.2 Parking	4.2.1 Parking Supply	• Only required for site plans	✗
	4.2.2 Spillover Parking	• No longer required based on the June 2023 summary of revisions to the TIA guidelines.	✗
NETWORK IMPACT COMPONENT			
4.5 Transportation Demand Management	All Elements	• Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	✓
4.6 Neighbourhood Traffic Calming	All Elements	• Only required when all of the following conditions are met: 1. Access via a collector or local road 2. Adjacent to a significant sensitive land use 3. Zoning By-Law Amendment or Draft Plan of Subdivision application 4. At least 75 vehicle-trips 5. Site-generated traffic will increase peak hour volumes by 50% or more	✓
4.7 Transit	4.7.1 Transit Route Capacity	• Only required when the proposed development generates 75 transit trips or more	✓
	4.7.2 Transit Priority Requirements	• Only required when the proposed development generates 75 vehicle trips or more	✓
4.8 Network Concept	All Elements	• Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning	✓
4.9 Intersection Design	All Elements	• Only required when the proposed development generates 75 vehicle trips or more	✓

4 Analysis

4.1 Background Network Traffic

4.1.1 Changes to Background Transportation Network

As discussed previously, the transportation network within the study area is expected to undergo significant changes within the timeframe of this study which will further support the use of sustainable modes including transit, walking and cycling. Scott Street will continue to be incrementally reconstructed as a Complete Street and the expansion of O-Train Line 1 further west of Tunney's Pasture Station is expected to be open for full revenue service well within the timeframe of this study.

4.1.2 General background Growth Rates

The background growth rate is intended to represent regional growth from outside the study area that will travel along the adjacent road network. Historical traffic count data collected on core weekday peak hours (i.e. Tuesday to Thursday) was reviewed and volumes on Scott Street, Parkdale Avenue and Kichi Zibi Mikan were shown to be stable or declining since 2011. Based on this analysis and to remain conservative, a 0% background growth rate was applied to the arterial and regional road network throughout the study area for the purposes of this TIA. It is noteworthy that this assumption is also consistent with the Tunney's Master Plan Transportation Study and that known adjacent developments within the study area were accounted for explicitly in the assembly of background traffic.

Further information regarding the derivation of the background growth rates for this study is located in **Appendix H**.

4.1.3 Other Area Development

All known adjacent developments that would have a significant impact on traffic volumes within the study area were previously identified in **Table 3-4**. These developments have been explicitly accounted for in the estimation of Future Background traffic volume projections, representing specific areas of growth within the study area and are therefore considered in addition to the general background growth rate discussed in the preceding section.

4.2 Traffic Volume Summary

4.2.1 Future Background Traffic Volumes

Future background traffic volumes projections have been established by combining the adjacent development traffic and background traffic derived through the application of a growth rate, as discussed previously. **Exhibit 9** below presents Future Background Traffic volumes anticipated for the 2038, 2042 and 2046 analysis years.

4.2.2 Future Total Traffic Volumes

Future total volumes have been derived by combining the site-generated traffic volumes with future background volumes. **Exhibit 10** through **Exhibit 12** below present the Future Total Traffic volumes anticipated for the 2038, 2042 and 2046 analysis years, respectively.

NORTH

Parkdale Avenue

Remic Rapids

Kichi Zibi Mikan

Tunney's Pasture

Goldenrod Driveway

Colombine Driveway

Emmerson Avenue

Burnside Avenue

Lyndale Avenue

Tunney's Pasture Driveway

Goldenrod Driveway

Sir Fredrick Banting Driveway

Scott Street

Holland Avenue

Smirle Avenue

Ross Avenue

(15) 10
(3) 4
(4) 5

2 (3)
484 (1536)
6 (12)

469 (1518)
385 (217)

(18) 3
(327) 1173
(25) 223

12 (54)
5 (3)
25 (333)

(314) 880
(82) 315

90 (294)
100 (529)

(296) 657
(2) 44

(16) 14

189 (822)

(15) 26
(305) 635

13 (9)
6 (7)

5 (9)
177 (800)

(270) 560
(15) 50

(41) 13
(50) 26

193 (731)
80 (26)

(78) 249
(300) 360

96 (232)
52 (49)

53 (57)
206 (599)

(9) 3
(428) 385

10 (6)
31 (18)

29 (34)
296 (598)

(47) 72
(255) 288
(151) 199

33 (44)
195 (357)
39 (74)

(284) 114
(308) 349
(65) 49

70 (53)
237 (327)
60 (53)

(58) 19
(191) 51
(18) 17

24 (22)
248 (565)
80 (155)

119 (220)
137 (136)
109 (123)

(40) 68
(37) 31

45 (68)
293 (535)
4 (9)

12 (7)
11 (7)

(13) 18
(500) 453
(67) 71

91 (50)
253 (546)
4 (5)

12 (13)
1 (8)
1 (4)

(27) 35
(604) 401
(25) 26

(0) 1
(105) 20

(90) 24
(637) 461
(10) 5

LEGEND

Permitted Movements

xxx
(xxx)
Weekday AM (PM) Peak Hour Vehicular Volume

Notes:
*Eastbound left-turn, northbound through and southbound through movements are currently prohibited at the Scott & Sir Frederick Banting/Ross intersection.

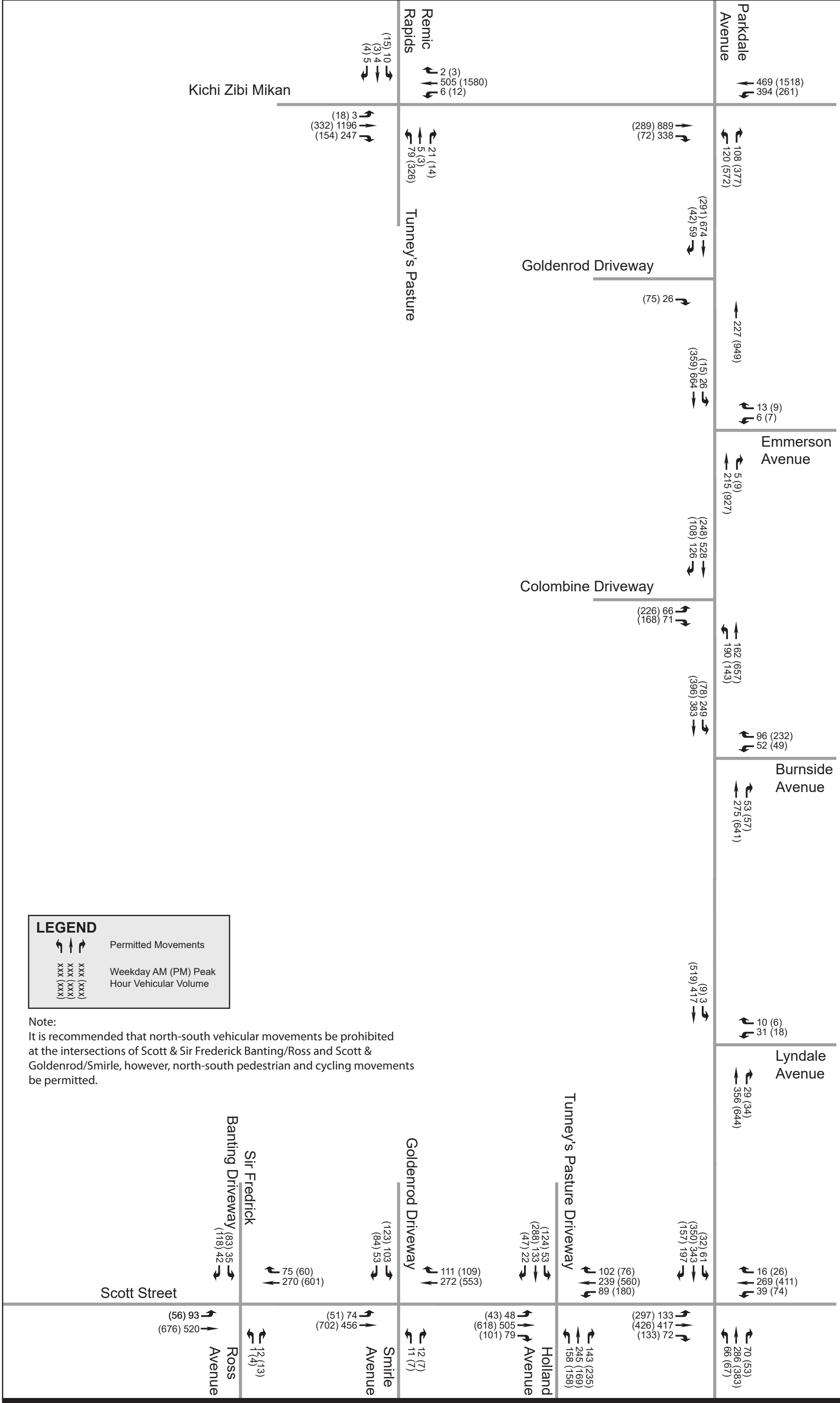
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Tunney's Pasture
Site Servicing & Piublic Road Redevelopment

Exhibit 9:
Future Background Traffic

PROJECT No. 139833

SCALE: N.T.S.



LEGEND

Permitted Movements

xxx xxx xxx
(xxx) (xx) (xx)

Weekday AM (PM) Peak Hour Vehicular Volume

Note:
It is recommended that north-south vehicular movements be prohibited at the intersections of Scott & Sir Frederick Banting/Ross and Scott & Goldenrod/Smirle, however, north-south pedestrian and cycling movements be permitted.

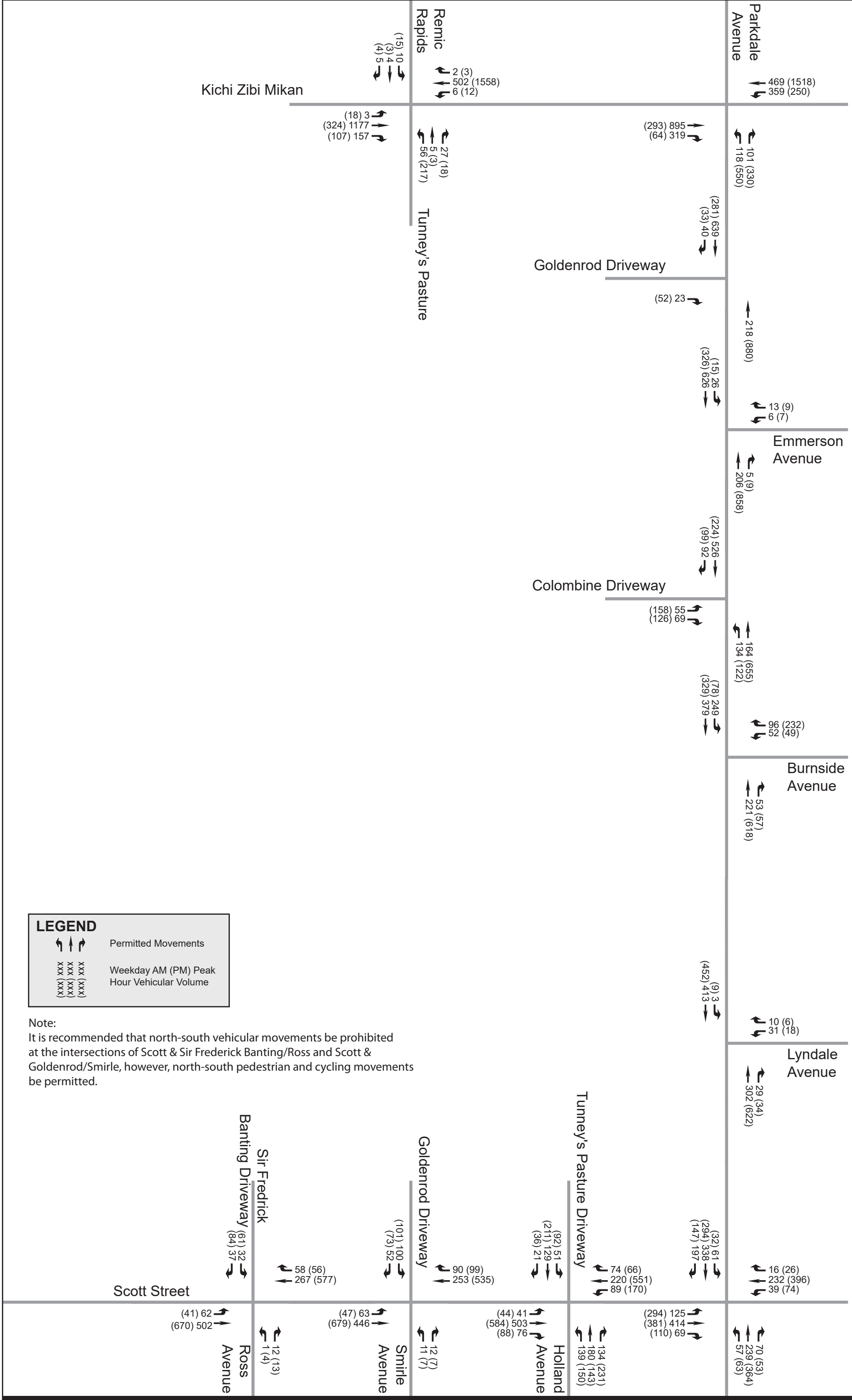
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Tunney's Pasture
Site Servicing & Piublic Road Redevelopment

Exhibit 10:
Future (2038) Total Traffic

PROJECT No. 139833

SCALE: N.T.S.



LEGEND

Permitted Movements

xxx xxx xxx
(xxx) (xx) (xx)

Weekday AM (PM) Peak Hour Vehicular Volume

Note:
It is recommended that north-south vehicular movements be prohibited at the intersections of Scott & Sir Frederick Banting/Ross and Scott & Goldenrod/Smirle, however, north-south pedestrian and cycling movements be permitted.

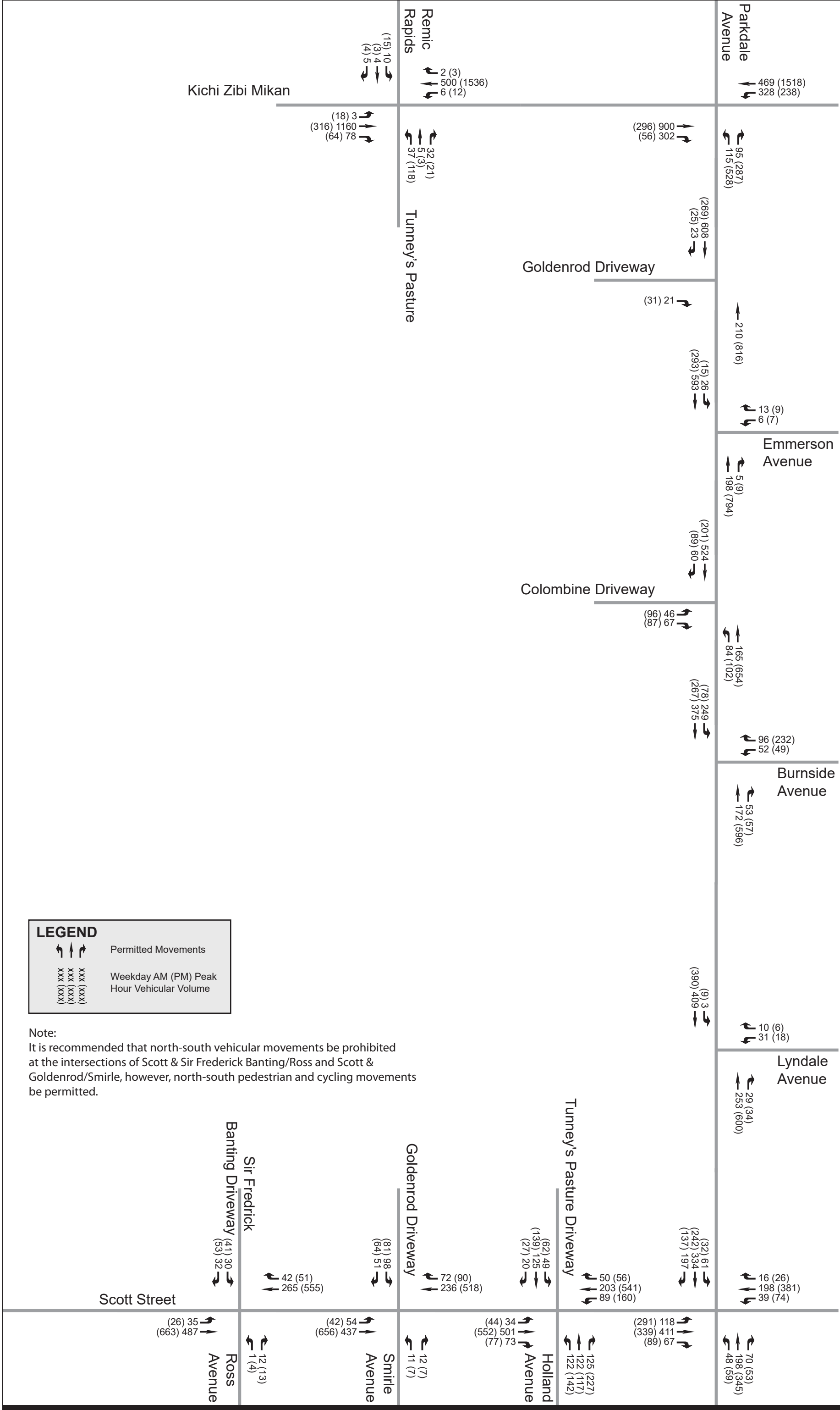
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Tunney's Pasture
Site Servicing & Piublic Road Redevelopment

Exhibit 11:
Future (2042) Total Traffic

PROJECT No. 139833

SCALE: N.T.S.



LEGEND

Permitted Movements

xxx (xxx)
Weekday AM (PM) Peak Hour Vehicular Volume

Note:
It is recommended that north-south vehicular movements be prohibited at the intersections of Scott & Sir Frederick Banting/Ross and Scott & Goldenrod/Smirle, however, north-south pedestrian and cycling movements be permitted.

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Tunney's Pasture
Site Servicing & Piublic Road Redevelopment

Exhibit 12:
Future (2046) Total Traffic

PROJECT No. 139833

SCALE: N.T.S.

4.3 Development Design

4.3.1 Design for Sustainable Modes

The proposed development will leverage its direct adjacency to high quality transit by establishing a multi-modal transportation network in accordance with the City's latest design standards to support a high-rise, compact and mixed-use community that aims to offer daily amenities within a 15-minute walk.

As the subject site is located within a Transit-oriented Development (TOD) zone, all streets will be designed in accordance with the City of Ottawa's 'Complete Streets' approach. To promote active transportation mobility at the periphery of the site, all signalized site access intersections that will be conveyed to the City will be redesigned as 'protected intersections' to designate separate space for pedestrians and cyclists and increase safety/comfort among these vulnerable users.

Transit Coverage

Once the internal road network is reconstructed and conveyed to the City of Ottawa, it is expected that transit will serve the site's new continuous collector road network, including Sir Frederick Banting Driveway, Colombine Driveway and Tunney's Pasture Driveway. Providing local transit service, particularly within the northern half of the site, will allow the OC Transpo Transit Service Policy to be met, which aims to provide a bus stop within a 400-metres (5-minute walk) for at least 95% of dwelling units in the urban area. To achieve this target, it is recommended that, at a minimum, bus stops be situated near the following intersections or mid-block locations:

- Sir Frederick Banting Dr. & Sorrel Dr.
- Sir Frederick Banting Dr. & Colombine Dr.
- Tunney's Pasture Dr. & Colombine Dr.
- Tunney's Pasture Dr. (mid-block between Eglantine Dr. and Sorrel Dr.)
- Tunney's Pasture Dr. & Yarrow Dr. (within close proximity to LRT station entrance)

Future potential bus stop locations noted above were overlaid on the proposed active transportation plan, as shown on **Exhibit 13** below.

Adequacy of On-Site Active Transportation Infrastructure

The dense, fine-grained pedestrian and cycling network on-site was designed to complement the proposed internal street network and support the mobility of significant site-generated active users, particularly during weekday peak periods.

The potential assignment of active trips at full build-out of the site is shown on the proposed active transportation plan at key access locations at or near the periphery of the site (see **Exhibit 13** below). These active volume projections were used to verify whether these key locations will adequately accommodate peak active transportation volumes within the timeframe of this study.

Table 4-1 below identifies potential existing or proposed active transportation facility types that are being considered for full build-out of the site. In nearly all cases, the sustainable mode volume projections indicate that the segregation of pedestrians and cyclists should be considered by the 2046 horizon year, based on the exceedance of thresholds provided in Ontario Traffic Manual (OTM) Book 18. The need for segregated or mixed-use facilities, however, is also dependent on competing objectives such as space for tree plantings which will be an important consideration for more naturalized areas of the site.

Given the likelihood that the Tunney's Pasture redevelopment will contribute significantly to the use of the active transportation facility at KZM & Remic Rapids/Tunney's Pasture, it is reasonable to assume that this internal connection will require segregated active transportation facilities, while internal connections to the 3-metre pathway connection at the northwest corner of the site should provision for a wider 4-metre multi-use path.

The feasibility of providing dedicating pedestrian and cycling facilities will be investigated through the design of the internal street network north of Colombine Driveway.

Table 4-1 – Active Transportation Facilities Review

Active Transportation Facility Location	Active Transportation Volumes[1]				Existing (Ex.) or Proposed (P) Facility	Are >20% of path users pedestrians & > 33 users per metre of width? [2] (% peds, # of users)	Consider Pathway Segregation?
	Cyclists/Weekday Peak Hour		Pedestrians/Weekday Peak Hour				
	IN	OUT	IN	OUT			
Internal Connections to Carleton Ave Underpass Path	16	18	29	43	~3.0m Pathway (Ex.) on NCC land	Yes (~68% peds, 36 users/metre)	No – recommend upgrade to 4m MUP, if feasible
Internal Connections to Kichi Zibi Mikan & Remic Rapids	71	81	49	74	~3.0m Multi-Use Pathway (Ex.) on NCC land	Yes (~45% peds, 92 users/metre)	Yes – feasibility to be investigated during design stage
Parkdale & Colombine	11	13	30	45	Sidewalks & cycle tracks (P)	Yes (~75% peds, 33 users/metre)	Yes – segregation already proposed in concept plan
Parkdale & Burnside	15	17	40	60	Assume 4.0m Multi-Use Path (P)	Yes (~75% peds, 25 users/metre)	Yes – feasibility to be investigated during design stage
Tunney's Pasture & Scott	64	74	215	320	Sidewalks & cycle tracks (P)	Yes (~80% peds, 224 users/metre)	Yes – segregation already proposed in concept plan
Goldenrod (Scott to Yarrow)	23	26	136	203	Sidewalks & bike lanes (P)	Yes (~87% peds, 129 users/metre)	Yes – segregation already proposed in concept plan
Scott & Sir Frederick Banting	22	26	63	94	Sidewalks & cycle tracks (P)	Yes (~73%, 130 users/metre)	Yes – segregation already proposed in concept plan
Kichi Sibi Winter Trail (KSWT)	22	26	63	94	Informal Pathway (Ex.)	Yes (~73%, 130 users/metre)	No – recommend upgrade to 4m path, if feasible
Total	**244**	**280**	**626**	**932**			

Notes: [1] 2046 site-generated traffic volumes under weekday morning peak hour conditions, representing peak active transportation volumes
[2] *Ontario Traffic Manual, Book 18 (2021), p.70*

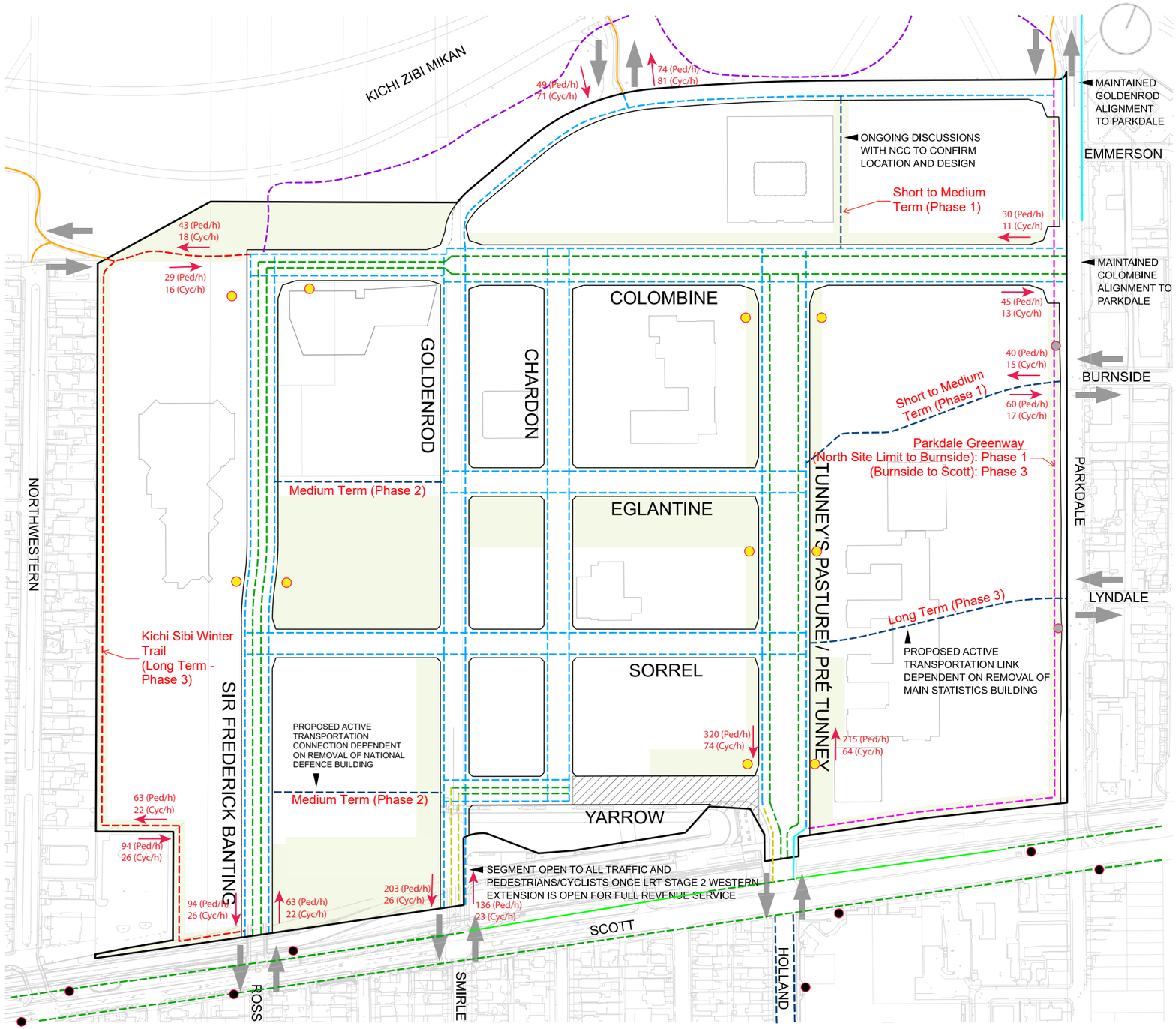
Transportation Demand Management (TDM) Infrastructure Checklist

The Transportation Demand Management (TDM)-Supportive Development Design and Infrastructure Checklist (as referenced in **Appendix I**) identifies a range of potential measures which could be considered as part of future Site Plan Control (SPC) applications, following the successful completion of the Draft Plan process, to offset the vehicular impact on the adjacent road network. Some noteworthy potential measures are listed below:

- Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multifamily residential developments;
- Integrate a permanent bike repair station with commonly used tools adjacent to indoor bike parking area;
- Provide secure and sheltered bike parking on the ground floor and upper level of the underground parking garage for residents, as well as some additional bike stalls outdoors near the primary building entrances.
- Locate buildings close to street entrance with no vehicular parking area in between; and
- Design roads used for access or circulation by cyclists with a target operating speed of no more than 30 km/h, or provide a separated cycling facility.

4.3.2 Circulation and Access

Not Applicable: Per Section 3.11, this TIA element is not required to support the City of Ottawa's Draft Plan of Subdivision application process.



Active Transportation Plan

- Site Boundary
- Yarrow Woonerf
- Existing Bus Stop Location on Boundary Streets
- Existing Bus Stop Location on Boundary Streets (No Longer In Use)
- Future Potential Bus Stop Location
- Open Space
- 45 (Ped/h) 48 (Cyc/h) Assignment of Peak Active Transportation Trips (2038 Site-Generated Traffic, Weekday PM Peak Hour)
- Future Parkdale & Transitway Greenway (City Initiative) - includes In-Boulevard Cycle Tracks
- Proposed Sidewalks
- Proposed In-Boulevard Cycle Tracks
- Proposed On-Road Cycling Facilities
- Proposed Kichi Sibi Winter Trail Formalization to All-Season Facility
- Proposed Active Transportation Link
- Proposed Pedestrian Transportation Link
- Existing Sidewalk
- Existing NCC Pathway
- Existing On-Road Cycling Facilities
- Existing Multi-Use Pathway (MUP)
- External Connection Point for Active Users

Notes:
- Proposed road pattern by Arcadis IBI Group, July 2024.
- Plans are subject to change following NCC Board approvals.

Location
TUNNEY'S PASTURE

Date: 2025-06-02 | Drafted By: SD

Scale: 0 100m, 1:1500

North

NORTH

ARCADIS

Tunney's Pasture - Site Servicing and Public Road Redevelopment
Transportation Impact Assessment

Exhibit 13
Proposed Active Transportation Plan

PROJECT No. 139833

SCALE: 0m 125m 250m

4.3.3 New Street Networks

As discussed previously, the Urban Design Manual (UDM) for the Redevelopment of Tunney's Pasture (2024) reflects CLC/PSPC's commitment to building a sustainable development that promotes mobility by non-auto modes. Through the UDM process, typical cross-sections for each street were developed in alignment with the UDM objectives and sustainability goals, as well as the City of Ottawa's Complete Streets Framework (2015) reflected in the Designing Neighbourhood Collector Streets (2019), Local Residential Streets 30km/h Design Toolbox (2021) and the City's most recent local street cross-sections (2022).

The proposed right-of-way for each internal street within Tunney's Pasture is outlined in **Table 4-2** below and corresponding typical cross-sections are provided in **Appendix J**.

Table 4-2 – Proposed Roadways

Roadway	Classification	Proposed Right-of-Way (m)
Yarrow Driveway (Chardon extension to Tunney's Pasture)	Woonerf	22-24.0
Yarrow Driveway (Goldenrod to Chardon extension)	Local	24.0
Sorrel Driveway, Eglantine Driveway, Goldenrod Driveway	Local	24.0
Sir Frederick Banting Driveway	Collector	26.0
Colombine Driveway	Collector	34.0
Tunney's Pasture Driveway	Collector	43.0

In keeping with the City's mobility objectives for each road type, it is recommended that all collector streets be posted at 40 km/h, while all local roads be posted at 30 km/h.

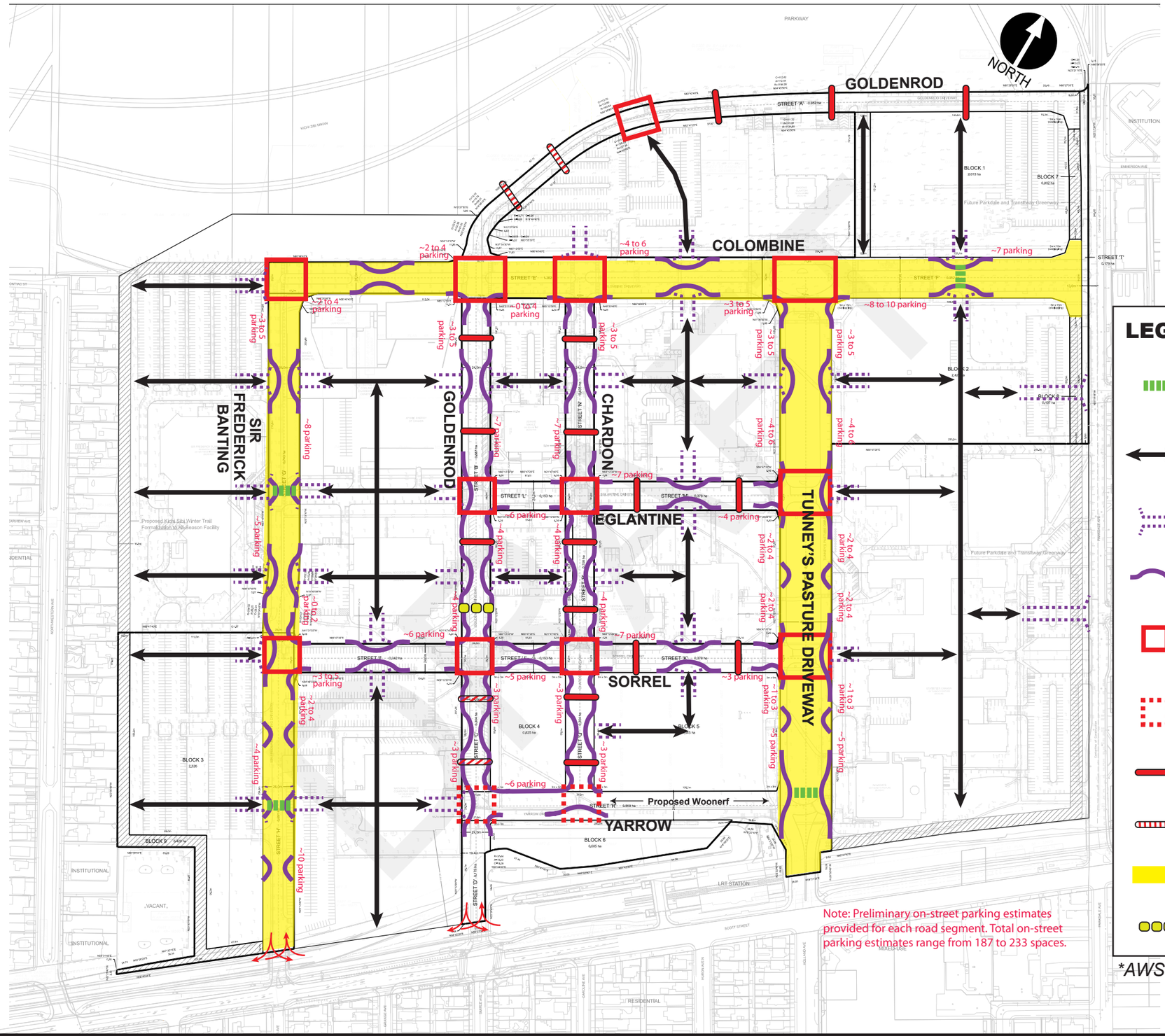
Tunney's Pasture Driveway and Colombine Driveway will have unique cross-sections which build off of the ideal '26A – Treed Boulevard' road cross-section in the Designing Neighbourhood Collector Streets policy document but were widened to accommodate double rows of trees on each side of the ROW and space for Low Impact Development (LID) features. All of the collector road cross-sections include concrete sidewalks and uni-directional cycle tracks on both sides per the City's policy direction for these road classifications.

Yarrow Driveway from Goldenrod Driveway to the proposed Chardon Driveway extension will serve as a commercial local street with sidewalks and uni-directional cycle tracks on both sides to support safe and convenient 'last-mile' connections to the LRT station, bus loop and future high-rise built form envisioned in adjacent parcels.

The remainder of Yarrow Driveway, from the proposed Chardon Driveway extension to Tunney's Pasture Driveway, is contemplated as a 'woonerf' or shared street where all users have equal priority. This design will prohibit cut-through traffic while also prioritizing active travel modes and provide seamless integration between the LRT station plaza, bus loop and high-density, mixed-use development surrounding the LRT station where pedestrian activity is anticipated to be the highest across the entire site.

All local streets will be designed with a 24-metre ROW to accommodate 2.0-metre concrete sidewalks on both sides, an 8.5m pavement width to support one vehicle travel lane per direction, alternating on-street parking and street trees on both sides, as well as Low Impact Development (LID) features, where feasible. These local streets conform to the City's definition of a 'Complete Street', supporting local vehicle volumes and operating speeds to allow cyclists to ride comfortably and safely in mixed traffic and represent an expansion of the 20-metre ideal local cross-section width.

In accordance with the City of Ottawa's Local Residential Streets 30km/h Design Toolbox (September 2021), a conceptual traffic calming plan has been prepared for the subject site and is illustrated in **Exhibit 14** below.



LEGEND

- Future Potential Pedestrian Crossover (PXO)
- Future Potential Private Connection
- Future Potential Site Access
- Future Potential Curb Extension
- Existing AWSC* - Potential Raised Intersection
- Future Potential Raised Intersection/AWSC*
- Future Potential Speed Hump
- Future Potential Speed Cushion
- Proposed Collector Streets
- Future Potential 'Modal Filter'

AWSC - All-Way Stop Control

4.3.3.1 Intersection Control

As shown in **Exhibit 14** above, the vast majority of internal intersections currently exist as all-way stop-controlled, with just two new locations being recommended for this form of intersection control, including Yarrow & Goldenrod and Yarrow & Chardon. Arcadis recommends retaining the existing all-way stop configurations, as they support pedestrian mobility and align with the redevelopment's vision for a compact, walkable community.

- All-way stop control is justifiable at the local street intersections with Tunney's Pasture Driveway based on potential sightline limitations created by the proposed 6-metre raised centre median.
- The collector-to-collector intersections are expected to achieve appropriate balances of 75/25 and 65/35 for three- and four-legged intersections, accordingly, including Sir Frederick Banting & Colombine and Colombine & Tunney's Pasture. Similarly, the intersection of Goldenrod & Tunney's Pasture access to Kichi Zibi Mikan is expected to achieve a balanced threshold of vehicle volumes in alignment, given that the north and west legs of the intersection are effectively collector roads.
- The preliminary all-way stop control warrant analysis conducted for this study indicated that the Sorrel & Sir Frederick Banting and Chardon & Colombine intersections indicate that warrants are expected to be triggered at these locations. It is recognized, however, that there is still a higher possibility in comparison with other internal intersections that these locations may not achieve the balance of vehicle volumes required to trigger the warrants in practice, given the difference in road hierarchy of these intersecting streets and the dependence on site-specific development within the vicinity of these intersections. As such, these warrants will need to be investigated further through future Site Plan Control (SPC) applications to support the development of adjacent property parcels.

A review of all-way stop control warrants for internal intersections and supporting analysis is provided in **Appendix M**.

4.4 Parking

Although the parking component of the TIA is not specifically required to support the Draft Plan of Subdivision process, a brief discussion on pertinent topics have been included in this section, including the loss of existing surface parking and a preliminary estimate of the proposed on-street parking supply across subject site. It is important to note that parking supply for new development will be appropriately justified and reviewed through subsequent Site Plan Control applications to the City of Ottawa for each development block (by others).

Loss of Existing On-Site Surface Parking

It is recognized that Phase 1 of the proposed development will involve the loss of parking for office/employment uses which may remain on-site through the redevelopment timeframe of Tunney's Pasture. Understanding the long-term transition of the site to maximize multi-modal transportation options, Canada Lands Company (CLC) is committed to working with the federal tenants at Tunney's Pasture to develop a Parking Management Strategy. This strategy will manage the remaining parking supply and work to satisfy the functional need of the office uses still existing on site without creating spillover demand to adjacent communities.

The Parking Management Strategy will review the implications of this loss of parking supply so that these effects can be better understood and mitigated accordingly, with consideration of the four main strategies outlined below:

1) Determine if the remaining land outside the property parcel that is being disposed to public market can adequately fulfill the office parking demand;
2) Determine if the parking demand currently accommodated by the surface parking lot can be served by other parking lots on the remaining office lands across the Tunney's Pasture site;
3) Determine if additional parking (surface or structured) on the remaining office lands across the Tunney's Pasture site is required; and
4) Establish whether Transportation Demand Management (TDM) measures are required to reduce parking demand in alignment with the remaining parking supply.

Regardless of the mitigation strategies recommended through the parking study, any new off-street parking supplies should generally be concealed and structured, wherever feasible, to complement the compact and pedestrian-oriented environment of the proposed development. Parking facilities will also consider emerging technologies such as Electric Vehicle (EV) charging infrastructure, as well as their potential conversion to more pedestrian-oriented uses in the future, should there be a reduced need for parking as the site is built out.

Preliminary On-Street Parking Estimate

A preliminary estimate of on-street, parallel parking stalls was developed with reference to the Traffic and Parking By-law (2017-301), the proposed typical cross-sections discussed previously for each street, as well as the potential placement of bulb-outs indicated on the Conceptual Traffic Calming and Mobility Plan shown previously in **Exhibit 14**. Based on the typical cross-sections, Tunney's Pasture Driveway will support parking on both sides, while other street types will generally accommodate alternating parking. With consideration of the above, the future on-street parking supply is estimated to be in the order of approximately 187 to 233 spaces and will continue to be reviewed and refined through the detailed design of these internal streets. The incorporation of features such as Low Impact Development (LID) infrastructure or consolidated pick-up/drop-off areas that optimize use of space within the ROW will be considered as well.

By comparison, the existing on-street parking supply within Tunney's Pasture is approximately 400 spaces or roughly half of what is proposed now. This reduction in parking is in line with the policy objectives of the Official Plan which encourages low parking supplies in transit-oriented developments to promote the use of alternative modes, while weighing the need to retain some on-street parking to support local businesses.[2]

4.5 Transportation Demand Management (TDM)

The City of Ottawa requires that Transportation Demand Management (TDM) measures be included as part of all new development applications in an effort to reduce automobile dependence, particularly during the weekday peak travel periods. TDM initiatives are aimed at encouraging individuals to use non-auto modes of travel during the peak periods. Transportation Demand Management, through the design of public infrastructure and the design of private development, is an essential tool for meeting the 85% non-auto modes share targeted for this development by 2046. The Draft Plan of Subdivision process has a direct influence on public infrastructure (i.e. internal transportation network), while the subsequent development of property parcels will provide complementary measures to meet this target.

4.5.1 Context for TDM

As discussed previously, the proposed development is located within the Tunney's Pasture Station Transit-oriented Development (TOD) zone, Community Design Plan (CDP) and Design Priority Area (DPA) planning policy areas. This development is envisioned as a high-density site with a compact built form. The proposed development will offer a range of dwelling sizes, layouts and unit typologies, as well as a mix of other complementary land uses, including the retention of some existing office/laboratory components across the site and the integration of ground-floor commercial uses in new or existing mid- to high-rise buildings to help promote the development of a sustainable, diverse and inclusive community.

In the Scoping section of this report, the mode share distributions from the 2020 TRANS Trip Generation Summary Report for the Ottawa West TAZ were refined beyond the use of a typical 'blended rate' with consideration of the site's proximity to high quality transit and active transportation facilities. Sustainable modes are expected to incrementally offset vehicular demands within the study area with the planned opening of LRT Stage 2 Western Extension, in combination with the strengthening of active transportation infrastructure within the timeframe of this study and gradual transformation of Tunney's Pasture into a mixed-use community.

[2] 2022 Official Plan, Section 4.1.4, subsections 2) and 4)

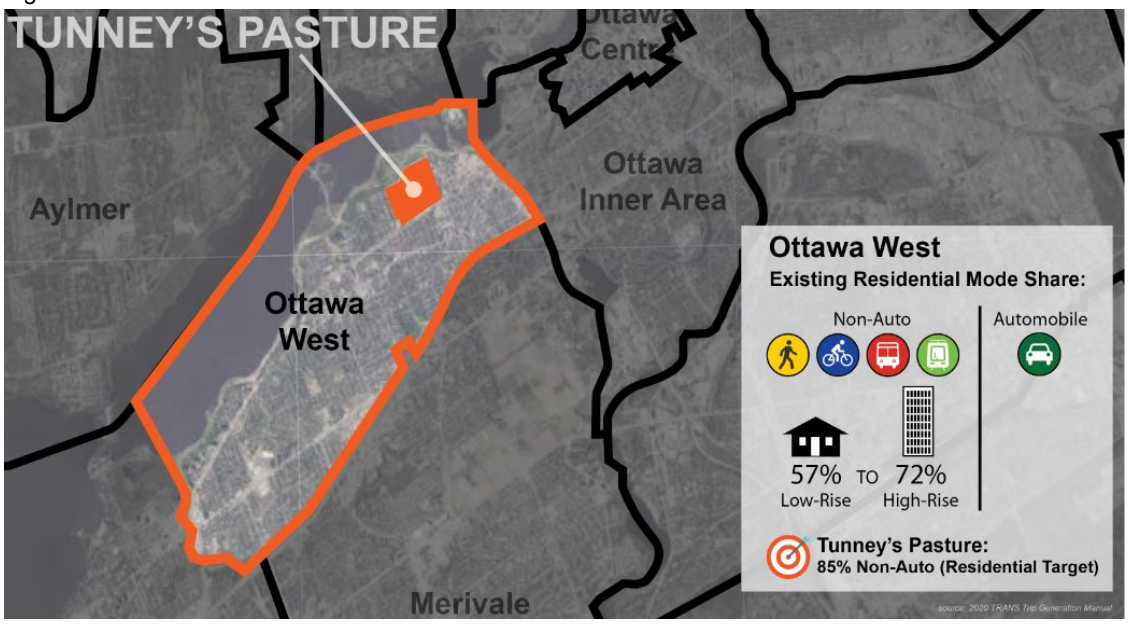
4.5.2 Need and Opportunity

With the proximity of this site to Tunney's Pasture, a major rapid transit hub, there is an important opportunity to shift the existing auto-oriented environment of the site to be more pedestrian-friendly and align with the City's policy objectives.

It is acknowledged that a suite of Transportation Demand Management (TDM) measures, as described in the following section, will be required to achieve the significant 85% non-auto mode share target proposed in this study for residential uses and mandated by the City of Ottawa for transit-oriented developments at full build-out.

For comparison, the 2020 TRANS Trip Generation Summary Report indicates that between 57% and 72% of residential trips presently occur by non-auto modes across the entire Ottawa West Traffic Assessment Zone (TAZ), as shown in **Figure 4-1** below.

Figure 4-1 – Ottawa West TAZ



4.5.3 TDM Program & Guiding Principles

At the Draft Plan of Subdivision stage, the implementation of TDM measures to serve the development throughout its lifetime are limited to the design of the proposed internal street network as 'Complete Streets', and includes infrastructure within the ROW to support sustainable modes of transportation. Site-specific TDM measures cannot be defined at this time, however, key Guiding Principles were developed to direct future decisions regarding TDM and help foster a more sustainable and less auto-oriented community.

One of the City's key planning documents guiding development within Tunney's Pasture, the Scott Street CDP, recommended consideration be given to a range of Transportation Demand Management (TDM) measures through the build-out of Tunney's Pasture, such as:

- Reduced parking supply rates for new developments;
- Providing employee incentives to support use of ride-share;
- Offering transit incentives such as free transit pass for new residents upon move-in for first year;
- Encouraging cycling and walking by improving the on-site cycling and pedestrian networks;
- Contributing to the enhancement of the study area's bicycle and sidewalk network;
- Offering high quality on-site bicycle parking (e.g. frequent, visible, secure and weather-protected facilities)
- Requiring condo owners to pay the actual cost for a parking space (i.e. no discounted rates); and
- Provisioning for car sharing parking spaces on-site.

Subsequent to the Scott Street CDP, the City of Ottawa's TDM Measures Checklist was developed and is provided in **Appendix I** for reference. A few applicable measures pertaining to subdivision applications are provided below:

- Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress;
- Offer on-site cycling courses for residents, or subsidize off-site courses;
- Offer preloaded PRESTO cards to encourage commuters to use public transit;
- Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels; and
- Provide a multimodal travel option information package to new residents.

Based on TDM discussions provided in the Scott Street CDP and a review of the City of Ottawa's TDM Checklists identified previously, a list of key Guiding Principles, along with some potential TDM measures for further consideration through future Site Plan Control (SPC) applications within Tunney's Pasture, are outlined below:

- **Guiding Principle #1 (Built Form & Pedestrian Connectivity):** Site-specific developments should be designed to accommodate compact, street-oriented development and promote safety, comfort and connectivity for active users.
  - Locate buildings close to the street and do not locate parking areas between the street and building entrances.
  - Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort.
- **Guiding Principle #2 (Inclusivity & Accessibility):** Residents or visitors to Tunney's Pasture should not be obligated to own a private automobile to feel welcome in this proposed mixed-use, 15-minute community. Transportation infrastructure should also be inclusive and accessible, catering to individuals across all ages and stages of life.
  - Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress;
  - Provide up to three carshare parking spaces in place of general vehicle parking for residents/employees or visitors to reduce reliance on private automobile ownership.
  - Provide a designated area for carpool drivers, taxis or ride-hailing services to facilitate pick-up/drop-off activities without using a fire lane or no stopping zones.
  - Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails.
- **Guiding Principle #3 (Transit):** Transit infrastructure and incentives should encourage the use of sustainable modes of transportation as a feasible and competitive alternative to driving.
  - Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building.
  - Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit.
  - Provide transit schedules and route maps at building entrances.
- **Guiding Principle #4 (Cycling):** Cycling infrastructure should be strategically located to promote its usage in a variety of situations and to serve individuals with a range of cycling abilities.
  - Provide a permanent bike repair station with commonly used tools adjacent to the primary bicycle parking area;
  - Provide secure and sheltered bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments.

To complement Guiding Principle #4 and in alignment with the City's Public Bike Parking Strategy, it is recommended to introduce destination-oriented bike parking for short and long-term needs at key locations within Tunney's Pasture as well.

4.6 Road Safety

A summary of all reported collisions within the study period over the past five years was presented previously in the Scoping component of this TIA. The City requires a safety review if at least six collisions of a discernible pattern have occurred over the study period. Based on these criteria, the collision types at each of the locations listed below required further review.

Scott & Holland/Tunney's Pasture

Rear-End – Of the nine observed rear-end collisions, there was a roughly even distribution amongst the four intersection legs. Most were attributed to 'following too close'. All rear-end collisions were classified as 'property damage only', with the exception of a 'non-fatal injury' collision that occurred during snowy and dark conditions.

Sideswipe – Six of the nine sideswipe collisions occurred during the weekday peak hour periods under congested conditions. Half of the sideswipe collisions involved northbound vehicles, while the east and westbound directions experienced a similar distribution of the remaining collisions. A single 'non-fatal injury' collision was reported, with the remaining sideswipes being classified as 'property damage only'.

Turning Movement – Seven of the 10 turning movement collisions occurred during the weekday peak hour periods under congested conditions. All turning movement collisions involved left-turning vehicles, while each leg of the intersection experienced between one and four collisions of this type. All but one 'non-fatal injury' collision were classified as 'property damage only'.

Pedestrian – Within the 5 years of collision records reviewed for this study, there were 2 reported collisions involving pedestrians, both of which resulted in 'non-fatal injuries'. One of these collisions was due to a driver failing to yield the right of way, while there is no evident cause for the second pedestrian collision. Both collisions occurred during the day under clear weather conditions.

Bicycle – There was one property-damage only bicycle collision recorded in which a vehicle sideswiped a cyclist. There are no evident causes for this collision, however.

It is noteworthy that Scott Street & Holland/Tunney's Pasture was recently reconstructed as 'protected intersection' to improve safety and reduce opportunities for a variety of collision types amongst all modes of travel.

Parkdale & Scott

Angle – Three of the six angle collisions occurred under dark or rainy conditions and may reflect driver behaviour during less than ideal conditions. Most of these collisions involved northbound or westbound vehicles either turning left or going straight, while disobeying traffic control.

Rear-End – Of the 11 rear-end collisions, five occurred under dark/dusk lighting conditions or during rainy conditions which may be a reflection of driver behaviour during nighttime conditions, particularly as nearly all of the collisions involved motorists 'following too closely'. Most of the collisions involved northbound vehicles, while the remainder were associated with west or southbound vehicles. All of the collisions were considered minor in nature and involved 'property damage only'.

Bicycle – Within the 5 years of collision records reviewed for this study, there were 3 reported collisions involving cyclists, two of which resulted in 'non-fatal injuries', and one collision involving 'property damage only'. Two collisions were due to motorists failing to yield the right of way, while one was due to the cyclist. All collisions occurred during the day under clear weather conditions.

Similar to the Scott & Holland/Tunney's Pasture intersection, Parkdale & Scott was also recently reconstructed as 'protected intersection'. These upgrades are anticipated to significantly improve safety among vulnerable road users, while reducing the opportunity and severity of all collision types.

KZM & Remic Rapids/Tunney's Pasture

Turning Movement – Three of the six turning movement collisions occurred under dark/dusk lighting and/or snowy conditions. The majority of collisions involved northbound vehicles going straight and colliding with southbound vehicles performing left-turning movements. All collisions were considered minor in nature and were classified as 'property damage only'.

KZM Eastbound - Island Park to Parkdale

Rear-End – Four of the 10 rear-end collisions occurred under dawn/dusk lighting or during rainy conditions. Half of the rear-end collisions occurred during weekday peak periods when traffic is most likely to be in a congested state. All collisions were considered minor in nature and were classified as 'property damage only'.

KZM Westbound - Island Park to Parkdale

Sideswipe – Seven of the 12 rear-end collisions occurred during weekday peak periods when traffic is most likely to be in a congested state and occurred during a lane change maneuver. All 'rear-end' collisions were classified as 'property damage only' with the exception of one 'non-fatal injury' collision.

Rear-End – Of the 20 collisions, 18 occurred during either weekday peak periods (congested conditions) or during dusk/dark or snowy conditions when driving conditions are not ideal. All collisions are minor in nature resulting in 'property damage only' or 'non-fatal injuries'.

Pedestrian – A motorist lost control of their vehicle which resulted in the fatality of a pedestrian and serious injuries to a cyclist. The collision occurred during the day under clear weather conditions.

Based on the Road Safety Analysis presented above, it is recommended that each of the major intersections along the Scott Street and Parkdale Avenue frontages of the site be upgraded to 'protected intersections'. Any geometric improvements required at site access intersections on either Parkdale Avenue or Scott Street to facilitate 'protected intersection' upgrades will be covered through a Roadway Modification Application (RMA), included in **Appendix O**.

The Ottawa South Shore Riverfront Park Plan (NCC, 2018) also indicates long-term plans to implement measures on Kichi Zibi Mikan to support speed limit reductions, as well as introducing enhanced crossings for active users.

4.7 Neighbourhood Traffic Calming

Despite the subject site's multiple connections to the arterial and regional road network, there have been concerns expressed by Communities' Perspective Group (CPG) members regarding the potential exacerbation of any existing cut-through traffic patterns resulting from the Tunney's Pasture redevelopment. These concerns are based on the site's direct vehicular connections with adjacent neighborhoods and widely-known congestion issues on nearby key commuter routes, including Island Park Drive and Parkdale Avenue during the weekday peak periods.

This Neighbourhood Traffic Calming component of the TIA is intended to highlight key infiltration routes that were identified through the Touch-Point #2 Meeting held on February 10, 2025 with Communities' Perspective Group (CPG) Stream 1 members and other prior meetings with the broader CPG. A separate Neighbourhood Traffic Calming Strategy was developed to evaluate potential concept-level traffic calming solutions within adjacent communities, as well as at the site access intersections. The primary objectives of this strategy are to limit cut-through between Tunney's Pasture and adjacent communities, including Mechanicsville, Hintonburg, Wellington Village and Champlain Park, while facilitating access by active modes.

Potential neighborhood traffic infiltration routes within adjacent communities are identified in **Exhibit 15** below.

Traffic count data collected in March/April 2025 at select peripheral intersections referenced in preceding sections will be analysed further in the Neighbourhood Traffic Calming Strategy (see **Appendix K**) to verify existing cut-through traffic patterns and develop appropriate traffic calming solutions to mitigate these issues within the above noted neighbourhoods immediately surrounding Tunney's Pasture.

The effectiveness of the implemented traffic calming strategy to mitigate vehicular cross-traffic between the site and surrounding communities will be evaluated at reoccurring intervals over the timeframe of the Tunney's Pasture redevelopment, as outlined in the Monitoring Plan (see **Appendix N**).

The proposed solutions and mitigation strategies investigated in the Neighbourhood Traffic Calming Strategy will serve to limit the amount of cut-through traffic through a range of measures with varying degrees of intensity to suit the context, including high-friction, traffic-calmed streets and turning movement restrictions at the site's boundary street intersections. It is also noteworthy that in the near-term (Phase 1), the introduction of residential land uses within Tunney's Pasture will generate traffic opposite the existing peak flow of traffic which is less likely to utilize neighbourhood shortcuts. At full build-out, the site will ultimately generate fewer automobile trips in comparison with pre-COVID-19 pandemic volumes.



ARCADIS

Tunney's Pasture - Site Servicing and Public Road Redevelopment
Transportation Impact Assessment

Exhibit 15
Potential Neighbourhood Infiltration Routes

PROJECT No. 139833

SCALE: 0m 125m 250m

4.8 Transit

4.8.1 Route Capacity

The estimated future total transit passenger demand within the study area was provided previously in the Forecasting component for each phase of development considered in this study. The resulting transit trips have been summarized in **Table 4-3** below, and are divided by inbound/outbound transit trips, as well as cardinal direction.

Table 4-3 – Future Peak Hour Site-Generated Transit Trips

Phase	Period	Peak Hour Transit Demand (Person Trips/Hour)						
		In/Out Transit Volumes Projections		Transit Volume Projections by Cardinal Direction				TOTAL
		IN	OUT	North	South	East	West	
Phase 1 (2038)	AM	884	715	64	576	432	528	**1,599**
	PM	847	1,158	80	722	541	662	**2,005**
Phases 1 & 2 (2042)	AM	790	928	52	636	498	533	**1,718**
	PM	965	1,061	61	750	588	628	**2,026**
Phases 1, 2 & 3 (2046)	AM	717	1,194	38	707	592	573	**1,911**
	PM	1,114	980	42	775	649	628	**2,094**

Based on **Table 4-3** above, the site-generated transit ridership in Phases 1, 2 and 3 will result in at most 2,094 additional transit riders during either the weekday morning or weekday afternoon peak hours.

Overall transit demand at full build-out of the site is expected to be accommodated by its direct adjacency to Tunney's Pasture Station, a major transit hub that is served by O-Train Line 1, as well as numerous local and feeder bus routes which will continue to either provide service coverage within the site by accessing the Tunney's Pasture bus loop or directly through the internal street network of the site.

The majority of site-generated transit trips will be accommodated on Ottawa LRT system via Tunney's Pasture Station. O-Train Line 1 double-car trains presently support total ridership of approximately 14,400 passengers per hour in both directions with existing 5-minute headways during weekday peak periods and with the capability to further reduce headways to 3-minute gaps to carry an upper limit of approximately 24,000 passengers per hour in both directions. As such, O-Train Line 1 LRT service represents an important opportunity to provide high quality transit service to the subject site, given its significant capacity to carry transit riders and its direct connections to the remainder of Ottawa's City-wide rapid transit network.

The remainder of site-generated transit trips will be accommodated by OC Transpo and STO bus service. Given that there are expected to numerous bus routes operating along both existing boundary streets of the site with frequencies of 15 to 30 minutes and that an OC-Transpo buses can accommodate approximately 100 passengers, increases in transit frequency may not be required to accommodate transit ridership contributions from the subject site. STO buses also provide weekday peak period service within the internal street network of the site, with similar overlapping frequencies. Regardless, it is recommended that OC Transpo review ridership data in conjunction with the site-generated transit demand projections presented above to determine if there is sufficient transit capacity to accommodate these additional transit trips.

4.8.1.1 Early Transit Service Agreement

As discussed previously in the Transportation Demand Management (TDM) section in Section 4.5.3, an early transit service agreement may be required to service development parcels located beyond the 600-metre radius from the

Tunney's Pasture LRT Station, given the recent removal of OC Transpo bus service within the site's internal street network as part of the New Ways to Bus program.

It is estimated that transit ridership demand to/from the northernmost property parcels located within the Tunney's Pasture development which are most likely to use local bus service would be in the order of 150 and 200 transit trips during the weekday morning and afternoon peak hours, respectively. These candidate development parcels with the highest reliance on potential local feeder transit service routes are either located north of Colombine Driveway or west of Sir Frederick Banting Driveway.

4.8.2 Transit Priority Measures

As discussed previously, the 2013 TMP identifies a future Transit Priority Corridor with Continuous Lanes on Holland Avenue within the vicinity of the site. Given the constrained urban context of this corridor, however, it is possible that isolated transit priority measures such as queue jump lanes at major intersections may be the only feasible option along this corridor, given potentially competing objectives to support active users, for example. Regardless, there is currently no proposed timeline for any transit priority upgrades on Holland Avenue.

These transit priority measures would allow for more efficient transit routes on the adjacent road network to feed more seamlessly into the Tunney's Pasture LRT Station which would be beneficial in improving transit reliability and service quality to support the overall sustainable growth and development within the broader area.

As discussed during the existing conditions MMLOS analysis, however, substandard TLOS at the Scott & Holland intersection is associated with delays on the northbound and eastbound approaches. The substandard TLOS can be attributed to existing and Future Background growth and is not a result of site-generated traffic demands.

As such, it is not anticipated that additional transit priority measures will be required to support the projected site-generated transit demands, the majority of which are expected to be accommodated by LRT service rather than buses.

4.9 Review of Network Concept

A screenline is an artificial boundary between areas of major traffic generation that captures all significant points of entry from one area to another to compare crossing demand with the available roadway capacity. Screenlines are typically located along geographical barriers such as rivers, rail lines or within the Greenbelt. To capture existing flow and model future demand, count stations are established by the City of Ottawa at each crossing point along the screenline.

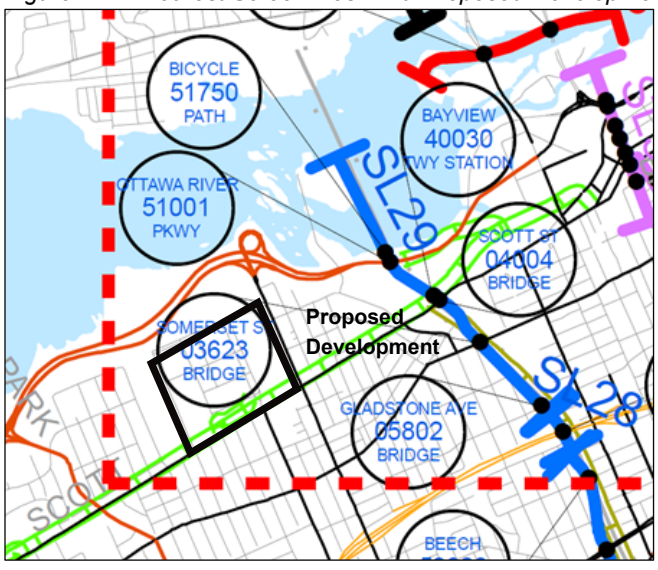
The nearest strategic planning screenlines adjacent to the development have been identified as follows:

- **SL28 – O-Train (Central):** This screenline has one vehicular crossing point: Highway 417.
- **SL29 – O-Train (North):** This screenline has five vehicular crossing points: Kichi Zibi Mikan, Bayview Station, Scott Street Bridge, Somerset Street Bridge and Gladstone Avenue.

SL28 and SL29 are shown in **Figure 4-2** (right), as determined from the City of Ottawa's Road Network Development Report (2013), a supporting document to the 2013 Transportation Master Plan (TMP).

Table 4-4 below summarizes the City 2031 Network Concept demand and capacity across these two screenlines.

Figure 4-2 – Nearest Screenlines w.r.t. Proposed Development



Source: TRANS Screenline System (2010)

Table 4-4 – Screenline Analysis

Screenline	2011 - Base Network Peak Direction			2031 - Base Network Peak Direction			2031 - Network Concept Peak Direction		
	Demand	Capacity	v/c Ratio	Demand	Capacity	v/c Ratio	Demand	Capacity	v/c Ratio
SL28 O-Train (Central)	6,082	5,400	**1.13**	6,176	5,400	**1.14**	6,192	5,400	**1.15**
SL29 O-Train (North)	3,195	6,800	0.47	3,298	6,800	0.49	3,117	5,400	0.58

Source: Exhibits 3-4 & 4-8 of the Road Network Development Report: Final Report (December 2013)

As indicated in **Table 4-4** above, there is a long-standing volume-to-capacity deficiency across SL28 which is predicted to remain during the most constrained weekday peak period until at least 2031. Highway 417 is busy and congested conditions experienced on Parkdale Avenue are likely attributable to its full interchange connection to this 400-series highway and direct link to Kichi Zibi Mikan, the latter of which appears to have available capacity per SL29 results outlined above.

The capacity issues experienced across SL28 underscore the need for more transit-oriented developments such as Tunney's Pasture to help resolve City-wide congestion issues.

Comparison with Pre-Pandemic Counts

In order to determine whether the additional site-generated traffic demands associated with the Tunney's Pasture redevelopment will be sufficiently absorbed across SL28 & SL29, a comparison with pre-pandemic volume observations was undertaken.

According to the pre-pandemic traffic counts collected for the Tunney's Pasture Redevelopment Community Transportation Study (Parsons, 2018), the site was generating more than 2,000 vehicles per weekday peak hour prior to the COVID-19 pandemic. A comparison of the traffic volumes associated with Phase 1, which represents the highest overall traffic generation scenario for the subject site within the time of this study, is provided for comparison against the pre-pandemic observed ground counts from the 2018 CTS in **Table 4-5** below.

Table 4-5 – Comparison of Pre-Pandemic Site-Generated Traffic with Phase 1 Projections

Scenario	Vehicles – Weekday AM Peak Hour			Vehicles – Weekday PM Peak Hour		
	In	Out	Total	In	Out	Total
Phase 1 Traffic Projections [1]	1,274	589	1,863	862	1,533	2,395
Pre-Pandemic Site-Generated Traffic [2]	1,495	570	2,065	542	1,473	2,015
Difference (%)	**-221 (-15%)**	**+19 (+3%)**	**-202 (-10%)**	**+320 (+59%)**	**+60 (+4%)**	**+380 (+19%)**

Notes:

[1] Phase 1 traffic volume projections do not include 'pass-by trips'.

[2] 2018 Tunney's Pasture Redevelopment Community Transportation Study (Parsons, 2018), page 10.

Based on the difference calculated in **Table 4-5** above, there would only be an additional 60 vehicles per hour, or approximately 4% more traffic, in the peak direction, added during the weekday afternoon peak hour relative to the pre-pandemic counts conducted for the 2018 Community Transportation Study (CTS). The majority of the additional traffic is added in the off-peak direction of travel which has sufficient excess capacity to absorb additional vehicular demand.

Relevant extracts from the 2018 CTS are provided in **Appendix L**.

4.10 Intersection Operational Review

4.10.1 Access Intersection Review

4.10.1.1 Location and Design of Access

As discussed previously, the proposed development will continue to provide transportation connections to the adjacent road network via six access intersections, including:

- **Kichi Zībī Mīkan & Tunney's Pasture:** This existing signalized intersection will retain its existing movement restrictions and will continue to be the only access serving the site directly via Kichi Zibi Mikan.
- **Parkdale & Goldenrod:** This existing right-in/right-out intersection will remain in its current configuration and location, with eastbound stop control and north-south free-flow movements.
- **Parkdale & Colombine:** This existing two-way stop-controlled intersection will be upgraded to include 'protected intersection' elements and will be controlled with traffic signals.
- **Scott & Holland/Tunney's Pasture:** This signalized intersection and main gateway to the site was recently reconstructed as a 'protected intersection'. No significant changes are proposed or required at this intersection to accommodate the Tunney's Pasture redevelopment.
- **Scott & Goldenrod:** This existing intersection was recently upgraded to a 'protected intersection'. The north leg which provides exclusive access for transit vehicles to access the bus loop, will be open for public use prior to the completion of Phase 1 of the subject site.
- **Scott & Sir Frederick Banting/Ross:** This existing two-way stop-controlled intersection will be upgraded to a 'protected intersection' controlled with traffic signals. It is recommended that these upgrades occur prior to Phase 1 of the Tunney's Pasture redevelopment to address existing capacity constraints identified through this study.

4.10.1.2 Intersection Control

4.10.1.2.1 Traffic Signal Warrants

Traffic signal warrants analysis was conducted for the intersections of Parkdale & Colombine, as well as Scott & Sir Frederick Banting/Ross under Future (2038) Total Traffic and Future (2046) Total Traffic conditions, and the results indicate that traffic signals are not warranted at either of these intersections within the timeframe of this study.

Despite not triggering the warrants, the implementation of traffic signals is recommended at both intersections for the following reasons:

- Provides opportunities to significantly improve safety and connectivity for vulnerable road users through the introduction of fully 'protected intersection' configurations, with controlled crosswalks and crossrides on all approaches.
- Resolves traffic operational issues and mitigates high vehicular delays which also pose increased safety risks for active users.

At the Scott & Sir Frederick Banting/Ross intersection, there were existing capacity issues resulting from non-compliant vehicular movements that also result in elevated safety risks for active users. The recommendation to upgrade this intersection with traffic signals is also consistent with the vision for the adjacent road network, as outlined in the Scott Street CDP. Further, this intersection is located along an approximately 440-metre segment of Scott Street, in which signalization would provide another controlled crossing opportunity for pedestrians and cyclists while increasing connectivity to the planned cycling network within Tunney's Pasture, as previously illustrated in **Exhibit 14**.

The results of the traffic signal warrant analysis are provided in **Appendix M**.

4.10.2 Intersection Analysis Criteria (Automobile)

For signalized intersections, the City of Ottawa has developed criteria for signalized intersections as part of the TIA Guidelines which directly relate the v/c ratio to a Level of Service (LOS) designation. In contrast, the LOS for unsignalized intersections is based on average delay using the criteria outlined in the Highway Capacity Manual (HCM) 2010. These criteria are presented in **Table 4-6** below.

The MMLOS Guidelines Update (March 2024) indicate that a Level of Service 'E' or better is acceptable City-wide.

Table 4-6 – Level of Service Thresholds

Level of Service	Signalized	Unsignalized
	V/C Ratio	Delay (Seconds per Vehicle)
A	0 to 0.60	<10
B	0.61 to 0.70	>10 and <15
C	0.71 to 0.80	>15 and <25
D	0.81 to 0.90	>25 and <35
E	0.91 to 1.00	>35 and <50
F	> 1.00	>50

4.10.3 Intersection Capacity Analysis

The Level of Service (LOS) results are based on locally-specific parameters as described in the TIA Guidelines and incorporates existing signal timing plans obtained from the City of Ottawa. The analysis of existing conditions utilized a Peak Hour Factor (PHF) of 0.90, while future conditions considers optimized signal timing plans and the use of a Peak Hour Factor (PHF) of 1.0 to recognize peak 'spreading' beyond a 15-minute period in congested conditions and therefore some of the study area intersections are shown to perform better in comparison with Existing Traffic conditions under Future Background Traffic conditions.

Following the established intersection capacity analysis criteria described above, future traffic conditions were analysed using the weekday peak hour traffic volumes derived in this study.

The subsequent sections present the results of the intersection capacity analysis. All tables summarize study area intersection LOS results during the weekday morning and afternoon peak hours.

The intersection capacity analysis reports have been provided in **Appendix F**.

4.10.3.1 Future Background Traffic

An intersection capacity analysis has been undertaken using the Future Background Traffic volumes presented previously in **Exhibit 9**. The results of the intersection capacity analysis are summarized below.

Table 4-7 – Intersection Capacity Analysis: Future Background Traffic

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)	Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)
Kichi Zibi Mikan & Remic Rapids	Signalized	A (0.22)	WBTRL (0.23)	C (0.79)	NBTL (0.89)
> *Kichi Zibi Mikan & Remic Rapids*	Signalized [1]	A (0.20)	WBTRL (0.21)	D (0.85)	NBTL (0.89)
Kichi Zibi Mikan & Tunney's Pasture	Signalized	A (0.50)	EBTL (0.55)	A (0.28)	NBTR (0.72)
> *Kichi Zibi Mikan & Tunney's Pasture*	Signalized [1]	A (0.46)	EBTL (0.50)	A (0.31)	NBTR (0.72)
Parkdale & Goldenrod (right-in/right-out)	Unsignalized	B (13.4s)	EBR (13.4s)	A (10.0s)	EBR (10.0s)
Parkdale & Emmerson	Unsignalized	B (11.7s)	WBRL (11.7s)	C (18.4s)	WBRL (18.4s)
Parkdale & Colombine	Unsignalized	C (16.9s)	EBRL (16.9s)	C (18.8s)	EBRL (18.8s)
Parkdale & Burnside	Signalized	B (0.65)	SBTL (0.65)	A (0.57)	WBRL (0.67)
Parkdale & Lyndale	Signalized	A (0.29)	SBTL (0.29)	A (0.44)	NBTR (0.44)
Parkdale & Scott	Signalized	A (0.51)	NBTRL (0.63)	B (0.69)	NBTRL (0.74)
> *Parkdale & Scott*	Signalized [1]	A (0.50)	NBTRL (0.62)	C (0.71)	NBTRL (0.83)
Scott & Holland/Tunney's Pasture	Signalized	A (0.55)	NBL (0.69)	C (0.79)	NBL (0.81)
> *Scott & Holland/Tunney's Pasture*	Signalized [1]	A (0.56)	NBL (0.69)	B (0.62)	NBR (0.79)
Scott & Goldenrod/Smirle	Signalized	A (0.35)	SBL (0.57)	A (0.44)	EBTR (0.45)
> *Scott & Goldenrod/Smirle*	Signalized [1]	A (0.35)	SBL (0.57)	A (0.47)	EBTR (0.47)
Scott & Sir Frederick Banting/Ross	Unsignalized	B (12.7s)	NBTRL (12.7s)	D (34.2s)	NBTRL (34.2s)

Notes: [1] *Corridor or signal timing plan optimization for weekday PM peak hour*

Based on the intersection capacity analysis shown in **Table 4-7** above, all study area intersections are projected to operate at an acceptable Level of Service (i.e. LOS 'E' or better) under Future Background Traffic volumes developed for this study. As indicated previously, some intersections will see a slight improvement under Future Background Traffic conditions relative to Existing conditions, as a result of 'peak spreading'.

Signal timing plan optimization was employed as a potential strategy to mitigate existing internal queuing identified on the northbound approach of the Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture intersections during the weekday afternoon peak hour. A reduction in cycle length from 145s to 110s would allow queuing on both Kichi Zibi Mikan and the Tunney's Pasture access to be more manageable, while maintaining traffic operational performance of the intersection within acceptable conditions.

Existing queue spillback issues on the northbound right-turn at the Scott & Holland/Tunney's Pasture intersection, as well as the eastbound left-turn at the Parkdale & Scott intersection can be mitigated through corridor optimization, although still represent constraints with respect to the assignment of site-generated traffic contributions. It is noteworthy as well that both of these junctions as a 'whole' will continue to operate acceptably with or without signal timing plan adjustments under Future Background Traffic conditions within the timeframe of this study.

4.10.3.2 Future (2038) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2038) Total Traffic volumes presented previously in **Exhibit 10**. The results of the intersection capacity analysis are summarized below.

Table 4-8 – Intersection Capacity Analysis: Future (2038) Total Traffic

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)	Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)
Remic Rapids & Kichi Zibi Mikan	Signalized	A (0.26)	NBTL (0.45)	C (0.80)	NBTL (0.88)
> *Remic Rapids & Kichi Zibi Mikan*	Signalized [1]	A (0.24)	NBTL (0.41)	D (0.86)	NBTL (0.87)
Kichi Zibi Mikan & Tunney's Pasture	Signalized	A (0.54)	EBTL (0.56)	A (0.27)	NBTR (0.63)
> *Remic Rapids & Tunney's Pasture*	Signalized [1]	A (0.49)	EBTL (0.51)	A (0.29)	NBTR (0.62)
Parkdale & Goldenrod (right-in/right-out)	Unsignalized	B (14.0s)	EBR (14.0s)	B (10.6s)	EBR (10.6s)
Parkdale & Emmerson	Unsignalized	B (12.2s)	WBRL (12.2s)	C (22.0s)	WBRL (22.0s)
Parkdale & Colombine	Unsignalized	**E (42.8s)**	**EBRL (42.8s)**	**F (434.1s)**	**EBRL (434.1s)**
> *Parkdale & Colombine*	Signalized [1,2]	A (0.47)	SBTR (0.50)	A (0.57)	EBL (0.68)
Parkdale & Burnside	Signalized	B (0.70)	SBTL (0.70)	A (0.60)	WBRL (0.67)
> *Parkdale & Burnside*	Signalized [1]	B (0.64)	SBTL (0.67)	A (0.58)	WBRL (0.71)
Parkdale & Lyndale	Signalized	A (0.32)	SBTL (0.32)	A (0.47)	NBTR (0.47)
> *Parkdale & Lyndale*	Signalized [1]	A (0.31)	SBTL (0.31)	A (0.46)	NBTR (0.46)
Parkdale & Scott	Signalized	B (0.61)	NBTRL (0.78)	D (0.88)	**NBTRL (1.03)**
> *Parkdale & Scott*	Signalized [1]	A (0.60)	NBTRL (0.70)	D (0.86)	**NBTRL (0.98)**
Scott & Holland/Tunney's Pasture	Signalized	B (0.68)	NBL (0.79)	**F (1.02)**	**NBL (1.03)**
> *Scott & Holland/Tunney's Pasture*	Signalized [1,3]	B (0.69)	NBL (0.82)	**E (0.92)**	**WBL (0.93)**
Scott & Goldenrod/Smirle	Signalized	A (0.42)	SBL (0.72)	A (0.59)	SBL (0.73)
> *Scott & Goldenrod/Smirle*	Signalized [1]	A (0.42)	SBL (0.71)	A (0.60)	SBL (0.70)
Scott & Sir Frederick Banting/Ross	Unsignalized	C (22.9s)	SBTRL (22.9s)	**F (189.7s)**	**SBTRL (189.7s)**
> *Scott & Sir Frederick Banting/Ross*	Signalized [1]	A (0.50)	EBTRL (0.52)	B (0.66)	SBTRL (0.74)

Notes: [1] *Corridor or signal timing plan optimization*
[2] *Proposed eastbound left-turn auxiliary lane and northbound left-turn auxiliary lane*
[3] *Remove dedicated southbound right-turn auxiliary lane and replace with buffered bike lane*

With the addition of Phase 1 site-generated traffic, and without any modifications to the intersection geometry or signal timings, a number of capacity constraints were identified at study area intersections, including at the Parkdale & Colombine, Parkdale & Scott, Scott & Holland/Tunney's Pasture and Scott & Sir Frederick Banting/Ross intersections.

The Parkdale & Colombine and Scott & Sir Frederick Banting/Ross intersections are shown to operate with an overall LOS 'F' during the weekday afternoon peak hour as a result of high sidestreet delays, with their existing two-way stop-controlled configurations. Upgrading these intersections to signalized and 'protected intersection' configurations would provide safe and comfortable controlled crossings to promote travel by active modes, while resolving these capacity issues, some of which exist under existing conditions.

The intersections of Scott Street with Parkdale Avenue and Holland/Tunney's Pasture are both expected to operate at or slightly above their theoretical capacities during the weekday afternoon peak hour on the northbound approaches which represent the worst-performing movements of each intersection. Similar to Future Background Traffic conditions, signal optimization was shown to mitigate these operational constraints, while contributing to reduction in queuing associated with the northbound right-turn and eastbound through movements at Scott & Holland/Tunney's Pasture, as well as the eastbound left-turn at Scott & Parkdale. A reduced cycle length of 100s was employed for the signal optimization on Scott Street to minimize pedestrian and cycling crossing delays and help manage queue lengths.

The following mitigation measures are recommended at the Scott & Holland/Tunney's Pasture intersection to support existing and future travel demand:

- Despite the above noted constraints at the Scott & Holland/Tunney's Pasture intersection, the capacity analysis conducted for this study was shown to support the removal of the southbound right-turn auxiliary lane and reallocation of this additional pavement width to develop a southbound buffered bike lane on Tunney's Pasture Driveway from Yarrow Driveway to Scott Street, thereby closing this gap in the cycling network. Vehicles would retain the ability to perform right-turn movements through the use of a shared southbound through-right turning lane at the Scott & Holland/Tunney's Pasture intersection.
- Consideration should be given to incorporating a longer storage length for the northbound right-turn auxiliary lane at the Scott & Holland/Tunney's Pasture intersection to resolve existing queuing constraints associated with this movement through the future Holland Avenue redesign which were shown to be partially resolvable through signal optimization under Future Background and Future Total Traffic conditions, but will continue to occur within the timeframe of this study.

The overall performance of both Scott & Holland/Tunney's Pasture and Parkdale & Scott will be tracked through the Monitoring Plan (see **Appendix N**) to allow for safe transportation operations for all road users, such as queuing on the southbound approach of the Scott & Holland/Tunney's Pasture intersection associated with the consolidation of the southbound through and right-turn movements into a single lane.

Signal timing plan optimization was employed as a potential strategy to mitigate existing internal queuing identified on the northbound approach of the Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture intersections during the weekday afternoon peak hour. Similar to Future Background Traffic Conditions, this optimization would result in a slight increase in capacity constraints on Kichi Zibi Mikan, however all movements at these intersections would continue to remain within acceptable operating conditions (i.e. LOS 'E' or better) and Phase 1 of the Tunney's Pasture redevelopment will not exacerbate this existing queuing constraint.

4.10.3.3 Future (2042) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2042) Total Traffic volumes presented previously in **Exhibit 11**. The results of the intersection capacity analysis are summarized below.

Table 4-9 – Intersection Capacity Analysis: Future (2042) Total Traffic

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)	Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)
Kichi Zibi Mikan & Remic Rapids	Signalized	A (0.23)	NBTL (0.30)	C (0.75)	WBTRL (0.78)
> *Kichi Zibi Mikan & Remic Rapids*	Signalized [1]	A (0.23)	NBTL (0.30)	C (0.80)	WBTRL (0.85)
Kichi Zibi Mikan & Tunney's Pasture	Signalized	A (0.48)	EBTL (0.50)	A (0.22)	NBTR (0.43)
> *Kichi Zibi Mikan & Tunney's Pasture*	Signalized [1]	A (0.48)	EBTL (0.50)	A (0.24)	NBTR (0.42)
Parkdale & Goldenrod (right-in/right-out)	Unsignalized	B (13.4s)	EBR (13.4s)	B (10.3s)	EBR (10.3s)
Parkdale & Emmerson	Unsignalized	B (11.9s)	WBRL (11.9s)	C (19.9s)	WBRL (19.9s)
Parkdale & Colombine	Unsignalized	D (27.0s)	EBRL (27.0s)	**F (146.4s)**	**EBRL (146.4s)**
> *Parkdale & Colombine*	Signalized [1,2]	A (0.43)	SBTR (0.46)	A (0.53)	EBL (0.56)
Parkdale & Burnside	Signalized	B (0.68)	SBTL (0.68)	A (0.58)	WBRL (0.67)
> *Parkdale & Burnside*	Signalized [1]	B (0.62)	SBTL (0.65)	A (0.56)	WBRL (0.71)
Parkdale & Lyndale	Signalized	A (0.31)	SBTL (0.31)	A (0.46)	NBTR (0.46)
> *Parkdale & Lyndale*	Signalized [1]	A (0.31)	SBTL (0.31)	A (0.45)	NBTR (0.45)
Parkdale & Scott	Signalized	A (0.56)	NBTRL (0.65)	C (0.80)	NBTRL (0.88)
> *Parkdale & Scott*	Signalized [1]	A (0.55)	NBTRL (0.58)	C (0.78)	NBTRL (0.88)
Scott & Holland/Tunney's Pasture	Signalized	B (0.65)	NBL (0.77)	**E (0.93)**	**EBTR (0.95)**

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)	Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)
> Scott & Holland/Tunney's Pasture	Signalized [1,3]	B (0.65)	NBL (0.81)	C (0.77)	NBL (0.82)
Scott & Goldenrod/Smirle	Signalized	A (0.41)	SBL (0.71)	A (0.55)	SBL (0.68)
> Scott & Goldenrod/Smirle	Signalized [1]	A (0.41)	SBL (0.70)	A (0.58)	SBL (0.62)
Scott & Sir Frederick Banting/Ross	Unsignalized	C (19.6s)	SBTRL (19.6s)	**F (75.9s)**	**SBTRL (75.9s)**
> Scott & Sir Frederick Banting/ Ross	Signalized [1]	A (0.45)	EBTRL (0.47)	A (0.59)	SBTRL (0.61)

Notes: 1 Corridor or signal timing plan optimization
2 Proposed eastbound left-turn auxiliary lane and northbound left-turn auxiliary lane
3 Remove dedicated southbound right-turn lane and replace with buffered bike lane

Due to the significant reduction in office land uses in Phase 2, site-generated traffic during the weekday afternoon peak hour is expected to decrease by approximately 24% by 2042 in comparison with its peak in 2038, while peak direction volumes are expected to decrease by as much as 28%.

The mitigation measures recommended under Future (2038) Total Traffic conditions will largely be carried forward to allow for the study area intersections to function within acceptable levels of service (i.e. LOS 'E' or better), however due to the significant decrease in volumes expected by 2042, as described above, study area intersections will experience notable improvements in relation initial development phase.

4.10.3.4 Future (2046) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2046) Total Traffic volumes presented previously in **Exhibit 12**. The results of the intersection capacity analysis are summarized below.

Table 4-10 – Intersection Capacity Analysis: Future (2046) Total Traffic

Intersection	Traffic Control	AM Peak		PM Peak	
		Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)	Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)
Kichi Zibi Mikan & Remic Rapids	Signalized	A (0.22)	WBTRL (0.22)	B (0.70)	WBTRL (0.77)
Kichi Zibi Mikan & Tunney's Pasture	Signalized	A (0.46)	EBTL (0.49)	A (0.19)	NBTR (0.25)
Parkdale & Goldenrod (right-in/right-out)	Unsignalized	B (12.9s)	EBR (12.9s)	A (10.0s)	EBR (10.0s)
Parkdale & Emmerson	Unsignalized	B (11.7s)	WBRL (11.7s)	C (18.1s)	WBRL (18.1s)
Parkdale & Colombine	Unsignalized	C (20.7s)	EBRL (20.7s)	**E (37.0s)**	**EBRL (37.0s)**
>Parkdale & Colombine	Signalized [1,2]	A (0.41)	SBTR (0.43)	A (0.46)	NBT (0.47)
Parkdale & Burnside	Signalized	B (0.66)	SBTL (0.66)	A (0.57)	WBRL (0.67)
>Parkdale & Burnside	Signalized [1]	B (0.61)	SBTL (0.63)	A (0.56)	WBRL (0.71)
Parkdale & Lyndale	Signalized	A (0.31)	SBTL (0.31)	A (0.44)	NBTR (0.44)
>Parkdale & Lyndale	Signalized [1]	A (0.30)	SBTL (0.30)	A (0.43)	NBTR (0.43)
Parkdale & Scott	Signalized	A (0.52)	NBTRL (0.54)	C (0.74)	NBTRL (0.80)
> Parkdale & Scott	Signalized [1]	A (0.51)	EBT (0.52)	C (0.73)	NBTRL (0.82)
Scott & Holland/Tunney's Pasture	Signalized	B (0.63)	NBL (0.74)	D (0.86)	EBTR (0.87)
> Scott & Holland/Tunney's Pasture	Signalized [1,3]	B (0.63)	NBL (0.80)	B (0.68)	NBL (0.82)
Scott & Goldenrod/Smirle	Signalized	A (0.40)	SBL (0.71)	A (0.53)	SBL (0.62)
> Scott & Goldenrod/Smirle	Signalized [1]	A (0.40)	SBL (0.70)	A (0.52)	SBL (0.56)
Scott & Sir Frederick Banting/Ross	Unsignalized	C (17.7s)	SBTRL (17.7s)	**E (39.5s)**	**SBTRL (39.5s)**

Intersection	Traffic Control	AM Peak		PM Peak	
		Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)	Overall LOS (V/C or Delay)	Most Constrained Movements (V/C or Delay)
> Scott & Sir Frederick Banting/Ross	Signalized [1]	A (0.41)	EBTRL (0.42)	A (0.52)	EBTRL (0.53)

Notes: 1 Corridor or signal timing plan optimization
2 Proposed eastbound left-turn auxiliary lane and northbound left-turn auxiliary lane
3 Remove dedicated southbound right-turn lane and replace with buffered bike lane

As indicated in **Table 4-10** above, with the mitigation measures proposed in the previous analysis years, all study area intersections are shown to continue operating at acceptable levels of service (LOS 'E' or better) under Future (2046) Total Traffic conditions.

By the study horizon under weekday afternoon peak hour conditions, total site-generated traffic volumes are expected to decrease significantly by approximately 47% in comparison with the highest vehicular activity in Phase 1 (2038), while peak direction volumes are expected to decrease by about 54% within the same timeframe. Longstanding queue spillback constraints on the northbound approach of the Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture intersections identified under Existing Conditions, as well as Phases 1 and 2 will be resolved by full build-out, as on-site uses evolve and directional splits become increasingly more balanced.

4.11 Geometric Review

4.11.1 Auxiliary Lane Analysis

4.11.1.1 Auxiliary Left-Turn Lane Requirements (Signalized Intersections)

A review of auxiliary left-turn lane storage requirements was completed under Future (2038) and Future (2046) Total Traffic conditions, comparing the highest queue lengths on each intersection approach under weekday morning and afternoon peak hours. The review compared the projected 95th percentile queue lengths from Synchro operational results and the standard queue length calculation based on the following equation:

$$Storage\ Length = \frac{NL}{C} \times 1.5$$

Where:
N = number of vehicles per hour
L = Length occupied by a vehicle in the queue = 7 m
C = number of traffic signal cycles per hour

The results of the auxiliary left-turn lane analysis are summarized below in **Table 4-11** below. It should be noted that analysis was generally limited to movements which will experience contributions from site-generated traffic volumes.

Table 4-11 – Auxiliary Left-Turn Storage Analysis at Signalized Intersections

Intersection	Approach	Future (2038) Total Traffic		Future (2046) Total Traffic		Ex. Parallel Lane OR Planned (P) Storage Length (m)	Storage Deficiency (m)		Recommended Min. Additional Storage (m)
		Max. 95th % Queue (m)	Max. Calc. Queue (m)	Max. 95th % Queue (m)	Max. Calc. Queue (m)		2038	2046	
KZM & Remic Rapids/ Tunney's Pasture [1]	NB	80	100	30	35	55 [2] (Ex.)	- [3]	-	None - Queuing issues resolvable within study timeframe
Parkdale & Colombine	NB	20	45	10	25	-	45	25	45
	EB	50	55	25	25	-	55	25	55
Parkdale & Scott [1]	EB	50	90	50	85	50 (Ex.)	40	35	Not at this time - Queuing not exacerbated by site traffic
	WB	25	25	15	25	55 (Ex.)	-	-	-
	SB	20	20	20	20	65 (Ex.)	-	-	-
Scott & Holland/ Tunney's Pasture [1]	EB	10	15	10	15	50 (Ex.)	-	-	-
	WB	75	55	20	50	135 (Ex.)	-	-	-
	NB	70	50	55	45	70 (Ex.)	-	-	-
	SB	35	40	20	20	65 (Ex.)	-	-	-
Scott & Goldenrod [1]	EB	5	25	5	20	80 (Ex.)	-	-	-
	WB	5	5	5	5	35 (Ex.)	-	-	-

Notes: [1] *Corridor or signal optimization*
[2] *Refers to separation distance between KZM and first internal Tunney's Pasture intersection at Goldenrod Driveway.*
[3] *No auxiliary lane storage lane deficiencies. Technically a northbound thru-left but serves as a de-facto left-turn lane.*

The results in **Table 4-11** above indicate several storage deficiencies associated with left-turning movements at the study area intersections. Further review indicates that most of these constraints are attributable to existing conditions or background traffic.

The shared northbound approach of the Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture intersection serves as a de-facto left-turn lane, given that the vast majority of traffic turns left onto KZM, while only nominal traffic continues northbound to Remic Rapids. Existing queue spillback constraints identified on the northbound approach under Existing Conditions will not be exacerbated by Phases 1 and 2 and will be mitigated by signal plan optimization. Ultimately, these existing queuing issues will be resolved by upon full build-out of the site, as on-site land uses evolve over time.

Based on the queue length analysis conducted for this study, it is recommended that the Parkdale & Colombine intersection be configured with northbound and eastbound left-turn auxiliary lanes with at least 45 metres and 55 metres of available storage capacity, respectively, to accommodate the highest weekday peak hour traffic generation of the subject site in 2038.

The eastbound left-turn movement at Parkdale & Scott has existing queuing deficiencies which show spillback exceeding the 50-metre storage capacity on this approach by approximately 40 metres. Through the analysis undertaken in this study, it was determined that that this queuing deficiency is manageable through signal optimization. Further, the 'net site-generated' trip contributions are anticipated to be nominal at 7 to 13 vehicles during the most constrained weekday peak hour, equivalent to less than one vehicle per cycle length. Any decision to modify this left-turn auxiliary lane would need to be carefully undertaken by the City, with consideration of access implications for properties on the south side of Scott Street. It should be noted that while a specific review of the eastbound approach of the Parkdale & Scott intersection is not part of the Monitoring Plan (see **Appendix N**) accompanying this TIA, the overall operations of the intersection will be tracked at regular intervals through the execution of this strategic plan.

4.11.1.2 Auxiliary Right-Turn Lane Requirements (Signalized Intersections)

Section 9.14 of TAC suggests that auxiliary right-turn lanes should be considered when more than 10% of vehicles on an approach are turning right and when the peak hour demand exceeds 60 vehicles. The purpose of this guideline is to mitigate operational impacts to through-traffic, particularly on high-speed arterial roadways, and may not be applicable in all circumstances. The highest of the weekday morning and weekday afternoon peak hour volumes under Future (2038) Total Traffic and Future (2046) Total Traffic conditions were considered in this evaluation. Auxiliary right-turn lane warrants were not evaluated for movements with existing right-turn lanes and this evaluation was limited to site access intersections only.

The Parkdale & Colombine intersection meets both criteria to trigger a southbound right-turn lane, however given that Parkdale Avenue is a low-speed arterial road with a 40km/h posted speed limit and located in a constrained urban environment and that queuing is manageable on the southbound approach, a right-turn auxiliary lane is deemed unnecessary to safely accommodate site-generated traffic.

4.12 Future MMLOS Analysis

4.12.1 Segment-Based MMLOS

Segment-based MMLOS results for boundary street segments adjacent to the subject site are provided in **Table 4-12** below for future conditions.

Based on relevant policy documents, future potential improvements to the adjacent road network are outlined below which are most likely to have a bearing on the segment-based MMLOS analysis. On Kichi Zibi Mikan, it is possible that a pedestrian pathway could be implemented on the south side of this parkway per the Ottawa River South Shore Riverfront Park Plan (NCC, 2018). The 'Parkdale Greenway' envisioned in the Scott Street CDP was assumed to exist along the eastern boundary of the site for the purposes of this segment-based MMLOS analysis. The plans for both of the above-noted improvements are highly-conceptual at this time and therefore the scores below provide an overall indication of the benefits of each initiative from a MMLOS evaluation perspective.

Table 4-12 – Segment-Based MMLOS Analysis Results: Future Conditions

Segment	Travel Mode	Side	Overall LOS	Critical LOS	Target LOS	Deviation[1]
Kichi Zibi Mikan, Island Park to Parkdale	Pedestrian (PLOS)	North	B	B	A	-1
		South [2]	B	B		-1
	Bicycle (BLOS)	North	B	B	B	0
		South	B	E		0
	Transit (TLOS)	North	E	N/A	E	0
		South	D			+1
	Public Realm (PRLOS)	Both Sides	C	N/A	B	-1
Parkdale Avenue, Goldenrod to Burnside	Pedestrian (PLOS)	West [3]	B	B	A	-1
		East	B	B		-1
	Bicycle (BLOS)	West [3]	B	B	B	0
		East	D	D		-2
	Public Realm (PRLOS)	Both Sides	B	N/A	B	0
Parkdale Avenue, Burnside to Lyndale	Pedestrian (PLOS)	West [3]	B	C	A	-1
		East	B	C		-1
	Bicycle (BLOS)	West [3]	B	B	B	0
		East	D	D		-2
	Public Realm (PRLOS)	Both Sides	B	N/A	B	0

Segment	Travel Mode	Side	Overall LOS	Critical LOS	Target LOS	Deviation[1]
Parkdale Avenue, Lyndale to Scott	Pedestrian (PLOS)	West [3]	B	C	A	-1
		East	B	C		-1
	Bicycle (BLOS)	West [3]	B	B	B	0
		East	D	D		-2
	Public Realm (PRLOS)	Both Sides	B	N/A	B	0

Notes: [1] *A comparison of 'Overall LOS' and 'Target LOS'. 'Critical LOS' is shown for information purposes only.*
[2] *Pedestrian pathway on the south side of Kichi Zibi Mikan per Ottawa South Shore Riverfront Park Plan (NCC, 2018).*
[3] *Parkdale Greenway on the west side of Parkdale Ave per Scott St CDP.*

The results of the segment-based MMLOS presented in **Table 4-12** above indicate that none of the boundary street segments meet the PLOS or BLOS targets on both sides due to either a lack of separation between cyclists, pedestrians and motorized traffic or distances between controlled crossings, however both have the potential to improve significantly if the additional active transportation facilities are introduced per the NCC and City's planning documents. It is recognized that both of these are long-term initiatives that may not necessarily occur within this study timeframe.

On either Kichi Zibi Mikan or Parkdale Avenue within the study area, if there is a high-quality bi-directional facility on one side of the roadway, a substandard score on the other side of the road could be tolerated, provided there are frequent controlled crossing points.

Segment-based Transit LOS will have a similar score under both existing and future conditions, given that there are no plans to introduce Transit Priority Measures on Kichi Zibi Mikan. The Public Realm LOS scores are based on whether there is available right-of-way to potentially introduce improvements to the pedestrian environment and therefore the scores are similar to existing conditions, given that functional-level plans do not exist for these improvements at this time.

4.12.2 Intersection-Based MMLOS

Future intersection-based MMLOS results are summarized in **Table 4-13** below and were evaluated based on Future (2038) Total Traffic conditions. The analysis assumes that all signalized study area intersections, excluding the Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture intersections, will be 'fully protected' and include dedicated cycling infrastructure such as 'crossrides' on all approaches under future conditions.

Table 4-13 – Intersection-based MMLOS Results: Future Conditions

Intersection	Travel Mode	Overall LOS	Critical LOS	MMLOS Target	Deviation
Kichi Zibi Mikan & Tunney's Pasture / Remic Rapids	Pedestrian (PLOS)	B	B	A	-1
	Bicycle (BLOS)	D	E	B	-2
	Transit (TLOS)	C	D	E	+2
	Auto (ALOS) [1]	C	C	E	+2
Parkdale & Colombine	Pedestrian (PLOS)	B	B	A	-1
	Bicycle (BLOS)	C	C	B	-1
	Transit (TLOS)	B	C	E	+3
	Auto (ALOS) [1]	A	B	E	+4
Parkdale & Burnside	Pedestrian (PLOS)	B	B	A	-1
	Bicycle (BLOS)	A	B	B	+1
	Transit (TLOS)	A	B	E	+4
	Auto (ALOS) [1]	A	B	E	+4
Parkdale & Lyndale	Pedestrian (PLOS)	A	A	A	0
	Bicycle (BLOS)	A	A	B	+1
	Transit (TLOS)	B	C	E	+3
	Auto (ALOS) [1]	A	A	E	+4
Parkdale & Scott	Pedestrian (PLOS)	B	B	A	-1
	Bicycle (BLOS)	A	B	A	0
	Transit (TLOS)	C	E	E	+2
	Auto (ALOS) [1]	D	D	E	+1
Scott & Holland/Tunney's Pasture	Pedestrian (PLOS)	B	C	A	-1
	Bicycle (BLOS)	B	B	A	-1
	Transit (TLOS)	C	D	D	+1
	Auto (ALOS) [1]	D	D	E	+1
Scott & Goldenrod/Smirle	Pedestrian (PLOS)	B	B	A	-1
	Bicycle (BLOS)	B	C	A	-1
	Transit (TLOS)	B	D	D	+2
	Auto (ALOS) [1]	A	B	E	+4
Scott & Sir Frederick Banting/Ross	Pedestrian (PLOS)	B	B	A	-1
	Bicycle (BLOS)	B	B	A	-1
	Transit (TLOS)	B	D	D	+2
	Auto (ALOS) [1]	B	B	E	+3

Note: [1] Auto Level of Service (ALOS) is based on weekday peak period volumes per the draft MMLOS Guidelines (March 2024).

The results of the analysis presented in **Table 4-13** above indicate that the majority of signalized study area intersections are one deviation point shy of achieving their respective PLOS target scores under Future (2038) Total Traffic conditions. These deficiencies can be attributed to the number of travel lanes that the pedestrian is required

to cross, which is the case at the Scott & Holland/Tunney's Pasture intersection, and of particular importance as this is the nearest intersection to the Tunney's Pasture LRT station. The PLOS targets are met for the Parkdale & Lyndale intersection. Consideration should be given to implementing Leading Pedestrian Intervals (LPIs) and high-visibility crosswalk markings at all signalized study area intersections to provide enhanced safety and comfort for pedestrians, although these measures will not be sufficient to achieve the PLOS targets. Cycle lengths below 120s have been carried forward to reduce crossing delays for pedestrians and cyclists, as well as reduce travel delays for transit vehicles.

BLOS targets are not met at the following intersections: Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture, Parkdale & Colombine, Scott & Holland/Tunney's Pasture, Scott & Goldenrod/Smirle, as well as Scott & Sir Frederick Banting/Ross. Failure to meet the BLOS targets is primarily due to a lack of cycling infrastructure at the Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture intersections for cyclists on all approaches, while the number of travel lanes crossed and right-turn volumes impact the level of traffic stress for cyclists. The of Parkdale & Colombine, Scott & Goldenrod/Smirle, as well as Scott & Sir Frederick Banting/Ross may require 'protected corners' with raised curbs to help achieve the BLOS.

The TLOS and ALOS targets are met or exceeded for all study area signalized intersections under Future (2038) Total Traffic conditions.

4.13 Summary of Recommended Network Improvements

Based on the analysis conducted for this study, the following phased mitigation strategy is required to address the multi-modal site-generated travel demands:

Near-Term Mitigation Measures

Based on a review of Existing conditions, the following near-term modifications were identified as being required to support Tunney's Pasture at the onset of redevelopment:

- Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture
  - Optimize signal timing to reduce existing internal queue spillback experienced on the northbound approach; no physical modifications required.
- Parkdale & Scott
  - Optimize traffic signal timings to resolve constraints on the eastbound approach; no physical modifications required.
- Scott & Sir Frederick Banting/Ross (Developer-Funded with Repayment Mechanism)
  - Upgrade the existing unsignalized intersection to a 'protected intersection' configuration, maintaining the existing auxiliary lane arrangement. Signalization of this intersection aligns with the Scott Street CDP which also supports the prohibition of north-south through movements. This upgrade will provide a controlled active transportation crossing on this section of Scott Street.

Phase 1 Mitigation Measures

To address multi-modal transportation constraints identified under Future (2038) Total Traffic conditions, the most constrained analysis scenario in this study, the following mitigation measures are proposed to accommodate the combined multi-modal impacts of background and site-generated travel demands:

- Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture
  - Constraints identified under Existing conditions are not significantly exacerbated in Phase 1. Continue to optimize traffic signal timings; physical modifications are not recommended nor required.
- Parkdale & Colombine (Developer-Funded with Repayment Mechanism)
  - Upgrade the existing unsignalized intersection to a 'protected intersection' (signalized). This will provide an additional controlled crossing for active users on Parkdale Avenue north of Burnside Avenue which is supported by the Scott Street CDP.
  - Introduce a 45-metre northbound auxiliary lane and a 55m eastbound left-turn auxiliary lane.

- Scott & Holland/Tunney's Pasture (Developer-Funded with Repayment Mechanism)
    - Signal timing plan optimization to support transit reliability and overall improvements to transportation operations at the Scott & Holland/Tunney's Pasture intersection.
    - Proposed removal of southbound right-turn lane, consolidation of the southbound through-right turn movements into a single shared lane and reallocation of this pavement width to support the introduction of a southbound buffered bike lane.
- The City should also consider implementing the following multi-modal initiatives to support the redevelopment of the site through its own funding mechanisms:
    - Boundary Street 'Protected Intersections': It is recommended that each of the signalized intersections along the Scott Street and Parkdale Avenue frontages of the site be upgraded to 'protected intersections', including Parkdale & Burnside and Parkdale & Lyndale. Any geometric improvements required at site access intersections on either Parkdale Avenue or Scott Street to facilitate 'protected intersection' upgrades will be covered through a Roadway Modification Application (RMA), as discussed previously.
    - Holland Avenue Cycling Infrastructure: The City should implement dedicated cycling infrastructure on Holland Avenue to provide a safe north-south active transportation corridor and divert cyclists from more congested parallel routes such as Parkdale Avenue and further encourage a shift away from automobile use for short trips. Holland Avenue will serve as an important north-south cycling route to support the redevelopment of Tunney's Pasture, given its alignment with the primary gateway to the site and continuous linear connectivity to the Central Experimental Farm's pathway system.
    - Transit: To ensure all resident of Tunney's Pasture are within an acceptable walking distance to public transit (particularly in the northwestern area of the site where the walking distance to Tunney's LRT station is in excess of 800 metres), OC Transpo should consider reinstating local bus service within Tunney's Pasture, which is being removed through the City's New Ways to Bus initiative, and realign the route(s) to conform to the collector road hierarchy of the proposed internal street network. If local transit service is not available during the early stages of development, an early transit service agreement may be required with OC Transpo until regular service is warranted by community occupancy levels.
    - Parkdale Greenway: An active transportation corridor with separated space for cyclists and pedestrians on the west side of Parkdale Avenue and abutting the site should be introduced. This corridor is referred to as the 'Parkdale Greenway' in the Scott Street CDP and is expected to be built in two primary phases as part of Phase 1 (north site limits to just south of Burnside) and Phase 3 (Burnside Avenue to Scott Street).
        - Phase 1 – Parkdale Greenway (Northern site limits to just south of Burnside)
- Proposed Internal Active Transportation Connections (Developer-Funded with Repayment Mechanism)
    - Eglantine (at Tunney's Pasture) to Parkdale (at Burnside)
        - Providing a direct connection from Eglantine Driveway to Parkdale (at Burnside) and the Mechanicsville community further east.
    - Proposed mid-block connection east of Brooke Claxton Building
        - A proposed north-south active transportation connection linking Colombine Driveway to Goldenrod Driveway within a servicing easement.

Phase 2 Mitigation Measures

- The multi-modal transportation analysis undertaken for Phase 2 did not identify the need for any additional mitigation measures to support additional vehicular traffic beyond those identified for Phase 1, given that the initial phase of development is the most critical in terms of traffic generation.
- Proposed Internal Active Transportation Connections (Developer-Funded with Repayment Mechanism)
    - Eglantine (at Goldenrod) to Sir Frederick Banting

        - This proposed active transportation connection will provide an east-west link between Goldenrod Driveway and Sir Frederick Banting Driveway and contribute to the formation of a broader connection further east to Parkdale (at Burnside) and the Mechanicsville community.
    - Yarrow (at Goldenrod) to Sir Frederick Banting
        - This proposed active transportation connection will provide an east-west link between Goldenrod Driveway and provide a more direct connection between the southwest corner of the site and Yarrow Driveway and the rapid transit station.

Full Build-out Mitigation Measures

The mitigation strategy at full build-out will generally carry forward measures recommended in Phase 1, with the following notable changes, primarily focused on improving active transportation connectivity as resulting property parcels within Tunney's Pasture are developed:

- Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture
    - Existing queue spillback constraints on the northbound approach identified under Existing and Phase 1 conditions will be resolved by full build-out, as on-site land uses evolve over time.
- Proposed Internal Active Transportation Connections (Developer-Funded with Repayment Mechanism)
    - Sorrel (at Tunney's Pasture) to Parkdale (at Lyndale)
        - This connection is dependent on the removal of the Main Statistics Building and its alignment is dependent on the built from proposed for this property parcel.
    - Transitway and Parkdale Greenway (Burnside Avenue to Scott Street)
        - Upgrades to the existing pathway linking Tunney's Pasture Driveway to Scott Street to incorporate dedicated space for pedestrians and cyclists.
        - Implement the remainder of the Parkdale Greenway from just south of Burnside Avenue to Scott Street to accommodate bi-directional cycling facilities and a pedestrian facility on the west side of Parkdale Avenue.
    - Kichi Sibi Winter Trail/Scott Street Connector
        - Formalization of the existing trail along the western edge of the site, with linkages to Sir Frederick Banting and the Carleton Avenue underpass.

Any geometric improvements required at the site access intersections on either Scott Street or Parkdale Avenue relating to 'protected intersection' upgrades will be addressed through the functional-level design Roadway Modification Application (RMA) process in support of this TIA (see **Appendix O**).

5 Conclusion

Tunney's Pasture is presently a single-use, auto-oriented federal government employment campus. As the subject site is transformed into a mixed-use, transit-supportive and 15-minute community, travel patterns and mode choice among site-generated trips will change significantly.

Based on traffic data collected at the onset of the study, the site historically generated roughly 4,000 to 5,000 person-trips per weekday peak hour prior to the COVID-19 pandemic. As Tunney's Pasture is gradually redeveloped, this new community is expected to generate significantly more person-trips, with estimates of up to 7,542, 6,979 and 6,777 two-way person-trips in 2038 (Phase 1), 2042 (Phases 1 & 2) and 2046 (Phases 1, 2 & 3), respectively, during each weekday peak hour.

Segregating person-trips by the mode share targets established through this TIA process and accounting for existing site-generated vehicular trips observed through traffic count data collected for this study, the proposed development is anticipated to generate up to 955, 335 and 6 'net new' two-way weekday peak hour vehicle-trips in 2038, 2042 and 2046, respectively. Dispersed amongst six access points, the site-generated traffic impacts are shown to be highest during Phase 1 on the immediate boundary street intersections, with impacts decreasing farther away from the site as a result of more potential arterial and regional travel routes.

The high non-auto mode share targets established for this study will be supported by the Complete Streets infrastructure of the proposed internal street network in combination with active transportation linkages planned throughout the site, as well as a host of site-specific Transportation Demand Management (TDM) measures. City initiatives such as the Scott Street Complete Street upgrades, the LRT Stage 2 Western Extension, the 'Parkdale Greenway' active transportation corridor and Holland Avenue cycling infrastructure will contribute to reductions in automobile usage during the weekday peak hours for both background and site-generated trips.

The existing travel patterns associated with Tunney's Pasture are a direct result of employer start and end times, with most trips being inbound in the morning and outbound in the afternoon. With the addition of residential land uses in Phase 1, an increase in site traffic generation of approximately 410 vehicle trips is expected above pre-pandemic traffic count data. When considering that residential-based traffic patterns follow an opposing flow to office-based land uses, the vast majority of this additional traffic does not significantly exacerbate conditions and results in only a 5% increase (75 vehicle trips) in the peak direction of flow. To this end, the site's transformation from a traffic *generator* to a traffic *source* has the positive effect of utilizing available roadway capacity that is opposite from the peak direction of travel which mitigates operational impacts to the adjacent road network.

It is recognized that Phase 1 of the proposed development will involve the loss of parking for office/employment uses which may remain on-site through the redevelopment timeframe of Tunney's Pasture. Understanding the long-term transition of the site to maximize multi-modal transportation options, Canada Lands Company (CLC) is committed to working with the federal tenants at Tunney's Pasture to develop a Parking Management Strategy. This strategy will manage the remaining parking supply and work to satisfy the functional need of the office uses still existing on site without creating spillover demand to adjacent communities.

The Parking Management Strategy will review the implications of this loss of parking supply so that these effects can be better understood and mitigated accordingly, with consideration of the four main strategies outlined below:

1) Determine if the remaining land outside the property parcel that is being disposed to public market can adequately fulfill the office parking demand;
2) Determine if the parking demand currently accommodated by the surface parking lot can be served by other parking lots on the remaining office lands across the Tunney's Pasture site;
3) Determine if additional parking (surface or structured) on the remaining office lands across the Tunney's Pasture site is required; and
4) Establish whether Transportation Demand Management (TDM) measures are required to reduce parking demand in alignment with the remaining parking supply.

To address the intersection capacity and queuing constraints identified through this study, the following mitigation measures are proposed to accommodate the combined impacts of background and site-generated travel demands:

- Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture – Internal queue spillback on the northbound approach identified under Existing conditions is not significantly exacerbated in Phase 1 and is resolved by full build-out. Optimize traffic signal timings, without the need for physical modifications.
- Parkdale & Colombine – Upgrade the existing unsignalized intersection to a 'fully protected' intersection configuration. Introduce an auxiliary northbound left-turn lane with 45 metres of storage and an eastbound left-turn auxiliary lane with 55 metres of storage.
- Parkdale & Scott – Regular signal optimization to address existing queuing constraints on the eastbound and northbound capacity constraints expected with the addition of Phase 1 site-generated traffic and support the reliability of transit routes travelling through this intersection. No geometric changes are required.
- Scott & Holland/Tunney's Pasture – To close the missing link in the cycling network, it is proposed to remove the existing right-turn lane on the north leg of the intersection and reallocate this space to develop a buffered bike lane. The existing through lane would become a shared through-right lane. Regular signal optimization will support improved transit reliability within the study timeframe as well.
- Scott & Goldenrod/Smirle – Incorporate traffic calming measures to mitigate north-south through traffic volumes in alignment with the Scott Street CDP.
- Scott & Sir Frederick Banting/Ross – Upgrade the existing unsignalized intersection to a 'protected intersection' configuration, maintaining the existing auxiliary lane arrangement and incorporate traffic calming measures to mitigate north-south cut-through traffic at this intersection.

The remaining study area intersections were determined to be operating at an acceptable Level of Service (LOS 'E') beyond the 2046 study horizon year, based on the intersection capacity analysis conducted for this study.

Through the intersection capacity and queuing analysis conducted for this study, it was determined that a Roadway Modification Application (RMA) is required to accommodate off-site geometric modifications at the site access intersections to support the redevelopment of Tunney's Pasture, including Parkdale & Colombine, Parkdale & Burnside, Scott & Holland/Tunney's Pasture, Scott & Goldenrod/Smirle, as well as Scott & Sir Frederick Banting/Ross.

A Multi-Modal Level of Service (MMLOS) analysis was conducted for the roadway segments and signalized intersections within the study area. Based on the results of the analysis, it is recommended that the City consider implementing measures, including 'protected intersections' at each of the boundary street intersections, an active transportation corridor with separated space for cyclists and pedestrians on the west side of Parkdale Avenue adjacent to the site (referred to as the 'Parkdale Greenway'), dedicated cycling infrastructure on Holland Avenue, as well as reinstating local bus service within Tunney's Pasture.

A Monitoring Plan was prepared and is attached to this study to support the overall TIA process. This document is intended serve as a guide to track various transportation-related aspects as the site is built out, such as confirming timelines to implement mitigation strategies outlined previously, verifying whether mode share targets are being met, evaluating the effectiveness of the traffic calming measures implemented to support the site's redevelopment, as well as tracking on-site parking occupancy rates. If there is a disconnect between key TIA study parameters and observed data collected as part of the Monitoring Plan, this strategic process provides opportunities to intervene and correct course, as needed.

A Neighbourhood Traffic Calming Strategy is also appended to this TIA to provide the City with potential solutions regarding the mitigation of any existing cut-through traffic issues within communities directly bordering Tunney's Pasture, including Mechanicsville, Hintonburg, Wellington Village and Champlain Park that may be exacerbated by the proposed development.

Based on the findings of this study, it is the overall opinion of Arcadis that the proposed development will integrate well with and can be safely accommodated by the adjacent transportation network, with consideration of the recommendations outlined above.

Appendix A – TIA Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

*Revised per City of Ottawa update to the TIA Guidelines, effective June 14, 2023

1. Description of Proposed Development

Municipal Address	Tunney's Pasture Campus - Various municipal addresses including 120 Parkdale Avenue, 101 & 203 Goldenrod Driveway, as well as 251 Sir Frederick Banting Driveway
Description of Location	The site is generally bound by Kichi Zībī Mīkan to the north, Parkdale Avenue to the east, Scott Street to the south and Northwestern Avenue to the west.



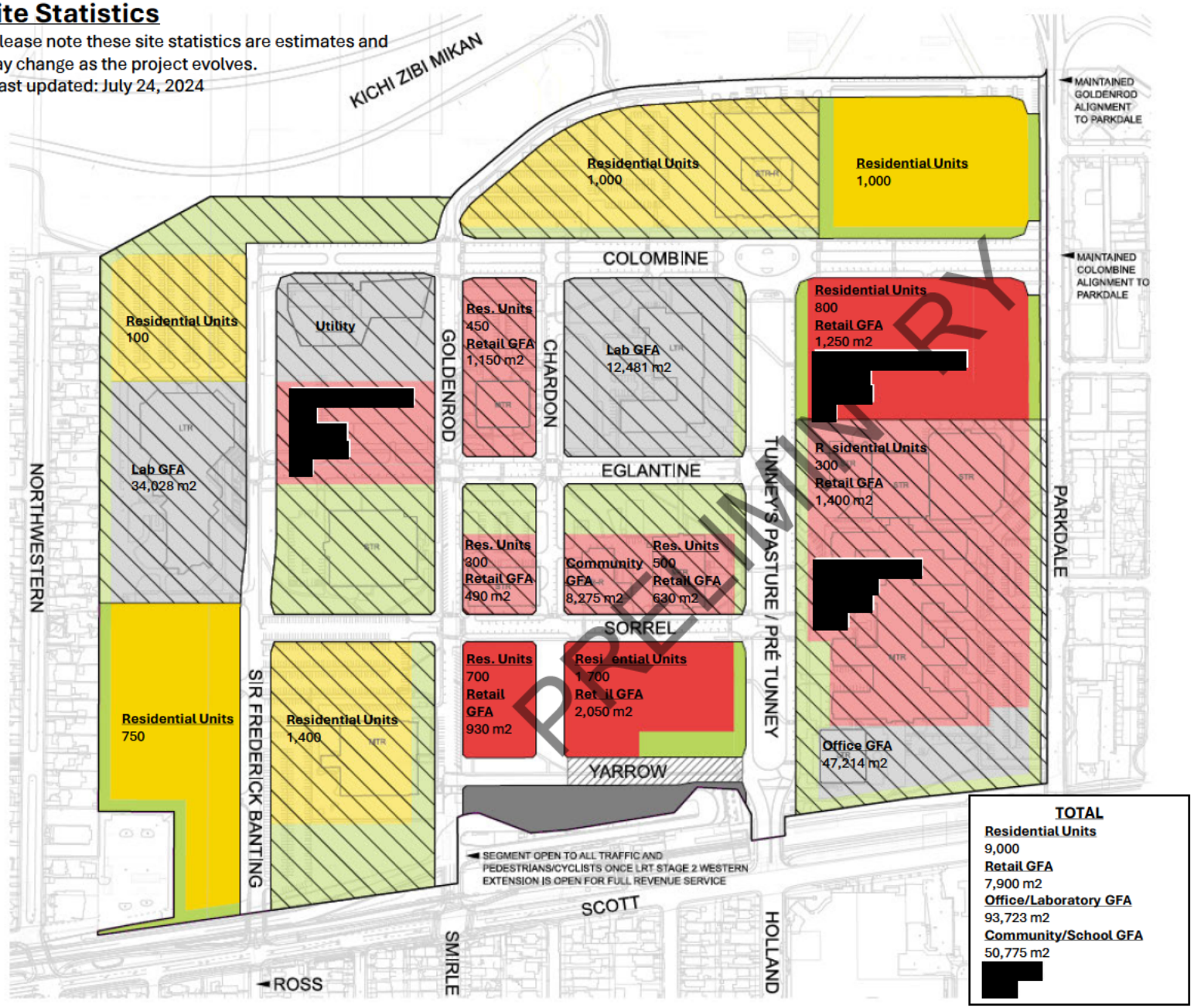
Land Use Classification	Mixed-Use (Residential, Employment & Commercial)
Development Size (units)	~9,000 dwelling units
Development Size (m^2)	Office: 93,723 m^2 GFA Ground-floor Commercial: ~7,900 m^2 GFA

Number of Accesses and Locations	1) Scott Street & Sir Frederick Banting Driveway/Ross Avenue (right-in/right-out) 2) Scott Street & Goldenrod Driveway/Smirle Avenue (mixed traffic to be permitted from Scott St to Tunney's Pasture following Stage 2 LRT and bus loop reconfiguration) 3) Scott Street & Tunney's Pasture Driveway/Holland Avenue (recently-implemented protected intersection) 4) Parkdale & Colombine Driveway 5) Kichi Zībī Mīkan & Goldenrod/Remic Rapids 6) Parkdale & Goldenrod (right-in/right-out)
Phase of Development	3-phase development: 2038, 2042, 2046
Buildout Year	~2046

If available, please attach a sketch of the development or site plan to this form.

Site Statistics

- Please note these site statistics are estimates and may change as the project evolves.
- Last updated: July 24, 2024



TOTAL

Residential Units
9,000
Retail GFA
7,900 m2
Office/Laboratory GFA
93,723 m2
Community/School GFA
50,775 m2

Proposed Land Use Designations	Area (ha)
Residential	10.057
Mixed-Use (Residential, Office, Retail, Community Use)	12.736
Open Space	7.951
Lab/Office/Utility	6.666
Transit Station	0.636
Public Right-of-Way	11.083
TOTAL:	49.129

2. Trip Gen Trigger

Considering the Development's Land Use Type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Land Use Type*	Minimum Development Size (60 person trips)	
Single-Detached[1]	60 units	
Multi-Use Family (Low-Rise)[1]	90 units	
Multi-Use Family (High-Rise)[1]	150 Units	✓
Office[2]	1,400 m^2	✓
Industrial[2]	7,000 m^2	
Fast-food restaurant or coffee shop[2]	110 m^2	
Destination Retail[2]	1,800 m^2	✓
Gas Station or convenience market[2]	90 m^2	

**If the development has a land use type other than what is presented in the table above, estimates of person trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.*

[1] *Table 2, Table 3 & Table 4 TRANS Trip Generation Summary Report*

[2] *ITE Trip Generation Manual 11.1 Ed.*

Based on the above, the Trip Generation Trigger is satisfied.

3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Cross-Town Bikeways?		✓
Is the development in a Design Priority Area (DPA), Transit-oriented Development (TOD) zone or Hub?*	✓	

**DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6) See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.*
Hubs are identified as Protected Major Transit Station Areas (PTMSAs) and identified in Schedule C1-Protected Major Transit Station Areas (PMTSAs).

Based on the above, the Location Trigger is satisfied.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street 80km/hr or greater?		✓
Are there any horizontal/vertical curvatures on a boundary street that limit sight lines at a proposed driveway?		✓
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/suburban conditions?)		✓
Is the proposed driveway within auxiliary lanes of an intersection?		✓
Does the proposed driveway make use of an existing median break that serves an existing site?		✓
Is there a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	✓	
Does the development include a drive-thru facility?		✓

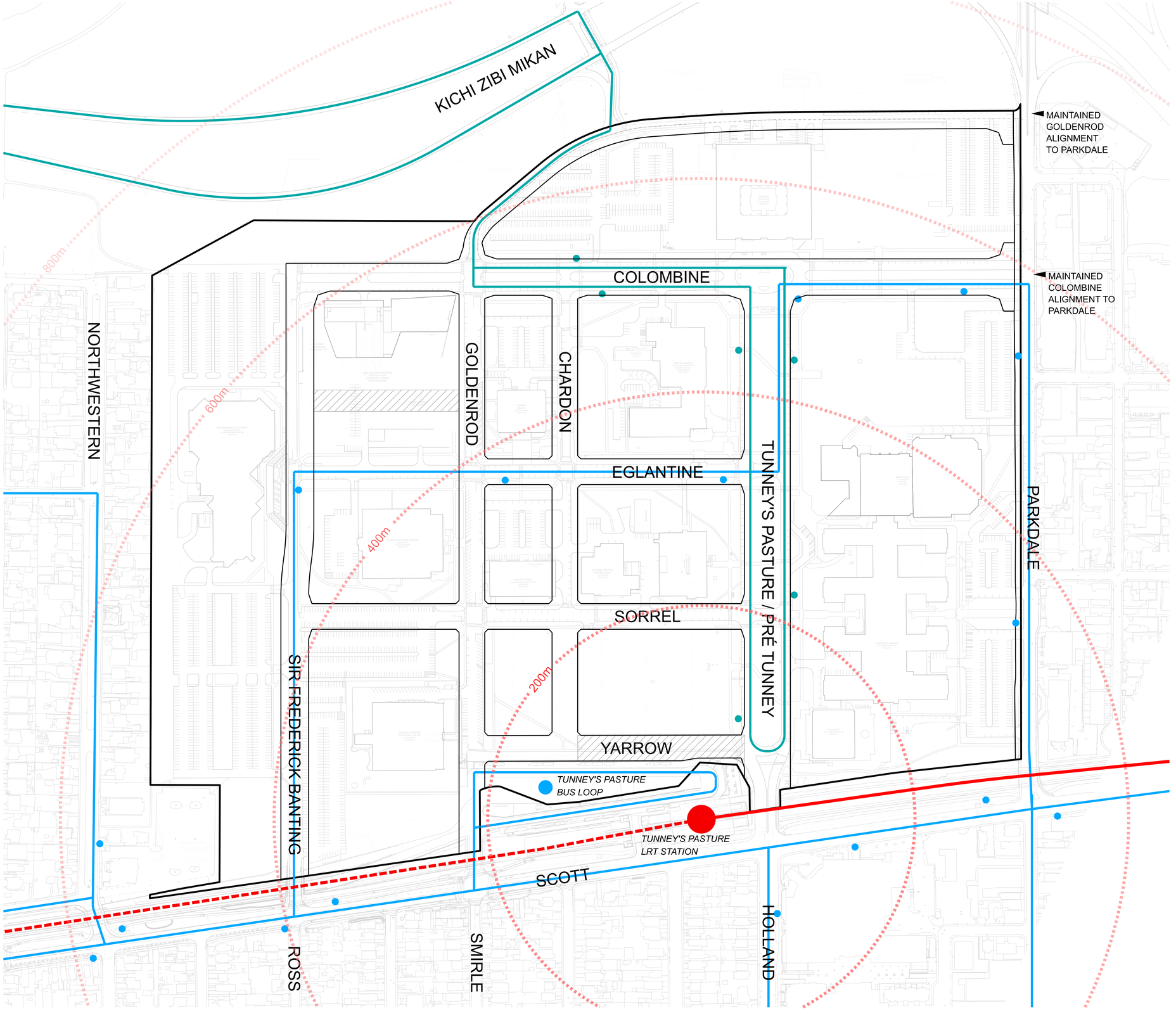
Based on the above, the Safety Trigger is satisfied.

5. Summary

	Yes	No
Does the development satisfy the Trip Generation Trigger?	✓	
Does the development satisfy the Location Trigger?	✓	
Does the development satisfy the Safety Trigger?	✓	

Based on the results of the TIA Screening Form, the Trip Generation, Location and Safety Triggers are satisfied. As such, a TIA is required for the proposed development.

Appendix B – Transit Proximity Study Map



Transit Proximity Study Map

Site Boundary

Proposed Road Network

Right-of-Way

Woonerf Right-of-Way

OC Transpo

Existing Tunney's Pasture LRT Station

Radial Distance from Tunney's Pasture LRT Station (200m intervals)

Existing O-Train LRT Line - Stage 1 (complete)

Future O-Train LRT Line - Stage 2 (under construction)

Existing Tunney's Pasture Bus Loop

Existing Bus Route

Existing Bus Stop

STO

Existing Bus Route

Existing Bus Stop

Notes:
- Proposed road pattern by Arcadis IBI Group, July 2024.
- Future bus routes to be confirmed with OC Transpo/LRT and STO.

Location

TUNNEY'S PASTURE

Date: 2024-09-20

Drafted By: SD

Scale: 0 — 100m

North

ARCADIS

Appendix C – Traffic Count Data

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



Remic Rapids/Tunney's Pasture & Sir John A. MacDonald Parkway E/B — **Ottawa, ON**

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, May 16, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15

Remic Rapids
Sir John A. MacDonald Pkwy
Sir John A. MacDonald Pkwy
Tunney's Pasture

(A) 86 | 1044 | 958
86 | 0 | 0 | 85 | 1

0
4468
4468 (B)
0 | 79 | 3790 | 599

Total Volume
5650
Approaching Intersection
(A+B+C+D)

(D) 0
4093
4093
0 | 0 | 0 | 0 | 0

0 | 0 | 878 | 218 | 1096
599
1096 (C)
1695

All Pedestrian Crossings
0
1
115
Total
117
1

AM Peak Hour Flow Diagram

Remic Rapids
Sir John A. MacDonald Pkw
Sir John A. MacDonald Pkw
Tunney's Pasture

(A) 10 | 32 | 22
0 | 0 | 10 | 0 | 10

Pedestrian Crossings
During AM Peak Hour
0
0 + 6
1

0
(D) 0

1390 | 1390 | 1164 | 223 | 3
1431
(A+B+C+D)
0 | 0 | 0 | 0 | 0 | 1186

1390 (B)
1186

0 | 0 | 19 | 12 | 31
223
(C) 31
254

Summary - AM Peak Hr.

Peak Hr.	0745-0845
Volume	1431
PHF	0.87

PM Peak Hour Flow Diagram

Remic Rapids
Sir John A. MacDonald Pkw
Sir John A. MacDonald Pkw
Tunney's Pasture

(A) 6 | 263 | 257
0 | 0 | 6 | 0 | 6

Pedestrian Crossings
During PM Peak Hour
0
0 + 1
0

0
(D) 0

349 | 349 | 306 | 25 | 18
648
(A+B+C+D)
0 | 0 | 0 | 0 | 0 | 366

349 (B)
366

0 | 0 | 239 | 54 | 293
25
(C) 293
318

Summary - PM Peak Hr.

Peak Hr.	1500-1600
Volume	648
PHF	0.85

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



Remic Rapids & Sir John A. MacDonald Parkway W/B — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, May 16, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15

Remic Rapids
Sir John A. MacDonald Pkwy
Sir John A. MacDonald Pkwy

(A) 80 | 169 | 89
80 → 39 | 41 | 0 | 0

7131
7131
0 → 0 | 0 | 0 | 0
0 (B)

Total Volume
7309
Approaching Intersection
(A+B+C+D)

(D) 6269
6269
60 | 6161 | 48 | 0 → 6269
6269
0

0 | 931 | 29 | 0 → 960
89
960 (C)
1049

All Pedestrian Crossings
2
1 | 115
Total 118 | 0

AM Peak Hour Flow Diagram

Remic Rapids
Sir John A. MacDonald Pkw

(A) 9 | 16 | 7
9 → 5 | 4 | 0 | 0

Pedestrian Crossings During AM Peak Hour
0
0 + 8
0

495
495 | 0 → 0 | 0 | 0
0 (B)

512 (A+B+C+D)

(D) 473
2 → 465 | 473 | 473
6
0

0
Sir John A. MacDonald Pkw

Remic Rapids
0 → 0 | 25 | 5 | 0 → 30
10 (C) 30
40

Summary - AM Peak Hr.	
Peak Hr.	0815-0915
Volume	512
PHF	0.88

PM Peak Hour Flow Diagram

Remic Rapids
Sir John A. MacDonald Pkw

(A) 7 | 13 | 6
7 → 4 | 3 | 0 | 0

Pedestrian Crossings During PM Peak Hour
0
1 + 2
0

1828
1828 | 0 → 0 | 0 | 0
0 (B)

1849 (A+B+C+D)

(D) 1506
3 → 1491 | 1506 | 1506
12
0

0
Sir John A. MacDonald Pkw

Remic Rapids
0 → 0 | 333 | 3 | 0 → 336
15 (C) 336
351

Summary - PM Peak Hr.	
Peak Hr.	1545-1645
Volume	1849
PHF	0.96

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



Parkdale Avenue & Sir John A. MacDonald On/Off Ramps — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

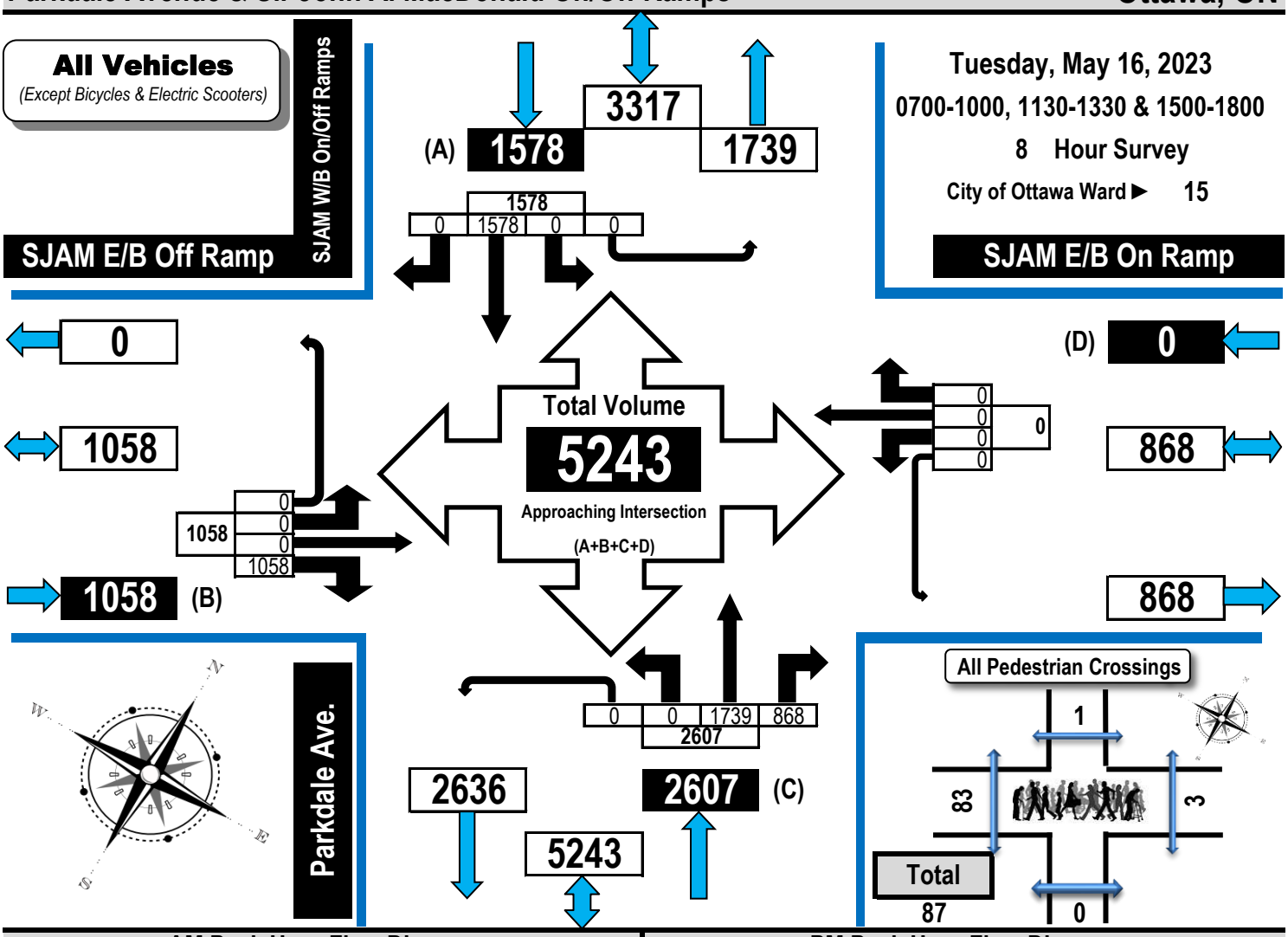
Tuesday, May 16, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15

SJAM W/B On/Off Ramps

SJAM E/B Off Ramp

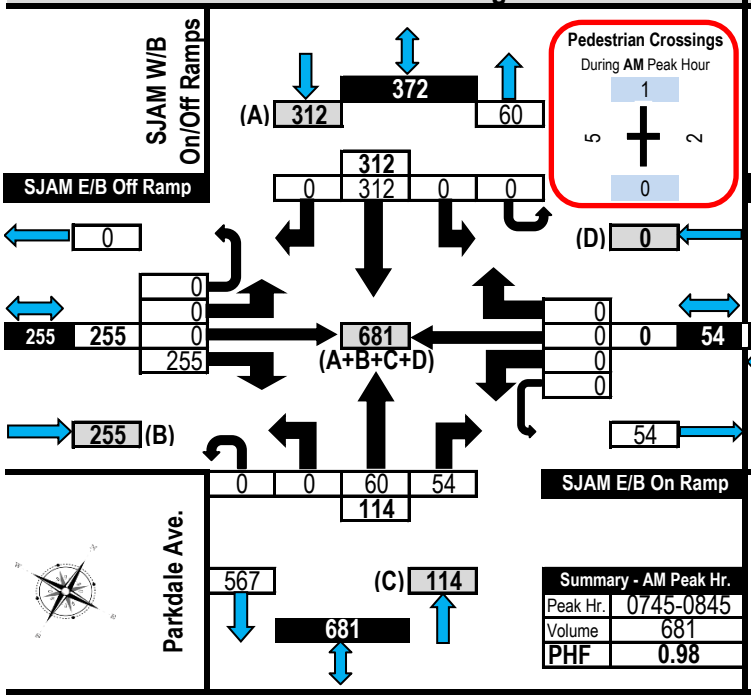
SJAM E/B On Ramp

Parkdale Ave.



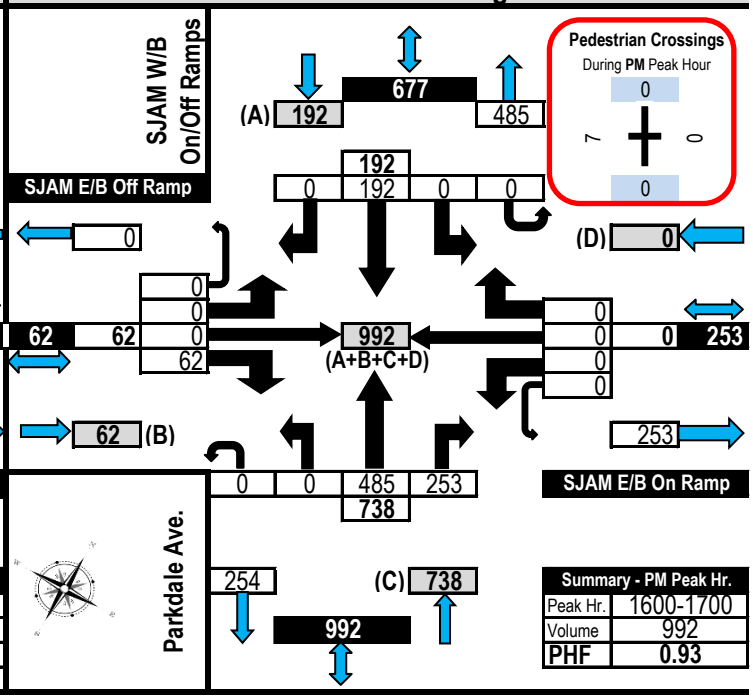
All Pedestrian Crossings

AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0745-0845
Volume	681
PHF	0.98

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1600-1700
Volume	992
PHF	0.93

ACCURATE TRUSTED TRAFFIC DATA

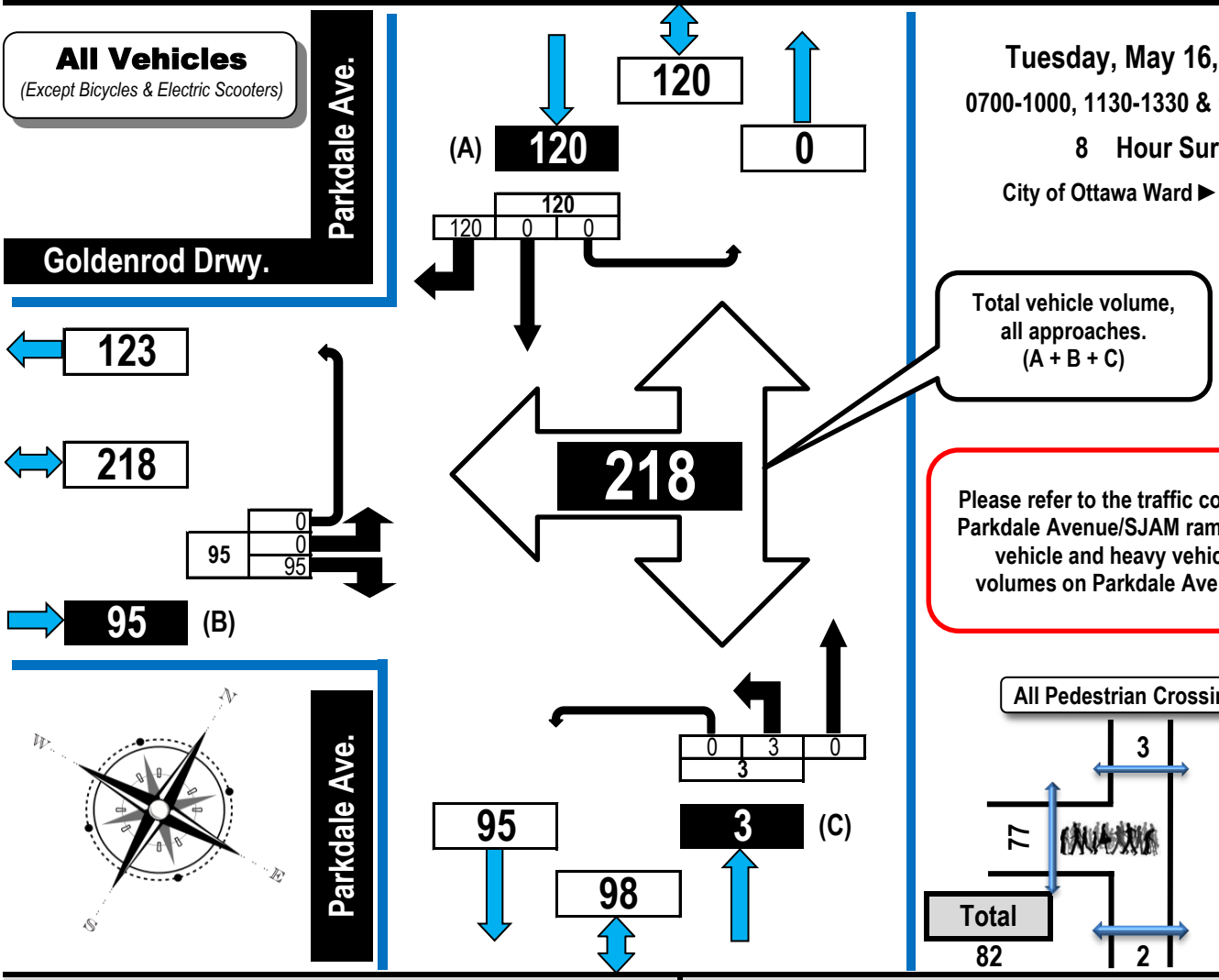
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



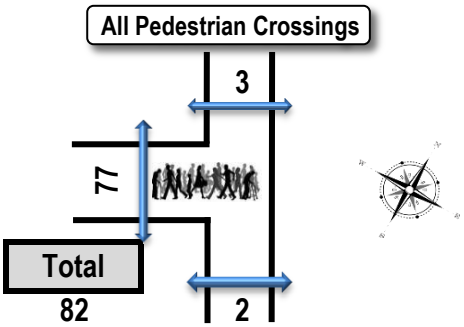
Goldenrod Driveway & Parkdale Avenue — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

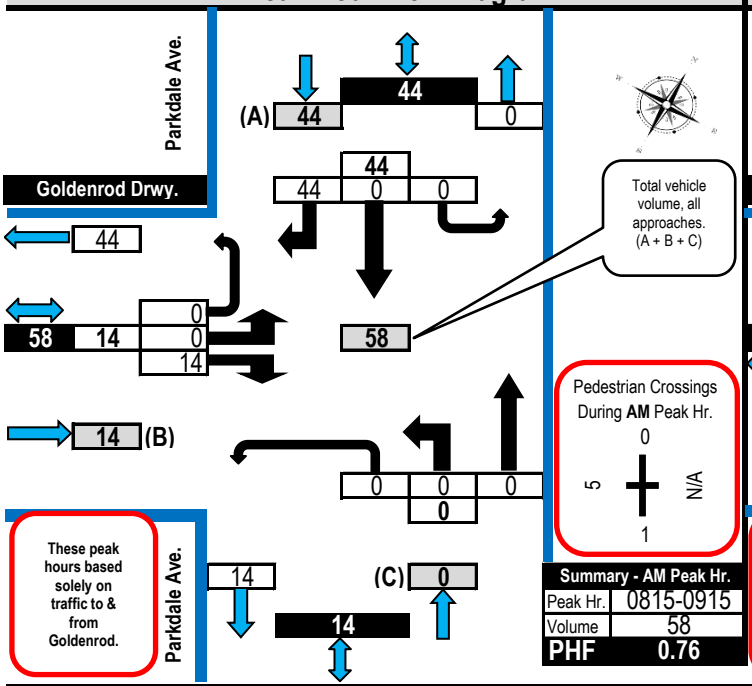
Tuesday, May 16, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 15



Please refer to the traffic count at Parkdale Avenue/SJAM ramps for vehicle and heavy vehicle volumes on Parkdale Avenue.

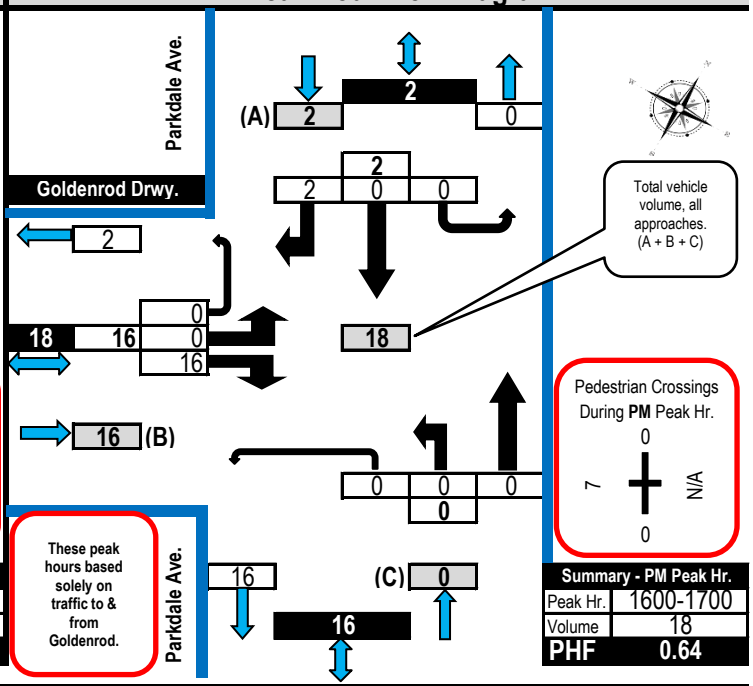


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0815-0915
Volume	58
PHF	0.76

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1600-1700
Volume	18
PHF	0.64

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



Emmerson Avenue & Parkdale Avenue — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Thursday, May 18, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 15

Parkdale Ave.

(A) 2606 | 5393 | 2787

2606
2507 | 98 | 1

Total vehicle volume, all approaches. (A + C + D)

5543

Emmerson Ave.

75 | 81 | 0 | 156 (D) 156

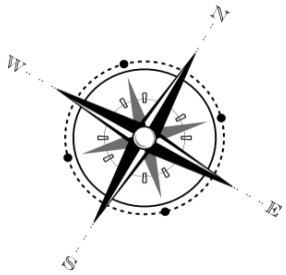
323

167

1 | 2711 | 69
2781

2589 | 2781 (C) | 5370

All Pedestrian Crossings
22 | 22
Total 69 | 25



AM Peak Hour Flow Diagram

Parkdale Ave.

(A) 527 | 642 | 115

527
508 | 19 | 0

Pedestrian Crossings During AM Peak Hr.
0
N/A + 0
4

(D) 17

Total vehicle volume, all approaches. (A + C + D)

653 (A+C+D)

11
6 | 17 | 41
0

24

0 | 104 | 5
109

514 | (C) 109
623

Emmerson Ave.

Summary - AM Peak Hr.	
Peak Hr.	0730-0830
Volume	653
PHF	0.93

PM Peak Hour Flow Diagram

Parkdale Ave.

(A) 276 | 1001 | 725

276
266 | 10 | 0

Pedestrian Crossings During PM Peak Hr.
5
N/A + 1
9

(D) 15

Total vehicle volume, all approaches. (A + C + D)

1017 (A+C+D)

8
7 | 15 | 34
0

19

0 | 717 | 9
726

273 | (C) 726
999

Emmerson Ave.

Summary - PM Peak Hr.	
Peak Hr.	1630-1730
Volume	1017
PHF	0.96

ACCURATE TRUSTED TRAFFIC DATA

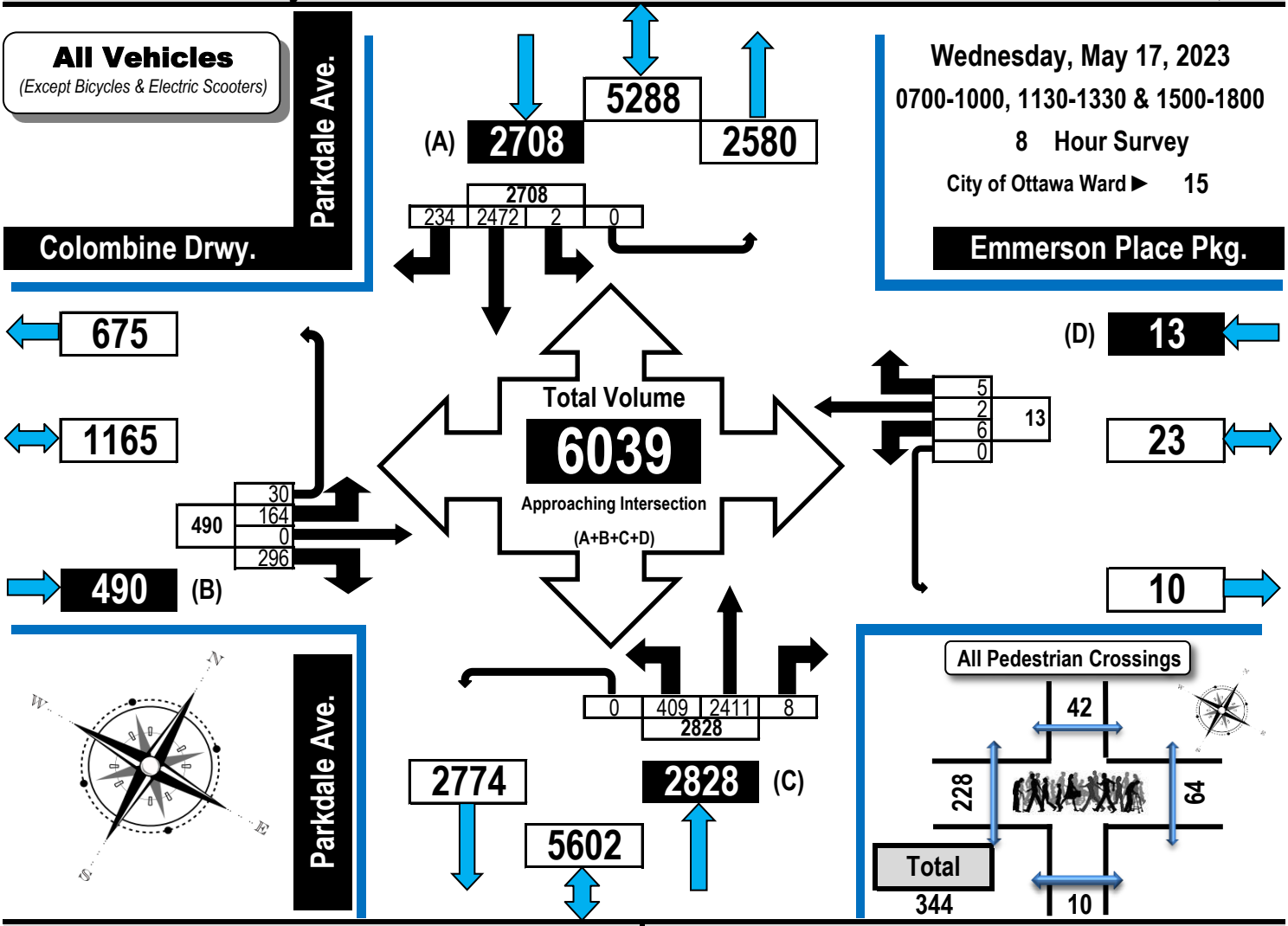
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



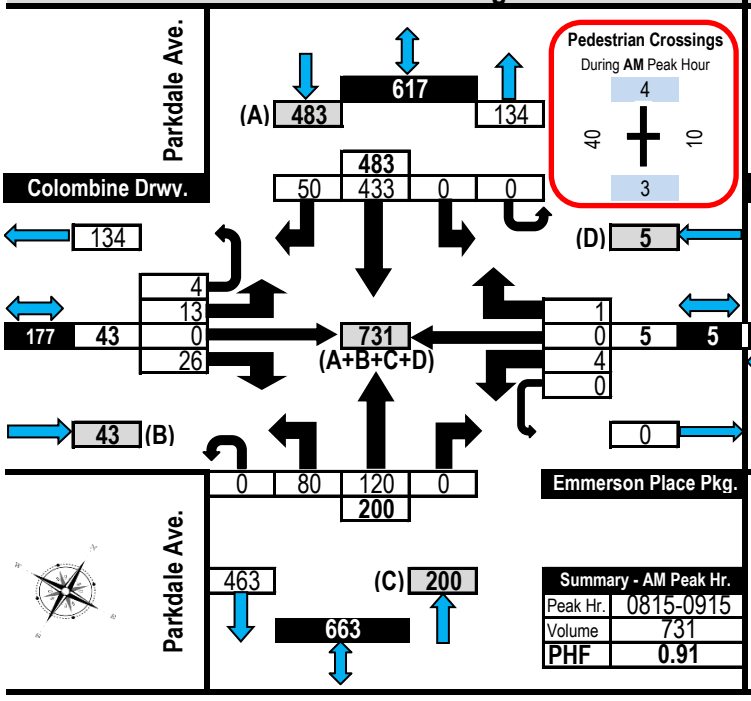
Colombine Driveway & Parkdale Avenue — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Wednesday, May 17, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 15

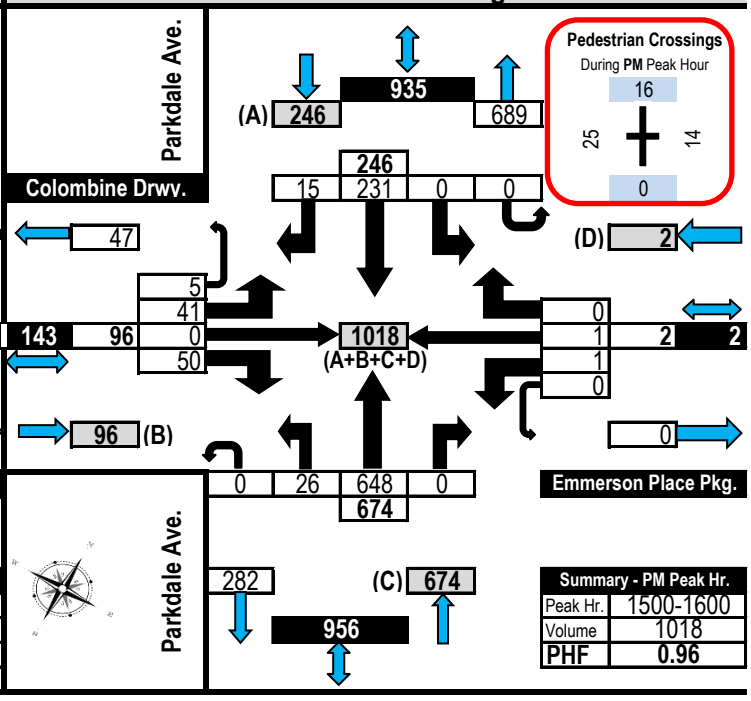


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0815-0915
Volume	731
PHF	0.91

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1500-1600
Volume	1018
PHF	0.96

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

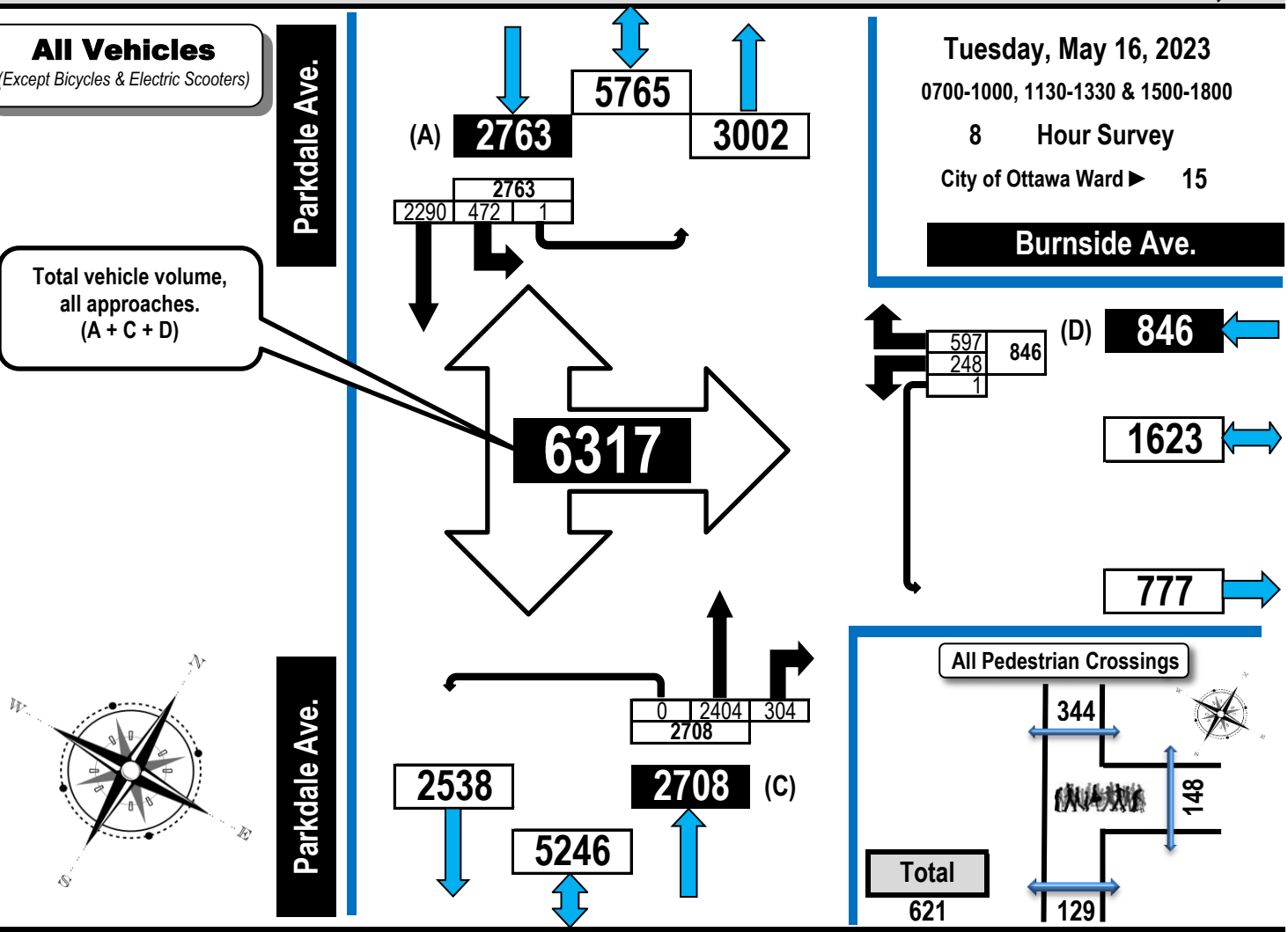


Burnside Avenue & Parkdale Avenue — Ottawa, ON

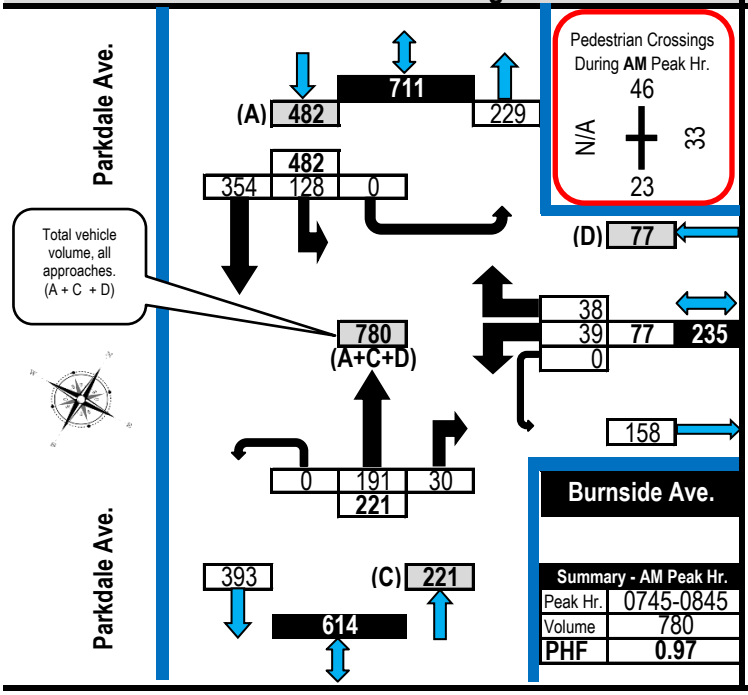
All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, May 16, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 15

Total vehicle volume, all approaches. (A + C + D)

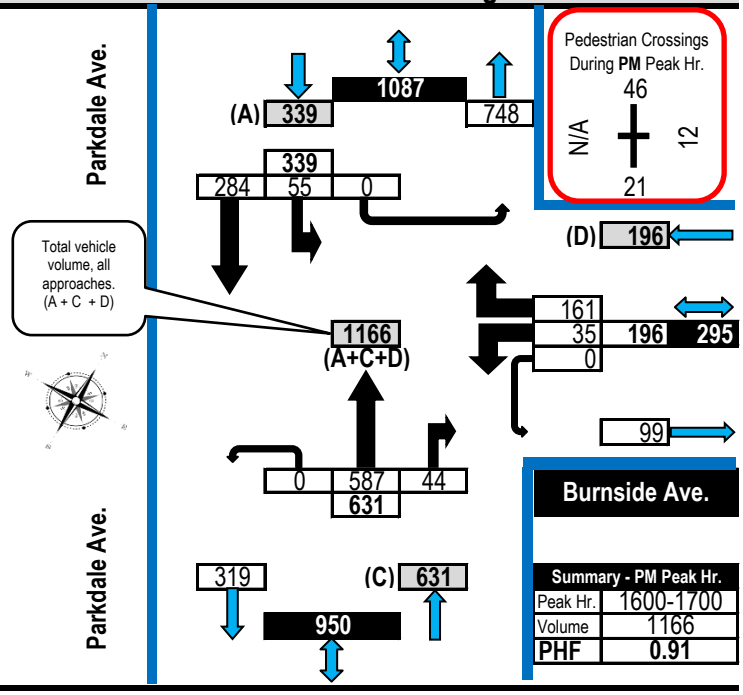


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0745-0845
Volume	780
PHF	0.97

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1600-1700
Volume	1166
PHF	0.91

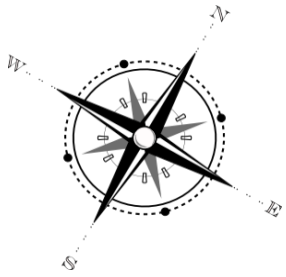
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

Lyndale Avenue & Parkdale Avenue — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

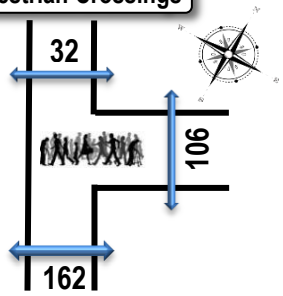
Thursday, May 11, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 15

Total vehicle volume, all approaches. (A + C + D)



(A)	2750	5624	2874
	2722	28	0
(D)	119	29	90	0
	303		
	184		
(C)	3001	0	2845	156
	2812		
	5813		
	5870		

All Pedestrian Crossings



Total: 300

AM Peak Hour Flow Diagram

Total vehicle volume, all approaches. (A + C + D)



(A)	369	629	260
	367	369	2	0
(D)	17	2	15	17	43
	26		
	668 (A+C+D)		
	664	0	258	282	24
(C)	282	382		

Pedestrian Crossings During **AM** Peak Hr.: 4 / N/A + 12 / 27

Summary - AM Peak Hr.

Peak Hr.	0815-0915
Volume	668
PHF	0.87

PM Peak Hour Flow Diagram

Total vehicle volume, all approaches. (A + C + D)



(A)	407	986	579
	402	407	5	0
(D)	14	4	10	14	39
	25		
	1016 (A+C+D)		
	1007	0	575	595	20
(C)	595	412		

Pedestrian Crossings During **PM** Peak Hr.: 4 / N/A + 22 / 20

Summary - PM Peak Hr.

Peak Hr.	1645-1745
Volume	1016
PHF	0.97

ACCURATE TRUSTED TRAFFIC DATA

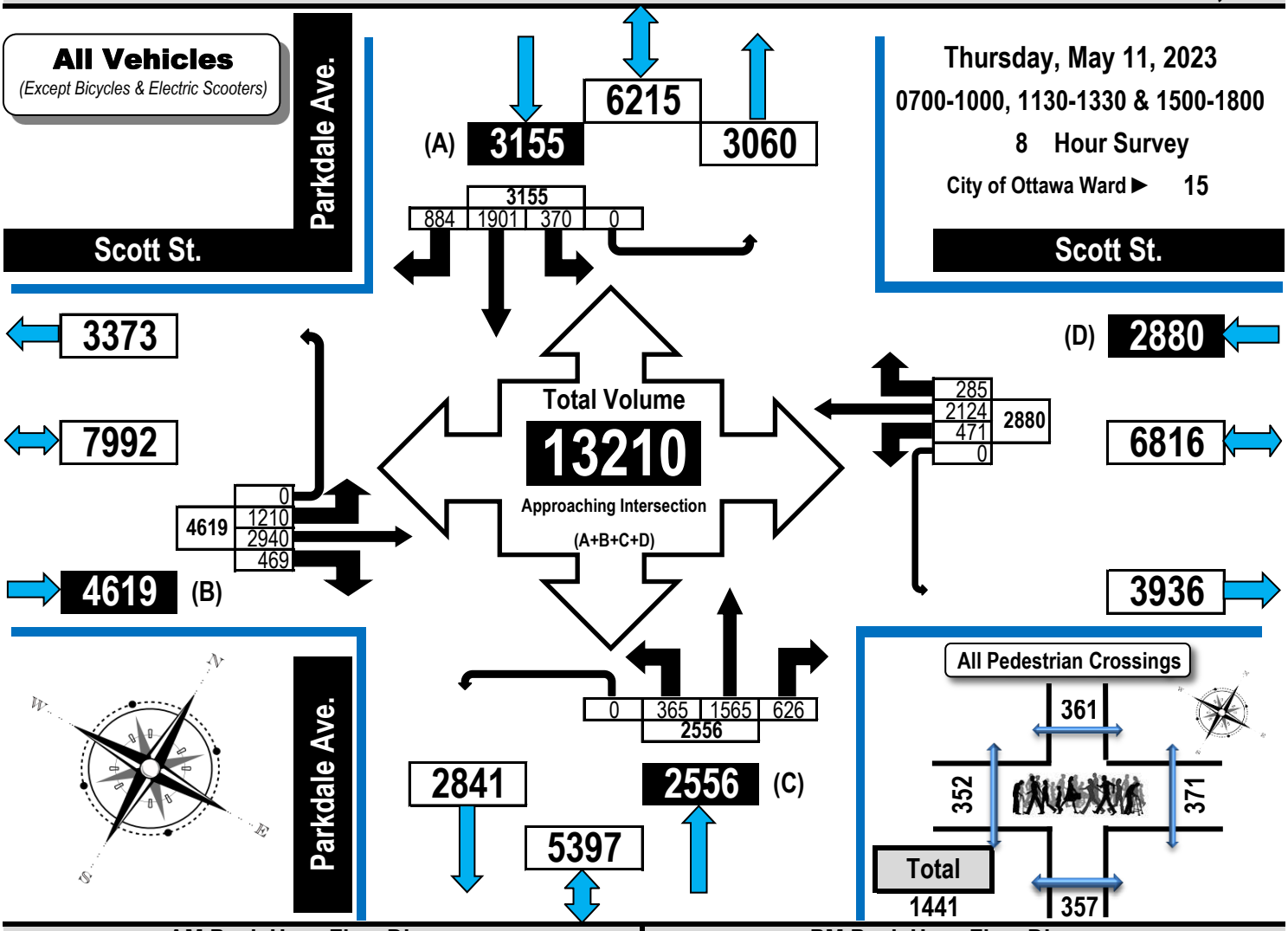
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



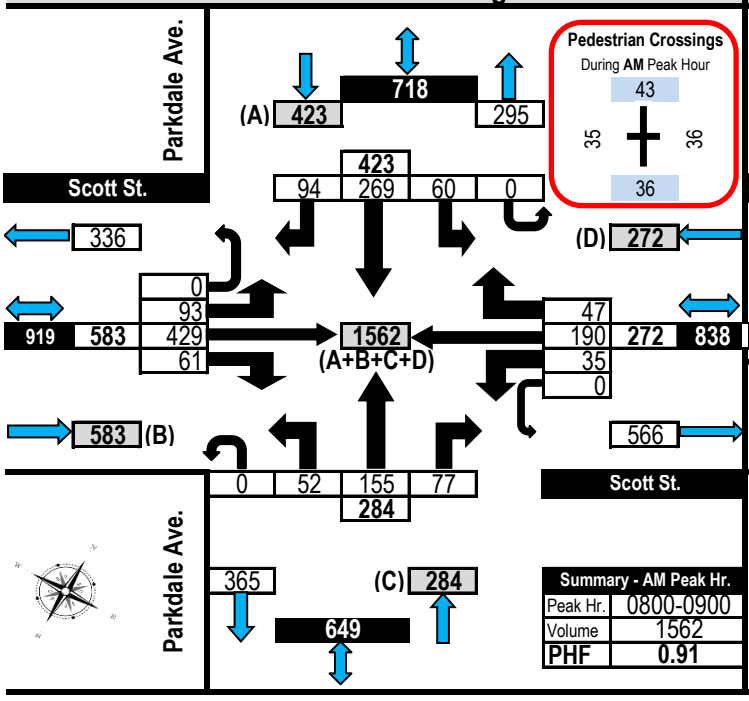
Parkdale Avenue & Scott Street — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Thursday, May 11, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15

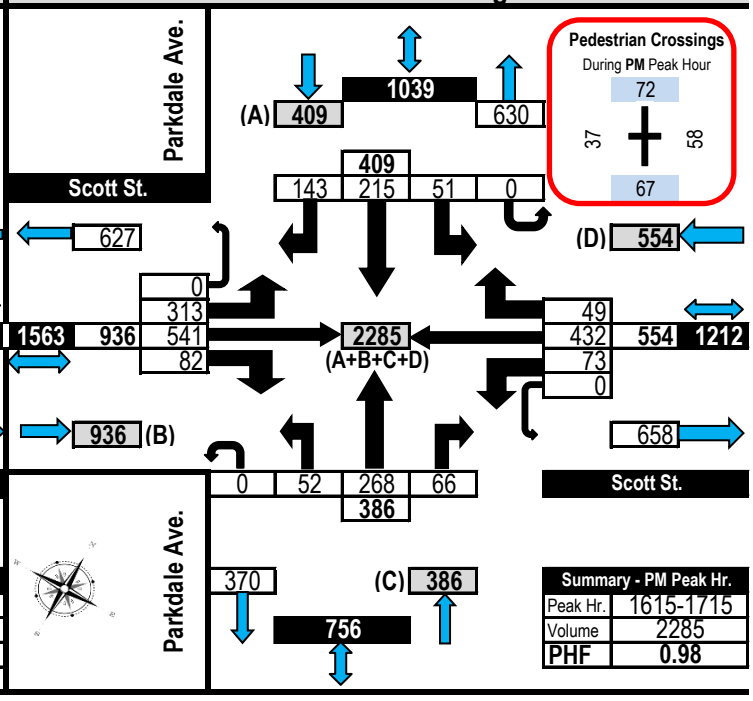


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	1562
PHF	0.91

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1615-1715
Volume	2285
PHF	0.98

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



Holland Avenue/Tunney's Pasture Driveway & Scott Street — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, May 30, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15

Tunney's Pasture Drwy.
Scott St.
Scott St.
Holland Ave.

(A) 1029 — 2069 — 1040
1029: 94 | 695 | 240 | 0

3367
6989
3622: 0 | 117 | 2934 | 571
3622 (B)

Total Volume
10692
Approaching Intersection
(A+B+C+D)

(D) 3452
172 | 2471 | 809 | 0 = 3452
7662
4210

0 | 802 | 751 | 1036
2589
2075
2589 (C)
4664

All Pedestrian Crossings
1032
1251
1292
Total 4359
784

AM Peak Hour Flow Diagram

Tunney's Pasture Drwy.
Scott St.
(A) 87 — 266 — 179
87: 17 | 51 | 19 | 0
Pedestrian Crossings During AM Peak Hour: 149 / 190 + 180 / 98
352
(D) 328
0 | 18 | 437 | 70 = 525
877
1305 (A+B+C+D)
24 | 226 | 78 | 0 = 328
903
525 (B)
575
Scott St.
Holland Ave.
0 | 109 | 137 | 119
365
199
(C) 365
564

Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	1305
PHF	0.94

PM Peak Hour Flow Diagram

Tunney's Pasture Drwy.
Scott St.
(A) 267 — 438 — 171
267: 18 | 191 | 58 | 0
Pedestrian Crossings During PM Peak Hour: 152 / 198 + 140 / 112
689
(D) 723
0 | 13 | 478 | 65 = 556
1245
2024 (A+B+C+D)
22 | 548 | 153 | 0 = 723
1478
556 (B)
755
Scott St.
Holland Ave.
0 | 123 | 136 | 219
478
409
(C) 478
887

Summary - PM Peak Hr.	
Peak Hr.	1600-1700
Volume	2024
PHF	0.91

ACCURATE TRUSTED TRAFFIC DATA

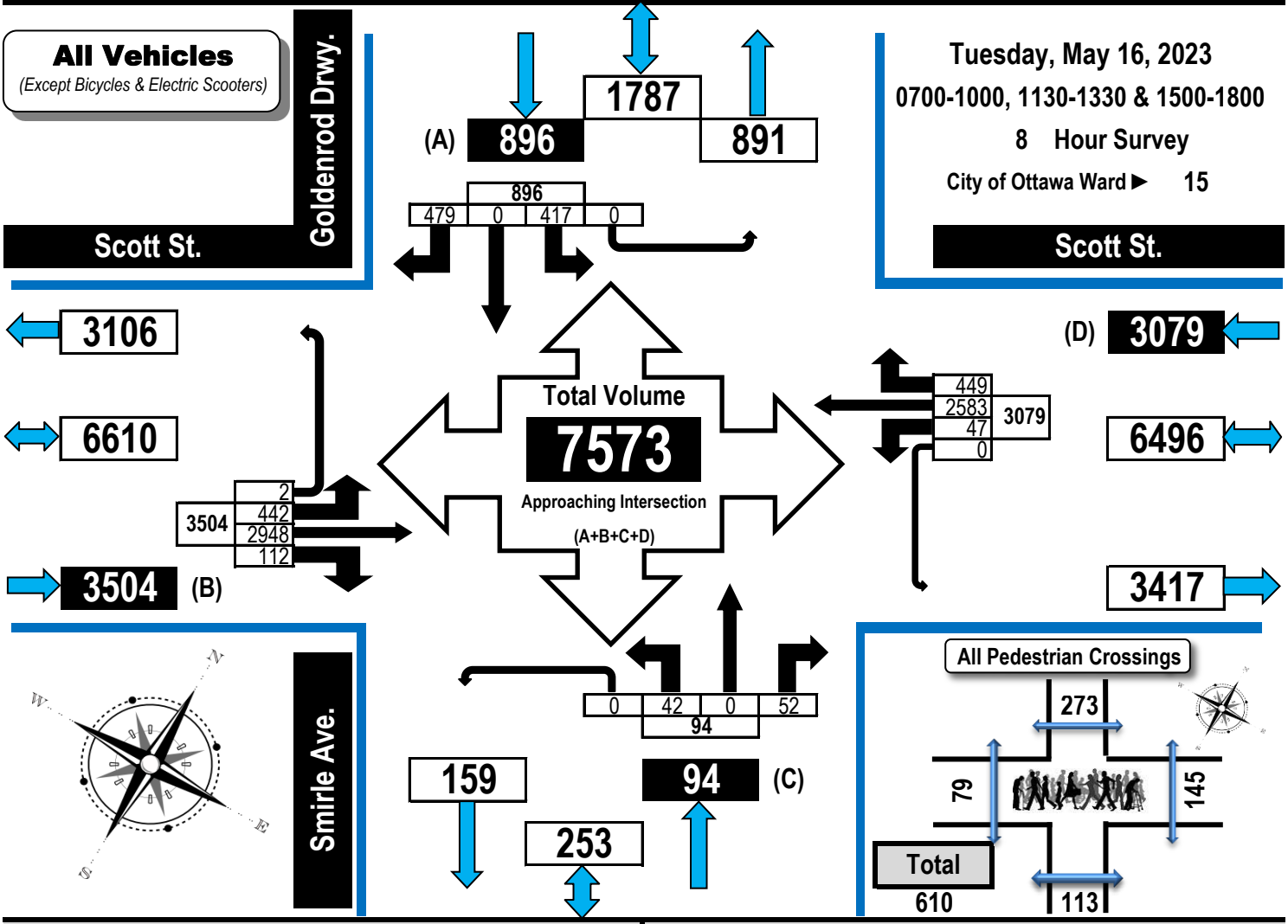
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



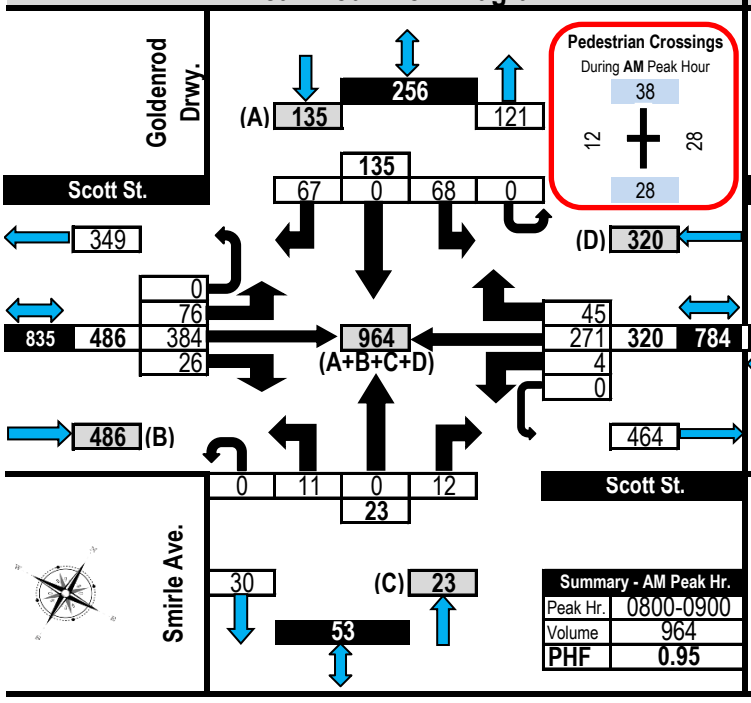
Goldenrod Driveway/Smirle Avenue & Scott Street — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

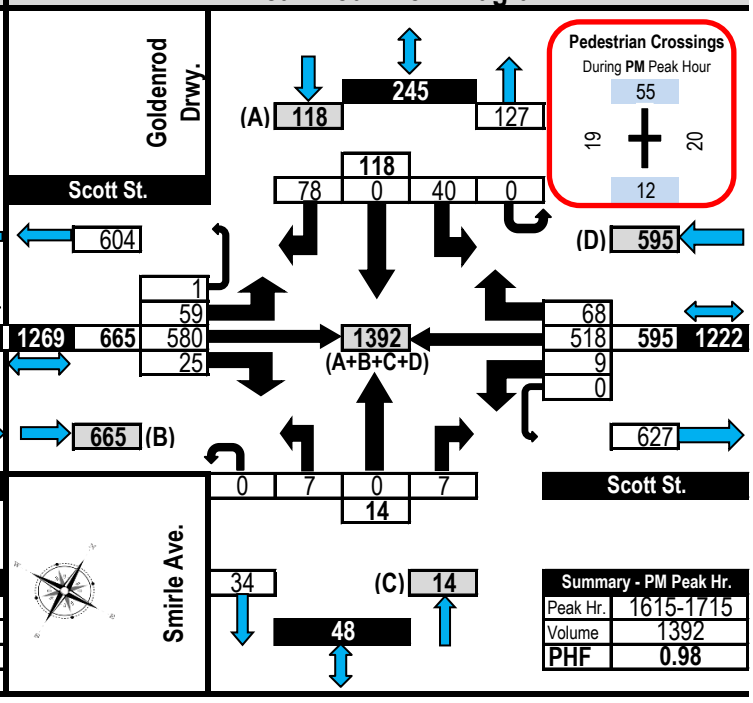
Tuesday, May 16, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 15



AM Peak Hour Flow Diagram



PM Peak Hour Flow Diagram



ACCURATE TRUSTED TRAFFIC DATA

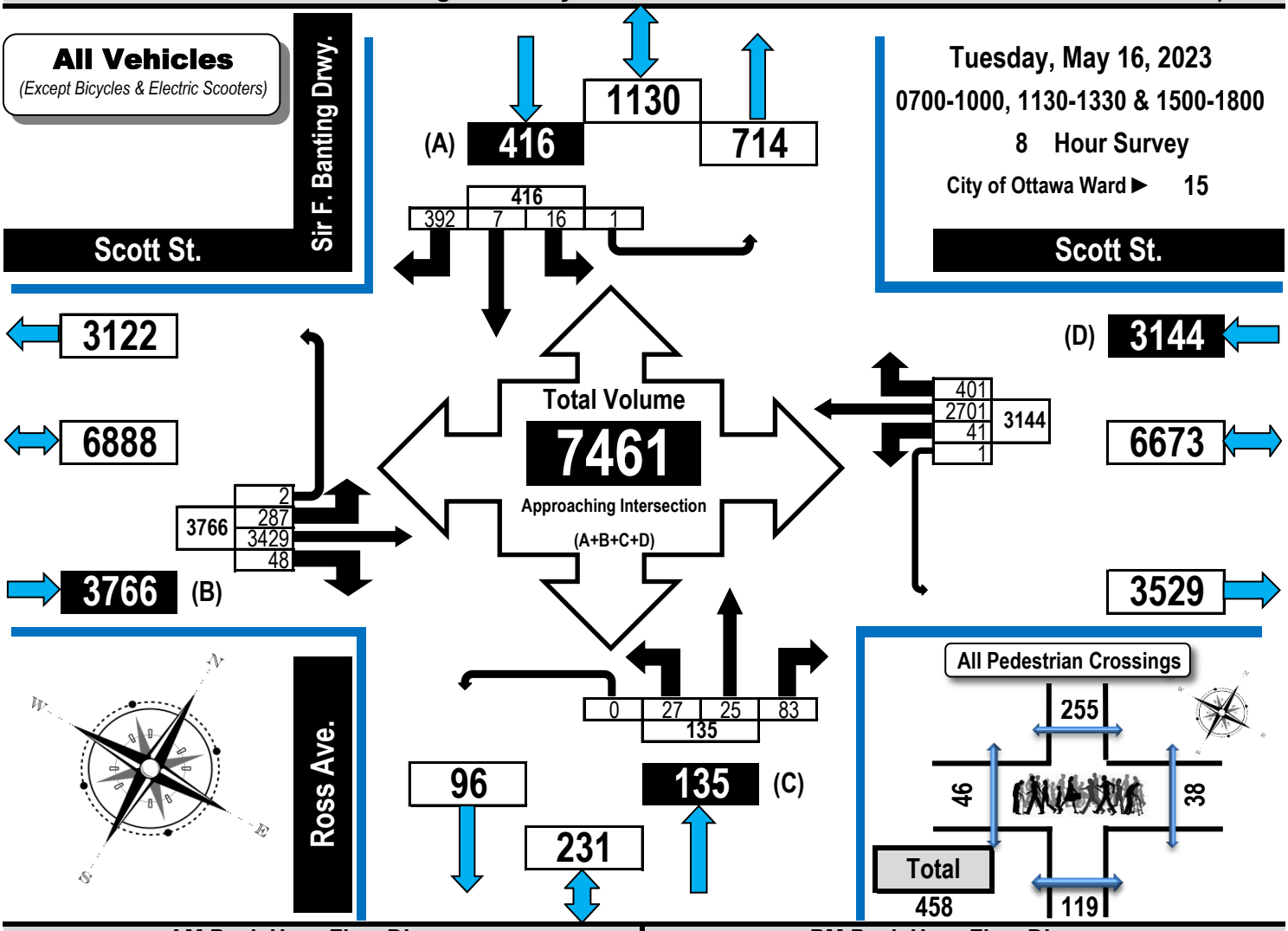
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



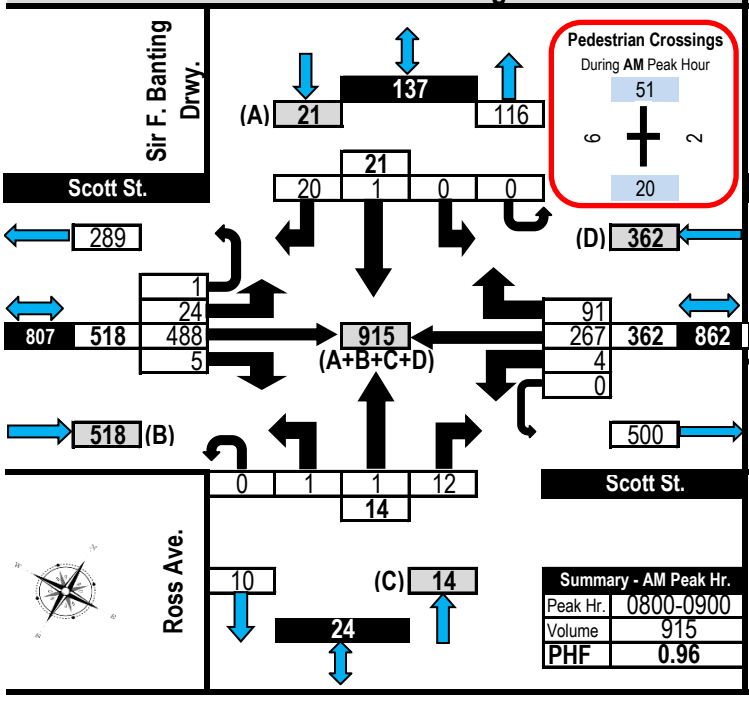
Ross Avenue/Sir Frederick Banting Driveway & Scott Street — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, May 16, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 15

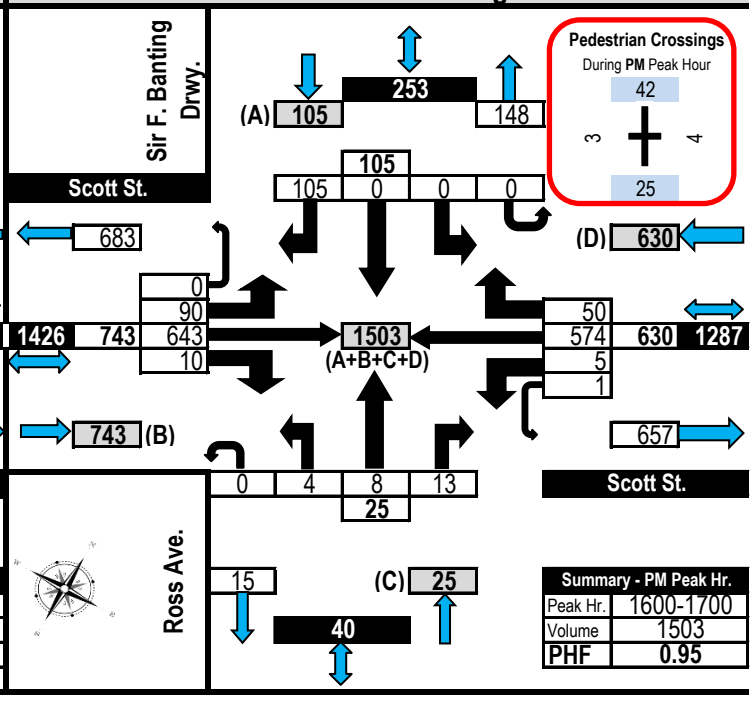


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	915
PHF	0.96

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1600-1700
Volume	1503
PHF	0.95

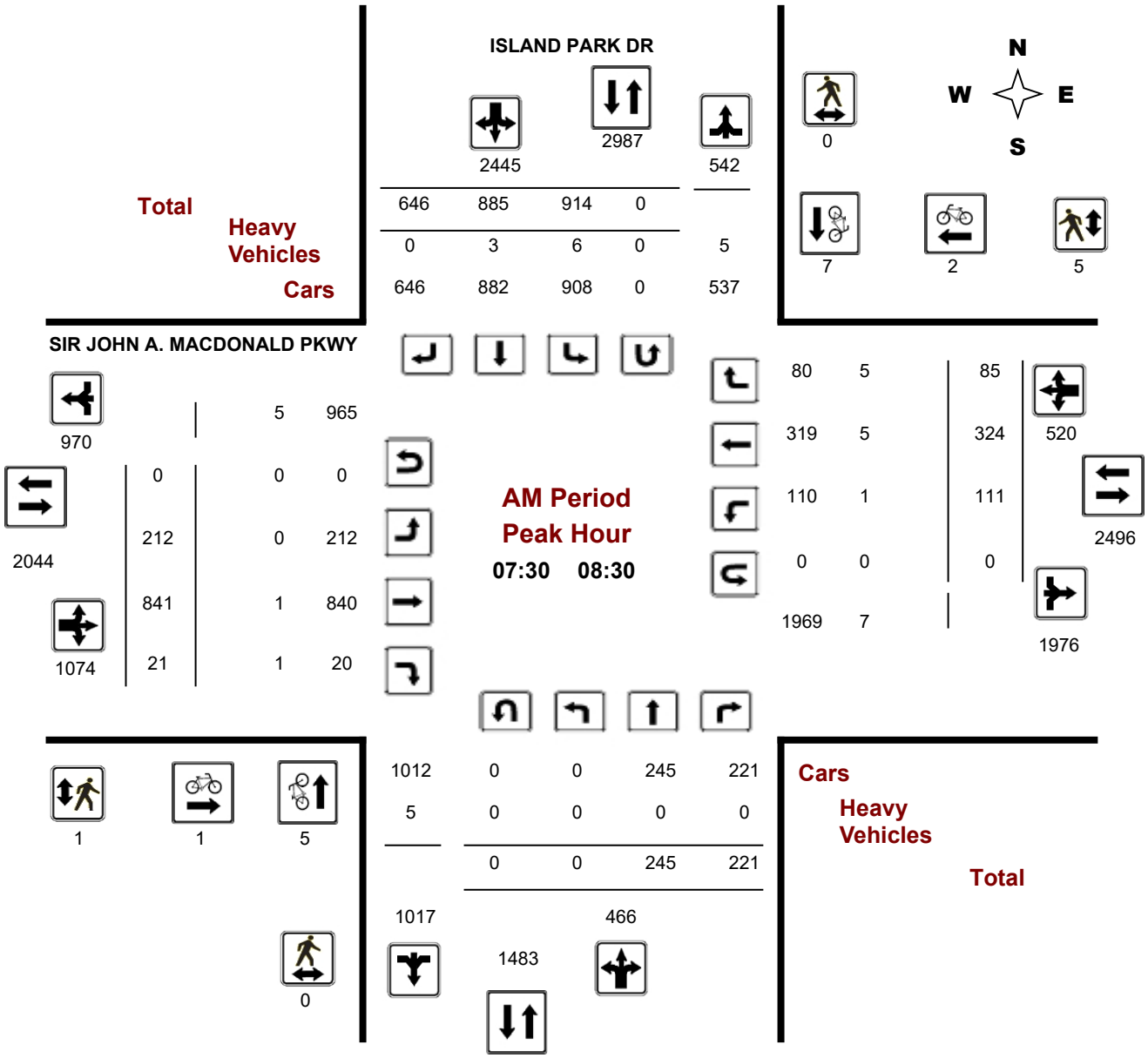
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

SIR JOHN A. MACDONALD PKWY @ ISLAND PARK DR

Survey Date: Tuesday, March 25, 2025 **WO No:** 42595

Start Time: 07:00 **Device:** Miovision



Comments:

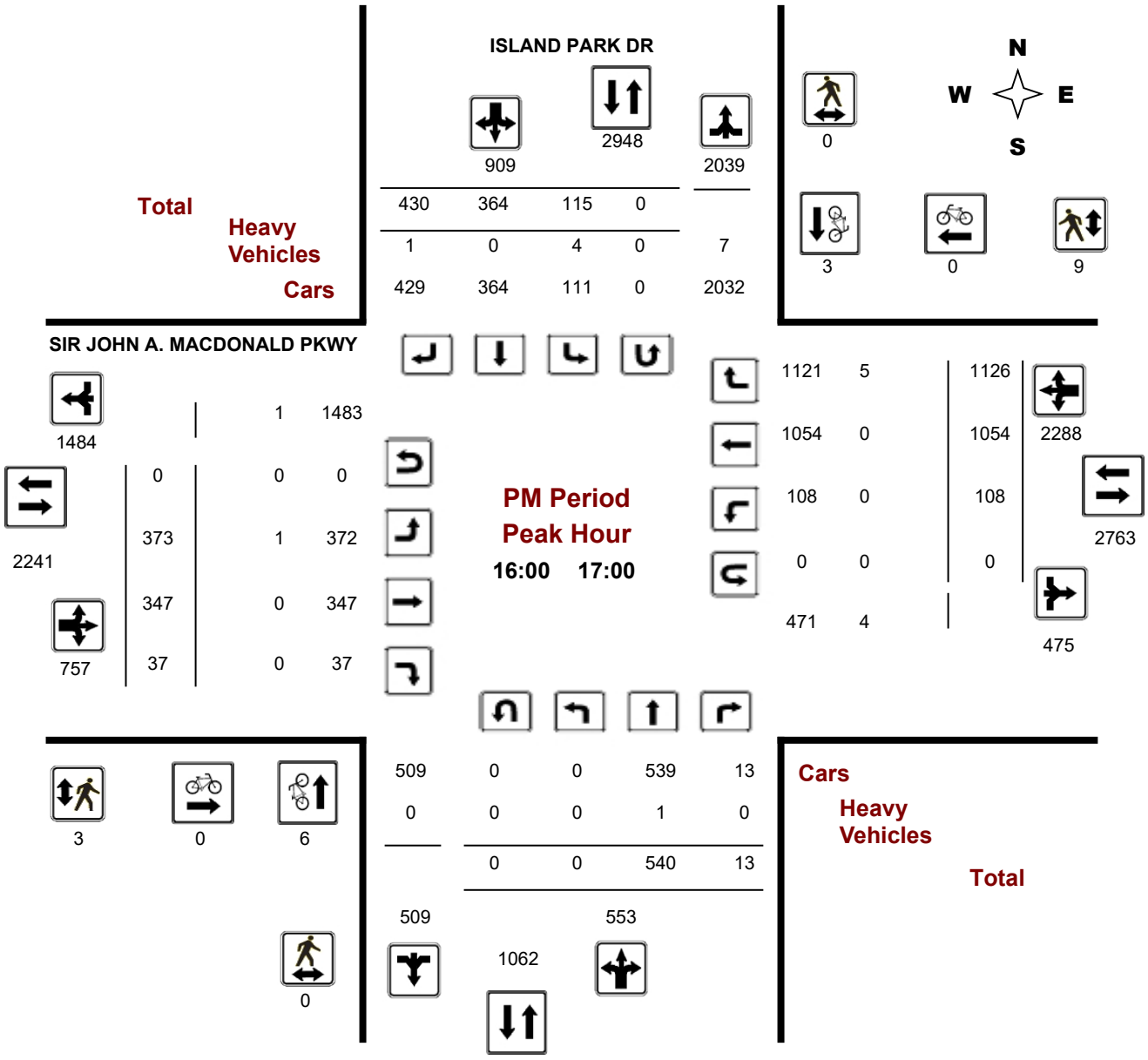
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

SIR JOHN A. MACDONALD PKWY @ ISLAND PARK DR

Survey Date: Tuesday, March 25, 2025 **WO No:** 42595

Start Time: 07:00 **Device:** Miovision



Comments:

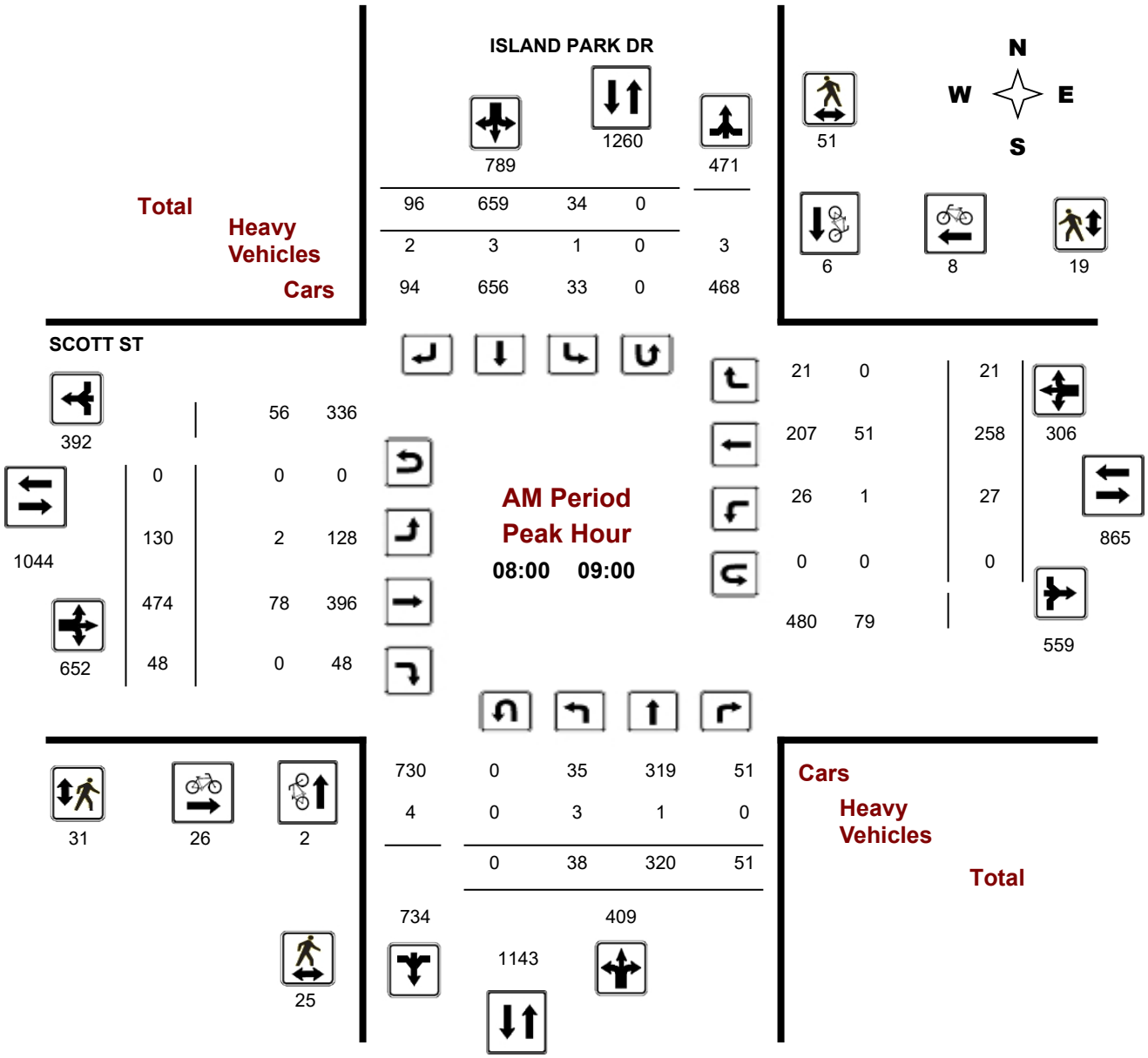
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ISLAND PARK DR @ SCOTT ST

Survey Date: Tuesday, April 01, 2025
Start Time: 07:00

WO No: 42604
Device: Miovision



Comments:

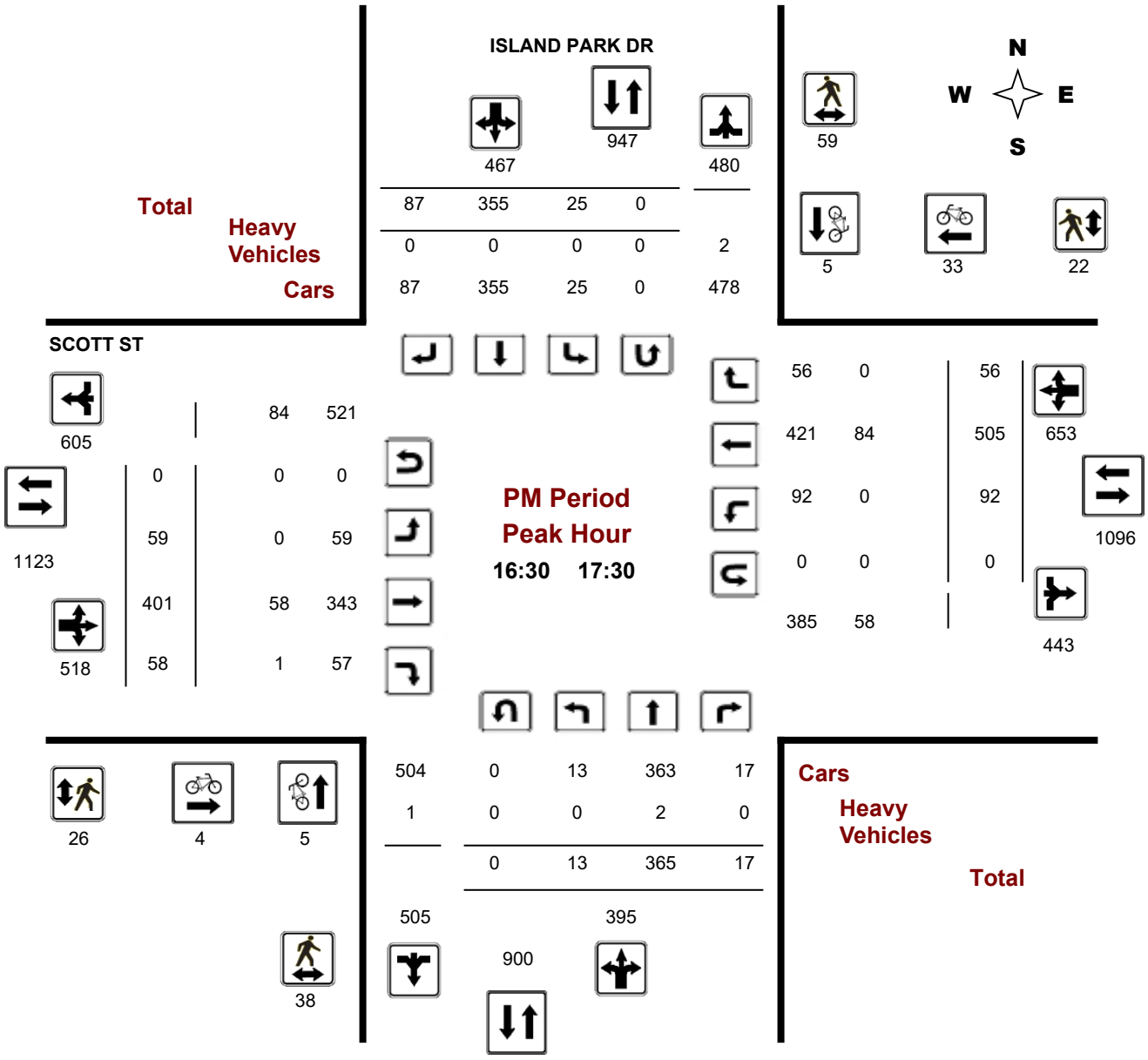
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ISLAND PARK DR @ SCOTT ST

Survey Date: Tuesday, April 01, 2025
Start Time: 07:00

WO No: 42604
Device: Miovision



Comments:

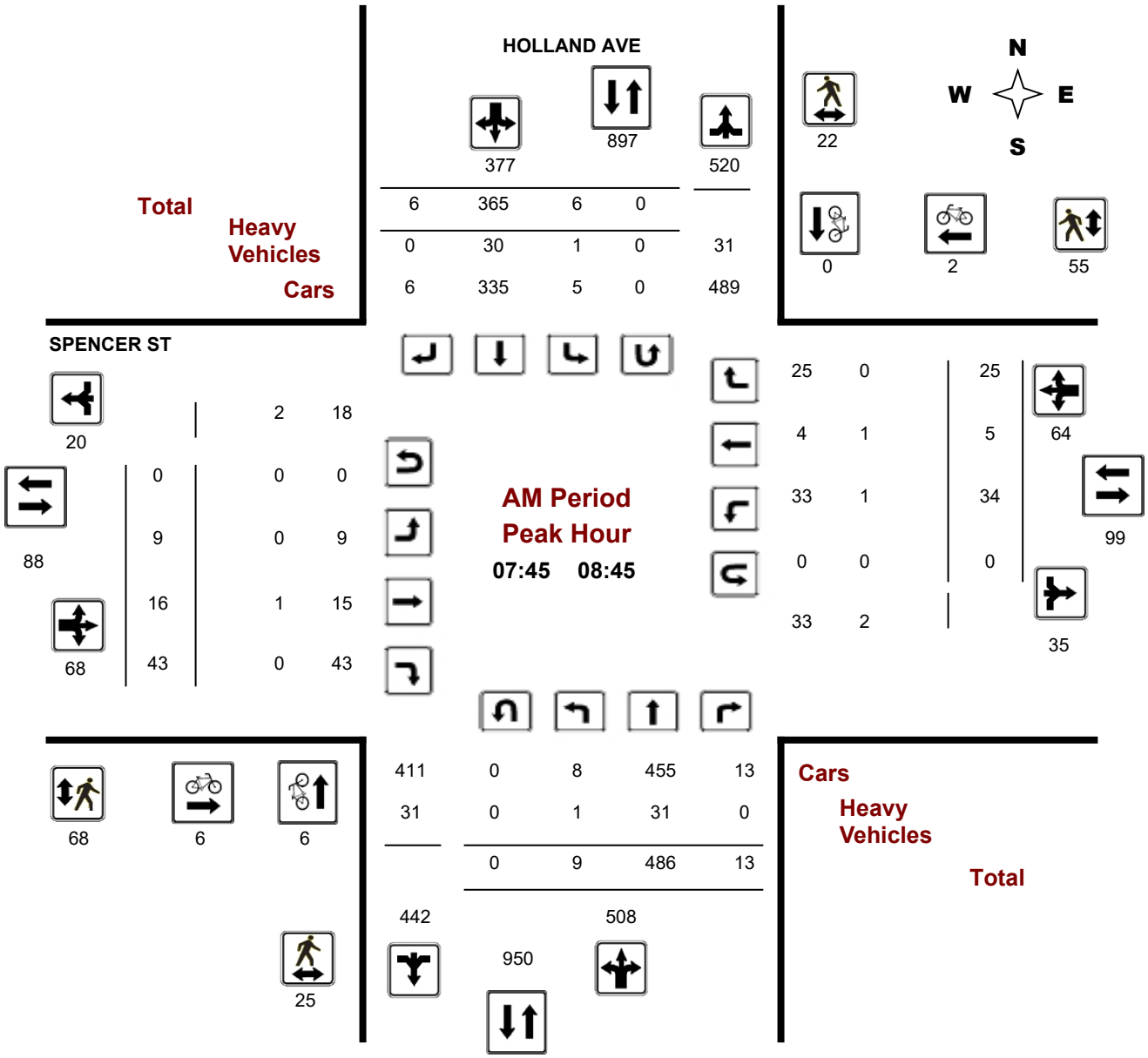
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ SPENCER ST

Survey Date: Tuesday, March 25, 2025
Start Time: 07:00

WO No: 42619
Device: Miovision



Comments:

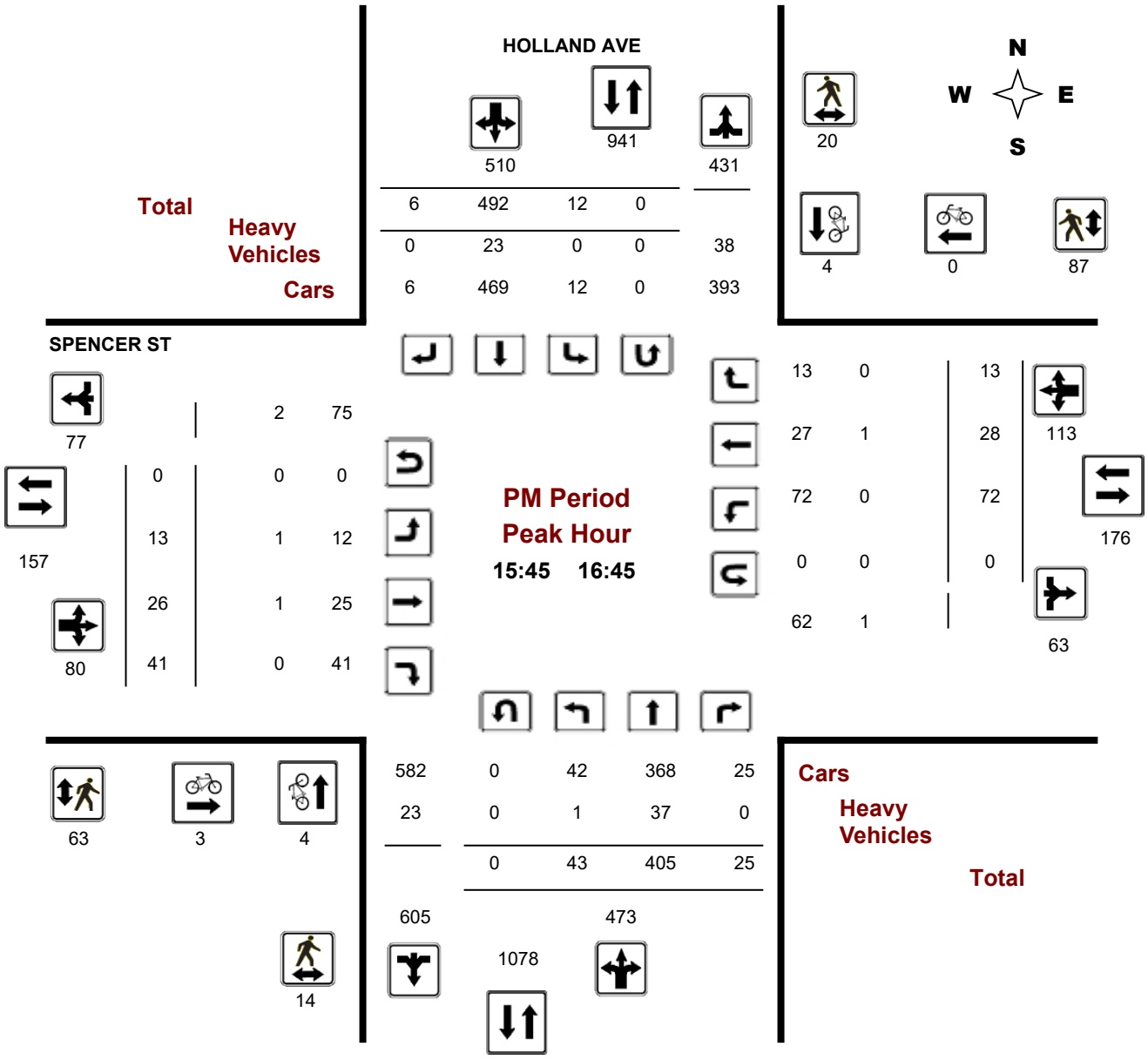
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ SPENCER ST

Survey Date: Tuesday, March 25, 2025 **WO No:** 42619

Start Time: 07:00 **Device:** Miovision



Comments:

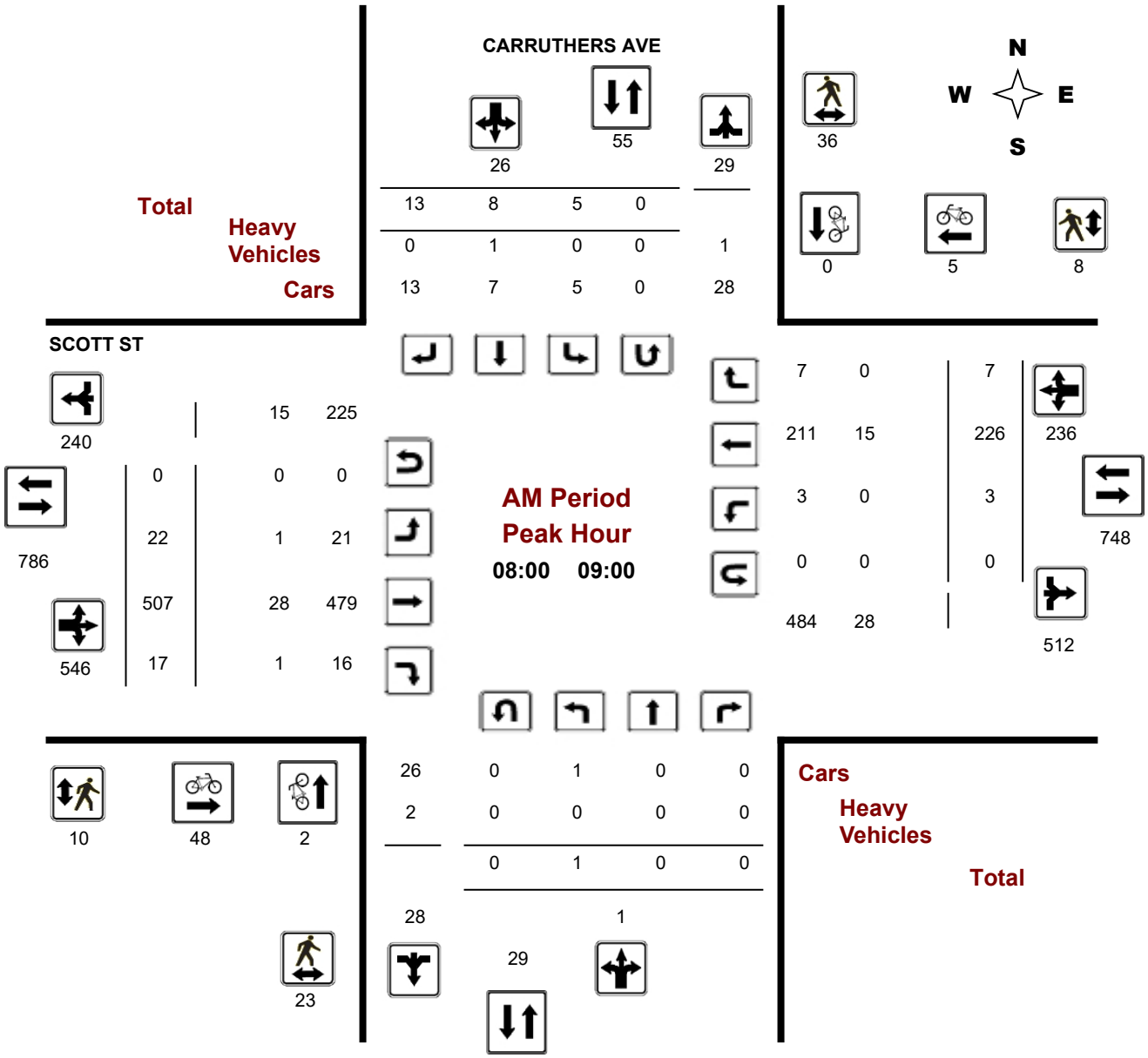
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARRUTHERS AVE @ SCOTT ST

Survey Date: Tuesday, March 25, 2025
Start Time: 07:00

WO No: 42592
Device: Miovision



Comments:

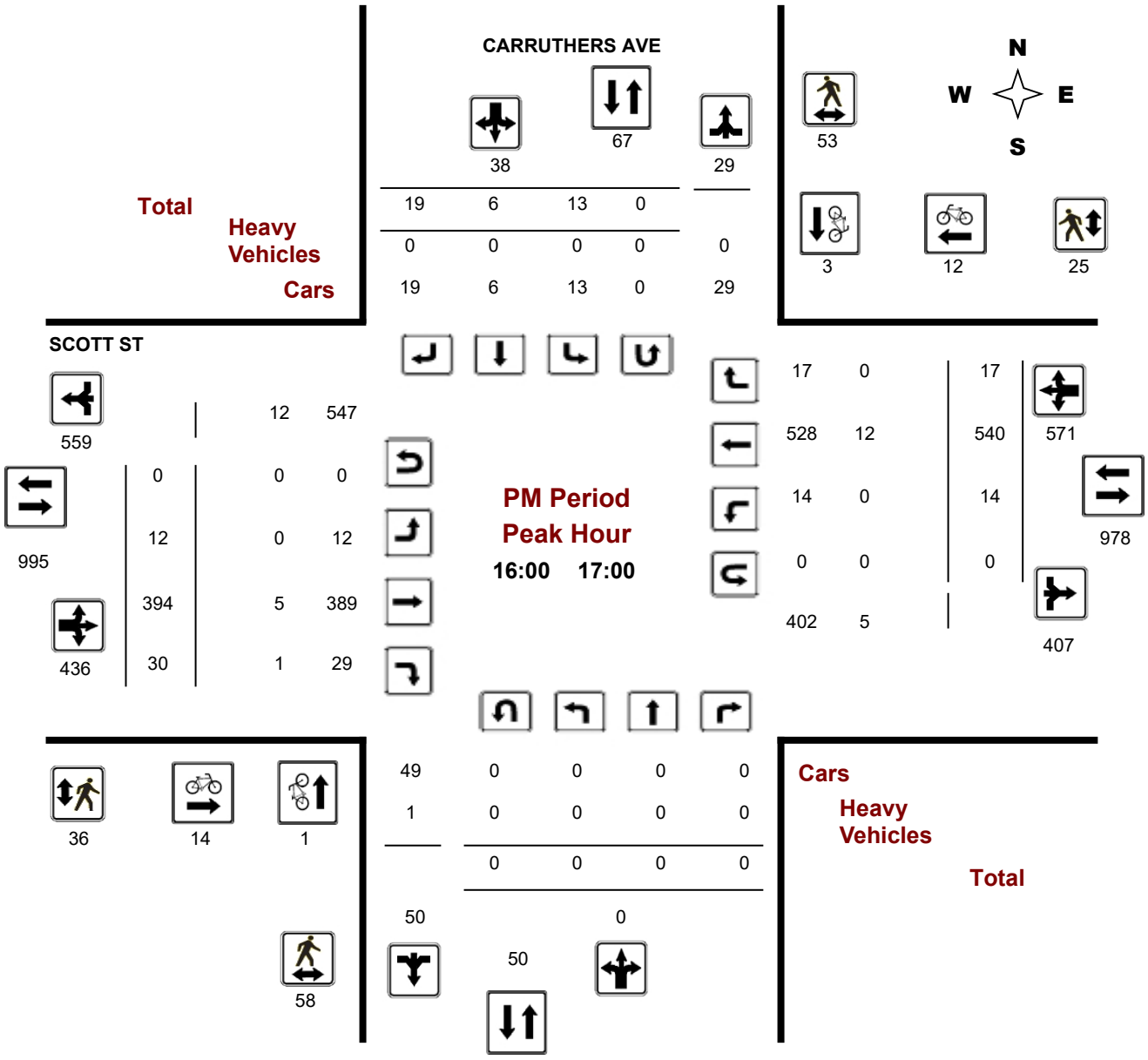
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARRUTHERS AVE @ SCOTT ST

Survey Date: Tuesday, March 25, 2025
Start Time: 07:00

WO No: 42592
Device: Miovision



Comments:

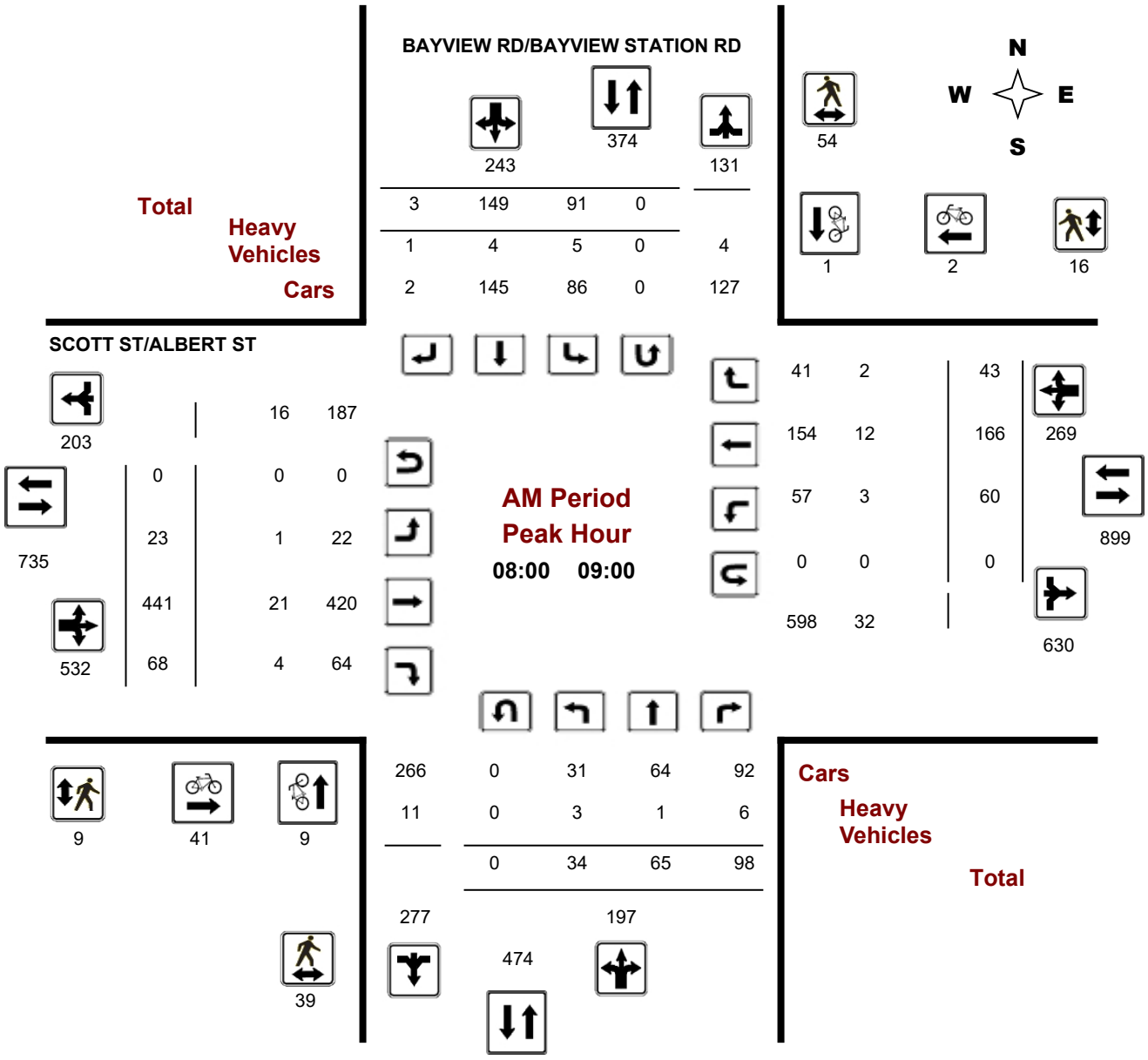
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BAYVIEW RD/BAYVIEW STATION RD @ SCOTT ST/ALBERT ST

Survey Date: Tuesday, March 25, 2025 **WO No:** 42593

Start Time: 07:00 **Device:** Miovision



Comments:

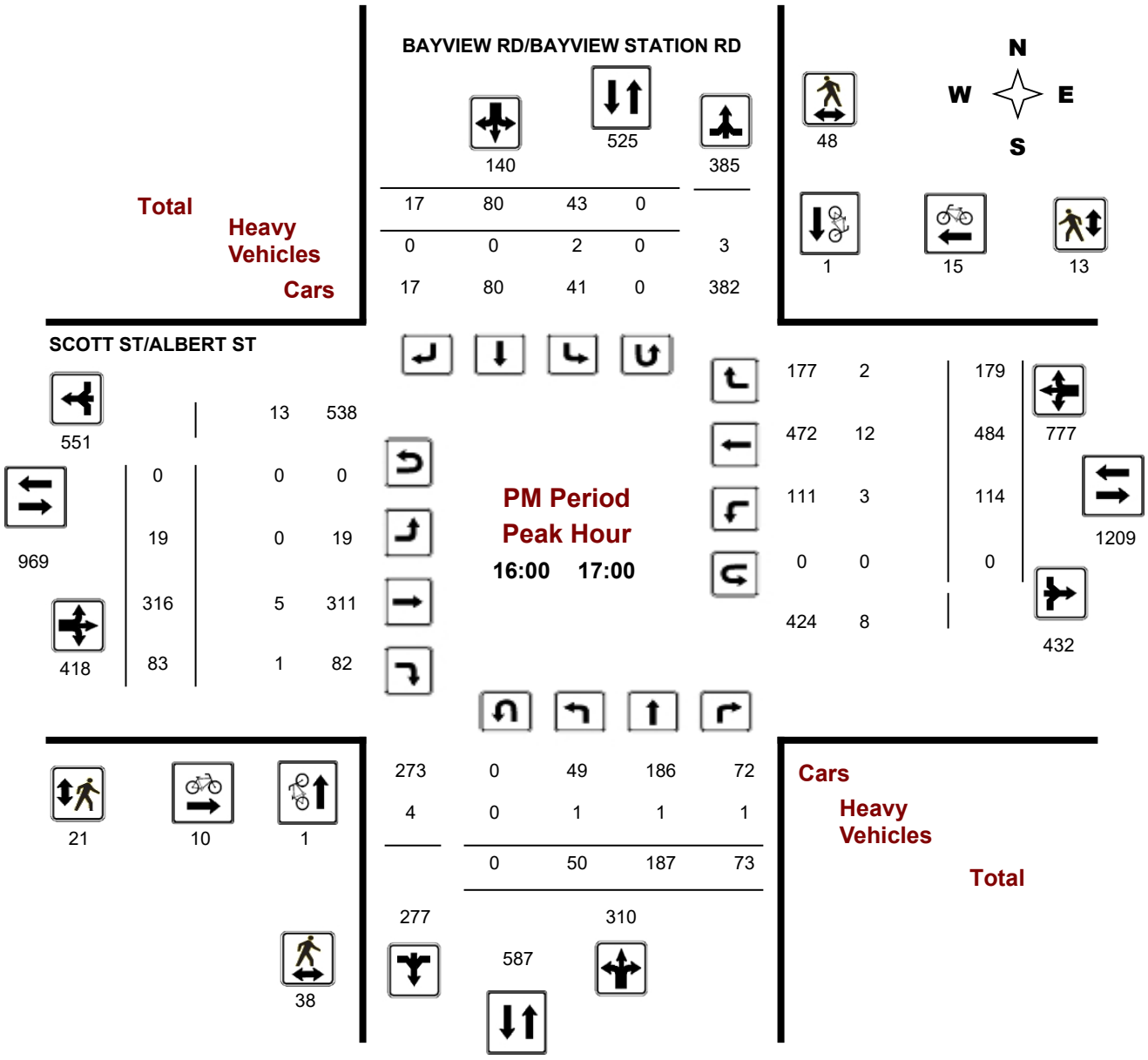
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BAYVIEW RD/BAYVIEW STATION RD @ SCOTT ST/ALBERT ST

Survey Date: Tuesday, March 25, 2025 **WO No:** 42593

Start Time: 07:00 **Device:** Miovision



Comments:

5698147 - BAYVIEW STATION RD/BURNSIDE AVE @ ... - TMC

Tue Mar 25, 2025
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1281466, Location: 45.409556, -75.72883, Site Code: 42594103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA

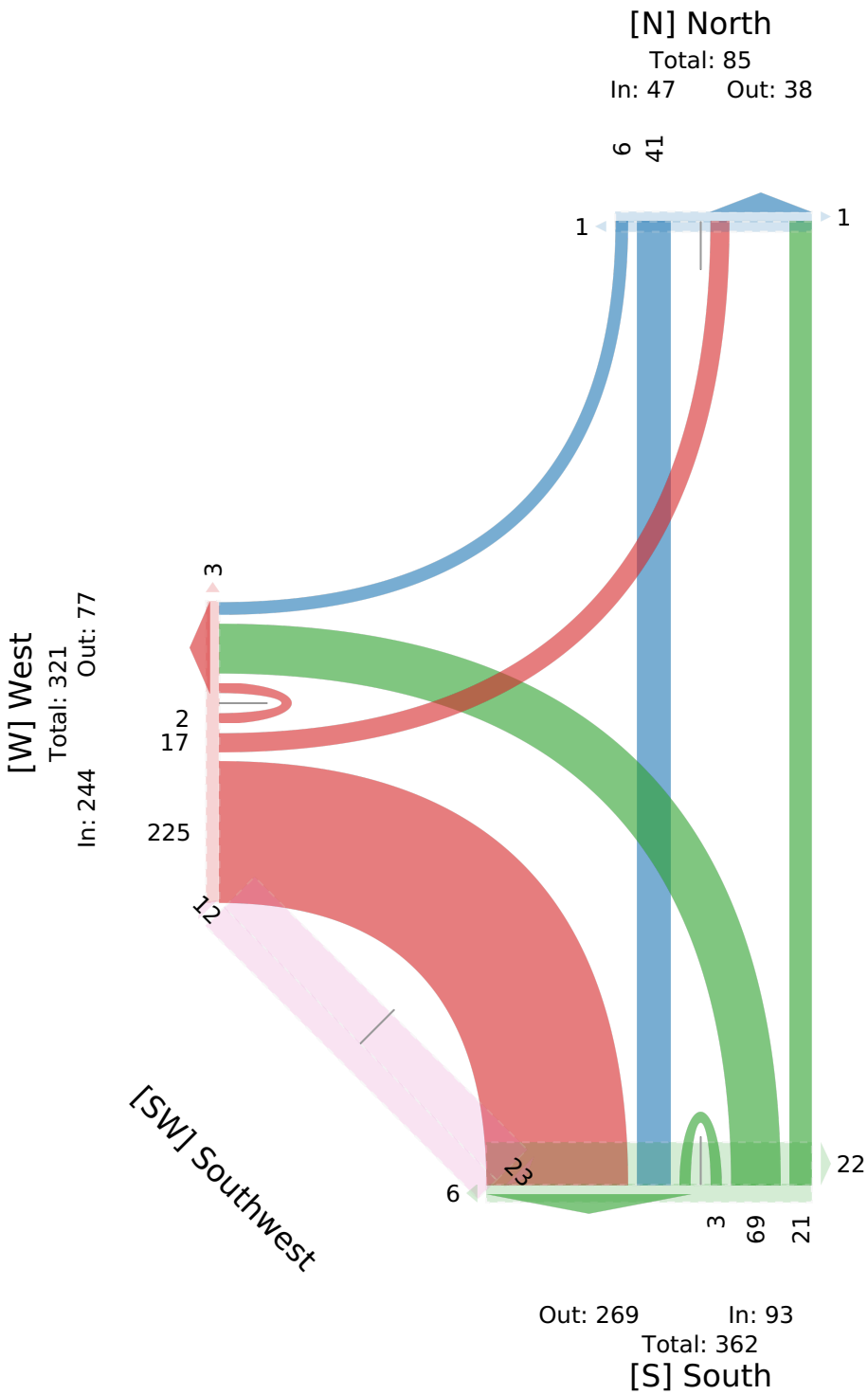
Leg Direction	North Southbound						South Northbound						Southwest Northeastbound						West Eastbound						
Time	R	BR	T	U	**App**	Ped*	T	L	HL	U	**App**	Ped*	HR	BL	HL	U	**App**	Ped*	HR	R	L	U	**App**	Ped*	**Int**
2025-03-25 7:45AM	0	0	5	0	**5**	0	7	16	0	1	**24**	6	0	0	0	0	**0**	10	0	58	5	0	**63**	0	**92**
8:00AM	2	0	8	0	**10**	1	9	19	0	1	**29**	5	0	0	0	0	**0**	5	0	54	5	1	**60**	1	**99**
8:15AM	3	0	15	0	**18**	0	3	9	0	0	**12**	7	0	0	0	0	**0**	8	0	50	4	1	**55**	1	**85**
8:30AM	1	0	13	0	**14**	1	2	25	0	1	**28**	10	0	0	0	0	**0**	12	0	63	3	0	**66**	1	**108**
Total	6	0	41	0	**47**	2	21	69	0	3	**93**	28	0	0	0	0	**0**	35	0	225	17	2	**244**	3	**384**
% Approach	12.8%	0%	87.2%	0%	**-**	-	22.6%	74.2%	0%	3.2%	**-**	-	0%	0%	0%	0%	**-**	-	0%	92.2%	7.0%	0.8%	**-**	-	-
% Total	1.6%	0%	10.7%	0%	**12.2%**	-	5.5%	18.0%	0%	0.8%	**24.2%**	-	0%	0%	0%	0%	**0%**	-	0%	58.6%	4.4%	0.5%	**63.5%**	-	-
PHF	0.500	-	0.650	-	**0.625**	-	0.583	0.708	-	0.750	**0.793**	-	-	-	-	-	**-**	-	-	0.893	0.850	0.500	**0.924**	-	0.899
Lights and Motorcycles	6	0	37	0	**43**	-	19	66	0	1	**86**	-	0	0	0	0	**0**	-	0	224	17	2	**243**	-	372
% Lights and Motorcycles	100%	0%	90.2%	0%	**91.5%**	-	90.5%	95.7%	0%	33.3%	**92.5%**	-	0%	0%	0%	0%	**-**	-	0%	99.6%	100%	100%	**99.6%**	-	96.9%
Heavy	0	0	2	0	**2**	-	2	2	0	2	**6**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	9
% Heavy	0%	0%	4.9%	0%	**4.3%**	-	9.5%	2.9%	0%	66.7%	**6.5%**	-	0%	0%	0%	0%	**-**	-	0%	0.4%	0%	0%	**0.4%**	-	2.3%
Bicycles on Road	0	0	2	0	**2**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	3
% Bicycles on Road	0%	0%	4.9%	0%	**4.3%**	-	0%	1.4%	0%	0%	**1.1%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	0.8%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	28	-	-	-	-	-	35	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

5698147 - BAYVIEW STATION RD/BURNSIDE AVE @ ... - TMC

Tue Mar 25, 2025
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1281466, Location: 45.409556, -75.72883, Site Code: 42594103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



5698147 - BAYVIEW STATION RD/BURNSIDE AVE @ ... - TMC

Tue Mar 25, 2025
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1281466, Location: 45.409556, -75.72883, Site Code: 42594103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA

Leg Direction	North Southbound						South Northbound						Southwest Northeastbound						West Eastbound						
Time	R	BR	T	U	**App**	Ped*	T	L	HL	U	**App**	Ped*	HR	BL	HL	U	**App**	Ped*	HR	R	L	U	**App**	Ped*	**Int**
2025-03-25 4:15PM	2	0	6	0	**8**	0	30	83	0	0	**113**	5	0	0	0	0	**0**	10	0	21	0	0	**21**	2	**142**
4:30PM	3	0	7	0	**10**	1	22	62	0	1	**85**	3	0	0	0	0	**0**	11	0	28	0	0	**28**	1	**123**
4:45PM	2	0	5	0	**7**	2	37	67	0	2	**106**	3	0	0	0	0	**0**	8	0	23	2	0	**25**	4	**138**
5:00PM	0	0	10	0	**10**	0	19	61	0	0	**80**	6	0	0	0	0	**0**	16	0	35	1	0	**36**	3	**126**
Total	7	0	28	0	**35**	3	108	273	0	3	**384**	17	0	0	0	0	**0**	45	0	107	3	0	**110**	10	**529**
% Approach	20.0%	0%	80.0%	0%	**-**	-	28.1%	71.1%	0%	0.8%	**-**	-	0%	0%	0%	0%	**-**	-	0%	97.3%	2.7%	0%	**-**	-	**-**
% Total	1.3%	0%	5.3%	0%	**6.6%**	-	20.4%	51.6%	0%	0.6%	**72.6%**	-	0%	0%	0%	0%	**0%**	-	0%	20.2%	0.6%	0%	**20.8%**	-	**-**
PHF	0.583	-	0.700	-	**0.875**	-	0.730	0.819	-	0.375	**0.847**	-	-	-	-	-	**-**	-	-	0.757	0.375	-	**0.757**	-	0.934
Lights and Motorcycles	7	0	27	0	**34**	-	108	271	0	3	**382**	-	0	0	0	0	**0**	-	0	105	3	0	**108**	-	524
% Lights and Motorcycles	100%	0%	96.4%	0%	**97.1%**	-	100%	99.3%	0%	100%	**99.5%**	-	0%	0%	0%	0%	**-**	-	0%	98.1%	100%	0%	**98.2%**	-	99.1%
Heavy	0	0	1	0	**1**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	3
% Heavy	0%	0%	3.6%	0%	**2.9%**	-	0%	0.4%	0%	0%	**0.3%**	-	0%	0%	0%	0%	**-**	-	0%	0.9%	0%	0%	**0.9%**	-	0.6%
Bicycles on Road	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	2
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	0.4%	0%	0%	**0.3%**	-	0%	0%	0%	0%	**-**	-	0%	0.9%	0%	0%	**0.9%**	-	0.4%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	17	-	-	-	-	-	45	-	-	-	-	-	10	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

5698147 - BAYVIEW STATION RD/BURNSIDE AVE @ ... - TMC

Tue Mar 25, 2025

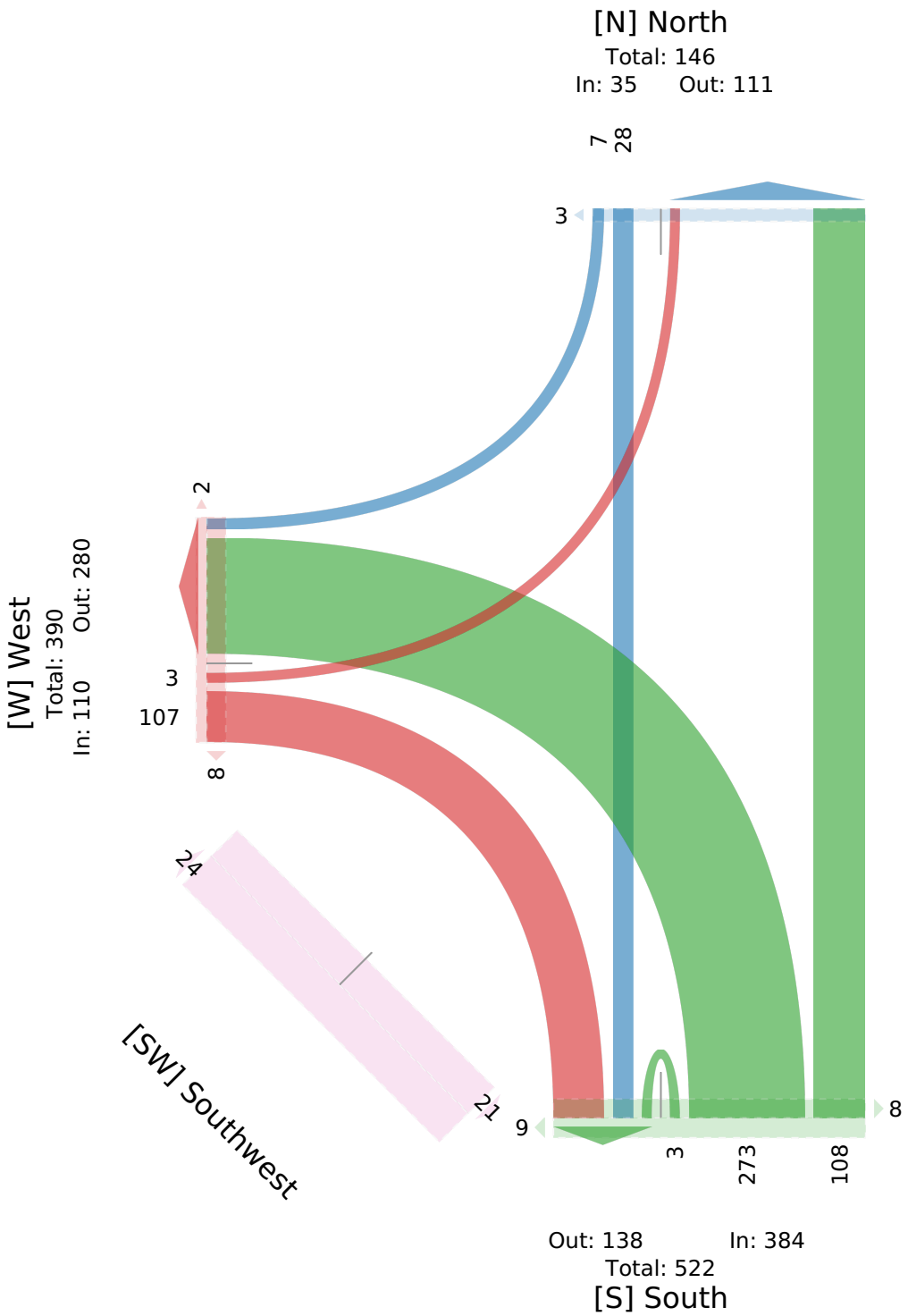
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1281466, Location: 45.409556, -75.72883, Site Code: 42594103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



Appendix D – Collision Data

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: BULLMAN ST @ PARKDALE AVE

Traffic Control: Stop sign **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-May-06, Sat,13:36	Rain	Angle	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-14, Wed,12:37	Clear	Angle	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Passenger van	Other motor vehicle	
2018-Oct-16, Tue,17:25	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-13, Thu,17:10	Clear	Angle	P.D. only	Wet	East	Turning left	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: CARLETON AVE @ SCOTT ST

Traffic Control: Traffic signal **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Oct-24, Mon,06:56	Clear	SMV other	P.D. only	Dry	West	Going ahead	Pick-up truck	Pole (utility, power)	0
2017-May-15, Mon,16:51	Clear	Other	P.D. only	Dry	West	Reversing	Pick-up truck	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Dec-17, Mon,17:13	Clear	SMV other	Non-fatal injury	Wet	North	Turning left	Automobile, station wagon	Pedestrian	1
2020-Apr-16, Thu,16:05	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	

Location: COLOMBINE DRWY @ PARKDALE AVE

Traffic Control: Stop sign **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jul-27, Thu,12:45	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: COLOMBINE DRWY @ PARKDALE AVE

Traffic Control: Stop sign **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-05, Mon,15:45	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-29, Tue,17:30	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Unknown	Automobile, station wagon	Other motor vehicle	
2020-Mar-05, Thu,08:44	Clear	Angle	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: EMMERSON AVE @ PARKDALE AVE

Traffic Control: Stop sign **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jul-11, Tue,15:43	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

Location: HOLLAND AVE/TUNNEY'S PASTURE @ SCOTT ST

Traffic Control: Traffic signal **Total Collisions:** 33

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-04, Mon,09:22	Clear	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-17, Wed,09:17	Clear	Rear end	P.D. only	Packed snow	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-02, Wed,09:19	Snow	Rear end	P.D. only	Packed snow	South	Going ahead	Municipal transit bus	Other motor vehicle	0
					South	Changing lanes	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Mar-17, Thu,11:00	Clear	SMV other	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Pedestrian	1

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: HOLLAND AVE/TUNNEY'S PASTURE @ SCOTT ST

Traffic Control: Traffic signal **Total Collisions:** 33

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-May-18, Wed,08:04	Clear	SMV other	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Pedestrian	1
2016-Jun-09, Thu,15:33	Clear	Turning movement	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jun-16, Thu,14:20	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jun-27, Mon,15:13	Clear	Sideswipe	Non-fatal injury	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	
2016-Jul-31, Sun,14:41	Clear	Angle	Non-fatal injury	Dry	East	Turning right	Motorcycle	Other motor vehicle	0
					South	Going ahead	Municipal transit bus	Other motor vehicle	
2016-Oct-06, Thu,12:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-31, Tue,09:01	Clear	SMV other	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
2017-Jan-31, Tue,16:27	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-10, Fri,09:48	Clear	Rear end	P.D. only	Ice	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-15, Wed,06:20	Snow	Turning movement	P.D. only	Packed snow	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-24, Mon,16:33	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2017-May-17, Wed,08:40	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Bicycle	Other motor vehicle	0
					North	Stopped	Pick-up truck	Cyclist	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: HOLLAND AVE/TUNNEY'S PASTURE @ SCOTT ST

Traffic Control: Traffic signal **Total Collisions:** 33

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Dec-11, Mon,08:45	Clear	Turning movement	P.D. only	Dry	South	Turning left	Unknown	Other motor vehicle	0
					North	Turning right	Municipal transit bus	Other motor vehicle	
2018-Nov-01, Thu,15:41	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-22, Thu,17:30	Clear	Sideswipe	P.D. only	Packed snow	West	Unknown	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-08, Sat,21:30	Snow	Rear end	Non-fatal injury	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-10, Mon,14:45	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-10, Mon,18:00	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-12, Wed,16:10	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-25, Tue,18:30	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-11, Thu,16:01	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2019-Aug-29, Thu,16:58	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-24, Tue,10:45	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: HOLLAND AVE/TUNNEY'S PASTURE @ SCOTT ST

Traffic Control: Traffic signal **Total Collisions:** 33

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-01, Fri,13:36	Clear	Sideswipe	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Municipal transit bus	Other motor vehicle	
2019-Nov-04, Mon,16:30	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-01, Sun,13:32	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-25, Tue,17:45	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jul-24, Fri,07:30	Clear	Turning movement	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2020-Oct-14, Wed,08:05	Clear	Sideswipe	P.D. only	Dry	North	Turning right	Truck and trailer	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	

Location: LYNDALE AVE @ PARKDALE AVE

Traffic Control: Traffic signal **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Sep-07, Wed,14:13	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-10, Tue,17:58	Clear	SMV unattended vehicle	P.D. only	Dry	South	Unknown	Unknown	Unattended vehicle	0
2019-Apr-17, Wed,15:35	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Aug-04, Tue,15:31	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MERTON ST @ SCOTT ST

Traffic Control: Traffic signal **Total Collisions:** 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-02, Tue,21:09	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Unknown	Other motor vehicle	
2016-Oct-27, Thu,23:16	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-18, Thu,17:37	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Sep-21, Fri,19:20	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2019-Jan-29, Tue,11:01	Clear	Other	P.D. only	Packed snow	West	Reversing	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

Location: OTTAWA RIVER PKWY @ REMIC RAPIDS ENT/TUNNEY'S

Traffic Control: Traffic signal **Total Collisions:** 16

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-15, Fri,18:15	Snow	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-03, Wed,15:35	Clear	Rear end	P.D. only	Wet	West	Stopped	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2016-Jul-09, Sat,20:28	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jul-19, Tue,18:50	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: OTTAWA RIVER PKWY @ REMIC RAPIDS ENT/TUNNEY'S

Traffic Control: Traffic signal **Total Collisions:** 16

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Dec-28, Wed,16:20	Unknown	Rear end	P.D. only	Unknown	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2017-May-20, Sat,14:47	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other	0
2017-Jul-05, Wed,13:22	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-02, Mon,04:13	Clear	Angle	P.D. only	Dry	West	Overtaking	Motorcycle	Other motor vehicle	0
					South	Turning left	Truck - open	Other motor vehicle	
2017-Oct-09, Mon,09:14	Rain	SMV other	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
2017-Dec-23, Sat,17:00	Snow	Turning movement	P.D. only	Slush	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-20, Tue,14:45	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-19, Sat,15:36	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-12, Mon,12:30	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-22, Thu,16:00	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Pick-up truck	Other motor vehicle	
2019-Oct-08, Tue,12:10	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jan-24, Fri,17:43	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: OTTAWA RIVER PKWY OFFR-EB @ PARKDALE AVE

Traffic Control: Yield sign **Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Sep-03, Sun,14:30	Rain	SMV other	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
2017-Dec-11, Mon,07:58	Clear	Rear end	P.D. only	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jun-11, Mon,12:48	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Oct-25, Thu,06:45	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Oct-18, Fri,11:53	Clear	Rear end	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle	0
					South	Merging	Automobile, station wagon	Other motor vehicle	
2020-Feb-16, Sun,12:20	Clear	Rear end	P.D. only	Wet	South	Merging	Automobile, station wagon	Other motor vehicle	0
					South	Merging	Automobile, station wagon	Other motor vehicle	

Location: OTTAWA RIVER PKWY ONR-EB @ PARKDALE AVE

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Mar-16, Thu,13:15	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: OTTAWA RIVER PKWY WB @ PARKDALE AVE WB ON RAMP

Traffic Control: Yield sign **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Apr-04, Tue,16:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-20, Thu,12:30	Rain	SMV other	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Ran off road	0

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: PARKDALE AVE @ SCOTT ST

Traffic Control: Traffic signal **Total Collisions:** 32

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jul-06, Wed,16:03	Clear	SMV other	P.D. only	Dry	South	Turning right	Municipal transit bus	Pole (utility, power)	0
2016-Jul-23, Sat,10:33	Clear	Turning movement	P.D. only	Dry	West	Turning left	Passenger van	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2016-Nov-14, Mon,17:31	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Dec-06, Tue,18:22	Clear	Turning movement	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	
2017-Feb-24, Fri,09:50	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-04, Sat,18:39	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Apr-30, Sun,12:51	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-May-23, Tue,14:54	Clear	SMV other	P.D. only	Dry	East	Going ahead	Truck and trailer	Other	0
2017-Jun-30, Fri,02:03	Clear	Angle	P.D. only	Wet	North	Going ahead	Passenger van	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2017-Jul-05, Wed,08:56	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Aug-03, Thu,16:02	Clear	Turning movement	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	
2018-Mar-17, Sat,15:05	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Changing lanes	Automobile, station wagon	Other motor vehicle	
2018-Mar-23, Fri,07:46	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: PARKDALE AVE @ SCOTT ST

Traffic Control: Traffic signal **Total Collisions:** 32

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Apr-12, Thu,17:56	Rain	Rear end	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-10, Thu,08:45	Clear	Sideswipe	P.D. only	Dry	North	Overtaking	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Truck - dump	Other motor vehicle	
2018-Aug-24, Fri,13:55	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2018-Oct-04, Thu,14:43	Clear	Turning movement	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Cyclist	
2018-Oct-23, Tue,17:07	Clear	Sideswipe	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-18, Sun,18:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Dec-03, Mon,18:35	Clear	Approaching	P.D. only	Wet	West	Unknown	Unknown	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Dec-10, Mon,16:05	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Passenger van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-06, Wed,08:39	Clear	Rear end	P.D. only	Loose snow	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Unknown	Other motor vehicle	
2019-Feb-22, Fri,15:30	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-30, Sat,13:46	Rain	Turning movement	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: PARKDALE AVE @ SCOTT ST

Traffic Control: Traffic signal **Total Collisions:** 32

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Apr-16, Tue,09:15	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jul-14, Sun,08:25	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2019-Oct-08, Tue,11:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Oct-31, Thu,09:11	Rain	Angle	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-22, Fri,15:16	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Truck - closed	Other motor vehicle	
2020-Jun-10, Wed,16:16	Clear	Rear end	P.D. only	Dry	North	Overtaking	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Sep-21, Mon,20:10	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2020-Nov-14, Sat,12:27	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Location: ROSS AVE @ SCOTT ST

Traffic Control: Stop sign **Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Oct-05, Thu,18:15	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: ROSS AVE @ SCOTT ST

Traffic Control: Stop sign **Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jul-03, Tue,13:43	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-06, Thu,18:06	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-15, Thu,08:47	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Cyclist	
2019-Oct-15, Tue,08:24	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2020-Jan-16, Thu,08:00	Snow	Sideswipe	P.D. only	Packed snow	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: OTTAWA RIVER PKWY btwn ISLAND PARK DR & TURN LANE (1)

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Aug-13, Sat,08:05	Rain	Sideswipe	P.D. only	Wet	East	Unknown	Pick-up truck	Other motor vehicle	0
					East	Unknown	Pick-up truck	Other motor vehicle	
2018-Jun-08, Fri,14:40	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Changing lanes	Automobile, station wagon	Other motor vehicle	

Location: OTTAWA RIVER PKWY EB btwn ISLAND PARK DR & PARKDALE AVE

Traffic Control: No control **Total Collisions:** 19

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-13, Sat,07:54	Clear	SMV other	Non-fatal injury	Ice	East	Going ahead	Pick-up truck	Ran off road	0
2016-Feb-25, Thu,18:30	Snow	Other	P.D. only	Ice	East	Stopped	Automobile, station wagon	Skidding/sliding	0
					East	Slowing or stopping	Delivery van	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Jun-02, Thu,00:15	Clear	SMV other	Non-fatal injury	Wet	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
2016-Sep-09, Fri,13:48	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-May-12, Fri,16:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Aug-09, Thu,08:00	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-09, Tue,16:30	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Passenger van	Other motor vehicle	0
					East	Changing lanes	Automobile, station wagon	Other motor vehicle	
2018-Nov-06, Tue,07:14	Rain	SMV other	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Ran off road	0

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: OTTAWA RIVER PKWY EB btwn ISLAND PARK DR & PARKDALE AVE

Traffic Control: No control

Total Collisions: 19

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-15, Thu,06:17	Clear	Turning movement	P.D. only	Dry	West	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-19, Mon,18:38	Clear	Sideswipe	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Changing lanes	Unknown	Other motor vehicle	
2018-Nov-26, Mon,07:10	Clear	SMV other	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Animal - wild	0
2019-Mar-22, Fri,07:20	Rain	Rear end	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Aug-22, Thu,15:22	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Changing lanes	Automobile, station wagon	Other motor vehicle	
2019-Dec-03, Tue,06:16	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-15, Sun,01:30	Drifting Snow	SMV other	P.D. only	Ice	East	Going ahead	Automobile, station wagon	Ran off road	0
2020-Jan-24, Fri,09:00	Clear	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Jan-28, Tue,07:30	Clear	Rear end	P.D. only	Ice	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Jun-10, Wed,11:20	Rain	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Pick-up truck	Other motor vehicle	
2020-Sep-19, Sat,19:25	Clear	Rear end	P.D. only	Dry	East	Overtaking	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: OTTAWA RIVER PKWY EB btwn PARKDALE AVE SB OFF-RAMP & PARKDALE AVE NB ON-RAMP

Traffic Control: No control

Total Collisions: 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-May-22, Fri,18:15	Clear	Rear end	P.D. only	Dry	East	Going ahead	Police vehicle	Other motor vehicle	0
					East	Pulling onto shoulder or toward curb	Police vehicle	Other motor vehicle	

Location: OTTAWA RIVER PKWY WB btwn ISLAND PARK DR & PARKDALE AVE

Traffic Control: No control

Total Collisions: 39

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-13, Wed,16:45	Clear	Rear end	P.D. only	Slush	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
					West	Unknown	Delivery van	Other motor vehicle	
					West	Unknown	Pick-up truck	Other motor vehicle	
2016-Feb-12, Fri,17:15	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2016-Feb-17, Wed,16:05	Snow	Rear end	P.D. only	Packed snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Pick-up truck	Other motor vehicle	
2016-Mar-01, Tue,23:30	Snow	SMV other	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
2016-Apr-11, Mon,16:00	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-May-26, Thu,09:00	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Jun-13, Mon,17:00	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2016 **To:** December 31, 2020

Location: OTTAWA RIVER PKWY WB btwn ISLAND PARK DR & PARKDALE AVE

Traffic Control: No control

Total Collisions: 39

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Aug-26, Fri,15:20	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Changing lanes	Automobile, station wagon	Other motor vehicle	
2016-Nov-22, Tue,17:15	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Dec-14, Wed,16:15	Clear	Rear end	P.D. only	Other	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-25, Wed,18:03	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-31, Tue,14:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Truck - tank	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Mar-09, Thu,15:39	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Apr-15, Sat,12:49	Clear	Sideswipe	P.D. only	Dry	West	Overtaking	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Delivery van	Other motor vehicle	
2017-Apr-26, Wed,15:50	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-27, Thu,17:00	Clear	Sideswipe	P.D. only	Slush	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-01, Thu,15:45	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: OTTAWA RIVER PKWY WB btwn ISLAND PARK DR & PARKDALE AVE

Traffic Control: No control

Total Collisions: 39

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jun-20, Tue,15:45	Other	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Jul-10, Mon,13:08	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-20, Wed,10:38	Clear	Sideswipe	P.D. only	Wet	West	Overtaking	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Bus (other)	Other motor vehicle	
2018-Jan-21, Sun,22:24	Freezing Rain	SMV other	P.D. only	Packed snow	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
2018-Feb-13, Tue,17:15	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-21, Wed,16:14	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-29, Tue,18:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2018-May-30, Wed,09:00	Clear	Rear end	Non-fatal injury	Dry	West	Stopped	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Passenger van	Other motor vehicle	
2019-Jan-29, Tue,18:30	Snow	Sideswipe	P.D. only	Loose snow	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-05, Tue,12:40	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-08, Fri,18:44	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: OTTAWA RIVER PKWY WB btwn ISLAND PARK DR & PARKDALE AVE

Traffic Control: No control

Total Collisions: 39

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Mar-16, Sat,19:45	Clear	SMV other	P.D. only	Ice	West	Going ahead	Pick-up truck	Curb	0
2019-Mar-31, Sun,09:31	Drifting Snow	SMV other	P.D. only	Slush	West	Going ahead	Passenger van	Skidding/sliding	0
2019-Apr-17, Wed,18:02	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-17, Mon,15:25	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-07, Sun,17:00	Clear	Angle	P.D. only	Dry	South	Turning right	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-02, Fri,15:36	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Changing lanes	Automobile, station wagon	Other motor vehicle	
2019-Aug-12, Mon,17:05	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Dec-02, Mon,17:00	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jan-15, Wed,00:00	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jun-10, Wed,18:51	Clear	Rear end	Fatal injury	Dry	West	Other	Automobile, station wagon	Cyclist	1
					West	Going ahead	Bicycle	Other motor vehicle	
2020-Jun-16, Tue,19:45	Clear	Sideswipe	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Merging	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: OTTAWA RIVER PKWY WB btwn PARKDALE AVE SB OFF-RAMP & PARKDALE AVE NB ON-RAMP

Traffic Control: No control

Total Collisions: 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Apr-06, Wed,19:00	Snow	Rear end	P.D. only	Packed snow	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Feb-24, Fri,15:00	Unknown	Rear end	Non-fatal injury	Unknown	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Location: PARKDALE AVE btwn SPLIT & EMMERSON AVE

Traffic Control: No control

Total Collisions: 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jun-01, Wed,14:45	Clear	SMV unattended vehicle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Unattended vehicle	0
2016-Jun-14, Tue,16:36	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jul-01, Sat,15:06	Clear	Turning movement	Non-fatal injury	Dry	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: PARKDALE AVE btwn BURNSIDE AVE & LYNDALE AVE

Traffic Control: No control

Total Collisions: 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Mar-16, Wed,10:00	Clear	Angle	P.D. only	Dry	South	Pulling away from shoulder or curb	Pick-up truck	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Feb-28, Wed,14:45	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: PARKDALE AVE btwn BURNSIDE AVE & LYNDALE AVE

Traffic Control: No control **Total Collisions:** 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Mar-20, Tue,16:15	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-16, Wed,00:00	Snow	SMV unattended vehicle	P.D. only	Slush	Unknown	Unknown	Unknown	Unattended vehicle	0
2019-Jan-24, Thu,22:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0

Location: PARKDALE AVE btwn COLOMBINE DRWY & EMMERSON AVE

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-17, Wed,12:00	Clear	SMV unattended vehicle	P.D. only	Loose snow	South	Turning right	Automobile, station wagon	Unattended vehicle	0
2018-Nov-07, Wed,07:50	Clear	Rear end	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Location: PARKDALE AVE btwn LYNDALE AVE & SCOTT ST

Traffic Control: No control **Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Apr-14, Thu,08:34	Clear	Angle	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					South	Changing lanes	Pick-up truck	Other motor vehicle	
2016-Jun-22, Wed,18:37	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Dec-06, Tue,08:19	Clear	Angle	P.D. only	Wet	East	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: PARKDALE AVE btwn LYNDALE AVE & SCOTT ST

Traffic Control: No control **Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-18, Thu,12:57	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-06, Tue,10:25	Clear	SMV other	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Pedestrian	1
2020-Jan-22, Wed,16:17	Clear	SMV other	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Pedestrian	1

Location: PARKDALE AVE EB OFF RAMP/OTTAWA RIVER PKWY btwn OTTAWA RIVER PKWY & PARKDALE AVE

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jul-30, Sat,10:10	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Location: PARKDALE AVE WB OFF RAMP/OTTAWA RIVER PKWY btwn OTTAWA RIVER PKWY & PARKDALE AVE

Traffic Control: No control **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-04, Mon,11:00	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other	0
2016-Jun-06, Mon,07:20	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Dec-09, Fri,08:30	Clear	Rear end	P.D. only	Ice	West	Going ahead	Passenger van	Skidding/sliding	0
					West	Going ahead	Automobile, station wagon	Skidding/sliding	
2017-Mar-21, Tue,08:20	Snow	Rear end	P.D. only	Packed snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: PARKDALE AVE WB ON RAMP/OTTAWA RIVER PKWY btwn OTTAWA RIVER PKWY & PARKDALE AVE

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-May-05, Fri,16:21	Rain	Rear end	Non-fatal injury	Wet	West	Stopped	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Location: SCOTT ST btwn CARLETON AVE & ROCKHURST RD

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Aug-07, Fri,06:55	Clear	Turning movement	Non-fatal injury	Dry	West	Turning right	Construction equipment	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	

Location: SCOTT ST btwn CARLETON AVE & WESTERN AVE

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jun-21, Wed,16:35	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	

Location: SCOTT ST btwn CAROLINE AVE & HURON AVE N

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Sep-15, Fri,08:08	Clear	Sideswipe	Non-fatal injury	Dry	West	Changing lanes	Truck - open	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	
2018-Oct-17, Wed,12:34	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: SCOTT ST btwn PARKDALE AVE & TUNNEY'S PASTURE DRWY

Traffic Control: No control **Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Mar-23, Wed,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2018-Jan-17, Wed,09:12	Clear	Turning movement	P.D. only	Slush	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-05, Mon,16:24	Snow	Angle	P.D. only	Loose snow	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2018-Jul-16, Mon,07:06	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Pick-up truck	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2018-Nov-21, Wed,11:11	Clear	SMV other	P.D. only	Dry	West	Reversing	Construction equipment	Pole (utility, power)	0
2019-Jan-23, Wed,17:54	Snow	Rear end	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Passenger van	Other motor vehicle	
2020-Nov-06, Fri,13:48	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Appendix E – Multi-Modal Level of Service (MMLOS) Analyses

Multi-Modal Level of Service - Intersections Form

Project: Tunney's Pasture
Consultant: Arcadis
Date: Jun 19, 2025
Scenario: Existing

	Intersection Name	**Kichi Zibi Mikan & Remic Rapids / Tunney's Pasture**				**Parkdale Ave & Burnside Ave**				**Parkdale Ave & Lyndale Ave**			
	OP Transect / Policy Area	**Downtown Core, Inner Urban,Hub and/or Special District**				**Within 600m of a rapid transit station**				**Within 600m of a rapid transit station**			
Pedestrian	**PLOS Inputs**												
	Pedestrians Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Number of Travel Lanes Crossed	1-3	1-3	4	No Crosswalk	1-3	1-3	1-3	No Crosswalk	1-3	1-3	1-3	No Crosswalk
	Median Refuge (≥2.7m)	No	No	Yes	-	No	No	No	-	No	No	No	-
	Crosswalk Treatment	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	-	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	-	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	-
	Signal Cycle Length (sec)	> 120				61-75				61-75			
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	**WBR**	**EBR**	**NBR**	**SBR**	**WBR**	**EBR**	**NBR**	**SBR**	**WBR**	**EBR**	**NBR**	**SBR**
	Right-Turn Geometry	Right-Turn With No Channel	Conventional Right-Turn Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	No Right-Turn / Prohib.	Right-Turn With No Channel	No Right-Turn / Prohib.	Right-Turn With No Channel	No Right-Turn / Prohib.	Right-Turn With No Channel	No Right-Turn / Prohib.
	Right-Turn Signal Phasing	Permissive	-	Permissive	Permissive	Permissive	-	Permissive	-	Permissive	-	Permissive	-
	Right-Turn Volume	≤ 150 veh/h	> 150 to 300 veh/h	≤ 150 veh/h	≤ 150 veh/h	> 150 to 300 veh/h	-	≤ 150 veh/h	-	≤ 150 veh/h	-	≤ 150 veh/h	-
	Right-Turn Effective Corner Radius	≤ 8m	-	≤ 8m	≤ 8m	≤ 8m	-	≤ 8m	-	≤ 8m	-	≤ 8m	-
	Cross-street Posted Speed (km/h)	60 km/h		30 km/h		40 km/h		40 km/h		40 km/h		40 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	**EBL**	**WBL**	**SBL**	**NBL**	**EBL**	**WBL**	**SBL**	**NBL**	**EBL**	**WBL**	**SBL**	**NBL**
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	No Left-Turn / Prohib.	Perm or Prot+Perm	Perm or Prot+Perm	No Left-Turn / Prohib.	No Left-Turn / Prohib.	Perm or Prot+Perm	Perm or Prot+Perm	No Left-Turn / Prohib.
	Left-Turn Volume	≤ 50 veh/h	≤ 50 veh/h	≤ 50 veh/h	> 100 veh/h	-	≤ 50 veh/h	≤ 50 veh/h	-	-	≤ 50 veh/h	≤ 50 veh/h	-
	Left-Turn Opposing Lanes	-	-	-	-	-	-	-	-	-	-	-	-
	Score	**4.00**	**3.55**	**4.00**	**-**	**4.45**	**4.75**	**4.60**	**-**	**4.60**	**4.75**	**4.60**	**-**
	PLOS	**B**	**B**	**B**	**-**	**B**	**A**	**A**	**-**	**A**	**A**	**A**	**-**
		B				**A**				**A**			
	Target PLOS	**A**				**A**				**A**			
Bicycle	**BLOS Inputs**												
	Cycling Route Classification	**Elsewhere**				**Elsewhere**				**Elsewhere**			
	Cyclists Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Type of Cycling Facility Across Leg	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic		Mixed Traffic	Mixed Traffic	Mixed Traffic	
	Two-Way ADT (in Cyclist Travel Direction)	3,970		21,770		9,700		2,950		10,020		390	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	No	No	No	No		No	No	No	
	Crossride Operation	-	-	-	-	-	-	-		-	-	-	
	Target Crossride Setback Met?	-	-	-	-	-	-	-	-	-	-	-	-
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-	-	-	-		-	-	-	
	Cyclist Left-Turn Operation	**WBL**	**EBL**	**NBL**	**SBL**	**WBL**	**EBL**	**NBL**	**SBL**	**WBL**	**EBL**	**NBL**	**SBL**
	Cyclist Left-Turn Treatment Type	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	No Left-Turn	No Left-Turn	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	No Left-Turn	No Left-Turn	General Purpose Through-Left or Single Left-Turn Lane
	Vehicle Lanes Crossed by Cyclists	One Lane Crossed	One Lane Crossed	No Lane Crossed	No Lane Crossed	No Lane Crossed	-	-	No Lane Crossed	No Lane Crossed	-	-	No Lane Crossed
	Score	**50**	**20**	**80**	**40**	**70**	**80**	**140**	**-**	**80**	**80**	**140**	**-**
	BLOS	**D**	**E**	**C**	**D**	**C**	**C**	**A**	**-**	**C**	**C**	**A**	**-**
		D				**B**				**B**			
	Target BLOS	**B**				**B**				**B**			
Transit	**TLOS Inputs**												
	Transit Facility	**Mixed Traffic**				**Mixed Traffic**				**Mixed Traffic**			
	Vehicles Travelling	**Southbound**	**Northbound**	**Westbound**	**Eastbound**	**Southbound**	**Northbound**	**Westbound**	**Eastbound**	**Southbound**	**Northbound**	**Westbound**	**Eastbound**
	Average Transit Delay		56-80 sec	21-35 sec	11-20 sec	≤ 10 sec	≤ 10 sec	11-20 sec		≤ 10 sec	≤ 10 sec	21-35 sec	
	Example Transit Priority Treatment		-	-	-	-	-	-		-	-	-	
	TLOS	**-**	**E**	**C**	**B**	**A**	**A**	**B**	**-**	**A**	**A**	**C**	**-**
		C				**A**				**B**			
	Target TLOS	**E (D if road connects to transit station)**				**E (D if road connects to transit station)**				**E (D if road connects to transit station)**			
Auto	**AutoLOS Inputs**												
	Overall Intersection Volume to Capacity Ratio	0.71 to 0.80				0 to 0.60				0 to 0.60			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table				See Separate Traffic Operations Table				See Separate Traffic Operations Table			
	AutoLOS	**C**				**A**				**A**			
	Target AutoLOS	**E**				**E**				**E**			

Multi-Modal Level of Service - Intersections Form

Project: Tunney's Pasture
Consultant: Arcadis
Date: Jun 19, 2025
Scenario: Existing

	Intersection Name	Parkdale Ave & Scott St				Scott St & Holland Ave./Tunney's Pasture Dr.			
	OP Transect / Policy Area	Within 600m of a rapid transit station				Within 600m of a rapid transit station			
Pedestrian	PLOS Inputs								
	Pedestrians Crossing the	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg
	Number of Travel Lanes Crossed	1-3	1-3	4	4	4	5	4	1-3
	Median Refuge (≥2.7m)	No	No	No	No	No	No	No	No
	Crosswalk Treatment	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings
	Signal Cycle Length (sec)	91-105				91-105			
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	WBR	EBR	NBR	SBR	WBR	EBR	NBR	SBR
	Right-Turn Geometry	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel
	Right-Turn Signal Phasing	Permissive	Permissive	Permissive	Permissive	Permissive (with LPI/LBI)	Permissive (with LPI/LBI)	Permissive (with LPI/LBI)	Permissive (with LPI/LBI)
	Right-Turn Volume	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	> 150 to 300 veh/h	≤ 150 veh/h
	Right-Turn Effective Corner Radius	> 8m	≤ 8m	≤ 8m	≤ 8m	> 8m	≤ 8m	≤ 8m	> 8m
	Cross-street Posted Speed (km/h)	40 km/h		50 km/h		40 km/h		50 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	EBL	WBL	SBL	NBL	EBL	WBL	SBL	NBL
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm
	Left-Turn Volume	> 100 veh/h	> 50 to 100 veh/h	> 50 to 100 veh/h	> 50 to 100 veh/h	≤ 50 veh/h	> 100 veh/h	> 50 to 100 veh/h	> 100 veh/h
	Left-Turn Opposing Lanes	-	≤ 1	≤ 1	≤ 1	-	-	≥ 2	-
	Score	4.15	4.35	3.75	3.75	3.90	3.10	3.55	4.30
	PLOS	B	B	B	B	B	C	B	B
		B				B			
	Target PLOS	A				A			
Bicycle	BLOS Inputs								
	Cycling Route Classification	Cross-Town Bikeway				Cross-Town Bikeway			
	Cyclists Crossing the	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg
	Type of Cycling Facility Across Leg	Crossride	Crossride	Crossride	Crossride	Crossride	Crossride	Crossride	Crossride
	Two-Way ADT (in Cyclist Travel Direction)	7,950		14,900		7,480		12,790	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	No	No	No	No	No
	Crossride Operation	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional
	Target Crossride Setback Met?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-	-	-	-	-
	Cyclist Left-Turn Operation	WBL	EBL	NBL	SBL	WBL	EBL	NBL	SBL
	Cyclist Left-Turn Treatment Type	Protected Corner	Protected Corner	Protected Corner	Protected Corner	Protected Corner	Protected Corner	Protected Corner	Protected Corner
	Vehicle Lanes Crossed by Cyclists	-	-	-	-	-	-	-	-
	Score	100	140	140	140	145	105	100	105
	BLOS	B	A	A	A	A	B	B	B
		A				B			
	Target BLOS	A				A			
Transit	TLOS Inputs								
	Transit Facility	TP - Continuous Lanes				TP - Continuous Lanes			
	Vehicles Travelling	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound
	Average Transit Delay	11-20 sec	36-55 sec	Unavailable	21-35 sec	21-35 sec	36-55 sec	Unavailable	36-55 sec
	Example Transit Priority Treatment	-	-	Continuous bus lane or transit queue jump lane with TSP	-	-	-	Continuous bus lane or transit queue jump lane without TSP	-
	TLOS	B	D	A	C	C	D	B	D
		B				C			
	Target TLOS	B				B			
Auto	AutoLOS Inputs								
	Overall Intersection Volume to Capacity Ratio	0.81 to 0.90				0.71 to 0.80			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table				See Separate Traffic Operations Table			
	AutoLOS	D				C			
	Target AutoLOS	E				E			

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Project: Tunney's Pasture
Consultant: Arcadis
Date: Jun 19, 2025
Scenario: Existing

	Segment Name	Kichi Zibi Mikan				Parkdale Ave (between Goldenrod and Burnside)				Parkdale Ave (between Burnside and Lyndale)			
	OP Transect / Policy Area	Downtown Core, Inner Urban,Hub and/or Special District				Within 600m of a rapid transit station				Within 600m of a rapid transit station			
	Segment Component	Majority (>50%)		Critical		Majority (>50%)		Critical		Majority (>50%)		Critical	
	Side of Street	W or N	E or S	W or N	E or S	W or N	E or S	W or N	E or S	W or N	E or S	W or N	E or S
Pedestrian	PLOS Inputs												
	Posted Speed (km/h)	60 km/h		60 km/h		40 km/h		40 km/h		40 km/h		40 km/h	
	Two-Way ADT	36,830		36,830		9,920		9,920		9,920		9,920	
	Pedestrian Facility	Multi-Use Pathway	None	Multi-Use Pathway	None	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Facility Width (m)	3.00m	-	3.00m	-	1.80m	1.80m	1.80m	1.80m	2.00m	2.00m	1.80m	1.80m
	Offset from Motor Vehicle Travel Lanes (m)	≥ 3.0m	-	≥ 3.0m	-	1.5-2.99m	1.5-2.99m	1.5-2.99m	1.5-2.99m	< 0.5m	< 0.5m	< 0.5m	< 0.5m
	Presence of Adjacent Parking?	No	-	No	-	-	-	-	-	-	-	-	-
	General Purpose Curb Lane ADT	-	-	-	-	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000
	Max. Distance between Controlled Crossings (m)	> 400m	> 400m	> 400m	> 400m	201-230m	201-230m	201-230m	201-230m	≤ 200m	≤ 200m	≤ 200m	≤ 200m
	Score	**3.75**	**0.00**	**3.75**	**0.00**	**4.00**	**4.00**	**4.00**	**4.00**	**3.50**	**3.50**	**2.75**	**2.75**
	PLOS	**B**	**F**	**B**	**F**	**B**	**B**	**B**	**B**	**B**	**B**	**C**	**C**
	Target PLOS	**A**				**A**				**A**			
Bicycle	BLOS Inputs												
	Cycling Route Classification	**Elsewhere**				**Elsewhere**				**Elsewhere**			
	Cycling Facility	Multi-Use Pathway	Shared Operating Space	Multi-Use Pathway	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-	-	-	-	-	-	-	-	-
	Facility Operation	-	-	-	-	-	-	-	-	-	-	-	-
	Pedestrian/Cyclist Volume	High-Volume MUP (> 100 users per hour)	-	High-Volume MUP (> 100 users per hour)	-	-	-	-	-	-	-	-	-
	Facility Width	3.0-3.49m	-	3.0-3.49m	-	-	-	-	-	-	-	-	-
	Boulevard/Buffer Width (excluding curb)	≥ 1.5m or any boulevard width with continuous traffic barrier	-	≥ 1.5m or any boulevard width with continuous traffic barrier	-	-	-	-	-	-	-	-	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	None	Cross-Street	None	None	None	None	None	None	None	None	None
	Number of Travel Lanes at Crossing	-	-	≤ 2	-	-	-	-	-	-	-	-	-
	Crossing includes Median Refuge (≥ 2.7m)	-	-	No	-	-	-	-	-	-	-	-	-
	Cross-street Posted Speed (km/h)	-	-	≤ 30 km/h	-	-	-	-	-	-	-	-	-
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	-	Rare	-	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare
	Score	**3.50**	**0.75**	**3.73**	**0.75**	**1.60**	**1.60**	**1.60**	**1.60**	**1.60**	**1.60**	**1.60**	**1.60**
	BLOS	**B**	**E**	**B**	**E**	**D**	**D**	**D**	**D**	**D**	**D**	**D**	**D**
	Target BLOS	**B**				**B**				**B**			
Transit	TLOS Inputs												
	Transit Facility	**Mixed Traffic**											
	Facility Type	Mixed Traffic	Mixed Traffic										
	Expected Transit Running Time (Qualitative)	Slightly Impeded or Unimpeded	Slightly Impeded or Unimpeded										
	Transit Travel Speed (Mixed Traffic Only)	25 km/h	46 km/h										
	TLOS	**E**	**D**			**-**	**-**			**-**	**-**		
	Target TLOS	**E (D if road connects to transit station)**				**-**				**-**			
Public Realm	PRLOS Inputs												
	Context	Other Streets	Other Streets			Other Streets	Other Streets			Other Streets	Other Streets		
	Inner Boulevard Width	≥ 4.0m	≥ 4.0m			≤ 0.6m	≤ 0.6m			≤ 0.6m	≤ 0.6m		
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width	≥ 3.0m	≥ 3.0m			≥ 3.0m	≥ 3.0m			≥ 3.0m	≥ 3.0m		
	Transit Route on Segment?	No	No			Yes	No			Yes	No		
	Bus Stop Elements	-	-			Curbside landing zone with shelter behind sidewalk	-			Curbside landing zone with shelter behind sidewalk	-		
	Number of Midblock Traffic Lanes (both travel directions)	4				≤ 2				≤ 2			
	Score	**70.00**	**35.00**			**75.00**	**77.00**			**83.00**	**85.00**		
	PRLOS	**B**	**D**			**B**	**B**			**B**	**B**		
		C				**B**				**B**			

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Project: Tunney's Pasture
Consultant: Arcadis
Date: Jun 19, 2025
Scenario: Existing

	Segment Name	Parkdale Ave (between Lyndale and Scott)			
	OP Transect / Policy Area	Within 600m of a rapid transit station			
	Segment Component	Majority (>50%)		Critical	
	Side of Street	W or N	E or S	W or N	E or S
Pedestrian	PLOS Inputs				
	Posted Speed (km/h)	40 km/h		40 km/h	
	Two-Way ADT	9,920		9,920	
	Pedestrian Facility	Sidewalk	Sidewalk	Sidewalk	Sidewalk
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	Yes	Yes	Yes	Yes
	Facility Width (m)	2.00m	2.00m	1.80m	1.80m
	Offset from Motor Vehicle Travel Lanes (m)	< 0.5m	< 0.5m	< 0.5m	< 0.5m
	Presence of Adjacent Parking?	-	-	-	-
	General Purpose Curb Lane ADT	> 3000	> 3000	> 3000	> 3000
	Max. Distance between Controlled Crossings (m)	≤ 200m	≤ 200m	≤ 200m	≤ 200m
	Score	**3.50**	**3.50**	**2.75**	**2.75**
	PLOS	**B**	**B**	**C**	**C**
	Target PLOS	**A**			
Bicycle	BLOS Inputs				
	Cycling Route Classification	**Elsewhere**			
	Cycling Facility	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-
	Facility Operation	-	-	-	-
	Pedestrian/Cyclist Volume	-	-	-	-
	Facility Width	-	-	-	-
	Boulevard/Buffer Width (excluding curb)	-	-	-	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	None	None	None
	Number of Travel Lanes at Crossing	-	-	-	-
	Crossing includes Median Refuge (≥ 2.7m)	-	-	-	-
	Cross-street Posted Speed (km/h)	-	-	-	-
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	Rare	Rare	Rare	Rare
	Score	**1.60**	**1.60**	**1.60**	**1.60**
	BLOS	**D**	**D**	**D**	**D**
	Target BLOS	**B**			
Transit	TLOS Inputs				
	Transit Facility				
	Facility Type				
	Expected Transit Running Time (Qualitative)				
	Transit Travel Speed (Mixed Traffic Only)				
	TLOS	**-**	**-**		
	Target TLOS	**-**			
Public Realm	PRLOS Inputs				
	Context	Other Streets	Other Streets		
	Inner Boulevard Width	≤ 0.6m	≤ 0.6m		
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width	≥ 3.0m	≥ 3.0m		
	Transit Route on Segment?	Yes	No		
	Bus Stop Elements	Curbside landing zone with shelter behind sidewalk	-		
	Number of Midblock Traffic Lanes (both travel directions)	≤ 2			
	Score	**83.00**	**85.00**		
	PRLOS	**B**	**B**		
		B			

Multi-Modal Level of Service - Intersections Form

Project: Tunney's Pasture
Consultant: Arcadis
Date: Jun 19, 2025
Scenario: Future Total 2038[1]
Note that the Future (2038) Total Traffic scenario was selected for the completion of the MMLOS analysis, as this scenario represents the peak vehicular site-generated traffic contributions on the adjacent road network during the weekday peak hours.

	Intersection Name	Kichi Zibi Mikan & Remic Rapids / Tunney's Pasture				Parkdale Ave & Burnside Ave				Parkdale Ave & Lyndale Ave			
	OP Transect / Policy Area	Downtown Core, Inner Urban,Hub and/or Special District				Within 600m of a rapid transit station				Within 600m of a rapid transit station			
Pedestrian	PLOS Inputs												
	Pedestrians Crossing the	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg
	Number of Travel Lanes Crossed	1-3	1-3	4	No Crosswalk	1-3	1-3	1-3	No Crosswalk	1-3	1-3	1-3	No Crosswalk
	Median Refuge (≥2.7m)	No	No	Yes	-	No	No	No	-	No	No	No	-
	Crosswalk Treatment	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	-	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	-	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	-
	Signal Cycle Length (sec)	106-120				76-90						76-90	
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	WBR	EBR	NBR	SBR	WBR	EBR	NBR	SBR	WBR	EBR	NBR	SBR
	Right-Turn Geometry	Right-Turn With No Channel	Conventional Right-Turn Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	No Right-Turn / Prohib.	Right-Turn With No Channel	No Right-Turn / Prohib.	Right-Turn With No Channel	No Right-Turn / Prohib.	Right-Turn With No Channel	No Right-Turn / Prohib.
	Right-Turn Signal Phasing	Permissive	-	Permissive	Permissive	Permissive	-	Permissive	-	Permissive	-	Permissive	-
	Right-Turn Volume	≤ 150 veh/h	> 150 to 300 veh/h	≤ 150 veh/h	≤ 150 veh/h	> 150 to 300 veh/h	-	≤ 150 veh/h	-	≤ 150 veh/h	-	≤ 150 veh/h	-
	Right-Turn Effective Corner Radius	≤ 8m	-	≤ 8m	≤ 8m	≤ 8m	-	≤ 8m	-	≤ 8m	-	≤ 8m	-
	Cross-street Posted Speed (km/h)	60 km/h		30 km/h		40 km/h		40 km/h		40 km/h		40 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	EBL	WBL	SBL	NBL	EBL	WBL	SBL	NBL	EBL	WBL	SBL	NBL
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	No Left-Turn / Prohib.	Perm or Prot+Perm	Perm or Prot+Perm	No Left-Turn / Prohib.	No Left-Turn / Prohib.	Perm or Prot+Perm	Perm or Prot+Perm	No Left-Turn / Prohib.
	Left-Turn Volume	≤ 50 veh/h	≤ 50 veh/h	≤ 50 veh/h	> 100 veh/h	-	≤ 50 veh/h	≤ 50 veh/h	-	-	≤ 50 veh/h	≤ 50 veh/h	-
	Left-Turn Opposing Lanes	-	-	-	-	-	-	-	-	-	-	-	-
	Score	4.15	3.70	4.15	-	4.30	4.60	4.45	-	4.45	4.60	4.45	-
	PLOS	B	B	B	-	B	A	B	-	B	A	B	-
		B				B				A			
	Target PLOS	A				A				A			
Bicycle	BLOS Inputs												
	Cycling Route Classification	Elsewhere				Elsewhere				Elsewhere			
	Cyclists Crossing the	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg
	Type of Cycling Facility Across Leg	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Crossride	Crossride	Crossride		Crossride	Crossride	Crossride	
	Two-Way ADT (in Cyclist Travel Direction)	4,930		20,990		13,010		4,160		12,060		670	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	No	No	No	No		No	No	No	
	Crossride Operation	-	-	-	-	Unidirectional	Unidirectional	Unidirectional		Unidirectional	Unidirectional	Unidirectional	-
	Target Crossride Setback Met?	-	-	-	-	Yes	-	Yes	-	Yes	-	Yes	-
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-	-	-	-		-	-	-	-
	Cyclist Left-Turn Operation	WBL	EBL	NBL	SBL	WBL	EBL	NBL	SBL	WBL	EBL	NBL	SBL
	Cyclist Left-Turn Treatment Type	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	Physically Separated	Physically Separated	No Left-Turn	Physically Separated	Physically Separated	No Left-Turn	No Left-Turn	Physically Separated
	Vehicle Lanes Crossed by Cyclists	One Lane Crossed	One Lane Crossed	No Lane Crossed	No Lane Crossed	-	-	-	-	No Lane Crossed	-	-	No Lane Crossed
	Score	50	20	80	40	110	130	140	-	Input PLOS First	130	140	-
	BLOS	D	E	C	D	B	A	A	-	-	A	A	-
		D				A				C			
	Target BLOS	B				B				B			
Transit	TLOS Inputs												
	Transit Facility	Mixed Traffic				Mixed Traffic				Mixed Traffic			
	Vehicles Travelling	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound
	Average Transit Delay		36-55 sec	21-35 sec	11-20 sec	≤ 10 sec	≤ 10 sec	11-20 sec		≤ 10 sec	≤ 10 sec	21-35 sec	
	Example Transit Priority Treatment		-	-	-	-	-	-		-	-	-	
	TLOS	-	D	C	B	A	A	B	-	A	A	C	-
		C				A				B			
	Target TLOS	E (D if road connects to transit station)				E (D if road connects to transit station)				E (D if road connects to transit station)			
Auto	AutoLOS Inputs												
	Overall Intersection Volume to Capacity Ratio	0.71 to 0.80				0 to 0.60				0 to 0.60			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table				See Separate Traffic Operations Table				See Separate Traffic Operations Table			
	AutoLOS	C				A				A			
	Target AutoLOS	E				E				E			

Multi-Modal Level of Service - Intersections Form

Project: Tunney's Pasture
Consultant: Arcadis
Date: Jun 19, 2025
Scenario: Future Total 2038[1]
Note that the Future (2038) Total Traffic scenario was selected for the completion of the MMLOS analysis, as this scenario represents the peak vehicular site-generated traffic contributions on the adjacent road network during the weekday peak hours.

	Intersection Name	Parkdale Ave & Scott St				Scott St & Holland Ave/Tunney's Pasture Dr.				Scott St & Sir Frederick Banting Dr. / Ross Ave.			
	OP Transect / Policy Area	**Within 600m of a rapid transit station**				**Within 600m of a rapid transit station**				**Within 600m of a rapid transit station**			
Pedestrian	**PLOS Inputs**												
	Pedestrians Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Number of Travel Lanes Crossed	1-3	1-3	4	4	1-3	5	4	1-3	1-3	1-3	1-3	1-3
	Median Refuge (≥2.7m)	No	No	No	No	No	No	No	No	No	No	No	No
	Crosswalk Treatment	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings
	Signal Cycle Length (sec)	91-105				91-105				91-105			
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	**WBR**	**EBR**	**NBR**	**SBR**	**WBR**	**EBR**	**NBR**	**SBR**	**WBR**	**EBR**	**NBR**	**SBR**
	Right-Turn Geometry	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel
	Right-Turn Signal Phasing	Permissive	Permissive	Permissive	Permissive	Permissive (with LPI/LBI)	Permissive (with LPI/LBI)	Permissive (with LPI/LBI)	Permissive (with LPI/LBI)	Permissive	Permissive	Permissive	Permissive
	Right-Turn Volume	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	> 150 to 300 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h
	Right-Turn Effective Corner Radius	> 8m	≤ 8m	≤ 8m	≤ 8m	> 8m	≤ 8m	≤ 8m	> 8m	> 8m	> 8m	> 8m	≤ 8m
	Cross-street Posted Speed (km/h)	40 km/h		50 km/h		40 km/h		50 km/h		50 km/h		30 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	**EBL**	**WBL**	**SBL**	**NBL**	**EBL**	**WBL**	**SBL**	**NBL**	**EBL**	**WBL**	**SBL**	**NBL**
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm
	Left-Turn Volume	> 100 veh/h	> 50 to 100 veh/h	> 50 to 100 veh/h	> 50 to 100 veh/h	≤ 50 veh/h	> 100 veh/h	> 50 to 100 veh/h	> 100 veh/h	> 50 to 100 veh/h	≤ 50 veh/h	≤ 50 veh/h	≤ 50 veh/h
	Left-Turn Opposing Lanes	-	≤ 1	≤ 1	≤ 1	-	-	≥ 2	-	≤ 1	-	-	-
	Score	**4.15**	**4.35**	**3.75**	**3.75**	**4.50**	**3.10**	**3.55**	**4.30**	**4.35**	**4.35**	**4.35**	**4.35**
	PLOS	**B**	**B**	**B**	**B**	**A**	**C**	**B**	**B**	**B**	**B**	**B**	**B**
		B				**B**				**B**			
	Target PLOS	**A**				**A**				**A**			
Bicycle	**BLOS Inputs**												
	Cycling Route Classification	**Cross-Town Bikeway**				**Cross-Town Bikeway**				**Cross-Town Bikeway**			
	Cyclists Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Type of Cycling Facility Across Leg	Crossride	Crossride	Crossride	Crossride	Crossride	Crossride	Crossride	Crossride	Crossride	Crossride	Crossride	Crossride
	Two-Way ADT (in Cyclist Travel Direction)	10,420		13,460		10,210		15,780		2,180		14,080	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	No	No	No	No	No	No	No	No	No
	Crossride Operation	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional	Unidirectional
	Target Crossride Setback Met?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-	-	-	-	-	-	-	-	-
	Cyclist Left-Turn Operation	**WBL**	**EBL**	**NBL**	**SBL**	**WBL**	**EBL**	**NBL**	**SBL**	**WBL**	**EBL**	**NBL**	**SBL**
	Cyclist Left-Turn Treatment Type	Protected Corner	Protected Corner	Protected Corner	Protected Corner	Protected Corner	Protected Corner	Protected Corner	Protected Corner	Physically Separated	Physically Separated	Physically Separated	Physically Separated
	Vehicle Lanes Crossed by Cyclists	-	-	-	-	-	-	-	-	-	-	-	-
	Score	**100**	**140**	**140**	**140**	**145**	**105**	**100**	**105**	**120**	**120**	**120**	**120**
	BLOS	**B**	**A**	**A**	**A**	**A**	**B**	**B**	**B**	**B**	**B**	**B**	**B**
		A				**B**				**B**			
	Target BLOS	**A**				**A**				**A**			
Transit	**TLOS Inputs**												
	Transit Facility	**Mixed Traffic**				**Mixed Traffic**				**Mixed Traffic**			
	Vehicles Travelling	**Southbound**	**Northbound**	**Westbound**	**Eastbound**	**Southbound**	**Northbound**	**Westbound**	**Eastbound**	**Southbound**	**Northbound**	**Westbound**	**Eastbound**
	Average Transit Delay	11-20 sec	56-80 sec	Unavailable	21-35 sec	21-35 sec	36-55 sec	Unavailable	21-35 sec	36-55 sec	11-20 sec	≤ 10 sec	11-20 sec
	Example Transit Priority Treatment	-	-	Continuous bus lane or transit queue jump lane with TSP	-	-	-	Continuous bus lane or transit queue jump lane without TSP	-	-	-	-	-
	TLOS	**B**	**E**	**A**	**C**	**C**	**D**	**B**	**C**	**D**	**B**	**A**	**B**
		C				**C**				**B**			
	Target TLOS	**E (D if road connects to transit station)**				**E (D if road connects to transit station)**				**E (D if road connects to transit station)**			
Auto	**AutoLOS Inputs**												
	Overall Intersection Volume to Capacity Ratio	0.81 to 0.90				0.81 to 0.90				0.61 to 0.70			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table				See Separate Traffic Operations Table				See Separate Traffic Operations Table			
	AutoLOS	**D**				**D**				**B**			
	Target AutoLOS	**E**				**E**				**E**			

Multi-Modal Level of Service - Intersections Form

Project: Tunney's Pasture
Consultant: Arcadis
Date: Jun 19, 2025
Scenario: Future Total 2038[1]

Note that the Future (2038) Total Traffic scenario was selected for the completion of the MMLOS analysis, as this scenario represents the peak vehicular site-generated traffic contributions on the adjacent road network during the weekday peak hours.

	Intersection Name	Parkdale Ave & Colombine Ave				Scott & Goldenrod/Smirle			
	OP Transect / Policy Area	Within 600m of a rapid transit station				Within 600m of a rapid transit station			
Pedestrian	PLOS Inputs								
	Pedestrians Crossing the	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg
	Number of Travel Lanes Crossed	1-3	1-3	No Crosswalk	1-3	1-3	1-3	4	4
	Median Refuge (≥2.7m)	No	No	-	Yes	No	No	No	Yes
	Crosswalk Treatment	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	-	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings
	Signal Cycle Length (sec)	76-90				91-105			
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	WBR	EBR	NBR	SBR	WBR	EBR	NBR	SBR
	Right-Turn Geometry	No Right-Turn / Prohib.	Right-Turn With No Channel	No Right-Turn / Prohib.	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel
	Right-Turn Signal Phasing	-	Permissive	-	Permissive	Permissive	Permissive	Permissive	Permissive
	Right-Turn Volume	-	> 150 to 300 veh/h	-	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h
	Right-Turn Effective Corner Radius	-	≤ 8m	-	≤ 8m	> 8m	> 8m	> 8m	≤ 8m
	Cross-street Posted Speed (km/h)	30 km/h		40 km/h		30 km/h		50 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	EBL	WBL	SBL	NBL	EBL	WBL	SBL	NBL
	Left-Turn Signal Phasing	Perm or Prot+Perm	No Left-Turn / Prohib.	No Left-Turn / Prohib.	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm
	Left-Turn Volume	> 100 veh/h	-	-	> 50 to 100 veh/h	> 50 to 100 veh/h	≤ 50 veh/h	> 100 veh/h	≤ 50 veh/h
	Left-Turn Opposing Lanes	-	-	-	≤ 1	≤ 1	-	-	-
	Score	4.45	4.35	-	4.50	4.35	4.35	3.55	4.35
	PLOS	B	B	-	A	B	B	B	B
		B				B			
	Target PLOS	A				A			
Bicycle	BLOS Inputs								
	Cycling Route Classification	Elsewhere				Cross-Town Bikeway			
	Cyclists Crossing the	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg
	Type of Cycling Facility Across Leg	Mixed Traffic	Mixed Traffic		Crossride	Crossride	Crossride	Crossride	Crossride
	Two-Way ADT (in Cyclist Travel Direction)	11,560		3,540		2,210		14,500	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No		Yes	No	No	No	No
	Crossride Operation	-	-	-	-	Unidirectional	Unidirectional	Unidirectional	Unidirectional
	Target Crossride Setback Met?	-	-	-	-	Yes	Yes	Yes	Yes
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-	-	-	-	-
	Cyclist Left-Turn Operation	WBL	EBL	NBL	SBL	WBL	EBL	NBL	SBL
	Cyclist Left-Turn Treatment Type		General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	Physically Separated	Physically Separated	Physically Separated	Protected Corner
	Vehicle Lanes Crossed by Cyclists	-	One Lane Crossed	One Lane Crossed	No Lane Crossed	-	-	-	-
	Score	-	65	-	90	120	120	80	140
	BLOS	-	C	-	C	B	B	C	A
		C				B			
	Target BLOS	B				A			
Transit	TLOS Inputs								
	Transit Facility	Mixed Traffic				Mixed Traffic			
	Vehicles Travelling	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound
	Average Transit Delay	≤ 10 sec	≤ 10 sec		21-35 sec	≤ 10 sec	≤ 10 sec	Unavailable	36-55 sec
	Example Transit Priority Treatment	-	-		-	-	-	Continuous bus lane or transit queue jump lane without TSP	-
	TLOS	A	A	-	C	A	A	B	D
		B				B			
	Target TLOS	E (D if road connects to transit station)				E (D if road connects to transit station)			
Auto	AutoLOS Inputs								
	Overall Intersection Volume to Capacity Ratio	0 to 0.60				0 to 0.60			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table				See Separate Traffic Operations Table			
	AutoLOS	A				A			
	Target AutoLOS	E				E			

Multi-Modal Level of Service - Segments Form

Project: Tunney's Pasture
Consultant: Arcadis
Date: Jun 19, 2025
Scenario: Future Conditions

For the purposes of this segment-based MMLOS analysis, it was assumed that the Parkdale Greenway will be in place on the west side of Parkdale Ave, as envisioned in the Scott St CDP.
A potential pedestrian pathway was evaluated on the south side of Kichi Zibi Mikan, which was indicated at a conceptual level in theThe Ottawa South Shore Riverfront Park Plan (NCC, 2018).

	Segment Name	Kichi Zibi Mikan				Parkdale Ave (between Goldenrod and Burnside)				Parkdale Ave (between Burnside and Lyndale)			
	OP Transect / Policy Area	Downtown Core, Inner Urban,Hub and/or Special District				Within 600m of a rapid transit station				Within 600m of a rapid transit station			
	Segment Component	Majority (>50%)		Critical		Majority (>50%)		Critical		Majority (>50%)		Critical	
	Side of Street	N or W	E or S	N or W	E or S	N or W	E or S	N or W	E or S	N or W	E or S	N or W	E or S
Pedestrian	PLOS Inputs												
	Posted Speed (km/h)	60 km/h		60 km/h		40 km/h		40 km/h		40 km/h		40 km/h	
	Two-Way ADT	24,150		24,150		13,100		13,100		11,420		11,420	
	Pedestrian Facility	Multi-Use Pathway	Multi-Use Pathway	Multi-Use Pathway	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Facility Width (m)	3.00m	2.00m	3.00m	2.00m	1.80m	1.80m	1.80m	1.80m	2.00m	2.00m	1.80m	1.80m
	Offset from Motor Vehicle Travel Lanes (m)	≥ 3.0m	≥ 3.0m	≥ 3.0m	≥ 3.0m	1.5-2.99m	1.5-2.99m	1.5-2.99m	1.5-2.99m	< 0.5m	< 0.5m	< 0.5m	< 0.5m
	Presence of Adjacent Parking?	No	No	No	No	-	-	-	-	-	-	-	-
	General Purpose Curb Lane ADT	-	-	-	-	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000	> 3000
	Max. Distance between Controlled Crossings (m)	> 400m	> 400m	> 400m	> 400m	201-230m	201-230m	201-230m	201-230m	≤ 200m	≤ 200m	≤ 200m	≤ 200m
	Score	3.75	3.75	3.75	3.75	4.00	4.00	4.00	4.00	3.50	3.50	2.75	2.75
	PLOS	B	B	B	B	B	B	B	B	B	B	C	C
	Target PLOS	A				A				A			
Bicycle	BLOS Inputs												
	Cycling Route Classification	Elsewhere				Elsewhere				Elsewhere			
	Cycling Facility	Multi-Use Pathway	Multi-Use Pathway	Multi-Use Pathway	Shared Operating Space	Cycle Track	Shared Operating Space	Cycle Track	Shared Operating Space	Cycle Track	Shared Operating Space	Cycle Track	Shared Operating Space
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-	-	-	-	-	-	-	-	-
	Facility Operation	-	-	-	-	Bidirectional	-	Bidirectional	-	Bidirectional	-	Bidirectional	-
	Pedestrian/Cyclist Volume	High-Volume MUP (> 100 users per hour)	High-Volume MUP (> 100 users per hour)	High-Volume MUP (> 100 users per hour)	-	-	-	-	-	-	-	-	-
	Facility Width	3.0-3.49m	3.0-3.49m	3.0-3.49m	-	≥ 3.5m	-	≥ 3.5m	-	≥ 3.5m	-	≥ 3.5m	-
	Boulevard/Buffer Width (excluding curb)	≥ 1.5m or any boulevard width with continuous traffic barrier	≥ 1.5m or any boulevard width with continuous traffic barrier	≥ 1.5m or any boulevard width with continuous traffic barrier	-	0.6-0.99m and no adjacent parking	-	0.6-1.49m with adjacent parking	-	0.6-0.99m and no adjacent parking	-	0.6-1.49m with adjacent parking	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	None	Cross-Street	None	Cross-Street	Cross-Street	Cross-Street	Cross-Street	Cross-Street	Cross-Street	Cross-Street	Cross-Street
	Number of Travel Lanes at Crossing	-	-	≤ 2	-	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
	Crossing includes Median Refuge (≥ 2.7m)	-	-	No	-	No	No	No	No	No	No	No	No
	Cross-street Posted Speed (km/h)	-	-	≤ 30 km/h	-	40 km/h	40 km/h	40 km/h	40 km/h	40 km/h	40 km/h	40 km/h	40 km/h
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	-	Rare	-	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare
	Score	3.50	3.50	3.73	0.75	3.58	2.05	4.43	2.05	3.58	2.05	4.43	2.05
	BLOS	B	B	B	E	B	D	B	D	B	D	B	D
	Target BLOS	B				B				B			
Transit	TLOS Inputs												
	Transit Facility	Mixed Traffic											
	Facility Type	Mixed Traffic	Mixed Traffic										
	Expected Transit Running Time (Qualitative)	Slightly Impeded or Unimpeded	Slightly Impeded or Unimpeded										
	Transit Travel Speed (Mixed Traffic Only)	25 km/h	46 km/h										
	TLOS	E	D										
	Target TLOS	E (D if road connects to transit station)				-				-			
Public Realm	PRLOS Inputs												
	Context	Other Streets	Other Streets			Other Streets	Other Streets			Other Streets	Other Streets		
	Inner Boulevard Width	≥ 4.0m	≥ 4.0m			≤ 0.6m	≤ 0.6m			≤ 0.6m	≤ 0.6m		
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width	≥ 3.0m	≥ 3.0m			≥ 3.0m	≥ 3.0m			≥ 3.0m	≥ 3.0m		
	Transit Route on Segment?	No	No			Yes	No			Yes	No		
	Bus Stop Elements	-	-			Curbside landing zone with shelter behind sidewalk	-			Curbside landing zone with shelter behind sidewalk	-		
	Number of Midblock Traffic Lanes (both travel directions)	4				≤ 2				≤ 2			
	Score	70.00	65.00			85.00	77.00			93.00	85.00		
	PRLOS	B	C			B	B			A	B		
		C				B				B			

Multi-Modal Level of Service - Segments Form

Project: Tunney's Pasture
Consultant: Arcadis
Date: Jun 19, 2025
Scenario: Future Conditions

For the purposes of this segment-based MMLOS analysis, it was assumed that the Parkdale Greenway will be in place on the west side of Parkdale Ave, as envisioned in the Scott St CDP.
A potential pedestrian pathway was evaluated on the south side of Kichi Zibi Mikan, which was indicated at a conceptual level in theThe Ottawa South Shore Riverfront Park Plan (NCC, 2018).

	Segment Name	Parkdale Ave (between Lyndale and Scott)			
	OP Transect / Policy Area	Within 600m of a rapid transit station			
	Segment Component	Majority (>50%)		Critical	
	Side of Street	N or W	E or S	N or W	E or S
Pedestrian	PLOS Inputs				
	Posted Speed (km/h)	40 km/h		40 km/h	
	Two-Way ADT	12,150		12,150	
	Pedestrian Facility	Sidewalk	Sidewalk	Sidewalk	Sidewalk
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	Yes	Yes	Yes	Yes
	Facility Width (m)	2.00m	2.00m	1.80m	1.80m
	Offset from Motor Vehicle Travel Lanes (m)	< 0.5m	< 0.5m	< 0.5m	< 0.5m
	Presence of Adjacent Parking?	-	-	-	-
	General Purpose Curb Lane ADT	> 3000	> 3000	> 3000	> 3000
	Max. Distance between Controlled Crossings (m)	≤ 200m	≤ 200m	≤ 200m	≤ 200m
	Score	3.50	3.50	2.75	2.75
	PLOS	B	B	C	C
	Target PLOS	A			
Bicycle	BLOS Inputs				
	Cycling Route Classification	Elsewhere			
	Cycling Facility	Cycle Track	Shared Operating Space	Cycle Track	Shared Operating Space
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-
	Facility Operation	Bidirectional	-	Bidirectional	-
	Pedestrian/Cyclist Volume	-	-	-	-
	Facility Width	≥ 3.5m	-	≥ 3.5m	-
	Boulevard/Buffer Width (excluding curb)	0.6-0.99m and no adjacent parking	-	0.6-1.49m with adjacent parking	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	Cross-Street	Cross-Street	Cross-Street	Cross-Street
	Number of Travel Lanes at Crossing	≤ 2	≤ 2	≤ 2	≤ 2
	Crossing includes Median Refuge (≥ 2.7m)	No	No	No	No
	Cross-street Posted Speed (km/h)	40 km/h	40 km/h	40 km/h	40 km/h
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	Rare	Rare	Rare	Rare
	Score	3.58	2.05	4.43	2.05
	BLOS	B	D	B	D
	Target BLOS	B			
Transit	TLOS Inputs				
	Transit Facility				
	Facility Type				
	Expected Transit Running Time (Qualitative)				
	Transit Travel Speed (Mixed Traffic Only)				
	TLOS	-	-		
	Target TLOS	-			
Public Realm	PRLOS Inputs				
	Context	Other Streets	Other Streets		
	Inner Boulevard Width	≤ 0.6m	≤ 0.6m		
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width	≥ 3.0m	≥ 3.0m		
	Transit Route on Segment?	Yes	No		
	Bus Stop Elements	Curbside landing zone with shelter behind sidewalk	-		
	Number of Midblock Traffic Lanes (both travel directions)	≤ 2			
	Score	93.00	85.00		
	PRLOS	A	B		
		B			

Appendix F – Intersection Capacity Analyses

Existing

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	6	465	2	25	5	0	0	4	5
Future Volume (vph)	0	0	0	6	465	2	25	5	0	0	4	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt					0.999						0.919	
Flt Protected					0.999			0.960				
Satd. Flow (prot)	0	0	0	0	3417	0	0	1639	0	0	1656	0
Flt Permitted					0.999			0.757				
Satd. Flow (perm)	0	0	0	0	3417	0	0	1293	0	0	1656	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						6	
Link Speed (k/h)		60			60			30			30	
Link Distance (m)		298.2			148.1			68.2			52.4	
Travel Time (s)		17.9			8.9			8.2			6.3	
Confl. Peds. (#/hr)									8	8		
Confl. Bikes (#/hr)						1						3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	8%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	7	517	2	28	6	0	0	4	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	526	0	0	34	0	0	10	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				73.0	73.0		26.0	26.0			26.0	
Total Split (%)				63.5%	63.5%		22.6%	22.6%			22.6%	
Maximum Green (s)				67.3	67.3		15.7	15.7			15.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				15	15		15	15			15	
Act Effct Green (s)					67.3			15.7			15.7	
Actuated g/C Ratio					0.68			0.16			0.16	
v/c Ratio					0.23			0.17			0.04	
Control Delay					6.3			18.3			25.8	
Queue Delay					0.0			0.0			0.0	

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA

Existing Conditions
Weekday AM Peak Hour

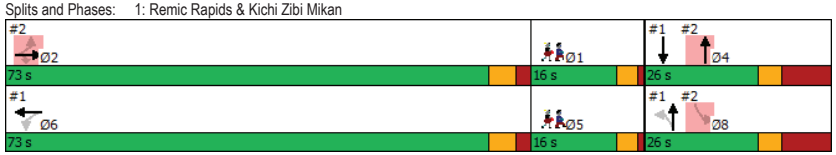
Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	73.0	16.0
Total Split (%)	14%	63%	14%
Maximum Green (s)	12.0	67.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	15	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					6.3			18.3			25.8	
LOS					A			B			C	
Approach Delay					6.3			18.3			25.8	
Approach LOS					A			B			C	
Queue Length 50th (m)					17.7			2.8			0.7	
Queue Length 95th (m)					24.1			m4.5			5.2	
Internal Link Dist (m)		274.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2323			205			267	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.23			0.17			0.04	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 35.9%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	12	1491	3	333	3	0	0	3	4
Future Volume (vph)	0	0	0	12	1491	3	333	3	0	0	3	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.99	
Frt											0.923	
Flt Protected								0.953				
Satd. Flow (prot)	0	0	0	0	3458	0	0	1701	0	0	1665	0
Flt Permitted								0.723				
Satd. Flow (perm)	0	0	0	0	3458	0	0	1286	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											4	
Link Speed (k/h)		60			60			30			50	
Link Distance (m)		298.2			148.1			68.2			52.4	
Travel Time (s)		17.9			8.9			8.2			3.8	
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	13	1657	3	370	3	0	0	3	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1673	0	0	373	0	0	7	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				81.0	81.0		48.0	48.0			48.0	
Total Split (%)				55.9%	55.9%		33.1%	33.1%			33.1%	
Maximum Green (s)				75.3	75.3		37.7	37.7			37.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				15	15		15	15			15	
Act Effct Green (s)					75.3			37.7			37.7	
Actuated g/C Ratio					0.58			0.29			0.29	
v/c Ratio					0.83			0.99			0.01	
Control Delay					26.3			56.0			24.2	
Queue Delay					0.0			0.0			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	81.0	16.0
Total Split (%)	11%	56%	11%
Maximum Green (s)	12.0	75.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	15	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Existing Conditions
Weekday PM Peak Hour

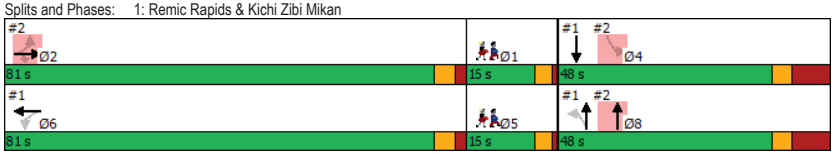


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					26.3			56.0			24.2	
LOS					C			E			C	
Approach Delay					26.3			56.0			24.2	
Approach LOS					C			E			C	
Queue Length 50th (m)					171.8			21.6			0.6	
Queue Length 95th (m)					204.8			m#139.2			4.2	
Internal Link Dist (m)		274.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2018			375			489	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.83			0.99			0.01	

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 129
Natural Cycle: 150
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 31.7 Intersection LOS: C
Intersection Capacity Utilization 83.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1164	223	0	0	0	0	27	12	10	0	0
Future Volume (vph)	3	1164	223	0	0	0	0	27	12	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					1.00				
Frt			0.850					0.959				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1517	0	0	0	0	1614	0	1729	0	0
Flt Permitted										0.729		
Satd. Flow (perm)	0	3458	1482	0	0	0	0	1614	0	1327	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			248					13				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	11%	0%	0%	0%	0%
Adj. Flow (vph)	3	1293	248	0	0	0	0	30	13	11	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1296	248	0	0	0	0	43	0	11	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	15	15	15					15		15		
Act Effct Green (s)		67.3	67.3					15.7		15.7		
Actuated g/C Ratio		0.68	0.68					0.16		0.16		

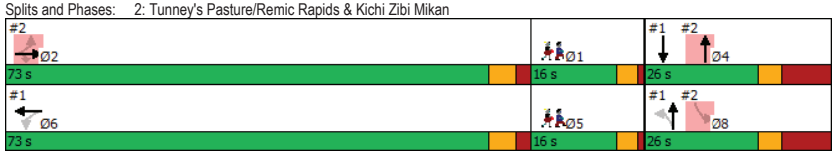
2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Existing Conditions
Weekday AM Peak Hour

Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	15
Act Effct Green (s)			
Actuated g/C Ratio			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.55	0.23					0.16		0.05		
Control Delay		9.2	1.3					29.2		34.1		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		9.2	1.3					29.2		34.1		
LOS		A	A					C		C		
Approach Delay		7.9						29.2			34.1	
Approach LOS		A						C			C	
Queue Length 50th (m)		59.4	0.0					5.0		1.9		
Queue Length 95th (m)		74.6	6.8					14.5		5.8		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2350	1086					266		210		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.55	0.23					0.16		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 51.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	306	25	0	0	0	0	318	54	15	0	0
Future Volume (vph)	18	306	25	0	0	0	0	318	54	15	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt			0.850					0.980				
Flt Protected		0.997								0.950		
Satd. Flow (prot)	0	3384	1381	0	0	0	0	1749	0	1729	0	0
Flt Permitted		0.997								0.287		
Satd. Flow (perm)	0	3384	1381	0	0	0	0	1749	0	522	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85					6				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	12%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	20	340	28	0	0	0	0	353	60	17	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	360	28	0	0	0	0	413	0	17	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						8				
Permitted Phases	2		2							4		
Detector Phase	2	2	2					8		4		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	81.0	81.0	81.0					48.0		48.0		
Total Split (%)	55.9%	55.9%	55.9%					33.1%		33.1%		
Maximum Green (s)	75.3	75.3	75.3					37.7		37.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					None		Max		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	15	15	15					15		15		
Act Effct Green (s)		75.3	75.3					37.7		37.7		
Actuated g/C Ratio		0.58	0.58					0.29		0.29		

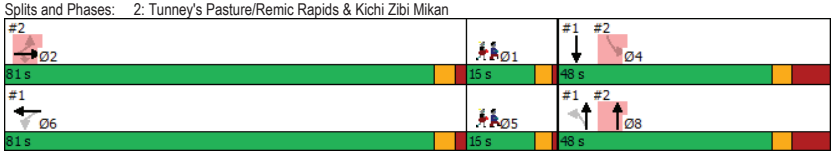
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	81.0
Total Split (%)	11%	11%	56%
Maximum Green (s)	12.0	12.0	75.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	15
Act Effct Green (s)			
Actuated g/C Ratio			

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Existing Conditions
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.18	0.03					0.80		0.11		
Control Delay		12.8	0.1					54.7		39.9		
Queue Delay		0.0	0.0					1.3		0.0		
Total Delay		12.8	0.1					56.0		39.9		
LOS		B	A					E		D		
Approach Delay		11.9						56.0			39.9	
Approach LOS		B						E			D	
Queue Length 50th (m)		21.3	0.0					95.9		4.1		
Queue Length 95th (m)		29.1	0.0					#143.3		m6.3		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		1975	841					515		152		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					23		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.18	0.03					0.84		0.11		

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 129			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 34.7		Intersection LOS: C	
Intersection Capacity Utilization 44.0%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	14	0	114	523	44
Future Volume (vph)	0	14	0	114	523	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.989	
Flt Protected						
Satd. Flow (prot)	0	1471	0	1820	1800	0
Flt Permitted						
Satd. Flow (perm)	0	1471	0	1820	1800	0
Link Speed (k/h)	30			40	40	
Link Distance (m)	138.1			63.3	246.5	
Travel Time (s)	16.6			5.7	22.2	
Confl. Peds. (#/hr)			7			7
Confl. Bikes (#/hr)						4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	7%	0%	0%	0%	0%
Adj. Flow (vph)	0	16	0	127	581	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	0	127	630	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	0	114	523	44
Future Vol, veh/h	0	14	0	114	523	44
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	7	0	0	0	0
Mvmt Flow	0	16	0	127	581	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	613	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.27	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.363	-	-	-	-
Pot Cap-1 Maneuver	0	483	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	480	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	480	-	-
HCM Lane V/C Ratio	-	0.032	-	-
HCM Control Delay (s)	-	12.8	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	0	738	252	2
Future Vol, veh/h	0	16	0	738	252	2
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	18	0	820	280	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	288	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	756	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	-	751	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	751	-	-
HCM Lane V/C Ratio	-	0.024	-	-
HCM Control Delay (s)	-	9.9	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	11	104	5	19	508
Future Vol, veh/h	6	11	104	5	19	508
Conflicting Peds, #/hr	4	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	9	0	0	2
Mvmt Flow	7	12	116	6	21	564

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	729	119	0	0	122	0
Stage 1	119	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	393	938	-	-	1478	-
Stage 1	911	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	383	938	-	-	1478	-
Mov Cap-2 Maneuver	383	-	-	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	532	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	621	1478	-
HCM Lane V/C Ratio	-	-	0.03	0.014	-
HCM Control Delay (s)	-	-	11	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	0	738	252	2
Future Vol, veh/h	0	16	0	738	252	2
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	18	0	820	280	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	288	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	756	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	751	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	751	-	-
HCM Lane V/C Ratio	-	0.024	-	-
HCM Control Delay (s)	-	9.9	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	26	80	120	433	50
Future Vol, veh/h	13	26	80	120	433	50
Conflicting Peds, #/hr	4	3	40	0	0	40
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	15	31	4	3	1	4
Mvmt Flow	14	29	89	133	481	56

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	864	552	577	0	-	0
Stage 1	549	-	-	-	-	-
Stage 2	315	-	-	-	-	-
Critical Hdwy	6.55	6.51	4.14	-	-	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.579	2.236	-	-	-
Pot Cap-1 Maneuver	308	482	987	-	-	-
Stage 1	553	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	257	463	951	-	-	-
Mov Cap-2 Maneuver	257	-	-	-	-	-
Stage 1	479	-	-	-	-	-
Stage 2	685	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	3.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	951	-	365	-	-
HCM Lane V/C Ratio	0.093	-	0.119	-	-
HCM Control Delay (s)	9.2	0	16.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.4	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	50	26	648	231	15
Future Vol, veh/h	41	50	26	648	231	15
Conflicting Peds, #/hr	16	0	25	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	8	8	0	1	0
Mvmt Flow	46	56	29	720	257	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1085	291	299	0	-	0
Stage 1	291	-	-	-	-	-
Stage 2	794	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.18	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.272	-	-	-
Pot Cap-1 Maneuver	242	734	1229	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	449	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	222	717	1201	-	-	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	439	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19	0.3	0
HCM LOS	C		

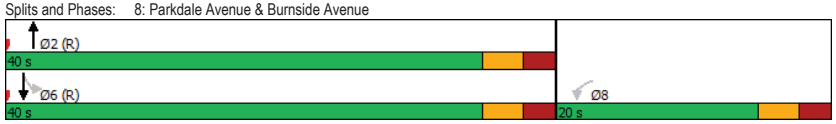
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1201	-	358	-	-
HCM Lane V/C Ratio	0.024	-	0.282	-	-
HCM Control Delay (s)	8.1	0	19	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	39	38	191	30	128	354
Future Volume (vph)	39	38	191	30	128	354
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.92		0.99			0.99
Frt	0.933		0.982			
Flt Protected	0.975					0.987
Satd. Flow (prot)	1560	0	1661	0	0	1753
Flt Permitted	0.975					0.846
Satd. Flow (perm)	1521	0	1661	0	0	1489
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	42		22			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	23	46		33	33	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	5%	17%	1%	3%
Adj. Flow (vph)	43	42	212	33	142	393
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	245	0	0	535
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	20.0		40.0		40.0	40.0
Total Split (%)	33.3%		66.7%		66.7%	66.7%
Maximum Green (s)	14.6		34.6		34.6	34.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	15		15			
Act Effct Green (s)	8.2		44.3			44.3
Actuated g/C Ratio	0.14		0.74			0.74
v/c Ratio	0.35		0.20			0.49
Control Delay	17.0		4.2			7.2
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	17.0		4.2			7.2
LOS	B		A			A
Approach Delay	17.0		4.2			7.2
Approach LOS	B		A			A
Queue Length 50th (m)	4.4		6.5			21.1
Queue Length 95th (m)	13.1		19.4			59.5
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	401		1231			1098
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.21		0.20			0.49

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 18 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 68.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue

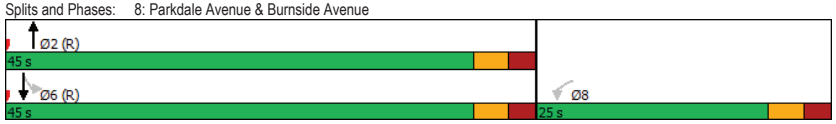


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	161	587	44	55	284
Future Volume (vph)	35	161	587	44	55	284
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88		1.00			1.00
Frt	0.889		0.991			
Flt Protected	0.991					0.992
Satd. Flow (prot)	1414	0	1796	0	0	1761
Flt Permitted	0.991					0.837
Satd. Flow (perm)	1400	0	1796	0	0	1485
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	179		9			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	21	46		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	0%	0%	2%	0%	3%
Adj. Flow (vph)	39	179	652	49	61	316
Shared Lane Traffic (%)						
Lane Group Flow (vph)	218	0	701	0	0	377
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	19.6		39.6		39.6	39.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	15		15			
Act Effct Green (s)	8.9		50.3			50.3
Actuated g/C Ratio	0.13		0.72			0.72
v/c Ratio	0.65		0.54			0.35
Control Delay	17.0		7.3			5.6
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	17.0		7.3			5.6
LOS	B		A			A
Approach Delay	17.0		7.3			5.6
Approach LOS	B		A			A
Queue Length 50th (m)	4.8		29.6			13.3
Queue Length 95th (m)	21.0		77.4			36.4
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	520		1293			1067
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.42		0.54			0.35

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 23 (33%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 8.4		Intersection LOS: A	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue

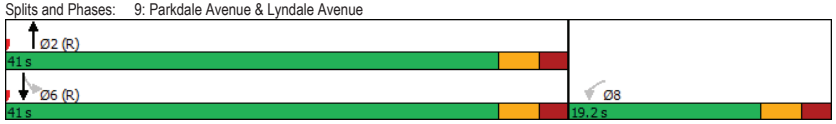


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	2	258	24	2	367
Future Volume (vph)	15	2	258	24	2	367
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		1.00			1.00
Frt	0.986		0.988			
Flt Protected	0.957					
Satd. Flow (prot)	1534	0	1723	0	0	1750
Flt Permitted	0.957					0.999
Satd. Flow (perm)	1454	0	1723	0	0	1748
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	2		14			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	27	4		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	13%	0%	4%	4%	0%	4%
Adj. Flow (vph)	17	2	287	27	2	408
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	314	0	0	410
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	19.2		41.0		41.0	41.0
Total Split (%)	31.9%		68.1%		68.1%	68.1%
Maximum Green (s)	14.0		35.9		35.9	35.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	15		15			
Act Effct Green (s)	7.6		51.9			51.9
Actuated g/C Ratio	0.13		0.86			0.86
v/c Ratio	0.10		0.21			0.27
Control Delay	21.1		3.1			3.5
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	21.1		3.1			3.5
LOS	C		A			A
Approach Delay	21.1		3.1			3.5
Approach LOS	C		A			A
Queue Length 50th (m)	1.8		0.0			0.0
Queue Length 95th (m)	5.8		25.1			35.5
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	339		1488			1507
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.06		0.21			0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 60.2			
Actuated Cycle Length: 60.2			
Offset: 18 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay: 3.8		Intersection LOS: A	
Intersection Capacity Utilization 35.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue

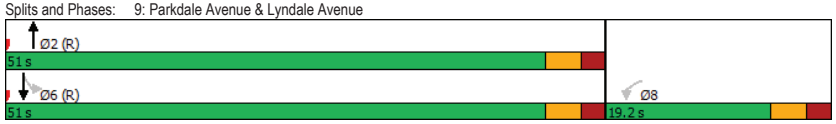


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	4	575	20	5	402
Future Volume (vph)	10	4	575	20	5	402
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		1.00			1.00
Frt	0.964		0.996			
Flt Protected	0.965					0.999
Satd. Flow (prot)	1680	0	1809	0	0	1766
Flt Permitted	0.965					0.994
Satd. Flow (perm)	1618	0	1809	0	0	1757
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	4		5			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	20	4		22	22	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	11	4	639	22	6	447
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	0	661	0	0	453
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	19.2		51.0		51.0	51.0
Total Split (%)	27.4%		72.6%		72.6%	72.6%
Maximum Green (s)	14.0		45.9		45.9	45.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	15		15			
Act Effct Green (s)	7.5		62.0			62.0
Actuated g/C Ratio	0.11		0.88			0.88
v/c Ratio	0.09		0.41			0.29
Control Delay	23.6		3.8			3.1
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	23.6		3.8			3.1
LOS	C		A			A
Approach Delay	23.6		3.8			3.1
Approach LOS	C		A			A
Queue Length 50th (m)	1.4		0.0			0.0
Queue Length 95th (m)	5.6		64.0			38.4
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	325		1598			1551
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.05		0.41			0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 70.2			
Actuated Cycle Length: 70.2			
Offset: 18 (26%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 3.8		Intersection LOS: A	
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	342	44	32	192	29	51	208	48	68	265	192
Future Volume (vph)	105	342	44	32	192	29	51	208	48	68	265	192
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.92		0.91	0.97		0.87		0.98		0.96		0.94
Frt			0.850			0.850		0.979				0.850
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1679	1685	985	1729	1733	1406	0	1672	0	1712	1784	1517
Flt Permitted	0.618			0.454				0.893		0.488		
Satd. Flow (perm)	1001	1685	900	802	1733	1220	0	1498	0	841	1784	1421
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			107		11				213
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			233.9			267.4			221.0	
Travel Time (s)		17.9			16.8			24.1			19.9	
Confl. Peds. (#/hr)	63		33	33		63	23		45	45		23
Confl. Bikes (#/hr)			9									
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	8%	57%	0%	5%	10%	10%	3%	2%	1%	2%	2%
Adj. Flow (vph)	117	380	49	36	213	32	57	231	53	76	294	213
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	380	49	36	213	32	0	341	0	76	294	213
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	32.1	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	46.3%	46.3%	46.3%	46.3%	46.3%	46.3%	45.3%	45.3%		45.3%	45.3%	45.3%
Maximum Green (s)	37.9	37.9	37.9	37.9	37.9	37.9	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	15	15	15	15	15	15	15	15		15	15	15
Act Effct Green (s)	45.9	45.9	45.9	45.9	45.9	45.9		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.39		0.39	0.39	0.39

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	7.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

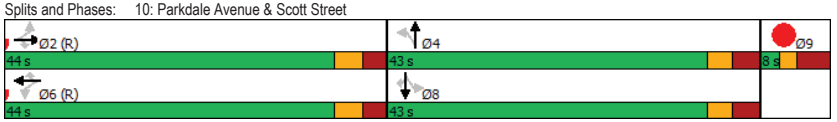
10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA
Existing Conditions
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.24	0.47	0.10	0.09	0.25	0.05		0.58		0.23	0.43	0.31
Control Delay	13.4	15.6	0.6	14.2	15.5	0.1		27.2		22.2	23.8	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	13.4	15.6	0.6	14.2	15.5	0.1		27.2		22.2	23.8	4.2
LOS	B	B	A	B	B	A		C		C	C	A
Approach Delay		13.8			13.6			27.2			16.4	
Approach LOS		B			B			C			B	
Queue Length 50th (m)	7.9	32.1	0.1	3.4	22.1	0.0		47.1		9.2	38.9	0.0
Queue Length 95th (m)	m16.8	44.6	m0.3	8.9	36.4	0.0		74.8		19.8	60.9	13.4
Internal Link Dist (m)		225.1			209.9			243.4			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	483	814	490	387	837	644		585		324	689	679
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.24	0.47	0.10	0.09	0.25	0.05		0.58		0.23	0.43	0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 91 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 17.2		Intersection LOS: B	
Intersection Capacity Utilization 90.1%		ICU Level of Service E	
Analysis Period (min) 15			

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

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	276	301	54	54	350	40	43	302	37	45	225	148
Future Volume (vph)	276	301	54	54	350	40	43	302	37	45	225	148
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		0.83	0.90		0.85		0.98		0.96		0.91
Frt			0.850			0.850		0.987				0.850
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1729	1784	1394	1695	1733	1547	0	1680	0	1729	1784	1532
Flt Permitted	0.210			0.559				0.934		0.405		
Satd. Flow (perm)	366	1784	1154	902	1733	1320	0	1570	0	705	1784	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			101			163		6				164
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			233.9			267.4			221.0	
Travel Time (s)		17.9			16.8			24.1			19.9	
Confl. Peds. (#/hr)	60		79	79		60	34		53	53		34
Confl. Bikes (#/hr)			4			11						5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	11%	2%	5%	0%	35%	1%	3%	0%	2%	1%
Adj. Flow (vph)	307	334	60	60	389	44	48	336	41	50	250	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	307	334	60	60	389	44	0	425	0	50	250	164
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.6	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	15.0	48.0	48.0	33.0	33.0	33.0	44.0	44.0		44.0	44.0	44.0
Total Split (%)	15.0%	48.0%	48.0%	33.0%	33.0%	33.0%	44.0%	44.0%		44.0%	44.0%	44.0%
Maximum Green (s)	9.4	41.9	41.9	26.9	26.9	26.9	37.7	37.7		37.7	37.7	37.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.3	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)		19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		15	15	15	15	15	15	15		15	15	15
Act Effct Green (s)	50.4	49.9	49.9	26.9	26.9	26.9		37.7		37.7	37.7	37.7
Actuated g/C Ratio	0.50	0.50	0.50	0.27	0.27	0.27		0.38		0.38	0.38	0.38

10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA

Existing Conditions
Weekday PM Peak Hour

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings

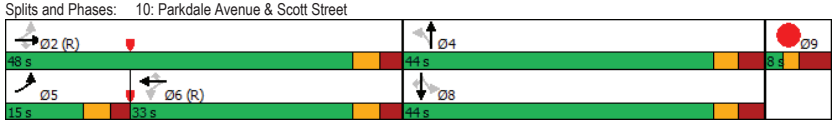
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.73	0.38	0.10	0.25	0.83	0.09		0.71		0.19	0.37	0.26
Control Delay	27.4	17.0	1.1	28.6	47.1	0.4		34.2		23.3	24.6	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	27.4	17.0	1.1	28.6	47.1	0.4		34.2		23.3	24.6	4.5
LOS	C	B	A	C	D	A		C		C	C	A
Approach Delay		20.2			40.7			34.2			17.4	
Approach LOS		C			D			C			B	
Queue Length 50th (m)	34.4	38.3	0.0	8.7	71.5	0.0		68.2		6.4	34.6	0.0
Queue Length 95th (m)	#64.3	58.2	2.0	13.0	#114.9	0.2		103.8		15.2	54.6	12.4
Internal Link Dist (m)		225.1			209.9			243.4			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	421	890	626	242	466	474		595		265	672	626
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.73	0.38	0.10	0.25	0.83	0.09		0.71		0.19	0.37	0.26

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 27.3 Intersection LOS: C
Intersection Capacity Utilization 100.9% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Parkdale Avenue & Scott Street



10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA

Existing Conditions
Weekday PM Peak Hour

Lane Group	Ø9
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lanes, Volumes, Timings
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	437	70	78	226	24	109	137	119	19	51	17
Future Volume (vph)	18	437	70	78	226	24	109	137	119	19	51	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.78	0.95		0.95		0.64	0.65		0.63	0.71		0.61
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1631	1479	0	1662	1655	1238	1361	1802	1502	1262	1685	1381
Flt Permitted	0.603			0.377			0.720			0.648		
Satd. Flow (perm)	807	1479	0	625	1655	793	673	1802	940	613	1685	841
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			244.8			108.7	
Travel Time (s)		20.2			17.9			22.0			13.0	
Confl. Peds. (#/hr)	149		98	98		149	190		180	180		190
Confl. Bikes (#/hr)			122			15			8			4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	11%	40%	4%	10%	25%	27%	1%	3%	37%	8%	12%
Adj. Flow (vph)	20	486	78	87	251	27	121	152	132	21	57	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	564	0	87	251	27	121	152	132	21	57	19
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	2	2		6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	3.0	3.0	3.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	44.0	44.0		44.0	44.0	44.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	46.3%	46.3%		46.3%	46.3%	46.3%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	37.8	37.8		37.8	37.8	37.8	34.8	34.8	34.8	34.8	34.8	34.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)	59.6	59.6		59.6	59.6	59.6	23.0	23.0	23.0	23.0	23.0	23.0
Actuated g/C Ratio	0.63	0.63		0.63	0.63	0.63	0.24	0.24	0.24	0.24	0.24	0.24

11: Holland Avenue/Tunney's Pasture Driveway & Scott Street Existing Conditions
Tunney's Pasture TIA Weekday AM Peak Hour

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	3.0	3.0	3.0	3.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?		Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

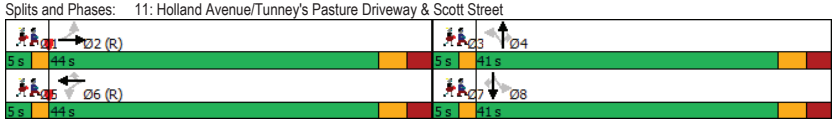
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.04	0.61		0.22	0.24	0.05	0.74	0.35	0.58	0.14	0.14	0.09
Control Delay	10.4	16.9		9.7	8.1	8.2	57.0	29.5	39.7	25.7	24.9	24.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	16.9		9.7	8.1	8.2	57.0	29.5	39.7	25.7	24.9	24.0
LOS	B	B		A	A	A	E	C	D	C	C	C
Approach Delay		16.7			8.5			41.0			24.9	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	1.3	58.7		4.8	14.2	1.3	20.3	22.8	21.1	3.0	8.1	2.7
Queue Length 95th (m)	5.6	124.7		m14.6	32.5	m5.4	34.5	32.8	33.2	7.6	14.7	7.0
Internal Link Dist (m)		256.5			225.1			220.8			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		30.0
Base Capacity (vph)	505	927		391	1037	497	247	661	345	225	618	309
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.61		0.22	0.24	0.05	0.49	0.23	0.38	0.09	0.09	0.06

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 85 (89%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 22.0 Intersection LOS: C
Intersection Capacity Utilization 69.6% ICU Level of Service C
Analysis Period (min) 15

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

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	478	65	153	548	22	123	136	219	58	191	18
Future Volume (vph)	13	478	65	153	548	22	123	136	219	58	191	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.96				0.55	0.69		0.66	0.75		0.53
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1601	1573	0	1679	1701	1172	1361	1802	1547	1679	1802	1459
Flt Permitted	0.084			0.208			0.553			0.646		
Satd. Flow (perm)	142	1573	0	368	1701	644	551	1802	1025	852	1802	772
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			244.8			108.7	
Travel Time (s)		20.2			17.9			22.0			13.0	
Confl. Peds. (#/hr)	152		112	112		152	198		140	140		198
Confl. Bikes (#/hr)			31			86			3			8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	5%	40%	3%	7%	32%	27%	1%	0%	3%	1%	6%
Adj. Flow (vph)	14	531	72	170	609	24	137	151	243	64	212	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	603	0	170	609	24	137	151	243	64	212	20
Turn Type	Perm	NA		custom	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2		15	6 15			4			8	
Permitted Phases	2			6		6 15	4		4	8		8
Detector Phase	2	2		15	6 15	6 15	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		11.2			30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	50.0	50.0		15.0			35.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	45.5%	45.5%		13.6%			31.8%	31.8%	31.8%	31.8%	31.8%	31.8%
Maximum Green (s)	43.8	43.8		8.8			28.8	28.8	28.8	28.8	28.8	28.8
Yellow Time (s)	3.3	3.3		3.3			3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9			2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0			0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2			6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min	C-Min		None			Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0					2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0					22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30					30	30	30	30	30	30
Act Effct Green (s)	47.9	47.9		57.4	63.6	63.6	34.0	34.0	34.0	34.0	34.0	34.0
Actuated g/C Ratio	0.44	0.44		0.52	0.58	0.58	0.31	0.31	0.31	0.31	0.31	0.31

Lane Group	Ø1	Ø3	Ø5	Ø6	Ø7
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Ideal Flow (vphpl)					
Storage Length (m)					
Storage Lanes					
Taper Length (m)					
Lane Util. Factor					
Ped Bike Factor					
Frt					
Flt Protected					
Satd. Flow (prot)					
Flt Permitted					
Satd. Flow (perm)					
Right Turn on Red					
Satd. Flow (RTOR)					
Link Speed (k/h)					
Link Distance (m)					
Travel Time (s)					
Confl. Peds. (#/hr)					
Confl. Bikes (#/hr)					
Peak Hour Factor					
Heavy Vehicles (%)					
Adj. Flow (vph)					
Shared Lane Traffic (%)					
Lane Group Flow (vph)					
Turn Type					
Protected Phases	1	3	5	6	7
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	1.0	1.0	1.0	5.0	1.0
Minimum Split (s)	3.0	3.0	3.0	27.2	3.0
Total Split (s)	5.0	5.0	5.0	50.0	5.0
Total Split (%)	5%	5%	5%	45%	5%
Maximum Green (s)	3.0	3.0	3.0	43.8	3.0
Yellow Time (s)	2.0	2.0	2.0	3.3	2.0
All-Red Time (s)	0.0	0.0	0.0	2.9	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag		Lead			Lead
Lead-Lag Optimize?		Yes			Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min	None
Walk Time (s)	0.0	0.0	0.0	2.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	19.0	0.0
Pedestrian Calls (#/hr)	0	0	0	30	0
Act Effct Green (s)					
Actuated g/C Ratio					

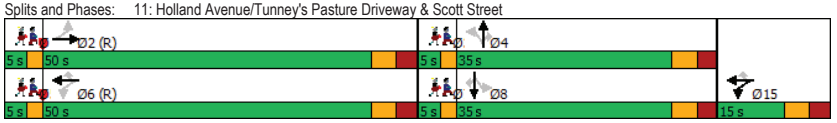
11: Holland Avenue/Tunney's Pasture Driveway & Scott Street
Tunney's Pasture TIA
Existing Conditions
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.23	0.88		0.56	0.62	0.06	0.81	0.27	0.77	0.24	0.38	0.08
Control Delay	30.4	44.5		18.6	18.7	10.7	70.0	30.4	52.5	31.7	32.4	28.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	44.5		18.6	18.7	10.7	70.0	30.4	52.5	31.7	32.4	28.5
LOS	C	D		B	B	B	E	C	D	C	C	C
Approach Delay		44.2			18.4			50.7			32.0	
Approach LOS		D			B			D			C	
Queue Length 50th (m)	1.8	114.0		16.1	80.6	2.1	27.0	24.4	47.2	10.3	35.6	3.0
Queue Length 95th (m)	7.4	#180.0		26.6	115.8	5.9	#61.5	41.1	#86.7	21.7	56.4	8.9
Internal Link Dist (m)		256.5			225.1			220.8			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		30.0
Base Capacity (vph)	61	684		305	983	372	170	556	316	262	556	238
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.88		0.56	0.62	0.06	0.81	0.27	0.77	0.24	0.38	0.08

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 34.9 Intersection LOS: C
Intersection Capacity Utilization 88.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	488	5	4	267	91	1	1	12	0	1	20
Future Vol, veh/h	24	488	5	4	267	91	1	1	12	0	1	20
Conflicting Peds, #/hr	51	0	20	20	0	51	6	0	2	2	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	18	0	0	27	4	0	0	0	0	0	15
Mvmt Flow	27	542	6	4	297	101	1	1	13	0	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	449	0	0	568	0	0	992	1076	567	-	1029	405
Stage 1	-	-	-	-	-	-	619	619	-	-	407	-
Stage 2	-	-	-	-	-	-	373	457	-	-	622	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	-	6.5	6.35
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	-	4	3.435
Pot Cap-1 Maneuver	1122	-	-	1014	-	-	227	221	527	0	236	619
Stage 1	-	-	-	-	-	-	480	483	-	0	601	-
Stage 2	-	-	-	-	-	-	652	571	-	0	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1069	-	-	995	-	-	206	199	516	-	212	587
Mov Cap-2 Maneuver	-	-	-	-	-	-	206	199	-	-	212	-
Stage 1	-	-	-	-	-	-	454	457	-	-	570	-
Stage 2	-	-	-	-	-	-	620	542	-	-	456	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	13.8	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	423	1069	-	-	995	-	-	587
HCM Lane V/C Ratio	0.037	0.025	-	-	0.004	-	-	0.038
HCM Control Delay (s)	13.8	8.5	-	-	8.6	-	-	11.4
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	90	643	10	5	574	50	4	8	13	0	0	105
Future Vol, veh/h	90	643	10	5	574	50	4	8	13	0	0	105
Conflicting Peds, #/hr	42	0	25	25	0	42	3	0	4	4	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	10	10	0	15	4	0	0	0	0	0	2
Mvmt Flow	100	714	11	6	638	56	4	9	14	0	0	117

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	736	0	0	750	0	0	1685	1693	749	-	-	711
Stage 1	-	-	-	-	-	-	945	945	-	-	-	-
Stage 2	-	-	-	-	-	-	740	748	-	-	-	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	-	-	3.318
Pot Cap-1 Maneuver	879	-	-	868	-	-	75	94	415	0	0	433
Stage 1	-	-	-	-	-	-	317	343	-	0	0	-
Stage 2	-	-	-	-	-	-	412	423	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	845	-	-	848	-	-	44	70	404	-	-	415
Mov Cap-2 Maneuver	-	-	-	-	-	-	44	70	-	-	-	-
Stage 1	-	-	-	-	-	-	248	269	-	-	-	-
Stage 2	-	-	-	-	-	-	293	404	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.1	51.2	17
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	105	845	-	-	848	-	-	415
HCM Lane V/C Ratio	0.265	0.118	-	-	0.007	-	-	0.281
HCM Control Delay (s)	51.2	9.8	-	-	9.3	-	-	17
HCM Lane LOS	F	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1	0.4	-	-	0	-	-	1.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	474	48	27	258	21	38	320	51	34	659	96
Future Volume (vph)	130	474	48	27	258	21	38	320	51	34	659	96
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		75.0	240.0		40.0	0.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94		0.89	0.99		0.86		0.99		0.98	0.99	
Frt			0.850			0.850		0.983			0.981	
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1695	1569	1547	1662	1517	1547	0	1755	0	1679	1763	0
Flt Permitted	0.487			0.174				0.554		0.468		
Satd. Flow (perm)	814	1569	1381	301	1517	1334	0	977	0	814	1763	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			92			92		11			12	
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		163.9			607.5			150.4			212.0	
Travel Time (s)		11.8			43.7			13.5			19.1	
Confl. Peds. (#/hr)	51		25	25		51	31		19	19		31
Confl. Bikes (#/hr)			26			8			2			6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	16%	0%	4%	20%	0%	8%	0%	0%	3%	0%	2%
Adj. Flow (vph)	144	527	53	30	287	23	42	356	57	38	732	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	144	527	53	30	287	23	0	455	0	38	839	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	34.0	34.0		34.0	34.0	
Total Split (s)	32.0	32.0	32.0	32.0	32.0	32.0	57.0	57.0		57.0	57.0	
Total Split (%)	33.7%	33.7%	33.7%	33.7%	33.7%	33.7%	60.0%	60.0%		60.0%	60.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	50.0	50.0		50.0	50.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0		7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	15	15	15	15	15	15	15	15		15	15	
Act Effct Green (s)	31.0	31.0	31.0	31.0	31.0	31.0		50.0		50.0	50.0	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33		0.53		0.53	0.53	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	5.0
Total Split (s)	6.0
Total Split (%)	6%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.54	1.03	0.10	0.31	0.58	0.05		0.88		0.09	0.90	
Control Delay	35.4	81.4	1.9	34.2	32.2	0.2		39.9		12.0	34.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	35.4	81.4	1.9	34.2	32.2	0.2		39.9		12.0	34.6	
LOS	D	F	A	C	C	A		D		B	C	
Approach Delay		66.4			30.3			39.9			33.6	
Approach LOS		E			C			D			C	
Queue Length 50th (m)	21.4	~104.2	0.0	4.1	43.4	0.0		68.2		3.3	129.7	
Queue Length 95th (m)	41.5	#164.2	2.8	12.7	69.5	0.0		#132.0		8.3	#211.9	
Internal Link Dist (m)		139.9			583.5			126.4			188.0	
Turn Bay Length (m)	40.0		75.0	240.0		40.0				30.0		
Base Capacity (vph)	265	511	512	98	495	497		519		428	933	
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	
Reduced v/c Ratio	0.54	1.03	0.10	0.31	0.58	0.05		0.88		0.09	0.90	

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 38 (40%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 44.2 Intersection LOS: D
Intersection Capacity Utilization 103.3% ICU Level of Service G
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: 14: Island Park Drive & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	401	58	92	505	56	13	365	17	25	355	87
Future Volume (vph)	59	401	58	92	505	56	13	365	17	25	355	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		75.0	240.0		40.0	0.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.89	0.97		0.82		1.00		0.98	0.99	
Frt			0.850			0.850		0.994			0.970	
Flt Protected	0.950			0.950				0.998		0.950		
Satd. Flow (prot)	1729	1596	1517	1729	1556	1547	0	1784	0	1729	1741	0
Flt Permitted	0.246			0.359				0.979		0.430		
Satd. Flow (perm)	434	1596	1352	633	1556	1267	0	1749	0	769	1741	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87			87		3			16	
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		163.9			607.5			150.4			212.0	
Travel Time (s)		11.8			43.7			13.5			19.1	
Confl. Peds. (#/hr)	59		38	38		59	26		22	22		26
Confl. Bikes (#/hr)			4			33			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	14%	2%	0%	17%	0%	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	66	446	64	102	561	62	14	406	19	28	394	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	446	64	102	561	62	0	439	0	28	491	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	34.0	34.0		34.0	34.0	
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	51.0	51.0		51.0	51.0	
Total Split (%)	43.0%	43.0%	43.0%	43.0%	43.0%	43.0%	51.0%	51.0%		51.0%	51.0%	
Maximum Green (s)	36.0	36.0	36.0	36.0	36.0	36.0	44.0	44.0		44.0	44.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0		7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	15	15	15	15	15	15	15	15		15	15	
Act Effct Green (s)	42.0	42.0	42.0	42.0	42.0	42.0		44.0		44.0	44.0	
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	0.42		0.44		0.44	0.44	

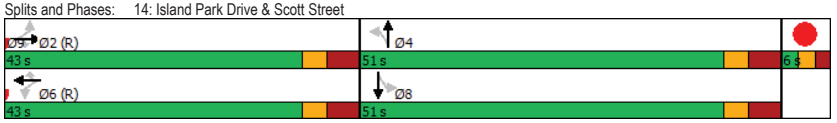
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	5.0
Total Split (s)	6.0
Total Split (%)	6%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.36	0.67	0.10	0.38	0.86	0.11		0.57		0.08	0.63	
Control Delay	27.1	29.3	2.6	25.5	41.4	2.4		24.4		17.2	25.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	27.1	29.3	2.6	25.5	41.4	2.4		24.4		17.2	25.5	
LOS	C	C	A	C	D	A		C		B	C	
Approach Delay		26.1			35.8			24.4			25.1	
Approach LOS		C			D			C			C	
Queue Length 50th (m)	8.6	68.0	0.0	13.4	96.5	0.0		61.4		3.1	69.6	
Queue Length 95th (m)	20.6	102.5	4.8	28.1	#157.9	4.4		91.5		8.4	103.7	
Internal Link Dist (m)		139.9			583.5			126.4			188.0	
Turn Bay Length (m)	40.0		75.0	240.0		40.0				30.0		
Base Capacity (vph)	182	670	618	265	653	582		771		338	775	
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	
Reduced v/c Ratio	0.36	0.67	0.10	0.38	0.86	0.11		0.57		0.08	0.63	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 28.6 Intersection LOS: C
Intersection Capacity Utilization 82.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 14: Island Park Drive & Scott Street



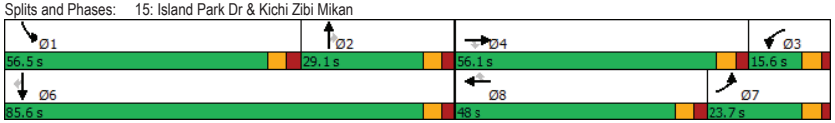
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	212	841	21	111	324	85	0	245	221	914	885	646
Future Volume (vph)	212	841	21	111	324	85	0	245	221	914	885	646
Ideal Flow (vphpl)	2500	1800	1800	2000	1800	1800	1800	1800	1800	1800	2000	1800
Storage Length (m)	90.0		100.0	100.0		280.0	0.0		100.0	65.0		100.0
Storage Lanes	1		1	1		1	0		1	2		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor			0.98			0.98			0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	2401	3458	1473	1902	3390	1459	0	1820	1547	3321	2022	1547
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	2401	3458	1442	1902	3390	1426	0	1820	1501	3282	2022	1521
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			105			148			148			387
Link Speed (k/h)		60			60			40			60	
Link Distance (m)		287.3			493.5			253.4			345.2	
Travel Time (s)		17.2			29.6			22.8			20.7	
Confl. Peds. (#/hr)							1		5	5		1
Confl. Bikes (#/hr)			1			2			5			7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	5%	1%	2%	6%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	236	934	23	123	360	94	0	272	246	1016	983	718
Shared Lane Traffic (%)												
Lane Group Flow (vph)	236	934	23	123	360	94	0	272	246	1016	983	718
Turn Type	Prot	NA	Perm	Prot	NA	Perm		NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8		2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	30.1	30.1	10.6	30.1	30.1		29.1	29.1	11.5	29.1	29.1
Total Split (s)	23.7	56.1	56.1	15.6	48.0	48.0		29.1	29.1	56.5	85.6	85.6
Total Split (%)	15.1%	35.7%	35.7%	9.9%	30.5%	30.5%		18.5%	18.5%	35.9%	54.4%	54.4%
Maximum Green (s)	18.1	50.0	50.0	10.0	41.9	41.9		23.0	23.0	50.0	79.5	79.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.9	2.4	2.4	1.9	2.4	2.4		2.4	2.4	2.8	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	5.6	6.1	6.1		6.1	6.1	6.5	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead		Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max		Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		17.0	17.0		17.0	17.0		16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		15	15		15	15		15	15		15	15
Act Effct Green (s)	18.1	50.0	50.0	10.0	41.9	41.9		23.3	23.3	49.7	79.5	79.5
Actuated g/C Ratio	0.12	0.32	0.32	0.06	0.27	0.27		0.15	0.15	0.32	0.51	0.51

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.86	0.85	0.04	1.02	0.40	0.19		1.01	0.71	0.97	0.96	0.75
Control Delay	95.1	58.8	0.1	158.2	49.0	1.3		121.7	37.0	74.0	58.0	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	95.1	58.8	0.1	158.2	49.0	1.3		121.7	37.0	74.0	58.0	18.7
LOS	F	E	A	F	D	A		F	D	E	E	B
Approach Delay		64.8			64.5			81.5			53.6	
Approach LOS		E			E			F			D	
Queue Length 50th (m)	73.6	144.1	0.0	~40.5	49.0	0.0		~90.0	29.5	161.3	290.2	85.8
Queue Length 95th (m)	#118.4	171.6	0.0	#83.2	64.4	1.2		#148.3	61.6	#204.3	#385.9	140.4
Internal Link Dist (m)		263.3			469.5			229.4			321.2	
Turn Bay Length (m)	90.0		100.0	100.0		280.0			100.0	65.0		100.0
Base Capacity (vph)	276	1099	529	120	902	488		270	348	1055	1021	960
Starvation Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.86	0.85	0.04	1.02	0.40	0.19		1.01	0.71	0.96	0.96	0.75

Intersection Summary

Area Type: Other
Cycle Length: 157.3
Actuated Cycle Length: 157.3
Natural Cycle: 135
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 60.4 Intersection LOS: E
Intersection Capacity Utilization 97.3% ICU Level of Service F
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: 15: Island Park Dr & Kichi Zibi Mikan



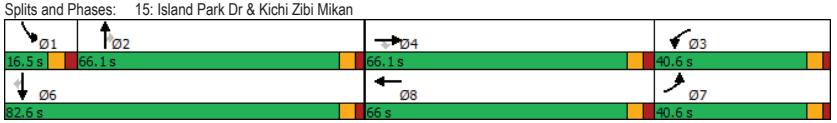
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	373	347	37	108	1054	1126	0	540	13	115	364	430
Future Volume (vph)	373	347	37	108	1054	1126	0	540	13	115	364	430
Ideal Flow (vphpl)	2500	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0		100.0	100.0		280.0	0.0		100.0	65.0		100.0
Storage Lanes	1		1	1		1	0		1	2		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor									0.96	0.98		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	2401	3458	1547	1729	3458	1547	0	1820	1547	3257	1820	1547
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	2401	3458	1547	1729	3458	1547	0	1820	1488	3204	1820	1515
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			88			504			88			406
Link Speed (k/h)		60			60			40			60	
Link Distance (m)		287.3			493.5			253.4			345.2	
Travel Time (s)		17.2			29.6			22.8			20.7	
Confl. Peds. (#/hr)							3		9	9		3
Confl. Bikes (#/hr)									6			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	414	386	41	120	1171	1251	0	600	14	128	404	478
Shared Lane Traffic (%)												
Lane Group Flow (vph)	414	386	41	120	1171	1251	0	600	14	128	404	478
Turn Type	Prot	NA	Perm	Prot	NA	Free		NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases			4			Free			2			6
Detector Phase	7	4	4	3	8			2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	30.1	30.1	10.6	30.1			29.1	29.1	11.5	29.1	29.1
Total Split (s)	40.6	66.1	66.1	40.6	66.0			66.1	66.1	16.5	82.6	82.6
Total Split (%)	21.4%	34.9%	34.9%	21.4%	34.9%			34.9%	34.9%	8.7%	43.6%	43.6%
Maximum Green (s)	35.0	60.0	60.0	35.0	59.9			60.0	60.0	10.0	76.5	76.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7			3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.9	2.4	2.4	1.9	2.4			2.4	2.4	2.8	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	5.6	6.1			6.1	6.1	6.5	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead			Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max			Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		17.0	17.0		17.0			16.0	16.0		16.0	16.0
Pedestrian Calls (#/hr)		15	15		15			15	15		15	15
Act Effct Green (s)	34.2	60.0	60.0	34.1	59.9	188.4		60.1	60.1	9.9	76.5	76.5
Actuated g/C Ratio	0.18	0.32	0.32	0.18	0.32	1.00		0.32	0.32	0.05	0.41	0.41

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.95	0.35	0.07	0.38	1.07	0.81		1.03	0.03	0.75	0.55	0.56
Control Delay	107.5	50.5	0.3	72.0	105.8	4.7		106.8	0.1	113.3	46.3	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	107.5	50.5	0.3	72.0	105.8	4.7		106.8	0.1	113.3	46.3	9.3
LOS	F	D	A	E	F	A		F	A	F	D	A
Approach Delay		76.1			54.4			104.3			37.3	
Approach LOS		E			D			F			D	
Queue Length 50th (m)	156.6	59.4	0.0	40.4	~256.7	0.0		~243.6	0.0	25.1	117.0	17.0
Queue Length 95th (m)	#220.5	75.2	0.0	62.5	#299.5	0.0		#320.2	0.0	#41.0	152.3	51.9
Internal Link Dist (m)		263.3			469.5			229.4			321.2	
Turn Bay Length (m)	90.0		100.0	100.0		280.0			100.0	65.0		100.0
Base Capacity (vph)	447	1101	552	320	1099	1547		581	534	173	738	856
Starvation Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.93	0.35	0.07	0.38	1.07	0.81		1.03	0.03	0.74	0.55	0.56

Intersection Summary

Area Type: Other
Cycle Length: 189.3
Actuated Cycle Length: 188.4
Natural Cycle: 145
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 60.7 Intersection LOS: E
Intersection Capacity Utilization 100.9% ICU Level of Service G
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: 15: Island Park Dr & Kichi Zibi Mikan

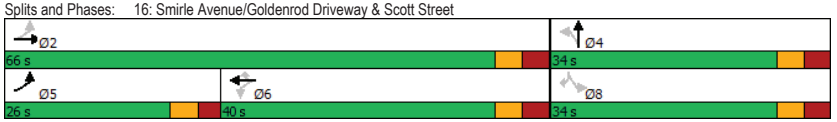


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	384	26	4	271	45	11	0	12	68	0	67
Future Volume (vph)	76	384	26	4	271	45	11	0	12	68	0	67
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.96		0.85		0.94		0.94		0.95
Frt		0.990				0.850		0.930				0.850
Flt Protected	0.950			0.950				0.977		0.950		
Satd. Flow (prot)	864	1732	0	1729	1767	802	0	1580	0	869	0	774
Flt Permitted	0.498			0.500				0.977		0.741		
Satd. Flow (perm)	432	1732	0	870	1767	681	0	1559	0	634	0	736
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				105		105				105
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	38		28	28		38	12		28	28		12
Confl. Bikes (#/hr)			86			21						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	100%	3%	4%	0%	3%	93%	0%	0%	0%	99%	0%	100%
Adj. Flow (vph)	84	427	29	4	301	50	12	0	13	76	0	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	456	0	4	301	50	0	25	0	76	0	74
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	26.0	66.0		40.0	40.0	40.0	34.0	34.0		34.0		34.0
Total Split (%)	26.0%	66.0%		40.0%	40.0%	40.0%	34.0%	34.0%		34.0%		34.0%
Maximum Green (s)	20.0	59.4		33.4	33.4	33.4	27.4	27.4		27.4		27.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	Max		Max	Max	Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		15		15	15	15	15	15		15		15
Act Effct Green (s)	63.6	64.5		52.0	52.0	52.0		15.6		15.8		15.8
Actuated g/C Ratio	0.71	0.72		0.58	0.58	0.58		0.17		0.18		0.18

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.24	0.36		0.01	0.29	0.11		0.07		0.68		0.34
Control Delay	8.6	8.3		16.2	16.1	0.5		0.4		62.5		7.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	8.6	8.3		16.2	16.1	0.5		0.4		62.5		7.0
LOS	A	A		B	B	A		A		E		A
Approach Delay		8.3			13.9			0.4			35.1	
Approach LOS		A			B			A			D	
Queue Length 50th (m)	4.4	29.4		0.3	28.7	0.0		0.0		12.1		0.0
Queue Length 95th (m)	13.9	66.2		2.6	64.5	0.4		0.0		26.7		5.6
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	405	1253		507	1030	440		553		195		299
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.21	0.36		0.01	0.29	0.11		0.05		0.39		0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 89.2			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 13.7		Intersection LOS: B	
Intersection Capacity Utilization 58.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



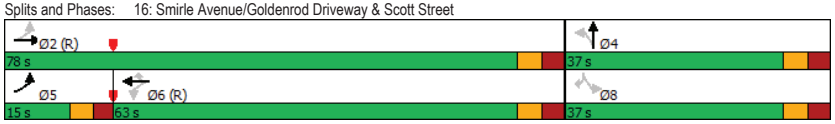
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	580	25	9	518	68	7	0	7	40	0	78
Future Volume (vph)	59	580	25	9	518	68	7	0	7	40	0	78
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99		0.76		0.94		0.95		0.93
Frt		0.994				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	873	1770	0	1729	1784	774	0	1595	0	873	0	789
Flt Permitted	0.350			0.409				0.976		0.747		
Satd. Flow (perm)	322	1770	0	734	1784	588	0	1553	0	650	0	733
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				91		91				91
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	55		12	12		55	19		20	20		19
Confl. Bikes (#/hr)			19			62						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	98%	2%	0%	0%	2%	100%	0%	0%	0%	98%	0%	96%
Adj. Flow (vph)	66	644	28	10	576	76	8	0	8	44	0	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	672	0	10	576	76	0	16	0	44	0	87
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	15.0	78.0		63.0	63.0	63.0	37.0	37.0		37.0		37.0
Total Split (%)	13.0%	67.8%		54.8%	54.8%	54.8%	32.2%	32.2%		32.2%		32.2%
Maximum Green (s)	9.0	71.4		56.4	56.4	56.4	30.4	30.4		30.4		30.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		15		15	15	15	15	15		15		15
Act Effct Green (s)	90.7	91.4		79.7	79.7	79.7		14.2		14.2		14.2
Actuated g/C Ratio	0.79	0.79		0.69	0.69	0.69		0.12		0.12		0.12

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.23	0.48		0.02	0.47	0.17		0.06		0.55		0.51
Control Delay	6.4	7.2		10.9	13.6	2.8		0.4		70.2		18.9
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	6.4	7.2		10.9	13.6	2.8		0.4		70.2		18.9
LOS	A	A		B	B	A		A		E		B
Approach Delay		7.2			12.3			0.4			36.1	
Approach LOS		A			B			A			D	
Queue Length 50th (m)	3.0	46.3		0.7	61.0	0.0		0.0		9.6		0.0
Queue Length 95th (m)	8.8	91.9		3.6	115.7	5.2		0.0		20.6		13.8
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	299	1407		508	1235	435		477		171		260
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.22	0.48		0.02	0.47	0.17		0.03		0.26		0.33

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 20 (17%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 11.7 Intersection LOS: B
Intersection Capacity Utilization 67.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	16	43	34	5	25	9	486	13	6	365	6
Future Volume (vph)	9	16	43	34	5	25	9	486	13	6	365	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor		0.96			0.95			1.00			1.00	
Frt		0.915			0.947			0.997			0.997	
Flt Protected		0.993			0.974			0.999			0.999	
Satd. Flow (prot)	0	1572	0	0	1575	0	0	1706	0	0	3181	0
Flt Permitted		0.950			0.838			0.992			0.948	
Satd. Flow (perm)	0	1494	0	0	1331	0	0	1691	0	0	3016	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			28			3			4	
Link Speed (k/h)		30			40			50			50	
Link Distance (m)		271.8			209.9			251.8			244.8	
Travel Time (s)		32.6			18.9			18.1			17.6	
Confl. Peds. (#/hr)	22		25	25		22	68		55	55		68
Confl. Bikes (#/hr)			6			2			6			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	6%	0%	3%	20%	0%	11%	6%	0%	17%	8%	0%
Adj. Flow (vph)	10	18	48	38	6	28	10	540	14	7	406	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	0	72	0	0	564	0	0	420	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5		23.5	23.5		29.3	29.3		29.3	29.3	
Total Split (s)	24.0	24.0		24.0	24.0		70.0	70.0		70.0	70.0	
Total Split (%)	25.5%	25.5%		25.5%	25.5%		74.5%	74.5%		74.5%	74.5%	
Maximum Green (s)	18.5	18.5		18.5	18.5		64.7	64.7		64.7	64.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.5			5.5			5.3			5.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	15	15		15	15		15	15		15	15	
Act Effct Green (s)		11.3			11.3			75.1			75.1	
Actuated g/C Ratio		0.12			0.12			0.80			0.80	
v/c Ratio		0.34			0.39			0.42			0.17	
Control Delay		20.2			29.7			5.6			3.6	
Queue Delay		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		20.2			29.7			5.6			3.6	
LOS		C			C			A			A	
Approach Delay		20.2			29.7			5.6			3.6	
Approach LOS		C			C			A			A	
Queue Length 50th (m)		4.8			7.6			23.9			7.2	
Queue Length 95th (m)		16.0			18.5			60.8			17.5	
Internal Link Dist (m)		247.8			185.9			227.8			220.8	
Turn Bay Length (m)												
Base Capacity (vph)		332			284			1351			2411	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.23			0.25			0.42			0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 94			
Actuated Cycle Length: 94			
Offset: 40 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 57.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 25: Holland Avenue & Spencer St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	26	41	72	28	13	43	405	25	12	492	6
Future Volume (vph)	13	26	41	72	28	13	43	405	25	12	492	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor		0.97			0.98			0.98			1.00	
Frt		0.930			0.985			0.993			0.998	
Flt Protected		0.992			0.969			0.995			0.999	
Satd. Flow (prot)	0	1605	0	0	1706	0	0	1649	0	0	3283	0
Flt Permitted		0.948			0.762			0.913			0.941	
Satd. Flow (perm)	0	1524	0	0	1324	0	0	1505	0	0	3087	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			6			6			2	
Link Speed (k/h)		30			40			50			50	
Link Distance (m)		271.8			209.9			251.8			244.8	
Travel Time (s)		32.6			18.9			18.1			17.6	
Confl. Peds. (#/hr)	20		14	14		20	63		87	87		63
Confl. Bikes (#/hr)			3						4			4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	4%	0%	0%	4%	0%	2%	9%	0%	0%	5%	0%
Adj. Flow (vph)	14	29	46	80	31	14	48	450	28	13	547	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	125	0	0	526	0	0	567	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5		23.5	23.5		29.3	29.3		29.3	29.3	
Total Split (s)	31.0	31.0		31.0	31.0		69.0	69.0		69.0	69.0	
Total Split (%)	31.0%	31.0%		31.0%	31.0%		69.0%	69.0%		69.0%	69.0%	
Maximum Green (s)	25.5	25.5		25.5	25.5		63.7	63.7		63.7	63.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.5			5.5			5.3			5.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	15	15		15	15		15	15		15	15	
Act Effct Green (s)		14.0			14.0			75.2			75.2	
Actuated g/C Ratio		0.14			0.14			0.75			0.75	
v/c Ratio		0.35			0.66			0.46			0.24	
Control Delay		23.6			54.1			7.0			4.5	
Queue Delay		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		23.6			54.1			7.0			4.5	
LOS		C			D			A			A	
Approach Delay		23.6			54.1			7.0			4.5	
Approach LOS		C			D			A			A	
Queue Length 50th (m)		7.5			22.1			31.6			14.4	
Queue Length 95th (m)		20.0			38.1			64.4			26.1	
Internal Link Dist (m)		247.8			185.9			227.8			220.8	
Turn Bay Length (m)												
Base Capacity (vph)		422			342			1133			2321	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.21			0.37			0.46			0.24	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 38 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 11.5 Intersection LOS: B
Intersection Capacity Utilization 74.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 25: Holland Avenue & Spencer St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	507	17	3	226	7	0	0	0	5	8	13
Future Volume (vph)	22	507	17	3	226	7	0	0	0	5	8	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00						0.98	
Frt		0.996			0.996						0.935	
Flt Protected		0.998			0.999						0.990	
Satd. Flow (prot)	0	1702	0	0	1692	0	0	0	0	0	1593	0
Flt Permitted		0.983			0.996						0.990	
Satd. Flow (perm)	0	1673	0	0	1687	0	0	0	0	0	1588	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			3						14	
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		233.9			420.1			161.5			166.1	
Travel Time (s)		16.8			30.2			14.5			14.9	
Confl. Peds. (#/hr)	36		23	23		36	10		8	8		10
Confl. Bikes (#/hr)			48			5			2			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	6%	6%	0%	7%	0%	0%	0%	0%	0%	12%	0%
Adj. Flow (vph)	24	563	19	3	251	8	0	0	0	6	9	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	606	0	0	262	0	0	0	0	0	29	0
Turn Type	Perm	NA		Perm	NA					Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6						8		
Detector Phase	2	2		6	6					8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0					5.0	5.0	
Minimum Split (s)	23.8	23.8		30.8	30.8					30.8	30.8	
Total Split (s)	69.0	69.0		69.0	69.0					31.0	31.0	
Total Split (%)	69.0%	69.0%		69.0%	69.0%					31.0%	31.0%	
Maximum Green (s)	63.3	63.3		63.3	63.3					25.2	25.2	
Yellow Time (s)	3.3	3.3		3.3	3.3					3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4					2.5	2.5	
Lost Time Adjust (s)		0.0			0.0						0.0	
Total Lost Time (s)		5.7			5.7						5.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0					3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max					None	None	
Walk Time (s)	7.0	7.0		9.0	9.0					9.0	9.0	
Flash Dont Walk (s)	11.0	11.0		16.0	16.0					16.0	16.0	
Pedestrian Calls (#/hr)	15	15		15	15					15	15	
Act Effct Green (s)		81.8			81.8						13.5	
Actuated g/C Ratio		0.82			0.82						0.14	
v/c Ratio		0.44			0.19						0.13	
Control Delay		7.4			5.1						21.7	
Queue Delay		0.0			0.0						0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		7.4			5.1						21.7	
LOS		A			A						C	
Approach Delay		7.4			5.1						21.7	
Approach LOS		A			A						C	
Queue Length 50th (m)		23.8			7.7						2.8	
Queue Length 95th (m)		90.2			31.4						9.1	
Internal Link Dist (m)		209.9			396.1			137.5			142.1	
Turn Bay Length (m)												
Base Capacity (vph)		1369			1381						410	
Starvation Cap Reductn		0			0						0	
Spillback Cap Reductn		0			0						0	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.44			0.19						0.07	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 78 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 7.2 Intersection LOS: A
Intersection Capacity Utilization 63.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 26: Carruthers Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	394	30	14	540	17	0	0	0	13	6	19
Future Volume (vph)	12	394	30	14	540	17	0	0	0	13	6	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00						0.92	
Frt		0.991			0.996						0.932	
Flt Protected		0.999			0.999						0.984	
Satd. Flow (prot)	0	1767	0	0	1771	0	0	0	0	0	1572	0
Flt Permitted		0.982			0.985						0.984	
Satd. Flow (perm)	0	1735	0	0	1744	0	0	0	0	0	1537	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			3						21	
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		233.9			420.1			161.5			166.1	
Travel Time (s)		16.8			30.2			14.5			14.9	
Confl. Peds. (#/hr)	53		58	58		53	36		25	25		36
Confl. Bikes (#/hr)			14			12			1			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	1%	3%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	13	438	33	16	600	19	0	0	0	14	7	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	484	0	0	635	0	0	0	0	0	42	0
Turn Type	Perm	NA		Perm	NA					Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6						8		
Detector Phase	2	2		6	6					8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0					5.0	5.0	
Minimum Split (s)	35.7	35.7		35.7	35.7					25.8	25.8	
Total Split (s)	69.0	69.0		69.0	69.0					31.0	31.0	
Total Split (%)	69.0%	69.0%		69.0%	69.0%					31.0%	31.0%	
Maximum Green (s)	63.3	63.3		63.3	63.3					25.2	25.2	
Yellow Time (s)	3.3	3.3		3.3	3.3					3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4					2.5	2.5	
Lost Time Adjust (s)		0.0			0.0						0.0	
Total Lost Time (s)		5.7			5.7						5.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0					3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max					None	None	
Walk Time (s)	19.0	19.0		19.0	19.0					9.0	9.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0					10.0	10.0	
Pedestrian Calls (#/hr)	15	15		15	15					15	15	
Act Effct Green (s)		84.1			84.1						11.2	
Actuated g/C Ratio		0.84			0.84						0.11	
v/c Ratio		0.33			0.43						0.22	
Control Delay		1.9			5.5						24.7	
Queue Delay		0.0			0.0						0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		1.9			5.5						24.7	
LOS		A			A						C	
Approach Delay		1.9			5.5						24.7	
Approach LOS		A			A						C	
Queue Length 50th (m)		5.9			25.8						3.9	
Queue Length 95th (m)		16.3			75.5						12.3	
Internal Link Dist (m)		209.9			396.1			137.5			142.1	
Turn Bay Length (m)												
Base Capacity (vph)		1460			1467						403	
Starvation Cap Reductn		0			0						0	
Spillback Cap Reductn		0			0						0	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.33			0.43						0.10	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 4.7 Intersection LOS: A
Intersection Capacity Utilization 61.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 26: Carruthers Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	441	68	60	166	43	34	65	98	91	149	3
Future Volume (vph)	23	441	68	60	166	43	34	65	98	91	149	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	50.0		0.0	45.0		7.0	40.0		0.0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.97	0.97		0.99		0.94	0.97	1.00	
Frt		0.983			0.969				0.850		0.997	
Flt Protected		0.998		0.950			0.950			0.950		
Satd. Flow (prot)	0	1674	0	1647	1612	0	1586	1784	1459	1647	1751	0
Flt Permitted		0.981		0.437			0.571			0.710		
Satd. Flow (perm)	0	1640	0	737	1612	0	941	1784	1368	1196	1751	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			24				109		1	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		420.1			215.8			163.2			157.2	
Travel Time (s)		30.2			15.5			11.8			11.3	
Confl. Peds. (#/hr)	54		39	39		54	9		16	16		9
Confl. Bikes (#/hr)			41			2			9			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	5%	6%	5%	7%	5%	9%	2%	6%	5%	3%	33%
Adj. Flow (vph)	26	490	76	67	184	48	38	72	109	101	166	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	592	0	67	232	0	38	72	109	101	169	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		6	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	32.5	32.5		32.5	32.5		32.4	32.4	32.4	32.4	32.4	
Total Split (s)	68.0	68.0		68.0	68.0		32.4	32.4	32.4	32.4	32.4	
Total Split (%)	67.7%	67.7%		67.7%	67.7%		32.3%	32.3%	32.3%	32.3%	32.3%	
Maximum Green (s)	61.5	61.5		61.5	61.5		26.0	26.0	26.0	26.0	26.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.1	3.1	3.1	3.1	3.1	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5		6.5	6.5		6.4	6.4	6.4	6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0	19.0	19.0	19.0	
Pedestrian Calls (#/hr)	15	15		15	15		15	15	15	15	15	
Act Effct Green (s)		69.7		69.7	69.7		17.8	17.8	17.8	17.8	17.8	
Actuated g/C Ratio		0.69		0.69	0.69		0.18	0.18	0.18	0.18	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.52		0.13	0.21		0.23	0.23	0.33	0.48	0.55	
Control Delay		10.5		7.8	6.5		35.5	34.4	8.7	42.7	42.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		10.5		7.8	6.5		35.5	34.4	8.7	42.7	42.5	
LOS		B		A	A		D	C	A	D	D	
Approach Delay		10.5			6.8			21.8			42.5	
Approach LOS		B			A			C			D	
Queue Length 50th (m)		41.5		3.4	11.0		6.7	12.6	0.0	18.5	31.2	
Queue Length 95th (m)		93.6		11.3	27.9		14.2	22.0	12.6	30.6	45.3	
Internal Link Dist (m)		396.1			191.8			139.2			133.2	
Turn Bay Length (m)				50.0			45.0		7.0	40.0		
Base Capacity (vph)		1143		511	1126		243	461	435	309	454	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	0	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.52		0.13	0.21		0.16	0.16	0.25	0.33	0.37	

Intersection Summary

Area Type: Other
Cycle Length: 100.4
Actuated Cycle Length: 100.4
Offset: 40 (40%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 17.8 Intersection LOS: B
Intersection Capacity Utilization 82.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 27: Bayview Station Rd. & Scott Street/Albert Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	311	82	111	484	179	50	187	73	43	80	17
Future Volume (vph)	19	311	82	111	484	179	50	187	73	43	80	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	50.0		0.0	45.0		7.0	40.0		0.0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.97	0.97		0.97		0.95	0.98	0.99	
Frt		0.973			0.959				0.850		0.974	
Flt Protected		0.998		0.950			0.950			0.950		
Satd. Flow (prot)	0	1704	0	1679	1661	0	1695	1802	1532	1647	1754	0
Flt Permitted		0.956		0.502			0.687			0.485		
Satd. Flow (perm)	0	1631	0	857	1661	0	1183	1802	1461	826	1754	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			34				38		10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		420.1			215.8			163.2			157.2	
Travel Time (s)		30.2			15.5			11.8			11.3	
Confl. Peds. (#/hr)	48		38	38		48	21		13	13		21
Confl. Bikes (#/hr)			10			15			1			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	1%	3%	2%	1%	2%	1%	1%	5%	0%	0%
Adj. Flow (vph)	21	346	91	123	538	199	56	208	81	48	89	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	458	0	123	737	0	56	208	81	48	108	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		6	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	32.5	32.5		32.5	32.5		32.4	32.4	32.4	32.4	32.4	
Total Split (s)	68.0	68.0		68.0	68.0		32.4	32.4	32.4	32.4	32.4	
Total Split (%)	67.7%	67.7%		67.7%	67.7%		32.3%	32.3%	32.3%	32.3%	32.3%	
Maximum Green (s)	61.5	61.5		61.5	61.5		26.0	26.0	26.0	26.0	26.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.1	3.1	3.1	3.1	3.1	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5		6.5	6.5		6.4	6.4	6.4	6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0	19.0	19.0	19.0	
Pedestrian Calls (#/hr)	15	15		15	15		15	15	15	15	15	
Act Effct Green (s)		68.7		68.7	68.7		18.8	18.8	18.8	18.8	18.8	
Actuated g/C Ratio		0.68		0.68	0.68		0.19	0.19	0.19	0.19	0.19	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.41		0.21	0.64		0.25	0.62	0.27	0.31	0.32	
Control Delay		9.0		8.3	13.1		35.0	44.4	20.7	38.0	32.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		9.0		8.3	13.1		35.0	44.4	20.7	38.0	32.5	
LOS		A		A	B		C	D	C	D	C	
Approach Delay		9.0			12.5			37.3			34.2	
Approach LOS		A			B			D			C	
Queue Length 50th (m)		30.0		7.2	62.8		9.6	38.5	7.3	8.3	17.0	
Queue Length 95th (m)		63.3		19.2	131.9		18.8	55.1	18.0	17.2	28.9	
Internal Link Dist (m)		396.1			191.8			139.2			133.2	
Turn Bay Length (m)				50.0			45.0		7.0	40.0		
Base Capacity (vph)		1123		586	1147		306	466	406	213	461	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	0	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.41		0.21	0.64		0.18	0.45	0.20	0.23	0.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100.4			
Actuated Cycle Length: 100.4			
Offset: 65 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 18.2		Intersection LOS: B	
Intersection Capacity Utilization 92.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 27: Bayview Station Rd. & Scott Street/Albert Street

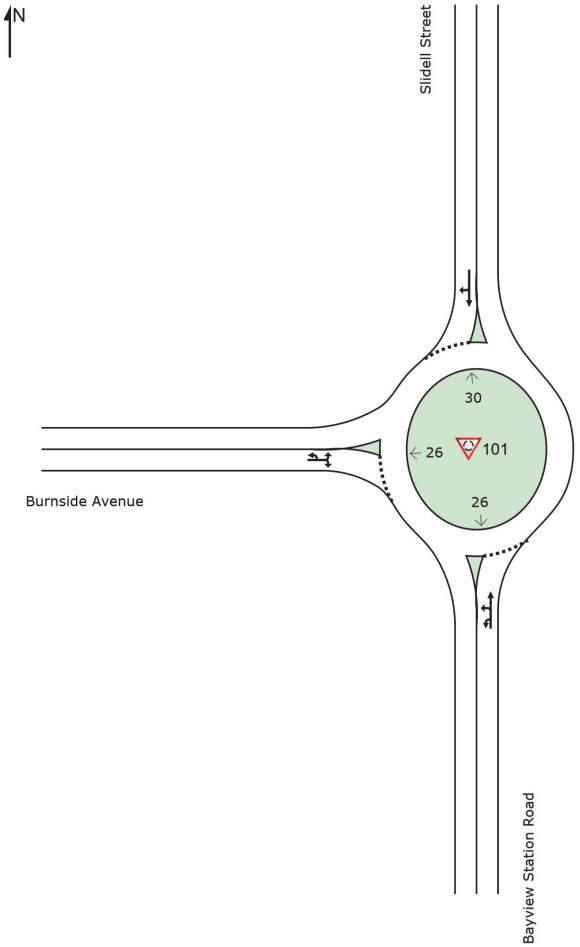


SITE LAYOUT

Site: 101 [Existing AM (Site Folder: General)]

Burnside & Slidell/Bayview
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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MOVEMENT SUMMARY

Site: 101 [Existing AM (Site Folder: General)]

Burnside & Slidell/Bayview
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Bayview Station Road														
3u	U	3	2	3	66.7	0.100	6.3	LOS A	0.3	2.8	0.09	0.02	0.09	51.5
3	L2	69	2	77	2.9	0.100	4.2	LOS A	0.3	2.8	0.09	0.02	0.09	53.7
8	T1	21	2	23	9.5	0.100	4.5	LOS A	0.3	2.8	0.09	0.02	0.09	53.4
Approach		93	6	103	6.5	0.100	4.4	LOS A	0.3	2.8	0.09	0.02	0.09	53.6
North: Slidell Street														
4	T1	41	2	46	4.9	0.053	4.1	LOS A	0.2	1.4	0.19	0.09	0.19	56.6
14	R2	6	0	7	0.0	0.053	3.9	LOS A	0.2	1.4	0.19	0.09	0.19	55.8
Approach		47	2	52	4.3	0.053	4.1	LOS A	0.2	1.4	0.19	0.09	0.19	56.5
West: Burnside Avenue														
5u	U	2	0	2	0.0	0.255	5.8	LOS A	1.1	8.5	0.18	0.08	0.18	56.9
5	L2	17	0	19	0.0	0.255	5.8	LOS A	1.1	8.5	0.18	0.08	0.18	55.5
12	R2	225	1	250	0.4	0.255	5.8	LOS A	1.1	8.5	0.18	0.08	0.18	54.1
Approach		244	1	271	0.4	0.255	5.8	LOS A	1.1	8.5	0.18	0.08	0.18	54.2
All Vehicles		384	9	427	2.3	0.255	5.3	LOS A	1.1	8.5	0.16	0.07	0.16	54.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

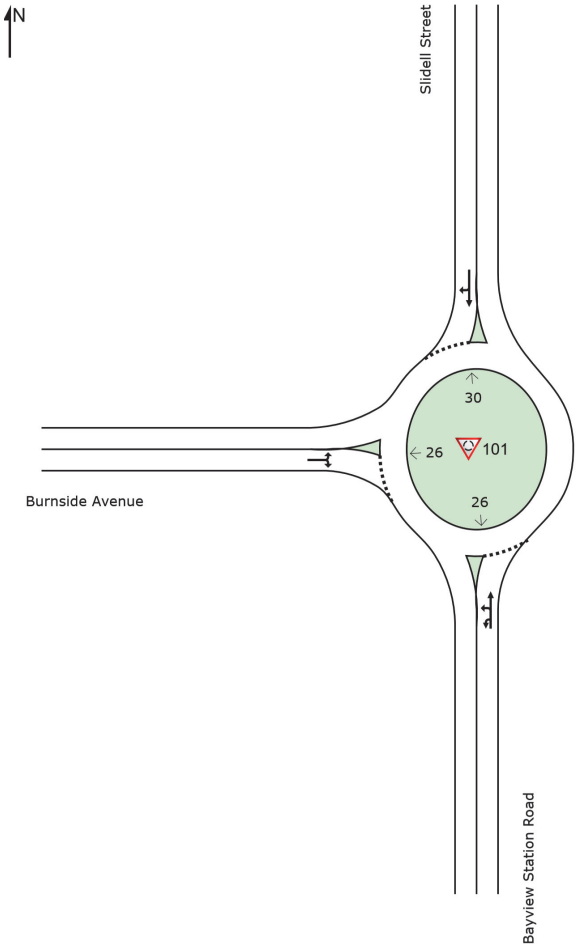
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Project: C:\Users\damboa1123\ARCADIS\139833 Public Rd Redevelopment Tunney's Pasture - Internal Documents (1)\6.0_Technical \6.23_Traffic\05_Analytic Models\SIDRA\Burnside_Slidell_Bayview.sip9

SITE LAYOUT

Site: 101 [Existing PM (Site Folder: General)]

Burnside & Slidell/Bayview
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101 [Existing PM (Site Folder: General)]

Burnside & Slidell/Bayview
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Bayview Station Road														
3u	U	3	0	3	0.0	0.381	7.1	LOS A	2.1	15.6	0.04	0.01	0.04	53.2
3	L2	273	1	303	0.4	0.381	7.1	LOS A	2.1	15.6	0.04	0.01	0.04	52.2
8	T1	108	0	120	0.0	0.381	7.1	LOS A	2.1	15.6	0.04	0.01	0.04	52.1
Approach		384	1	427	0.3	0.381	7.1	LOS A	2.1	15.6	0.04	0.01	0.04	52.2
North: Slidell Street														
4	T1	28	1	31	3.6	0.048	5.0	LOS A	0.2	1.2	0.38	0.27	0.38	56.9
14	R2	7	0	8	0.0	0.048	4.8	LOS A	0.2	1.2	0.38	0.27	0.38	55.6
Approach		35	1	39	2.9	0.048	4.9	LOS A	0.2	1.2	0.38	0.27	0.38	56.6
West: Burnside Avenue														
5	L2	3	0	3	0.0	0.114	4.3	LOS A	0.4	3.2	0.12	0.04	0.12	57.0
12	R2	107	1	119	0.9	0.114	4.4	LOS A	0.4	3.2	0.12	0.04	0.12	55.3
Approach		110	1	122	0.9	0.114	4.4	LOS A	0.4	3.2	0.12	0.04	0.12	55.3
All Vehicles		529	3	588	0.6	0.381	6.4	LOS A	2.1	15.6	0.08	0.03	0.08	53.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Future Background Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	6	484	2	25	5	0	0	4	5
Future Volume (vph)	0	0	0	6	484	2	25	5	0	0	4	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt					0.999						0.925	
Flt Protected					0.999			0.960				
Satd. Flow (prot)	0	0	0	0	3417	0	0	1719	0	0	1668	0
Flt Permitted					0.999			0.755				
Satd. Flow (perm)	0	0	0	0	3417	0	0	1352	0	0	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						5	
Link Speed (k/h)		60			60			30			30	
Link Distance (m)		143.2			148.1			68.2			97.8	
Travel Time (s)		8.6			8.9			8.2			11.7	
Confl. Peds. (#/hr)									8	8		
Confl. Bikes (#/hr)						1						3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	6	484	2	25	5	0	0	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	492	0	0	30	0	0	9	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				73.0	73.0		26.0	26.0			26.0	
Total Split (%)				63.5%	63.5%		22.6%	22.6%			22.6%	
Maximum Green (s)				67.3	67.3		15.7	15.7			15.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					67.7			15.8			15.8	
Actuated g/C Ratio					0.62			0.15			0.15	
v/c Ratio					0.23			0.15			0.04	
Control Delay					10.2			30.0			32.4	
Queue Delay					0.0			0.0			0.0	

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Background Conditions
Weekday AM Peak Hour

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	73.0	16.0
Total Split (%)	14%	63%	14%
Maximum Green (s)	12.0	67.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	30	30	30
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

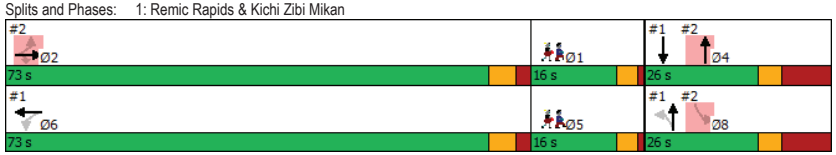
Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					10.2			30.0			32.4	
LOS					B			C			C	
Approach Delay					10.2			30.0			32.4	
Approach LOS					B			C			C	
Queue Length 50th (m)					26.6			4.2			0.8	
Queue Length 95th (m)					35.4			m7.8			5.6	
Internal Link Dist (m)		119.2			124.1			44.2			73.8	
Turn Bay Length (m)												
Base Capacity (vph)					2129			196			246	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.23			0.15			0.04	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 108.6			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 11.7		Intersection LOS: B	
Intersection Capacity Utilization 36.5%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	6	484	2	25	5	0	0	4	5
Future Volume (vph)	0	0	0	6	484	2	25	5	0	0	4	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt					0.999						0.925	
Flt Protected					0.999			0.960				
Satd. Flow (prot)	0	0	0	0	3417	0	0	1705	0	0	1668	0
Flt Permitted					0.999			0.755				
Satd. Flow (perm)	0	0	0	0	3417	0	0	1341	0	0	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						5	
Link Speed (k/h)		60			60			30			30	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			6.3	
Confl. Peds. (#/hr)									8	8		
Confl. Bikes (#/hr)						1						3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	3%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	6	484	2	25	5	0	0	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	492	0	0	30	0	0	9	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				73.0	73.0		26.0	26.0			26.0	
Total Split (%)				63.5%	63.5%		22.6%	22.6%			22.6%	
Maximum Green (s)				67.3	67.3		15.7	15.7			15.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					67.3			15.7			15.7	
Actuated g/C Ratio					0.68			0.16			0.16	
v/c Ratio					0.21			0.14			0.03	
Control Delay					6.2			24.9			26.7	
Queue Delay					0.0			0.0			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	73.0	16.0
Total Split (%)	14%	63%	14%
Maximum Green (s)	12.0	67.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA

Future Background OPT
Weekday AM Peak Hour

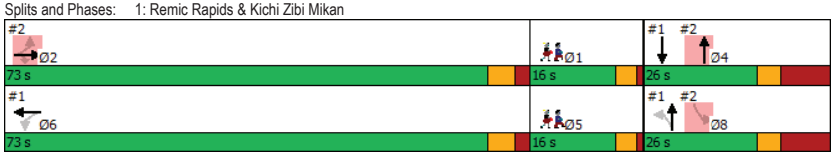


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					6.2			24.9			26.7	
LOS					A			C			C	
Approach Delay					6.2			24.9			26.7	
Approach LOS					A			C			C	
Queue Length 50th (m)					16.4			3.5			0.7	
Queue Length 95th (m)					22.5			m6.8			5.0	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2323			212			268	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.21			0.14			0.03	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 7.6		Intersection LOS: A	
Intersection Capacity Utilization 36.5%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



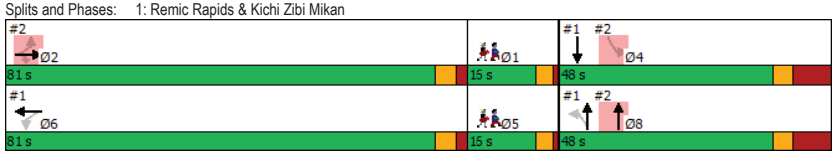
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	12	1536	3	333	3	0	0	3	4
Future Volume (vph)	0	0	0	12	1536	3	333	3	0	0	3	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.99	
Frt											0.923	
Flt Protected								0.953				
Satd. Flow (prot)	0	0	0	0	3458	0	0	1701	0	0	1665	0
Flt Permitted								0.724				
Satd. Flow (perm)	0	0	0	0	3458	0	0	1287	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											4	
Link Speed (k/h)		60			60			30			50	
Link Distance (m)		143.2			148.1			68.2			97.8	
Travel Time (s)		8.6			8.9			8.2			7.0	
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	12	1536	3	333	3	0	0	3	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1551	0	0	336	0	0	7	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				81.0	81.0		48.0	48.0			48.0	
Total Split (%)				55.9%	55.9%		33.1%	33.1%			33.1%	
Maximum Green (s)				75.3	75.3		37.7	37.7			37.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					75.3			37.7			37.7	
Actuated g/C Ratio					0.58			0.29			0.29	
v/c Ratio					0.77			0.89			0.01	
Control Delay					23.6			37.4			24.1	
Queue Delay					0.0			0.0			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	81.0	16.0
Total Split (%)	11%	56%	11%
Maximum Green (s)	12.0	75.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					23.6			37.4			24.1	
LOS					C			D			C	
Approach Delay					23.6			37.4			24.1	
Approach LOS					C			D			C	
Queue Length 50th (m)					149.0			11.1			0.6	
Queue Length 95th (m)					178.0			#128.6			4.2	
Internal Link Dist (m)		119.2			124.1			44.2			73.8	
Turn Bay Length (m)												
Base Capacity (vph)					2018			376			489	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.77			0.89			0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 129			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 26.0		Intersection LOS: C	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	12	1536	3	333	3	0	0	3	4
Future Volume (vph)	0	0	0	12	1536	3	333	3	0	0	3	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.99	
Frt											0.923	
Flt Protected								0.953				
Satd. Flow (prot)	0	0	0	0	3458	0	0	1701	0	0	1666	0
Flt Permitted								0.724				
Satd. Flow (perm)	0	0	0	0	3458	0	0	1289	0	0	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											4	
Link Speed (k/h)		60			60			30			50	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			3.8	
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	12	1536	3	333	3	0	0	3	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1551	0	0	336	0	0	7	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				56.2	56.2		37.8	37.8			37.8	
Total Split (%)				51.1%	51.1%		34.4%	34.4%			34.4%	
Maximum Green (s)				50.5	50.5		27.5	27.5			27.5	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					50.5			27.5			27.5	
Actuated g/C Ratio					0.54			0.29			0.29	
v/c Ratio					0.84			0.89			0.01	
Control Delay					23.4			38.3			18.3	
Queue Delay					0.0			0.0			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	56.2	16.0
Total Split (%)	15%	51%	15%
Maximum Green (s)	12.0	50.5	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA

Future Background OPT
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					23.4			38.3			18.3	
LOS					C			D			B	
Approach Delay					23.4			38.3			18.3	
Approach LOS					C			D			B	
Queue Length 50th (m)					117.1			14.0			0.4	
Queue Length 95th (m)					149.0			m#98.2			3.5	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					1857			377			490	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.84			0.89			0.01	

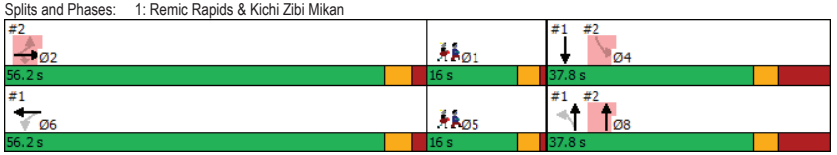
Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 94
Natural Cycle: 110
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 26.0 Intersection LOS: C
Intersection Capacity Utilization 84.9% ICU Level of Service E
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1173	223	0	0	0	0	19	12	10	0	0
Future Volume (vph)	3	1173	223	0	0	0	0	19	12	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					0.99				
Frt			0.850					0.948				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1517	0	0	0	0	1695	0	1729	0	0
Flt Permitted										0.737		
Satd. Flow (perm)	0	3458	1482	0	0	0	0	1695	0	1341	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			223					12				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	3	1173	223	0	0	0	0	19	12	10	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1176	223	0	0	0	0	31	0	10	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		67.7	67.7					15.8		15.8		
Actuated g/C Ratio		0.62	0.62					0.15		0.15		

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Background Conditions
Weekday AM Peak Hour

Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	30	30	30
Act Effct Green (s)			
Actuated g/C Ratio			

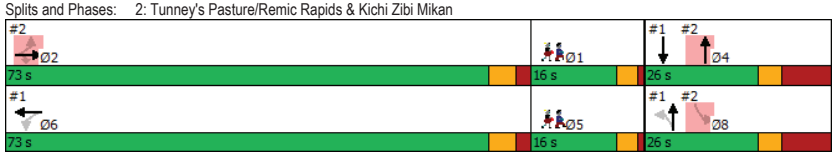
Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.55	0.22					0.12		0.05		
Control Delay		13.9	2.0					31.9		44.8		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		13.9	2.0					31.9		44.8		
LOS		B	A					C		D		
Approach Delay		12.0						31.9			44.8	
Approach LOS		B						C			D	
Queue Length 50th (m)		82.5	0.0					3.8		2.1		
Queue Length 95th (m)		101.6	9.6					12.7		5.7		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2154	1007					256		195		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.55	0.22					0.12		0.05		

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 108.6
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 12.7 Intersection LOS: B
Intersection Capacity Utilization 51.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1173	223	0	0	0	0	19	12	10	0	0
Future Volume (vph)	3	1173	223	0	0	0	0	19	12	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					0.99				
Frt			0.850					0.948				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1517	0	0	0	0	1685	0	1729	0	0
Flt Permitted										0.737		
Satd. Flow (perm)	0	3458	1482	0	0	0	0	1685	0	1341	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			223					12				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	3%	0%	0%	0%	0%
Adj. Flow (vph)	3	1173	223	0	0	0	0	19	12	10	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1176	223	0	0	0	0	31	0	10	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		67.3	67.3					15.7		15.7		
Actuated g/C Ratio		0.68	0.68					0.16		0.16		

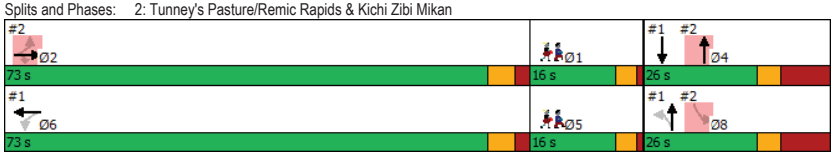
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Background OPT
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.50	0.21					0.11		0.05		
Control Delay		8.6	1.2					26.5		32.9		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		8.6	1.2					26.5		32.9		
LOS		A	A					C		C		
Approach Delay		7.4						26.5			32.9	
Approach LOS		A						C			C	
Queue Length 50th (m)		50.8	0.0					3.1		1.7		
Queue Length 95th (m)		64.3	6.5					11.0		4.9		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2350	1078					277		212		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.50	0.21					0.11		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 51.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	327	25	0	0	0	0	318	54	15	0	0
Future Volume (vph)	18	327	25	0	0	0	0	318	54	15	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt			0.850					0.980				
Flt Protected		0.997								0.950		
Satd. Flow (prot)	0	3415	1517	0	0	0	0	1749	0	1729	0	0
Flt Permitted		0.997								0.347		
Satd. Flow (perm)	0	3415	1517	0	0	0	0	1749	0	632	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85					6				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	18	327	25	0	0	0	0	318	54	15	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	345	25	0	0	0	0	372	0	15	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						8				
Permitted Phases	2		2							4		
Detector Phase	2	2	2					8		4		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	81.0	81.0	81.0					48.0		48.0		
Total Split (%)	55.9%	55.9%	55.9%					33.1%		33.1%		
Maximum Green (s)	75.3	75.3	75.3					37.7		37.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					None		Max		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		75.3	75.3					37.7		37.7		
Actuated g/C Ratio		0.58	0.58					0.29		0.29		

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Background Conditions
Weekday PM Peak Hour

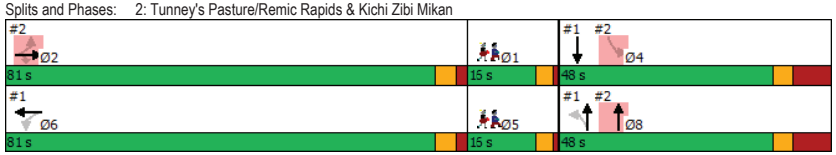
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	81.0
Total Split (%)	11%	11%	56%
Maximum Green (s)	12.0	12.0	75.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.17	0.03					0.72		0.08		
Control Delay		12.7	0.0					49.5		39.8		
Queue Delay		0.0	0.0					0.4		0.0		
Total Delay		12.7	0.0					50.0		39.8		
LOS		B	A					D		D		
Approach Delay		11.9						50.0			39.8	
Approach LOS		B						D			D	
Queue Length 50th (m)		20.3	0.0					83.6		3.6		
Queue Length 95th (m)		27.8	0.0					119.6		m5.6		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		1993	920					515		184		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					16		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.17	0.03					0.75		0.08		

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 129
Natural Cycle: 110
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 31.1 Intersection LOS: C
Intersection Capacity Utilization 44.6% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1173	223	0	0	0	0	19	12	10	0	0
Future Volume (vph)	3	1173	223	0	0	0	0	19	12	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					0.99				
Frt			0.850					0.948				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1517	0	0	0	0	1685	0	1729	0	0
Flt Permitted										0.737		
Satd. Flow (perm)	0	3458	1482	0	0	0	0	1685	0	1341	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			223					12				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	3%	0%	0%	0%	0%
Adj. Flow (vph)	3	1173	223	0	0	0	0	19	12	10	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1176	223	0	0	0	0	31	0	10	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		67.3	67.3					15.7		15.7		
Actuated g/C Ratio		0.68	0.68					0.16		0.16		

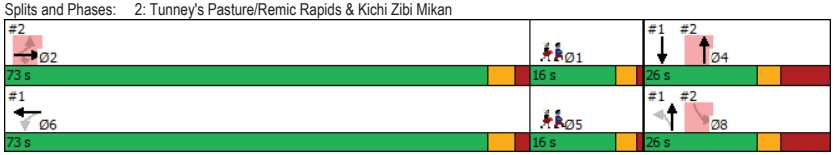
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Background OPT
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.50	0.21					0.11		0.05		
Control Delay		8.6	1.2					26.5		32.9		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		8.6	1.2					26.5		32.9		
LOS		A	A					C		C		
Approach Delay		7.4						26.5			32.9	
Approach LOS		A						C			C	
Queue Length 50th (m)		50.8	0.0					3.1		1.7		
Queue Length 95th (m)		64.3	6.5					11.0		4.9		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2350	1078					277		212		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.50	0.21					0.11		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 51.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	0	189	657	44
Future Vol, veh/h	0	14	0	189	657	44
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	0	14	0	189	657	44

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	686	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.24	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.336	-	-	-	-
Pot Cap-1 Maneuver	0	444	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	441	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	441	-	-
HCM Lane V/C Ratio	-	0.032	-	-
HCM Control Delay (s)	-	13.4	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	0	822	296	2
Future Vol, veh/h	0	16	0	822	296	2
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	0	822	296	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	304	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	740	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	735	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	735	-	-
HCM Lane V/C Ratio	-	0.022	-	-
HCM Control Delay (s)	-	10	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	13	177	5	26	635
Future Vol, veh/h	6	13	177	5	26	635
Conflicting Peds, #/hr	4	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	0	0	1
Mvmt Flow	6	13	177	5	26	635

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	871	180	0	0	182	0
Stage 1	180	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	324	868	-	-	1405	-
Stage 1	856	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	313	868	-	-	1405	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	484	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	556	1405	-
HCM Lane V/C Ratio	-	-	0.034	0.019	-
HCM Control Delay (s)	-	-	11.7	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	9	800	9	15	305
Future Vol, veh/h	7	9	800	9	15	305
Conflicting Peds, #/hr	9	5	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	1
Mvmt Flow	7	9	800	9	15	305

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1150	811	0	0	810	0
Stage 1	806	-	-	-	-	-
Stage 2	344	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	221	383	-	-	825	-
Stage 1	443	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	214	381	-	-	824	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	443	-	-	-	-	-
Stage 2	700	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	284	824	-
HCM Lane V/C Ratio	-	-	0.056	0.018	-
HCM Control Delay (s)	-	-	18.4	9.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	26	80	193	560	50
Future Vol, veh/h	13	26	80	193	560	50
Conflicting Peds, #/hr	4	3	40	0	0	40
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	11	2	2	1	2
Mvmt Flow	13	26	80	193	560	50

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	982	628	650	0	-	0
Stage 1	625	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Critical Hdwy	6.43	6.31	4.12	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.399	2.218	-	-	-
Pot Cap-1 Maneuver	275	467	936	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	230	449	901	-	-	-
Mov Cap-2 Maneuver	230	-	-	-	-	-
Stage 1	462	-	-	-	-	-
Stage 2	680	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	2.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	901	-	341	-	-
HCM Lane V/C Ratio	0.089	-	0.114	-	-
HCM Control Delay (s)	9.4	0	16.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.4	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	50	26	731	270	15
Future Vol, veh/h	41	50	26	731	270	15
Conflicting Peds, #/hr	16	0	25	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	2	1	0	1	0
Mvmt Flow	41	50	26	731	270	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1102	303	310	0	-	0
Stage 1	303	-	-	-	-	-
Stage 2	799	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	236	737	1256	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	217	720	1227	-	-	-
Mov Cap-2 Maneuver	217	-	-	-	-	-
Stage 1	710	-	-	-	-	-
Stage 2	436	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.8	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1227	-	352	-	-
HCM Lane V/C Ratio	0.021	-	0.259	-	-
HCM Control Delay (s)	8	0	18.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

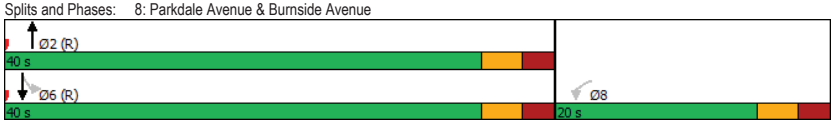
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	52	96	206	53	249	360
Future Volume (vph)	52	96	206	53	249	360
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.91		0.99			0.99
Frt	0.912		0.972			
Flt Protected	0.983					0.980
Satd. Flow (prot)	1508	0	1674	0	0	1763
Flt Permitted	0.983					0.752
Satd. Flow (perm)	1482	0	1674	0	0	1334
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	96		36			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	23	46		33	33	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	3%	9%	0%	2%
Adj. Flow (vph)	52	96	206	53	249	360
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	259	0	0	609
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	20.0		40.0		40.0	40.0
Total Split (%)	33.3%		66.7%		66.7%	66.7%
Maximum Green (s)	14.6		34.6		34.6	34.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		41.8			41.8
Actuated g/C Ratio	0.18		0.70			0.70
v/c Ratio	0.43		0.22			0.65
Control Delay	12.7		5.1			13.2
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	12.7		5.1			13.2
LOS	B		A			B
Approach Delay	12.7		5.1			13.2
Approach LOS	B		A			B
Queue Length 50th (m)	4.6		10.2			44.6
Queue Length 95th (m)	17.0		19.7			#104.1
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	433		1178			930
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.34		0.22			0.65

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 18 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 11.1 Intersection LOS: B
Intersection Capacity Utilization 77.2% 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.

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue



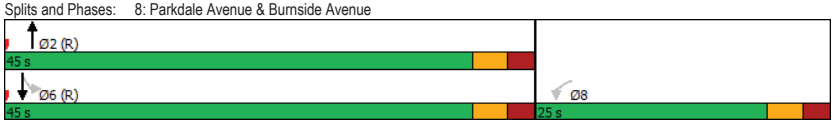
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	232	599	57	78	300
Future Volume (vph)	49	232	599	57	78	300
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88		1.00			1.00
Frt	0.889		0.988			
Flt Protected	0.991					0.990
Satd. Flow (prot)	1418	0	1789	0	0	1774
Flt Permitted	0.991					0.798
Satd. Flow (perm)	1405	0	1789	0	0	1428
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	232		11			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	21	46		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	0%	0%	2%	0%	2%
Adj. Flow (vph)	49	232	599	57	78	300
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	656	0	0	378
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	19.6		39.6		39.6	39.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	11.2		48.0			48.0
Actuated g/C Ratio	0.16		0.69			0.69
v/c Ratio	0.67		0.53			0.39
Control Delay	14.5		8.5			7.2
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	14.5		8.5			7.2
LOS	B		A			A
Approach Delay	14.5		8.5			7.2
Approach LOS	B		A			A
Queue Length 50th (m)	5.4		40.4			20.5
Queue Length 95th (m)	24.1		76.3			41.1
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	560		1229			978
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.50		0.53			0.39

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 23 (33%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 9.4 Intersection LOS: A
Intersection Capacity Utilization 92.8% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue

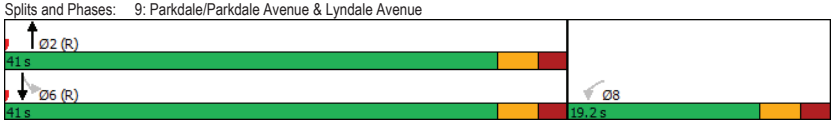


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	10	296	29	3	385
Future Volume (vph)	31	10	296	29	3	385
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		1.00			1.00
Frt	0.967		0.988			
Flt Protected	0.964					
Satd. Flow (prot)	1612	0	1740	0	0	1767
Flt Permitted	0.964					0.998
Satd. Flow (perm)	1541	0	1740	0	0	1764
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	10		15			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	27	4		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	0%	3%	3%	0%	3%
Adj. Flow (vph)	31	10	296	29	3	385
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	325	0	0	388
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	19.2		41.0		41.0	41.0
Total Split (%)	31.9%		68.1%		68.1%	68.1%
Maximum Green (s)	14.0		35.9		35.9	35.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		45.6			45.6
Actuated g/C Ratio	0.18		0.76			0.76
v/c Ratio	0.15		0.25			0.29
Control Delay	16.6		5.1			5.6
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	16.6		5.1			5.6
LOS	B		A			A
Approach Delay	16.6		5.1			5.6
Approach LOS	B		A			A
Queue Length 50th (m)	2.7		14.6			19.2
Queue Length 95th (m)	9.1		25.9			33.0
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	366		1322			1336
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.11		0.25			0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 60.2			
Actuated Cycle Length: 60.2			
Offset: 18 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 37.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale/Parkdale Avenue & Lyndale Avenue

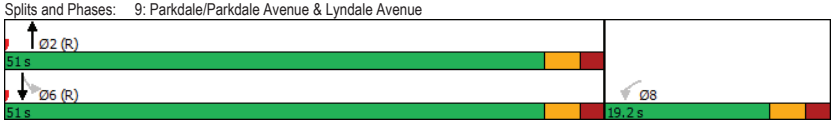


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	6	598	34	9	428
Future Volume (vph)	18	6	598	34	9	428
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		1.00			1.00
Frt	0.966		0.993			
Flt Protected	0.964					0.999
Satd. Flow (prot)	1682	0	1801	0	0	1783
Flt Permitted	0.964					0.989
Satd. Flow (perm)	1619	0	1801	0	0	1765
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		8			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	20	4		22	22	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	18	6	598	34	9	428
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	632	0	0	437
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	19.2		51.0		51.0	51.0
Total Split (%)	27.4%		72.6%		72.6%	72.6%
Maximum Green (s)	14.0		45.9		45.9	45.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		55.6			55.6
Actuated g/C Ratio	0.15		0.79			0.79
v/c Ratio	0.10		0.44			0.31
Control Delay	20.0		6.0			5.0
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	20.0		6.0			5.0
LOS	B		A			A
Approach Delay	20.0		6.0			5.0
Approach LOS	B		A			A
Queue Length 50th (m)	1.9		37.0			22.5
Queue Length 95th (m)	7.5		59.6			36.4
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	327		1428			1398
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.07		0.44			0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 70.2			
Actuated Cycle Length: 70.2			
Offset: 18 (26%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 5.9		Intersection LOS: A	
Intersection Capacity Utilization 49.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale/Parkdale Avenue & Lyndale Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	349	49	39	195	33	60	237	70	72	288	199
Future Volume (vph)	114	349	49	39	195	33	60	237	70	72	288	199
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.91		0.91	0.97		0.87		0.98		0.96		0.94
Frt			0.850			0.850		0.974				0.850
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1662	1733	1146	1662	1733	1381	0	1662	0	1695	1802	1446
Flt Permitted	0.635			0.483				0.895		0.467		
Satd. Flow (perm)	1015	1733	1046	818	1733	1198	0	1493	0	799	1802	1355
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			107		15				199
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			203.5			221.0	
Travel Time (s)		17.9			21.6			18.3			19.9	
Confl. Peds. (#/hr)	63		33	33		63	23		45	45		23
Confl. Bikes (#/hr)			9									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	5%	35%	4%	5%	12%	13%	1%	5%	2%	1%	7%
Adj. Flow (vph)	114	349	49	39	195	33	60	237	70	72	288	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	349	49	39	195	33	0	367	0	72	288	199
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	32.1	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	46.3%	46.3%	46.3%	46.3%	46.3%	46.3%	45.3%	45.3%		45.3%	45.3%	45.3%
Maximum Green (s)	37.9	37.9	37.9	37.9	37.9	37.9	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	45.9	45.9	45.9	45.9	45.9	45.9		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.39		0.39	0.39	0.39

10: Parkdale & Scott
Tunney's Pasture TIA

Future Background Conditions
Weekday AM Peak Hour

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	7.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
BD

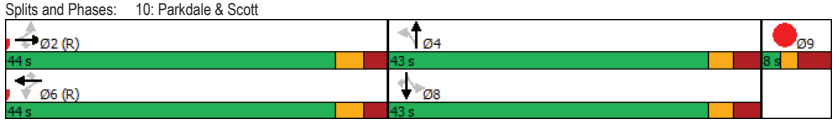
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.23	0.42	0.09	0.10	0.23	0.05		0.63		0.23	0.41	0.31
Control Delay	12.1	14.0	0.4	14.3	15.2	0.2		28.3		22.3	23.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	12.1	14.0	0.4	14.3	15.2	0.2		28.3		22.3	23.6	4.3
LOS	B	B	A	B	B	A		C		C	C	A
Approach Delay		12.3			13.2			28.3			16.6	
Approach LOS		B			B			C			B	
Queue Length 50th (m)	7.6	26.9	0.1	3.7	20.0	0.0		51.3		8.7	37.8	0.0
Queue Length 95th (m)	13.1	32.0	m0.0	9.4	33.3	0.0		81.6		19.1	59.3	13.1
Internal Link Dist (m)		225.1			275.4			179.5			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	490	837	560	395	837	634		585		308	696	645
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.23	0.42	0.09	0.10	0.23	0.05		0.63		0.23	0.41	0.31

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 91 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 17.3 Intersection LOS: B
Intersection Capacity Utilization 91.7% ICU Level of Service F
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale & Scott



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	349	49	39	195	33	60	237	70	72	288	199
Future Volume (vph)	114	349	49	39	195	33	60	237	70	72	288	199
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.91		0.91	0.97		0.87		0.98		0.96		0.94
Frt			0.850			0.850		0.974				0.850
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1695	1717	1146	1729	1767	1311	0	1677	0	1695	1802	1517
Flt Permitted	0.635			0.483				0.895		0.467		
Satd. Flow (perm)	1035	1717	1046	851	1767	1137	0	1506	0	799	1802	1421
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			107		15				199
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			225.5			221.0	
Travel Time (s)		17.9			21.6			20.3			19.9	
Confl. Peds. (#/hr)	63		33	33		63	23		45	45		23
Confl. Bikes (#/hr)			9									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	6%	35%	0%	3%	18%	8%	2%	1%	2%	1%	2%
Adj. Flow (vph)	114	349	49	39	195	33	60	237	70	72	288	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	349	49	39	195	33	0	367	0	72	288	199
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	32.1	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	46.3%	46.3%	46.3%	46.3%	46.3%	46.3%	45.3%	45.3%		45.3%	45.3%	45.3%
Maximum Green (s)	37.9	37.9	37.9	37.9	37.9	37.9	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	45.9	45.9	45.9	45.9	45.9	45.9		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.39		0.39	0.39	0.39

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	7.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

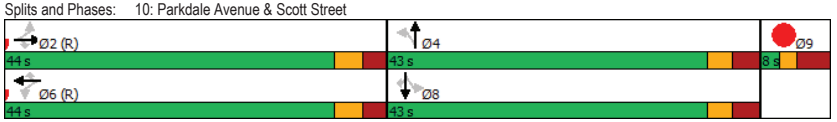
10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA
Future Background OPT
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.23	0.42	0.09	0.09	0.23	0.05		0.62		0.23	0.41	0.30
Control Delay	12.0	14.1	0.4	14.2	15.2	0.2		28.1		22.3	23.6	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	12.0	14.1	0.4	14.2	15.2	0.2		28.1		22.3	23.6	4.2
LOS	B	B	A	B	B	A		C		C	C	A
Approach Delay		12.3			13.2			28.1			16.5	
Approach LOS		B			B			C			B	
Queue Length 50th (m)	7.6	27.0	0.1	3.7	20.0	0.0		51.2		8.7	37.8	0.0
Queue Length 95th (m)	13.1	32.0	m0.0	9.4	33.2	0.0		81.2		19.1	59.3	13.0
Internal Link Dist (m)		225.1			275.4			201.5			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	500	829	560	411	853	604		590		308	696	671
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.23	0.42	0.09	0.09	0.23	0.05		0.62		0.23	0.41	0.30

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 91 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 17.2 Intersection LOS: B
Intersection Capacity Utilization 91.7% ICU Level of Service F
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	308	65	74	357	44	53	327	53	47	255	151
Future Volume (vph)	284	308	65	74	357	44	53	327	53	47	255	151
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		0.83	0.90		0.85		0.98		0.96		0.91
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1729	1784	1473	1729	1750	1473	0	1699	0	1695	1802	1502
Flt Permitted	0.280			0.573				0.926		0.394		
Satd. Flow (perm)	486	1784	1220	940	1750	1258	0	1574	0	674	1802	1365
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			101			163		8				160
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			203.5			221.0	
Travel Time (s)		17.9			21.6			18.3			19.9	
Confl. Peds. (#/hr)	60		79	79		60	34		53	53		34
Confl. Bikes (#/hr)			4			11						5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	5%	0%	4%	5%	18%	1%	1%	2%	1%	3%
Adj. Flow (vph)	284	308	65	74	357	44	53	327	53	47	255	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	284	308	65	74	357	44	0	433	0	47	255	151
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.6	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	15.0	49.0	49.0	34.0	34.0	34.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	15.0%	49.0%	49.0%	34.0%	34.0%	34.0%	43.0%	43.0%		43.0%	43.0%	43.0%
Maximum Green (s)	9.4	42.9	42.9	27.9	27.9	27.9	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.3	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)		19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	51.4	50.9	50.9	29.2	29.2	29.2		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.51	0.51	0.51	0.29	0.29	0.29		0.37		0.37	0.37	0.37

10: Parkdale & Scott
Tunney's Pasture TIA

Future Background Conditions
Weekday PM Peak Hour

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
BD

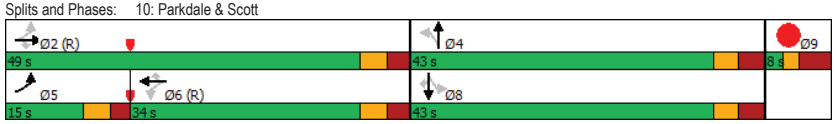
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.63	0.34	0.10	0.27	0.70	0.09		0.74		0.19	0.39	0.25
Control Delay	21.0	15.9	1.3	31.4	40.6	0.4		36.3		24.2	25.5	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	21.0	15.9	1.3	31.4	40.6	0.4		36.3		24.2	25.5	4.3
LOS	C	B	A	C	D	A		D		C	C	A
Approach Delay		16.7			35.4			36.3			18.3	
Approach LOS		B			D			D			B	
Queue Length 50th (m)	30.5	33.9	0.0	11.2	62.6	0.0		70.7		6.1	35.9	0.0
Queue Length 95th (m)	47.6	52.1	2.8	23.5	#95.0	0.0		107.7		14.9	56.7	11.0
Internal Link Dist (m)		225.1			275.4			179.5			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	450	908	670	274	510	482		582		247	661	602
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.63	0.34	0.10	0.27	0.70	0.09		0.74		0.19	0.39	0.25

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 25.7 Intersection LOS: C
Intersection Capacity Utilization 104.5% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Parkdale & Scott



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	308	65	74	357	44	53	327	53	47	255	151
Future Volume (vph)	284	308	65	74	357	44	53	327	53	47	255	151
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		0.83	0.90		0.85		0.98		0.96		0.91
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1729	1784	1473	1712	1750	1547	0	1689	0	1729	1802	1532
Flt Permitted	0.328			0.573				0.924		0.367		
Satd. Flow (perm)	569	1784	1221	930	1750	1320	0	1562	0	641	1802	1391
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			101			163		8				160
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			225.5			221.0	
Travel Time (s)		17.9			21.6			20.3			19.9	
Confl. Peds. (#/hr)	60		79	79		60	34		53	53		34
Confl. Bikes (#/hr)			4			11						5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	5%	1%	4%	0%	22%	1%	2%	0%	1%	1%
Adj. Flow (vph)	284	308	65	74	357	44	53	327	53	47	255	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	284	308	65	74	357	44	0	433	0	47	255	151
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.6	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	20.0	52.5	52.5	32.5	32.5	32.5	39.5	39.5		39.5	39.5	39.5
Total Split (%)	20.0%	52.5%	52.5%	32.5%	32.5%	32.5%	39.5%	39.5%		39.5%	39.5%	39.5%
Maximum Green (s)	14.4	46.4	46.4	26.4	26.4	26.4	33.2	33.2		33.2	33.2	33.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.3	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)		19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	54.9	54.4	54.4	33.9	33.9	33.9		33.2		33.2	33.2	33.2
Actuated g/C Ratio	0.55	0.54	0.54	0.34	0.34	0.34		0.33		0.33	0.33	0.33

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA

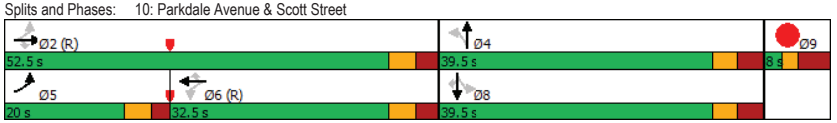
Future Background OPT
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.59	0.32	0.09	0.23	0.60	0.08		0.83		0.22	0.43	0.27
Control Delay	14.7	11.5	2.1	27.9	33.6	0.3		45.4		27.6	28.7	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	14.7	11.5	2.1	27.9	33.6	0.3		45.4		27.6	28.7	4.8
LOS	B	B	A	C	C	A		D		C	C	A
Approach Delay		11.9			29.6			45.4			20.6	
Approach LOS		B			C			D			C	
Queue Length 50th (m)	20.8	23.1	0.3	10.2	56.9	0.0		75.3		6.5	38.1	0.0
Queue Length 95th (m)	49.7	54.1	m2.6	23.1	92.9	0.0		#125.8		15.9	60.2	11.6
Internal Link Dist (m)		225.1			275.4			201.5			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	498	970	710	315	593	555		523		212	598	568
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.57	0.32	0.09	0.23	0.60	0.08		0.83		0.22	0.43	0.27

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 84 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 25.2 Intersection LOS: C
Intersection Capacity Utilization 104.5% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lanes, Volumes, Timings
BD

Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	453	71	80	248	24	109	137	119	19	51	17
Future Volume (vph)	18	453	71	80	248	24	109	137	119	19	51	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.78	0.96		0.94		0.64	0.65		0.63	0.71		0.61
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1531	0	1679	1670	1459	1465	1802	1517	1530	1767	1446
Flt Permitted	0.605			0.413			0.724			0.669		
Satd. Flow (perm)	840	1531	0	684	1670	935	725	1802	949	760	1767	880
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			108.7	
Travel Time (s)		20.2			17.9			20.2			13.0	
Confl. Peds. (#/hr)	149		98	98		149	190		180	180		190
Confl. Bikes (#/hr)			122			15			8			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	8%	33%	3%	9%	6%	18%	1%	2%	13%	3%	7%
Adj. Flow (vph)	18	453	71	80	248	24	109	137	119	19	51	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	524	0	80	248	24	109	137	119	19	51	17
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	2	2		6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	3.0	3.0	3.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	44.0	44.0		44.0	44.0	44.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	46.3%	46.3%		46.3%	46.3%	46.3%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	37.8	37.8		37.8	37.8	37.8	34.8	34.8	34.8	34.8	34.8	34.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)	61.8	61.8		61.8	61.8	61.8	20.8	20.8	20.8	20.8	20.8	20.8
Actuated g/C Ratio	0.65	0.65		0.65	0.65	0.65	0.22	0.22	0.22	0.22	0.22	0.22

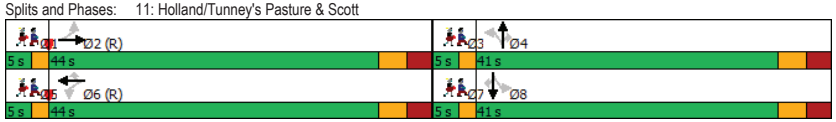
Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	3.0	3.0	3.0	3.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?		Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.03	0.53		0.18	0.23	0.04	0.69	0.35	0.57	0.11	0.13	0.09
Control Delay	9.0	13.2		8.4	7.4	7.2	53.6	31.4	41.9	26.8	26.7	25.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	13.2		8.4	7.4	7.2	53.6	31.4	41.9	26.8	26.7	25.9
LOS	A	B		A	A	A	D	C	D	C	C	C
Approach Delay		13.1			7.6			41.5			26.6	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	1.2	51.2		4.6	14.7	1.3	17.6	20.4	18.7	2.7	7.2	2.4
Queue Length 95th (m)	4.7	98.3		m13.4	32.5	m4.9	32.1	31.9	31.9	7.5	14.4	6.8
Internal Link Dist (m)		256.5			225.1			200.2			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		30.0
Base Capacity (vph)	545	995		444	1085	607	265	660	347	278	647	322
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.53		0.18	0.23	0.04	0.41	0.21	0.34	0.07	0.08	0.05

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 85 (89%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 20.2 Intersection LOS: C
Intersection Capacity Utilization 70.7% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland/Tunney's Pasture & Scott



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	453	71	80	248	24	109	137	119	19	51	17
Future Volume (vph)	18	453	71	80	248	24	109	137	119	19	51	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		30.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.78	0.96		0.94		0.64	0.65		0.63	0.71		0.61
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1502	0	1679	1655	1459	1465	1802	1517	1530	1767	1419
Flt Permitted	0.605			0.413			0.724			0.669		
Satd. Flow (perm)	840	1502	0	684	1655	935	725	1802	949	760	1767	864
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			108.7	
Travel Time (s)		20.2			17.9			20.2			13.0	
Confl. Peds. (#/hr)	149		98	98		149	190		180	180		190
Confl. Bikes (#/hr)			122			15			8			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	10%	36%	3%	10%	6%	18%	1%	2%	13%	3%	9%
Adj. Flow (vph)	18	453	71	80	248	24	109	137	119	19	51	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	524	0	80	248	24	109	137	119	19	51	17
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	2	2		6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	3.0	3.0	3.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	44.0	44.0		44.0	44.0	44.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	46.3%	46.3%		46.3%	46.3%	46.3%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	37.8	37.8		37.8	37.8	37.8	34.8	34.8	34.8	34.8	34.8	34.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)	61.8	61.8		61.8	61.8	61.8	20.8	20.8	20.8	20.8	20.8	20.8
Actuated g/C Ratio	0.65	0.65		0.65	0.65	0.65	0.22	0.22	0.22	0.22	0.22	0.22

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	3.0	3.0	3.0	3.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?		Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

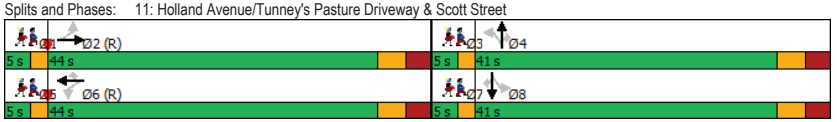
11: Holland Avenue/Tunney's Pasture Driveway & Scott Street Future Background OPT
Tunney's Pasture TIA Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.03	0.54		0.18	0.23	0.04	0.69	0.35	0.57	0.11	0.13	0.09
Control Delay	9.0	13.5		8.4	7.4	7.2	53.6	31.4	41.9	26.8	26.7	26.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	13.5		8.4	7.4	7.2	53.6	31.4	41.9	26.8	26.7	26.0
LOS	A	B		A	A	A	D	C	D	C	C	C
Approach Delay		13.4			7.6			41.5			26.6	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	1.2	51.7		4.6	14.8	1.3	17.6	20.4	18.7	2.7	7.2	2.4
Queue Length 95th (m)	4.7	99.7		m13.4	32.6	m4.9	32.1	31.9	31.9	7.5	14.4	6.9
Internal Link Dist (m)		256.5			225.1			200.2			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		30.0	65.0		30.0
Base Capacity (vph)	545	976		444	1075	607	265	660	347	278	647	316
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.54		0.18	0.23	0.04	0.41	0.21	0.34	0.07	0.08	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 85 (89%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 20.3		Intersection LOS: C	
Intersection Capacity Utilization 70.7%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	500	67	155	565	22	123	136	220	58	191	18
Future Volume (vph)	13	500	67	155	565	22	123	136	220	58	191	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.91	0.96				0.55	0.68		0.66	0.74		0.53
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1624	0	1695	1717	1419	1429	1802	1547	1695	1802	1517
Flt Permitted	0.081			0.253			0.564			0.661		
Satd. Flow (perm)	131	1624	0	451	1717	780	574	1802	1025	869	1802	803
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			108.7	
Travel Time (s)		20.2			17.9			20.2			13.0	
Confl. Peds. (#/hr)	152		112	112		152	198		140	140		198
Confl. Bikes (#/hr)			31			86			3			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	4%	19%	2%	6%	9%	21%	1%	0%	2%	1%	2%
Adj. Flow (vph)	13	500	67	155	565	22	123	136	220	58	191	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	567	0	155	565	22	123	136	220	58	191	18
Turn Type	Perm	NA		custom	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2		15	6 15			4			8	
Permitted Phases	2			6		6 15	4		4	8		8
Detector Phase	2	2		15	6 15	6 15	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		11.2			30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	50.0	50.0		15.0			35.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	45.5%	45.5%		13.6%			31.8%	31.8%	31.8%	31.8%	31.8%	31.8%
Maximum Green (s)	43.8	43.8		8.8			28.8	28.8	28.8	28.8	28.8	28.8
Yellow Time (s)	3.3	3.3		3.3			3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9			2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0			0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2			6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min	C-Min		None			Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0					2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0					22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30					30	30	30	30	30	30
Act Effct Green (s)	49.5	49.5		62.1	68.3	68.3	29.3	29.3	29.3	29.3	29.3	29.3
Actuated g/C Ratio	0.45	0.45		0.56	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27

11: Holland/Tunney's Pasture & Scott
Tunney's Pasture TIA

Future Background Conditions
Weekday PM Peak Hour

Lane Group	Ø1	Ø3	Ø5	Ø6	Ø7
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Ideal Flow (vphpl)					
Storage Length (m)					
Storage Lanes					
Taper Length (m)					
Lane Util. Factor					
Ped Bike Factor					
Frt					
Flt Protected					
Satd. Flow (prot)					
Flt Permitted					
Satd. Flow (perm)					
Right Turn on Red					
Satd. Flow (RTOR)					
Link Speed (k/h)					
Link Distance (m)					
Travel Time (s)					
Confl. Peds. (#/hr)					
Confl. Bikes (#/hr)					
Peak Hour Factor					
Heavy Vehicles (%)					
Adj. Flow (vph)					
Shared Lane Traffic (%)					
Lane Group Flow (vph)					
Turn Type					
Protected Phases	1	3	5	6	7
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	1.0	1.0	1.0	5.0	1.0
Minimum Split (s)	3.0	3.0	3.0	27.2	3.0
Total Split (s)	5.0	5.0	5.0	50.0	5.0
Total Split (%)	5%	5%	5%	45%	5%
Maximum Green (s)	3.0	3.0	3.0	43.8	3.0
Yellow Time (s)	2.0	2.0	2.0	3.3	2.0
All-Red Time (s)	0.0	0.0	0.0	2.9	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag		Lead			Lead
Lead-Lag Optimize?		Yes			Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min	None
Walk Time (s)	0.0	0.0	0.0	2.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	19.0	0.0
Pedestrian Calls (#/hr)	0	0	0	30	0
Act Effct Green (s)					
Actuated g/C Ratio					

Lanes, Volumes, Timings
BD

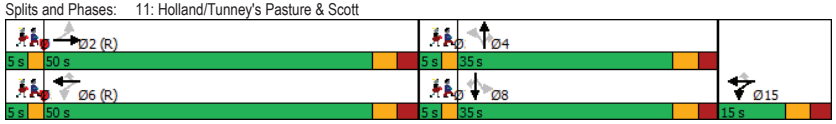
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.22	0.78		0.39	0.53	0.05	0.81	0.28	0.81	0.25	0.40	0.08
Control Delay	30.8	35.1		13.1	15.1	10.2	73.3	32.3	59.6	32.7	34.6	28.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	35.1		13.1	15.1	10.2	73.3	32.3	59.6	32.7	34.6	28.7
LOS	C	D		B	B	B	E	C	E	C	C	C
Approach Delay		35.0			14.5			55.3			33.8	
Approach LOS		C			B			E			C	
Queue Length 50th (m)	1.7	101.7		14.2	70.3	1.9	23.5	22.0	42.0	9.3	32.0	2.8
Queue Length 95th (m)	7.2	147.8		24.3	102.8	5.4	#51.9	37.3	#74.6	20.0	51.0	8.2
Internal Link Dist (m)		256.5			225.1			200.2			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		30.0
Base Capacity (vph)	59	730		397	1066	484	165	518	294	250	518	231
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.78		0.39	0.53	0.05	0.75	0.26	0.75	0.23	0.37	0.08

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 32.2 Intersection LOS: C
Intersection Capacity Utilization 89.7% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Holland/Tunney's Pasture & Scott



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	500	67	155	565	22	123	136	220	58	191	18
Future Volume (vph)	13	500	67	155	565	22	123	136	220	58	191	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		30.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.96		0.93		0.58	0.70		0.69	0.76		0.57
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1617	0	1695	1701	1419	1429	1802	1547	1695	1802	1517
Flt Permitted	0.368			0.366			0.575			0.670		
Satd. Flow (perm)	594	1617	0	607	1701	827	603	1802	1070	907	1802	864
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			108.7	
Travel Time (s)		20.2			17.9			20.2			13.0	
Confl. Peds. (#/hr)	152		112	112		152	198		140	140		198
Confl. Bikes (#/hr)			31			86			3			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	4%	26%	2%	7%	9%	21%	1%	0%	2%	1%	2%
Adj. Flow (vph)	13	500	67	155	565	22	123	136	220	58	191	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	567	0	155	565	22	123	136	220	58	191	18
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	2	2		6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	54.0	54.0		54.0	54.0	54.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	54.0%	54.0%		54.0%	54.0%	54.0%	36.0%	36.0%	36.0%	36.0%	36.0%	36.0%
Maximum Green (s)	47.8	47.8		47.8	47.8	47.8	29.8	29.8	29.8	29.8	29.8	29.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	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	3.0	3.0	3.0	3.0
Recall Mode	C-Min	C-Min		C-Min	C-Min	C-Min	Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)	61.4	61.4		61.4	61.4	61.4	26.2	26.2	26.2	26.2	26.2	26.2
Actuated g/C Ratio	0.61	0.61		0.61	0.61	0.61	0.26	0.26	0.26	0.26	0.26	0.26

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

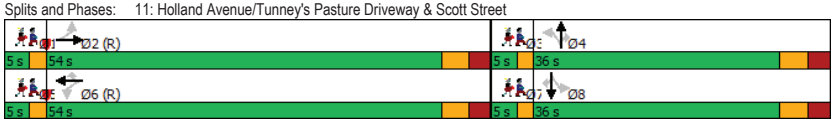
11: Holland Avenue/Tunney's Pasture Driveway & Scott Street
Tunney's Pasture TIA
Future Background OPT
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.04	0.57		0.42	0.54	0.04	0.78	0.29	0.79	0.24	0.40	0.08
Control Delay	9.4	12.0		11.6	10.5	5.9	63.9	29.0	52.6	28.8	31.4	24.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	12.0		11.6	10.5	5.9	63.9	29.0	52.6	28.8	31.4	24.8
LOS	A	B		B	B	A	E	C	D	C	C	C
Approach Delay		11.9			10.6			48.8			30.4	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	0.9	52.9		7.9	29.6	1.0	21.9	20.9	39.3	8.8	30.3	2.6
Queue Length 95th (m)	m2.0	51.3		m41.0	m120.9	m1.9	40.0	32.3	59.4	17.3	43.9	7.2
Internal Link Dist (m)		256.5			225.1			200.2			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		30.0	65.0		30.0
Base Capacity (vph)	364	992		372	1043	507	188	563	334	283	563	270
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.57		0.42	0.54	0.04	0.65	0.24	0.66	0.20	0.34	0.07

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 22.4 Intersection LOS: C
Intersection Capacity Utilization 89.7% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Vol, veh/h	24	461	5	4	253	91	1	1	12	0	1	20
Future Vol, veh/h	24	461	5	4	253	91	1	1	12	0	1	20
Conflicting Peds, #/hr	51	0	20	20	0	51	6	0	2	2	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	8	0	0	12	5	0	0	0	0	0	8
Mvmt Flow	24	461	5	4	253	91	1	1	12	0	1	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	486	0	0	855	935	486	878	892	356
Stage 1	-	-	-	-	-	-	532	532	-	358	358	-
Stage 2	-	-	-	-	-	-	323	403	-	520	534	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.372
Pot Cap-1 Maneuver	1175	-	-	1087	-	-	281	267	585	271	283	675
Stage 1	-	-	-	-	-	-	535	529	-	664	631	-
Stage 2	-	-	-	-	-	-	693	603	-	543	528	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1120	-	-	1067	-	-	258	242	573	245	256	640
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	242	-	245	256	-
Stage 1	-	-	-	-	-	-	510	505	-	614	599	-
Stage 2	-	-	-	-	-	-	664	572	-	514	504	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	12.7	11.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	484	1120	-	-	1067	-	-	597
HCM Lane V/C Ratio	0.029	0.021	-	-	0.004	-	-	0.035
HCM Control Delay (s)	12.7	8.3	0	-	8.4	-	-	11.3
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Vol, veh/h	90	637	10	5	546	50	4	8	13	0	0	105
Future Vol, veh/h	90	637	10	5	546	50	4	8	13	0	0	105
Conflicting Peds, #/hr	42	0	25	25	0	42	3	0	4	4	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	5	10	0	6	3	0	0	0	0	0	2
Mvmt Flow	90	637	10	5	546	50	4	8	13	0	0	105

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	672	0	0	1484	1495	671	1460	1475	616
Stage 1	-	-	-	-	-	-	847	847	-	623	623	-
Stage 2	-	-	-	-	-	-	637	648	-	837	852	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.318
Pot Cap-1 Maneuver	956	-	-	928	-	-	104	124	460	108	128	491
Stage 1	-	-	-	-	-	-	359	381	-	477	481	-
Stage 2	-	-	-	-	-	-	469	469	-	364	379	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	919	-	-	907	-	-	69	98	448	83	101	471
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	98	-	83	101	-
Stage 1	-	-	-	-	-	-	297	315	-	388	459	-
Stage 2	-	-	-	-	-	-	361	448	-	291	314	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.1	34.2	14.8
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	148	919	-	-	907	-	-	471
HCM Lane V/C Ratio	0.169	0.098	-	-	0.006	-	-	0.223
HCM Control Delay (s)	34.2	9.3	0	-	9	-	-	14.8
HCM Lane LOS	D	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.3	-	-	0	-	-	0.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	401	26	4	293	45	11	0	12	68	0	31
Future Volume (vph)	35	401	26	4	293	45	11	0	12	68	0	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.95		0.85		0.94		0.94		0.95
Frt		0.991				0.850		0.930				0.850
Flt Protected	0.950			0.950				0.977		0.950		
Satd. Flow (prot)	1160	1750	0	1729	1767	1113	0	1580	0	1054	0	967
Flt Permitted	0.522			0.514				0.977		0.742		
Satd. Flow (perm)	607	1750	0	893	1767	946	0	1558	0	770	0	920
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				105		105				105
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	38		28	28		38	12		28	28		12
Confl. Bikes (#/hr)			86			21						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	49%	2%	4%	0%	3%	39%	0%	0%	0%	64%	0%	60%
Adj. Flow (vph)	35	401	26	4	293	45	11	0	12	68	0	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	427	0	4	293	45	0	23	0	68	0	31
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	26.0	66.0		40.0	40.0	40.0	34.0	34.0		34.0		34.0
Total Split (%)	26.0%	66.0%		40.0%	40.0%	40.0%	34.0%	34.0%		34.0%		34.0%
Maximum Green (s)	20.0	59.4		33.4	33.4	33.4	27.4	27.4		27.4		27.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	Max		Max	Max	Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	66.4	67.2		59.4	59.4	59.4		14.0		14.1		14.1
Actuated g/C Ratio	0.74	0.74		0.66	0.66	0.66		0.16		0.16		0.16

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.07	0.33		0.01	0.25	0.07		0.07		0.57		0.13
Control Delay	5.9	6.9		12.0	11.5	0.2		0.4		52.5		1.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	5.9	6.9		12.0	11.5	0.2		0.4		52.5		1.2
LOS	A	A		B	B	A		A		D		A
Approach Delay		6.8			10.0			0.4			36.4	
Approach LOS		A			B			A			D	
Queue Length 50th (m)	1.5	23.3		0.3	23.8	0.0		0.0		10.5		0.0
Queue Length 95th (m)	5.4	50.3		2.0	49.2	0.0		0.0		23.4		0.0
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	569	1304		587	1163	658		547		234		353
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.06	0.33		0.01	0.25	0.07		0.04		0.29		0.09

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 90.3
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 11.0 — Intersection LOS: B
Intersection Capacity Utilization 56.0% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 16: Smirle/Goldenrod & Scott

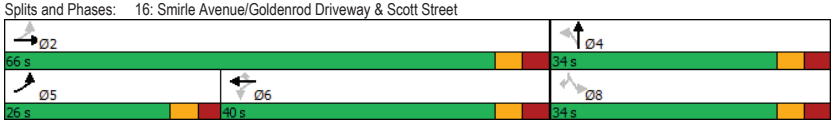


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	401	26	4	293	45	11	0	12	68	0	31
Future Volume (vph)	35	401	26	4	293	45	11	0	12	68	0	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.95		0.85		0.94		0.94		0.95
Frt		0.991				0.850		0.930				0.850
Flt Protected	0.950			0.950				0.977		0.950		
Satd. Flow (prot)	1168	1734	0	1729	1767	1121	0	1580	0	1048	0	961
Flt Permitted	0.522			0.514				0.977		0.742		
Satd. Flow (perm)	612	1734	0	893	1767	953	0	1558	0	766	0	915
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				105		105				105
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	38		28	28		38	12		28	28		12
Confl. Bikes (#/hr)			86			21						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	48%	3%	4%	0%	3%	38%	0%	0%	0%	65%	0%	61%
Adj. Flow (vph)	35	401	26	4	293	45	11	0	12	68	0	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	427	0	4	293	45	0	23	0	68	0	31
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	26.0	66.0		40.0	40.0	40.0	34.0	34.0		34.0		34.0
Total Split (%)	26.0%	66.0%		40.0%	40.0%	40.0%	34.0%	34.0%		34.0%		34.0%
Maximum Green (s)	20.0	59.4		33.4	33.4	33.4	27.4	27.4		27.4		27.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	Max		Max	Max	Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	66.4	67.3		59.5	59.5	59.5		14.0		14.1		14.1
Actuated g/C Ratio	0.73	0.74		0.66	0.66	0.66		0.15		0.16		0.16

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.07	0.33		0.01	0.25	0.07		0.07		0.57		0.13
Control Delay	5.9	6.9		12.0	11.5	0.2		0.4		52.8		1.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	5.9	6.9		12.0	11.5	0.2		0.4		52.8		1.2
LOS	A	A		B	B	A		A		D		A
Approach Delay		6.9			10.0			0.4			36.6	
Approach LOS		A			B			A			D	
Queue Length 50th (m)	1.5	23.5		0.3	23.9	0.0		0.0		10.5		0.0
Queue Length 95th (m)	5.4	50.5		2.0	49.2	0.0		0.0		23.5		0.0
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	573	1292		587	1162	662		547		233		351
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.06	0.33		0.01	0.25	0.07		0.04		0.29		0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 90.4			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 11.1		Intersection LOS: B	
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	604	25	9	535	68	7	0	7	40	0	37
Future Volume (vph)	27	604	25	9	535	68	7	0	7	40	0	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.98		0.76		0.94		0.95		0.93
Frt		0.994				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1130	1787	0	1729	1802	943	0	1595	0	1310	0	1097
Flt Permitted	0.380			0.426				0.976		0.748		
Satd. Flow (perm)	452	1787	0	763	1802	717	0	1553	0	976	0	1019
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				91		91				91
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	55		12	12		55	19		20	20		19
Confl. Bikes (#/hr)			19			62						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	53%	1%	0%	0%	1%	64%	0%	0%	0%	32%	0%	41%
Adj. Flow (vph)	27	604	25	9	535	68	7	0	7	40	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	629	0	9	535	68	0	14	0	40	0	37
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	15.0	78.0		63.0	63.0	63.0	37.0	37.0		37.0		37.0
Total Split (%)	13.0%	67.8%		54.8%	54.8%	54.8%	32.2%	32.2%		32.2%		32.2%
Maximum Green (s)	9.0	71.4		56.4	56.4	56.4	30.4	30.4		30.4		30.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	89.5	90.3		82.6	82.6	82.6		15.3		15.3		15.3
Actuated g/C Ratio	0.78	0.79		0.72	0.72	0.72		0.13		0.13		0.13

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.07	0.45		0.02	0.41	0.13		0.05		0.31		0.17
Control Delay	5.2	7.3		10.1	11.6	1.6		0.4		48.4		1.8
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	5.2	7.3		10.1	11.6	1.6		0.4		48.4		1.8
LOS	A	A		B	B	A		A		D		A
Approach Delay		7.2			10.5			0.4			26.0	
Approach LOS		A			B			A			C	
Queue Length 50th (m)	1.6	57.5		0.8	65.1	0.0		0.0		7.7		0.0
Queue Length 95th (m)	4.2	81.1		3.0	94.7	3.6		0.0		18.0		0.0
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	404	1403		547	1293	540		477		258		336
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.07	0.45		0.02	0.41	0.13		0.03		0.16		0.11

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 20 (17%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 9.7 Intersection LOS: A
Intersection Capacity Utilization 67.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 16: Smirle/Goldenrod & Scott



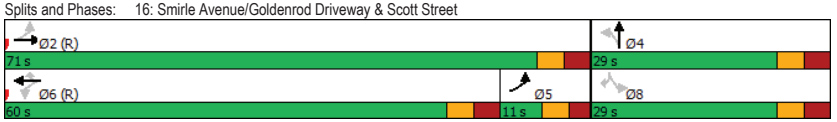
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	604	25	9	535	68	7	0	7	40	0	37
Future Volume (vph)	27	604	25	9	535	68	7	0	7	40	0	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	1.00		0.99		0.79		0.94		0.95		0.94
Frt		0.994				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1145	1787	0	1729	1784	955	0	1600	0	1310	0	1105
Flt Permitted	0.407			0.372				0.976		0.748		
Satd. Flow (perm)	467	1787	0	671	1784	750	0	1564	0	983	0	1034
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				111		111				111
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	55		12	12		55	19		20	20		19
Confl. Bikes (#/hr)			19			62						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	51%	1%	0%	0%	2%	62%	0%	0%	0%	32%	0%	40%
Adj. Flow (vph)	27	604	25	9	535	68	7	0	7	40	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	629	0	9	535	68	0	14	0	40	0	37
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	11.0	71.0		60.0	60.0	60.0	29.0	29.0		29.0		29.0
Total Split (%)	11.0%	71.0%		60.0%	60.0%	60.0%	29.0%	29.0%		29.0%		29.0%
Maximum Green (s)	5.0	64.4		53.4	53.4	53.4	22.4	22.4		22.4		22.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	74.6	75.4		68.8	68.8	68.8		15.2		15.2		15.2
Actuated g/C Ratio	0.75	0.75		0.69	0.69	0.69		0.15		0.15		0.15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.07	0.47		0.02	0.44	0.12		0.04		0.27		0.15
Control Delay	6.4	8.4		8.9	8.2	1.1		0.2		38.9		1.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	6.4	8.4		8.9	8.2	1.1		0.2		38.9		1.2
LOS	A	A		A	A	A		A		D		A
Approach Delay		8.4			7.4			0.2			20.8	
Approach LOS		A			A			A			C	
Queue Length 50th (m)	1.6	57.4		0.4	48.0	0.1		0.0		6.4		0.0
Queue Length 95th (m)	4.3	83.7		m1.1	59.0	m1.2		0.0		15.6		0.0
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	382	1347		461	1226	550		436		220		317
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.07	0.47		0.02	0.44	0.12		0.03		0.18		0.12

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 8.6 Intersection LOS: A
Intersection Capacity Utilization 67.4% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



Future (2038) Total

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	6	505	2	79	5	0	0	4	5
Future Volume (vph)	0	0	0	6	505	2	79	5	0	0	4	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt					0.999						0.925	
Flt Protected					0.999			0.955				
Satd. Flow (prot)	0	0	0	0	3417	0	0	1690	0	0	1668	0
Flt Permitted					0.999			0.732				
Satd. Flow (perm)	0	0	0	0	3417	0	0	1296	0	0	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						5	
Link Speed (k/h)		60			60			30			30	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			6.3	
Confl. Peds. (#/hr)									8	8		
Confl. Bikes (#/hr)						1						3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	3%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	6	505	2	79	5	0	0	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	513	0	0	84	0	0	9	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				73.0	73.0		26.0	26.0			26.0	
Total Split (%)				63.5%	63.5%		22.6%	22.6%			22.6%	
Maximum Green (s)				67.3	67.3		15.7	15.7			15.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					67.7			15.8			15.8	
Actuated g/C Ratio					0.62			0.15			0.15	
v/c Ratio					0.24			0.45			0.04	
Control Delay					10.3			30.2			32.4	
Queue Delay					0.0			0.1			0.0	

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2038 Conditions
Weekday AM Peak Hour

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	73.0	16.0
Total Split (%)	14%	63%	14%
Maximum Green (s)	12.0	67.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	30	30	30
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

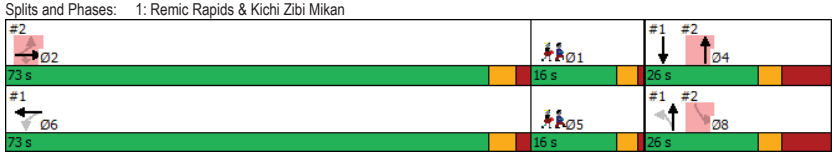
Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					10.3			30.4			32.4	
LOS					B			C			C	
Approach Delay					10.3			30.4			32.4	
Approach LOS					B			C			C	
Queue Length 50th (m)					27.8			5.1			0.8	
Queue Length 95th (m)					37.0			m15.6			5.6	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2129			188			246	
Starvation Cap Reductn					0			4			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.24			0.46			0.04	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 108.6			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 13.4		Intersection LOS: B	
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	6	505	2	79	5	0	0	4	5
Future Volume (vph)	0	0	0	6	505	2	79	5	0	0	4	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt					0.999						0.925	
Flt Protected					0.999			0.955				
Satd. Flow (prot)	0	0	0	0	3417	0	0	1690	0	0	1668	0
Flt Permitted					0.999			0.732				
Satd. Flow (perm)	0	0	0	0	3417	0	0	1296	0	0	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						5	
Link Speed (k/h)		60			60			30			30	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			6.3	
Confl. Peds. (#/hr)									8	8		
Confl. Bikes (#/hr)						1						3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	3%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	6	505	2	79	5	0	0	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	513	0	0	84	0	0	9	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				73.0	73.0		26.0	26.0			26.0	
Total Split (%)				63.5%	63.5%		22.6%	22.6%			22.6%	
Maximum Green (s)				67.3	67.3		15.7	15.7			15.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					67.3			15.7			15.7	
Actuated g/C Ratio					0.68			0.16			0.16	
v/c Ratio					0.22			0.41			0.03	
Control Delay					6.2			23.3			26.7	
Queue Delay					0.0			0.2			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	73.0	16.0
Total Split (%)	14%	63%	14%
Maximum Green (s)	12.0	67.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

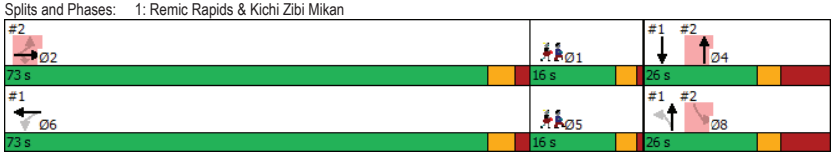
1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2038 OPT
Weekday AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					6.2			23.5			26.7	
LOS					A			C			C	
Approach Delay					6.2			23.5			26.7	
Approach LOS					A			C			C	
Queue Length 50th (m)					17.2			4.4			0.7	
Queue Length 95th (m)					23.5			12.0			5.0	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2323			205			268	
Starvation Cap Reductn					0			7			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.22			0.42			0.03	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	12	1580	3	326	3	0	0	3	4
Future Volume (vph)	0	0	0	12	1580	3	326	3	0	0	3	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.99	
Frt											0.923	
Flt Protected								0.953				
Satd. Flow (prot)	0	0	0	0	3458	0	0	1701	0	0	1665	0
Flt Permitted								0.724				
Satd. Flow (perm)	0	0	0	0	3458	0	0	1287	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											4	
Link Speed (k/h)		60			60			30			50	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			3.8	
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	12	1580	3	326	3	0	0	3	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1595	0	0	329	0	0	7	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				81.0	81.0		48.0	48.0			48.0	
Total Split (%)				55.9%	55.9%		33.1%	33.1%			33.1%	
Maximum Green (s)				75.3	75.3		37.7	37.7			37.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					75.3			37.7			37.7	
Actuated g/C Ratio					0.58			0.29			0.29	
v/c Ratio					0.79			0.88			0.01	
Control Delay					24.4			37.3			24.1	
Queue Delay					0.0			0.0			0.0	

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA

Future Total 2038 Conditions
Weekday PM Peak Hour

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	81.0	16.0
Total Split (%)	11%	56%	11%
Maximum Green (s)	12.0	75.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

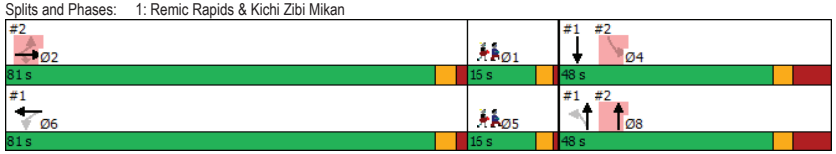
Lanes, Volumes, Timings
BD

Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					24.4			37.3			24.1	
LOS					C			D			C	
Approach Delay					24.4			37.3			24.1	
Approach LOS					C			D			C	
Queue Length 50th (m)					156.9			18.3			0.6	
Queue Length 95th (m)					187.3			#122.9			4.2	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2018			376			489	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.79			0.88			0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 129			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 26.6		Intersection LOS: C	
Intersection Capacity Utilization 85.8%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

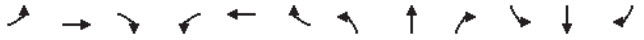
Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	12	1580	3	326	3	0	0	3	4
Future Volume (vph)	0	0	0	12	1580	3	326	3	0	0	3	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.99	
Frt											0.923	
Flt Protected								0.953				
Satd. Flow (prot)	0	0	0	0	3458	0	0	1701	0	0	1666	0
Flt Permitted								0.724				
Satd. Flow (perm)	0	0	0	0	3458	0	0	1289	0	0	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											4	
Link Speed (k/h)		60			60			30			50	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			3.8	
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	12	1580	3	326	3	0	0	3	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1595	0	0	329	0	0	7	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				56.2	56.2		37.8	37.8			37.8	
Total Split (%)				51.1%	51.1%		34.4%	34.4%			34.4%	
Maximum Green (s)				50.5	50.5		27.5	27.5			27.5	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					50.5			27.5			27.5	
Actuated g/C Ratio					0.54			0.29			0.29	
v/c Ratio					0.86			0.87			0.01	
Control Delay					24.7			37.6			18.3	
Queue Delay					0.0			0.0			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	56.2	16.0
Total Split (%)	15%	51%	15%
Maximum Green (s)	12.0	50.5	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

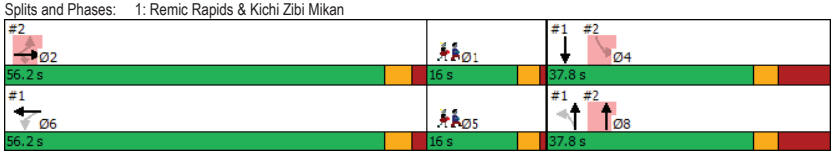
1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2038 OPT
Weekday PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					24.7			37.6			18.3	
LOS					C			D			B	
Approach Delay					24.7			37.6			18.3	
Approach LOS					C			D			B	
Queue Length 50th (m)					123.4			12.7			0.4	
Queue Length 95th (m)					156.8			#95.3			3.5	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					1857			377			490	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.86			0.87			0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 94			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 26.9		Intersection LOS: C	
Intersection Capacity Utilization 85.8%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1196	247	0	0	0	0	73	21	10	0	0
Future Volume (vph)	3	1196	247	0	0	0	0	73	21	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					1.00				
Frt			0.850					0.970				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1517	0	0	0	0	1720	0	1729	0	0
Flt Permitted										0.696		
Satd. Flow (perm)	0	3458	1482	0	0	0	0	1720	0	1267	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			247					10				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	3%	0%	0%	0%	0%
Adj. Flow (vph)	3	1196	247	0	0	0	0	73	21	10	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1199	247	0	0	0	0	94	0	10	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		67.7	67.7					15.8		15.8		
Actuated g/C Ratio		0.62	0.62					0.15		0.15		

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2038 Conditions
Weekday AM Peak Hour

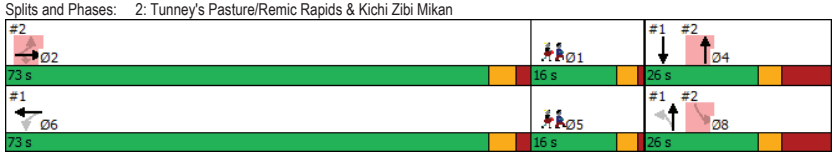
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	30	30	30
Act Effct Green (s)			
Actuated g/C Ratio			

Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.56	0.24					0.36		0.05		
Control Delay		14.1	2.0					43.8		44.8		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		14.1	2.0					43.8		44.8		
LOS		B	A					D		D		
Approach Delay		12.0						43.8			44.8	
Approach LOS		B						D			D	
Queue Length 50th (m)		85.0	0.0					17.4		2.1		
Queue Length 95th (m)		104.6	10.1					33.6		5.7		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2154	1016					258		183		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.56	0.24					0.36		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 108.6			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1196	247	0	0	0	0	73	21	10	0	0
Future Volume (vph)	3	1196	247	0	0	0	0	73	21	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					1.00				
Frt			0.850					0.970				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1517	0	0	0	0	1720	0	1729	0	0
Flt Permitted										0.696		
Satd. Flow (perm)	0	3458	1482	0	0	0	0	1720	0	1267	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			247					10				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	3%	0%	0%	0%	0%
Adj. Flow (vph)	3	1196	247	0	0	0	0	73	21	10	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1199	247	0	0	0	0	94	0	10	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		67.3	67.3					15.7		15.7		
Actuated g/C Ratio		0.68	0.68					0.16		0.16		

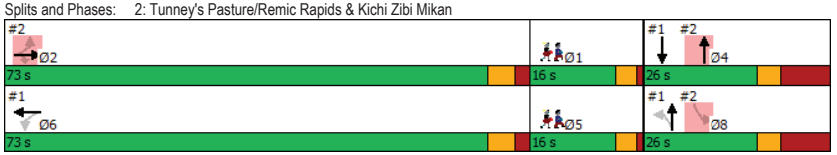
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2038 OPT
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.51	0.23					0.33		0.05		
Control Delay		8.7	1.3					36.8		33.0		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		8.7	1.3					36.8		33.0		
LOS		A	A					D		C		
Approach Delay		7.4						36.8			33.0	
Approach LOS		A						D			C	
Queue Length 50th (m)		52.5	0.0					14.4		1.7		
Queue Length 95th (m)		66.2	6.8					29.1		4.9		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2350	1086					281		200		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.51	0.23					0.33		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	332	154	0	0	0	0	311	14	15	0	0
Future Volume (vph)	18	332	154	0	0	0	0	311	14	15	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt			0.850					0.994				
Flt Protected		0.997								0.950		
Satd. Flow (prot)	0	3383	1517	0	0	0	0	1774	0	1729	0	0
Flt Permitted		0.997								0.417		
Satd. Flow (perm)	0	3383	1517	0	0	0	0	1774	0	759	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			154					2				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	18	332	154	0	0	0	0	311	14	15	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	350	154	0	0	0	0	325	0	15	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						8				
Permitted Phases	2		2							4		
Detector Phase	2	2	2					8		4		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	81.0	81.0	81.0					48.0		48.0		
Total Split (%)	55.9%	55.9%	55.9%					33.1%		33.1%		
Maximum Green (s)	75.3	75.3	75.3					37.7		37.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					None		Max		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		75.3	75.3					37.7		37.7		
Actuated g/C Ratio		0.58	0.58					0.29		0.29		

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2038 Conditions
Weekday PM Peak Hour

Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	81.0
Total Split (%)	11%	11%	56%
Maximum Green (s)	12.0	12.0	75.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

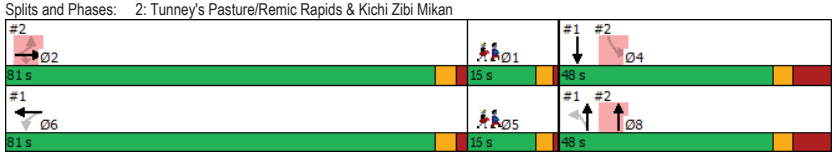
Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.18	0.16					0.63		0.07		
Control Delay		12.7	2.2					45.6		38.1		
Queue Delay		0.0	0.0					0.1		0.0		
Total Delay		12.8	2.2					45.7		38.1		
LOS		B	A					D		D		
Approach Delay		9.5						45.7			38.1	
Approach LOS		A						D			D	
Queue Length 50th (m)		20.6	0.0					71.2		3.6		
Queue Length 95th (m)		28.3	8.8					103.0		m5.4		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		1974	949					519		221		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		307	0					9		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.21	0.16					0.64		0.07		

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 129
Natural Cycle: 110
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 24.0 Intersection LOS: C
Intersection Capacity Utilization 41.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	332	154	0	0	0	0	311	14	15	0	0
Future Volume (vph)	18	332	154	0	0	0	0	311	14	15	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		1.00		
Frt			0.850					0.994				
Flt Protected		0.997								0.950		
Satd. Flow (prot)	0	3383	1517	0	0	0	0	1774	0	1729	0	0
Flt Permitted		0.997								0.475		
Satd. Flow (perm)	0	3383	1517	0	0	0	0	1774	0	863	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			154					2				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	18	332	154	0	0	0	0	311	14	15	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	350	154	0	0	0	0	325	0	15	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						8				
Permitted Phases	2		2							4		
Detector Phase	2	2	2					8		4		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	56.2	56.2	56.2					37.8		37.8		
Total Split (%)	51.1%	51.1%	51.1%					34.4%		34.4%		
Maximum Green (s)	50.5	50.5	50.5					27.5		27.5		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					None		Max		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		50.5	50.5					27.5		27.5		
Actuated g/C Ratio		0.54	0.54					0.29		0.29		

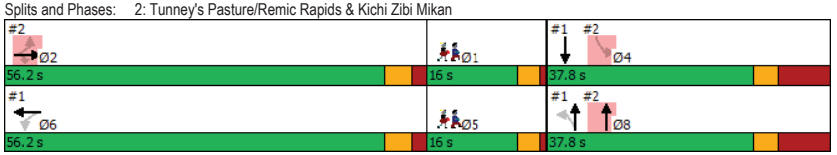
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	56.2
Total Split (%)	15%	15%	51%
Maximum Green (s)	12.0	12.0	50.5
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2038 OPT
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.19	0.17					0.62		0.06		
Control Delay		11.6	2.3					34.9		24.8		
Queue Delay		0.0	0.0					0.2		0.0		
Total Delay		11.6	2.3					35.0		24.8		
LOS		B	A					D		C		
Approach Delay		8.8						35.0			24.8	
Approach LOS		A						D			C	
Queue Length 50th (m)		16.2	0.0					50.5		2.5		
Queue Length 95th (m)		23.6	8.3					78.5		m3.7		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		1817	886					520		252		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					13		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.19	0.17					0.64		0.06		

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 94			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 19.2		Intersection LOS: B	
Intersection Capacity Utilization 41.7%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	26	0	227	674	59
Future Vol, veh/h	0	26	0	227	674	59
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	0	26	0	227	674	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	711	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.24	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.336	-	-	-	-
Pot Cap-1 Maneuver	0	430	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	427	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	427	-	-
HCM Lane V/C Ratio	-	0.061	-	-
HCM Control Delay (s)	-	14	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	75	0	949	291	42
Future Vol, veh/h	0	75	0	949	291	42
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	75	0	949	291	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	319	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	726	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	721	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	721	-	-
HCM Lane V/C Ratio	-	0.104	-	-
HCM Control Delay (s)	-	10.6	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	13	215	5	26	664
Future Vol, veh/h	6	13	215	5	26	664
Conflicting Peds, #/hr	4	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	0	0	1
Mvmt Flow	6	13	215	5	26	664

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	938	218	0	0	220	0
Stage 1	218	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	296	827	-	-	1361	-
Stage 1	823	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	286	827	-	-	1361	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	469	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	518	1361	-
HCM Lane V/C Ratio	-	-	0.037	0.019	-
HCM Control Delay (s)	-	-	12.2	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	9	927	9	15	359
Future Vol, veh/h	7	9	927	9	15	359
Conflicting Peds, #/hr	9	5	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	1
Mvmt Flow	7	9	927	9	15	359

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1331	938	0	0	937	0
Stage 1	933	-	-	-	-	-
Stage 2	398	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	172	323	-	-	739	-
Stage 1	386	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	166	321	-	-	738	-
Mov Cap-2 Maneuver	166	-	-	-	-	-
Stage 1	386	-	-	-	-	-
Stage 2	660	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	228	738	-
HCM Lane V/C Ratio	-	-	0.07	0.02	-
HCM Control Delay (s)	-	-	22	10	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	66	71	190	162	528	126
Future Vol, veh/h	66	71	190	162	528	126
Conflicting Peds, #/hr	4	3	40	0	0	40
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	11	2	2	1	2
Mvmt Flow	66	71	190	162	528	126

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1177	634	694	0	-	0
Stage 1	631	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Critical Hdwy	6.43	6.31	4.12	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.399	2.218	-	-	-
Pot Cap-1 Maneuver	210	463	901	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	578	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	148	445	868	-	-	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	386	-	-	-	-	-
Stage 2	557	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	42.8	5.6	0
HCM LOS	E		

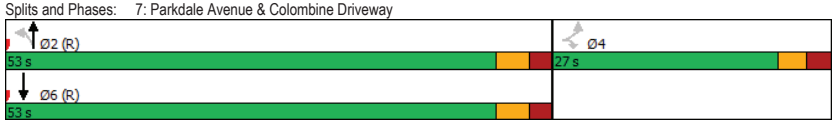
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	868	-	226	-	-
HCM Lane V/C Ratio	0.219	-	0.606	-	-
HCM Control Delay (s)	10.3	0	42.8	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.8	-	3.5	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	66	71	190	162	528	126
Future Volume (vph)	66	71	190	162	528	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0	0.0	45.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97	0.98		0.98	
Frt		0.850			0.974	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1679	1394	1695	1784	1721	0
Flt Permitted	0.950		0.371			
Satd. Flow (perm)	1664	1357	648	1784	1721	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		71			26	
Link Speed (k/h)	30			40	40	
Link Distance (m)	174.2			99.7	87.5	
Travel Time (s)	20.9			9.0	7.9	
Confl. Peds. (#/hr)	4	3	40			40
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	11%	2%	2%	1%	2%
Adj. Flow (vph)	66	71	190	162	528	126
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	71	190	162	654	0
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.2	23.2	27.5	27.5	27.5	
Total Split (s)	27.0	27.0	53.0	53.0	53.0	
Total Split (%)	33.8%	33.8%	66.3%	66.3%	66.3%	
Maximum Green (s)	21.8	21.8	47.5	47.5	47.5	
Yellow Time (s)	2.7	2.7	3.2	3.2	3.2	
All-Red Time (s)	2.5	2.5	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	30	30	30	30	30	
Act Effct Green (s)	11.4	11.4	61.1	61.1	61.1	
Actuated g/C Ratio	0.14	0.14	0.76	0.76	0.76	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
v/c Ratio	0.28	0.28	0.38	0.12	0.50	
Control Delay	31.1	9.9	6.8	3.4	7.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	31.1	9.9	6.8	3.4	7.1	
LOS	C	A	A	A	A	
Approach Delay	20.1			5.2	7.1	
Approach LOS	C			A	A	
Queue Length 50th (m)	9.5	0.0	5.8	4.6	27.7	
Queue Length 95th (m)	18.1	9.6	18.6	11.8	76.0	
Internal Link Dist (m)	150.2			75.7	63.5	
Turn Bay Length (m)	55.0		45.0			
Base Capacity (vph)	453	421	495	1362	1320	
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	0.15	0.17	0.38	0.12	0.50	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 20 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 8.1		Intersection LOS: A	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 7: Parkdale Avenue & Colombine Driveway



Intersection	
Int Delay, s/veh	111.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	226	168	143	657	248	108
Future Vol, veh/h	226	168	143	657	248	108
Conflicting Peds, #/hr	16	0	25	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	2	1	0	1	0
Mvmt Flow	226	168	143	657	248	108

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1286	327	381	0	-	0
Stage 1	327	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	~ 183	714	1183	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	375	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 141	698	1156	-	-	-
Mov Cap-2 Maneuver	~ 141	-	-	-	-	-
Stage 1	578	-	-	-	-	-
Stage 2	366	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 434.1	1.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1156	-	214	-	-
HCM Lane V/C Ratio	0.124	-	1.841	-	-
HCM Control Delay (s)	8.6	0	$ 434.1	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	27.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

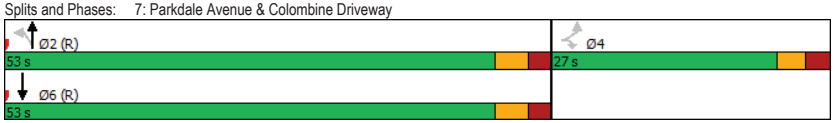
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	226	168	143	657	248	108
Future Volume (vph)	226	168	143	657	248	108
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0	0.0	45.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		0.97		0.98	
Frt		0.850			0.959	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1729	1517	1712	1820	1699	0
Flt Permitted	0.950		0.537			
Satd. Flow (perm)	1668	1517	942	1820	1699	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		168			48	
Link Speed (k/h)	30			40	40	
Link Distance (m)	174.2			99.7	87.5	
Travel Time (s)	20.9			9.0	7.9	
Confl. Peds. (#/hr)	16		25			25
Confl. Bikes (#/hr)						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	1%	0%	1%	0%
Adj. Flow (vph)	226	168	143	657	248	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	226	168	143	657	356	0
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.2	23.2	27.5	27.5	27.5	
Total Split (s)	27.0	27.0	53.0	53.0	53.0	
Total Split (%)	33.8%	33.8%	66.3%	66.3%	66.3%	
Maximum Green (s)	21.8	21.8	47.5	47.5	47.5	
Yellow Time (s)	2.7	2.7	3.2	3.2	3.2	
All-Red Time (s)	2.5	2.5	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	30	30	30	30	30	
Act Effct Green (s)	16.0	16.0	53.3	53.3	53.3	
Actuated g/C Ratio	0.20	0.20	0.67	0.67	0.67	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
v/c Ratio	0.68	0.38	0.23	0.54	0.31	
Control Delay	39.6	6.9	4.6	6.1	6.3	
Queue Delay	0.0	0.0	0.0	0.4	0.0	
Total Delay	39.6	6.9	4.6	6.5	6.3	
LOS	D	A	A	A	A	
Approach Delay	25.7			6.1	6.3	
Approach LOS	C			A	A	
Queue Length 50th (m)	32.1	0.0	4.0	19.5	16.5	
Queue Length 95th (m)	49.4	13.3	9.9	37.6	35.9	
Internal Link Dist (m)	150.2			75.7	63.5	
Turn Bay Length (m)	55.0		45.0			
Base Capacity (vph)	454	535	628	1213	1148	
Starvation Cap Reductn	0	0	0	184	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.50	0.31	0.23	0.64	0.31	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 11.2 Intersection LOS: B
Intersection Capacity Utilization 58.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: Parkdale Avenue & Colombine Driveway



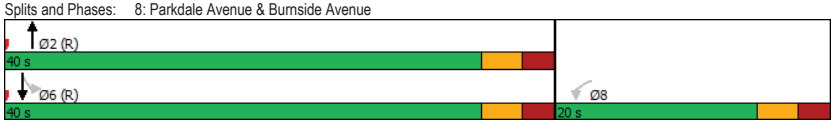
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	52	96	275	53	249	383
Future Volume (vph)	52	96	275	53	249	383
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.91		0.99			0.99
Frt	0.912		0.978			
Flt Protected	0.983					0.981
Satd. Flow (prot)	1508	0	1680	0	0	1754
Flt Permitted	0.983					0.731
Satd. Flow (perm)	1482	0	1680	0	0	1291
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	96		27			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	23	46		33	33	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	4%	9%	0%	3%
Adj. Flow (vph)	52	96	275	53	249	383
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	328	0	0	632
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	20.0		40.0		40.0	40.0
Total Split (%)	33.3%		66.7%		66.7%	66.7%
Maximum Green (s)	14.6		34.6		34.6	34.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		41.8			41.8
Actuated g/C Ratio	0.18		0.70			0.70
v/c Ratio	0.43		0.28			0.70
Control Delay	12.7		5.7			15.3
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	12.7		5.7			15.3
LOS	B		A			B
Approach Delay	12.7		5.7			15.3
Approach LOS	B		A			B
Queue Length 50th (m)	4.6		14.6			49.3
Queue Length 95th (m)	17.0		26.5			#113.2
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	433		1179			900
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.34		0.28			0.70

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 18 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 80.2% 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.

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue

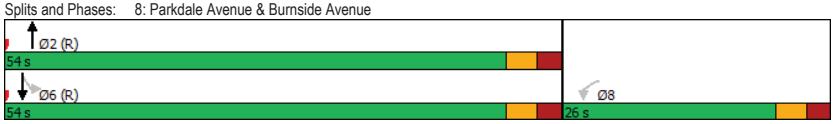


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	52	96	275	53	249	383
Future Volume (vph)	52	96	275	53	249	383
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88		0.99			0.98
Frt	0.912		0.978			
Flt Protected	0.983					0.981
Satd. Flow (prot)	1474	0	1676	0	0	1754
Flt Permitted	0.983					0.731
Satd. Flow (perm)	1440	0	1676	0	0	1287
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	96		22			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	23	46		33	33	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	4%	9%	0%	3%
Adj. Flow (vph)	52	96	275	53	249	383
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	328	0	0	632
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	26.0		54.0		54.0	54.0
Total Split (%)	32.5%		67.5%		67.5%	67.5%
Maximum Green (s)	20.6		48.6		48.6	48.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.8		58.4			58.4
Actuated g/C Ratio	0.14		0.73			0.73
v/c Ratio	0.53		0.27			0.67
Control Delay	19.8		2.6			8.1
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	19.8		2.6			8.1
LOS	B		A			A
Approach Delay	19.8		2.6			8.1
Approach LOS	B		A			A
Queue Length 50th (m)	6.9		2.0			19.6
Queue Length 95th (m)	22.6		9.5			31.1
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	442		1229			939
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.33		0.27			0.67

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 16 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 80.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue



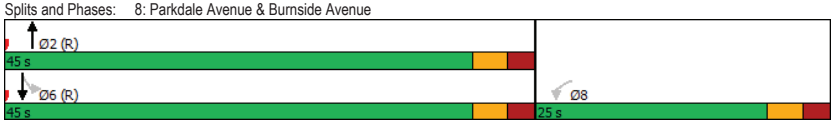
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	232	641	57	78	396
Future Volume (vph)	49	232	641	57	78	396
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88		1.00			1.00
Frt	0.889		0.989			
Flt Protected	0.991					0.992
Satd. Flow (prot)	1418	0	1791	0	0	1776
Flt Permitted	0.991					0.821
Satd. Flow (perm)	1405	0	1791	0	0	1468
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	232		11			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	21	46		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	0%	0%	2%	0%	2%
Adj. Flow (vph)	49	232	641	57	78	396
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	698	0	0	474
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	19.6		39.6		39.6	39.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	11.2		48.0			48.0
Actuated g/C Ratio	0.16		0.69			0.69
v/c Ratio	0.67		0.57			0.47
Control Delay	14.5		9.0			8.2
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	14.5		9.0			8.2
LOS	B		A			A
Approach Delay	14.5		9.0			8.2
Approach LOS	B		A			A
Queue Length 50th (m)	5.4		44.5			27.9
Queue Length 95th (m)	24.1		84.7			55.5
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	560		1230			1005
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.50		0.57			0.47

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 23 (33%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 9.8 Intersection LOS: A
Intersection Capacity Utilization 100.5% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue



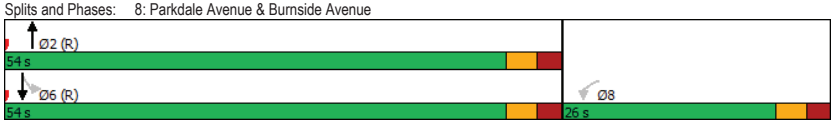
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	232	641	57	78	396
Future Volume (vph)	49	232	641	57	78	396
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.87		1.00			1.00
Frt	0.889		0.989			
Flt Protected	0.991					0.992
Satd. Flow (prot)	1397	0	1791	0	0	1776
Flt Permitted	0.991					0.819
Satd. Flow (perm)	1382	0	1791	0	0	1465
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	232		10			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	21	46		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	0%	0%	2%	0%	2%
Adj. Flow (vph)	49	232	641	57	78	396
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	698	0	0	474
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	26.0		54.0		54.0	54.0
Total Split (%)	32.5%		67.5%		67.5%	67.5%
Maximum Green (s)	20.6		48.6		48.6	48.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	11.5		57.7			57.7
Actuated g/C Ratio	0.14		0.72			0.72
v/c Ratio	0.71		0.54			0.45
Control Delay	17.4		4.4			6.0
Queue Delay	0.0		0.0			0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	17.4		4.4			6.4
LOS	B		A			A
Approach Delay	17.4		4.4			6.4
Approach LOS	B		A			A
Queue Length 50th (m)	6.5		13.9			19.1
Queue Length 95th (m)	27.2		18.6			41.9
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	528		1294			1056
Starvation Cap Reductn	0		3			210
Spillback Cap Reductn	3		28			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.54		0.55			0.56

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 16 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 7.6 Intersection LOS: A
Intersection Capacity Utilization 100.5% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	10	356	29	3	417
Future Volume (vph)	31	10	356	29	3	417
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		1.00			1.00
Frt	0.967		0.990			
Flt Protected	0.964					
Satd. Flow (prot)	1612	0	1744	0	0	1750
Flt Permitted	0.964					0.998
Satd. Flow (perm)	1541	0	1744	0	0	1747
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	10		12			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	27	4		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	0%	3%	3%	0%	4%
Adj. Flow (vph)	31	10	356	29	3	417
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	385	0	0	420
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	19.2		41.0		41.0	41.0
Total Split (%)	31.9%		68.1%		68.1%	68.1%
Maximum Green (s)	14.0		35.9		35.9	35.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		45.6			45.6
Actuated g/C Ratio	0.18		0.76			0.76
v/c Ratio	0.15		0.29			0.32
Control Delay	16.6		5.5			5.8
Queue Delay	0.0		0.0			0.0

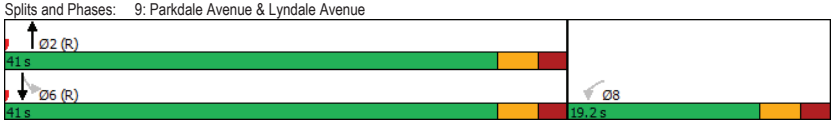
9: Parkdale Avenue & Lyndale Avenue
Tunney's Pasture TIA

Future Total 2038 Conditions
Weekday AM Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	16.6		5.5			5.8
LOS	B		A			A
Approach Delay	16.6		5.5			5.8
Approach LOS	B		A			A
Queue Length 50th (m)	2.7		18.4			21.4
Queue Length 95th (m)	9.1		32.1			36.6
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	366		1324			1323
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.11		0.29			0.32

Intersection Summary			
Area Type:	Other		
Cycle Length: 60.2			
Actuated Cycle Length: 60.2			
Offset: 18 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 6.2		Intersection LOS: A	
Intersection Capacity Utilization 39.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue

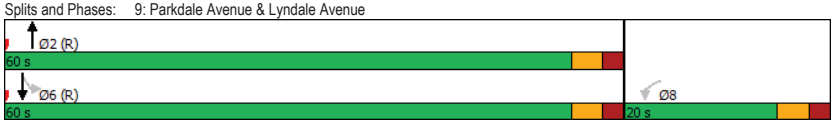


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	10	356	29	3	417
Future Volume (vph)	31	10	356	29	3	417
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93		1.00			1.00
Frt	0.967		0.990			
Flt Protected	0.964					
Satd. Flow (prot)	1611	0	1743	0	0	1750
Flt Permitted	0.964					0.998
Satd. Flow (perm)	1517	0	1743	0	0	1747
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	10		12			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	27	4		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	0%	3%	3%	0%	4%
Adj. Flow (vph)	31	10	356	29	3	417
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	385	0	0	420
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	20.0		60.0		60.0	60.0
Total Split (%)	25.0%		75.0%		75.0%	75.0%
Maximum Green (s)	14.8		54.9		54.9	54.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.7		62.2			62.2
Actuated g/C Ratio	0.13		0.78			0.78
v/c Ratio	0.19		0.28			0.31
Control Delay	25.5		4.4			5.5
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	25.5		4.4			5.5
LOS	C		A			A
Approach Delay	25.5		4.4			5.5
Approach LOS	C		A			A
Queue Length 50th (m)	4.0		18.4			20.3
Queue Length 95th (m)	12.3		29.6			40.9
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	288		1357			1358
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.14		0.28			0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 39.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue

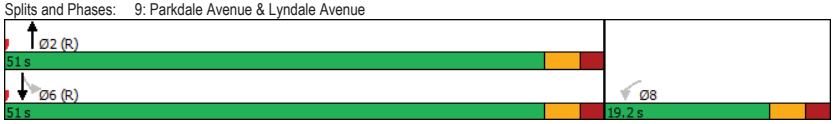


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	6	644	34	9	519
Future Volume (vph)	18	6	644	34	9	519
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		1.00			1.00
Frt	0.966		0.993			
Flt Protected	0.964					0.999
Satd. Flow (prot)	1682	0	1802	0	0	1783
Flt Permitted	0.964					0.990
Satd. Flow (perm)	1619	0	1802	0	0	1767
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		8			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	20	4		22	22	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	18	6	644	34	9	519
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	678	0	0	528
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	19.2		51.0		51.0	51.0
Total Split (%)	27.4%		72.6%		72.6%	72.6%
Maximum Green (s)	14.0		45.9		45.9	45.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		55.6			55.6
Actuated g/C Ratio	0.15		0.79			0.79
v/c Ratio	0.10		0.47			0.38
Control Delay	20.0		6.4			5.5
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	20.0		6.4			5.5
LOS	B		A			A
Approach Delay	20.0		6.4			5.5
Approach LOS	B		A			A
Queue Length 50th (m)	1.9		41.3			29.2
Queue Length 95th (m)	7.5		66.7			46.8
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	327		1429			1400
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.07		0.47			0.38

Intersection Summary			
Area Type:	Other		
Cycle Length: 70.2			
Actuated Cycle Length: 70.2			
Offset: 18 (26%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 6.3		Intersection LOS: A	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue

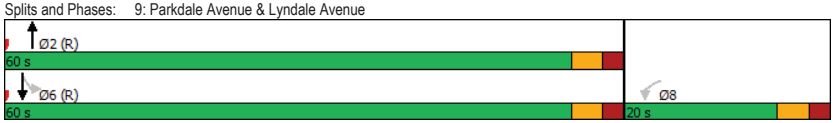


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	6	644	34	9	519
Future Volume (vph)	18	6	644	34	9	519
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		1.00			1.00
Frt	0.966		0.993			
Flt Protected	0.964					0.999
Satd. Flow (prot)	1682	0	1801	0	0	1783
Flt Permitted	0.964					0.990
Satd. Flow (perm)	1610	0	1801	0	0	1767
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		8			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	20	4		22	22	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	18	6	644	34	9	519
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	678	0	0	528
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	20.0		60.0		60.0	60.0
Total Split (%)	25.0%		75.0%		75.0%	75.0%
Maximum Green (s)	14.8		54.9		54.9	54.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		65.4			65.4
Actuated g/C Ratio	0.13		0.82			0.82
v/c Ratio	0.11		0.46			0.37
Control Delay	24.2		5.6			4.0
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	24.2		5.6			4.0
LOS	C		A			A
Approach Delay	24.2		5.6			4.0
Approach LOS	C		A			A
Queue Length 50th (m)	2.3		41.3			26.8
Queue Length 95th (m)	8.5		64.3			33.0
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	302		1474			1445
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.08		0.46			0.37

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 5.3		Intersection LOS: A	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	417	72	39	269	16	66	286	70	61	343	197
Future Volume (vph)	133	417	72	39	269	16	66	286	70	61	343	197
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93		0.91	0.97		0.87		0.98		0.96		0.94
Frt			0.850			0.850		0.978				0.850
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1695	1717	1146	1729	1767	1311	0	1689	0	1695	1802	1517
Flt Permitted	0.561			0.420				0.817		0.425		
Satd. Flow (perm)	928	1717	1046	744	1767	1137	0	1386	0	731	1802	1421
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			107		12				175
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			279.3			221.0	
Travel Time (s)		17.9			21.6			25.1			19.9	
Confl. Peds. (#/hr)	63		33	33		63	23		45	45		23
Confl. Bikes (#/hr)			9									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	6%	35%	0%	3%	18%	8%	2%	1%	2%	1%	2%
Adj. Flow (vph)	133	417	72	39	269	16	66	286	70	61	343	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	417	72	39	269	16	0	422	0	61	343	197
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	32.1	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	46.3%	46.3%	46.3%	46.3%	46.3%	46.3%	45.3%	45.3%		45.3%	45.3%	45.3%
Maximum Green (s)	37.9	37.9	37.9	37.9	37.9	37.9	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	45.9	45.9	45.9	45.9	45.9	45.9		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.39		0.39	0.39	0.39

10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA

Future Total 2038 Conditions
Weekday AM Peak Hour

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	7.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
BD

Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.30	0.50	0.13	0.11	0.32	0.03		0.78		0.22	0.49	0.30
Control Delay	14.7	16.2	2.3	14.5	16.3	0.1		36.6		22.2	25.1	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	14.7	16.2	2.3	14.5	16.3	0.1		36.6		22.2	25.1	5.6
LOS	B	B	A	B	B	A		D		C	C	A
Approach Delay		14.3			15.3			36.6			18.4	
Approach LOS		B			B			D			B	
Queue Length 50th (m)	9.9	31.7	0.0	3.8	28.9	0.0		64.9		7.4	46.8	2.5
Queue Length 95th (m)	m19.4	54.0	m1.1	9.6	45.8	0.0		#112.4		16.8	71.9	15.8
Internal Link Dist (m)		225.1			275.4			255.3			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	448	829	560	359	853	604		542		282	696	656
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.30	0.50	0.13	0.11	0.32	0.03		0.78		0.22	0.49	0.30

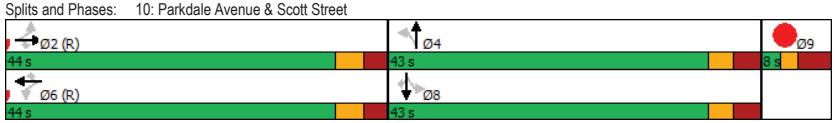
Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 91 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 20.5 Intersection LOS: C
Intersection Capacity Utilization 95.8% ICU Level of Service F
Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	417	72	39	269	16	66	286	70	61	343	197
Future Volume (vph)	133	417	72	39	269	16	66	286	70	61	343	197
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.92		0.91	0.97		0.86		0.98		0.96		0.93
Frt			0.850			0.850		0.978				0.850
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1695	1717	1146	1729	1767	1311	0	1687	0	1695	1802	1517
Flt Permitted	0.550			0.403				0.847		0.439		
Satd. Flow (perm)	907	1717	1042	714	1767	1129	0	1435	0	753	1802	1418
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			101			101		12				175
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			265.8			221.0	
Travel Time (s)		17.9			21.6			23.9			19.9	
Confl. Peds. (#/hr)	63		33	33		63	23		45	45		23
Confl. Bikes (#/hr)			9									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	6%	35%	0%	3%	18%	8%	2%	1%	2%	1%	2%
Adj. Flow (vph)	133	417	72	39	269	16	66	286	70	61	343	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	417	72	39	269	16	0	422	0	61	343	197
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	32.1	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	48.0	48.0		48.0	48.0	48.0
Total Split (%)	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	48.0%	48.0%		48.0%	48.0%	48.0%
Maximum Green (s)	37.9	37.9	37.9	37.9	37.9	37.9	41.7	41.7		41.7	41.7	41.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	45.9	45.9	45.9	45.9	45.9	45.9		41.7		41.7	41.7	41.7
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.46	0.46		0.42		0.42	0.42	0.42

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

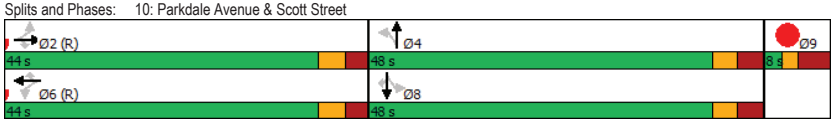
10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA
Future Total 2038 OPT MOD
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.32	0.53	0.14	0.12	0.33	0.03		0.70		0.19	0.46	0.28
Control Delay	16.6	19.2	2.0	16.8	18.7	0.1		30.7		20.7	23.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	16.6	19.2	2.0	16.8	18.7	0.1		30.7		20.7	23.5	5.1
LOS	B	B	A	B	B	A		C		C	C	A
Approach Delay		16.6			17.6			30.7			17.2	
Approach LOS		B			B			C			B	
Queue Length 50th (m)	14.0	57.9	0.8	4.2	32.2	0.0		63.9		7.3	46.8	2.5
Queue Length 95th (m)	m18.7	58.8	m1.4	10.6	50.5	0.0		100.0		16.4	70.9	15.4
Internal Link Dist (m)		225.1			275.4			241.8			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	416	788	532	327	811	572		605		314	751	693
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.32	0.53	0.14	0.12	0.33	0.03		0.70		0.19	0.46	0.28

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 36 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 20.0 Intersection LOS: B
Intersection Capacity Utilization 95.8% ICU Level of Service F
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	426	133	74	411	26	67	383	53	32	350	157
Future Volume (vph)	297	426	133	74	411	26	67	383	53	32	350	157
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		0.83	0.92		0.85		0.98		0.96		0.91
Frt			0.850			0.850		0.986				0.850
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1729	1784	1473	1712	1750	1547	0	1693	0	1729	1802	1532
Flt Permitted	0.197			0.514				0.777		0.351		
Satd. Flow (perm)	345	1784	1220	848	1750	1321	0	1318	0	616	1802	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			163		7				160
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			279.3			221.0	
Travel Time (s)		17.9			21.6			25.1			19.9	
Confl. Peds. (#/hr)	60		79	79		60	34		53	53		34
Confl. Bikes (#/hr)			4			11						5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	5%	1%	4%	0%	22%	1%	2%	0%	1%	1%
Adj. Flow (vph)	297	426	133	74	411	26	67	383	53	32	350	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	297	426	133	74	411	26	0	503	0	32	350	157
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.6	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	15.0	49.0	49.0	34.0	34.0	34.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	15.0%	49.0%	49.0%	34.0%	34.0%	34.0%	43.0%	43.0%		43.0%	43.0%	43.0%
Maximum Green (s)	9.4	42.9	42.9	27.9	27.9	27.9	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.3	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)		19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	51.4	50.9	50.9	27.9	27.9	27.9		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.51	0.51	0.51	0.28	0.28	0.28		0.37		0.37	0.37	0.37

10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA
Future Total 2038 Conditions
Weekday PM Peak Hour

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.71	0.47	0.19	0.31	0.84	0.05		1.03		0.14	0.53	0.26
Control Delay	26.2	18.0	3.1	33.0	51.2	0.2		81.3		23.3	28.5	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	26.2	18.0	3.1	33.0	51.2	0.2		81.3		23.3	28.5	4.5
LOS	C	B	A	C	D	A		F		C	C	A
Approach Delay		18.5			46.0			81.3			21.2	
Approach LOS		B			D			F			C	
Queue Length 50th (m)	32.3	51.0	0.0	11.3	75.0	0.0		~104.2		4.1	52.6	0.0
Queue Length 95th (m)	#57.6	75.6	8.7	24.0	#124.1	0.0		#165.9		11.0	79.6	12.1
Internal Link Dist (m)		225.1			275.4			255.3			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	418	908	686	236	488	486		488		226	661	612
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.71	0.47	0.19	0.31	0.84	0.05		1.03		0.14	0.53	0.26

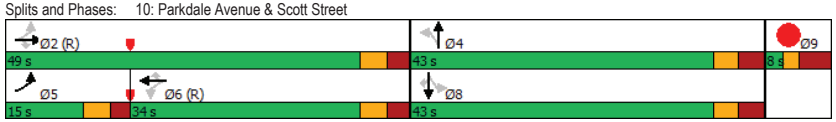
Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 38.0 Intersection LOS: D
Intersection Capacity Utilization 110.3% ICU Level of Service H
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: 10: Parkdale Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	426	133	74	411	26	67	383	53	32	350	157
Future Volume (vph)	297	426	133	74	411	26	67	383	53	32	350	157
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		0.83	0.94		0.85		0.98		0.96		0.91
Frt			0.850			0.850		0.986				0.850
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1729	1784	1473	1712	1750	1547	0	1693	0	1729	1802	1532
Flt Permitted	0.352			0.374				0.793		0.358		
Satd. Flow (perm)	611	1784	1220	630	1750	1320	0	1346	0	628	1802	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			168		7				166
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			265.8			221.0	
Travel Time (s)		17.9			21.6			23.9			19.9	
Confl. Peds. (#/hr)	60		79	79		60	34		53	53		34
Confl. Bikes (#/hr)			4			11						5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	5%	1%	4%	0%	22%	1%	2%	0%	1%	1%
Adj. Flow (vph)	297	426	133	74	411	26	67	383	53	32	350	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	297	426	133	74	411	26	0	503	0	32	350	157
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.6	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	15.2	48.0	48.0	32.8	32.8	32.8	44.0	44.0		44.0	44.0	44.0
Total Split (%)	15.2%	48.0%	48.0%	32.8%	32.8%	32.8%	44.0%	44.0%		44.0%	44.0%	44.0%
Maximum Green (s)	9.6	41.9	41.9	26.7	26.7	26.7	37.7	37.7		37.7	37.7	37.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.3	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)		19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	50.4	49.9	49.9	34.7	34.7	34.7		37.7		37.7	37.7	37.7
Actuated g/C Ratio	0.50	0.50	0.50	0.35	0.35	0.35		0.38		0.38	0.38	0.38

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

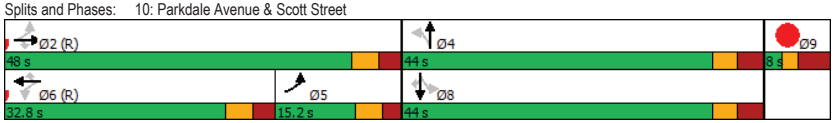
10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA
Future Total 2038 OPT MOD
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.72	0.48	0.20	0.34	0.68	0.05		0.98		0.14	0.52	0.25
Control Delay	31.1	18.4	4.3	29.7	34.6	0.2		68.2		22.5	27.4	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	31.1	18.4	4.3	29.7	34.6	0.2		68.2		22.5	27.4	4.0
LOS	C	B	A	C	C	A		E		C	C	A
Approach Delay		20.6			32.1			68.2			20.3	
Approach LOS		C			C			E			C	
Queue Length 50th (m)	36.2	53.8	3.2	10.5	67.3	0.0		94.0		4.0	51.7	0.0
Queue Length 95th (m)	m47.5	m73.3	m4.8	23.2	100.5	0.0		#160.9		10.7	78.2	11.0
Internal Link Dist (m)		225.1			275.4			241.8			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	415	890	675	218	607	567		511		236	679	628
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.72	0.48	0.20	0.34	0.68	0.05		0.98		0.14	0.52	0.25

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 32.9 Intersection LOS: C
Intersection Capacity Utilization 110.3% ICU Level of Service H
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	505	79	89	239	102	158	245	143	53	133	22
Future Volume (vph)	48	505	79	89	239	102	158	245	143	53	133	22
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.77	0.96				0.64	0.69		0.63	0.76		0.61
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1502	0	1679	1655	1459	1465	1802	1517	1530	1767	1419
Flt Permitted	0.610			0.343			0.672			0.505		
Satd. Flow (perm)	841	1502	0	606	1655	935	712	1802	949	621	1767	864
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			184.8	
Travel Time (s)		20.2			17.9			20.2			22.2	
Confl. Peds. (#/hr)	149		98	98		149	190		180	180		190
Confl. Bikes (#/hr)			122			15			8			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	10%	36%	3%	10%	6%	18%	1%	2%	13%	3%	9%
Adj. Flow (vph)	48	505	79	89	239	102	158	245	143	53	133	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	584	0	89	239	102	158	245	143	53	133	22
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	2	2		6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	3.0	3.0	3.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	44.0	44.0		44.0	44.0	44.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	46.3%	46.3%		46.3%	46.3%	46.3%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	37.8	37.8		37.8	37.8	37.8	34.8	34.8	34.8	34.8	34.8	34.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)	55.7	55.7		55.7	55.7	55.7	26.9	26.9	26.9	26.9	26.9	26.9
Actuated g/C Ratio	0.59	0.59		0.59	0.59	0.59	0.28	0.28	0.28	0.28	0.28	0.28

11: Holland Avenue/Tunney's Pasture Driveway & Scott Street Future Total 2038 Conditions
Tunney's Pasture TIA Weekday AM Peak Hour

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	3.0	3.0	3.0	3.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?		Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

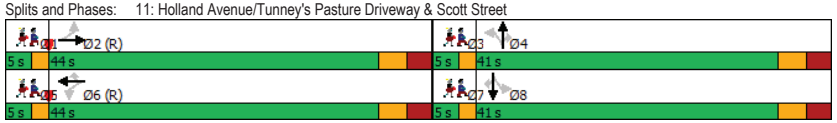
Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.10	0.66		0.25	0.25	0.19	0.79	0.48	0.53	0.30	0.27	0.09
Control Delay	12.9	21.3		12.0	9.9	10.4	55.3	29.6	33.8	27.4	25.1	21.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	21.3		12.0	9.9	10.4	55.3	29.6	33.8	27.4	25.1	21.1
LOS	B	C		B	A	B	E	C	C	C	C	C
Approach Delay		20.6			10.5			38.1			25.3	
Approach LOS		C			B			D			C	
Queue Length 50th (m)	3.6	68.0		5.7	15.6	6.5	26.5	37.0	21.9	7.6	18.8	2.9
Queue Length 95th (m)	11.8	#156.7		m16.1	m33.7	m16.7	41.8	47.4	33.0	14.5	26.8	6.9
Internal Link Dist (m)		256.5			225.1			200.2			160.8	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		30.0
Base Capacity (vph)	493	880		355	970	548	268	679	357	234	666	325
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.66		0.25	0.25	0.19	0.59	0.36	0.40	0.23	0.20	0.07

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 85 (89%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 24.0 Intersection LOS: C
Intersection Capacity Utilization 89.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	505	79	89	239	102	158	245	143	53	133	22
Future Volume (vph)	48	505	79	89	239	102	158	245	143	53	133	22
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.76	0.96		0.94		0.62	0.68		0.61	0.76	0.94	
Frt		0.980				0.850			0.850		0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1503	0	1679	1655	1459	1465	1802	1517	1530	1616	0
Flt Permitted	0.610			0.344			0.646			0.497		
Satd. Flow (perm)	824	1503	0	573	1655	912	681	1802	920	608	1616	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			108.7	
Travel Time (s)		20.2			17.9			20.2			13.0	
Confl. Peds. (#/hr)	149		98	98		149	190		180	180		190
Confl. Bikes (#/hr)			122			15			8			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	10%	36%	3%	10%	6%	18%	1%	2%	13%	3%	9%
Adj. Flow (vph)	48	505	79	89	239	102	158	245	143	53	133	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	584	0	89	239	102	158	245	143	53	155	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	2	2		6	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	
Total Split (s)	53.6	53.6		53.6	53.6	53.6	36.4	36.4	36.4	36.4	36.4	
Total Split (%)	53.6%	53.6%		53.6%	53.6%	53.6%	36.4%	36.4%	36.4%	36.4%	36.4%	
Maximum Green (s)	47.4	47.4		47.4	47.4	47.4	30.2	30.2	30.2	30.2	30.2	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min	C-Min	Min	Min	Min	Min	Min	
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	
Act Effct Green (s)	59.3	59.3		59.3	59.3	59.3	28.3	28.3	28.3	28.3	28.3	
Actuated g/C Ratio	0.59	0.59		0.59	0.59	0.59	0.28	0.28	0.28	0.28	0.28	

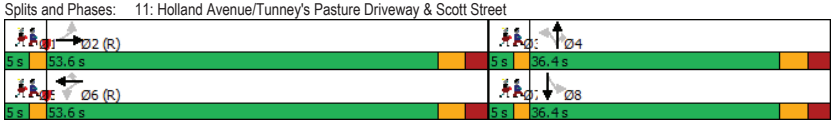
Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.10	0.66		0.26	0.24	0.19	0.82	0.48	0.55	0.31	0.34	
Control Delay	8.5	15.3		13.0	11.4	11.3	63.8	31.6	37.1	30.4	28.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.5	15.3		13.0	11.4	11.3	63.8	31.6	37.1	30.4	28.7	
LOS	A	B		B	B	B	E	C	D	C	C	
Approach Delay		14.8			11.7			42.4			29.1	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	3.2	49.2		6.5	17.4	6.7	27.5	38.0	22.7	7.8	23.0	
Queue Length 95th (m)	6.7	136.8		m14.8	m31.0	m15.4	#54.4	55.7	39.2	17.3	36.7	
Internal Link Dist (m)		256.5			225.1			200.2			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		
Base Capacity (vph)	488	890		339	981	540	219	581	296	196	521	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.66		0.26	0.24	0.19	0.72	0.42	0.48	0.27	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 24.0 Intersection LOS: C
Intersection Capacity Utilization 89.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	618	101	180	560	76	158	169	235	124	288	47
Future Volume (vph)	43	618	101	180	560	76	158	169	235	124	288	47
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.95				0.55	0.75		0.66	0.76		0.53
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1587	0	1695	1701	1419	1429	1802	1547	1695	1802	1517
Flt Permitted	0.082			0.115			0.440			0.618		
Satd. Flow (perm)	132	1587	0	205	1701	780	499	1802	1025	836	1802	803
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			184.8	
Travel Time (s)		20.2			17.9			20.2			22.2	
Confl. Peds. (#/hr)	152		112	112		152	198		140	140		198
Confl. Bikes (#/hr)			31			86			3			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	4%	26%	2%	7%	9%	21%	1%	0%	2%	1%	2%
Adj. Flow (vph)	43	618	101	180	560	76	158	169	235	124	288	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	719	0	180	560	76	158	169	235	124	288	47
Turn Type	Perm	NA		custom	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2		15	6 15			4			8	
Permitted Phases	2			6		6 15	4		4	8		8
Detector Phase	2	2		15	6 15	6 15	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		11.2			30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	50.0	50.0		15.0			35.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	45.5%	45.5%		13.6%			31.8%	31.8%	31.8%	31.8%	31.8%	31.8%
Maximum Green (s)	43.8	43.8		8.8			28.8	28.8	28.8	28.8	28.8	28.8
Yellow Time (s)	3.3	3.3		3.3			3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9			2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0			0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2			6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min	C-Min		None			Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0					2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0					22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30					30	30	30	30	30	30
Act Effct Green (s)	48.8	48.8		57.6	63.8	63.8	33.8	33.8	33.8	33.8	33.8	33.8
Actuated g/C Ratio	0.44	0.44		0.52	0.58	0.58	0.31	0.31	0.31	0.31	0.31	0.31

11: Holland Avenue/Tunney's Pasture Driveway & Scott Street Future Total 2038 Conditions
Tunney's Pasture TIA Weekday PM Peak Hour

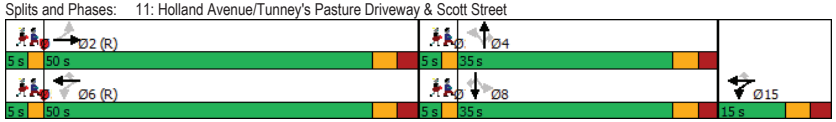
Lane Group	Ø1	Ø3	Ø5	Ø6	Ø7
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Ideal Flow (vphpl)					
Storage Length (m)					
Storage Lanes					
Taper Length (m)					
Lane Util. Factor					
Ped Bike Factor					
Frt					
Flt Protected					
Satd. Flow (prot)					
Flt Permitted					
Satd. Flow (perm)					
Right Turn on Red					
Satd. Flow (RTOR)					
Link Speed (k/h)					
Link Distance (m)					
Travel Time (s)					
Confl. Peds. (#/hr)					
Confl. Bikes (#/hr)					
Peak Hour Factor					
Heavy Vehicles (%)					
Adj. Flow (vph)					
Shared Lane Traffic (%)					
Lane Group Flow (vph)					
Turn Type					
Protected Phases	1	3	5	6	7
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	1.0	1.0	1.0	5.0	1.0
Minimum Split (s)	3.0	3.0	3.0	27.2	3.0
Total Split (s)	5.0	5.0	5.0	50.0	5.0
Total Split (%)	5%	5%	5%	45%	5%
Maximum Green (s)	3.0	3.0	3.0	43.8	3.0
Yellow Time (s)	2.0	2.0	2.0	3.3	2.0
All-Red Time (s)	0.0	0.0	0.0	2.9	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag		Lead			Lead
Lead-Lag Optimize?		Yes			Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min	None
Walk Time (s)	0.0	0.0	0.0	2.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	19.0	0.0
Pedestrian Calls (#/hr)	0	0	0	30	0
Act Effct Green (s)					
Actuated g/C Ratio					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.74	1.02		0.80	0.57	0.17	1.03	0.31	0.75	0.48	0.52	0.19
Control Delay	92.5	70.8		43.1	17.3	12.0	121.3	31.0	50.8	38.7	35.5	30.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.5	70.8		43.1	17.3	12.0	121.3	31.0	50.8	38.7	35.5	30.7
LOS	F	E		D	B	B	F	C	D	D	D	C
Approach Delay		72.0			22.5			64.7			35.9	
Approach LOS		E			C			E			D	
Queue Length 50th (m)	7.4	~164.3		17.1	70.9	7.2	~36.4	27.6	45.2	21.6	50.8	7.4
Queue Length 95th (m)	#29.4	#233.7		#51.7	102.3	14.8	#76.7	45.4	#82.2	40.6	77.0	17.1
Internal Link Dist (m)		256.5			225.1			200.2			160.8	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		30.0
Base Capacity (vph)	58	704		226	986	452	153	553	314	256	553	246
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	1.02		0.80	0.57	0.17	1.03	0.31	0.75	0.48	0.52	0.19

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 48.5 Intersection LOS: D
Intersection Capacity Utilization 102.1% ICU Level of Service G
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: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	618	101	180	560	76	158	169	235	124	288	47
Future Volume (vph)	43	618	101	180	560	76	158	169	235	124	288	47
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.96				0.58	0.79		0.69	0.77	0.94	
Frt		0.979				0.850			0.850		0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1594	0	1695	1701	1419	1429	1802	1547	1695	1655	0
Flt Permitted	0.324			0.205			0.419			0.640		
Satd. Flow (perm)	522	1594	0	366	1701	827	500	1802	1070	884	1655	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			108.7	
Travel Time (s)		20.2			17.9			20.2			13.0	
Confl. Peds. (#/hr)	152		112	112		152	198		140	140		198
Confl. Bikes (#/hr)			31			86			3			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	4%	26%	2%	7%	9%	21%	1%	0%	2%	1%	2%
Adj. Flow (vph)	43	618	101	180	560	76	158	169	235	124	288	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	719	0	180	560	76	158	169	235	124	335	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	2	2		6	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	
Total Split (s)	54.0	54.0		54.0	54.0	54.0	36.0	36.0	36.0	36.0	36.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%	54.0%	36.0%	36.0%	36.0%	36.0%	36.0%	
Maximum Green (s)	47.8	47.8		47.8	47.8	47.8	29.8	29.8	29.8	29.8	29.8	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min	C-Min	Min	Min	Min	Min	Min	
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	
Act Effct Green (s)	52.8	52.8		52.8	52.8	52.8	34.8	34.8	34.8	34.8	34.8	
Actuated g/C Ratio	0.53	0.53		0.53	0.53	0.53	0.35	0.35	0.35	0.35	0.35	

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

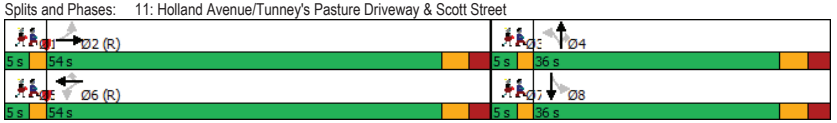
11: Holland Avenue/Tunney's Pasture Driveway & Scott Street Future Total 2038 OPT MOD
Tunney's Pasture TIA Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.85		0.93	0.62	0.17	0.91	0.27	0.63	0.40	0.58	
Control Delay	13.2	25.8		63.9	10.8	7.5	82.1	24.9	36.3	29.7	31.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.2	25.8		63.9	10.8	7.5	82.1	24.9	36.3	29.7	31.6	
LOS	B	C		E	B	A	F	C	D	C	C	
Approach Delay		25.1			22.2			45.8			31.1	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	2.9	60.1		33.9	33.8	3.9	28.9	23.3	37.6	18.0	52.5	
Queue Length 95th (m)	m7.3	#187.2		m#70.4	m50.6	m7.4	#67.7	39.2	64.2	34.6	80.7	
Internal Link Dist (m)		256.5			225.1			200.2			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		
Base Capacity (vph)	275	841		193	898	436	174	627	372	307	575	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.85		0.93	0.62	0.17	0.91	0.27	0.63	0.40	0.58	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 29.7 Intersection LOS: C
Intersection Capacity Utilization 102.2% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Vol, veh/h	93	520	5	4	270	75	1	0	12	35	0	42
Future Vol, veh/h	93	520	5	4	270	75	1	0	12	35	0	42
Conflicting Peds, #/hr	51	0	20	20	0	51	6	0	2	2	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	9	0	0	14	5	0	0	0	0	0	7
Mvmt Flow	93	520	5	4	270	75	1	0	12	35	0	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	396	0	0	545	0	0	1072	1133	545	1084	1098	365
Stage 1	-	-	-	-	-	-	729	729	-	367	367	-
Stage 2	-	-	-	-	-	-	343	404	-	717	731	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.363
Pot Cap-1 Maneuver	1174	-	-	1034	-	-	200	205	542	196	215	669
Stage 1	-	-	-	-	-	-	417	431	-	657	626	-
Stage 2	-	-	-	-	-	-	676	603	-	424	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1119	-	-	1015	-	-	165	169	531	165	177	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	165	169	-	165	177	-
Stage 1	-	-	-	-	-	-	362	374	-	553	594	-
Stage 2	-	-	-	-	-	-	625	572	-	365	373	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	13.2	22.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	454	1119	-	-	1015	-	-	277
HCM Lane V/C Ratio	0.029	0.083	-	-	0.004	-	-	0.278
HCM Control Delay (s)	13.2	8.5	0	-	8.6	-	-	22.9
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	1.1

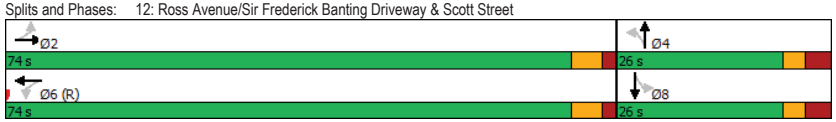
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Volume (vph)	93	520	5	4	270	75	1	0	12	35	0	42
Future Volume (vph)	93	520	5	4	270	75	1	0	12	35	0	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.97			0.97			0.98	
Frt		0.999			0.967			0.875			0.926	
Flt Protected		0.993		0.950				0.996			0.978	
Satd. Flow (prot)	0	1677	0	1729	1522	0	0	1540	0	0	1554	0
Flt Permitted		0.890		0.439				0.978			0.848	
Satd. Flow (perm)	0	1487	0	786	1522	0	0	1511	0	0	1344	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			32			27			42	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		302.8			168.9			203.1			119.6	
Travel Time (s)		21.8			12.2			24.4			14.4	
Confl. Peds. (#/hr)	51		20	20		51	6		2	2		6
Confl. Bikes (#/hr)			82			20			3			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	9%	0%	0%	14%	5%	0%	0%	0%	0%	0%	7%
Adj. Flow (vph)	93	520	5	4	270	75	1	0	12	35	0	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	618	0	4	345	0	0	13	0	0	77	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		23.9	23.9		23.9	23.9	
Total Split (s)	74.0	74.0		74.0	74.0		26.0	26.0		26.0	26.0	
Total Split (%)	74.0%	74.0%		74.0%	74.0%		26.0%	26.0%		26.0%	26.0%	
Maximum Green (s)	68.5	68.5		68.5	68.5		20.1	20.1		20.1	20.1	
Yellow Time (s)	3.6	3.6		3.6	3.6		2.7	2.7		2.7	2.7	
All-Red Time (s)	1.9	1.9		1.9	1.9		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5		5.5	5.5			5.9			5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	30	30		30	30		30	30		30	30	
Act Effct Green (s)		79.5		79.5	79.5			12.5			12.5	
Actuated g/C Ratio		0.80		0.80	0.80			0.12			0.12	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.52		0.01	0.28			0.06			0.38	
Control Delay		7.5		1.0	1.5			6.6			25.1	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		7.5		1.0	1.5			6.6			25.1	
LOS		A		A	A			A			C	
Approach Delay		7.5			1.5			6.6			25.1	
Approach LOS		A			A			A			C	
Queue Length 50th (m)		50.0		0.0	3.3			0.0			5.9	
Queue Length 95th (m)		77.0		m0.3	4.2			2.8			18.8	
Internal Link Dist (m)		278.8			144.9			179.1			95.6	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		1181		624	1216			325			303	
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		0.52		0.01	0.28			0.04			0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 90 (90%), Referenced to phase 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 6.8		Intersection LOS: A	
Intersection Capacity Utilization 81.6%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 12: Ross Avenue/Sir Frederick Banting Driveway & Scott Street



Intersection	
Int Delay, s/veh	24.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	56	676	10	5	601	60	4	0	13	83	0	118
Future Vol, veh/h	56	676	10	5	601	60	4	0	13	83	0	118
Conflicting Peds, #/hr	42	0	25	25	0	42	3	0	4	4	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	5	10	0	7	3	0	0	0	0	0	2
Mvmt Flow	56	676	10	5	601	60	4	0	13	83	0	118

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	703	0	0	711	0	0	1521	1531	710	1487	1506	676
Stage 1	-	-	-	-	-	-	818	818	-	683	683	-
Stage 2	-	-	-	-	-	-	703	713	-	804	823	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.318
Pot Cap-1 Maneuver	904	-	-	898	-	-	98	118	437	104	122	453
Stage 1	-	-	-	-	-	-	373	393	-	442	452	-
Stage 2	-	-	-	-	-	-	431	438	-	380	391	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	869	-	-	877	-	-	64	99	425	89	102	434
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	99	-	89	102	-
Stage 1	-	-	-	-	-	-	326	344	-	381	432	-
Stage 2	-	-	-	-	-	-	311	418	-	329	342	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	26.7	189.7
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	183	869	-	-	877	-	-	167
HCM Lane V/C Ratio	0.093	0.064	-	-	0.006	-	-	1.204
HCM Control Delay (s)	26.7	9.4	0	-	9.1	-	-	189.7
HCM Lane LOS	D	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0	-	-	11.1

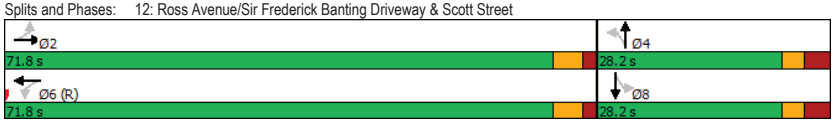
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	676	10	5	601	60	4	0	13	83	0	118
Future Volume (vph)	56	676	10	5	601	60	4	0	13	83	0	118
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.98	0.99			0.97			0.98	
Frt		0.998			0.986			0.897			0.921	
Flt Protected		0.996		0.950				0.988			0.980	
Satd. Flow (prot)	0	1726	0	1729	1661	0	0	1574	0	0	1593	0
Flt Permitted		0.915		0.378				0.933			0.858	
Satd. Flow (perm)	0	1583	0	677	1661	0	0	1485	0	0	1388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			11			27			66	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		302.8			168.9			203.1			119.6	
Travel Time (s)		21.8			12.2			24.4			14.4	
Confl. Peds. (#/hr)	42		25	25		42	3		4	4		3
Confl. Bikes (#/hr)			16			59						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	5%	10%	0%	7%	3%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	56	676	10	5	601	60	4	0	13	83	0	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	742	0	5	661	0	0	17	0	0	201	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		23.9	23.9		23.9	23.9	
Total Split (s)	71.8	71.8		71.8	71.8		28.2	28.2		28.2	28.2	
Total Split (%)	71.8%	71.8%		71.8%	71.8%		28.2%	28.2%		28.2%	28.2%	
Maximum Green (s)	66.3	66.3		66.3	66.3		22.3	22.3		22.3	22.3	
Yellow Time (s)	3.6	3.6		3.6	3.6		2.7	2.7		2.7	2.7	
All-Red Time (s)	1.9	1.9		1.9	1.9		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5		5.5	5.5			5.9			5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	30	30		30	30		30	30		30	30	
Act Effct Green (s)		73.1		73.1	73.1			15.5			15.5	
Actuated g/C Ratio		0.73		0.73	0.73			0.16			0.16	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.64		0.01	0.54			0.07			0.74	
Control Delay		11.2		1.0	2.8			8.2			42.6	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		11.2		1.0	2.8			8.2			42.6	
LOS		B		A	A			A			D	
Approach Delay		11.2			2.8			8.2			42.6	
Approach LOS		B			A			A			D	
Queue Length 50th (m)		66.1		0.1	5.1			0.0			24.7	
Queue Length 95th (m)		125.3		m0.1	12.0			3.9			45.8	
Internal Link Dist (m)		278.8			144.9			179.1			95.6	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		1157		494	1216			352			360	
Starvation Cap Reductn		0		0	11			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.64		0.01	0.55			0.05			0.56	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 96 (96%), Referenced to phase 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 11.6 Intersection LOS: B
Intersection Capacity Utilization 112.5% ICU Level of Service H
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Ross Avenue/Sir Frederick Banting Driveway & Scott Street



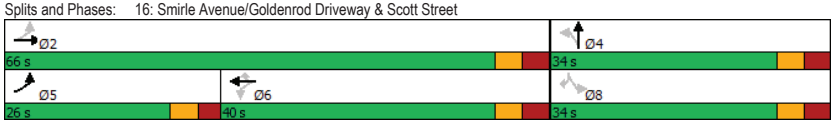
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	456	26	4	272	111	11	0	12	103	0	53
Future Volume (vph)	74	456	26	4	272	111	11	0	12	103	0	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.96		0.85		0.94		0.94		0.95
Frt		0.992				0.850		0.930				0.850
Flt Protected	0.950			0.950				0.977		0.950		
Satd. Flow (prot)	1168	1738	0	1729	1767	1121	0	1580	0	1048	0	961
Flt Permitted	0.524			0.488				0.977		0.742		
Satd. Flow (perm)	611	1738	0	851	1767	953	0	1558	0	766	0	915
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				111		105				105
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	38		28	28		38	12		28	28		12
Confl. Bikes (#/hr)			86			21						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	48%	3%	4%	0%	3%	38%	0%	0%	0%	65%	0%	61%
Adj. Flow (vph)	74	456	26	4	272	111	11	0	12	103	0	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	482	0	4	272	111	0	23	0	103	0	53
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	26.0	66.0		40.0	40.0	40.0	34.0	34.0		34.0		34.0
Total Split (%)	26.0%	66.0%		40.0%	40.0%	40.0%	34.0%	34.0%		34.0%		34.0%
Maximum Green (s)	20.0	59.4		33.4	33.4	33.4	27.4	27.4		27.4		27.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	Max		Max	Max	Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	63.7	64.5		53.3	53.3	53.3		16.5		17.0		17.0
Actuated g/C Ratio	0.71	0.72		0.59	0.59	0.59		0.18		0.19		0.19

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.15	0.39		0.01	0.26	0.18		0.06		0.72		0.21
Control Delay	7.7	8.9		15.0	15.0	4.2		0.3		60.0		2.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	7.7	8.9		15.0	15.0	4.2		0.3		60.0		2.2
LOS	A	A		B	B	A		A		E		A
Approach Delay		8.7			11.9			0.3			40.3	
Approach LOS		A			B			A			D	
Queue Length 50th (m)	4.0	33.8		0.3	25.7	0.0		0.0		16.7		0.0
Queue Length 95th (m)	11.7	71.3		2.5	54.8	9.9		0.0		33.8		1.1
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	555	1246		503	1045	609		549		234		352
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.13	0.39		0.01	0.26	0.18		0.04		0.44		0.15

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 90.1
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 14.0 Intersection LOS: B
Intersection Capacity Utilization 62.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



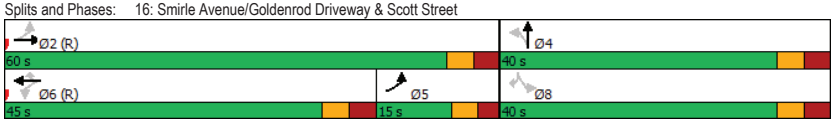
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	456	26	4	272	111	11	0	12	103	0	53
Future Volume (vph)	74	456	26	4	272	111	11	0	12	103	0	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93	0.99		0.97		0.85		0.94		0.94		0.95
Frt		0.992				0.850		0.930				0.850
Flt Protected	0.950			0.950				0.977		0.950		
Satd. Flow (prot)	1168	1737	0	1729	1767	1121	0	1580	0	1048	0	961
Flt Permitted	0.581			0.448				0.977		0.742		
Satd. Flow (perm)	667	1737	0	792	1767	956	0	1558	0	766	0	915
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				111		111				111
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	38		28	28		38	12		28	28		12
Confl. Bikes (#/hr)			86			21						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	48%	3%	4%	0%	3%	38%	0%	0%	0%	65%	0%	61%
Adj. Flow (vph)	74	456	26	4	272	111	11	0	12	103	0	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	482	0	4	272	111	0	23	0	103	0	53
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	15.0	60.0		45.0	45.0	45.0	40.0	40.0		40.0		40.0
Total Split (%)	15.0%	60.0%		45.0%	45.0%	45.0%	40.0%	40.0%		40.0%		40.0%
Maximum Green (s)	9.0	53.4		38.4	38.4	38.4	33.4	33.4		33.4		33.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	72.4	72.0		60.0	60.0	60.0		18.6		19.2		19.2
Actuated g/C Ratio	0.72	0.72		0.60	0.60	0.60		0.19		0.19		0.19

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.39		0.01	0.26	0.18		0.06		0.71		0.20
Control Delay	4.5	4.9		9.8	10.3	3.3		0.3		60.5		1.7
Queue Delay	0.0	0.1		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	4.5	5.1		9.8	10.3	3.3		0.3		60.5		1.7
LOS	A	A		A	B	A		A		E		A
Approach Delay		5.0			8.3			0.3			40.5	
Approach LOS		A			A			A			D	
Queue Length 50th (m)	2.0	13.1		0.3	31.3	3.0		0.0		18.4		0.0
Queue Length 95th (m)	m4.4	41.9		m0.9	m41.2	m3.4		0.0		33.1		0.3
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	520	1251		475	1059	617		594		255		379
Starvation Cap Reductn	0	155		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.14	0.44		0.01	0.26	0.18		0.04		0.40		0.14

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 62.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



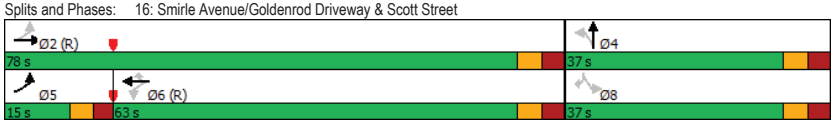
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	702	25	9	553	109	7	0	7	123	0	84
Future Volume (vph)	51	702	25	9	553	109	7	0	7	123	0	84
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99		0.76		0.94		0.95		0.93
Frt		0.995				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1145	1789	0	1729	1784	955	0	1595	0	1310	0	1105
Flt Permitted	0.340			0.368				0.976		0.748		
Satd. Flow (perm)	410	1789	0	662	1784	725	0	1553	0	976	0	1027
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				109		91				91
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	55		12	12		55	19		20	20		19
Confl. Bikes (#/hr)			19			62						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	51%	1%	0%	0%	2%	62%	0%	0%	0%	32%	0%	40%
Adj. Flow (vph)	51	702	25	9	553	109	7	0	7	123	0	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	727	0	9	553	109	0	14	0	123	0	84
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	15.0	78.0		63.0	63.0	63.0	37.0	37.0		37.0		37.0
Total Split (%)	13.0%	67.8%		54.8%	54.8%	54.8%	32.2%	32.2%		32.2%		32.2%
Maximum Green (s)	9.0	71.4		56.4	56.4	56.4	30.4	30.4		30.4		30.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	82.4	81.8		70.9	70.9	70.9		20.0		20.0		20.0
Actuated g/C Ratio	0.72	0.71		0.62	0.62	0.62		0.17		0.17		0.17

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.15	0.57		0.02	0.50	0.22		0.04		0.73		0.33
Control Delay	7.4	11.4		13.2	16.8	4.0		0.2		67.4		10.1
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	7.4	11.4		13.2	16.8	4.0		0.2		67.4		10.1
LOS	A	B		B	B	A		A		E		B
Approach Delay		11.2			14.7			0.2			44.1	
Approach LOS		B			B			A			D	
Queue Length 50th (m)	3.1	72.6		0.8	69.8	0.0		0.0		26.1		0.0
Queue Length 95th (m)	8.7	131.1		3.8	123.2	9.3		0.0		43.4		10.8
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	351	1274		408	1100	488		477		258		338
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.15	0.57		0.02	0.50	0.22		0.03		0.48		0.25

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 20 (17%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 16.6 Intersection LOS: B
Intersection Capacity Utilization 70.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



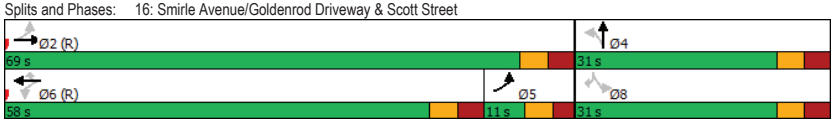
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	702	25	9	553	109	7	0	7	123	0	84
Future Volume (vph)	51	702	25	9	553	109	7	0	7	123	0	84
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	1.00				0.78		0.94		0.95		0.94
Frt		0.995				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1145	1790	0	1729	1784	955	0	1600	0	1310	0	1105
Flt Permitted	0.376			0.293				0.976		0.748		
Satd. Flow (perm)	434	1790	0	533	1784	749	0	1564	0	983	0	1034
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				111		111				111
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	55		12	12		55	19		20	20		19
Confl. Bikes (#/hr)			19			62						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	51%	1%	0%	0%	2%	62%	0%	0%	0%	32%	0%	40%
Adj. Flow (vph)	51	702	25	9	553	109	7	0	7	123	0	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	727	0	9	553	109	0	14	0	123	0	84
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	11.0	69.0		58.0	58.0	58.0	31.0	31.0		31.0		31.0
Total Split (%)	11.0%	69.0%		58.0%	58.0%	58.0%	31.0%	31.0%		31.0%		31.0%
Maximum Green (s)	5.0	62.4		51.4	51.4	51.4	24.4	24.4		24.4		24.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	69.4	68.8		60.0	60.0	60.0		18.0		18.0		18.0
Actuated g/C Ratio	0.69	0.69		0.60	0.60	0.60		0.18		0.18		0.18

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.15	0.59		0.03	0.52	0.22		0.04		0.70		0.30
Control Delay	5.4	6.6		9.3	10.2	2.1		0.2		57.9		6.0
Queue Delay	0.0	0.2		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	5.4	6.8		9.3	10.2	2.1		0.2		57.9		6.0
LOS	A	A		A	B	A		A		E		A
Approach Delay		6.7			8.9			0.2			36.8	
Approach LOS		A			A			A			D	
Queue Length 50th (m)	2.2	33.1		0.5	38.7	0.1		0.0		21.7		0.0
Queue Length 95th (m)	m3.4	43.5		m1.0	m66.9	m1.8		0.0		39.0		7.1
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	336	1232		319	1070	493		465		239		336
Starvation Cap Reductn	0	108		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.15	0.65		0.03	0.52	0.22		0.03		0.51		0.25

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 98 (98%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 11.3 Intersection LOS: B
Intersection Capacity Utilization 70.0% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



Future (2042) Total

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	6	502	2	56	5	0	0	4	5
Future Volume (vph)	0	0	0	6	502	2	56	5	0	0	4	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt					0.999						0.925	
Flt Protected					0.999			0.956				
Satd. Flow (prot)	0	0	0	0	3417	0	0	1678	0	0	1668	0
Flt Permitted					0.999			0.737				
Satd. Flow (perm)	0	0	0	0	3417	0	0	1294	0	0	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						5	
Link Speed (k/h)		60			60			30			30	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			6.3	
Confl. Peds. (#/hr)									8	8		
Confl. Bikes (#/hr)						1						3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	4%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	6	502	2	56	5	0	0	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	510	0	0	61	0	0	9	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				73.0	73.0		26.0	26.0			26.0	
Total Split (%)				63.5%	63.5%		22.6%	22.6%			22.6%	
Maximum Green (s)				67.3	67.3		15.7	15.7			15.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					67.3			15.7			15.7	
Actuated g/C Ratio					0.68			0.16			0.16	
v/c Ratio					0.22			0.30			0.03	
Control Delay					6.2			21.2			26.7	
Queue Delay					0.0			0.0			0.0	

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA

Future Total 2042 Conditions
Weekday AM Peak Hour

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	73.0	16.0
Total Split (%)	14%	63%	14%
Maximum Green (s)	12.0	67.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

Lanes, Volumes, Timings
BD

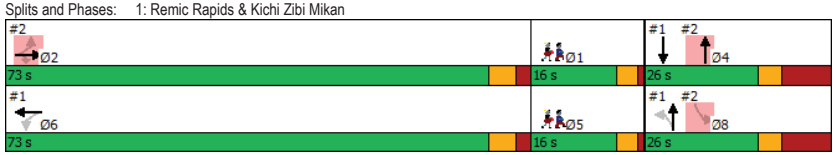
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					6.2			21.2			26.7	
LOS					A			C			C	
Approach Delay					6.2			21.2			26.7	
Approach LOS					A			C			C	
Queue Length 50th (m)					17.1			4.8			0.7	
Queue Length 95th (m)					23.3			m7.8			5.0	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2323			205			268	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.22			0.30			0.03	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 8.1		Intersection LOS: A	
Intersection Capacity Utilization 38.5%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1177	157	0	0	0	0	50	27	10	0	0
Future Volume (vph)	3	1177	157	0	0	0	0	50	27	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					1.00				
Frt			0.850					0.953				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1502	0	0	0	0	1682	0	1729	0	0
Flt Permitted										0.707		
Satd. Flow (perm)	0	3458	1468	0	0	0	0	1682	0	1287	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157					20				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	0%	4%	0%	0%	0%	0%
Adj. Flow (vph)	3	1177	157	0	0	0	0	50	27	10	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1180	157	0	0	0	0	77	0	10	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		67.3	67.3					15.7		15.7		
Actuated g/C Ratio		0.68	0.68					0.16		0.16		

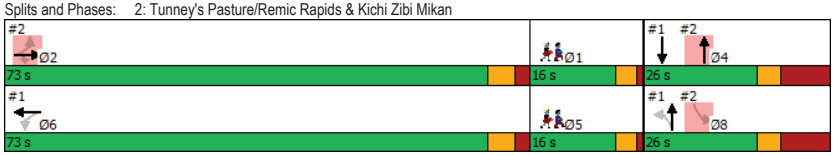
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2042 OPT
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.50	0.15					0.27		0.05		
Control Delay		8.6	1.2					30.9		32.9		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		8.6	1.2					30.9		32.9		
LOS		A	A					C		C		
Approach Delay		7.7						30.9			32.9	
Approach LOS		A						C			C	
Queue Length 50th (m)		51.2	0.0					9.6		1.7		
Queue Length 95th (m)		64.7	5.6					22.6		4.9		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2350	1048					283		204		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.50	0.15					0.27		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 9.2		Intersection LOS: A	
Intersection Capacity Utilization 52.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

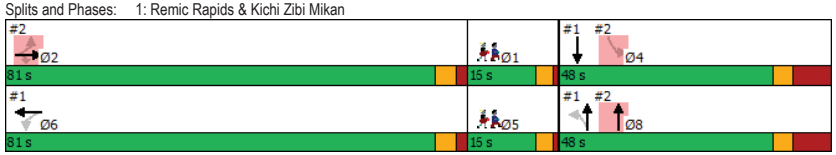
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	12	1558	3	217	3	0	0	3	4
Future Volume (vph)	0	0	0	12	1558	3	217	3	0	0	3	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.99	
Frt											0.923	
Flt Protected								0.953				
Satd. Flow (prot)	0	0	0	0	3458	0	0	1701	0	0	1665	0
Flt Permitted								0.725				
Satd. Flow (perm)	0	0	0	0	3458	0	0	1289	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											4	
Link Speed (k/h)		60			60			30			50	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			3.8	
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	12	1558	3	217	3	0	0	3	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1573	0	0	220	0	0	7	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				81.0	81.0		48.0	48.0			48.0	
Total Split (%)				55.9%	55.9%		33.1%	33.1%			33.1%	
Maximum Green (s)				75.3	75.3		37.7	37.7			37.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					75.3			37.7			37.7	
Actuated g/C Ratio					0.58			0.29			0.29	
v/c Ratio					0.78			0.59			0.01	
Control Delay					24.0			17.4			24.1	
Queue Delay					0.0			0.0			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	81.0	16.0
Total Split (%)	11%	56%	11%
Maximum Green (s)	12.0	75.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					24.0			17.4			24.1	
LOS					C			B			C	
Approach Delay					24.0			17.4			24.1	
Approach LOS					C			B			C	
Queue Length 50th (m)					153.0			8.7			0.6	
Queue Length 95th (m)					182.6			12.3			4.2	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2018			376			489	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.78			0.59			0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 129			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 23.2		Intersection LOS: C	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	12	1558	3	217	3	0	0	3	4
Future Volume (vph)	0	0	0	12	1558	3	217	3	0	0	3	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.99	
Frt											0.923	
Flt Protected								0.953				
Satd. Flow (prot)	0	0	0	0	3458	0	0	1701	0	0	1666	0
Flt Permitted								0.725				
Satd. Flow (perm)	0	0	0	0	3458	0	0	1290	0	0	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											4	
Link Speed (k/h)		60			60			30			50	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			3.8	
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	12	1558	3	217	3	0	0	3	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1573	0	0	220	0	0	7	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				56.2	56.2		37.8	37.8			37.8	
Total Split (%)				51.1%	51.1%		34.4%	34.4%			34.4%	
Maximum Green (s)				50.5	50.5		27.5	27.5			27.5	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					50.5			27.5			27.5	
Actuated g/C Ratio					0.54			0.29			0.29	
v/c Ratio					0.85			0.58			0.01	
Control Delay					24.0			16.5			18.3	
Queue Delay					0.0			0.0			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	56.2	16.0
Total Split (%)	15%	51%	15%
Maximum Green (s)	12.0	50.5	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA

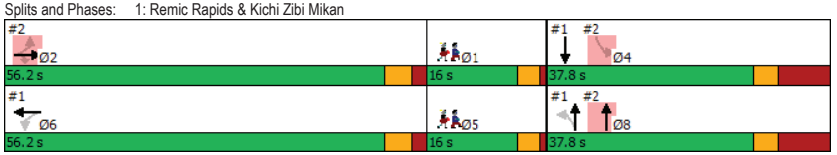
Future Total 2042 OPT
Weekday PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					24.0			16.5			18.3	
LOS					C			B			B	
Approach Delay					24.0			16.5			18.3	
Approach LOS					C			B			B	
Queue Length 50th (m)					120.1			7.3			0.4	
Queue Length 95th (m)					152.6			13.5			3.5	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					1857			377			490	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.85			0.58			0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 94			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 23.1		Intersection LOS: C	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1177	157	0	0	0	0	50	27	10	0	0
Future Volume (vph)	3	1177	157	0	0	0	0	50	27	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					1.00				
Frt			0.850					0.953				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1502	0	0	0	0	1682	0	1729	0	0
Flt Permitted										0.707		
Satd. Flow (perm)	0	3458	1468	0	0	0	0	1682	0	1287	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157					20				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	0%	4%	0%	0%	0%	0%
Adj. Flow (vph)	3	1177	157	0	0	0	0	50	27	10	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1180	157	0	0	0	0	77	0	10	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		67.3	67.3					15.7		15.7		
Actuated g/C Ratio		0.68	0.68					0.16		0.16		

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2042 Conditions
Weekday AM Peak Hour

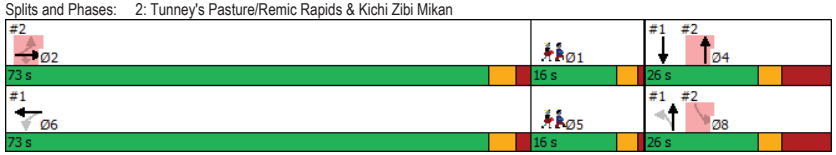
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.50	0.15					0.27		0.05		
Control Delay		8.6	1.2					30.9		32.9		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		8.6	1.2					30.9		32.9		
LOS		A	A					C		C		
Approach Delay		7.7						30.9			32.9	
Approach LOS		A						C			C	
Queue Length 50th (m)		51.2	0.0					9.6		1.7		
Queue Length 95th (m)		64.7	5.6					22.6		4.9		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2350	1048					283		204		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.50	0.15					0.27		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 9.2		Intersection LOS: A	
Intersection Capacity Utilization 52.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1177	157	0	0	0	0	50	27	10	0	0
Future Volume (vph)	3	1177	157	0	0	0	0	50	27	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					1.00				
Frt			0.850					0.953				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1502	0	0	0	0	1682	0	1729	0	0
Flt Permitted										0.707		
Satd. Flow (perm)	0	3458	1468	0	0	0	0	1682	0	1287	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157					20				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	0%	4%	0%	0%	0%	0%
Adj. Flow (vph)	3	1177	157	0	0	0	0	50	27	10	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1180	157	0	0	0	0	77	0	10	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		67.3	67.3					15.7		15.7		
Actuated g/C Ratio		0.68	0.68					0.16		0.16		

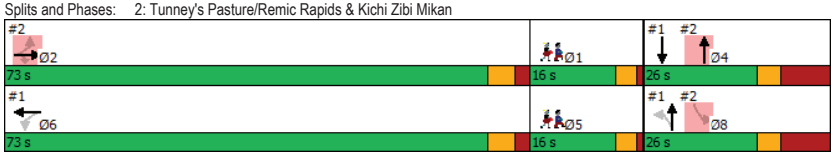
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2042 OPT
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.50	0.15					0.27		0.05		
Control Delay		8.6	1.2					30.9		32.9		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		8.6	1.2					30.9		32.9		
LOS		A	A					C		C		
Approach Delay		7.7						30.9			32.9	
Approach LOS		A						C			C	
Queue Length 50th (m)		51.2	0.0					9.6		1.7		
Queue Length 95th (m)		64.7	5.6					22.6		4.9		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2350	1048					283		204		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.50	0.15					0.27		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 9.2		Intersection LOS: A	
Intersection Capacity Utilization 52.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	324	107	0	0	0	0	202	18	15	0	0
Future Volume (vph)	18	324	107	0	0	0	0	202	18	15	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		1.00		
Frt			0.850					0.989				
Flt Protected		0.997								0.950		
Satd. Flow (prot)	0	3384	1502	0	0	0	0	1765	0	1729	0	0
Flt Permitted		0.997								0.581		
Satd. Flow (perm)	0	3384	1502	0	0	0	0	1765	0	1055	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107					3				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	3%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	18	324	107	0	0	0	0	202	18	15	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	107	0	0	0	0	220	0	15	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						8				
Permitted Phases	2		2							4		
Detector Phase	2	2	2					8		4		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	81.0	81.0	81.0					48.0		48.0		
Total Split (%)	55.9%	55.9%	55.9%					33.1%		33.1%		
Maximum Green (s)	75.3	75.3	75.3					37.7		37.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					None		Max		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		75.3	75.3					37.7		37.7		
Actuated g/C Ratio		0.58	0.58					0.29		0.29		

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2042 Conditions
Weekday PM Peak Hour

Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	81.0
Total Split (%)	11%	11%	56%
Maximum Green (s)	12.0	12.0	75.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

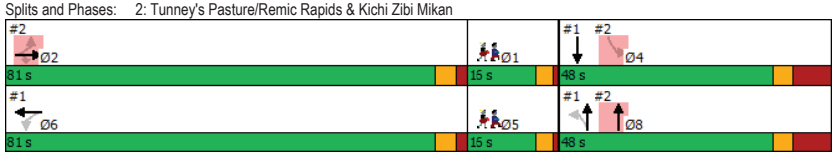
Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.17	0.12					0.43		0.05		
Control Delay		12.7	2.4					39.5		37.9		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		12.7	2.4					39.5		37.9		
LOS		B	A					D		D		
Approach Delay		10.3						39.5			37.9	
Approach LOS		B						D			D	
Queue Length 50th (m)		20.1	0.0					44.6		3.5		
Queue Length 95th (m)		27.7	7.4					68.1		m5.3		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		1975	921					517		308		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.17	0.12					0.43		0.05		

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 129
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 35.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	324	107	0	0	0	0	202	18	15	0	0
Future Volume (vph)	18	324	107	0	0	0	0	202	18	15	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		1.00		
Frt			0.850					0.989				
Flt Protected		0.997								0.950		
Satd. Flow (prot)	0	3384	1502	0	0	0	0	1765	0	1729	0	0
Flt Permitted		0.997								0.621		
Satd. Flow (perm)	0	3384	1502	0	0	0	0	1765	0	1128	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112					4				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	3%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	18	324	107	0	0	0	0	202	18	15	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	107	0	0	0	0	220	0	15	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						8				
Permitted Phases	2		2							4		
Detector Phase	2	2	2					8		4		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	56.2	56.2	56.2					37.8		37.8		
Total Split (%)	51.1%	51.1%	51.1%					34.4%		34.4%		
Maximum Green (s)	50.5	50.5	50.5					27.5		27.5		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					None		Max		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		50.5	50.5					27.5		27.5		
Actuated g/C Ratio		0.54	0.54					0.29		0.29		

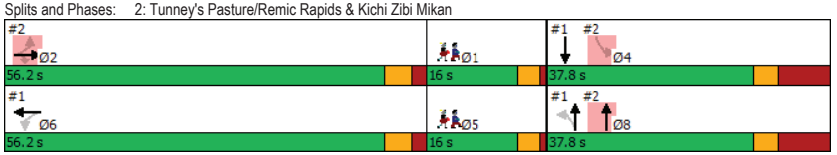
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	56.2
Total Split (%)	15%	15%	51%
Maximum Green (s)	12.0	12.0	50.5
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2042 OPT
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.19	0.12					0.42		0.05		
Control Delay		11.5	2.4					29.4		24.4		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		11.5	2.4					29.4		24.4		
LOS		B	A					C		C		
Approach Delay		9.4						29.4			24.4	
Approach LOS		A						C			C	
Queue Length 50th (m)		15.8	0.0					31.5		2.5		
Queue Length 95th (m)		23.1	6.6					51.9		m3.6		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		1818	858					519		330		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.19	0.12					0.42		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 94			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 35.7%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	0	218	639	40
Future Vol, veh/h	0	23	0	218	639	40
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	0	23	0	218	639	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	666	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.24	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.336	-	-	-	-
Pot Cap-1 Maneuver	0	456	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	453	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	453	-	-
HCM Lane V/C Ratio	-	0.051	-	-
HCM Control Delay (s)	-	13.4	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	52	0	880	281	33
Future Vol, veh/h	0	52	0	880	281	33
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	52	0	880	281	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	305	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	740	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	735	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	735	-	-
HCM Lane V/C Ratio	-	0.071	-	-
HCM Control Delay (s)	-	10.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	13	206	5	26	626
Future Vol, veh/h	6	13	206	5	26	626
Conflicting Peds, #/hr	4	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	0	0	1
Mvmt Flow	6	13	206	5	26	626

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	891	209	0	0	211	0
Stage 1	209	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	315	836	-	-	1372	-
Stage 1	831	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	305	836	-	-	1372	-
Mov Cap-2 Maneuver	305	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	489	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	539	1372	-
HCM Lane V/C Ratio	-	-	0.035	0.019	-
HCM Control Delay (s)	-	-	11.9	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	9	858	9	15	326
Future Vol, veh/h	7	9	858	9	15	326
Conflicting Peds, #/hr	9	5	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	2
Mvmt Flow	7	9	858	9	15	326

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1229	869	0	0	868	0
Stage 1	864	-	-	-	-	-
Stage 2	365	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	198	354	-	-	785	-
Stage 1	416	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	192	352	-	-	784	-
Mov Cap-2 Maneuver	192	-	-	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	685	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	258	784	-
HCM Lane V/C Ratio	-	-	0.062	0.019	-
HCM Control Delay (s)	-	-	19.9	9.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	69	134	164	526	92
Future Vol, veh/h	55	69	134	164	526	92
Conflicting Peds, #/hr	4	3	40	0	0	40
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	12	2	2	1	2
Mvmt Flow	55	69	134	164	526	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1048	615	658	0	-	0
Stage 1	612	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Critical Hdwy	6.44	6.32	4.12	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.408	2.218	-	-	-
Pot Cap-1 Maneuver	250	473	930	-	-	-
Stage 1	537	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	194	454	896	-	-	-
Mov Cap-2 Maneuver	194	-	-	-	-	-
Stage 1	432	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27	4.4	0
HCM LOS	D		

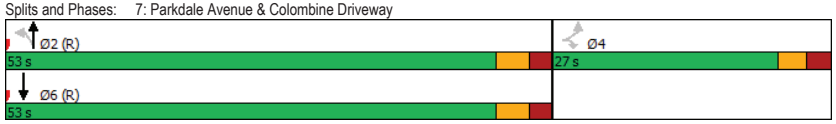
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	896	-	285	-	-
HCM Lane V/C Ratio	0.15	-	0.435	-	-
HCM Control Delay (s)	9.7	0	27	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.5	-	2.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	55	69	134	164	526	92
Future Volume (vph)	55	69	134	164	526	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0	0.0	45.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97	0.98		0.99	
Frt		0.850			0.980	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1662	1381	1695	1784	1739	0
Flt Permitted	0.950		0.391			
Satd. Flow (perm)	1648	1345	682	1784	1739	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		69			19	
Link Speed (k/h)	30			40	40	
Link Distance (m)	174.2			99.7	87.5	
Travel Time (s)	20.9			9.0	7.9	
Confl. Peds. (#/hr)	4	3	40			40
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	12%	2%	2%	1%	2%
Adj. Flow (vph)	55	69	134	164	526	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	69	134	164	618	0
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.2	23.2	27.5	27.5	27.5	
Total Split (s)	27.0	27.0	53.0	53.0	53.0	
Total Split (%)	33.8%	33.8%	66.3%	66.3%	66.3%	
Maximum Green (s)	21.8	21.8	47.5	47.5	47.5	
Yellow Time (s)	2.7	2.7	3.2	3.2	3.2	
All-Red Time (s)	2.5	2.5	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	30	30	30	30	30	
Act Effct Green (s)	11.3	11.3	61.3	61.3	61.3	
Actuated g/C Ratio	0.14	0.14	0.77	0.77	0.77	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
v/c Ratio	0.24	0.28	0.26	0.12	0.46	
Control Delay	30.4	10.0	5.4	3.7	6.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.4	10.0	5.4	3.7	6.7	
LOS	C	B	A	A	A	
Approach Delay	19.1			4.5	6.7	
Approach LOS	B			A	A	
Queue Length 50th (m)	7.9	0.0	4.3	5.0	24.5	
Queue Length 95th (m)	15.7	9.5	11.9	13.4	69.5	
Internal Link Dist (m)	150.2			75.7	63.5	
Turn Bay Length (m)	55.0		45.0			
Base Capacity (vph)	449	416	522	1366	1336	
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	0.12	0.17	0.26	0.12	0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 20 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 7.5		Intersection LOS: A	
Intersection Capacity Utilization 62.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Parkdale Avenue & Colombine Driveway



Intersection	
Int Delay, s/veh	30.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	158	126	122	655	224	99
Future Vol, veh/h	158	126	122	655	224	99
Conflicting Peds, #/hr	16	0	25	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	3	2	0	1	0
Mvmt Flow	158	126	122	655	224	99

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1214	299	348	0	-	0
Stage 1	299	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.218	-	-	-
Pot Cap-1 Maneuver	202	738	1211	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	162	721	1183	-	-	-
Mov Cap-2 Maneuver	162	-	-	-	-	-
Stage 1	620	-	-	-	-	-
Stage 2	385	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	146.4	1.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1183	-	247	-	-
HCM Lane V/C Ratio	0.103	-	1.15	-	-
HCM Control Delay (s)	8.4	0	146.4	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	12.9	-	-

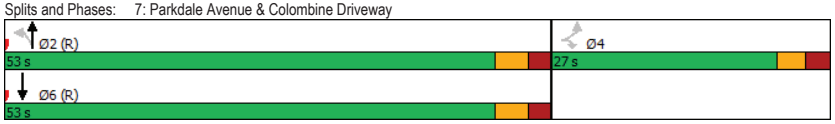
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	158	126	122	655	224	99
Future Volume (vph)	158	126	122	655	224	99
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0	0.0	45.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		0.97		0.98	
Frt		0.850			0.959	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1729	1502	1695	1820	1699	0
Flt Permitted	0.950		0.565			
Satd. Flow (perm)	1668	1502	980	1820	1699	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		126			49	
Link Speed (k/h)	30			40	40	
Link Distance (m)	174.2			99.7	87.5	
Travel Time (s)	20.9			9.0	7.9	
Confl. Peds. (#/hr)	16		25			25
Confl. Bikes (#/hr)						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	3%	2%	0%	1%	0%
Adj. Flow (vph)	158	126	122	655	224	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	158	126	122	655	323	0
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.2	23.2	27.5	27.5	27.5	
Total Split (s)	27.0	27.0	53.0	53.0	53.0	
Total Split (%)	33.8%	33.8%	66.3%	66.3%	66.3%	
Maximum Green (s)	21.8	21.8	47.5	47.5	47.5	
Yellow Time (s)	2.7	2.7	3.2	3.2	3.2	
All-Red Time (s)	2.5	2.5	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	30	30	30	30	30	
Act Effct Green (s)	13.5	13.5	55.8	55.8	55.8	
Actuated g/C Ratio	0.17	0.17	0.70	0.70	0.70	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
v/c Ratio	0.56	0.35	0.18	0.52	0.27	
Control Delay	37.5	8.3	3.8	4.9	5.0	
Queue Delay	0.0	0.0	0.0	0.3	0.0	
Total Delay	37.5	8.3	3.8	5.3	5.0	
LOS	D	A	A	A	A	
Approach Delay	24.6			5.0	5.0	
Approach LOS	C			A	A	
Queue Length 50th (m)	22.6	0.0	3.2	18.4	12.1	
Queue Length 95th (m)	37.6	12.5	8.5	34.5	27.0	
Internal Link Dist (m)	150.2			75.7	63.5	
Turn Bay Length (m)	55.0		45.0			
Base Capacity (vph)	454	500	683	1270	1200	
Starvation Cap Reductn	0	0	0	191	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.35	0.25	0.18	0.61	0.27	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 9.0 — Intersection LOS: A
Intersection Capacity Utilization 54.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Parkdale Avenue & Colombine Driveway



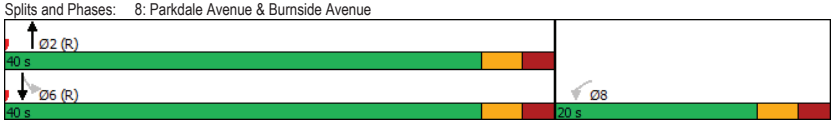
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	52	96	221	53	249	379
Future Volume (vph)	52	96	221	53	249	379
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.91		0.99			0.99
Frt	0.912		0.974			
Flt Protected	0.983					0.981
Satd. Flow (prot)	1508	0	1654	0	0	1754
Flt Permitted	0.983					0.752
Satd. Flow (perm)	1482	0	1654	0	0	1327
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	96		34			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	23	46		33	33	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	5%	9%	0%	3%
Adj. Flow (vph)	52	96	221	53	249	379
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	274	0	0	628
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	20.0		40.0		40.0	40.0
Total Split (%)	33.3%		66.7%		66.7%	66.7%
Maximum Green (s)	14.6		34.6		34.6	34.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		41.8			41.8
Actuated g/C Ratio	0.18		0.70			0.70
v/c Ratio	0.43		0.24			0.68
Control Delay	12.7		5.3			14.2
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	12.7		5.3			14.2
LOS	B		A			B
Approach Delay	12.7		5.3			14.2
Approach LOS	B		A			B
Queue Length 50th (m)	4.6		11.2			47.4
Queue Length 95th (m)	17.0		21.3			#109.5
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	433		1163			925
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.34		0.24			0.68

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 18 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 11.6 Intersection LOS: B
Intersection Capacity Utilization 78.3% 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.

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue



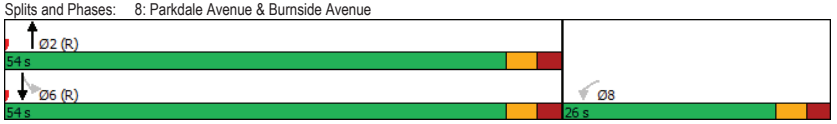
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	52	96	221	53	249	379
Future Volume (vph)	52	96	221	53	249	379
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88		0.98			0.98
Frt	0.912		0.974			
Flt Protected	0.983					0.981
Satd. Flow (prot)	1474	0	1649	0	0	1754
Flt Permitted	0.983					0.752
Satd. Flow (perm)	1440	0	1649	0	0	1322
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	96		27			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	23	46		33	33	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	5%	9%	0%	3%
Adj. Flow (vph)	52	96	221	53	249	379
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	274	0	0	628
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	26.0		54.0		54.0	54.0
Total Split (%)	32.5%		67.5%		67.5%	67.5%
Maximum Green (s)	20.6		48.6		48.6	48.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.8		58.4			58.4
Actuated g/C Ratio	0.14		0.73			0.73
v/c Ratio	0.53		0.23			0.65
Control Delay	19.8		2.4			7.6
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	19.8		2.4			7.6
LOS	B		A			A
Approach Delay	19.8		2.4			7.6
Approach LOS	B		A			A
Queue Length 50th (m)	6.9		1.5			19.3
Queue Length 95th (m)	22.6		2.6			30.6
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	442		1211			965
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.33		0.23			0.65

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 16 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 8.0 Intersection LOS: A
Intersection Capacity Utilization 78.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue



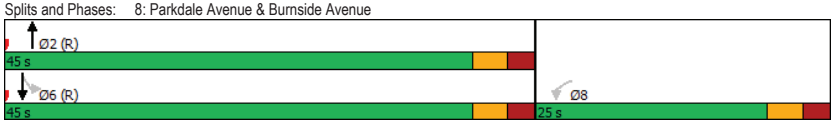
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	232	618	57	78	329
Future Volume (vph)	49	232	618	57	78	329
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88		1.00			1.00
Frt	0.889		0.989			
Flt Protected	0.991					0.991
Satd. Flow (prot)	1418	0	1791	0	0	1775
Flt Permitted	0.991					0.804
Satd. Flow (perm)	1405	0	1791	0	0	1438
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	232		11			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	21	46		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	0%	0%	2%	0%	2%
Adj. Flow (vph)	49	232	618	57	78	329
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	675	0	0	407
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	19.6		39.6		39.6	39.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	11.2		48.0			48.0
Actuated g/C Ratio	0.16		0.69			0.69
v/c Ratio	0.67		0.55			0.41
Control Delay	14.5		8.7			7.5
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	14.5		8.7			7.5
LOS	B		A			A
Approach Delay	14.5		8.7			7.5
Approach LOS	B		A			A
Queue Length 50th (m)	5.4		42.1			22.6
Queue Length 95th (m)	24.1		79.8			45.3
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	560		1230			985
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.50		0.55			0.41

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 23 (33%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 9.5 Intersection LOS: A
Intersection Capacity Utilization 95.5% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue

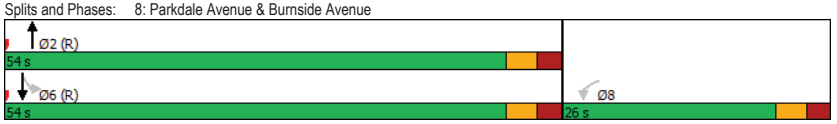


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	232	618	57	78	329
Future Volume (vph)	49	232	618	57	78	329
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.87		1.00			1.00
Frt	0.889		0.989			
Flt Protected	0.991					0.991
Satd. Flow (prot)	1397	0	1790	0	0	1775
Flt Permitted	0.991					0.802
Satd. Flow (perm)	1382	0	1790	0	0	1435
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	232		11			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	21	46		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	0%	0%	2%	0%	2%
Adj. Flow (vph)	49	232	618	57	78	329
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	675	0	0	407
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	26.0		54.0		54.0	54.0
Total Split (%)	32.5%		67.5%		67.5%	67.5%
Maximum Green (s)	20.6		48.6		48.6	48.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	11.5		57.7			57.7
Actuated g/C Ratio	0.14		0.72			0.72
v/c Ratio	0.71		0.52			0.39
Control Delay	17.4		4.3			5.7
Queue Delay	0.0		0.0			0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	17.4		4.3			6.1
LOS	B		A			A
Approach Delay	17.4		4.3			6.1
Approach LOS	B		A			A
Queue Length 50th (m)	6.5		13.4			15.8
Queue Length 95th (m)	27.2		18.0			35.5
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	528		1294			1035
Starvation Cap Reductn	0		4			253
Spillback Cap Reductn	0		2			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.53		0.52			0.52

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 16 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 7.5		Intersection LOS: A	
Intersection Capacity Utilization 95.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	10	302	29	3	413
Future Volume (vph)	31	10	302	29	3	413
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		1.00			1.00
Frt	0.967		0.988			
Flt Protected	0.964					
Satd. Flow (prot)	1612	0	1724	0	0	1750
Flt Permitted	0.964					0.998
Satd. Flow (perm)	1541	0	1724	0	0	1747
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	10		14			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	27	4		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	0%	4%	3%	0%	4%
Adj. Flow (vph)	31	10	302	29	3	413
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	331	0	0	416
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	19.2		41.0		41.0	41.0
Total Split (%)	31.9%		68.1%		68.1%	68.1%
Maximum Green (s)	14.0		35.9		35.9	35.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		45.6			45.6
Actuated g/C Ratio	0.18		0.76			0.76
v/c Ratio	0.15		0.25			0.31
Control Delay	16.6		5.2			5.8
Queue Delay	0.0		0.0			0.0

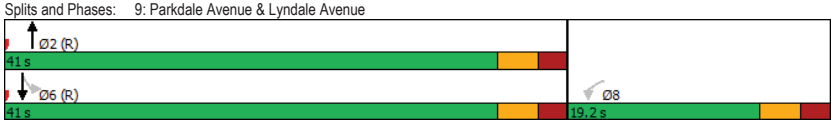
9: Parkdale Avenue & Lyndale Avenue
Tunney's Pasture TIA

Future Total 2042 Conditions
Weekday AM Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	16.6		5.2			5.8
LOS	B		A			A
Approach Delay	16.6		5.2			5.8
Approach LOS	B		A			A
Queue Length 50th (m)	2.7		15.0			21.1
Queue Length 95th (m)	9.1		26.7			36.0
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	366		1309			1323
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.11		0.25			0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 60.2			
Actuated Cycle Length: 60.2			
Offset: 18 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 39.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue



Lanes, Volumes, Timings
BD

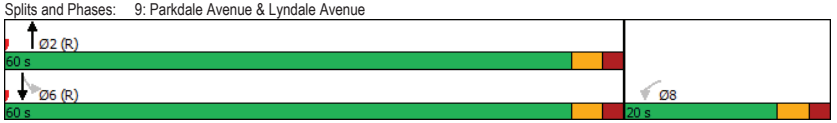
Synchro 11 Report
June 2025

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	10	302	29	3	413
Future Volume (vph)	31	10	302	29	3	413
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93		1.00			1.00
Frt	0.967		0.988			
Flt Protected	0.964					
Satd. Flow (prot)	1611	0	1724	0	0	1750
Flt Permitted	0.964					0.998
Satd. Flow (perm)	1517	0	1724	0	0	1747
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	10		14			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	27	4		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	0%	4%	3%	0%	4%
Adj. Flow (vph)	31	10	302	29	3	413
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	331	0	0	416
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	20.0		60.0		60.0	60.0
Total Split (%)	25.0%		75.0%		75.0%	75.0%
Maximum Green (s)	14.8		54.9		54.9	54.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.7		62.2			62.2
Actuated g/C Ratio	0.13		0.78			0.78
v/c Ratio	0.19		0.25			0.31
Control Delay	25.5		4.1			5.6
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	25.5		4.1			5.6
LOS	C		A			A
Approach Delay	25.5		4.1			5.6
Approach LOS	C		A			A
Queue Length 50th (m)	4.0		15.0			20.1
Queue Length 95th (m)	12.3		24.6			40.9
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	288		1343			1358
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.14		0.25			0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 39.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue

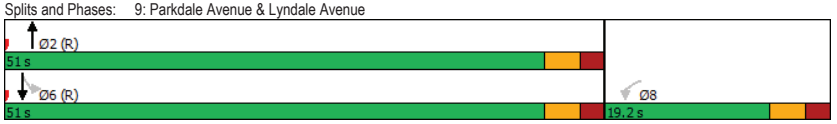


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	6	622	34	9	452
Future Volume (vph)	18	6	622	34	9	452
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		1.00			1.00
Frt	0.966		0.993			
Flt Protected	0.964					0.999
Satd. Flow (prot)	1682	0	1801	0	0	1783
Flt Permitted	0.964					0.989
Satd. Flow (perm)	1619	0	1801	0	0	1765
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		8			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	20	4		22	22	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	18	6	622	34	9	452
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	656	0	0	461
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	19.2		51.0		51.0	51.0
Total Split (%)	27.4%		72.6%		72.6%	72.6%
Maximum Green (s)	14.0		45.9		45.9	45.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		55.6			55.6
Actuated g/C Ratio	0.15		0.79			0.79
v/c Ratio	0.10		0.46			0.33
Control Delay	20.0		6.2			5.1
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	20.0		6.2			5.1
LOS	B		A			A
Approach Delay	20.0		6.2			5.1
Approach LOS	B		A			A
Queue Length 50th (m)	1.9		39.3			24.1
Queue Length 95th (m)	7.5		63.4			39.2
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	327		1428			1398
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.07		0.46			0.33

Intersection Summary			
Area Type:	Other		
Cycle Length: 70.2			
Actuated Cycle Length: 70.2			
Offset: 18 (26%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 50.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue



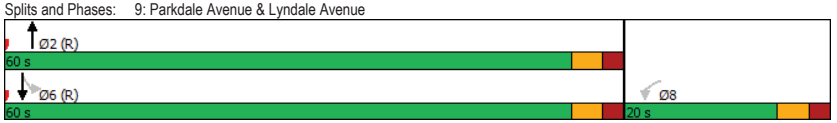
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	6	622	34	9	452
Future Volume (vph)	18	6	622	34	9	452
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		1.00			1.00
Frt	0.966		0.993			
Flt Protected	0.964					0.999
Satd. Flow (prot)	1682	0	1801	0	0	1783
Flt Permitted	0.964					0.989
Satd. Flow (perm)	1610	0	1801	0	0	1765
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		8			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	20	4		22	22	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	18	6	622	34	9	452
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	656	0	0	461
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	20.0		60.0		60.0	60.0
Total Split (%)	25.0%		75.0%		75.0%	75.0%
Maximum Green (s)	14.8		54.9		54.9	54.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		65.4			65.4
Actuated g/C Ratio	0.13		0.82			0.82
v/c Ratio	0.11		0.45			0.32
Control Delay	24.2		5.4			3.7
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	24.2		5.4			3.7
LOS	C		A			A
Approach Delay	24.2		5.4			3.7
Approach LOS	C		A			A
Queue Length 50th (m)	2.3		39.3			23.1
Queue Length 95th (m)	8.5		60.9			27.8
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	302		1474			1443
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.08		0.45			0.32

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 5.1 Intersection LOS: A
Intersection Capacity Utilization 50.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	414	69	39	232	16	57	239	70	61	338	197
Future Volume (vph)	125	414	69	39	232	16	57	239	70	61	338	197
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.92		0.91	0.97		0.87		0.98		0.96		0.94
Frt			0.850			0.850		0.974				0.850
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1695	1717	1138	1729	1750	1311	0	1664	0	1695	1802	1517
Flt Permitted	0.598			0.423				0.858		0.466		
Satd. Flow (perm)	982	1717	1039	749	1750	1137	0	1434	0	798	1802	1421
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			107		15				178
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			279.3			221.0	
Travel Time (s)		17.9			21.6			25.1			19.9	
Confl. Peds. (#/hr)	63		33	33		63	23		45	45		23
Confl. Bikes (#/hr)			9									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	6%	36%	0%	4%	18%	9%	3%	1%	2%	1%	2%
Adj. Flow (vph)	125	414	69	39	232	16	57	239	70	61	338	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	414	69	39	232	16	0	366	0	61	338	197
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	32.1	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	46.3%	46.3%	46.3%	46.3%	46.3%	46.3%	45.3%	45.3%		45.3%	45.3%	45.3%
Maximum Green (s)	37.9	37.9	37.9	37.9	37.9	37.9	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	45.9	45.9	45.9	45.9	45.9	45.9		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.39		0.39	0.39	0.39

10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA

Future Total 2042 Conditions
Weekday AM Peak Hour

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	7.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
BD

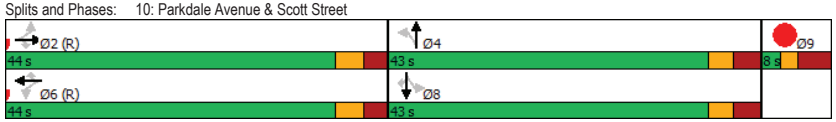
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.26	0.50	0.12	0.11	0.27	0.03		0.65		0.20	0.49	0.30
Control Delay	14.2	16.4	2.0	14.5	15.7	0.1		29.4		21.6	25.0	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	14.2	16.4	2.0	14.5	15.7	0.1		29.4		21.6	25.0	5.4
LOS	B	B	A	B	B	A		C		C	C	A
Approach Delay		14.3			14.7			29.4			18.1	
Approach LOS		B			B			C			B	
Queue Length 50th (m)	9.1	35.9	0.0	3.7	24.4	0.0		51.8		7.3	45.9	2.1
Queue Length 95th (m)	m18.3	51.7	m1.0	9.5	39.4	0.0		83.0		16.5	70.6	15.4
Internal Link Dist (m)		225.1			275.4			255.3			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	474	829	557	361	845	604		563		308	696	658
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.26	0.50	0.12	0.11	0.27	0.03		0.65		0.20	0.49	0.30

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 91 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 18.6 Intersection LOS: B
Intersection Capacity Utilization 92.3% ICU Level of Service F
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	414	69	39	232	16	57	239	70	61	338	197
Future Volume (vph)	125	414	69	39	232	16	57	239	70	61	338	197
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.92		0.91	0.97		0.86		0.98		0.96		0.93
Frt			0.850			0.850		0.974				0.850
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1695	1717	1138	1729	1750	1311	0	1663	0	1695	1802	1517
Flt Permitted	0.589			0.406				0.887		0.478		
Satd. Flow (perm)	964	1717	1035	719	1750	1129	0	1481	0	816	1802	1418
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			101			101		15				178
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			265.8			221.0	
Travel Time (s)		17.9			21.6			23.9			19.9	
Confl. Peds. (#/hr)	63		33	33		63	23		45	45		23
Confl. Bikes (#/hr)			9									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	6%	36%	0%	4%	18%	9%	3%	1%	2%	1%	2%
Adj. Flow (vph)	125	414	69	39	232	16	57	239	70	61	338	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	414	69	39	232	16	0	366	0	61	338	197
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	32.1	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	48.0	48.0		48.0	48.0	48.0
Total Split (%)	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	48.0%	48.0%		48.0%	48.0%	48.0%
Maximum Green (s)	37.9	37.9	37.9	37.9	37.9	37.9	41.7	41.7		41.7	41.7	41.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	45.9	45.9	45.9	45.9	45.9	45.9		41.7		41.7	41.7	41.7
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.46	0.46		0.42		0.42	0.42	0.42

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

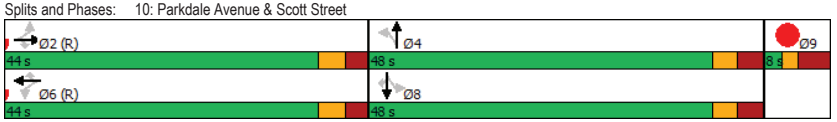
10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA
Future Total 2042 OPT MOD
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.28	0.53	0.13	0.12	0.29	0.03		0.58		0.18	0.45	0.28
Control Delay	16.2	19.4	1.9	16.8	18.1	0.1		26.1		20.2	23.3	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	16.2	19.4	1.9	16.8	18.1	0.1		26.1		20.2	23.3	4.9
LOS	B	B	A	B	B	A		C		C	C	A
Approach Delay		16.8			16.9			26.1			16.9	
Approach LOS		B			B			C			B	
Queue Length 50th (m)	15.4	58.8	0.7	4.2	27.2	0.0		51.2		7.3	45.9	2.1
Queue Length 95th (m)	m17.6	55.6	m1.3	10.6	43.5	0.0		80.7		16.1	69.6	15.0
Internal Link Dist (m)		225.1			275.4			241.8			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	442	788	529	330	803	572		626		340	751	695
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.28	0.53	0.13	0.12	0.29	0.03		0.58		0.18	0.45	0.28

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 36 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 92.3% ICU Level of Service F
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	381	110	74	396	26	63	364	53	32	294	147
Future Volume (vph)	294	381	110	74	396	26	63	364	53	32	294	147
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		0.83	0.91		0.85		0.98		0.96		0.91
Frt			0.850			0.850		0.985				0.850
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1729	1784	1473	1712	1750	1547	0	1686	0	1729	1802	1532
Flt Permitted	0.216			0.536				0.872		0.365		
Satd. Flow (perm)	377	1784	1220	879	1750	1321	0	1473	0	639	1802	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			110			163		7				160
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			279.3			221.0	
Travel Time (s)		17.9			21.6			25.1			19.9	
Confl. Peds. (#/hr)	60		79	79		60	34		53	53		34
Confl. Bikes (#/hr)			4			11						5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	5%	1%	4%	0%	24%	1%	2%	0%	1%	1%
Adj. Flow (vph)	294	381	110	74	396	26	63	364	53	32	294	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	294	381	110	74	396	26	0	480	0	32	294	147
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.6	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	15.0	49.0	49.0	34.0	34.0	34.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	15.0%	49.0%	49.0%	34.0%	34.0%	34.0%	43.0%	43.0%		43.0%	43.0%	43.0%
Maximum Green (s)	9.4	42.9	42.9	27.9	27.9	27.9	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.3	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)		19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	51.4	50.9	50.9	27.9	27.9	27.9		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.51	0.51	0.51	0.28	0.28	0.28		0.37		0.37	0.37	0.37

10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA

Future Total 2042 Conditions
Weekday PM Peak Hour

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
BD

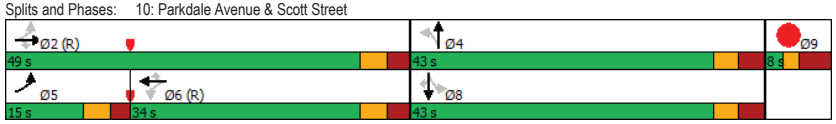
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.69	0.42	0.16	0.30	0.81	0.05		0.88		0.14	0.44	0.24
Control Delay	24.1	17.1	3.2	32.6	48.4	0.2		48.8		23.2	26.6	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	24.1	17.1	3.2	32.6	48.4	0.2		48.8		23.2	26.6	4.0
LOS	C	B	A	C	D	A		D		C	C	A
Approach Delay		17.8			43.5			48.8			19.3	
Approach LOS		B			D			D			B	
Queue Length 50th (m)	31.9	44.1	0.0	11.3	71.5	0.0		84.8		4.1	42.5	0.0
Queue Length 95th (m)	53.2	66.3	8.1	23.9	#117.2	0.0		#143.1		10.9	65.6	10.3
Internal Link Dist (m)		225.1			275.4			255.3			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	429	908	674	245	488	486		545		234	661	612
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.69	0.42	0.16	0.30	0.81	0.05		0.88		0.14	0.44	0.24

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 30.5 Intersection LOS: C
Intersection Capacity Utilization 108.0% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	381	110	74	396	26	63	364	53	32	294	147
Future Volume (vph)	294	381	110	74	396	26	63	364	53	32	294	147
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		0.83	0.93		0.85		0.98		0.96		0.91
Frt			0.850			0.850		0.985				0.850
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1729	1784	1473	1712	1750	1547	0	1686	0	1729	1802	1532
Flt Permitted	0.369			0.426				0.872		0.365		
Satd. Flow (perm)	639	1784	1220	711	1750	1320	0	1473	0	639	1802	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			110			168		7				166
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			265.8			221.0	
Travel Time (s)		17.9			21.6			23.9			19.9	
Confl. Peds. (#/hr)	60		79	79		60	34		53	53		34
Confl. Bikes (#/hr)			4			11						5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	5%	1%	4%	0%	24%	1%	2%	0%	1%	1%
Adj. Flow (vph)	294	381	110	74	396	26	63	364	53	32	294	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	294	381	110	74	396	26	0	480	0	32	294	147
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.6	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	16.2	49.0	49.0	32.8	32.8	32.8	43.0	43.0		43.0	43.0	43.0
Total Split (%)	16.2%	49.0%	49.0%	32.8%	32.8%	32.8%	43.0%	43.0%		43.0%	43.0%	43.0%
Maximum Green (s)	10.6	42.9	42.9	26.7	26.7	26.7	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.3	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)		19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	51.4	50.9	50.9	34.7	34.7	34.7		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.51	0.51	0.51	0.35	0.35	0.35		0.37		0.37	0.37	0.37

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA

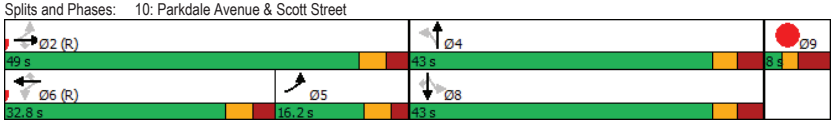
Future Total 2042 OPT
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.66	0.42	0.16	0.30	0.65	0.05		0.88		0.14	0.44	0.24
Control Delay	27.5	16.7	4.2	28.1	33.7	0.2		48.8		23.2	26.6	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	27.5	16.7	4.2	28.1	33.7	0.2		48.8		23.2	26.6	3.6
LOS	C	B	A	C	C	A		D		C	C	A
Approach Delay		19.0			31.1			48.8			19.2	
Approach LOS		B			C			D			B	
Queue Length 50th (m)	35.1	46.8	2.4	10.3	64.1	0.0		84.8		4.1	42.5	0.0
Queue Length 95th (m)	m49.7	m68.4	m5.8	22.4	95.9	0.0		#143.1		10.9	65.6	9.5
Internal Link Dist (m)		225.1			275.4			241.8			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	443	908	674	246	607	567		545		234	661	615
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.66	0.42	0.16	0.30	0.65	0.05		0.88		0.14	0.44	0.24

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 28.1 Intersection LOS: C
Intersection Capacity Utilization 108.0% ICU Level of Service G
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	503	76	89	220	74	139	180	134	51	129	21
Future Volume (vph)	41	503	76	89	220	74	139	180	134	51	129	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.76	0.96		0.95		0.64	0.69		0.63	0.73		0.61
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1504	0	1679	1655	1432	1429	1802	1517	1517	1767	1406
Flt Permitted	0.621			0.358			0.674			0.602		
Satd. Flow (perm)	844	1504	0	601	1655	917	695	1802	949	697	1767	856
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			184.8	
Travel Time (s)		20.2			17.9			20.2			22.2	
Confl. Peds. (#/hr)	149		98	98		149	190		180	180		190
Confl. Bikes (#/hr)			122			15			8			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	10%	37%	3%	10%	8%	21%	1%	2%	14%	3%	10%
Adj. Flow (vph)	41	503	76	89	220	74	139	180	134	51	129	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	579	0	89	220	74	139	180	134	51	129	21
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	2	2		6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	3.0	3.0	3.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	44.0	44.0		44.0	44.0	44.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	46.3%	46.3%		46.3%	46.3%	46.3%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	37.8	37.8		37.8	37.8	37.8	34.8	34.8	34.8	34.8	34.8	34.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)	57.8	57.8		57.8	57.8	57.8	24.8	24.8	24.8	24.8	24.8	24.8
Actuated g/C Ratio	0.61	0.61		0.61	0.61	0.61	0.26	0.26	0.26	0.26	0.26	0.26

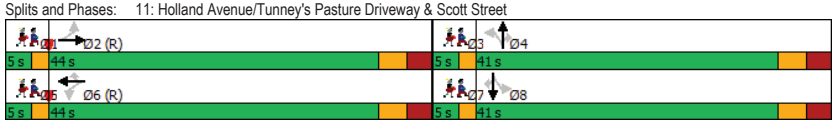
Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	3.0	3.0	3.0	3.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?		Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.08	0.63		0.24	0.22	0.13	0.77	0.38	0.54	0.28	0.28	0.09
Control Delay	11.5	18.8		11.3	9.0	9.5	56.8	29.0	36.2	28.2	26.9	22.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	18.8		11.3	9.0	9.5	56.8	29.0	36.2	28.2	26.9	22.8
LOS	B	B		B	A	A	E	C	D	C	C	C
Approach Delay		18.3			9.6			39.6			26.8	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	2.9	63.0		5.7	13.8	4.4	23.4	26.9	21.0	7.4	18.7	2.9
Queue Length 95th (m)	9.9	#147.3		m16.8	31.9	m13.0	37.9	36.7	32.3	14.4	27.4	7.0
Internal Link Dist (m)		256.5			225.1			200.2			160.8	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		30.0
Base Capacity (vph)	513	915		365	1007	558	258	670	352	259	657	318
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.63		0.24	0.22	0.13	0.54	0.27	0.38	0.20	0.20	0.07

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 85 (89%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 23.2 Intersection LOS: C
Intersection Capacity Utilization 87.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	503	76	89	220	74	139	180	134	51	129	21
Future Volume (vph)	41	503	76	89	220	74	139	180	134	51	129	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.75	0.96		0.94		0.62	0.68		0.61	0.72	0.94	
Frt		0.980				0.850			0.850		0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1505	0	1679	1655	1432	1429	1802	1517	1517	1615	0
Flt Permitted	0.621			0.359			0.648			0.594		
Satd. Flow (perm)	826	1505	0	598	1655	895	662	1802	920	680	1615	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			108.7	
Travel Time (s)		20.2			17.9			20.2			13.0	
Confl. Peds. (#/hr)	149		98	98		149	190		180	180		190
Confl. Bikes (#/hr)			122			15			8			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	10%	37%	3%	10%	8%	21%	1%	2%	14%	3%	10%
Adj. Flow (vph)	41	503	76	89	220	74	139	180	134	51	129	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	579	0	89	220	74	139	180	134	51	150	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	2	2		6	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	
Total Split (s)	53.6	53.6		53.6	53.6	53.6	36.4	36.4	36.4	36.4	36.4	
Total Split (%)	53.6%	53.6%		53.6%	53.6%	53.6%	36.4%	36.4%	36.4%	36.4%	36.4%	
Maximum Green (s)	47.4	47.4		47.4	47.4	47.4	30.2	30.2	30.2	30.2	30.2	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min	C-Min	Min	Min	Min	Min	Min	
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	
Act Effct Green (s)	61.6	61.6		61.6	61.6	61.6	26.0	26.0	26.0	26.0	26.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62	0.62	0.26	0.26	0.26	0.26	0.26	

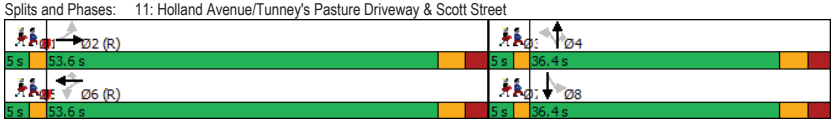
Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.08	0.62		0.24	0.22	0.13	0.81	0.38	0.56	0.29	0.36	
Control Delay	7.8	13.7		12.3	10.6	10.3	65.6	30.9	39.4	30.7	30.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.8	13.7		12.3	10.6	10.3	65.6	30.9	39.4	30.7	30.5	
LOS	A	B		B	B	B	E	C	D	C	C	
Approach Delay		13.3			11.0			44.1			30.6	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	2.2	50.0		6.4	15.8	5.1	24.7	28.1	22.0	7.8	23.2	
Queue Length 95th (m)	6.1	135.1		m15.9	30.3	m12.5	43.8	41.3	36.6	16.1	35.7	
Internal Link Dist (m)		256.5			225.1			200.2			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		
Base Capacity (vph)	508	927		368	1019	551	209	570	290	215	510	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.08	0.62		0.24	0.22	0.13	0.67	0.32	0.46	0.24	0.29	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 23.3 Intersection LOS: C
Intersection Capacity Utilization 87.6% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	584	88	170	551	66	150	143	231	92	211	36
Future Volume (vph)	44	584	88	170	551	66	150	143	231	92	211	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.96				0.55	0.69		0.66	0.74		0.53
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1591	0	1695	1701	1394	1417	1802	1547	1695	1802	1502
Flt Permitted	0.082			0.156			0.553			0.658		
Satd. Flow (perm)	132	1591	0	278	1701	766	572	1802	1025	870	1802	795
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			184.8	
Travel Time (s)		20.2			17.9			20.2			22.2	
Confl. Peds. (#/hr)	152		112	112		152	198		140	140		198
Confl. Bikes (#/hr)			31			86			3			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	4%	29%	2%	7%	11%	22%	1%	0%	2%	1%	3%
Adj. Flow (vph)	44	584	88	170	551	66	150	143	231	92	211	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	672	0	170	551	66	150	143	231	92	211	36
Turn Type	Perm	NA		custom	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2		15	6 15			4			8	
Permitted Phases	2			6		6 15	4		4	8		8
Detector Phase	2	2		15	6 15	6 15	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		11.2			30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	50.0	50.0		15.0			35.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	45.5%	45.5%		13.6%			31.8%	31.8%	31.8%	31.8%	31.8%	31.8%
Maximum Green (s)	43.8	43.8		8.8			28.8	28.8	28.8	28.8	28.8	28.8
Yellow Time (s)	3.3	3.3		3.3			3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9			2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0			0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2			6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min	C-Min		None			Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0					2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0					22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30					30	30	30	30	30	30
Act Effct Green (s)	48.8	48.8		57.6	63.8	63.8	33.8	33.8	33.8	33.8	33.8	33.8
Actuated g/C Ratio	0.44	0.44		0.52	0.58	0.58	0.31	0.31	0.31	0.31	0.31	0.31

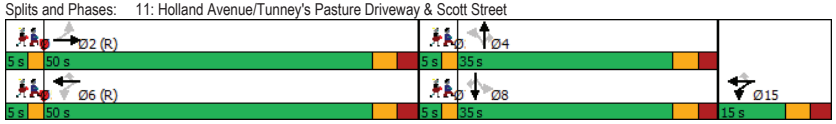
Lane Group	Ø1	Ø3	Ø5	Ø6	Ø7
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Ideal Flow (vphpl)					
Storage Length (m)					
Storage Lanes					
Taper Length (m)					
Lane Util. Factor					
Ped Bike Factor					
Frt					
Flt Protected					
Satd. Flow (prot)					
Flt Permitted					
Satd. Flow (perm)					
Right Turn on Red					
Satd. Flow (RTOR)					
Link Speed (k/h)					
Link Distance (m)					
Travel Time (s)					
Confl. Peds. (#/hr)					
Confl. Bikes (#/hr)					
Peak Hour Factor					
Heavy Vehicles (%)					
Adj. Flow (vph)					
Shared Lane Traffic (%)					
Lane Group Flow (vph)					
Turn Type					
Protected Phases	1	3	5	6	7
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	1.0	1.0	1.0	5.0	1.0
Minimum Split (s)	3.0	3.0	3.0	27.2	3.0
Total Split (s)	5.0	5.0	5.0	50.0	5.0
Total Split (%)	5%	5%	5%	45%	5%
Maximum Green (s)	3.0	3.0	3.0	43.8	3.0
Yellow Time (s)	2.0	2.0	2.0	3.3	2.0
All-Red Time (s)	0.0	0.0	0.0	2.9	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag		Lead			Lead
Lead-Lag Optimize?		Yes			Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min	None
Walk Time (s)	0.0	0.0	0.0	2.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	19.0	0.0
Pedestrian Calls (#/hr)	0	0	0	30	0
Act Effct Green (s)					
Actuated g/C Ratio					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.76	0.95		0.66	0.56	0.15	0.86	0.26	0.74	0.34	0.38	0.15
Control Delay	95.9	54.8		25.2	17.1	11.7	76.9	30.3	49.8	34.1	32.4	29.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.9	54.8		25.2	17.1	11.7	76.9	30.3	49.8	34.1	32.4	29.8
LOS	F	D		C	B	B	E	C	D	C	C	C
Approach Delay		57.3			18.4			52.2			32.6	
Approach LOS		E			B			D			C	
Queue Length 50th (m)	7.7	135.7		16.0	69.3	6.1	30.1	23.0	44.2	15.3	35.4	5.6
Queue Length 95th (m)	#29.4	#210.9		#29.9	99.9	13.0	#67.7	39.1	#80.4	29.9	56.2	13.7
Internal Link Dist (m)		256.5			225.1			200.2			160.8	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		30.0
Base Capacity (vph)	58	705		258	986	444	175	553	314	267	553	244
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.95		0.66	0.56	0.15	0.86	0.26	0.74	0.34	0.38	0.15

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 39.7 Intersection LOS: D
Intersection Capacity Utilization 98.3% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	584	88	170	551	66	150	143	231	92	211	36
Future Volume (vph)	44	584	88	170	551	66	150	143	231	92	211	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.96				0.58	0.74		0.69	0.76	0.94	
Frt		0.980				0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1598	0	1695	1701	1394	1417	1802	1547	1695	1647	0
Flt Permitted	0.348			0.260			0.518			0.666		
Satd. Flow (perm)	558	1598	0	464	1701	812	570	1802	1070	904	1647	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			108.7	
Travel Time (s)		20.2			17.9			20.2			13.0	
Confl. Peds. (#/hr)	152		112	112		152	198		140	140		198
Confl. Bikes (#/hr)			31			86			3			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	4%	29%	2%	7%	11%	22%	1%	0%	2%	1%	3%
Adj. Flow (vph)	44	584	88	170	551	66	150	143	231	92	211	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	672	0	170	551	66	150	143	231	92	247	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	2	2		6	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	
Total Split (s)	54.0	54.0		54.0	54.0	54.0	36.0	36.0	36.0	36.0	36.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%	54.0%	36.0%	36.0%	36.0%	36.0%	36.0%	
Maximum Green (s)	47.8	47.8		47.8	47.8	47.8	29.8	29.8	29.8	29.8	29.8	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min	C-Min	Min	Min	Min	Min	Min	
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	
Act Effct Green (s)	55.6	55.6		55.6	55.6	55.6	32.0	32.0	32.0	32.0	32.0	
Actuated g/C Ratio	0.56	0.56		0.56	0.56	0.56	0.32	0.32	0.32	0.32	0.32	

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

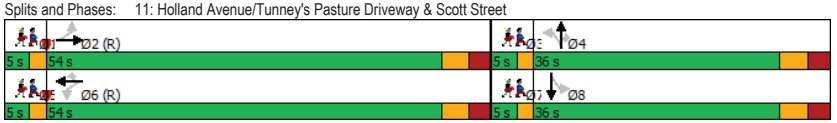
11: Holland Avenue/Tunney's Pasture Driveway & Scott Street
Tunney's Pasture TIA
Future Total 2042 OPT
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.76		0.66	0.58	0.15	0.82	0.25	0.68	0.32	0.47	
Control Delay	11.8	18.4		22.4	9.5	7.0	65.3	25.4	39.7	28.0	29.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.8	18.4		22.4	9.5	7.0	65.3	25.4	39.7	28.0	29.7	
LOS	B	B		C	A	A	E	C	D	C	C	
Approach Delay		18.0			12.1			43.1			29.3	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	3.1	55.1		10.6	33.5	3.3	25.5	19.4	36.8	12.8	36.4	
Queue Length 95th (m)	m6.8	81.4		m#56.2	m49.4	m6.5	#58.7	33.8	63.1	25.8	58.0	
Internal Link Dist (m)		256.5			225.1			200.2			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		
Base Capacity (vph)	310	888		257	945	451	190	600	356	301	549	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.76		0.66	0.58	0.15	0.79	0.24	0.65	0.31	0.45	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 23.2 Intersection LOS: C
Intersection Capacity Utilization 98.3% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Vol, veh/h	62	502	5	4	267	58	1	0	12	32	0	37
Future Vol, veh/h	62	502	5	4	267	58	1	0	12	32	0	37
Conflicting Peds, #/hr	51	0	20	20	0	51	6	0	2	2	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	10	0	0	14	7	0	0	0	0	0	8
Mvmt Flow	62	502	5	4	267	58	1	0	12	32	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	376	0	0	527	0	0	978	1033	527	992	1006	353
Stage 1	-	-	-	-	-	-	649	649	-	355	355	-
Stage 2	-	-	-	-	-	-	329	384	-	637	651	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.372
Pot Cap-1 Maneuver	1194	-	-	1050	-	-	232	234	555	227	243	677
Stage 1	-	-	-	-	-	-	462	469	-	666	633	-
Stage 2	-	-	-	-	-	-	688	615	-	469	468	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1138	-	-	1031	-	-	200	201	544	198	209	642
Mov Cap-2 Maneuver	-	-	-	-	-	-	200	201	-	198	209	-
Stage 1	-	-	-	-	-	-	419	425	-	586	601	-
Stage 2	-	-	-	-	-	-	642	584	-	423	424	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	12.7	19.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	480	1138	-	-	1031	-	-	315
HCM Lane V/C Ratio	0.027	0.054	-	-	0.004	-	-	0.219
HCM Control Delay (s)	12.7	8.3	0	-	8.5	-	-	19.6
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.8

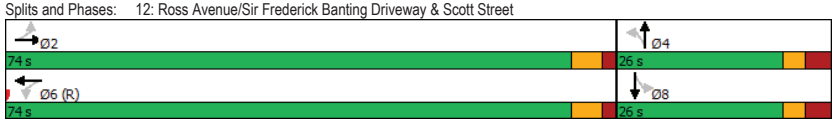
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Volume (vph)	62	502	5	4	267	58	1	0	12	32	0	37
Future Volume (vph)	62	502	5	4	267	58	1	0	12	32	0	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.97			0.97			0.98	
Frt		0.999			0.973			0.875			0.928	
Flt Protected		0.995		0.950				0.996			0.977	
Satd. Flow (prot)	0	1661	0	1729	1530	0	0	1540	0	0	1549	0
Flt Permitted		0.929		0.460				0.978			0.845	
Satd. Flow (perm)	0	1539	0	822	1530	0	0	1511	0	0	1336	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			25			27			37	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		302.8			168.9			203.1			119.6	
Travel Time (s)		21.8			12.2			24.4			14.4	
Confl. Peds. (#/hr)	51		20	20		51	6		2	2		6
Confl. Bikes (#/hr)			82			20			3			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	10%	0%	0%	14%	7%	0%	0%	0%	0%	0%	8%
Adj. Flow (vph)	62	502	5	4	267	58	1	0	12	32	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	569	0	4	325	0	0	13	0	0	69	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		23.9	23.9		23.9	23.9	
Total Split (s)	74.0	74.0		74.0	74.0		26.0	26.0		26.0	26.0	
Total Split (%)	74.0%	74.0%		74.0%	74.0%		26.0%	26.0%		26.0%	26.0%	
Maximum Green (s)	68.5	68.5		68.5	68.5		20.1	20.1		20.1	20.1	
Yellow Time (s)	3.6	3.6		3.6	3.6		2.7	2.7		2.7	2.7	
All-Red Time (s)	1.9	1.9		1.9	1.9		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5		5.5	5.5			5.9			5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	30	30		30	30		30	30		30	30	
Act Effct Green (s)		79.5		79.5	79.5			12.5			12.5	
Actuated g/C Ratio		0.80		0.80	0.80			0.12			0.12	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.47		0.01	0.27			0.06			0.35	
Control Delay		6.6		1.0	1.4			6.6			25.2	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		6.6		1.0	1.4			6.6			25.2	
LOS		A		A	A			A			C	
Approach Delay		6.6			1.4			6.6			25.2	
Approach LOS		A			A			A			C	
Queue Length 50th (m)		42.7		0.0	2.5			0.0			5.3	
Queue Length 95th (m)		64.5		m0.3	4.0			2.8			17.4	
Internal Link Dist (m)		278.8			144.9			179.1			95.6	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		1223		653	1221			325			298	
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		0.47		0.01	0.27			0.04			0.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 90 (90%), Referenced to phase 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 6.2		Intersection LOS: A	
Intersection Capacity Utilization 77.0%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 12: Ross Avenue/Sir Frederick Banting Driveway & Scott Street



Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			↰	↱		✣			✣	
Traffic Vol, veh/h	41	670	10	5	577	56	4	0	13	61	0	84
Future Vol, veh/h	41	670	10	5	577	56	4	0	13	61	0	84
Conflicting Peds, #/hr	42	0	25	25	0	42	3	0	4	4	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	5	10	0	7	4	0	0	0	0	0	2
Mvmt Flow	41	670	10	5	577	56	4	0	13	61	0	84

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	675	0	0	705	0	0	1442	1467	704	1425	1444	650
Stage 1	-	-	-	-	-	-	782	782	-	657	657	-
Stage 2	-	-	-	-	-	-	660	685	-	768	787	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.318
Pot Cap-1 Maneuver	926	-	-	902	-	-	111	129	440	114	133	469
Stage 1	-	-	-	-	-	-	390	408	-	457	465	-
Stage 2	-	-	-	-	-	-	455	451	-	397	406	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	890	-	-	881	-	-	83	111	428	99	115	450
Mov Cap-2 Maneuver	-	-	-	-	-	-	83	111	-	99	115	-
Stage 1	-	-	-	-	-	-	353	369	-	407	444	-
Stage 2	-	-	-	-	-	-	367	431	-	355	367	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	23.1	75.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	216	890	-	-	881	-	-	181
HCM Lane V/C Ratio	0.079	0.046	-	-	0.006	-	-	0.801
HCM Control Delay (s)	23.1	9.2	0	-	9.1	-	-	75.9
HCM Lane LOS	C	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	5.5

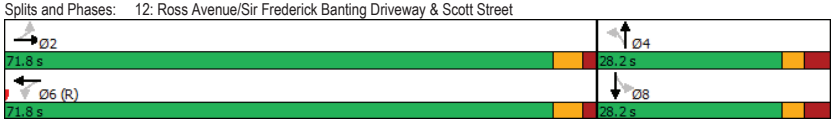
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	670	10	5	577	56	4	0	13	61	0	84
Future Volume (vph)	41	670	10	5	577	56	4	0	13	61	0	84
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.98	0.99			0.97			0.98	
Frt		0.998			0.987			0.897			0.922	
Flt Protected		0.997		0.950				0.988			0.979	
Satd. Flow (prot)	0	1726	0	1729	1662	0	0	1574	0	0	1594	0
Flt Permitted		0.943		0.391				0.940			0.856	
Satd. Flow (perm)	0	1630	0	700	1662	0	0	1495	0	0	1387	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			10			27			64	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		302.8			168.9			203.1			119.6	
Travel Time (s)		21.8			12.2			24.4			14.4	
Confl. Peds. (#/hr)	42		25	25		42	3		4	4		3
Confl. Bikes (#/hr)			16			59						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	5%	10%	0%	7%	4%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	41	670	10	5	577	56	4	0	13	61	0	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	721	0	5	633	0	0	17	0	0	145	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		23.9	23.9		23.9	23.9	
Total Split (s)	71.8	71.8		71.8	71.8		28.2	28.2		28.2	28.2	
Total Split (%)	71.8%	71.8%		71.8%	71.8%		28.2%	28.2%		28.2%	28.2%	
Maximum Green (s)	66.3	66.3		66.3	66.3		22.3	22.3		22.3	22.3	
Yellow Time (s)	3.6	3.6		3.6	3.6		2.7	2.7		2.7	2.7	
All-Red Time (s)	1.9	1.9		1.9	1.9		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5		5.5	5.5			5.9			5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	30	30		30	30		30	30		30	30	
Act Effct Green (s)		75.3		75.3	75.3			13.3			13.3	
Actuated g/C Ratio		0.75		0.75	0.75			0.13			0.13	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.59		0.01	0.50			0.08			0.61	
Control Delay		8.8		0.8	2.5			9.2			33.1	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		8.8		0.8	2.5			9.2			33.1	
LOS		A		A	A			A			C	
Approach Delay		8.8			2.5			9.2			33.1	
Approach LOS		A			A			A			C	
Queue Length 50th (m)		61.0		0.1	4.6			0.0			14.0	
Queue Length 95th (m)		96.8		m0.1	8.9			4.1			32.6	
Internal Link Dist (m)		278.8			144.9			179.1			95.6	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		1228		527	1254			354			359	
Starvation Cap Reductn		0		0	11			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.59		0.01	0.51			0.05			0.40	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 96 (96%), Referenced to phase 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 8.4 Intersection LOS: A
Intersection Capacity Utilization 98.7% ICU Level of Service F
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Ross Avenue/Sir Frederick Banting Driveway & Scott Street



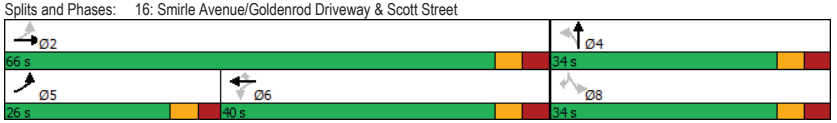
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	446	26	4	253	90	11	0	12	100	0	52
Future Volume (vph)	63	446	26	4	253	90	11	0	12	100	0	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.96		0.85		0.94		0.94		0.95
Frt		0.992				0.850		0.930				0.850
Flt Protected	0.950			0.950				0.977		0.950		
Satd. Flow (prot)	1108	1737	0	1729	1750	1052	0	1580	0	1035	0	955
Flt Permitted	0.540			0.493				0.977		0.742		
Satd. Flow (perm)	595	1737	0	859	1750	894	0	1558	0	756	0	909
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				105		105				105
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	38		28	28		38	12		28	28		12
Confl. Bikes (#/hr)			86			21						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	56%	3%	4%	0%	4%	47%	0%	0%	0%	67%	0%	62%
Adj. Flow (vph)	63	446	26	4	253	90	11	0	12	100	0	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	472	0	4	253	90	0	23	0	100	0	52
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	26.0	66.0		40.0	40.0	40.0	34.0	34.0		34.0		34.0
Total Split (%)	26.0%	66.0%		40.0%	40.0%	40.0%	34.0%	34.0%		34.0%		34.0%
Maximum Green (s)	20.0	59.4		33.4	33.4	33.4	27.4	27.4		27.4		27.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	Max		Max	Max	Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	63.7	64.5		53.5	53.5	53.5		16.4		16.9		16.9
Actuated g/C Ratio	0.71	0.72		0.59	0.59	0.59		0.18		0.19		0.19

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.38		0.01	0.24	0.16		0.06		0.71		0.20
Control Delay	7.6	8.8		14.8	14.6	3.4		0.3		60.1		2.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	7.6	8.8		14.8	14.6	3.4		0.3		60.1		2.0
LOS	A	A		B	B	A		A		E		A
Approach Delay		8.6			11.7			0.3			40.2	
Approach LOS		A			B			A			D	
Queue Length 50th (m)	3.3	32.6		0.3	23.3	0.0		0.0		16.2		0.0
Queue Length 95th (m)	10.3	69.3		2.4	50.4	7.1		0.0		33.0		0.9
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	535	1246		511	1040	574		549		231		351
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.12	0.38		0.01	0.24	0.16		0.04		0.43		0.15

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 90
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 14.0 Intersection LOS: B
Intersection Capacity Utilization 61.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



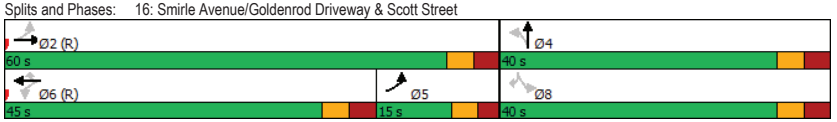
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	446	26	4	253	90	11	0	12	100	0	52
Future Volume (vph)	63	446	26	4	253	90	11	0	12	100	0	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93	0.99		0.97		0.85		0.94		0.94		0.95
Frt		0.992				0.850		0.930				0.850
Flt Protected	0.950			0.950				0.977		0.950		
Satd. Flow (prot)	1108	1737	0	1729	1750	1052	0	1580	0	1035	0	955
Flt Permitted	0.597			0.456				0.977		0.742		
Satd. Flow (perm)	647	1737	0	805	1750	897	0	1558	0	756	0	909
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				111		111				111
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	38		28	28		38	12		28	28		12
Confl. Bikes (#/hr)			86			21						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	56%	3%	4%	0%	4%	47%	0%	0%	0%	67%	0%	62%
Adj. Flow (vph)	63	446	26	4	253	90	11	0	12	100	0	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	472	0	4	253	90	0	23	0	100	0	52
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	15.0	60.0		45.0	45.0	45.0	40.0	40.0		40.0		40.0
Total Split (%)	15.0%	60.0%		45.0%	45.0%	45.0%	40.0%	40.0%		40.0%		40.0%
Maximum Green (s)	9.0	53.4		38.4	38.4	38.4	33.4	33.4		33.4		33.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	72.6	72.1		60.1	60.1	60.1		18.4		19.0		19.0
Actuated g/C Ratio	0.73	0.72		0.60	0.60	0.60		0.18		0.19		0.19

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.12	0.38		0.01	0.24	0.15		0.06		0.70		0.20
Control Delay	4.4	5.0		10.0	10.3	2.7		0.3		60.6		1.7
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	4.4	5.0		10.0	10.3	2.7		0.3		60.6		1.7
LOS	A	A		A	B	A		A		E		A
Approach Delay		5.0			8.3			0.3			40.4	
Approach LOS		A			A			A			D	
Queue Length 50th (m)	1.6	12.6		0.4	32.3	2.1		0.0		17.8		0.0
Queue Length 95th (m)	3.8	44.8		m1.0	37.3	m2.3		0.0		32.3		0.0
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	503	1253		483	1051	583		594		252		377
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.13	0.38		0.01	0.24	0.15		0.04		0.40		0.14

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 11.1 Intersection LOS: B
Intersection Capacity Utilization 61.6% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



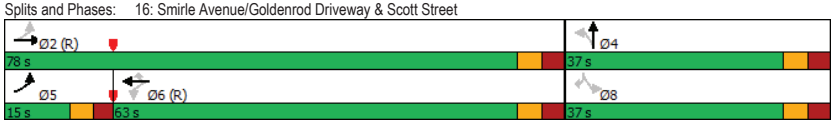
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	679	25	9	535	99	7	0	7	101	0	73
Future Volume (vph)	47	679	25	9	535	99	7	0	7	101	0	73
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99		0.76		0.94		0.95		0.93
Frt		0.995				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1108	1789	0	1729	1784	915	0	1595	0	1253	0	1060
Flt Permitted	0.359			0.388				0.976		0.748		
Satd. Flow (perm)	419	1789	0	697	1784	695	0	1553	0	934	0	984
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				99		91				91
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	55		12	12		55	19		20	20		19
Confl. Bikes (#/hr)			19			62						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	56%	1%	0%	0%	2%	69%	0%	0%	0%	38%	0%	46%
Adj. Flow (vph)	47	679	25	9	535	99	7	0	7	101	0	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	704	0	9	535	99	0	14	0	101	0	73
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	15.0	78.0		63.0	63.0	63.0	37.0	37.0		37.0		37.0
Total Split (%)	13.0%	67.8%		54.8%	54.8%	54.8%	32.2%	32.2%		32.2%		32.2%
Maximum Green (s)	9.0	71.4		56.4	56.4	56.4	30.4	30.4		30.4		30.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	84.1	83.5		72.7	72.7	72.7		18.3		18.3		18.3
Actuated g/C Ratio	0.73	0.73		0.63	0.63	0.63		0.16		0.16		0.16

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.54		0.02	0.47	0.21		0.04		0.68		0.31
Control Delay	6.6	10.1		12.1	15.2	3.7		0.3		66.4		8.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	6.6	10.1		12.1	15.2	3.7		0.3		66.4		8.4
LOS	A	B		B	B	A		A		E		A
Approach Delay		9.9			13.4			0.3			42.1	
Approach LOS		A			B			A			D	
Queue Length 50th (m)	2.9	68.8		0.8	66.4	0.0		0.0		21.0		0.0
Queue Length 95th (m)	7.6	115.3		3.6	111.2	8.4		0.0		37.3		8.4
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	360	1299		440	1128	475		477		246		327
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.13	0.54		0.02	0.47	0.21		0.03		0.41		0.22

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 20 (17%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 68.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



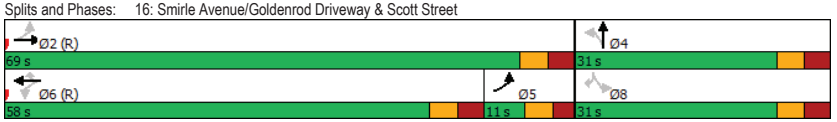
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	679	25	9	535	99	7	0	7	101	0	73
Future Volume (vph)	47	679	25	9	535	99	7	0	7	101	0	73
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	1.00				0.78		0.94		0.95		0.94
Frt		0.995				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1108	1789	0	1729	1784	915	0	1600	0	1253	0	1060
Flt Permitted	0.395			0.312				0.976		0.748		
Satd. Flow (perm)	440	1789	0	568	1784	718	0	1564	0	940	0	991
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				111		111				111
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	55		12	12		55	19		20	20		19
Confl. Bikes (#/hr)			19			62						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	56%	1%	0%	0%	2%	69%	0%	0%	0%	38%	0%	46%
Adj. Flow (vph)	47	679	25	9	535	99	7	0	7	101	0	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	704	0	9	535	99	0	14	0	101	0	73
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	11.0	69.0		58.0	58.0	58.0	31.0	31.0		31.0		31.0
Total Split (%)	11.0%	69.0%		58.0%	58.0%	58.0%	31.0%	31.0%		31.0%		31.0%
Maximum Green (s)	5.0	62.4		51.4	51.4	51.4	24.4	24.4		24.4		24.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	70.1	69.5		62.9	62.9	62.9		17.3		17.3		17.3
Actuated g/C Ratio	0.70	0.70		0.63	0.63	0.63		0.17		0.17		0.17

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.57		0.03	0.48	0.20		0.04		0.62		0.28
Control Delay	5.2	6.3		9.3	9.2	1.8		0.2		53.5		4.9
Queue Delay	0.0	0.2		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	5.2	6.5		9.3	9.2	1.8		0.2		53.5		4.9
LOS	A	A		A	A	A		A		D		A
Approach Delay		6.4			8.1			0.2			33.1	
Approach LOS		A			A			A			C	
Queue Length 50th (m)	1.8	28.6		0.5	38.6	0.0		0.0		17.5		0.0
Queue Length 95th (m)	m3.4	38.3		m1.1	m63.3	m1.5		0.0		33.0		4.6
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	341	1244		357	1121	492		465		229		325
Starvation Cap Reductn	0	90		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.14	0.61		0.03	0.48	0.20		0.03		0.44		0.22

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 98 (98%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 10.0 Intersection LOS: A
Intersection Capacity Utilization 68.6% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



Future (2046) Total



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	6	500	2	37	5	0	0	4	5
Future Volume (vph)	0	0	0	6	500	2	37	5	0	0	4	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt					0.999						0.925	
Flt Protected					0.999			0.958				
Satd. Flow (prot)	0	0	0	0	3417	0	0	1670	0	0	1668	0
Flt Permitted					0.999			0.745				
Satd. Flow (perm)	0	0	0	0	3417	0	0	1299	0	0	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						5	
Link Speed (k/h)		60			60			30			30	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			6.3	
Confl. Peds. (#/hr)									8	8		
Confl. Bikes (#/hr)						1						3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	5%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	6	500	2	37	5	0	0	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	508	0	0	42	0	0	9	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				73.0	73.0		26.0	26.0			26.0	
Total Split (%)				63.5%	63.5%		22.6%	22.6%			22.6%	
Maximum Green (s)				67.3	67.3		15.7	15.7			15.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					67.3			15.7			15.7	
Actuated g/C Ratio					0.68			0.16			0.16	
v/c Ratio					0.22			0.20			0.03	
Control Delay					6.2			25.6			26.7	
Queue Delay					0.0			0.0			0.0	

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2046 Conditions
Weekday AM Peak Hour

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	73.0	16.0
Total Split (%)	14%	63%	14%
Maximum Green (s)	12.0	67.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

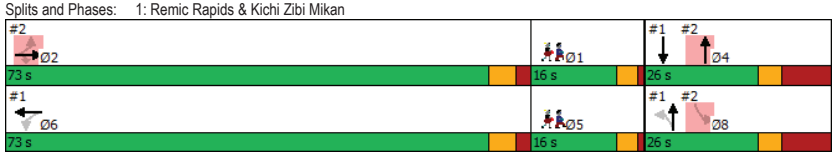
Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					6.2			25.6			26.7	
LOS					A			C			C	
Approach Delay					6.2			25.6			26.7	
Approach LOS					A			C			C	
Queue Length 50th (m)					17.0			4.9			0.7	
Queue Length 95th (m)					23.2			m8.4			5.0	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2323			206			268	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.22			0.20			0.03	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 37.5%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	6	500	2	37	5	0	0	4	5
Future Volume (vph)	0	0	0	6	500	2	37	5	0	0	4	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt					0.999						0.925	
Flt Protected					0.999			0.958				
Satd. Flow (prot)	0	0	0	0	3417	0	0	1670	0	0	1668	0
Flt Permitted					0.999			0.745				
Satd. Flow (perm)	0	0	0	0	3417	0	0	1299	0	0	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						5	
Link Speed (k/h)		60			60			30			30	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			6.3	
Confl. Peds. (#/hr)									8	8		
Confl. Bikes (#/hr)						1						3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	5%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	6	500	2	37	5	0	0	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	508	0	0	42	0	0	9	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				73.0	73.0		26.0	26.0			26.0	
Total Split (%)				63.5%	63.5%		22.6%	22.6%			22.6%	
Maximum Green (s)				67.3	67.3		15.7	15.7			15.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					67.3			15.7			15.7	
Actuated g/C Ratio					0.68			0.16			0.16	
v/c Ratio					0.22			0.20			0.03	
Control Delay					6.2			25.6			26.7	
Queue Delay					0.0			0.0			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	73.0	16.0
Total Split (%)	14%	63%	14%
Maximum Green (s)	12.0	67.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA

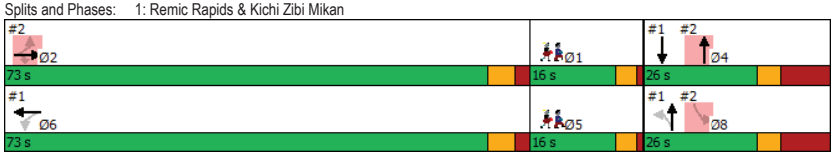
Future Total 2046 OPT
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					6.2			25.6			26.7	
LOS					A			C			C	
Approach Delay					6.2			25.6			26.7	
Approach LOS					A			C			C	
Queue Length 50th (m)					17.0			4.9			0.7	
Queue Length 95th (m)					23.2			m8.4			5.0	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2323			206			268	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.22			0.20			0.03	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 37.5%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



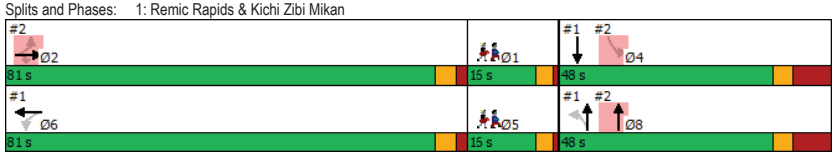
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	12	1536	3	118	3	0	0	3	4
Future Volume (vph)	0	0	0	12	1536	3	118	3	0	0	3	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.99	
Frt											0.923	
Flt Protected								0.954				
Satd. Flow (prot)	0	0	0	0	3458	0	0	1671	0	0	1665	0
Flt Permitted								0.727				
Satd. Flow (perm)	0	0	0	0	3458	0	0	1269	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											4	
Link Speed (k/h)		60			60			30			50	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			3.8	
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	12	1536	3	118	3	0	0	3	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1551	0	0	121	0	0	7	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				81.0	81.0		48.0	48.0			48.0	
Total Split (%)				55.9%	55.9%		33.1%	33.1%			33.1%	
Maximum Green (s)				75.3	75.3		37.7	37.7			37.7	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					75.3			37.7			37.7	
Actuated g/C Ratio					0.58			0.29			0.29	
v/c Ratio					0.77			0.33			0.01	
Control Delay					23.6			16.5			24.1	
Queue Delay					0.0			1.0			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	81.0	16.0
Total Split (%)	11%	56%	11%
Maximum Green (s)	12.0	75.3	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					23.6			17.4			24.1	
LOS					C			B			C	
Approach Delay					23.6			17.4			24.1	
Approach LOS					C			B			C	
Queue Length 50th (m)					149.0			7.5			0.6	
Queue Length 95th (m)					178.0			11.6			4.2	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					2018			370			489	
Starvation Cap Reductn					0			104			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.77			0.45			0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 129			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 23.1		Intersection LOS: C	
Intersection Capacity Utilization 72.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	12	1536	3	118	3	0	0	3	4
Future Volume (vph)	0	0	0	12	1536	3	118	3	0	0	3	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.99	
Frt											0.923	
Flt Protected								0.954				
Satd. Flow (prot)	0	0	0	0	3458	0	0	1671	0	0	1666	0
Flt Permitted								0.727				
Satd. Flow (perm)	0	0	0	0	3458	0	0	1270	0	0	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)											4	
Link Speed (k/h)		60			60			30			50	
Link Distance (m)		143.2			148.1			68.2			52.4	
Travel Time (s)		8.6			8.9			8.2			3.8	
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	12	1536	3	118	3	0	0	3	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1551	0	0	121	0	0	7	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Detector Phase				6	6		8	8			4	
Switch Phase												
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				25.7	25.7		22.3	22.3			22.3	
Total Split (s)				56.2	56.2		37.8	37.8			37.8	
Total Split (%)				51.1%	51.1%		34.4%	34.4%			34.4%	
Maximum Green (s)				50.5	50.5		27.5	27.5			27.5	
Yellow Time (s)				3.7	3.7		3.3	3.3			3.3	
All-Red Time (s)				2.0	2.0		7.0	7.0			7.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.7			10.3			10.3	
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				Max	Max		None	None			Max	
Walk Time (s)				15.0	15.0		7.0	7.0			7.0	
Flash Dont Walk (s)				5.0	5.0		5.0	5.0			5.0	
Pedestrian Calls (#/hr)				30	30		30	30			30	
Act Effct Green (s)					50.5			27.5			27.5	
Actuated g/C Ratio					0.54			0.29			0.29	
v/c Ratio					0.84			0.33			0.01	
Control Delay					23.4			13.7			18.3	
Queue Delay					0.0			0.6			0.0	

Lane Group	Ø1	Ø2	Ø5
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	25.7	16.0
Total Split (s)	16.0	56.2	16.0
Total Split (%)	15%	51%	15%
Maximum Green (s)	12.0	50.5	12.0
Yellow Time (s)	3.0	3.7	3.0
All-Red Time (s)	1.0	2.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	Max	None
Walk Time (s)	7.0	15.0	7.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	30	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

1: Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA

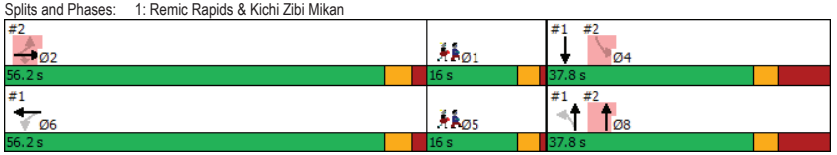
Future Total 2046 OPT
Weekday PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					23.4			14.3			18.3	
LOS					C			B			B	
Approach Delay					23.4			14.3			18.3	
Approach LOS					C			B			B	
Queue Length 50th (m)					117.1			6.1			0.4	
Queue Length 95th (m)					149.0			9.9			3.5	
Internal Link Dist (m)		119.2			124.1			44.2			28.4	
Turn Bay Length (m)												
Base Capacity (vph)					1857			371			490	
Starvation Cap Reductn					0			81			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.84			0.42			0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 94			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 22.7		Intersection LOS: C	
Intersection Capacity Utilization 72.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Remic Rapids & Kichi Zibi Mikan





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1160	78	0	0	0	0	31	32	10	0	0
Future Volume (vph)	3	1160	78	0	0	0	0	31	32	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					0.99				
Frt			0.850					0.931				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1459	0	0	0	0	1634	0	1729	0	0
Flt Permitted										0.716		
Satd. Flow (perm)	0	3458	1426	0	0	0	0	1634	0	1303	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107					32				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	6%	0%	0%	0%	0%	6%	0%	0%	0%	0%
Adj. Flow (vph)	3	1160	78	0	0	0	0	31	32	10	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1163	78	0	0	0	0	63	0	10	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		67.3	67.3					15.7		15.7		
Actuated g/C Ratio		0.68	0.68					0.16		0.16		

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2046 OPT
Weekday AM Peak Hour

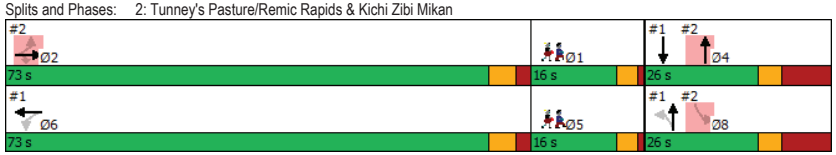
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.49	0.08					0.22		0.05		
Control Delay		8.5	0.7					23.3		32.9		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		8.5	0.7					23.3		32.9		
LOS		A	A					C		C		
Approach Delay		8.0						23.3			32.9	
Approach LOS		A						C			C	
Queue Length 50th (m)		50.1	0.0					5.2		1.7		
Queue Length 95th (m)		63.4	2.4					16.7		4.9		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2350	1003					286		206		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.49	0.08					0.22		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	316	64	0	0	0	0	103	21	15	0	0
Future Volume (vph)	18	316	64	0	0	0	0	103	21	15	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		1.00		
Frt			0.850					0.977				
Flt Protected		0.997								0.950		
Satd. Flow (prot)	0	3384	1473	0	0	0	0	1702	0	1729	0	0
Flt Permitted		0.997								0.677		
Satd. Flow (perm)	0	3384	1473	0	0	0	0	1702	0	1229	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112					9				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	5%	0%	0%	0%	0%	5%	0%	0%	0%	0%
Adj. Flow (vph)	18	316	64	0	0	0	0	103	21	15	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	334	64	0	0	0	0	124	0	15	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						8				
Permitted Phases	2		2							4		
Detector Phase	2	2	2					8		4		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	56.2	56.2	56.2					37.8		37.8		
Total Split (%)	51.1%	51.1%	51.1%					34.4%		34.4%		
Maximum Green (s)	50.5	50.5	50.5					27.5		27.5		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					None		Max		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		50.5	50.5					27.5		27.5		
Actuated g/C Ratio		0.54	0.54					0.29		0.29		

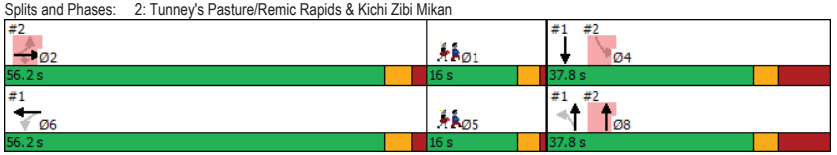
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	56.2
Total Split (%)	15%	15%	51%
Maximum Green (s)	12.0	12.0	50.5
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2046 OPT
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.18	0.08					0.25		0.04		
Control Delay		11.5	0.7					25.1		24.4		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		11.5	0.7					25.1		24.4		
LOS		B	A					C		C		
Approach Delay		9.8						25.1			24.4	
Approach LOS		A						C			C	
Queue Length 50th (m)		15.4	0.0					15.8		2.6		
Queue Length 95th (m)		22.5	1.5					29.7		m3.6		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		1818	843					504		359		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.18	0.08					0.25		0.04		

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 94			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 13.7		Intersection LOS: B	
Intersection Capacity Utilization 31.0%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1160	78	0	0	0	0	31	32	10	0	0
Future Volume (vph)	3	1160	78	0	0	0	0	31	32	10	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98					0.99				
Frt			0.850					0.931				
Flt Protected										0.950		
Satd. Flow (prot)	0	3458	1459	0	0	0	0	1634	0	1729	0	0
Flt Permitted										0.716		
Satd. Flow (perm)	0	3458	1426	0	0	0	0	1634	0	1303	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107					32				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)									1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	6%	0%	0%	0%	0%	6%	0%	0%	0%	0%
Adj. Flow (vph)	3	1160	78	0	0	0	0	31	32	10	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1163	78	0	0	0	0	63	0	10	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						4				
Permitted Phases	2		2							8		
Detector Phase	2	2	2					4		8		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	73.0	73.0	73.0					26.0		26.0		
Total Split (%)	63.5%	63.5%	63.5%					22.6%		22.6%		
Maximum Green (s)	67.3	67.3	67.3					15.7		15.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					Max		None		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		67.3	67.3					15.7		15.7		
Actuated g/C Ratio		0.68	0.68					0.16		0.16		

2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan
Tunney's Pasture TIA
Future Total 2046 Conditions
Weekday AM Peak Hour

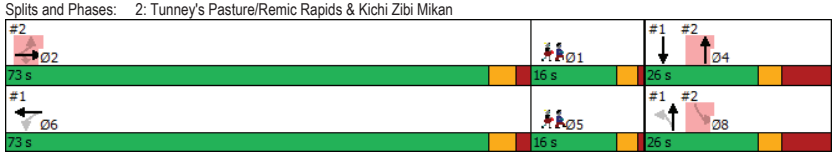
Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	73.0
Total Split (%)	14%	14%	63%
Maximum Green (s)	12.0	12.0	67.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.49	0.08					0.22		0.05		
Control Delay		8.5	0.7					23.3		32.9		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		8.5	0.7					23.3		32.9		
LOS		A	A					C		C		
Approach Delay		8.0						23.3			32.9	
Approach LOS		A						C			C	
Queue Length 50th (m)		50.1	0.0					5.2		1.7		
Queue Length 95th (m)		63.4	2.4					16.7		4.9		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		2350	1003					286		206		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.49	0.08					0.22		0.05		

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 99			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



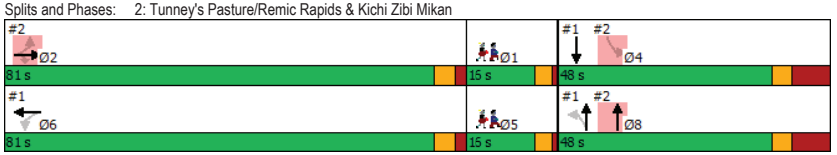
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	316	64	0	0	0	0	103	21	15	0	0
Future Volume (vph)	18	316	64	0	0	0	0	103	21	15	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		90.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		1.00		
Frt			0.850					0.977				
Flt Protected		0.997								0.950		
Satd. Flow (prot)	0	3384	1473	0	0	0	0	1702	0	1729	0	0
Flt Permitted		0.997								0.677		
Satd. Flow (perm)	0	3384	1473	0	0	0	0	1702	0	1228	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85					7				
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		142.7			164.5			84.3			68.2	
Travel Time (s)		8.6			9.9			10.1			6.1	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									2			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	5%	0%	0%	0%	0%	5%	0%	0%	0%	0%
Adj. Flow (vph)	18	316	64	0	0	0	0	103	21	15	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	334	64	0	0	0	0	124	0	15	0	0
Turn Type	Perm	NA	Perm					NA		Perm		
Protected Phases		2						8				
Permitted Phases	2		2							4		
Detector Phase	2	2	2					8		4		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0		5.0		
Minimum Split (s)	25.7	25.7	25.7					22.3		22.3		
Total Split (s)	81.0	81.0	81.0					48.0		48.0		
Total Split (%)	55.9%	55.9%	55.9%					33.1%		33.1%		
Maximum Green (s)	75.3	75.3	75.3					37.7		37.7		
Yellow Time (s)	3.7	3.7	3.7					3.3		3.3		
All-Red Time (s)	2.0	2.0	2.0					7.0		7.0		
Lost Time Adjust (s)		0.0	0.0					0.0		0.0		
Total Lost Time (s)		5.7	5.7					10.3		10.3		
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0		
Recall Mode	Max	Max	Max					None		Max		
Walk Time (s)	15.0	15.0	15.0					7.0		7.0		
Flash Dont Walk (s)	5.0	5.0	5.0					5.0		5.0		
Pedestrian Calls (#/hr)	30	30	30					30		30		
Act Effct Green (s)		75.3	75.3					37.7		37.7		
Actuated g/C Ratio		0.58	0.58					0.29		0.29		

Lane Group	Ø1	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (m)			
Storage Lanes			
Taper Length (m)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	25.7
Total Split (s)	16.0	16.0	81.0
Total Split (%)	11%	11%	56%
Maximum Green (s)	12.0	12.0	75.3
Yellow Time (s)	3.0	3.0	3.7
All-Red Time (s)	1.0	1.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	Max
Walk Time (s)	7.0	7.0	15.0
Flash Dont Walk (s)	5.0	5.0	5.0
Pedestrian Calls (#/hr)	0	0	30
Act Effct Green (s)			
Actuated g/C Ratio			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.17	0.07					0.25		0.04		
Control Delay		12.7	1.4					34.4		38.1		
Queue Delay		0.0	0.0					0.0		0.0		
Total Delay		12.7	1.4					34.4		38.1		
LOS		B	A					C		D		
Approach Delay		10.9						34.4			38.1	
Approach LOS		B						C			D	
Queue Length 50th (m)		19.6	0.0					22.6		3.6		
Queue Length 95th (m)		27.1	3.7					39.0		m5.5		
Internal Link Dist (m)		118.7			140.5			60.3			44.2	
Turn Bay Length (m)			90.0									
Base Capacity (vph)		1975	895					502		358		
Starvation Cap Reductn		0	0					0		0		
Spillback Cap Reductn		0	0					0		0		
Storage Cap Reductn		0	0					0		0		
Reduced v/c Ratio		0.17	0.07					0.25		0.04		

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 129			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 17.1		Intersection LOS: B	
Intersection Capacity Utilization 31.0%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Tunney's Pasture/Remic Rapids & Kichi Zibi Mikan



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	21	0	210	608	23
Future Vol, veh/h	0	21	0	210	608	23
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	5	0	0	0	0
Mvmt Flow	0	21	0	210	608	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	627	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.25	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.345	-	-	-	-
Pot Cap-1 Maneuver	0	478	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	475	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	475	-	-
HCM Lane V/C Ratio	-	0.044	-	-
HCM Control Delay (s)	-	12.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	31	0	816	269	25
Future Vol, veh/h	0	31	0	816	269	25
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	31	0	816	269	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	289	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	755	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	750	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	750	-	-
HCM Lane V/C Ratio	-	0.041	-	-
HCM Control Delay (s)	-	10	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	13	198	5	26	593
Future Vol, veh/h	6	13	198	5	26	593
Conflicting Peds, #/hr	4	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	5	0	0	2
Mvmt Flow	6	13	198	5	26	593

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	850	201	0	0	203	0
Stage 1	201	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	334	845	-	-	1381	-
Stage 1	838	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	323	845	-	-	1381	-
Mov Cap-2 Maneuver	323	-	-	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	507	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	559	1381	-
HCM Lane V/C Ratio	-	-	0.034	0.019	-
HCM Control Delay (s)	-	-	11.7	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	9	794	9	15	293
Future Vol, veh/h	7	9	794	9	15	293
Conflicting Peds, #/hr	9	5	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	2
Mvmt Flow	7	9	794	9	15	293

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1132	805	0	0	804	0
Stage 1	800	-	-	-	-	-
Stage 2	332	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	227	386	-	-	829	-
Stage 1	446	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	220	384	-	-	828	-
Mov Cap-2 Maneuver	220	-	-	-	-	-
Stage 1	446	-	-	-	-	-
Stage 2	709	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.1	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	290	828	-
HCM Lane V/C Ratio	-	-	0.055	0.018	-
HCM Control Delay (s)	-	-	18.1	9.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	46	67	84	165	524	60
Future Vol, veh/h	46	67	84	165	524	60
Conflicting Peds, #/hr	4	3	40	0	0	40
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	12	4	2	1	3
Mvmt Flow	46	67	84	165	524	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	931	597	624	0	-	0
Stage 1	594	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Critical Hdwy	6.44	6.32	4.14	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.408	2.236	-	-	-
Pot Cap-1 Maneuver	294	485	948	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	245	466	913	-	-	-
Mov Cap-2 Maneuver	245	-	-	-	-	-
Stage 1	475	-	-	-	-	-
Stage 2	692	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.7	3.2	0
HCM LOS	C		

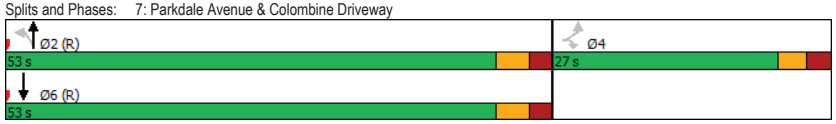
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	913	-	341	-	-
HCM Lane V/C Ratio	0.092	-	0.331	-	-
HCM Control Delay (s)	9.3	0	20.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.4	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	46	67	84	165	524	60
Future Volume (vph)	46	67	84	165	524	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0	0.0	45.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97	0.98		0.99	
Frt		0.850			0.986	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1662	1381	1662	1784	1756	0
Flt Permitted	0.950		0.411			
Satd. Flow (perm)	1648	1345	701	1784	1756	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		67			13	
Link Speed (k/h)	30			40	40	
Link Distance (m)	174.2			99.7	87.5	
Travel Time (s)	20.9			9.0	7.9	
Confl. Peds. (#/hr)	4	3	40			40
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	12%	4%	2%	1%	3%
Adj. Flow (vph)	46	67	84	165	524	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	67	84	165	584	0
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.2	23.2	27.5	27.5	27.5	
Total Split (s)	27.0	27.0	53.0	53.0	53.0	
Total Split (%)	33.8%	33.8%	66.3%	66.3%	66.3%	
Maximum Green (s)	21.8	21.8	47.5	47.5	47.5	
Yellow Time (s)	2.7	2.7	3.2	3.2	3.2	
All-Red Time (s)	2.5	2.5	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	30	30	30	30	30	
Act Effct Green (s)	11.1	11.1	61.4	61.4	61.4	
Actuated g/C Ratio	0.14	0.14	0.77	0.77	0.77	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
v/c Ratio	0.20	0.27	0.16	0.12	0.43	
Control Delay	29.7	10.1	5.3	4.1	6.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.7	10.1	5.3	4.1	6.4	
LOS	C	B	A	A	A	
Approach Delay	18.1			4.5	6.4	
Approach LOS	B			A	A	
Queue Length 50th (m)	6.6	0.0	3.0	5.2	22.0	
Queue Length 95th (m)	13.8	9.3	9.5	15.5	63.8	
Internal Link Dist (m)	150.2			75.7	63.5	
Turn Bay Length (m)	55.0		45.0			
Base Capacity (vph)	449	415	538	1369	1351	
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	0.10	0.16	0.16	0.12	0.43	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 20 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 56.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Parkdale Avenue & Colombine Driveway



Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	96	87	102	654	201	89
Future Vol, veh/h	96	87	102	654	201	89
Conflicting Peds, #/hr	16	0	25	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	5	2	0	1	0
Mvmt Flow	96	87	102	654	201	89

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1145	271	315	0	-	0
Stage 1	271	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Critical Hdwy	6.4	6.25	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.345	2.218	-	-	-
Pot Cap-1 Maneuver	223	761	1245	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	185	743	1216	-	-	-
Mov Cap-2 Maneuver	185	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	403	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37	1.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1216	-	288	-	-
HCM Lane V/C Ratio	0.084	-	0.635	-	-
HCM Control Delay (s)	8.2	0	37	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0.3	-	4	-	-

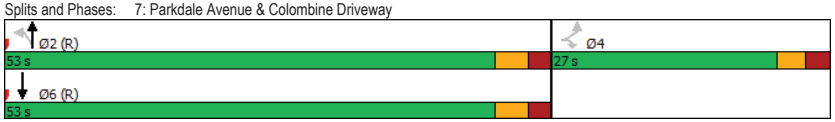
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	96	87	102	654	201	89
Future Volume (vph)	96	87	102	654	201	89
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0	0.0	45.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		0.97		0.98	
Frt		0.850			0.959	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1729	1473	1695	1820	1699	0
Flt Permitted	0.950		0.582			
Satd. Flow (perm)	1668	1473	1007	1820	1699	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		87			49	
Link Speed (k/h)	30			40	40	
Link Distance (m)	174.2			99.7	87.5	
Travel Time (s)	20.9			9.0	7.9	
Confl. Peds. (#/hr)	16		25			25
Confl. Bikes (#/hr)						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	5%	2%	0%	1%	0%
Adj. Flow (vph)	96	87	102	654	201	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	87	102	654	290	0
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.2	23.2	27.5	27.5	27.5	
Total Split (s)	27.0	27.0	53.0	53.0	53.0	
Total Split (%)	33.8%	33.8%	66.3%	66.3%	66.3%	
Maximum Green (s)	21.8	21.8	47.5	47.5	47.5	
Yellow Time (s)	2.7	2.7	3.2	3.2	3.2	
All-Red Time (s)	2.5	2.5	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	15.0	15.0	15.0	
Pedestrian Calls (#/hr)	30	30	30	30	30	
Act Effct Green (s)	12.0	12.0	60.6	60.6	60.6	
Actuated g/C Ratio	0.15	0.15	0.76	0.76	0.76	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
v/c Ratio	0.38	0.29	0.13	0.47	0.22	
Control Delay	33.2	9.1	3.5	4.3	4.3	
Queue Delay	0.0	0.0	0.0	0.2	0.0	
Total Delay	33.2	9.1	3.5	4.5	4.3	
LOS	C	A	A	A	A	
Approach Delay	21.7			4.3	4.3	
Approach LOS	C			A	A	
Queue Length 50th (m)	13.8	0.0	2.5	17.4	8.7	
Queue Length 95th (m)	24.5	10.6	m7.4	35.1	23.7	
Internal Link Dist (m)	150.2			75.7	63.5	
Turn Bay Length (m)	55.0		45.0			
Base Capacity (vph)	454	464	762	1378	1299	
Starvation Cap Reductn	0	0	0	187	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.21	0.19	0.13	0.55	0.22	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 6.9 Intersection LOS: A
Intersection Capacity Utilization 50.9% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Parkdale Avenue & Colombine Driveway



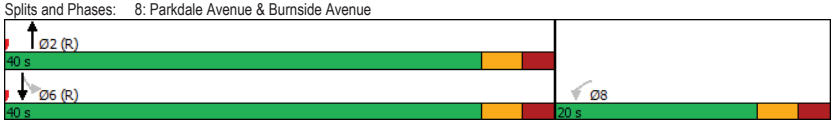
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	52	96	172	53	249	375
Future Volume (vph)	52	96	172	53	249	375
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.91		0.98			0.99
Frt	0.912		0.968			
Flt Protected	0.983					0.980
Satd. Flow (prot)	1508	0	1625	0	0	1752
Flt Permitted	0.983					0.771
Satd. Flow (perm)	1482	0	1625	0	0	1359
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	96		44			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	23	46		33	33	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	6%	9%	0%	3%
Adj. Flow (vph)	52	96	172	53	249	375
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	225	0	0	624
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	20.0		40.0		40.0	40.0
Total Split (%)	33.3%		66.7%		66.7%	66.7%
Maximum Green (s)	14.6		34.6		34.6	34.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		41.8			41.8
Actuated g/C Ratio	0.18		0.70			0.70
v/c Ratio	0.43		0.20			0.66
Control Delay	12.7		4.8			13.2
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	12.7		4.8			13.2
LOS	B		A			B
Approach Delay	12.7		4.8			13.2
Approach LOS	B		A			B
Queue Length 50th (m)	4.6		8.1			45.9
Queue Length 95th (m)	17.0		16.5			#106.4
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	433		1146			947
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.34		0.20			0.66

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 18 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 11.2 Intersection LOS: B
Intersection Capacity Utilization 78.1% 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.

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue



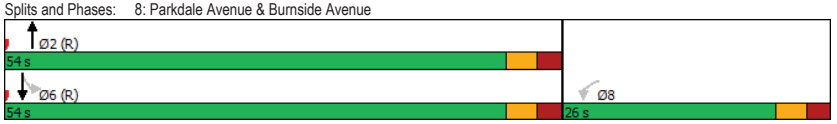
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	52	96	172	53	249	375
Future Volume (vph)	52	96	172	53	249	375
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88		0.98			0.98
Frt	0.912		0.968			
Flt Protected	0.983					0.980
Satd. Flow (prot)	1474	0	1619	0	0	1752
Flt Permitted	0.983					0.771
Satd. Flow (perm)	1440	0	1619	0	0	1353
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	96		35			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	23	46		33	33	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	6%	9%	0%	3%
Adj. Flow (vph)	52	96	172	53	249	375
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	225	0	0	624
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	26.0		54.0		54.0	54.0
Total Split (%)	32.5%		67.5%		67.5%	67.5%
Maximum Green (s)	20.6		48.6		48.6	48.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.8		58.4			58.4
Actuated g/C Ratio	0.14		0.73			0.73
v/c Ratio	0.53		0.19			0.63
Control Delay	19.8		2.2			7.4
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	19.8		2.2			7.4
LOS	B		A			A
Approach Delay	19.8		2.2			7.4
Approach LOS	B		A			A
Queue Length 50th (m)	6.9		1.1			18.9
Queue Length 95th (m)	22.6		2.0			29.9
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	442		1191			987
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.33		0.19			0.63

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 16 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 8.0 Intersection LOS: A
Intersection Capacity Utilization 78.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue



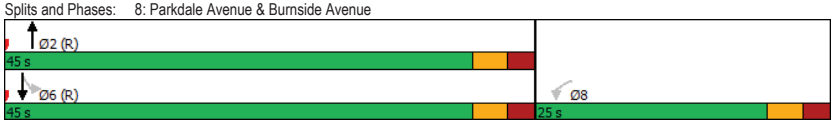
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	232	596	57	78	267
Future Volume (vph)	49	232	596	57	78	267
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88		1.00			1.00
Frt	0.889		0.988			
Flt Protected	0.991					0.989
Satd. Flow (prot)	1418	0	1789	0	0	1759
Flt Permitted	0.991					0.785
Satd. Flow (perm)	1405	0	1789	0	0	1394
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	232		11			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	21	46		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	0%	0%	2%	0%	3%
Adj. Flow (vph)	49	232	596	57	78	267
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	653	0	0	345
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	25.0		45.0		45.0	45.0
Total Split (%)	35.7%		64.3%		64.3%	64.3%
Maximum Green (s)	19.6		39.6		39.6	39.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	11.2		48.0			48.0
Actuated g/C Ratio	0.16		0.69			0.69
v/c Ratio	0.67		0.53			0.36
Control Delay	14.5		8.4			7.0
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	14.5		8.4			7.0
LOS	B		A			A
Approach Delay	14.5		8.4			7.0
Approach LOS	B		A			A
Queue Length 50th (m)	5.4		40.0			18.3
Queue Length 95th (m)	24.1		75.6			37.2
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	560		1229			955
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.50		0.53			0.36

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 23 (33%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 9.4 Intersection LOS: A
Intersection Capacity Utilization 90.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue

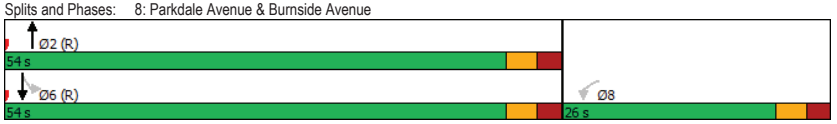


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	232	596	57	78	267
Future Volume (vph)	49	232	596	57	78	267
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.87		1.00			1.00
Frt	0.889		0.988			
Flt Protected	0.991					0.989
Satd. Flow (prot)	1397	0	1788	0	0	1759
Flt Permitted	0.991					0.781
Satd. Flow (perm)	1382	0	1788	0	0	1387
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	232		11			
Link Speed (k/h)	40		40			40
Link Distance (m)	199.2		180.1			99.7
Travel Time (s)	17.9		16.2			9.0
Confl. Peds. (#/hr)	21	46		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	0%	0%	2%	0%	3%
Adj. Flow (vph)	49	232	596	57	78	267
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	653	0	0	345
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.4		26.4		10.4	10.4
Total Split (s)	26.0		54.0		54.0	54.0
Total Split (%)	32.5%		67.5%		67.5%	67.5%
Maximum Green (s)	20.6		48.6		48.6	48.6
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.4		2.4		2.4	2.4
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.4		5.4			5.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		6.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	11.5		57.7			57.7
Actuated g/C Ratio	0.14		0.72			0.72
v/c Ratio	0.71		0.51			0.34
Control Delay	17.4		4.1			5.2
Queue Delay	0.0		0.0			0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	17.4		4.2			5.6
LOS	B		A			A
Approach Delay	17.4		4.2			5.6
Approach LOS	B		A			A
Queue Length 50th (m)	6.5		13.0			13.0
Queue Length 95th (m)	27.2		17.6			28.8
Internal Link Dist (m)	175.2		156.1			75.7
Turn Bay Length (m)						
Base Capacity (vph)	528		1292			1000
Starvation Cap Reductn	0		5			271
Spillback Cap Reductn	0		5			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.53		0.51			0.47

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 16 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 7.5		Intersection LOS: A	
Intersection Capacity Utilization 90.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Parkdale Avenue & Burnside Avenue



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	10	253	29	3	409
Future Volume (vph)	31	10	253	29	3	409
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		1.00			1.00
Frt	0.967		0.986			
Flt Protected	0.964					
Satd. Flow (prot)	1612	0	1720	0	0	1750
Flt Permitted	0.964					0.998
Satd. Flow (perm)	1541	0	1720	0	0	1747
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	10		17			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	27	4		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	0%	4%	3%	0%	4%
Adj. Flow (vph)	31	10	253	29	3	409
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	282	0	0	412
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	19.2		41.0		41.0	41.0
Total Split (%)	31.9%		68.1%		68.1%	68.1%
Maximum Green (s)	14.0		35.9		35.9	35.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		45.6			45.6
Actuated g/C Ratio	0.18		0.76			0.76
v/c Ratio	0.15		0.22			0.31
Control Delay	16.6		4.9			5.8
Queue Delay	0.0		0.0			0.0

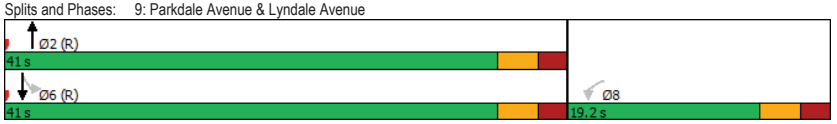
9: Parkdale Avenue & Lyndale Avenue
Tunney's Pasture TIA

Future Total 2046 Conditions
Weekday AM Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	16.6		4.9			5.8
LOS	B		A			A
Approach Delay	16.6		4.9			5.8
Approach LOS	B		A			A
Queue Length 50th (m)	2.7		12.1			20.8
Queue Length 95th (m)	9.1		22.2			35.7
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	366		1307			1323
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.11		0.22			0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 60.2			
Actuated Cycle Length: 60.2			
Offset: 18 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 38.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue



Lanes, Volumes, Timings
BD

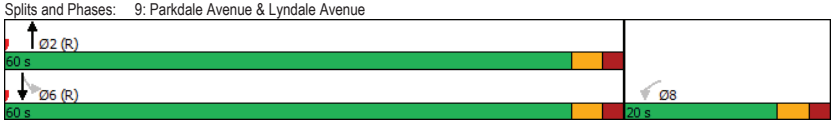
Synchro 11 Report
June 2025

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	10	253	29	3	409
Future Volume (vph)	31	10	253	29	3	409
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93		1.00			1.00
Frt	0.967		0.986			
Flt Protected	0.964					
Satd. Flow (prot)	1611	0	1719	0	0	1750
Flt Permitted	0.964					0.999
Satd. Flow (perm)	1517	0	1719	0	0	1749
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	10		16			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	27	4		12	12	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	0%	4%	3%	0%	4%
Adj. Flow (vph)	31	10	253	29	3	409
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	282	0	0	412
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	20.0		60.0		60.0	60.0
Total Split (%)	25.0%		75.0%		75.0%	75.0%
Maximum Green (s)	14.8		54.9		54.9	54.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.7		62.2			62.2
Actuated g/C Ratio	0.13		0.78			0.78
v/c Ratio	0.19		0.21			0.30
Control Delay	25.5		3.9			5.5
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	25.5		3.9			5.5
LOS	C		A			A
Approach Delay	25.5		3.9			5.5
Approach LOS	C		A			A
Queue Length 50th (m)	4.0		12.2			19.7
Queue Length 95th (m)	12.3		20.4			39.9
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	288		1339			1359
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.14		0.21			0.30

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.30			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 38.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue

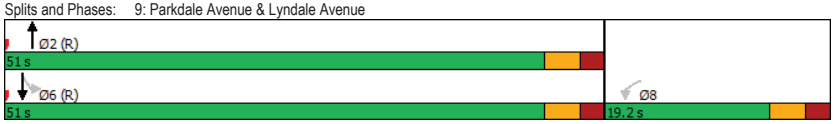


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	6	600	34	9	390
Future Volume (vph)	18	6	600	34	9	390
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		1.00			1.00
Frt	0.966		0.993			
Flt Protected	0.964					0.999
Satd. Flow (prot)	1682	0	1801	0	0	1766
Flt Permitted	0.964					0.988
Satd. Flow (perm)	1619	0	1801	0	0	1746
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		8			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	20	4		22	22	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	18	6	600	34	9	390
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	634	0	0	399
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	19.2		51.0		51.0	51.0
Total Split (%)	27.4%		72.6%		72.6%	72.6%
Maximum Green (s)	14.0		45.9		45.9	45.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		55.6			55.6
Actuated g/C Ratio	0.15		0.79			0.79
v/c Ratio	0.10		0.44			0.29
Control Delay	20.0		6.1			4.8
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	20.0		6.1			4.8
LOS	B		A			A
Approach Delay	20.0		6.1			4.8
Approach LOS	B		A			A
Queue Length 50th (m)	1.9		37.3			20.0
Queue Length 95th (m)	7.5		59.8			32.9
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	327		1428			1383
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.07		0.44			0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 70.2			
Actuated Cycle Length: 70.2			
Offset: 18 (26%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 5.9		Intersection LOS: A	
Intersection Capacity Utilization 49.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue

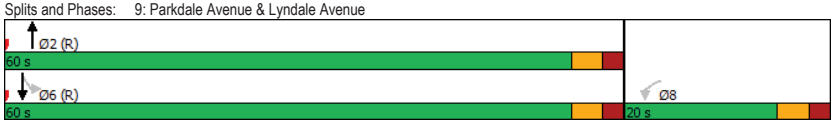


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	6	600	34	9	390
Future Volume (vph)	18	6	600	34	9	390
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		1.00			1.00
Frt	0.966		0.993			
Flt Protected	0.964					0.999
Satd. Flow (prot)	1682	0	1801	0	0	1766
Flt Permitted	0.964					0.988
Satd. Flow (perm)	1610	0	1801	0	0	1746
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		8			
Link Speed (k/h)	40		40			40
Link Distance (m)	167.5		221.0			180.1
Travel Time (s)	15.1		19.9			16.2
Confl. Peds. (#/hr)	20	4		22	22	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	18	6	600	34	9	390
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	634	0	0	399
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	19.2		25.1		10.1	10.1
Total Split (s)	20.0		60.0		60.0	60.0
Total Split (%)	25.0%		75.0%		75.0%	75.0%
Maximum Green (s)	14.8		54.9		54.9	54.9
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.2		2.1		2.1	2.1
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.2		5.1			5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		15.0			
Flash Dont Walk (s)	7.0		5.0			
Pedestrian Calls (#/hr)	50		50			
Act Effct Green (s)	10.6		65.4			65.4
Actuated g/C Ratio	0.13		0.82			0.82
v/c Ratio	0.11		0.43			0.28
Control Delay	24.2		5.3			3.6
Queue Delay	0.0		0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	24.2		5.3			3.6
LOS	C		A			A
Approach Delay	24.2		5.3			3.6
Approach LOS	C		A			A
Queue Length 50th (m)	2.3		37.3			19.6
Queue Length 95th (m)	8.5		57.6			24.7
Internal Link Dist (m)	143.5		197.0			156.1
Turn Bay Length (m)						
Base Capacity (vph)	302		1474			1427
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.08		0.43			0.28

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 49.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Parkdale Avenue & Lyndale Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	411	67	39	198	16	48	198	70	61	334	197
Future Volume (vph)	118	411	67	39	198	16	48	198	70	61	334	197
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.91		0.91	0.97		0.87		0.97		0.95		0.94
Frt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1679	1717	1129	1729	1733	1311	0	1641	0	1695	1802	1517
Flt Permitted	0.633			0.425				0.899		0.507		
Satd. Flow (perm)	1023	1717	1031	753	1733	1137	0	1482	0	863	1802	1421
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			107		18				180
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			279.3			221.0	
Travel Time (s)		17.9			21.6			25.1			19.9	
Confl. Peds. (#/hr)	63		33	33		63	23		45	45		23
Confl. Bikes (#/hr)			9									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	6%	37%	0%	5%	18%	10%	4%	1%	2%	1%	2%
Adj. Flow (vph)	118	411	67	39	198	16	48	198	70	61	334	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	411	67	39	198	16	0	316	0	61	334	197
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	32.1	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	46.3%	46.3%	46.3%	46.3%	46.3%	46.3%	45.3%	45.3%		45.3%	45.3%	45.3%
Maximum Green (s)	37.9	37.9	37.9	37.9	37.9	37.9	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	45.9	45.9	45.9	45.9	45.9	45.9		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.39		0.39	0.39	0.39

10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA

Future Total 2046 Conditions
Weekday AM Peak Hour

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	7.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
BD

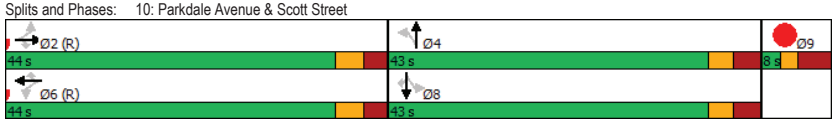
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.24	0.50	0.12	0.11	0.24	0.03		0.54		0.18	0.48	0.30
Control Delay	13.8	16.5	1.8	14.5	15.3	0.1		25.5		21.2	24.8	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	13.8	16.5	1.8	14.5	15.3	0.1		25.5		21.2	24.8	5.2
LOS	B	B	A	B	B	A		C		C	C	A
Approach Delay		14.3			14.2			25.5			17.9	
Approach LOS		B			B			C			B	
Queue Length 50th (m)	8.3	38.4	0.0	3.7	20.3	0.0		41.5		7.3	45.2	1.9
Queue Length 95th (m)	m17.3	49.3	m0.9	9.5	33.8	0.0		67.2		16.3	69.6	15.1
Internal Link Dist (m)		225.1			275.4			255.3			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	494	829	553	363	837	604		583		333	696	659
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.24	0.50	0.12	0.11	0.24	0.03		0.54		0.18	0.48	0.30

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 91 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 17.5 Intersection LOS: B
Intersection Capacity Utilization 90.9% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	411	67	39	198	16	48	198	70	61	334	197
Future Volume (vph)	118	411	67	39	198	16	48	198	70	61	334	197
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.91		0.91	0.97		0.86		0.97		0.95		0.93
Frt			0.850			0.850		0.970				0.850
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1679	1717	1129	1729	1733	1311	0	1640	0	1695	1802	1517
Flt Permitted	0.625			0.409				0.900		0.517		
Satd. Flow (perm)	1006	1717	1027	724	1733	1129	0	1482	0	878	1802	1418
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			101			101		18				180
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			265.8			221.0	
Travel Time (s)		17.9			21.6			23.9			19.9	
Confl. Peds. (#/hr)	63		33	33		63	23		45	45		23
Confl. Bikes (#/hr)			9									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	6%	37%	0%	5%	18%	10%	4%	1%	2%	1%	2%
Adj. Flow (vph)	118	411	67	39	198	16	48	198	70	61	334	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	411	67	39	198	16	0	316	0	61	334	197
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	2	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	32.1	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	48.0	48.0		48.0	48.0	48.0
Total Split (%)	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	48.0%	48.0%		48.0%	48.0%	48.0%
Maximum Green (s)	37.9	37.9	37.9	37.9	37.9	37.9	41.7	41.7		41.7	41.7	41.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	45.9	45.9	45.9	45.9	45.9	45.9		41.7		41.7	41.7	41.7
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.46	0.46		0.42		0.42	0.42	0.42

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

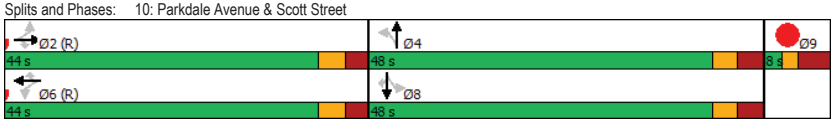
10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA
Future Total 2046 OPT MOD
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.26	0.52	0.13	0.12	0.25	0.03		0.50		0.17	0.44	0.28
Control Delay	16.3	20.1	1.7	16.7	17.6	0.1		23.6		19.9	23.2	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	16.3	20.1	1.7	16.7	17.6	0.1		23.6		19.9	23.2	4.8
LOS	B	C	A	B	B	A		C		B	C	A
Approach Delay		17.2			16.4			23.6			16.8	
Approach LOS		B			B			C			B	
Queue Length 50th (m)	14.7	59.6	0.7	4.2	22.7	0.0		41.5		7.3	45.2	1.9
Queue Length 95th (m)	m16.7	51.7	m1.3	10.6	37.3	0.0		66.4		15.9	68.9	14.7
Internal Link Dist (m)		225.1			275.4			241.8			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	461	788	526	332	795	572		628		366	751	696
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.26	0.52	0.13	0.12	0.25	0.03		0.50		0.17	0.44	0.28

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 36 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 18.1 Intersection LOS: B
Intersection Capacity Utilization 90.9% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	291	339	89	74	381	26	59	345	53	32	242	137
Future Volume (vph)	291	339	89	74	381	26	59	345	53	32	242	137
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		0.83	0.91		0.85		0.98		0.96		0.91
Frt			0.850			0.850		0.984				0.850
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1729	1784	1446	1712	1750	1547	0	1682	0	1729	1784	1532
Flt Permitted	0.237			0.557				0.922		0.379		
Satd. Flow (perm)	413	1784	1197	908	1750	1321	0	1551	0	662	1784	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			101			163		7				160
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			279.3			221.0	
Travel Time (s)		17.9			21.6			25.1			19.9	
Confl. Peds. (#/hr)	60		79	79		60	34		53	53		34
Confl. Bikes (#/hr)			4			11						5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	7%	1%	4%	0%	26%	1%	2%	0%	2%	1%
Adj. Flow (vph)	291	339	89	74	381	26	59	345	53	32	242	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	291	339	89	74	381	26	0	457	0	32	242	137
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.6	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	15.0	49.0	49.0	34.0	34.0	34.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	15.0%	49.0%	49.0%	34.0%	34.0%	34.0%	43.0%	43.0%		43.0%	43.0%	43.0%
Maximum Green (s)	9.4	42.9	42.9	27.9	27.9	27.9	36.7	36.7		36.7	36.7	36.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.3	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)		19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	51.4	50.9	50.9	28.1	28.1	28.1		36.7		36.7	36.7	36.7
Actuated g/C Ratio	0.51	0.51	0.51	0.28	0.28	0.28		0.37		0.37	0.37	0.37

10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA

Future Total 2046 Conditions
Weekday PM Peak Hour

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
BD

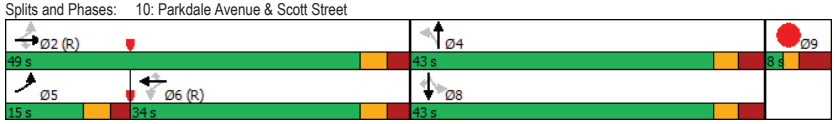
Synchro 11 Report
June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.66	0.37	0.14	0.29	0.78	0.05		0.80		0.13	0.37	0.22
Control Delay	22.4	16.4	2.7	32.2	45.5	0.2		40.0		23.0	25.3	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	22.4	16.4	2.7	32.2	45.5	0.2		40.0		23.0	25.3	3.3
LOS	C	B	A	C	D	A		D		C	C	A
Approach Delay		17.1			41.0			40.0			17.8	
Approach LOS		B			D			D			B	
Queue Length 50th (m)	31.5	38.1	0.0	11.3	67.9	0.0		77.1		4.1	33.9	0.0
Queue Length 95th (m)	48.8	58.0	6.1	23.7	#110.7	0.0		#126.7		10.9	53.8	8.7
Internal Link Dist (m)		225.1			275.4			255.3			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	439	908	658	255	491	488		573		242	654	612
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.66	0.37	0.14	0.29	0.78	0.05		0.80		0.13	0.37	0.22

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 27.9 Intersection LOS: C
Intersection Capacity Utilization 106.3% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	291	339	89	74	381	26	59	345	53	32	242	137
Future Volume (vph)	291	339	89	74	381	26	59	345	53	32	242	137
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		45.0	55.0		30.0	0.0		0.0	65.0		30.0
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		0.83	0.92		0.85		0.98		0.96		0.91
Frt			0.850			0.850		0.984				0.850
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1729	1784	1446	1712	1750	1547	0	1682	0	1729	1784	1532
Flt Permitted	0.386			0.476				0.921		0.372		
Satd. Flow (perm)	667	1784	1197	787	1750	1320	0	1549	0	651	1784	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			101			168		7				166
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		249.1			299.4			265.8			221.0	
Travel Time (s)		17.9			21.6			23.9			19.9	
Confl. Peds. (#/hr)	60		79	79		60	34		53	53		34
Confl. Bikes (#/hr)			4			11						5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	7%	1%	4%	0%	26%	1%	2%	0%	2%	1%
Adj. Flow (vph)	291	339	89	74	381	26	59	345	53	32	242	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	291	339	89	74	381	26	0	457	0	32	242	137
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Detector Phase	5	2	2	6	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.6	32.1	32.1	32.1	32.1	32.1	31.3	31.3		31.3	31.3	31.3
Total Split (s)	17.2	50.0	50.0	32.8	32.8	32.8	42.0	42.0		42.0	42.0	42.0
Total Split (%)	17.2%	50.0%	50.0%	32.8%	32.8%	32.8%	42.0%	42.0%		42.0%	42.0%	42.0%
Maximum Green (s)	11.6	43.9	43.9	26.7	26.7	26.7	35.7	35.7		35.7	35.7	35.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.3	2.8	2.8	2.8	2.8	2.8	3.3	3.3		3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.6	6.1	6.1	6.1	6.1	6.1		6.3		6.3	6.3	6.3
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	10.0	10.0		10.0	10.0	10.0
Flash Dont Walk (s)		19.0	19.0	19.0	19.0	19.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		30	30	30	30	30	30	30		30	30	30
Act Effct Green (s)	52.4	51.9	51.9	34.7	34.7	34.7		35.7		35.7	35.7	35.7
Actuated g/C Ratio	0.52	0.52	0.52	0.35	0.35	0.35		0.36		0.36	0.36	0.36

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	8.0
Total Split (s)	8.0
Total Split (%)	8%
Maximum Green (s)	2.0
Yellow Time (s)	2.0
All-Red Time (s)	4.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

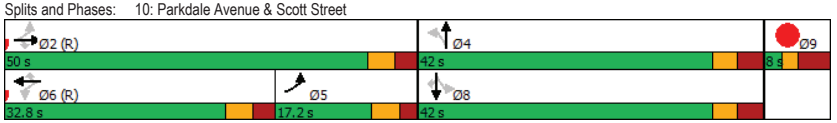
10: Parkdale Avenue & Scott Street
Tunney's Pasture TIA
Future Total 2046 OPT MOD
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.62	0.37	0.13	0.27	0.63	0.05		0.82		0.14	0.38	0.23
Control Delay	27.9	17.6	3.6	27.0	32.8	0.2		42.7		23.8	26.1	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	27.9	17.6	3.6	27.0	32.8	0.2		42.7		23.8	26.1	3.1
LOS	C	B	A	C	C	A		D		C	C	A
Approach Delay		20.0			30.1			42.7			18.3	
Approach LOS		C			C			D			B	
Queue Length 50th (m)	35.1	41.7	1.6	10.2	60.9	0.0		78.4		4.2	34.5	0.0
Queue Length 95th (m)	49.0	58.5	m4.0	21.9	91.9	0.0		#130.1		11.1	54.8	8.0
Internal Link Dist (m)		225.1			275.4			241.8			197.0	
Turn Bay Length (m)	50.0		45.0	55.0		30.0				65.0		30.0
Base Capacity (vph)	472	925	669	273	607	567		557		232	636	603
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.62	0.37	0.13	0.27	0.63	0.05		0.82		0.14	0.38	0.23

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 27.0 Intersection LOS: C
Intersection Capacity Utilization 106.3% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Parkdale Avenue & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	501	73	89	203	50	122	122	125	49	125	20
Future Volume (vph)	34	501	73	89	203	50	122	122	125	49	125	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.75	0.96		0.95		0.64	0.68		0.63	0.70		0.61
Frt		0.981				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1679	1507	0	1679	1640	1381	1394	1784	1517	1517	1767	1406
Flt Permitted	0.630			0.370			0.677			0.679		
Satd. Flow (perm)	837	1507	0	620	1640	885	680	1784	949	758	1767	856
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			184.8	
Travel Time (s)		20.2			17.9			20.2			22.2	
Confl. Peds. (#/hr)	149		98	98		149	190		180	180		190
Confl. Bikes (#/hr)			122			15			8			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	10%	38%	3%	11%	12%	24%	2%	2%	14%	3%	10%
Adj. Flow (vph)	34	501	73	89	203	50	122	122	125	49	125	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	574	0	89	203	50	122	122	125	49	125	20
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Detector Phase	2	2		6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	3.0	3.0	3.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	44.0	44.0		44.0	44.0	44.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	46.3%	46.3%		46.3%	46.3%	46.3%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	37.8	37.8		37.8	37.8	37.8	34.8	34.8	34.8	34.8	34.8	34.8
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)	59.6	59.6		59.6	59.6	59.6	23.0	23.0	23.0	23.0	23.0	23.0
Actuated g/C Ratio	0.63	0.63		0.63	0.63	0.63	0.24	0.24	0.24	0.24	0.24	0.24

11: Holland Avenue/Tunney's Pasture Driveway & Scott Street Future Total 2046 Conditions
Tunney's Pasture TIA Weekday AM Peak Hour

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	3.0	3.0	3.0	3.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?		Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

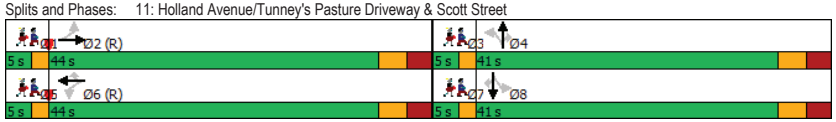
Lanes, Volumes, Timings Synchro 11 Report
BD June 2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.06	0.61		0.23	0.20	0.09	0.74	0.28	0.55	0.27	0.29	0.10
Control Delay	10.5	16.8		10.5	8.4	8.7	56.9	28.2	38.0	29.0	28.4	24.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	16.8		10.5	8.4	8.7	56.9	28.2	38.0	29.0	28.4	24.1
LOS	B	B		B	A	A	E	C	D	C	C	C
Approach Delay		16.4			9.0			41.0			28.1	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	2.3	59.6		5.6	12.5	2.8	20.4	18.0	19.8	7.2	18.5	2.8
Queue Length 95th (m)	8.2	125.9		m17.5	30.0	m9.7	34.8	27.2	31.5	14.3	27.7	7.2
Internal Link Dist (m)		256.5			225.1			200.2			160.8	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		30.0
Base Capacity (vph)	524	944		388	1028	554	249	654	348	278	648	314
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.61		0.23	0.20	0.09	0.49	0.19	0.36	0.18	0.19	0.06

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 85 (89%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 86.2% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	501	73	89	203	50	122	122	125	49	125	20
Future Volume (vph)	34	501	73	89	203	50	122	122	125	49	125	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.74	0.96		0.94		0.62	0.68		0.61	0.68	0.94	
Frt		0.981				0.850			0.850		0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1679	1508	0	1679	1640	1381	1394	1784	1517	1517	1617	0
Flt Permitted	0.630			0.373			0.651			0.679		
Satd. Flow (perm)	819	1508	0	620	1640	863	646	1784	920	741	1617	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			108.7	
Travel Time (s)		20.2			17.9			20.2			13.0	
Confl. Peds. (#/hr)	149		98	98		149	190		180	180		190
Confl. Bikes (#/hr)			122			15			8			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	10%	38%	3%	11%	12%	24%	2%	2%	14%	3%	10%
Adj. Flow (vph)	34	501	73	89	203	50	122	122	125	49	125	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	574	0	89	203	50	122	122	125	49	145	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	2	2		6	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	
Total Split (s)	53.6	53.6		53.6	53.6	53.6	36.4	36.4	36.4	36.4	36.4	
Total Split (%)	53.6%	53.6%		53.6%	53.6%	53.6%	36.4%	36.4%	36.4%	36.4%	36.4%	
Maximum Green (s)	47.4	47.4		47.4	47.4	47.4	30.2	30.2	30.2	30.2	30.2	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min	C-Min	Min	Min	Min	Min	Min	
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	
Act Effct Green (s)	63.8	63.8		63.8	63.8	63.8	23.8	23.8	23.8	23.8	23.8	
Actuated g/C Ratio	0.64	0.64		0.64	0.64	0.64	0.24	0.24	0.24	0.24	0.24	

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

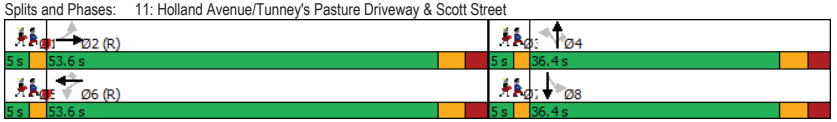
11: Holland Avenue/Tunney's Pasture Driveway & Scott Street Future Total 2046 OPT MOD
Tunney's Pasture TIA Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.07	0.60		0.23	0.19	0.09	0.80	0.29	0.57	0.28	0.38	
Control Delay	7.3	12.1		11.6	9.8	9.5	67.6	30.3	41.8	31.4	32.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.3	12.1		11.6	9.8	9.5	67.6	30.3	41.8	31.4	32.4	
LOS	A	B		B	A	A	E	C	D	C	C	
Approach Delay		11.9			10.2			46.5			32.1	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	1.8	43.3		6.6	14.9	3.4	22.2	19.4	21.4	7.8	23.5	
Queue Length 95th (m)	5.4	133.8		17.0	29.9	m9.6	38.1	29.2	34.2	15.4	34.6	
Internal Link Dist (m)		256.5			225.1			200.2			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		
Base Capacity (vph)	522	962		395	1046	550	201	556	286	230	504	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.07	0.60		0.23	0.19	0.09	0.61	0.22	0.44	0.21	0.29	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 22.5 Intersection LOS: C
Intersection Capacity Utilization 86.2% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	552	77	160	541	56	142	117	227	62	139	27
Future Volume (vph)	44	552	77	160	541	56	142	117	227	62	139	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.89	0.96				0.55	0.63		0.66	0.73		0.53
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1593	0	1679	1685	1381	1406	1784	1547	1679	1802	1488
Flt Permitted	0.080			0.204			0.659			0.682		
Satd. Flow (perm)	128	1593	0	360	1685	759	615	1784	1025	876	1802	787
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			184.8	
Travel Time (s)		20.2			17.9			20.2			22.2	
Confl. Peds. (#/hr)	152		112	112		152	198		140	140		198
Confl. Bikes (#/hr)			31			86			3			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	4%	34%	3%	8%	12%	23%	2%	0%	3%	1%	4%
Adj. Flow (vph)	44	552	77	160	541	56	142	117	227	62	139	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	629	0	160	541	56	142	117	227	62	139	27
Turn Type	Perm	NA		custom	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2		15	6 15			4			8	
Permitted Phases	2			6		6 15	4		4	8		8
Detector Phase	2	2		15	6 15	6 15	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	27.2	27.2		11.2			30.2	30.2	30.2	30.2	30.2	30.2
Total Split (s)	50.0	50.0		15.0			35.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	45.5%	45.5%		13.6%			31.8%	31.8%	31.8%	31.8%	31.8%	31.8%
Maximum Green (s)	43.8	43.8		8.8			28.8	28.8	28.8	28.8	28.8	28.8
Yellow Time (s)	3.3	3.3		3.3			3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9			2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0			0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2			6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag							Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min	C-Min		None			Min	Min	Min	Min	Min	Min
Walk Time (s)	2.0	2.0					2.0	2.0	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	19.0	19.0					22.0	22.0	22.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)	30	30					30	30	30	30	30	30
Act Effct Green (s)	50.0	50.0		60.7	66.9	66.9	30.7	30.7	30.7	30.7	30.7	30.7
Actuated g/C Ratio	0.45	0.45		0.55	0.61	0.61	0.28	0.28	0.28	0.28	0.28	0.28

11: Holland Avenue/Tunney's Pasture Driveway & Scott Street Future Total 2046 Conditions
Tunney's Pasture TIA Weekday PM Peak Hour

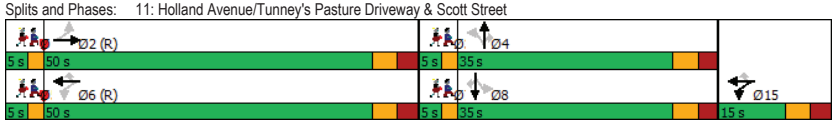
Lane Group	Ø1	Ø3	Ø5	Ø6	Ø7
Lane Configurations					
Traffic Volume (vph)					
Future Volume (vph)					
Ideal Flow (vphpl)					
Storage Length (m)					
Storage Lanes					
Taper Length (m)					
Lane Util. Factor					
Ped Bike Factor					
Frt					
Flt Protected					
Satd. Flow (prot)					
Flt Permitted					
Satd. Flow (perm)					
Right Turn on Red					
Satd. Flow (RTOR)					
Link Speed (k/h)					
Link Distance (m)					
Travel Time (s)					
Confl. Peds. (#/hr)					
Confl. Bikes (#/hr)					
Peak Hour Factor					
Heavy Vehicles (%)					
Adj. Flow (vph)					
Shared Lane Traffic (%)					
Lane Group Flow (vph)					
Turn Type					
Protected Phases	1	3	5	6	7
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	1.0	1.0	1.0	5.0	1.0
Minimum Split (s)	3.0	3.0	3.0	27.2	3.0
Total Split (s)	5.0	5.0	5.0	50.0	5.0
Total Split (%)	5%	5%	5%	45%	5%
Maximum Green (s)	3.0	3.0	3.0	43.8	3.0
Yellow Time (s)	2.0	2.0	2.0	3.3	2.0
All-Red Time (s)	0.0	0.0	0.0	2.9	0.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag		Lead			Lead
Lead-Lag Optimize?		Yes			Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min	None
Walk Time (s)	0.0	0.0	0.0	2.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	19.0	0.0
Pedestrian Calls (#/hr)	0	0	0	30	0
Act Effct Green (s)					
Actuated g/C Ratio					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.77	0.87		0.49	0.53	0.12	0.83	0.23	0.79	0.25	0.28	0.12
Control Delay	98.4	42.2		15.9	15.6	11.2	73.1	30.8	56.9	32.2	31.5	29.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.4	42.2		15.9	15.6	11.2	73.1	30.8	56.9	32.2	31.5	29.4
LOS	F	D		B	B	B	E	C	E	C	C	C
Approach Delay		45.9			15.3			55.3			31.4	
Approach LOS		D			B			E			C	
Queue Length 50th (m)	7.8	121.2		15.0	67.7	5.1	27.4	18.6	43.2	9.9	22.3	4.2
Queue Length 95th (m)	#29.8	#190.6		25.1	97.7	11.3	#60.2	32.9	#78.2	21.0	38.1	11.0
Internal Link Dist (m)		256.5			225.1			200.2			160.8	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		30.0
Base Capacity (vph)	57	723		327	1024	461	179	521	299	256	526	229
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.87		0.49	0.53	0.12	0.79	0.22	0.76	0.24	0.26	0.12

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 35.7 Intersection LOS: D
Intersection Capacity Utilization 94.7% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	552	77	160	541	56	142	117	227	62	139	27
Future Volume (vph)	44	552	77	160	541	56	142	117	227	62	139	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	135.0		65.0	70.0		40.0	65.0		30.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.96				0.58	0.68		0.69	0.75	0.93	
Frt		0.982				0.850			0.850		0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1599	0	1679	1685	1381	1406	1784	1547	1679	1628	0
Flt Permitted	0.377			0.316			0.625			0.682		
Satd. Flow (perm)	602	1599	0	558	1685	805	628	1784	1070	906	1628	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		280.5			249.1			224.2			108.7	
Travel Time (s)		20.2			17.9			20.2			13.0	
Confl. Peds. (#/hr)	152		112	112		152	198		140	140		198
Confl. Bikes (#/hr)			31			86			3			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	4%	34%	3%	8%	12%	23%	2%	0%	3%	1%	4%
Adj. Flow (vph)	44	552	77	160	541	56	142	117	227	62	139	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	629	0	160	541	56	142	117	227	62	166	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		
Detector Phase	2	2		6	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	27.2	27.2		27.2	27.2	27.2	30.2	30.2	30.2	30.2	30.2	
Total Split (s)	54.0	54.0		54.0	54.0	54.0	36.0	36.0	36.0	36.0	36.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%	54.0%	36.0%	36.0%	36.0%	36.0%	36.0%	
Maximum Green (s)	47.8	47.8		47.8	47.8	47.8	29.8	29.8	29.8	29.8	29.8	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min	C-Min	Min	Min	Min	Min	Min	
Walk Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	
Act Effct Green (s)	59.8	59.8		59.8	59.8	59.8	27.8	27.8	27.8	27.8	27.8	
Actuated g/C Ratio	0.60	0.60		0.60	0.60	0.60	0.28	0.28	0.28	0.28	0.28	

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (m)				
Storage Lanes				
Taper Length (m)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (k/h)				
Link Distance (m)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lead		Lead
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	0.0	0.0	0.0	0.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	0	0	0	0
Act Effct Green (s)				
Actuated g/C Ratio				

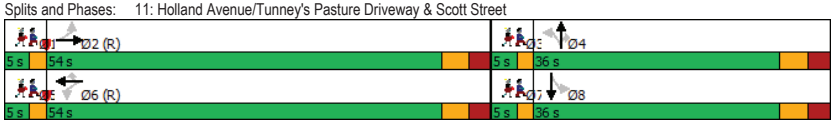
11: Holland Avenue/Tunney's Pasture Driveway & Scott Street Future Total 2046 OPT MOD
Tunney's Pasture TIA Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.12	0.66		0.48	0.54	0.12	0.82	0.24	0.76	0.25	0.37	
Control Delay	10.5	14.1		11.8	8.5	6.4	65.6	27.0	48.8	27.7	29.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.5	14.1		11.8	8.5	6.4	65.6	27.0	48.8	27.7	29.6	
LOS	B	B		B	A	A	E	C	D	C	C	
Approach Delay		13.9			9.1			48.5			29.1	
Approach LOS		B			A			D			C	
Queue Length 50th (m)	2.7	52.1		8.1	28.4	2.4	24.9	17.0	39.1	9.0	25.0	
Queue Length 95th (m)	m6.7	69.8		m17.7	m48.0	m5.6	#50.6	28.5	61.8	18.3	39.4	
Internal Link Dist (m)		256.5			225.1			200.2			84.7	
Turn Bay Length (m)	50.0			135.0		65.0	70.0		40.0	65.0		
Base Capacity (vph)	359	955		333	1006	481	199	567	340	287	517	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.66		0.48	0.54	0.12	0.71	0.21	0.67	0.22	0.32	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 21.6 Intersection LOS: C
Intersection Capacity Utilization 94.7% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Holland Avenue/Tunney's Pasture Driveway & Scott Street



Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Vol, veh/h	35	487	5	4	265	42	1	0	12	30	0	32
Future Vol, veh/h	35	487	5	4	265	42	1	0	12	30	0	32
Conflicting Peds, #/hr	51	0	20	20	0	51	6	0	2	2	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	10	0	0	14	10	0	0	0	0	0	9
Mvmt Flow	35	487	5	4	265	42	1	0	12	30	0	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	358	0	0	512	0	0	896	946	512	913	927	343
Stage 1	-	-	-	-	-	-	580	580	-	345	345	-
Stage 2	-	-	-	-	-	-	316	366	-	568	582	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.381
Pot Cap-1 Maneuver	1212	-	-	1064	-	-	263	264	566	256	270	684
Stage 1	-	-	-	-	-	-	504	503	-	675	640	-
Stage 2	-	-	-	-	-	-	699	626	-	511	502	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1155	-	-	1044	-	-	236	236	555	230	241	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	236	-	230	241	-
Stage 1	-	-	-	-	-	-	474	473	-	616	607	-
Stage 2	-	-	-	-	-	-	658	594	-	478	472	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	12.3	17.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	503	1155	-	-	1044	-	-	345
HCM Lane V/C Ratio	0.026	0.03	-	-	0.004	-	-	0.18
HCM Control Delay (s)	12.3	8.2	0	-	8.5	-	-	17.7
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.6

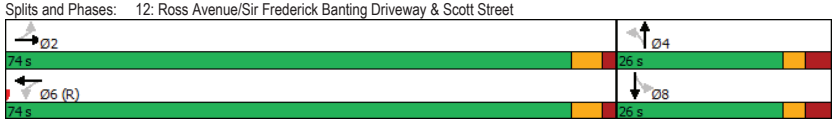
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Volume (vph)	35	487	5	4	265	42	1	0	12	30	0	32
Future Volume (vph)	35	487	5	4	265	42	1	0	12	30	0	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.98	0.98			0.97			0.98	
Frt		0.999			0.979			0.875			0.930	
Flt Protected		0.997		0.950				0.996			0.976	
Satd. Flow (prot)	0	1658	0	1729	1540	0	0	1540	0	0	1547	0
Flt Permitted		0.964		0.480				0.979			0.840	
Satd. Flow (perm)	0	1595	0	857	1540	0	0	1512	0	0	1328	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			18			27			32	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		302.8			168.9			203.1			119.6	
Travel Time (s)		21.8			12.2			24.4			14.4	
Confl. Peds. (#/hr)	51		20	20		51	6		2	2		6
Confl. Bikes (#/hr)			82			20			3			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	10%	0%	0%	14%	10%	0%	0%	0%	0%	0%	9%
Adj. Flow (vph)	35	487	5	4	265	42	1	0	12	30	0	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	527	0	4	307	0	0	13	0	0	62	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		23.9	23.9		23.9	23.9	
Total Split (s)	74.0	74.0		74.0	74.0		26.0	26.0		26.0	26.0	
Total Split (%)	74.0%	74.0%		74.0%	74.0%		26.0%	26.0%		26.0%	26.0%	
Maximum Green (s)	68.5	68.5		68.5	68.5		20.1	20.1		20.1	20.1	
Yellow Time (s)	3.6	3.6		3.6	3.6		2.7	2.7		2.7	2.7	
All-Red Time (s)	1.9	1.9		1.9	1.9		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5		5.5	5.5			5.9			5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	30	30		30	30		30	30		30	30	
Act Effct Green (s)		79.5		79.5	79.5			12.5			12.5	
Actuated g/C Ratio		0.80		0.80	0.80			0.12			0.12	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.42		0.01	0.25			0.06			0.32	
Control Delay		5.9		1.0	1.4			6.6			25.7	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		5.9		1.0	1.4			6.6			25.7	
LOS		A		A	A			A			C	
Approach Delay		5.9			1.4			6.6			25.7	
Approach LOS		A			A			A			C	
Queue Length 50th (m)		37.2		0.0	2.8			0.0			5.0	
Queue Length 95th (m)		55.9		m0.3	4.3			2.8			16.4	
Internal Link Dist (m)		278.8			144.9			179.1			95.6	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		1268		681	1228			325			292	
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		0.42		0.01	0.25			0.04			0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 90 (90%), Referenced to phase 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 5.8		Intersection LOS: A	
Intersection Capacity Utilization 73.3%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 12: Ross Avenue/Sir Frederick Banting Driveway & Scott Street



Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	26	663	10	5	555	51	4	0	13	41	0	53
Future Vol, veh/h	26	663	10	5	555	51	4	0	13	41	0	53
Conflicting Peds, #/hr	42	0	25	25	0	42	3	0	4	4	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	5	10	0	7	4	0	0	0	0	0	4
Mvmt Flow	26	663	10	5	555	51	4	0	13	41	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	648	0	0	698	0	0	1365	1403	697	1364	1383	626
Stage 1	-	-	-	-	-	-	745	745	-	633	633	-
Stage 2	-	-	-	-	-	-	620	658	-	731	750	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.336
Pot Cap-1 Maneuver	947	-	-	908	-	-	126	141	444	126	145	481
Stage 1	-	-	-	-	-	-	409	424	-	471	476	-
Stage 2	-	-	-	-	-	-	479	464	-	416	422	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	910	-	-	887	-	-	104	125	432	112	129	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	125	-	112	129	-
Stage 1	-	-	-	-	-	-	381	395	-	432	455	-
Stage 2	-	-	-	-	-	-	420	443	-	383	393	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	20.6	39.5
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	248	910	-	-	887	-	-	195
HCM Lane V/C Ratio	0.069	0.029	-	-	0.006	-	-	0.482
HCM Control Delay (s)	20.6	9.1	0	-	9.1	-	-	39.5
HCM Lane LOS	C	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	2.4

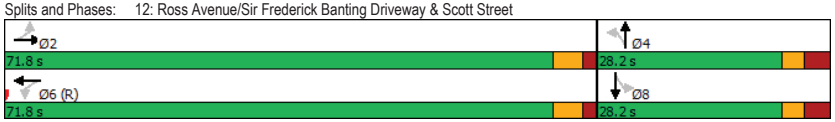
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	663	10	5	555	51	4	0	13	41	0	53
Future Volume (vph)	26	663	10	5	555	51	4	0	13	41	0	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.98	0.99			0.97			0.98	
Frt		0.998			0.987			0.897			0.924	
Flt Protected		0.998		0.950				0.988			0.979	
Satd. Flow (prot)	0	1726	0	1729	1662	0	0	1574	0	0	1581	0
Flt Permitted		0.969		0.403				0.922			0.851	
Satd. Flow (perm)	0	1674	0	721	1662	0	0	1466	0	0	1367	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			10			27			53	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		302.8			168.9			203.1			119.6	
Travel Time (s)		21.8			12.2			24.4			14.4	
Confl. Peds. (#/hr)	42		25	25		42	3		4	4		3
Confl. Bikes (#/hr)			16			59						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	5%	10%	0%	7%	4%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	26	663	10	5	555	51	4	0	13	41	0	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	699	0	5	606	0	0	17	0	0	94	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		23.9	23.9		23.9	23.9	
Total Split (s)	71.8	71.8		71.8	71.8		28.2	28.2		28.2	28.2	
Total Split (%)	71.8%	71.8%		71.8%	71.8%		28.2%	28.2%		28.2%	28.2%	
Maximum Green (s)	66.3	66.3		66.3	66.3		22.3	22.3		22.3	22.3	
Yellow Time (s)	3.6	3.6		3.6	3.6		2.7	2.7		2.7	2.7	
All-Red Time (s)	1.9	1.9		1.9	1.9		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5		5.5	5.5			5.9			5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	30	30		30	30		30	30		30	30	
Act Effct Green (s)		79.4		79.4	79.4			12.5			12.5	
Actuated g/C Ratio		0.79		0.79	0.79			0.12			0.12	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.53		0.01	0.46			0.08			0.43	
Control Delay		7.2		0.6	1.9			9.5			25.1	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		7.2		0.6	1.9			9.5			25.1	
LOS		A		A	A			A			C	
Approach Delay		7.2			1.9			9.5			25.1	
Approach LOS		A			A			A			C	
Queue Length 50th (m)		56.8		0.1	4.1			0.0			6.9	
Queue Length 95th (m)		84.4		m0.1	6.8			4.2			21.2	
Internal Link Dist (m)		278.8			144.9			179.1			95.6	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		1330		573	1322			347			346	
Starvation Cap Reductn		0		0	12			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.53		0.01	0.46			0.05			0.27	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 96 (96%), Referenced to phase 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 6.1 Intersection LOS: A
Intersection Capacity Utilization 80.2% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Ross Avenue/Sir Frederick Banting Driveway & Scott Street



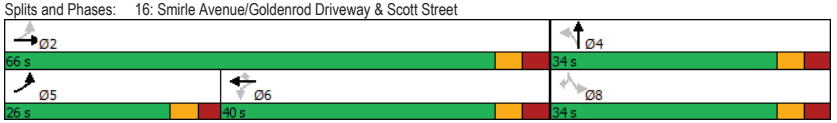
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	437	26	4	236	72	11	0	12	98	0	51
Future Volume (vph)	54	437	26	4	236	72	11	0	12	98	0	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.99		0.96		0.85		0.94		0.94		0.95
Frt		0.992				0.850		0.930				0.850
Flt Protected	0.950			0.950				0.977		0.950		
Satd. Flow (prot)	1048	1737	0	1729	1750	979	0	1580	0	1029	0	949
Flt Permitted	0.552			0.497				0.977		0.742		
Satd. Flow (perm)	573	1737	0	865	1750	832	0	1558	0	752	0	904
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				105		105				105
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	38		28	28		38	12		28	28		12
Confl. Bikes (#/hr)			86			21						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	65%	3%	4%	0%	4%	58%	0%	0%	0%	68%	0%	63%
Adj. Flow (vph)	54	437	26	4	236	72	11	0	12	98	0	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	463	0	4	236	72	0	23	0	98	0	51
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	26.0	66.0		40.0	40.0	40.0	34.0	34.0		34.0		34.0
Total Split (%)	26.0%	66.0%		40.0%	40.0%	40.0%	34.0%	34.0%		34.0%		34.0%
Maximum Green (s)	20.0	59.4		33.4	33.4	33.4	27.4	27.4		27.4		27.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	Max		Max	Max	Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	64.8	65.7		57.3	57.3	57.3		16.3		16.8		16.8
Actuated g/C Ratio	0.71	0.72		0.63	0.63	0.63		0.18		0.18		0.18

16: Smirle Avenue/Goldenrod Driveway & Scott Street
Tunney's Pasture TIA
Future Total 2046 Conditions
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.12	0.37		0.01	0.21	0.13		0.06		0.71		0.20
Control Delay	7.4	8.6		14.5	13.3	2.0		0.3		61.0		1.9
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	7.4	8.6		14.5	13.3	2.0		0.3		61.0		1.9
LOS	A	A		B	B	A		A		E		A
Approach Delay		8.4			10.7			0.3			40.8	
Approach LOS		A			B			A			D	
Queue Length 50th (m)	2.8	31.4		0.3	21.3	0.0		0.0		15.8		0.0
Queue Length 95th (m)	9.2	67.7		2.4	46.8	3.9		0.0		32.3		0.6
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	512	1254		544	1102	563		544		227		346
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.11	0.37		0.01	0.21	0.13		0.04		0.43		0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 91			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 61.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



Lanes, Volumes, Timings
BD
Synchro 11 Report
June 2025

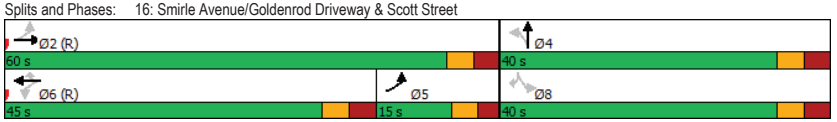
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	437	26	4	236	72	11	0	12	98	0	51
Future Volume (vph)	54	437	26	4	236	72	11	0	12	98	0	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93	0.99		0.97		0.85		0.94		0.94		0.95
Frt		0.992				0.850		0.930				0.850
Flt Protected	0.950			0.950				0.977		0.950		
Satd. Flow (prot)	1048	1737	0	1729	1750	979	0	1580	0	1029	0	949
Flt Permitted	0.612			0.462				0.977		0.742		
Satd. Flow (perm)	625	1737	0	815	1750	835	0	1558	0	752	0	904
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				111		111				111
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	38		28	28		38	12		28	28		12
Confl. Bikes (#/hr)			86			21						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	65%	3%	4%	0%	4%	58%	0%	0%	0%	68%	0%	63%
Adj. Flow (vph)	54	437	26	4	236	72	11	0	12	98	0	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	463	0	4	236	72	0	23	0	98	0	51
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	15.0	60.0		45.0	45.0	45.0	40.0	40.0		40.0		40.0
Total Split (%)	15.0%	60.0%		45.0%	45.0%	45.0%	40.0%	40.0%		40.0%		40.0%
Maximum Green (s)	9.0	53.4		38.4	38.4	38.4	33.4	33.4		33.4		33.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	72.7	72.2		60.2	60.2	60.2		18.3		18.9		18.9
Actuated g/C Ratio	0.73	0.72		0.60	0.60	0.60		0.18		0.19		0.19

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.11	0.37		0.01	0.22	0.13		0.06		0.70		0.20
Control Delay	4.4	5.1		10.0	10.6	2.0		0.3		60.6		1.7
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	4.4	5.1		10.0	10.6	2.0		0.3		60.6		1.7
LOS	A	A		A	B	A		A		E		A
Approach Delay		5.0			8.6			0.3			40.4	
Approach LOS		A			A			A			D	
Queue Length 50th (m)	1.4	12.4		0.4	29.9	1.5		0.0		17.4		0.0
Queue Length 95th (m)	3.4	50.2		m1.1	34.6	m1.5		0.0		31.8		0.0
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	484	1256		491	1054	547		594		251		375
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.11	0.37		0.01	0.22	0.13		0.04		0.39		0.14

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 11.3 Intersection LOS: B
Intersection Capacity Utilization 61.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



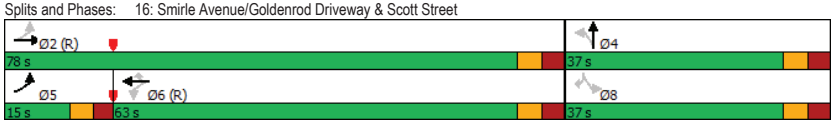
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	656	25	9	518	90	7	0	7	81	0	64
Future Volume (vph)	42	656	25	9	518	90	7	0	7	81	0	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99		0.76		0.94		0.95		0.93
Frt		0.994				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1067	1770	0	1729	1784	879	0	1595	0	1168	0	1011
Flt Permitted	0.373			0.405				0.976		0.748		
Satd. Flow (perm)	419	1770	0	727	1784	668	0	1553	0	870	0	939
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				91		91				91
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	55		12	12		55	19		20	20		19
Confl. Bikes (#/hr)			19			62						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	62%	2%	0%	0%	2%	76%	0%	0%	0%	48%	0%	53%
Adj. Flow (vph)	42	656	25	9	518	90	7	0	7	81	0	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	681	0	9	518	90	0	14	0	81	0	64
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	15.0	78.0		63.0	63.0	63.0	37.0	37.0		37.0		37.0
Total Split (%)	13.0%	67.8%		54.8%	54.8%	54.8%	32.2%	32.2%		32.2%		32.2%
Maximum Green (s)	9.0	71.4		56.4	56.4	56.4	30.4	30.4		30.4		30.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	85.1	84.5		73.9	73.9	73.9		17.3		17.3		17.3
Actuated g/C Ratio	0.74	0.73		0.64	0.64	0.64		0.15		0.15		0.15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.12	0.52		0.02	0.45	0.20		0.05		0.62		0.29
Control Delay	6.2	9.3		11.4	14.2	3.6		0.3		64.3		6.9
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	6.2	9.3		11.4	14.2	3.6		0.3		64.3		6.9
LOS	A	A		B	B	A		A		E		A
Approach Delay		9.2			12.6			0.3			39.0	
Approach LOS		A			B			A			D	
Queue Length 50th (m)	2.6	65.6		0.8	63.3	0.0		0.0		16.6		0.0
Queue Length 95th (m)	6.6	104.0		3.4	101.4	7.5		0.0		31.8		6.1
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	360	1300		467	1145	461		477		229		315
Starvation Cap Reductn	0	0		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.12	0.52		0.02	0.45	0.20		0.03		0.35		0.20

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 20 (17%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 13.4 Intersection LOS: B
Intersection Capacity Utilization 67.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



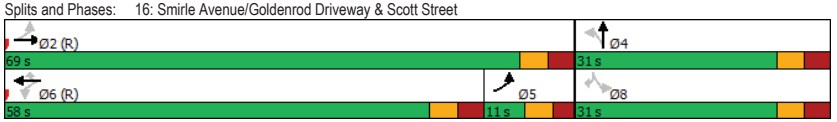
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	656	25	9	518	90	7	0	7	81	0	64
Future Volume (vph)	42	656	25	9	518	90	7	0	7	81	0	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	35.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	1.00		0.99		0.78		0.94		0.95		0.94
Frt		0.994				0.850		0.932				0.850
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1067	1771	0	1729	1784	879	0	1600	0	1168	0	1011
Flt Permitted	0.415			0.337				0.976		0.748		
Satd. Flow (perm)	444	1771	0	609	1784	689	0	1564	0	877	0	946
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				111		111				111
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		168.9			280.5			105.3			114.1	
Travel Time (s)		12.2			20.2			12.6			13.7	
Confl. Peds. (#/hr)	55		12	12		55	19		20	20		19
Confl. Bikes (#/hr)			19			62						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	62%	2%	0%	0%	2%	76%	0%	0%	0%	48%	0%	53%
Adj. Flow (vph)	42	656	25	9	518	90	7	0	7	81	0	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	681	0	9	518	90	0	14	0	81	0	64
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4			8		8
Detector Phase	5	2		6	6	6	4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	23.6		23.6	23.6	23.6	27.6	27.6		27.6		27.6
Total Split (s)	11.0	69.0		58.0	58.0	58.0	31.0	31.0		31.0		31.0
Total Split (%)	11.0%	69.0%		58.0%	58.0%	58.0%	31.0%	31.0%		31.0%		31.0%
Maximum Green (s)	5.0	62.4		51.4	51.4	51.4	24.4	24.4		24.4		24.4
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
All-Red Time (s)	2.7	3.3		3.3	3.3	3.3	3.3	3.3		3.3		3.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	6.0	6.6		6.6	6.6	6.6		6.6		6.6		6.6
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None		None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0		7.0
Flash Dont Walk (s)		10.0		10.0	10.0	10.0	14.0	14.0		14.0		14.0
Pedestrian Calls (#/hr)		30		30	30	30	30	30		30		30
Act Effct Green (s)	73.6	74.3		67.7	67.7	67.7		16.2		16.5		16.5
Actuated g/C Ratio	0.74	0.74		0.68	0.68	0.68		0.16		0.16		0.16

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.12	0.52		0.02	0.43	0.18		0.04		0.56		0.26
Control Delay	4.8	5.3		8.9	8.8	1.4		0.2		51.8		4.0
Queue Delay	0.0	0.1		0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	4.8	5.4		8.9	8.8	1.4		0.2		51.8		4.0
LOS	A	A		A	A	A		A		D		A
Approach Delay		5.3			7.7			0.2			30.7	
Approach LOS		A			A			A			C	
Queue Length 50th (m)	1.4	24.8		0.5	37.7	0.0		0.0		13.8		0.0
Queue Length 95th (m)	m3.1	33.8		m1.1	56.0	m1.1		0.0		28.1		2.8
Internal Link Dist (m)		144.9			256.5			81.3			90.1	
Turn Bay Length (m)	80.0			35.0		100.0						
Base Capacity (vph)	357	1317		412	1208	502		465		213		314
Starvation Cap Reductn	0	67		0	0	0		0		0		0
Spillback Cap Reductn	0	0		0	0	0		0		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.12	0.54		0.02	0.43	0.18		0.03		0.38		0.20

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 98 (98%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 8.7 Intersection LOS: A
Intersection Capacity Utilization 67.3% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Smirle Avenue/Goldenrod Driveway & Scott Street



Appendix G – Trip Generation Data

3.2 Recommended Residential Trip Generation Rates

A blended trip rate was developed from the three data sources through application of a rank-sum weighting process, considering the strengths and weaknesses of each dataset for the dwelling type in question. The recommended blended **residential person-trip rates** are presented in **Table 3**. All rates represent person-trips per dwelling unit and are to be applied to the **AM or PM peak period.**

Table 3: Recommended Residential Person-trip Rates

ITE Land Use Code	Dwelling Unit Type	Period	Person-Trip Rate
210	Single-detached	AM	2.05
		PM	2.48
220	Multi-Unit (Low-Rise)	AM	1.35
		PM	1.58
221 & 222	Multi-Unit (High-Rise)	AM	0.80
		PM	0.90

3.3 Adjustment Factors – Peak Period to Peak Hour

The various trip generation data sources require some adjustment to standardize the data for developing robust blended trip rates. The peak period conversion factor in **Table 4** may be used where applicable to develop trip generation rate estimates in the desired format.

Table 4: Adjustment Factors for Residential Trip Generation Rates

Factor	Application	Apply To	Period	Value
Peak Period Conversion Factor	**Peak period to peak hour conversion.** Because the 2020 TRANS Trip Generation Study reports trip generation rates by peak period, factors must be applied if the practitioner requires peak hour rates. In practice, the conversion to peak hour trip rates should occur **after** the application of modal shares.	Person-trip rates per peak period	AM	0.50
			PM	0.44
		Vehicle trip rates per peak period	AM	0.48
			PM	0.44
		Transit trip rates per peak period	AM	0.55
			PM	0.47
		Cycling trip rates per peak period	AM	0.58
			PM	0.48
		Walking trip rates per peak period	AM	0.58
			PM	0.52

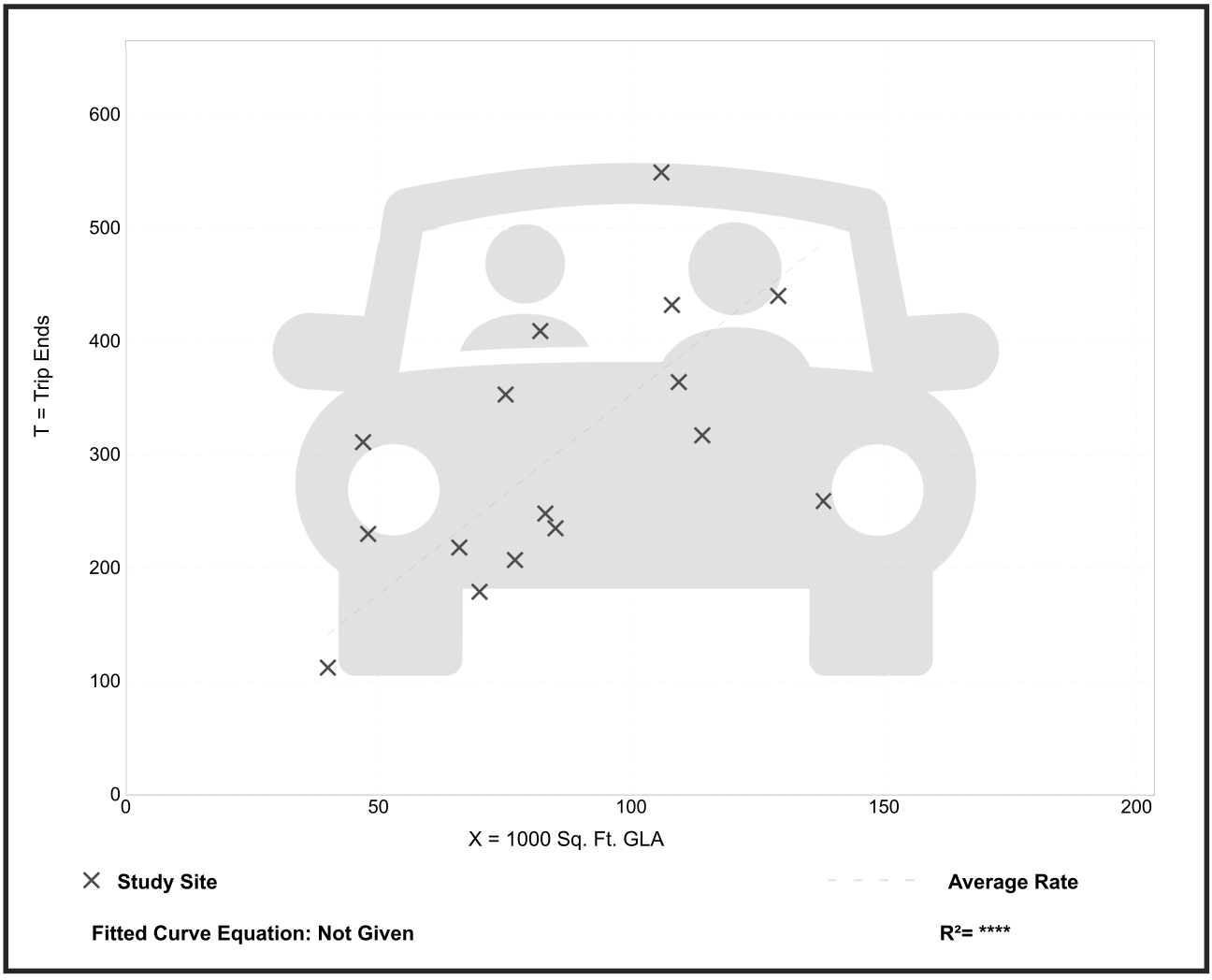
Shopping Plaza (40-150k) - Supermarket - Yes
(821)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 16
Avg. 1000 Sq. Ft. GLA: 86
Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.53	1.88 - 6.62	1.17

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

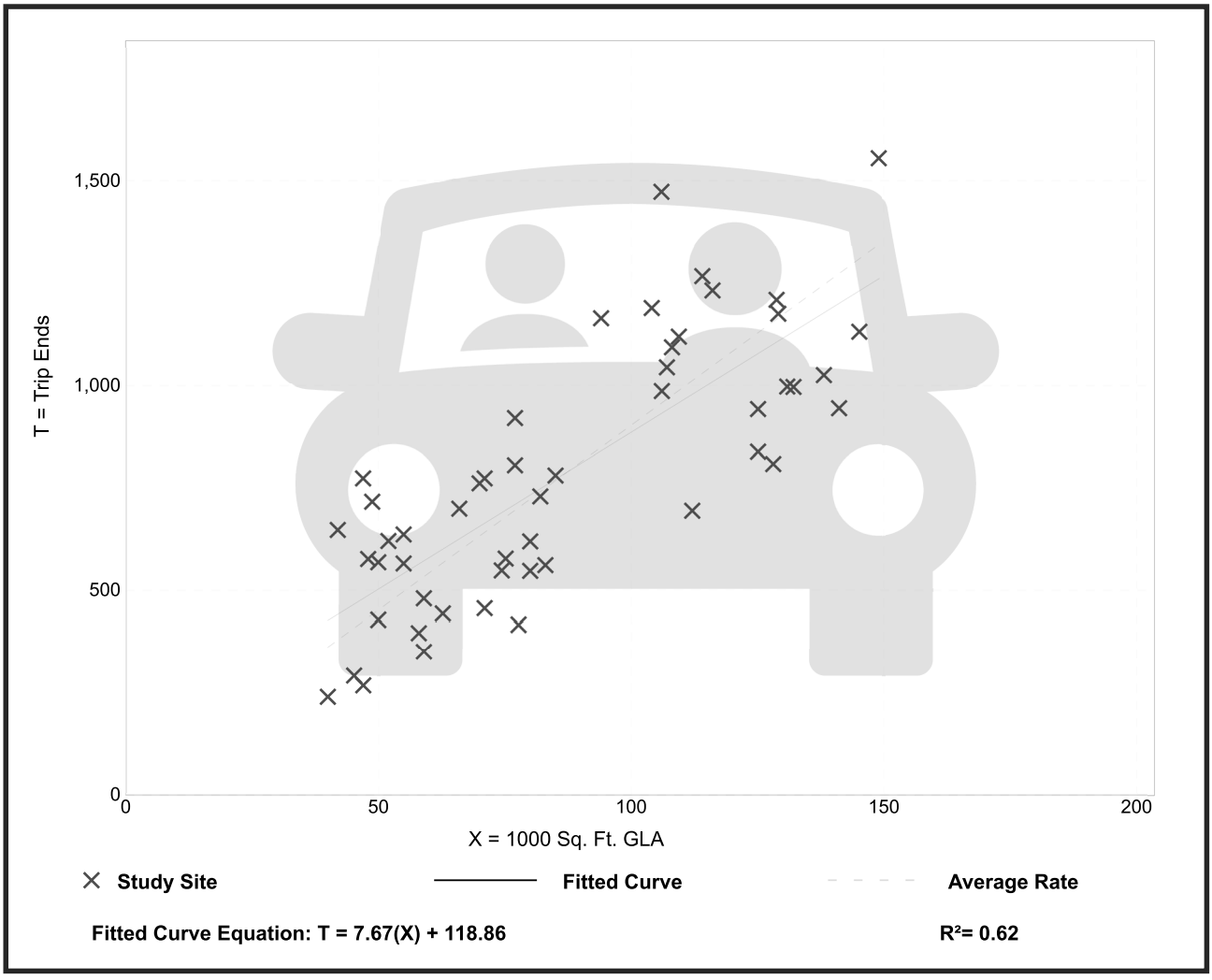
Shopping Plaza (40-150k) - Supermarket - Yes
(821)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 51
Avg. 1000 Sq. Ft. GLA: 87
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
9.03	5.35 - 16.45	2.37

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Development of a Local Trip Generation Rate for Tunney's Pasture Office/Laboratory Trips 2025-02-26

Time Period	From May 2023 TMCs (excludes driveways on Parkdale Ave)			From ITE (750 - Office Park) Source: ITE Trip Gen (11th Ed) Peak Hour of Adjacent Street Traffic (ITE rates x1.28 and factored by ex. auto driver mode share)		
	In	Out	Total	In	Out	Total
AM Peak Hour	692	198	890	2483	307	2790
PM Peak Hour	387	851	1238	382	2345	2727
Directional Splits	AM IN	AM OUT		AM IN	AM OUT	
	78%	22%	100%	89%	11%	100%
	PM OUT	PM OUT		PM OUT	PM OUT	
	31%	69%	100%	14%	86%	100%

Based on the above, a local rate should be further developed and considered. ITE rates are found to be to overly conservative and the directional splits are too skewed to suit the uniqe travel characteristics of office/laboratory uses within the Tunney's Pasture development.

Total Office Space at time May 2023 Turning Movement Counts were collected:	Office GFA (m2)	324,000
	Office GFA (ft2)	3,487,507
	Office GFA (/1000ft2)	3,487.507

Time Period	From 2014 MMTS (excludes driveways along Parkdale Ave)			Parkdale Ave 2014 MMTS Driveway Volumes Driveways Only			Total 2014 MMTS TMCs (includes driveways along Parkdale Ave)		
	In	Out	Total	In	Out	Total	In	Out	Total
AM Peak Hour	1088	447	1535	234	94	328	1322	541	1863
PM Peak Hour	353	1240	1593	164	182	346	517	1422	1939

Time Period	Proportion of 2009 Parkdale Ave driveways volumes out of total 2014 MMTS vehicle site-gen volumes	
	In	Out
AM Peak Hour	18%	17%
PM Peak Hour	32%	13%

Vehicle Trips

Time Period	May 2023 TMCs (excludes driveways on Parkdale Ave)			Approximation of Parkdale Ave Driveway Peak Hour Vehicle Volumes Only			May 2023 TMCs w/ factors applied to account for Parkdale Ave driveways		
	In	Out	Total	In	Out	Total	In	Out	Total
AM Peak Hour	692	198	890	122	34	157	814	232	1047
PM Peak Hour	387	851	1238	123	109	232	510	960	1470

Office Mode Share Rates under Existing Conditions (interpolated from 2020 TRANS Trip Generation Summary Report)

Auto Driver	47%	Note: divide by existing 'auto driver' percentage to convert vehicle trips to person trips
Auto Passenger	7%	
Transit	32%	
Biking	6%	
Walking	8%	
Total	**100%**	

Person Trips (Peak Hour)

Time Period	May 2023 TMCs w/ factors applied to account for Parkdale Ave driveways		
	In	Out	Total
AM Peak Hour	1733	494	2227
PM Peak Hour	1085	2042	3127

Applying a conservative factor of 1.5 to account for transtition from 2 to 3 days mandatory days a week in the office for federal civil servants since turning movement counts were conducted in May 2023
Conservatively assumes 50% increase in activity on-site, even though traffic count data was collected on the core working days from Tuesday to Thursday

Person-Trips w/ 1.5 factor applied Factor 1.5

Time Period	May 2023 TMCs w/ factors applied to account for Parkdale Ave driveways		
	In	Out	Total
AM Peak Hour	2599	742	3341
PM Peak Hour	1627	3064	4690

Person Trip Rate Rates for Weekday AM & PM Peak Hours (includes 1.5 amplification factor to consider potential full return to office 5 days a week)

Time Period	Unrounded Local Person-Trip Rates (/1000ft2 GFA)	Rounded Local Person-Trip Rates (/1000ft2 GFA)
AM Peak Hour	0.9580	**T=0.96*X**
PM Peak Hour	1.3449	**T=1.34*X**

Vehicle Trip Rates (includes 1.5 amplification factor to consider potential full return to office 5 days a week)

Time Period	Unrounded Local Vehicle-Trip Rates (/1000ft2 GFA)	Rounded Local Vehicle-Trip Rates (/1000ft2 GFA)
AM Peak Hour	0.4503	**T=0.45*X**
PM Peak Hour	0.6321	**T=0.63*X**

Maintain directional splits determined from May 2023 TMCs for Local Rates

Time Period	IN	OUT	TOTAL
AM Peak Hour	78%	22%	100%
PM Peak Hour	31%	69%	100%

Validation of Local Vehicle Trip Rates in Comparison with Other Sources

Time Period	Local Trip Rates	2014 MMTS TMCs	ITE (750 - Office Park Complex) (x1.28 and factored by existing auto driver mode share
AM Peak Hour	1569	1863	2790
PM Peak Hour	2197	1939	2727

Notes:
1. 2014 MMTS volumes differed significantly from the 750 - Office Park ITE trip generation rates.
2. Traffic data collected in 2023 was even lower than what the MMTS assumed, largely as a result of hybrid work (2 days a week).
3. 2023 TMCs were amplified to consider the impact of a potential full return to work (5 days a week).
4. Based on the above analysis, these amplified volumes are generally comparable to the site-generated traffic indicated in the 2014 MMTS, noting that there have since been significant improvements to transit and AT infrastructure
5. This approach validates the appropriateness of a local trip generation rate as opposed to the use of published ITE rates.
6. It should also be noted that the composition of the Tunney's Pasture office complex includes a significant amount of laboratory and operational/systems uses that would not generate traffic as a standard office would
7. Even with the calculated site-generated traffic as an office complex being much lower than what ITE would suggest, the traffic generation remains significantly higher than the site operating as a mixed-use community

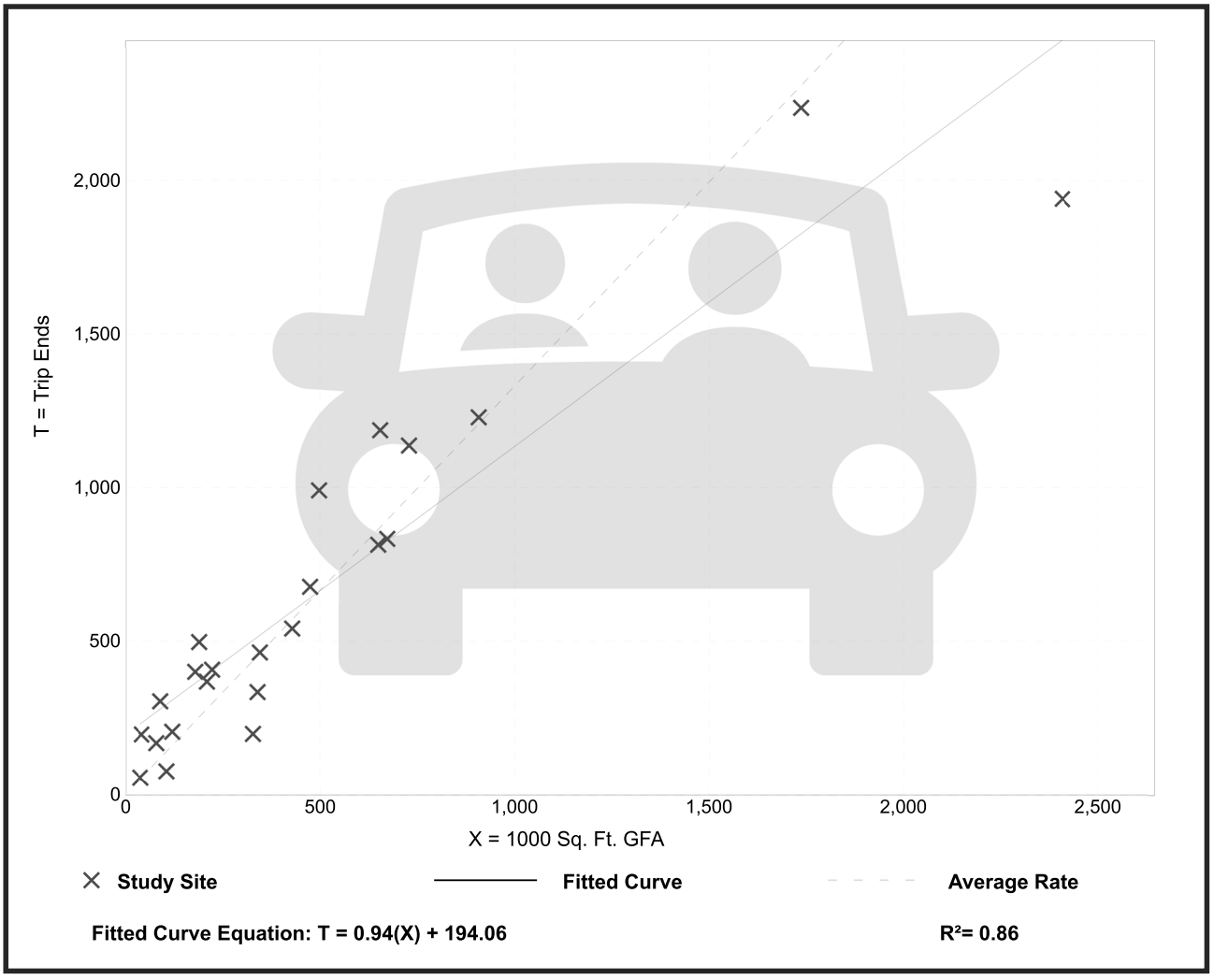
Office Park
(750)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 23
Avg. 1000 Sq. Ft. GFA: 498
Directional Distribution: 89% entering, 11% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.33	0.60 - 4.74	0.51

Data Plot and Equation



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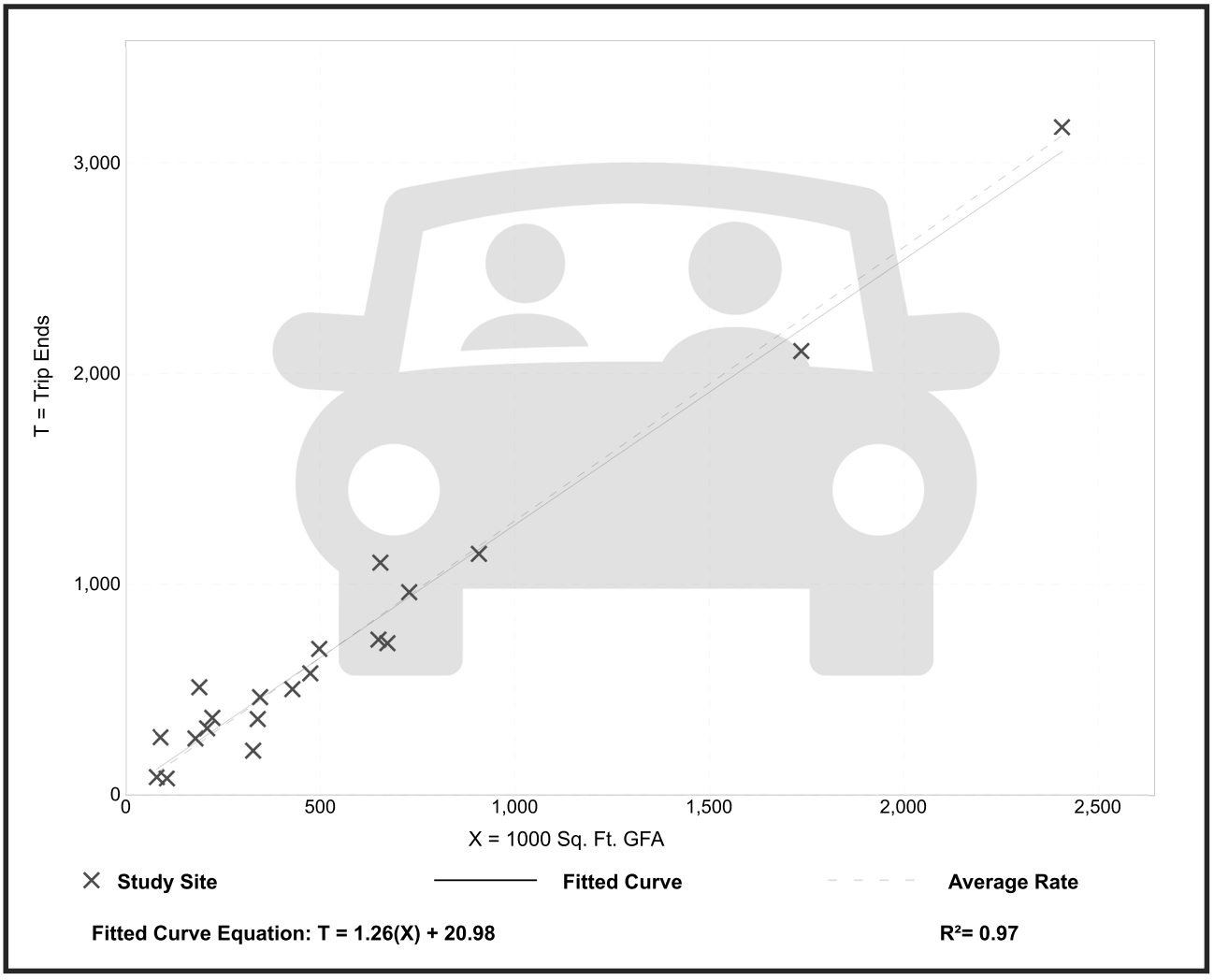
Office Park
(750)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	20
Avg. 1000 Sq. Ft. GFA:	563
Directional Distribution:	14% entering, 86% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.30	0.64 - 3.03	0.32

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Tunney's Pasture TIA	**Organization:**	Arcadis
Project Location:		**Performed By:**	IL
Scenario Description:	Phase 1	**Date:**	2023-11-10
Analysis Year:	2038	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				3,339	2,604	735
Retail				206	128	78
Restaurant				0		
Cinema/Entertainment				0		
Residential				1,693	518	1,175
Hotel				0		
All Other Land Uses[2]				0		
				5,238	3,250	1,988

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		41	0	0	0	0
Retail	23		0	0	10	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	24	12	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	5,238	3,250	1,988
Internal Capture Percentage	4%	3%	6%
External Vehicle-Trips[5]	5,018	3,140	1,878
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	2%	6%
Retail	41%	42%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	3%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Tunney's Pasture TIA
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	2604	2604	1.00	735	735
Retail	1.00	128	128	1.00	78	78
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	518.3031033	518	1.00	1174.606207	1175
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		206	463	0	7	0
Retail	23		10	0	11	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	24	12	235	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		41	0	0	0	0
Retail	104		0	0	10	0
Restaurant	365	10		0	26	0
Cinema/Entertainment	0	0	0		0	0
Residential	78	22	0	0		0
Hotel	78	5	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	47	2557	2604	2557	0	0
Retail	53	75	128	75	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	10	508	518	508	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	41	694	735	694	0	0
Retail	33	45	78	45	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	36	1139	1175	1139	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Tunney's Pasture TIA	**Organization:**	Arcadis
Project Location:		**Performed By:**	IL
Scenario Description:	Phase 1	**Date:**	2024-11-14
Analysis Year:	2038	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				4,675	1,449	3,226
Retail				599	288	311
Restaurant				0		
Cinema/Entertainment				0		
Residential				1,931	1,118	813
Hotel				0		
All Other Land Uses[2]				0		
				7,205	2,855	4,350

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1100			1100	
Retail					1100	
Restaurant						
Cinema/Entertainment						
Residential		1100				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		17	0	0	45	0
Retail	6		0	0	73	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	33	21	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	7,205	2,855	4,350
Internal Capture Percentage	5%	7%	4%
External Vehicle-Trips[5]	6,815	2,660	4,155
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	3%	2%
Retail	13%	25%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	11%	7%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	Tunney's Pasture TIA
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	1449	1449	1.00	3226	3226
Retail	1.00	288	288	1.00	311	311
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	1117.860621	1118	1.00	813.4303103	813
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		471	129	0	58	0
Retail	6		90	12	73	16
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	33	249	171	0		24
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		17	0	0	45	0
Retail	449		0	0	514	0
Restaurant	435	144		0	179	0
Cinema/Entertainment	87	12	0		45	0
Residential	826	21	0	0		0
Hotel	0	6	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	39	1410	1449	1410	0	0
Retail	38	250	288	250	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	118	1000	1118	1000	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	62	3164	3226	3164	0	0
Retail	79	232	311	232	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	54	759	813	759	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Tunney's Pasture TIA	**Organization:**	Arcadis
Project Location:		**Performed By:**	IL
Scenario Description:	Phase 2	**Date:**	2024-11-14
Analysis Year:	2042	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				2,153	1,679	474
Retail				295	183	112
Restaurant				0		
Cinema/Entertainment				0		
Residential				2,385	730	1,655
Hotel				0		
All Other Land Uses[2]				0		
				4,833	2,592	2,241

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		59	0	0	0	0
Retail	32		0	0	15	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	33	17	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	4,833	2,592	2,241
Internal Capture Percentage	6%	6%	7%
External Vehicle-Trips[5]	4,521	2,436	2,085
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	4%	12%
Retail	42%	42%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	3%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Tunney's Pasture TIA
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	1679	1679	1.00	474	474
Retail	1.00	183	183	1.00	112	112
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	730.1416354	730	1.00	1655.283271	1655
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		133	299	0	5	0
Retail	32		15	0	16	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	33	17	331	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		59	0	0	0	0
Retail	67		0	0	15	0
Restaurant	235	15		0	37	0
Cinema/Entertainment	0	0	0		0	0
Residential	50	31	0	0		0
Hotel	50	7	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	65	1614	1679	1614	0	0
Retail	76	107	183	107	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	15	715	730	715	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	59	415	474	415	0	0
Retail	47	65	112	65	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	50	1605	1655	1605	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Tunney's Pasture TIA	**Organization:**	Arcadis
Project Location:		**Performed By:**	IL
Scenario Description:	Phase 2	**Date:**	2024-11-14
Analysis Year:	2042	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				3,013	934	2,079
Retail				793	380	413
Restaurant				0		
Cinema/Entertainment				0		
Residential				2,722	1,575	1,147
Hotel				0		
All Other Land Uses[2]				0		
				6,528	2,889	3,639

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1100			1100	
Retail					1100	
Restaurant						
Cinema/Entertainment						
Residential		1100				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		22	0	0	37	0
Retail	8		0	0	97	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	46	28	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	6,528	2,889	3,639
Internal Capture Percentage	7%	8%	7%
External Vehicle-Trips[5]	6,052	2,651	3,401
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	6%	3%
Retail	13%	25%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	9%	6%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	Tunney's Pasture TIA
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	934	934	1.00	2079	2079
Retail	1.00	380	380	1.00	413	413
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	1575.028327	1575	1.00	1146.514164	1147
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		304	83	0	37	0
Retail	8		120	17	97	21
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	46	352	241	0		34
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		22	0	0	63	0
Retail	290		0	0	725	0
Restaurant	280	190		0	252	0
Cinema/Entertainment	56	15	0		63	0
Residential	532	28	0	0		0
Hotel	0	8	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	54	880	934	880	0	0
Retail	50	330	380	330	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	134	1441	1575	1441	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	59	2020	2079	2020	0	0
Retail	105	308	413	308	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	74	1073	1147	1073	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Tunney's Pasture TIA	**Organization:**	Arcadis
Project Location:		**Performed By:**	IL
Scenario Description:	Phase 3	**Date:**	2024-11-14
Analysis Year:	2046	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				966	753	213
Retail				384	238	146
Restaurant				0		
Cinema/Entertainment				0		
Residential				3,078	942	2,136
Hotel				0		
All Other Land Uses[2]				0		
				4,428	1,933	2,495

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		60	0	0	0	0
Retail	30		0	0	19	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	23	21	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	4,428	1,933	2,495
Internal Capture Percentage	7%	8%	6%
External Vehicle-Trips[5]	4,122	1,780	2,342
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	7%	28%
Retail	34%	34%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	2%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	Tunney's Pasture TIA
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	753	753	1.00	213	213
Retail	1.00	238	238	1.00	146	146
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	941.9801674	942	1.00	2135.960335	2136
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		60	134	0	2	0
Retail	42		19	0	20	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	43	21	427	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		76	0	0	0	0
Retail	30		0	0	19	0
Restaurant	105	19		0	47	0
Cinema/Entertainment	0	0	0		0	0
Residential	23	40	0	0		0
Hotel	23	10	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	53	700	753	700	0	0
Retail	81	157	238	157	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	19	923	942	923	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	60	153	213	153	0	0
Retail	49	97	146	97	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	44	2092	2136	2092	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Tunney's Pasture TIA	**Organization:**	Arcadis
Project Location:		**Performed By:**	IL
Scenario Description:	Phase 3	**Date:**	2024-11-14
Analysis Year:	2046	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				1,352	419	933
Retail				987	474	513
Restaurant				0		
Cinema/Entertainment				0		
Residential				3,512	2,032	1,480
Hotel				0		
All Other Land Uses[2]				0		
				5,851	2,925	2,926

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1100			1100	
Retail					1100	
Restaurant						
Cinema/Entertainment						
Residential		1100				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		28	0	0	17	0
Retail	10		0	0	120	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	59	35	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	5,851	2,925	2,926
Internal Capture Percentage	9%	9%	9%
External Vehicle-Trips[5]	5,313	2,656	2,657
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	16%	5%
Retail	13%	25%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	7%	6%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Tunney's Pasture TIA
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	419	419	1.00	933	933
Retail	1.00	474	474	1.00	513	513
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	2032.196033	2032	1.00	1479.598017	1480
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		136	37	0	17	0
Retail	10		149	21	120	26
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	59	454	311	0		44
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		28	0	0	81	0
Retail	130		0	0	935	0
Restaurant	126	237		0	325	0
Cinema/Entertainment	25	19	0		81	0
Residential	239	35	0	0		0
Hotel	0	9	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	69	350	419	350	0	0
Retail	63	411	474	411	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	137	1895	2032	1895	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	45	888	933	888	0	0
Retail	130	383	513	383	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	94	1386	1480	1386	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	821
Land Use	Shopping Plaza (40 - 150k)
Setting	General Urban/Suburban
Time Period	Weekday PM Peak Period
# Data Sites	15
Average Pass-By Rate	40%

Pass-By Characteristics for Individual Sites

GLA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
45	Florida	1992	844	56	24	20	44	—	30
50	Florida	1992	555	41	41	18	59	—	30
52	Florida	1995	665	42	33	25	58	—	30
53	Florida	1993	162	59	—	—	41	—	30
57.23	Kentucky	1993	247	31	53	16	69	2659	34
60	Florida	1995	1583	40	38	22	60	—	30
69.4	Kentucky	1993	109	25	42	33	75	1559	34
77	Florida	1992	365	46	—	—	54	—	30
78	Florida	1991	702	55	23	22	45	—	30
82	Florida	1992	336	34	—	—	66	—	30
92.857	Kentucky	1993	133	22	50	28	78	3555	34
100.888	Kentucky	1993	281	28	50	22	72	2111	34
121.54	Kentucky	1993	210	53	30	17	47	2636	34
144	New Jersey	1990	176	32	44	24	68	—	24
146.8	Kentucky	1993	—	36	39	25	64	—	34
Average 82.0				40					

An pass-by rate of 40% was applied during the weekday afternoon peak hour for commercial uses proposed on-site, corresponding to the average rate derived from the Shopping Plaza (40-150k) land use.

School Trip Generation - First Principles

A first principles approach was taken to develop the school trip generation for the possible elementary school within the Tunney's Pasture redevelopment to capture the unique characteristics of this school type within Ontario and within an urban context.

	Students	Teachers	Principals/Vice Principals	ly Childhood Educat	Office Staff	Custodian	Librarian
Elementary (Ontario Totals)	1,419,642	85,105	5,467	9,595	-	-	-
Elementary (Student to Faculty Ratios)	-	16.7	259.7	148.0	255	196	763

Sources: *https://www.ontario.ca/page/education-facts*
https://peopleforeducation.ca/report/2019-annual-report-on-schools-what-makes-a-school/#chapter3

Determine Breakdown of Faculty for 750-Student Elementary School

	Students	Teachers	Principals/Vice Principals	Early Childhood Educators	Office Staff	Custodian	Librarian	Total Staff
750-student Elementary School	750	45	3	5	3	4	1	61

Ottawa Student Transportation Association (OSTA) Mode Shares

	Walk	Bike	School bus	Transit	Drive+Walk	Drive	Carpool	Virtual	Total
City-Wide	16%	4%	64%	9%	3%	22%	1%	3%	122%
Inside Greenbelt	18%	4%	64%	10%	4%	19%	2%	4%	125%
Elementary	18%	3%	70%	1%	4%	20%	1%	3%	120%

Source: *https://www.envirocentre.ca/wp-content/uploads/2024/09/OSTA-Transportation-Survey-2022-Report-Overview-Report.pdf*

Re-categorized OSTA Mode Shares (maintaining school bus mode share, while reducing other modes proportionally to achieve 100%, reassigning 'virtual proportionally to other non-school bus modes)

	Walk	Bike	School bus	Transit	Drive+Walk	Drive	Carpool	Virtual	Total
City-Wide	10%	3%	64%	6%	2%	14%	1%	-	100%
Inside Greenbelt	11%	3%	64%	6%	3%	12%	1%	-	100%
Elementary	11%	2%	70%	1%	3%	13%	1%	-	100%

2011 OD Survey AM Within District Mode Shares

	Walk	Bike	School Bus	Transit	Auto Drive+Passenger	Other	Total
Urban Transit Area (page 77)	12%	2%	9%	20%	57%	-	100%
Inside Greenbelt (page 79)	14%	4%	8%	22%	52%	-	100%
Ottawa West (page 106)	34%	6%	8%	4%	48%	-	100%

Adjustment factor (For OSTA) = (Inside Greenbelt/City Wide)*(Ottawa West TAZ/Inside Greenbelt OD Survey)	2.64	1.45	1.00	0.19	1.19	0.77	1.78

Adjusted OTSA Mode Shares (Based on Above 2011 OD Survey Data and Applying Adjustment Factors)

	Walk	Bike	School bus	Transit	Drive+Walk	Drive	Carpool	Virtual	Total
Elementary	26%	2%	60%	0%	3%	8%	1%	0%	100%

Ottawa West Traffic Assessment Zone (TAZ) - 2011 OD Survey

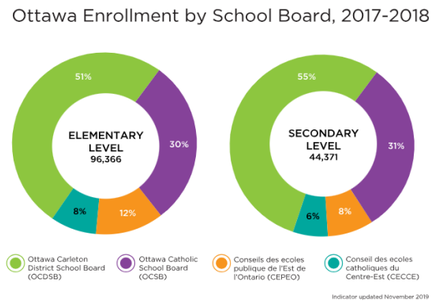
Occupation	Total	Percent
Work, Full Time	20,450	43%
Work, Part Time	2,480	5%
Student	9,370	20%
Retiree	11,840	25%
Unemployed	1,540	3%
Homemaker	1,020	2%
Other	1,270	3%
Total	47,970	100%

AM From+Within District Trips	Total	Percent
School	5,710	22%
Total	25,980	100%

Use 2020 TRANS Trip Generation Rates

	AM Peak PERIOD Outbound Residential Trips	Elementary Trips
Phases 1, 2 & 3	2,732	191
	AM Peak HOUR Outbound Residential Trips	**Elementary Trips**
Phases 1, 2 & 3	1,366	96

Ottawa West TAZ - 2011 OD Survey		Notes
% elementary school students:	12%	school (JK to Grade 8) and 16 years of schooling on average
People per Household	2.09	
% english public elementary students enrolled in OCDSB	51%	see pie Ottawa Enrolment pie chart
% elementary school students:	14%	
% english public elementary OCDSB students of entire p	7%	



Source: https://www.ottawainsights.ca/themes/education-and-learning/public-school/

Elementary School (Phase 1: 750 students)

	Mode Shares			Inbound AM Peak Hour Person Trips (External)			Outbound AM Peak Hour Person Trips (External)			Total AM Peak Hour Person Trips (External)			Total PM Peak Hour Person Trips (External)		
Travel Mode	Students	Parents	Staff (Based on employment use mode share)	Students	Parents	Staff	Students	Parents	Staff	In	Out	Total	In	Out	Total
Auto Driver	0%	12%	41%	0	78	25	-	78	-	103	78	181	47	52	99
Auto Passenger	12%	-	6%	78	-	4	-	0	-	82	0	82	-	1	1
Transit	0%	-	24%	0	-	15	-	0	-	15	0	15	-	3	3
Bike	2%	2%	8%	15	15	5	-	15	-	36	15	51	2	3	4

Walk	26%	26%	21%	169	169	13	-	169	-	351	169	520	17	19	36
School Bus	60%	-	-	392	-	0	-	0	-	392	0	392	-	-	0
Virtual	0%	-	-	0	-	0	-	0	-	0	0	0	-	-	0
Total	**100%**	**40%**	**100%**	**654**	**263**	**61**	-	**263**	-	**978**	**263**	**1241**	**65**	**78**	**143**

Elementary School (Phases 1 & 2: 750 students)

	Mode Shares			Inbound AM Peak Hour Person Trips (External)			Outbound AM Peak Hour Person Trips (External)			Total AM Peak Hour Person Trips (External)			Total PM Peak Hour Person Trips (External)		
Travel Mode	Students	Parents	Staff (Based on employment use mode share)	Students	Parents	Staff	Students	Parents	Staff	In	Out	Total	In	Out	Total
Auto Driver	0%	12%	39%	0	78	24	-	78	-	102	78	180	47	52	99
Auto Passenger	12%	-	6%	78	-	4	-	0	-	82	0	82	-	1	1
Transit	0%	-	24%	0	-	15	-	0	-	15	0	15	-	3	3
Bike	2%	2%	8%	15	15	5	-	15	-	36	15	51	2	3	4
Walk	26%	26%	23%	169	169	14	-	169	-	352	169	521	17	20	37
School Bus	60%	-	-	392	-	0	-	0	-	392	0	392	-	0%	0
Virtual	0%	-	-	0	-	0	-	0	-	0	0	0	-	0%	0
Total	**100%**	**40%**	**100%**	**654**	**263**	**61**	-	**263**	-	**978**	**263**	**1241**	**65**	**78**	**143**

Elementary School (Phases 1, 2 & 3: 750 students)

	Mode Shares			Inbound AM Peak Hour Person Trips (External)			Outbound AM Peak Hour Person Trips (External)			Total AM Peak Hour Person Trips (External)			Total PM Peak Hour Person Trips (External)		
Travel Mode	Students	Parents	Staff (Based on employment use mode share)	Students	Parents	Staff	Students	Parents	Staff	In	Out	Total	In	Out	Total
Auto Driver	0%	12%	37%	0	78	23	-	78	-	101	78	179	47	51	98
Auto Passenger	12%	-	6%	78	-	4	-	0	-	82	0	82	0%	1	1
Transit	0%	-	23%	0	-	14	-	0	-	14	0	14	0%	3	3
Bike	2%	2%	9%	15	15	5	-	15	-	36	15	52	2	3	4
Walk	26%	26%	25%	169	169	15	-	169	-	354	169	523	17	20	37
School Bus	60%	-	-	392	-	0	-	0	-	392	0	392	0%	0%	0
Virtual	0%	-	-	0	-	0	-	0	-	0	0	0	0%	0%	0
Total	**100%**	**40%**	**100%**	**654**	**263**	**61**	-	**263**	-	**978**	**263**	**1241**	**65**	**78**	**143**

Land Use	Phase		Internal Peak Hour School Person Trips						Internal Residential Person Trips Associated with School Uses					
			Total AM Trips			Total PM Trips			Total AM Trips			Total PM Trips		
			In	Out	Total	In	Out	Total	In (Parent Returns Home)	Out (Parent & Child Leave Home)	Total	In	Out	Total
Elementary	Phase 1		191	96	287	10	19	29	96	191	287	19	10	29
	Phase 2		191	96	287	10	19	29	96	191	287	19	10	29
	Phase 3		191	96	287	10	19	29	96	191	287	19	10	29

1. Assume 10% of students are in activities and that their trips coincide with weekday afternoon peak hour.

Scenario	Total Phase 1 Residential Trips Minus Internal Residential Trips Associated with Schools					
	Total AM Trips			Total PM Trips		
	In	Out	Total	In	Out	Total
Phase 1 Residential Peak Hour Person Trips	614	1,366	1,980	1,137	823	1,960
Internal Residential Person Trips Associated with School Uses	96	191	287	19	10	29
Difference	518	1,175	1,693	1,118	813	1,931

External School Person Trips

Mode Share	2038						2042						2046					
	Total AM Trips			Total PM Trips			Total AM Trips			Total PM Trips			Total AM Trips			Total PM Trips		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto Driver	103	78	181	47	52	99	102	78	180	47	52	99	101	78	179	47	51	98
Auto Passenger	82	0	82	0	1	1	82	0	82	0	1	1	82	0	82	0	1	1
Transit	15	0	15	0	3	3	15	0	15	0	3	3	14	0	14	0	3	3
Bike	36	15	51	2	3	4	36	15	51	2	3	4	36	15	52	2	3	4
Walk	351	169	520	17	19	36	352	169	521	17	20	37	354	169	523	17	20	37
School Bus	392	0	392	0	0	0	392	0	392	0	0	0	392	0	392	0	0	0
Total	978	263	1241	65	78	143	978	263	1241	65	78	143	978	263	1241	65	78	143

Total Internal & External School Person Trips

Phases	Total AM Trips			Total PM Trips		
	In	Out	Total	In	Out	Total
Phases 1, 2 & 3 External School Person Trips	978	263	1241	65	78	143
Internal Peak Hour School Person Trips	191	96	287	10	19	29
Total Internal & External School Person Trips	1,169	358	1,528	75	97	172

Appendix H – Background Growth Rate Review

School Trip Generation - First Principles

A first principles approach was taken to develop the school trip generation for the possible elementary school within the Tunney's Pasture redevelopment to capture the unique characteristics of this school type within Ontario and within an urban context.

	Students	Teachers	Principals/Vice Principals	ly Childhood Educat	Office Staff	Custodian	Librarian
Elementary (Ontario Totals)	1,419,642	85,105	5,467	9,595	-	-	-
Elementary (Student to Faculty Ratios)	-	16.7	259.7	148.0	255	196	763

Sources: *https://www.ontario.ca/page/education-facts*
https://peopleforeducation.ca/report/2019-annual-report-on-schools-what-makes-a-school/#chapter3

Determine Breakdown of Faculty for 750-Student Elementary School

	Students	Teachers	Principals/Vice Principals	Early Childhood Educators	Office Staff	Custodian	Librarian	Total Staff
750-student Elementary School	750	45	3	5	3	4	1	61

Ottawa Student Transportation Association (OSTA) Mode Shares

	Walk	Bike	School bus	Transit	Drive+Walk	Drive	Carpool	Virtual	Total
City-Wide	16%	4%	64%	9%	3%	22%	1%	3%	122%
Inside Greenbelt	18%	4%	64%	10%	4%	19%	2%	4%	125%
Elementary	18%	3%	70%	1%	4%	20%	1%	3%	120%

Source: *https://www.envirocentre.ca/wp-content/uploads/2024/09/OSTA-Transportation-Survey-2022-Report-Overview-Report.pdf*

Re-categorized OSTA Mode Shares (maintaining school bus mode share, while reducing other modes proportionally to achieve 100%, reassigning 'virtual proportionally to other non-school bus modes)

	Walk	Bike	School bus	Transit	Drive+Walk	Drive	Carpool	Virtual	Total
City-Wide	10%	3%	64%	6%	2%	14%	1%	-	100%
Inside Greenbelt	11%	3%	64%	6%	3%	12%	1%	-	100%
Elementary	11%	2%	70%	1%	3%	13%	1%	-	100%

2011 OD Survey AM Within District Mode Shares

	Walk	Bike	School Bus	Transit	Auto Drive+Passenger	Other	Total
Urban Transit Area (page 77)	12%	2%	9%	20%	57%	-	100%
Inside Greenbelt (page 79)	14%	4%	8%	22%	52%	-	100%
Ottawa West (page 106)	34%	6%	8%	4%	48%	-	100%

Adjustment factor (For OSTA) = (Inside Greenbelt/City Wide)*(Ottawa West TAZ/Inside Greenbelt OD Survey)	2.64	1.45	1.00	0.19	1.19	0.77	1.78

Adjusted OTSA Mode Shares (Based on Above 2011 OD Survey Data and Applying Adjustment Factors)

	Walk	Bike	School bus	Transit	Drive+Walk	Drive	Carpool	Virtual	Total
Elementary	26%	2%	60%	0%	3%	8%	1%	0%	100%

Ottawa West Traffic Assessment Zone (TAZ) - 2011 OD Survey

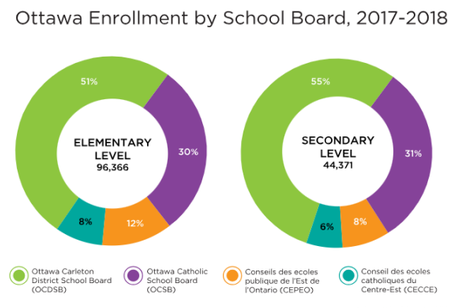
Occupation	Total	Percent
Work, Full Time	20,450	43%
Work, Part Time	2,480	5%
Student	9,370	20%
Retiree	11,840	25%
Unemployed	1,540	3%
Homemaker	1,020	2%
Other	1,270	3%
Total	47,970	100%

AM From+Within District Trips	Total	Percent
School	5,710	22%
Total	25,980	100%

Use 2020 TRANS Trip Generation Rates

	AM Peak PERIOD Outbound Residential Trips	Elementary Trips
Phases 1, 2 & 3	2,732	191
	AM Peak HOUR Outbound Residential Trips	**Elementary Trips**
Phases 1, 2 & 3	1,366	96

Ottawa West TAZ - 2011 OD Survey		Notes
% elementary school students:	12%	school (JK to Grade 8) and 16 years of schooling on average
People per Household	2.09	
% english public elementary students enrolled in OCDS	51%	see pie Ottawa Enrolment pie chart
% elementary school students:	14%	
% english public elementary OCDSB students of entire (	7%	



Source: https://www.ottawainsights.ca/themes/education-and-learning/public-school/

Elementary School (Phase 1: 750 students)

	Mode Shares			Inbound AM Peak Hour Person Trips (External)			Outbound AM Peak Hour Person Trips (External)			Total AM Peak Hour Person Trips (External)			Total PM Peak Hour Person Trips (External)		
Travel Mode	Students	Parents	Staff (Based on employment use mode share)	Students	Parents	Staff	Students	Parents	Staff	In	Out	Total	In	Out	Total
Auto Driver	0%	12%	41%	0	78	25	-	78	-	103	78	181	47	52	99
Auto Passenger	12%	-	6%	78	-	4	-	0	-	82	0	82	-	1	1
Transit	0%	-	24%	0	-	15	-	0	-	15	0	15	-	3	3
Bike	2%	2%	8%	15	15	5	-	15	-	36	15	51	2	3	4
Walk	26%	26%	21%	169	169	13	-	169	-	351	169	520	17	19	36
School Bus	60%	-	-	392	-	0	-	0	-	392	0	392	-	-	0
Virtual	0%	-	-	0	-	0	-	0	-	0	0	0	-	-	0
Total	**100%**	**40%**	**100%**	**654**	**263**	**61**	-	**263**	-	**978**	**263**	**1241**	**65**	**78**	**143**

Elementary School (Phases 1 & 2: 750 students)

	Mode Shares			Inbound AM Peak Hour Person Trips (External)			Outbound AM Peak Hour Person Trips (External)			Total AM Peak Hour Person Trips (External)			Total PM Peak Hour Person Trips (External)		
Travel Mode	Students	Parents	Staff (Based on employment use mode share)	Students	Parents	Staff	Students	Parents	Staff	In	Out	Total	In	Out	Total
Auto Driver	0%	12%	39%	0	78	24	-	78	-	102	78	180	47	52	99
Auto Passenger	12%	-	6%	78	-	4	-	0	-	82	0	82	-	1	1
Transit	0%	-	24%	0	-	15	-	0	-	15	0	15	-	3	3
Bike	2%	2%	8%	15	15	5	-	15	-	36	15	51	2	3	4
Walk	26%	26%	23%	169	169	14	-	169	-	352	169	521	17	20	37
School Bus	60%	-	-	392	-	0	-	0	-	392	0	392	-	0%	0
Virtual	0%	-	-	0	-	0	-	0	-	0	0	0	-	0%	0
Total	**100%**	**40%**	**100%**	**654**	**263**	**61**	-	**263**	-	**978**	**263**	**1241**	**65**	**78**	**143**

Elementary School (Phases 1, 2 & 3: 750 students)

	Mode Shares			Inbound AM Peak Hour Person Trips (External)			Outbound AM Peak Hour Person Trips (External)			Total AM Peak Hour Person Trips (External)			Total PM Peak Hour Person Trips (External)		
Travel Mode	Students	Parents	Staff (Based on employment use mode share)	Students	Parents	Staff	Students	Parents	Staff	In	Out	Total	In	Out	Total
Auto Driver	0%	12%	37%	0	78	23	-	78	-	101	78	179	47	51	98
Auto Passenger	12%	-	6%	78	-	4	-	0	-	82	0	82	0%	1	1
Transit	0%	-	23%	0	-	14	-	0	-	14	0	14	0%	3	3
Bike	2%	2%	9%	15	15	5	-	15	-	36	15	52	2	3	4
Walk	26%	26%	25%	169	169	15	-	169	-	354	169	523	17	20	37
School Bus	60%	-	-	392	-	0	-	0	-	392	0	392	0%	0%	0
Virtual	0%	-	-	0	-	0	-	0	-	0	0	0	0%	0%	0
Total	**100%**	**40%**	**100%**	**654**	**263**	**61**	-	**263**	-	**978**	**263**	**1241**	**65**	**78**	**143**

			Internal Peak Hour School Person Trips						Internal Residential Person Trips Associated with School Uses					
			Total AM Trips			Total PM Trips			Total AM Trips			Total PM Trips		
Land Use	Phase		In	Out	Total	In	Out	Total	In (Parent Returns Home)	Out (Parent & Child Leave Home)	Total	In	Out	Total
Elementary	Phase 1		191	96	287	10	19	29	96	191	287	19	10	29
	Phase 2		191	96	287	10	19	29	96	191	287	19	10	29
	Phase 3		191	96	287	10	19	29	96	191	287	19	10	29

1. Assume 10% of students are in activities and that their trips coincide with weekday afternoon peak hour.

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Difference	518	1,175	1,693	1,118	813	1,931

External School Person Trips

Mode Share	2038						2042						2046					
	Total AM Trips			Total PM Trips			Total AM Trips			Total PM Trips			Total AM Trips			Total PM Trips		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto Driver	103	78	181	47	52	99	102	78	180	47	52	99	101	78	179	47	51	98
Auto Passenger	82	0	82	0	1	1	82	0	82	0	1	1	82	0	82	0	1	1
Transit	15	0	15	0	3	3	15	0	15	0	3	3	14	0	14	0	3	3
Bike	36	15	51	2	3	4	36	15	51	2	3	4	36	15	52	2	3	4
Walk	351	169	520	17	19	36	352	169	521	17	20	37	354	169	523	17	20	37
School Bus	392	0	392	0	0	0	392	0	392	0	0	0	392	0	392	0	0	0
Total	978	263	1241	65	78	143	978	263	1241	65	78	143	978	263	1241	65	78	143

Total Internal & External School Person Trips

Phases	Total AM Trips			Total PM Trips		
	In	Out	Total	In	Out	Total
Phases 1, 2 & 3 External School Person Trips	978	263	1241	65	78	143
Internal Peak Hour School Person Trips	191	96	287	10	19	29
Total Internal & External School Person Trips	1,169	358	1,528	75	97	172

Appendix I – TDM Checklists

TDM-Supportive Development Design and Infrastructure Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☐
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☐
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☐
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☐
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☐
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☐
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☐
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☐
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☐
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☐
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☐
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☐
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☐
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	☐
	7.	**OTHER**	
	7.1	**On-site amenities to minimize off-site trips**	
BETTER	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☐
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☐
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☐
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☐
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☐

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☐
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☐
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☐
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☐
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☐
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☐
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☐
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☐
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

TDM Measures Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
	1.	**TDM PROGRAM MANAGEMENT**	
	1.1	**Program coordinator**	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
	2.	**WALKING AND CYCLING**	
	2.1	**Information on walking/cycling routes & destinations**	
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances	☐
	2.2	**Bicycle skills training**	
		Commuter travel	
BETTER ★	2.2.1	Offer on-site cycling courses for commuters, or subsidize off-site courses	☐
	2.3	**Valet bike parking**	
		Visitor travel	
BETTER	2.3.1	Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances	☐
BASIC		3.1.2	Provide online links to OC Transpo and STO information	☐
BETTER		3.1.3	Provide real-time arrival information display at entrances	☐
		3.2	**Transit fare incentives**	
			Commuter travel	
BETTER		3.2.1	Offer preloaded PRESTO cards to encourage commuters to use transit	☐
BETTER	★	3.2.2	Subsidize or reimburse monthly transit pass purchases by employees	☐
			Visitor travel	
BETTER		3.2.3	Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	☐
		3.3	**Enhanced public transit service**	
			Commuter travel	
BETTER		3.3.1	Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	☐
			Visitor travel	
BETTER		3.3.2	Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	☐
		3.4	**Private transit service**	
			Commuter travel	
BETTER		3.4.1	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	☐
			Visitor travel	
BETTER		3.4.2	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		4.	**RIDESHARING**	
		4.1	**Ridematching service**	
			Commuter travel	
BASIC	★	4.1.1	Provide a dedicated ridematching portal at OttawaRideMatch.com	☐
		4.2	**Carpool parking price incentives**	
			Commuter travel	
BETTER		4.2.1	Provide discounts on parking costs for registered carpools	☐
		4.3	**Vanpool service**	
			Commuter travel	
BETTER		4.3.1	Provide a vanpooling service for long-distance commuters	☐
		5.	**CARSHARING & BIKESHARING**	
		5.1	**Bikeshare stations & memberships**	
BETTER		5.1.1	Contract with provider to install on-site bikeshare station for use by commuters and visitors	☐
			Commuter travel	
BETTER		5.1.2	Provide employees with bikeshare memberships for local business travel	☐
		5.2	**Carshare vehicles & memberships**	
			Commuter travel	
BETTER		5.2.1	Contract with provider to install on-site carshare vehicles and promote their use by tenants	☐
BETTER		5.2.2	Provide employees with carshare memberships for local business travel	☐
		6.	**PARKING**	
		6.1	**Priced parking**	
			Commuter travel	
BASIC	★	6.1.1	Charge for long-term parking (daily, weekly, monthly)	☐
BASIC		6.1.2	Unbundle parking cost from lease rates at multi-tenant sites	☐
			Visitor travel	
BETTER		6.1.3	Charge for short-term parking (hourly)	☐

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		7. TDM MARKETING & COMMUNICATIONS	
		7.1 Multimodal travel information	
		Commuter travel	
BASIC	★	7.1.1 Provide a multimodal travel option information package to new/relocating employees and students	☐
		Visitor travel	
BETTER	★	7.1.2 Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☐
		7.2 Personalized trip planning	
		Commuter travel	
BETTER	★	7.2.1 Offer personalized trip planning to new/relocating employees	☐
		7.3 Promotions	
		Commuter travel	
BETTER		7.3.1 Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☐
		8. OTHER INCENTIVES & AMENITIES	
		8.1 Emergency ride home	
		Commuter travel	
BETTER	★	8.1.1 Provide emergency ride home service to non-driving commuters	☐
		8.2 Alternative work arrangements	
		Commuter travel	
BASIC	★	8.2.1 Encourage flexible work hours	☐
BETTER		8.2.2 Encourage compressed workweeks	☐
BETTER	★	8.2.3 Encourage telework	☐
		8.3 Local business travel options	
		Commuter travel	
BASIC	★	8.3.1 Provide local business travel options that minimize the need for employees to bring a personal car to work	☐
		8.4 Commuter incentives	
		Commuter travel	
BETTER		8.4.1 Offer employees a taxable, mode-neutral commuting allowance	☐
		8.5 On-site amenities	
		Commuter travel	
BETTER		8.5.1 Provide on-site amenities/services to minimize mid-day or mid-commute errands	☐

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

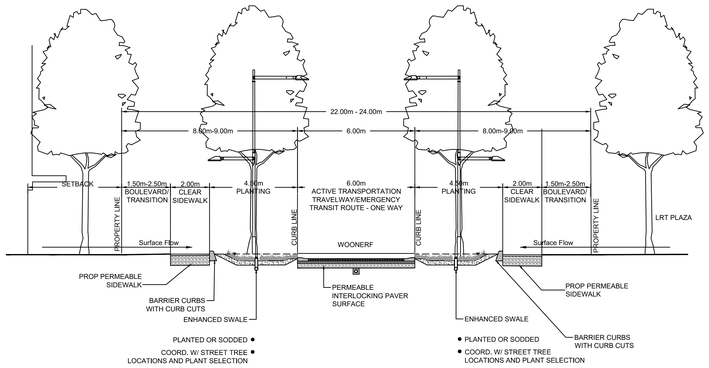
★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Residential developments*	Check if proposed & add descriptions
	1.	**TDM PROGRAM MANAGEMENT**	
	1.1	**Program coordinator**	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
	2.	**WALKING AND CYCLING**	
	2.1	**Information on walking/cycling routes & destinations**	
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances *(multi-family, condominium)*	☐
	2.2	**Bicycle skills training**	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

			TDM measures: *Residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances *(multi-family, condominium)*	☐
BETTER		3.1.2	Provide real-time arrival information display at entrances *(multi-family, condominium)*	☐
		3.2	**Transit fare incentives**	
BASIC	★	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	☐
BETTER		3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☐
		3.3	**Enhanced public transit service**	
BETTER	★	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels *(subdivision)*	☐
		3.4	**Private transit service**	
BETTER		3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	☐
		4.	**CARSHARING & BIKESHARING**	
		4.1	**Bikeshare stations & memberships**	
BETTER		4.1.1	Contract with provider to install on-site bikeshare station (*multi-family)*	☐
BETTER		4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐
		4.2	**Carshare vehicles & memberships**	
BETTER		4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐
BETTER		4.2.2	Provide residents with carshare memberships, either free or subsidized	☐
		5.	**PARKING**	
		5.1	**Priced parking**	
BASIC	★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☐
BASIC	★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☐

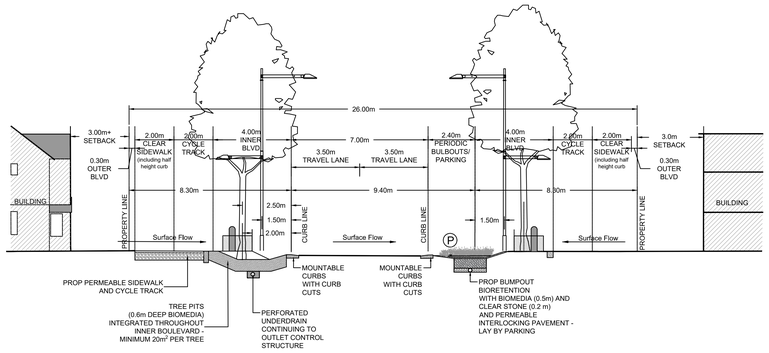
			TDM measures: *Residential developments*	Check if proposed & add descriptions
		6.	**TDM MARKETING & COMMUNICATIONS**	
		6.1	**Multimodal travel information**	
BASIC	★	6.1.1	Provide a multimodal travel option information package to new residents	☐
		6.2	**Personalized trip planning**	
BETTER	★	6.2.1	Offer personalized trip planning to new residents	☐

Appendix J – Proposed Typical Cross-sections



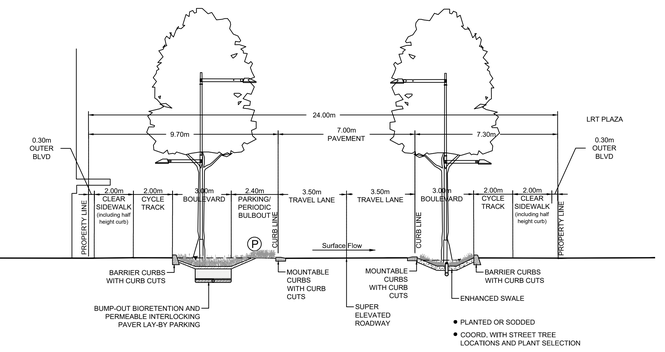
22.0 - 24.0m ROW
YARROW DRIVEWAY
(from BUS LOOP EMERGENCY ACCESS to TUNNEY'S PASTURE)
WOONERF

TARGETED PERCENTAGE OF ROW WIDTH ALLOCATED FOR NON-AUTO USES (URBAN DESIGN MANUAL 2018): 40%
NON-AUTO PERCENTAGE ACHIEVED FOR THIS TYPICAL CROSS SECTION: 100%



26A TREED BOULEVARDS
26m ROW COLLECTOR STREETS

TARGETED PERCENTAGE OF ROW WIDTH ALLOCATED FOR NON-AUTO USES (URBAN DESIGN MANUAL 2018): 40%
NON-AUTO PERCENTAGE ACHIEVED FOR THIS TYPICAL CROSS SECTION: 64%



24.0m ROW
YARROW DRIVEWAY
(from GOLDENROD to BUS LOOP EMERGENCY ACCESS)

TARGETED PERCENTAGE OF ROW WIDTH ALLOCATED FOR NON-AUTO USES (URBAN DESIGN MANUAL 2018): 40%
NON-AUTO PERCENTAGE ACHIEVED FOR THIS TYPICAL CROSS SECTION: 60%

24.0m ROW
LOCAL ROAD WITH LID

TARGETED PERCENTAGE OF ROW WIDTH ALLOCATED FOR NON-AUTO USES (URBAN DESIGN MANUAL 2018): 40%
NON-AUTO PERCENTAGE ACHIEVED FOR THIS TYPICAL CROSS SECTION: 65%

34.0m ROW WITHOUT MEDIAN
COLOMBINE DRIVEWAY (FROM GOLDENROD TO PARKDALE)

TARGETED PERCENTAGE OF ROW WIDTH ALLOCATED FOR NON-AUTO USES (URBAN DESIGN MANUAL 2018): 40%
NON-AUTO PERCENTAGE ACHIEVED FOR THIS TYPICAL CROSS SECTION: 72%

18.0m ROW
STAGE 1 IMPLEMENTATION - CHARDON
(FROM SORREL TO EGLANTINE)

TARGETED PERCENTAGE OF ROW WIDTH ALLOCATED FOR NON-AUTO USES (URBAN DESIGN MANUAL 2018): 40%
NON-AUTO PERCENTAGE ACHIEVED FOR THIS TYPICAL CROSS SECTION: 53%

NOTE:
STAGE 1 IMPLEMENTATION: 18.0m + 3.0m + 3.0m = 24.0m
EFFECTIVE WIDTH BETWEEN BUILDINGS = 24.03m TO 24.12m
ON STREET ALTERNATING PARKING

43.0m ROW
WITH LID IN MEDIAN
TUNNEY'S PASTURE DRIVEWAY
(FROM COLOMBINE TO YARROW)

TARGETED PERCENTAGE OF ROW WIDTH ALLOCATED FOR NON-AUTO USES (URBAN DESIGN MANUAL 2018): 40%
NON-AUTO PERCENTAGE ACHIEVED FOR THIS TYPICAL CROSS SECTION: 72%

DRY SWALE PROFILE 4.5 m WIDE. HARDEN DRY SWALE BOTTOM TO ACTIVATE PLAZAS, SEATING NODES, ETC. WITH SHALLOW FLOWS DURING RAIN EVENTS.

NOTES: SET-BACK FROM BUILDINGS IS CALCULATED FROM DISTANCE

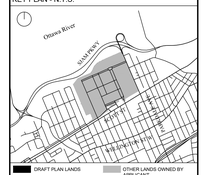
1. BETWEEN FRONTAGE OF STANDARDS LAB AND EXTENSION OF FRONTAGE OF R.H. COATS BUILDING. ROW WIDTH CAN BE FURTHER REDUCED BY KEEPING
2. SINGLE-ROW OF TREES ON EITHER SIDE.
3. MEDIAN MAY RESULT IN SIGHT LINE ISSUES AT INTERSECTIONS ALONG TUNNEY'S PASTURE DRIVEWAY, ESPECIALLY IF THERE IS VEGETATION/PLANTINGS WITHIN CLOSE PROXIMITY TO THESE JUNCTIONS.
4. ONE-WAY VEHICLE LANES SEPARATED BY A MEDIAN ARE LIKELY TO ENCOURAGE HIGHER OPERATING SPEEDS AND MAY NOT BE COMPATIBLE A WITH 40KM/H POSTED SPEED WITHOUT SIGNIFICANT TRAFFIC CALMING MEASURES.
5. LID EFFICIENCY IN MEDIAN IS NOT OPTIMAL. LID IS RECOMMENDED BEHIND THE CURB.

PUBLIC ROAD REDEVELOPMENT

TUNNEY'S PASTURE
OTTAWA, ON

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Arcadis Professional Services (Canada) Inc.
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KEY PLAN - N.T.S.



INFORMATION REQUIRED

UNDER SECTION 51 (17) OF THE PLANNING ACT, R.S.O. 1990, c.P.13 AS AMENDED
(a) - AS SHOWN
(b) - AS SHOWN
(c) - AS SHOWN
(d) - AS LISTED
(e) - AS SHOWN
(f) - AS SHOWN
(g) - AS SHOWN
(h) - MUNICIPAL WATER
(i) - AS SHOWN
(j) - AS SHOWN
(k) - MUNICIPAL SANITARY AND STORM SEWERS
(l) - AS SHOWN

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

SIGNED
V. ANDREW SHELP, O.L.S.
ANNIS, O'SULLIVAN, VOLLEBEKH LTD

DATE _____

OWNER'S CERTIFICATE

I HEREBY CONSENT TO THE FILING OF THIS PLAN BY IBI GROUP, IN DRAFT FORM.

SIGNED
CANADA LANDS COMPANY

DATE _____

LAND USE SCHEDULE

BLOCKS	DESCRIPTION	AREA (ha)
1	MIXED-USE	2.019
2	MIXED-USE	2.435
3	MIXED-USE	2.256
4	MIXED-USE	0.628
5	MIXED-USE	1.568
6	TRANSIT (TO BE CONVEYED TO CITY)	0.636
7	OPEN SPACE	0.092
8	OPEN SPACE	0.107
9	OPEN SPACE	0.420
10	OPEN SPACE	0.156
11	PUBLIC ROW (Goldenrod Driveway)	0.953
12	PUBLIC ROW (Goldenrod Driveway)	0.887
13	PUBLIC ROW (Goldenrod Driveway)	0.304
14	PUBLIC ROW (Goldenrod Driveway)	0.179
15	PUBLIC ROW (Colombine Driveway)	1.282
16	PUBLIC ROW (Colombine Driveway)	0.952
17	PUBLIC ROW (Sir Frederick Banting Driveway)	0.343
18	PUBLIC ROW (Sir Frederick Banting Driveway)	0.691
19	PUBLIC ROW (Sorrel Driveway)	0.342
20	PUBLIC ROW (Sorrel Driveway)	0.153
21	PUBLIC ROW (Sorrel Driveway)	0.374
22	PUBLIC ROW (Eglantine Driveway)	0.153
23	PUBLIC ROW (Eglantine Driveway)	0.378
24	PUBLIC ROW (Chardon Driveway)	0.435
25	ROW WIDENING - FUTURE (Chardon Driveway)	0.063
26	PUBLIC ROW (Chardon Driveway)	0.190
27	PUBLIC ROW (Chardon Driveway)	0.304
28	PUBLIC ROW (Yarrow Driveway)	0.833
29	PUBLIC ROW (Tunney's Pasture Driveway)	2.691
30	ROW WIDENING - (Parkdale Avenue)	0.175
	TOTAL:	21.395

#	DATE	BY	DESCRIPTION
1	2025-09-09	JS	Preliminary Draft LID Concept Plan

DRAWING ISSUE RECORD

APPROVALS

ARCADIS

Aquafor Beech Limited
#6–202–2600 SKYMARK Ave.,
MISSISSAUGA, ONTARIO, L4W 5B2
PHONE: (905) 629–0099, FAX: (905) 629–0089

BENCHMARK

1. Elevations shown are geodetic and are referred to the CGVD2013 geodetic datum.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

SCALE 1:1000 (m) — 15 0 10 20 40

PROJECT NO: 139833

DRAWN BY: SD | CHECKED BY:

PROJECT MGR: SA | APPROVED BY:

SHEET TITLE
DRAFT PLAN OF SUBDIVISION

SHEET NUMBER 2 | ISSUE 1.8

File Location: J:\139833_TunneyPasture\7.0_Production\7.03_Design\7.2_Planning\Draft Plan of Subdivision

Appendix K – Neighbourhood Traffic Calming Strategy

Memo

SUBJECT
Neighbourhood Traffic Calming Strategy
Tunney's Pasture – Site Servicing and Public Road Redevelopment

TO
Wally Dubyk, Transportation Project Manager, City of Ottawa

DATE
June 27, 2025

OUR REF
139833 Public Rd Redevelopment Tunney's Pasture - Internal Documents (1)\6.0_Technical\6.23_Traffic\03_Reports\TIA

DEPARTMENT
Transportation Engineering

PROJECT NUMBER
139833

COPIES TO
Katherine Constantine (CLC)
Mikaela Coon (CLC)

NAME
Ben Pascolo-Neveu – Transportation Engineer

Introduction

A Neighborhood Traffic Calming (NTC) Strategy has been prepared and is appended to the Transportation Impact Assessment (TIA) Step 4 submission to support the Tunney's Pasture redevelopment.

Canada Land Company's Role

It is important to recognize that this consultation process and subsequent preparation of the NTC Strategy document is a Canada Lands Company (CLC) initiative which is well beyond the requirements set out through the City of Ottawa's Draft Plan of Subdivision application process. As such, CLC's role was limited to serving as a facilitator to help voice the community's concerns and offer potential solutions regarding cut-through traffic to City technical staff for their consideration. It is up to City staff to determine how, when and to what extent these traffic calming solutions are implemented. The traffic calming plans developed through the consultation process propose comprehensive traffic management measures throughout adjacent communities are outside of CLC's scope of work to support the transfer of the proposed internal street network within Tunney's Pasture to the City of Ottawa and may also help to mitigate some existing cut-through issues.

Objectives

This document is intended to evaluate potential concept-level traffic calming solutions within adjacent communities, as well as at the site access intersections. The primary objectives of this strategy are to limit cut-through between Tunney's Pasture and Mechanicsville, Hintonburg, Wellington Village and Champlain Park, while facilitating access to the subject site by active modes. These solutions are meant to build on existing traffic management measures identified within each of the above noted communities and were mindful of the need to prioritize the mobility of individuals by active and sustainable modes over private automobile usage.

These neighbourhoods are located within the closest proximity to the subject site and therefore have the highest potential for experiencing traffic infiltration associated with the Tunney's Pasture redevelopment.

Traffic management measures proposed within the subject site, as presented in Section 4.3 and Exhibit 16 of the TIA, are intended to complement those discussed within this NTC Strategy.

Background

Despite the subject site's multiple connections to the arterial and regional road network, there have been concerns expressed by Communities' Perspective Group (CPG) members regarding the potential exacerbation of existing cut-through traffic patterns resulting from the Tunney's Pasture redevelopment. These concerns are based on the site's direct vehicular connections with adjacent neighborhoods and widely-known congestion issues on nearby key commuter routes, including Island Park Drive and Parkdale Avenue, during the weekday peak periods. It should be

noted that the purpose of this NTC Strategy is to prevent the exacerbation of cut-through traffic issues but that the resolution of existing issues is outside of the scope of this strategy report.

Community Engagement

A Communities' Perspective Group (CPG) was established at the onset of the Tunney's Pasture redevelopment to provide a forum for residents from adjacent communities and special interest groups to share input for consideration by the project team. A subset of the CPG, referred to as 'CPG Stream 1', is involved in the TIA process.

The project team is committed to working with the CPG Stream 1 to develop solutions that mitigate the impact of the Tunney's Pasture redevelopment on the surrounding transportation network and community, though it does not set out to resolve existing community issues with respect to transportation. As Canada Lands Company (CLC) has a mandate to accelerate the delivery of housing, this community engagement process allows the project team to move ahead with various stages of the Draft Plan of Subdivision application, while receiving input from the CPG.

Touch-Point Meetings

Over the course of the TIA process, three (3) touch-point meetings were proposed to allow for input/comment from the CPG Stream 1 members:

- Touchpoint 1 – TIA Terms of Reference (TOR) – December 2, 2024
- Touchpoint 2a – Neighbourhood Traffic Management Workshop (Mechanicsville) – January 8, 2025
- Touchpoint 2b – Neighbourhood Traffic Management Workshop (Hintonburg, Wellington Village & Champlain Park) – February 10, 2025
- Touchpoint 3 – Presentation of Preliminary TIA Conclusions & Recommendations – June 17, 2025

Touch-Point 1 provided CPG Stream 1 members with an overview of the TIA Terms of Reference (TOR), as well as an opportunity to provide input on these key study parameters for consideration by City technical staff.

The Touch-Point 2 sessions introduced CPG Stream 1 members to the Traffic Calming Toolbox, divided members into break-out groups to identify key issues, reviewed potential cut-through routes and engaged in discussions to better understand their primary concerns and possible solutions. Further refinements were made to the traffic calming plans by the project team after each workshop, with consideration of the ideas discussed during each session.

Lastly, Touch-Point 3 provided CPG Stream 1 members with an overview of the TIA study recommendations and conclusions, prior to the public release of the entire TIA on 'DevApps'.

Potential Traffic Infiltration Routes

Potential infiltration routes have been assessed based on community feedback from the Touch-Point 2 workshop meetings and were verified using traffic count data collected in May 2023 and March/April 2025.

Key routes include peripheral intersections identified in the TIA, including Scott & Carruthers, Scott & Bayview Station, Burnside & Bayview Station/Slidell (roundabout), as well as streets within Mechanicsville, Hintonburg, Wellington Village, and Champlain Park that connect directly to Tunney's Pasture. **Exhibit 1** below provides a visual representation of the primary cut-through routes.



ARCADIS

Tunney's Pasture - Site Servicing and Public Road Redevelopment
Neighbourhoood Traffic Calming Strategy

Exhibit 1
Potential Neighbourhood Infiltration Routes

PROJECT No. 139833

SCALE: 0m 125m 250m

Potential for Cut-Through Traffic

Based on the trip generation process undertaken as part of this TIA process, an increase of approximately 410 two-way vehicle trips is expected in Phase 1 and represents the peak direction of vehicular activity throughout the site's redevelopment. However, because residential traffic patterns typically follow an opposing flow to those of office-based land uses, the majority of this additional traffic does not significantly worsen traffic operations relative to existing conditions. Phase 1 traffic results in just a 5% increase (approximately 75 vehicle trips) in the peak direction dispersed across the entire road network. Furthermore, the site's transformation from a traffic *generator* to a traffic *source* has the positive effect of utilizing available roadway capacity that is opposite from the peak direction of travel. This shift mitigates operational impacts to the adjacent road network and therefore is less likely to exacerbate any existing cut-through issues.

Table 1 below provides a comparison of pre-pandemic and Phase 1 traffic volume projections.

Phase 2 of the development will result in significant reductions in both total and peak direction traffic volumes of approximately 24% and 28% in comparison with its peak in 2038, respectively, with further reductions anticipated in Phase 3. These reductions will decrease the likelihood of cut-through traffic on the adjacent road network and help alleviate longstanding congestion issues, which currently encourages motorists to seek alternative, less direct routes.

Table 1 – Comparison of Pre-Pandemic Site-Generated Traffic with Phase 1 Projections

Scenario	Vehicles – Weekday AM Peak Hour			Vehicles – Weekday PM Peak Hour		
	In	Out	Total	In	Out	Total
Phase 1 Traffic Projections [1]	1,274	589	1,863	877	1,548	2,425
Pre-Pandemic Site-Generated Traffic	1,495	570	2,065	542	1,473	2,015
Difference (%)	**-221 (-15%)**	**+19 (+3%)**	**-202 (-10%)**	**+335 (+62%)**	**+75 (+5%)**	**+410 (+20%)**

[1] *Phase 1 traffic volume projections do not include 'pass-by trips'.*

Traffic Calming Resources

The Local Residential Streets 30km/h Toolbox, published by the City of Ottawa in 2021, was the primary reference document utilized in the development of traffic calming solutions for this NTC Strategy, given the neighborhood context and local street composition of the internal street network of all four adjacent communities being reviewed in this study.

This Toolbox provides a range of traffic calming measures that are applicable to local streets to reduce operating speeds and the attractiveness of these low-order roads as potential cut-through routes, while improving safety for all road users. A targeted spacing of 50 to 60 metres between measures is considered acceptable to ensure adequate effectiveness.

Low-cost, retrofit measures were determined to be the most appropriate for consideration in the context of achieving a reduction in existing cut-through traffic within these communities.

Proposed Traffic Calming Measures

To address existing traffic calming concerns expressed by CPG Stream 1 members, the following types of traffic calming measures from the Toolbox were considered:

- Physical Infrastructure:
    - Speed humps or raised crosswalks on traffic infiltration-prone streets.

    - Curb extensions or road narrowing to slow vehicle speeds.
    - Traffic diverters to limit access to non-local traffic.
- Signage & Restrictions:
    - Additional 'Local Traffic Only' signage.
    - Expansion of vehicle movement restrictions.
- Active Transportation Enhancements:
    - Improved pedestrian crossings with visibility measures.
    - Dedicated bike lanes or shared cycling facilities.

The above noted measures aim to reduce cut-through traffic, while improving safety and accessibility for active modes of transportation and were considered in the development of traffic management measures discussed in each of the following sections.

Mechanicsville

Review of Existing Conditions

Mechanicsville is located to the east of Tunney's Pasture and is generally bound by Kichi Zibi Mikan to the north, Bayview Station Road to the east, Scott Street to the south and Parkdale Avenue to the west. This neighbourhood consists of a two-way grid-street pattern and, as such, there are numerous potential cut-through routes within Mechanicsville, as shown on **Exhibit 2** below.

Existing traffic management measures within Mechanicsville include the following:

- 'Flexible' centreline stakes (seasonal), 'Traffic Calmed Neighbourhood' signage and a speed display device on Burnside Avenue
- Turning movement prohibitions at Kichi Zibi Mikan & Slidell/Onigam
    - Authorized vehicles excepted: Westbound and southbound left-turning restrictions, as well as northbound turning movements
    - Restrictions from 7:00-9:00am and 4:00-6:00pm (Authorized vehicles excepted): Westbound right-turn and eastbound turning movements

Burnside Avenue has the highest potential for cut-through traffic of all streets within Mechanicsville, as a result of its direct connectivity from Parkdale Avenue to Scott Street via Bayview Station Road.

Turning movement count data referenced suggests that Burnside Avenue may be used as a possible cut-through route, with traffic volumes of a similar magnitude performing southbound left-turns at the Parkdale & Burnside and Scott & Bayview Station Road intersections during the weekday morning peak hour and the reverse in the weekday afternoon peak hour.

The Burnside & Bayview Station/Slidell roundabout was determined to operate at a high level of service (i.e. LOS 'A'), based on the intersection capacity analysis conducted for this TIA under Existing Conditions. As such, the high performance of this intersection may support the occurrence of cut-through traffic patterns within Mechanicsville. The attractiveness of Burnside Avenue as a potential cut-through route, however, is lessened by the significant turning movement restrictions which are already in place at the Kichi Zibi Mikan & Slidell/Onigam intersection.

Traffic count data collected at the Scott & Carruthers intersection did not support this location as a potential cut-through route. The south leg of this intersection is limited to southbound movements and volumes observed travelling southbound through this intersection were nominal and in the order of 10 vehicles per weekday peak hour.

Data collection undertaken at the Parkdale & Emmerson intersection indicates nominal left- and right-turning movements during both the weekday morning and afternoon peak hour periods. As such, this location was not identified as a primary cut-through route.

Relevant traffic count data collected to support the TIA process, and discussed above, is highlighted in **Appendix A**.

Proposed Traffic Calming Plan for Mechanicsville

A traffic calming plan was developed for Mechanicsville with input from community members. Key aspects of this traffic calming plan are outlined below:

- Introduce 'friction' on Burnside Avenue through the implementation of streetscaping improvements, as specified in the 2014 Scott Street Community Design Plan (CDP), to reduce opportunities for use of this primary cut-through route within the Mechanicsville community.
    - More specifically, Burnside Avenue was envisioned as a 'complete street' in the Scott Street CDP, and would accommodate two vehicular lanes, two bike lanes and landscaped boulevards with sidewalks and street trees on both sides within its existing right-of-way.
- Impose vehicle directional measures to limit traffic flow on Stonehurst Avenue to northbound north of Lyndale Avenue and southbound south of Lyndale Avenue to mitigate the occurrence of cut-through traffic and higher operating speeds adjacent to Laroche Park. Contra-flow bike lanes would be introduced to maintain travel in both directions for cyclists along the entire length of Stonehurst Avenue.
- Introduce regularly-spaced speed humps across the Mechanicsville street network to reduce the probability of cut-through traffic shifting to the next parallel street within the community, along with the above noted potential improvements to Burnside Avenue and Stonehurst Avenue.

It should be noted that a more aggressive strategy was presented to the CPG Stream 1 Mechanicsville representative to mitigate the impacts of cut-through traffic which featured traffic 'diverters' on key streets such as Burnside Avenue, however this option was deemed to be overly intrusive in limiting the movement of vehicular traffic within the community.

The potential traffic calming plan developed for Mechanicsville is provided in **Exhibit 3** below.



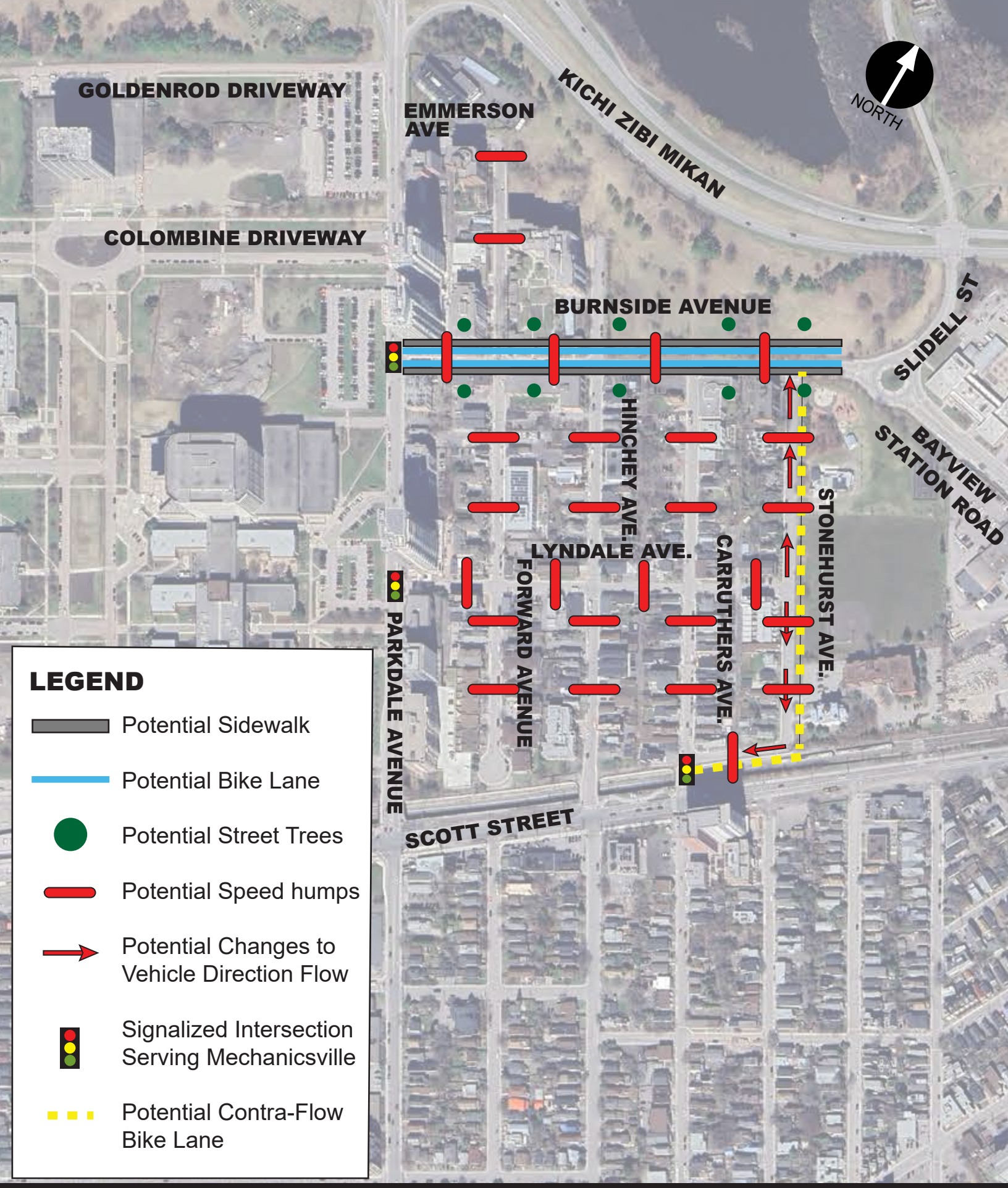
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Tunney's Pasture Site Servicing and Public Road Redevelopment

Exhibit 2 – Existing Primary & Secondary Cut-Through Routes (Mechanicsville)

PROJECT No. 139833

SCALE: 0m 15m



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Tunney's Pasture Site Servicing and Public Road Redevelopment

Exhibit 3 – Potential Traffic Calming Plan (Mechanicsville)

PROJECT No. 139833

SCALE: 0m 15m

Hintonburg

Existing Conditions Review

Hintonburg is located south of Tunney's Pasture and east of Wellington Village, with boundaries generally defined by Scott Street to the north, Bayview Station Road to the east, Wellington Street West to the south, and Holland Avenue to the west. This review focuses on the portion of Hintonburg located west of Parkdale Avenue and directly abutting the Tunney's Pasture site, as this area is most relevant to the cut-through traffic assessment.

Existing potential primary and secondary cut-through routes within Hintonburg are shown in **Exhibit 4** below.

Similar to Mechanicsville, Hintonburg's internal street network is generally arranged in a grid pattern, which may promote traffic infiltration into adjacent communities during periods of congestion on the arterial road network. In contrast, other local streets east of Parkdale Avenue are configured in an offset grid pattern and are therefore less conducive to encouraging cut-through traffic.

CPG Stream 1 members expressed concerns about congested conditions experienced on Parkdale Avenue during the weekday peak periods and how these conditions are likely contributing to a shift in traffic demand to nearby parallel streets in Hintonburg, including Hamilton Avenue N, Hinton Avenue N and portions of Tyndall Street for motorists seeking out alternative routes to access Highway 417. Given the potential challenges in crossing Wellington Street West with a two-way stop-controlled intersection, it is possible that cut-through motorists may only use a portion of these potential routes.

Parkdale Avenue has experienced longstanding congested conditions, especially during commuter peak periods, as a result of its full interchange connections to both Highway 417 and Kichi Zibi Mikan. When Highway 417 is busy, then traffic will divert to Kichi Zibi Mikan, potentially using parallel neighbourhood routes to avoid congested conditions on Parkdale Avenue. The transformation of Tunney's Pasture into a transit-oriented development is expected to reduce the need for crosstown regional trips. This change may alleviate bottleneck conditions on Highway 417, which currently contribute to the neighbourhood traffic infiltration issues within Hintonburg.

As indicated through a review of traffic count data collected for this TIA process, peak direction traffic volumes of up to 750 vehicles per hour have been observed on Parkdale Avenue. South of Scott Street, decreasing to approximately 300 to 400 vehicles per hour which is well within the capacity of a two-lane road. Despite these relatively low directional volumes, the portion of Parkdale Avenue between Bullman Street and Highway 417 does become congested and slow-moving during the weekday morning peak period. Additionally, during the weekday afternoon peak period this congestion extends from Kichi Zibi Mikan to Highway 417. Closely-spaced intersections with high pedestrian crossing volumes and an abundance of private driveways result in a slow throughput along this corridor. Relevant link volumes on Parkdale Avenue referenced above are indicated in **Appendix A**.

Existing traffic calming measures within the portion of Hintonburg reviewed in this neighbourhood consist of mid-block and intersection bulb-outs. A vehicle directional closure bulb-out exists on Hinton Avenue North, limiting traffic to northbound from Tyndall Street to Wellington Street West, while permitting two-way flow of pedestrians and cyclists within this block.

Proposed Traffic Calming Plan for Hintonburg

With consideration of the above, a potential traffic calming plan was developed for Hintonburg which included the more widespread use of bulb-outs at both intersections and mid-block, as well as 'raised intersections' to provide vertical deflection and further disincentivizes motorists from using sidestreets within close proximity to Parkdale Avenue as alternative routes to access Highway 417. Notably, a potential vehicle directional closure is also proposed on Hamilton Avenue N immediately south of commercial access driveways, similar to the movement restrictions already in place on Hinton Avenue N.

The potential traffic calming plan developed for Hintonburg is provided in **Exhibit 5** below.



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Tunney's Pasture Site Servicing and Public Road Redevelopment

Exhibit 4 – Existing Primary & Secondary Cut-Through Routes (Hintonburg)

PROJECT No. 139833

SCALE: 0m 15m



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Tunney's Pasture Site Servicing and Public Road Redevelopment

Exhibit 5 – Potential Traffic Calming Plan (Hintonburg)

PROJECT No. 139833

SCALE: 0m 15m

Wellington Village

Existing Conditions Review

Wellington Village is generally bound Scott Street to the north, Holland Avenue to the east, Wellington Street West to the south, as well as Island Park Drive to the west. The western limit of the traffic calming plan for Wellington Village, as part of this NTC Strategy, was established as Carleton Avenue. This limit reflects the expected decrease in potential neighbourhood traffic infiltration from Tunney's Pasture beyond the site's immediate boundary streets.

Wellington Village has a higher potential for cut-through traffic as a result of its grid street pattern which acts as a 'sieve' to permit direct two-way vehicular connectivity between Scott Street and Wellington Street West. This street pattern does create challenges in achieving a robust traffic calming strategy by allowing traffic to shift to the 'next street over' and therefore required a more comprehensive review of the neighbourhood to mitigate these potential occurrences. Furthermore, the site's internal street network is aligned directly with local streets within Wellington Village further south, thereby increasing the likelihood of cut-through traffic.

Existing potential primary and secondary cut-through routes within Wellington Village are shown in **Exhibit 6** below. Ross Avenue and Smirle Avenue are both identified as primary cut-through routes, given their direct connectivity to the site.

A desktop survey of existing traffic management measures within Wellington Village identified a range of measures including 'raised intersections', speed humps, bulb-outs (mid-block and at intersections), as well as seasonal measures such as 'flexible posts' and painted on-road messaging. Notably, Huron Avenue is being reconstructed to include short, raised center median segments, designed to add horizontal 'friction' for motorists.

The capacity analysis conducted as part of this TIA process indicated the need for upgrades to the Scott & Sir Frederick Banting/Ross intersection to accommodate a signalized and 'protected intersection' configuration under Existing Conditions. These upgrades are further supported by the Scott Street Community Design Plan (CDP) which also recommended traffic signals at this location, while north-south turning movement prohibitions are recommended at the intersections of Scott Street with Sir Frederick Banting/Ross & Goldenrod/Smirle.

A 'gateway' 30km/h speed limit exists within Wellington Village and indicates that streets in this neighbourhood support low vehicular operating speeds which safely accommodate cyclists riding in mixed traffic where dedicated cycling facilities are not proposed.

Based on the configuration of the internal street pattern within Wellington Village and its connections to the arterial road network (i.e. Scott Street and Wellington Street West), the primary cut-through routes with respect to the subject site are as follows and form direct connections with the internal street network of Tunney's Pasture:

- Ross Avenue (Scott Street to Wellington Street West)
- Smirle Avenue (Scott Street to Wellington Street West)

Proposed Traffic Calming Plan for Wellington Village

A traffic calming plan for Wellington Village was developed with input from CPG Stream 1 members. Key aspects of this traffic calming plan are outlined below:

- Introduce traffic 'diverters' at the intersections of Spencer Street with Ross Avenue and Goldenrod Driveway to mitigate cut-though impacts associated with the two north-south primary cut-through routes which align directly with Sir Frederick Banting Driveway and Goldenrod Driveway.
- Restrict vehicle traffic to northbound-only at the intersections of Ross Avenue and Smirle Avenue to Scott Street to reduce opportunities for cut-through traffic through a combination of vehicle directional measures and prohibitive signage.
- Prohibit north-south vehicular movements at the Scott & Sir Frederick Banting/Ross and Scott & Goldenrod/Smirle intersections but permit cycling movements.
- Introduce speed humps, mid-block and intersection bulb-outs and potential raised median segments on streets with sufficiently wide pavement widths.

The proposed traffic calming plan developed for Wellington Village is illustrated in **Exhibit 7** below.



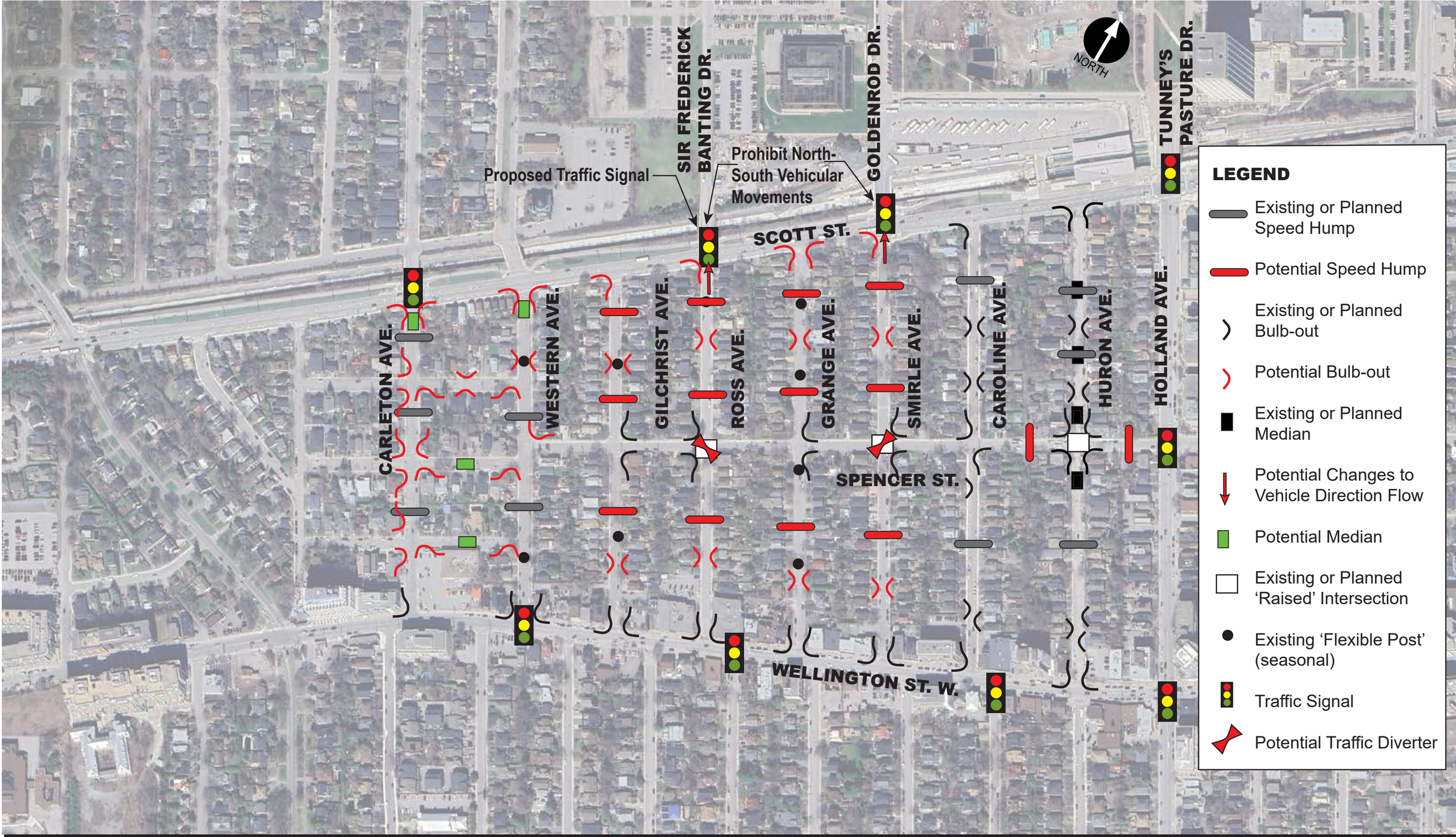
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Tunney's Pasture Site Servicing and Public Road Redevelopment

Exhibit 6 – Existing Primary and Secondary Cut-through Routes (Wellington Village)

PROJECT No. 139833

SCALE: 0m 15m



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Tunney's Pasture Site Servicing and Public Road Redevelopment

Exhibit 7 – Potential Traffic Calming Plan (Wellington Village)

PROJECT No. 139833

SCALE: 0m 15m

Champlain Park

The Champlain Park community is located immediately west of the subject site. The portion of Champlain Park which will be reviewed in this study is limited to Kichi Zibi Mikan to the north, Tunney's Pasture to the east, Scott Street to the south and Island Park Drive to the west. Even though there are no existing or planned vehicular connections between Tunney's Pasture and Champlain Park, it is likely that this neighbourhood experiences an increase in cut-through traffic as a result of commuter traffic, some of which may be generated from the existing Tunney's Pasture development, navigating around widely known congested conditions on Island Park Drive during the weekday peak periods.

Existing potential primary and secondary cut-through routes within Champlain Park are shown in **Exhibit 8** below.

Existing Conditions Review

Traffic count data collected on Island Park Drive in March/April 2025 to support of the overall TIA process indicates that peak direction volumes on this north-south arterial road are in the order of 800 to 1,000 vehicles during the weekday morning peak hour from Kichi Zibi Mikan to Scott Street, as identified in **Appendix A**. Volumes of this magnitude are an indicator that this two-lane road is approaching its capacity during this most constrained weekday peak hour and has an increased chance of causing spillover traffic within adjacent neighbourhoods.

Existing traffic calming measures within Champlain Park consist of speed humps, curb extensions at select intersections, as well as 'flexible stakes' (seasonal). Westbound right-turning vehicle prohibitions also exist at the Island Park & Clearview intersection to prohibit these turning movements from 3:30-6:00pm from Monday to Friday, while cycling movements are excepted.

Based on the configuration of the internal street pattern within Champlain Park and its connections to the arterial road network (i.e. Island Park Drive and Scott Street), the primary cut-through routes are most likely as follows:

- Northwestern Avenue and Clearview Avenue
- Carleton Avenue and Amanda Avenue
- Carleton Avenue and Sunnymede Avenue

Proposed Traffic Calming Plan for Champlain Park

A proposed traffic calming solution was developed with input from community members to introduce vehicle directional measures or 'friction' on primary cut-through, as outlined below:

- Use of speed cushions on transit routes to create vertical 'friction' for cars, without impeding local bus service travel times within the Champlain Park community;
- Introduce vehicle directional measures on key cut-through routes within the community, including Amanda Avenue and Keyworth Avenue, while permitting cyclists and pedestrian to travel in both directions; and
- More widespread and regularly-spaced use of intersection and speed humps, as well as intersection and mid-block bulb-outs within the City-owned street network in Champlain Park, in accordance with the Local Residential Streets Traffic Calming Toolbox (2021).

The proposed measures would allow existing OC Transpo bus service routes to be maintained through the Champlain Park community and continue to promote bi-directional travel on all streets by active users.

The potential traffic calming solution developed for Champlain Park is illustrated in **Exhibit 9** below.



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Tunney's Pasture Site Servicing and Public Road Redevelopment

Exhibit 8 – Existing Primary and Secondary Cut-through Routes (Champlain Park)

PROJECT No. 139833

SCALE: 0m 15m



ARCADIS Tunney's Pasture Site Servicing and Public Road Redevelopment

Exhibit 9 – Potential Traffic Calming Plan (Champlain Park)

PROJECT No.

SCALE: 0m 15m

Monitoring

Monitoring will take place at reoccurring intervals throughout the Tunney's Pasture determine the effectiveness of any traffic calming measures implemented by the City within adjacent neighbourhoods, as recommended by this Neighbourhood Traffic Calming Strategy, to determine if these measures achieve the intended results.

Cut-through traffic generated by the proposed development will be tracked through regular traffic data collection at key study area intersections. If necessary, adjustments to the strategy will be made based on data analysis to ensure its continued effectiveness in addressing traffic infiltration concerns.

It is important to recognize that traffic calming solutions proposed within adjacent neighbourhoods are not intended to resolve existing cut-through traffic issues, but rather to ensure that the Tunney's Pasture redevelopment does not exacerbate these existing issues.

Further details are provided in the Monitoring Plan which is included in Appendix M of the TIA.

Conclusion

The Neighborhood Traffic Calming Strategy for the Tunney's Pasture redevelopment provides potential solutions for mitigating cut-through traffic concerns in Mechanicsville, Hintonburg, Wellington Village and Champlain Park to complement measures being proposed within and on the periphery of the subject site, while promoting safer and more sustainable transportation options. Although the strategy does not aim to resolve pre-existing traffic issues, its focus is on preventing the redevelopment of the subject site from exacerbating these patterns within adjacent neighborhoods. Through a combination of physical infrastructure modifications, regulatory changes, and active transportation enhancements, the strategy aims to preserve the integrity of local neighborhoods, while supporting the city's broader transportation goals. A robust monitoring plan and continued community engagement will support its success over the duration of the redevelopment process.

The proposed solutions and mitigation strategies investigated in the Neighbourhood Traffic Calming Strategy will serve to limit the amount of cut-through traffic through a range of measures with varying degrees of intensity to suit the context, including high-friction, traffic-calmed streets and turning movement restrictions at the site's boundary street intersections. It is also noteworthy that in the near-term (Phase 1), the introduction of residential land uses within Tunney's Pasture will generate traffic opposite the existing peak flow of traffic which is less likely to utilize neighbourhood shortcuts and just 75 additional peak hour vehicular trips dispersed across the broader transportation network. At full build-out, the site will ultimately generate far fewer automobile trips in comparison with pre-COVID-19 pandemic volumes, thereby significantly reducing opportunities for cut-through traffic.

Prepared By:



Ben Pascolo-Neveu, P.Eng.
Transportation Engineer

Appendix L – 2018 Community Transportation Study Extracts

with the 57% balance of travel occurring in a private auto (47% driver and 10% passenger). The corresponding number of person trips is estimated in approximately 4,300 during each peak hour.

Table 1: Trip Generation Summary - Existing Land Use

	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Existing Auto Trips (from observed ground counts)	1,495	570	2,065	542	1,473	2,015
Existing Person Trips (derived from ground counts)	3,181	1,213	4,394	1,153	3,134	4,287

By way of comparison, the number of auto trips reflecting the existing land use at Tunney's Pasture was also estimated using rates obtained from the 9th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. The ITE Manual is considered the industry-wide standard in North America for estimating site vehicular traffic for proposed development. As shown in Table 2, the estimated number of vehicle trips to/from the existing Tunney's Pasture site based on ITE rates is approximately 50% greater than the number actually observed for the site using ground counts (2,000 vs 3,000 veh/h). The discrepancy could be explained by different non-auto modal share characteristics, and/or could be an indication that the ITE trip generation rates for the General Office land use are not truly reflective of the subject Tunney's Pasture site. In short, the ITE rates are considered to be conservative in nature (i.e., over-estimate projected vehicle traffic).

Table 2: Vehicle Trip Generation Summary - Existing Land Use

	AM Peak (veh/h)			PM Peak (veh/h)		
	In	Out	Total	In	Out	Total
Existing Auto Trips (from observed ground counts)	1,495	570	2,065	542	1,473	2,015
Existing Auto Trips (estimated from ITE rates)	2,724	383	3,107	503	2,474	2,977

As ITE trip generation surveys often record vehicle trips and typically reflect highly suburban locations (with little to no access by travel modes other than private automobiles), adjustment factors appropriate to the more connected suburban study area context were applied to attain estimates of person trips. To convert ITE vehicle trip rates to person trips, an auto occupancy factor and a non-auto trip factor were applied to the ITE vehicle trip rates. Our review of available literature suggests that a combined factor of approximately 1.3 is considered reasonable to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%. As such, the person trip generation for the existing site land use is summarized in Table 3.

Table 3: Person Trip Generation Summary - Existing Land Use

	AM Peak (persons/h)			PM Peak (persons/h)		
	In	Out	Total	In	Out	Total
Existing Person Trips (derived from ground counts)	3,181	1,213	4,394	1,153	3,134	4,287
Existing Person Trips (derived from ITE rates)	4,311	610	4,921	885	4,374	5,259

Comparing the existing person trips summarized in Table 3, the derivation based on the assumptions within the ITE Trip Generation Manual is considered slightly more aggressive (approximately 10% to 20% more trips) with respect to trip generation than what exists today for Tunney's Pasture based on ground counts. The ensuing analyses of the proposed land use will be based on the more conservative ITE trip generation rates.

Appendix M – Traffic Signal Warrants

Traffic Signal Warrants

OTM BOOK 12* - TRAFFIC SIGNAL WARRANT

Project: Public Rd Redevelopment Tunney's Pasture **Date:** June 23, 2025

Project #: 139833

Location: Parkdale (Major Roadway) at Colombine (Minor Roadway)

Orientation: North/South East/West

Municipality: Ontario **Scenario:** Future Total 2038

Justification 1 - Minimum Vehicle Volume

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, all approaches	480	720	480	**720**	1143 100%	572 79%	572 79%	572 79%	1550 100%	775 100%	775 100%	775 100%	92%
B. Vehicle volume along minor roads	120	170	180	**255**	137 54%	69 27%	69 27%	69 27%	394 100%	197 77%	197 77%	197 77%	58%

Justification 2 - Delay to Cross Traffic

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, along artery	480	720	480	**720**	1006 100%	503 70%	503 70%	503 70%	1156 100%	578 80%	578 80%	578 80%	81%
B. Combined vehicle and pedestrian volume crossing artery from minor roads	50	70	50	**70**	161 100%	33 47%	33 47%	33 47%	226 100%	113 100%	113 100%	113 100%	80%

Justification 3 - Volume/Delay Combination

JUSTIFICATION	SATISFIED TO 80% OR MORE?	BOTH SATISFIED TO 80% OR MORE?
Justification 1 - Minimum Vehicular Volume	NO	NO
Justification 2 - Delay to Cross Traffic	YES	

Justification 7 - Projected Volumes

WARRANT	DESCRIPTION	MINIMUM REQUIREMENT				COMPLIANCE		
		FREE FLOW	RESTRICTED FLOW	ADJUSTED FREE FLOW	ADJUSTED RESTRICTED FLOW	SECTIONAL AHV	SECTIONAL %	ENTIRE %
1. MINIMUM VEHICULAR VOLUME	A. Vehicle volumes, all approaches (Average Hour)	480	720	576	**864**	943	100%	61%
	B. Vehicle volume along minor roads (Average Hour)	120	170	216	**306**	186	61%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volumes, along artery (Average Hour)	480	720	576	**864**	757	88%	88%
	B. Combined vehicle and pedestrian volume crossing artery from minor roads (Average Hour)	50	75	60	**90**	102	100%	

Projected Traffic Volumes:

Average Hourly Volume (AHV) Equation: AHV = (amPHV + pmPHV)/4

AM Peak Hour Volumes

			↖	0				
126	528	0	←	0				
↙	↓	↘	↙	0				
	66	↗	↖	↑	↗			
	0	→	190	162	0			
	71	↘						

PM Peak Hour Volumes

			↖	0				
108	248	0	←	0				
↙	↓	↘	↙	0				
	226	↗	↖	↑	↗			
	0	→	143	657	0			
	168	↘						

Average Hourly Volumes (AHV)

			↖	0				
82	272	0	←	0				
↙	↓	↘	↙	0				
	102	↗	↖	↑	↗			
	0	→	117	287	0			
	84	↘						

Eight Hour Traffic Volumes:**

Hour	Major Road						Minor Road						Ped*
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
7:00 AM	190	162	0	0	528	126	66	0	71	0	0	0	0
8:00 AM	95	81	0	0	264	63	33	0	36	0	0	0	0
9:00 AM	95	81	0	0	264	63	33	0	36	0	0	0	0
10:00 AM	95	81	0	0	264	63	33	0	36	0	0	0	0
3:00 PM	143	657	0	0	248	108	226	0	168	0	0	0	0
4:00 PM	72	329	0	0	124	54	113	0	84	0	0	0	0
5:00 PM	72	329	0	0	124	54	113	0	84	0	0	0	0
6:00 PM	72	329	0	0	124	54	113	0	84	0	0	0	0

** Number of pedestrians crossing the major road*
*** These are projected 8-hour traffic volumes.*

Notes:

1. Vehicle volume warrant (1A) and (2A) for intersections of roadways having two or more moving lanes in one direction should be 25% higher than the values given above.

1 Lane per Direction

2. Warrant values for free flow apply when the 85th percentile speed of artery traffic equals or exceeds 70 km/h or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000. Warrant values for restricted flow apply to large urban communities when the 85th percentile speed of artery traffic does not exceed 70 km/h.

Restricted Flow

3. The lowest sectional percentage governs the entire warrant.

4. For "T" intersections the warrant values for the minor road should be increased by 50% (Warrant 1B only).

3-legged Intersection

5. All flow values for Justification 1 and 2 are to be increased by 20% in the case of new intersections, Justification 3 is to only be used for existing intersections and all flow values for Warrant 1 and Warrant 2 of Justification 7 are to be increased by 20% for existing intersections and by 50% in the case of new intersections.

Existing Intersection

6. The crossing volumes are defined as the sum of:
   (a) Left-turns from both minor road approaches.
   (b) The heaviest through volume from the minor road.
   (c) 50% of the heavier left turn movement from major road when both of the following are met:
      (i) the left-turn volume >120 vph
      (ii) the left-turn volume plus the opposing volume >720 vph
   (d) Pedestrians crossing the main road.

CONCLUSION: **The intersection does NOT meet the minimum warrants for traffic control signals.**

* "Ontario Traffic Manual, Book 12 (March 2012)", Ontario Ministry of Transportation.

OTM BOOK 12* - TRAFFIC SIGNAL WARRANT

Project: Public Rd Redevelopment Tunney's Pasture **Date:** June 23, 2025

Project #: 139833

Location: Parkdale (Major Roadway) at Colombine (Minor Roadway)

Orientation: North/South East/West

Municipality: Ontario **Scenario:** Future Total 2046

Justification 1 - Minimum Vehicle Volume

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, all approaches	480	720	480	**720**	946 100%	473 66%	473 66%	473 66%	1228 100%	614 85%	614 85%	614 85%	82%
B. Vehicle volume along minor roads	120	170	180	**255**	113 44%	57 22%	57 22%	57 22%	182 71%	91 36%	91 36%	91 36%	36%

Justification 2 - Delay to Cross Traffic

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, along artery	480	720	480	**720**	833 100%	417 58%	417 58%	417 58%	1046 100%	523 73%	523 73%	523 73%	74%
B. Combined vehicle and pedestrian volume crossing artery from minor roads	50	70	50	**70**	46 66%	23 33%	23 33%	23 33%	96 100%	48 69%	48 69%	48 69%	59%

Justification 3 - Volume/Delay Combination

JUSTIFICATION	SATISFIED TO 80% OR MORE?	BOTH SATISFIED TO 80% OR MORE?
Justification 1 - Minimum Vehicular Volume	NO	NO
Justification 2 - Delay to Cross Traffic	NO	

Justification 7 - Projected Volumes

WARRANT	DESCRIPTION	MINIMUM REQUIREMENT				COMPLIANCE		
		FREE FLOW	RESTRICTED FLOW	ADJUSTED FREE FLOW	ADJUSTED RESTRICTED FLOW	SECTIONAL AHV	SECTIONAL %	ENTIRE %
1. MINIMUM VEHICULAR VOLUME	A. Vehicle volumes, all approaches (Average Hour)	480	720	576	**864**	544	63%	24%
	B. Vehicle volume along minor roads (Average Hour)	120	170	216	**306**	74	24%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volumes, along artery (Average Hour)	480	720	576	**864**	470	54%	40%
	B. Combined vehicle and pedestrian volume crossing artery from minor roads (Average Hour)	50	75	60	**90**	36	40%	

Projected Traffic Volumes:

Average Hourly Volume (AHV) Equation: AHV = (amPHV + pmPHV)/4

AM Peak Hour Volumes

			↖	←	↙			
60	524	0	0	0	0			
↙	↓	↘						
	46	↗	↖	↑	↗			
	0	→	84	165	0			
	67	↘						

PM Peak Hour Volumes

			↖	←	↙			
89	201	0	0	0	0			
↙	↓	↘						
	96	↗	↖	↑	↗			
	0	→	102	654	0			
	86	↘						

Average Hourly Volumes (AHV)

			↖	←	↙			
37	181	0	0	0	0			
↙	↓	↘						
	36	↗	↖	↑	↗			
	0	→	47	205	0			
	38	↘						

Eight Hour Traffic Volumes:**

Hour	Major Road						Minor Road						Ped*
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
7:00 AM	84	165	0	0	524	60	46	0	67	0	0	0	0
8:00 AM	42	83	0	0	262	30	23	0	34	0	0	0	0
9:00 AM	42	83	0	0	262	30	23	0	34	0	0	0	0
10:00 AM	42	83	0	0	262	30	23	0	34	0	0	0	0
3:00 PM	102	654	0	0	201	89	96	0	86	0	0	0	0
4:00 PM	51	327	0	0	101	45	48	0	43	0	0	0	0
5:00 PM	51	327	0	0	101	45	48	0	43	0	0	0	0
6:00 PM	51	327	0	0	101	45	48	0	43	0	0	0	0

** Number of pedestrians crossing the major road*
*** These are projected 8-hour traffic volumes.*

Notes:

1. Vehicle volume warrant (1A) and (2A) for intersections of roadways having two or more moving lanes in one direction should be 25% higher than the values given above.

1 Lane per Direction

2. Warrant values for free flow apply when the 85th percentile speed of artery traffic equals or exceeds 70 km/h or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000. Warrant values for restricted flow apply to large urban communities when the 85th percentile speed of artery traffic does not exceed 70 km/h.

Restricted Flow

3. The lowest sectional percentage governs the entire warrant.

4. For "T" intersections the warrant values for the minor road should be increased by 50% (Warrant 1B only).

3-legged Intersection

5. All flow values for Justification 1 and 2 are to be increased by 20% in the case of new intersections, Justification 3 is to only be used for existing intersections and all flow values for Warrant 1 and Warrant 2 of Justification 7 are to be increased by 20% for existing intersections and by 50% in the case of new intersections.

Existing Intersection

6. The crossing volumes are defined as the sum of:
   (a) Left-turns from both minor road approaches.
   (b) The heaviest through volume from the minor road.
   (c) 50% of the heavier left turn movement from major road when both of the following are met:
      (i) the left-turn volume >120 vph
      (ii) the left-turn volume plus the opposing volume >720 vph
   (d) Pedestrians crossing the main road.

CONCLUSION: **The intersection does NOT meet the minimum warrants for traffic control signals.**

* "Ontario Traffic Manual, Book 12 (March 2012)", Ontario Ministry of Transportation.

OTM BOOK 12* - TRAFFIC SIGNAL WARRANT

Project: Public Rd Redevelopment Tunney's Pasture **Date:** June 23, 2025

Project #: 139833

Location: Scott Street *(Major Roadway)* at Sire Frederick Banting/Ross *(Minor Roadway)*

Orientation: East/West North/South

Municipality: Ontario **Scenario:** Future Total 2038

Justification 1 - Minimum Vehicle Volume

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, all approaches	480	720	480	**720**	1058 100%	529 73%	529 73%	529 73%	1626 100%	813 100%	813 100%	813 100%	90%
B. Vehicle volume along minor roads	120	170	120	**170**	91 54%	46 27%	46 27%	46 27%	218 100%	109 64%	109 64%	109 64%	53%

Justification 2 - Delay to Cross Traffic

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, along artery	480	720	480	**720**	967 100%	484 67%	484 67%	484 67%	1408 100%	704 98%	704 98%	704 98%	87%
B. Combined vehicle and pedestrian volume crossing artery from minor roads	50	70	50	**70**	36 51%	18 26%	18 26%	18 26%	87 100%	44 62%	44 62%	44 62%	52%

Justification 3 - Volume/Delay Combination

JUSTIFICATION	SATISFIED TO 80% OR MORE?	BOTH SATISFIED TO 80% OR MORE?
Justification 1 - Minimum Vehicular Volume	NO	NO
Justification 2 - Delay to Cross Traffic	NO	

Justification 7 - Projected Volumes

WARRANT	DESCRIPTION	MINIMUM REQUIREMENT				COMPLIANCE		
		FREE FLOW	RESTRICTED FLOW	ADJUSTED FREE FLOW	ADJUSTED RESTRICTED FLOW	SECTIONAL AHV	SECTIONAL %	ENTIRE %
1. MINIMUM VEHICULAR VOLUME	A. Vehicle volumes, all approaches (Average Hour)	480	720	576	**864**	672	78%	38%
	B. Vehicle volume along minor roads (Average Hour)	120	170	144	**204**	78	38%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volumes, along artery (Average Hour)	480	720	576	**864**	594	69%	34%
	B. Combined vehicle and pedestrian volume crossing artery from minor roads (Average Hour)	50	75	60	**90**	31	34%	

Projected Traffic Volumes:

Average Hourly Volume (AHV) Equation: AHV = (amPHV + pmPHV)/4

AM Peak Hour Volumes

			↖	↑ 75	
43	0	35	←	270	
↙	↓	↘	↙	4	
	93	↗	↖	↑	↗
	520	→	1	0	12
	5	↘			

PM Peak Hour Volumes

			↖	↑ 60	
118	0	83	←	601	
↙	↓	↘	↙	5	
	56	↗	↖	↑	↗
	676	→	4	0	13
	10	↘			

Average Hourly Volumes (AHV)

			↖	↑ 34	
40	0	30	←	218	
↙	↓	↘	↙	2	
	37	↗	↖	↑	↗
	299	→	1	0	6
	4	↘			

Eight Hour Traffic Volumes:**

Hour	Major Road						Minor Road						Ped*
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
7:00 AM	93	520	5	4	270	75	1	0	12	35	0	43	0
8:00 AM	47	260	3	2	135	38	1	0	6	18	0	22	0
9:00 AM	47	260	3	2	135	38	1	0	6	18	0	22	0
10:00 AM	47	260	3	2	135	38	1	0	6	18	0	22	0
3:00 PM	56	676	10	5	601	60	4	0	13	83	0	118	0
4:00 PM	28	338	5	3	301	30	2	0	7	42	0	59	0
5:00 PM	28	338	5	3	301	30	2	0	7	42	0	59	0
6:00 PM	28	338	5	3	301	30	2	0	7	42	0	59	0

** Number of pedestrians crossing the major road*
*** These are projected 8-hour traffic volumes.*

Notes:

1. Vehicle volume warrant (1A) and (2A) for intersections of roadways having two or more moving lanes in one direction should be 25% higher than the values given above.

1 Lane per Direction

2. Warrant values for free flow apply when the 85th percentile speed of artery traffic equals or exceeds 70 km/h or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000. Warrant values for restricted flow apply to large urban communities when the 85th percentile speed of artery traffic does not exceed 70 km/h.

Restricted Flow

3. The lowest sectional percentage governs the entire warrant.

4. For "T" intersections the warrant values for the minor road should be increased by 50% (Warrant 1B only).

4-legged Intersection

5. All flow values for Justification 1 and 2 are to be increased by 20% in the case of new intersections, Justification 3 is to only be used for existing intersections and all flow values for Warrant 1 and Warrant 2 of Justification 7 are to be increased by 20% for existing intersections and by 50% in the case of new intersections.

Existing Intersection

6. The crossing volumes are defined as the sum of:
   (a) Left-turns from both minor road approaches.
   (b) The heaviest through volume from the minor road.
   (c) 50% of the heavier left turn movement from major road when both of the following are met:
      (i) the left-turn volume >120 vph
      (ii) the left-turn volume plus the opposing volume >720 vph
   (d) Pedestrians crossing the main road.

CONCLUSION: The intersection does NOT meet the minimum warrants for traffic control signals.

* "Ontario Traffic Manual, Book 12 (March 2012)", Ontario Ministry of Transportation.

OTM BOOK 12* - TRAFFIC SIGNAL WARRANT

Project: Public Rd Redevelopment Tunney's Pasture **Date:** June 23, 2025

Project #: 139833

Location: Scott Street (Major Roadway) at Sire Frederick Banting/Ross (Minor Roadway)

Orientation: East/West North/South

Municipality: Ontario **Scenario:** Future Total 2046

Justification 1 - Minimum Vehicle Volume

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, all approaches	480	720	480	**720**	913 100%	457 63%	457 63%	457 63%	1421 100%	711 99%	711 99%	711 99%	86%
B. Vehicle volume along minor roads	120	170	120	**170**	75 44%	38 22%	38 22%	38 22%	111 65%	56 33%	56 33%	56 33%	34%

Justification 2 - Delay to Cross Traffic

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, along artery	480	720	480	**720**	838 100%	419 58%	419 58%	419 58%	1310 100%	655 91%	655 91%	655 91%	81%
B. Combined vehicle and pedestrian volume crossing artery from minor roads	50	70	50	**70**	31 44%	16 22%	16 22%	16 22%	45 64%	23 32%	23 32%	23 32%	34%

Justification 3 - Volume/Delay Combination

JUSTIFICATION	SATISFIED TO 80% OR MORE?	BOTH SATISFIED TO 80% OR MORE?
Justification 1 - Minimum Vehicular Volume	NO	NO
Justification 2 - Delay to Cross Traffic	NO	

Justification 7 - Projected Volumes

WARRANT	DESCRIPTION	MINIMUM REQUIREMENT				COMPLIANCE		
		FREE FLOW	RESTRICTED FLOW	ADJUSTED FREE FLOW	ADJUSTED RESTRICTED FLOW	SECTIONAL AHV	SECTIONAL %	ENTIRE %
1. MINIMUM VEHICULAR VOLUME	A. Vehicle volumes, all approaches (Average Hour)	480	720	576	**864**	585	68%	23%
	B. Vehicle volume along minor roads (Average Hour)	120	170	144	**204**	47	23%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volumes, along artery (Average Hour)	480	720	576	**864**	538	62%	21%
	B. Combined vehicle and pedestrian volume crossing artery from minor roads (Average Hour)	50	75	60	**90**	19	21%	

Projected Traffic Volumes:

Average Hourly Volume (AHV) Equation: AHV = (amPHV + pmPHV)/4

AM Peak Hour Volumes

			↖	↑	42
32	0	30	←		265
↙	↓	↘	↙		4
	35	↗	↖	↑	↗
	487	→	1	0	12
	5	↘			

PM Peak Hour Volumes

			↖	↑	51
53	0	41	←		555
↙	↓	↘	↙		5
	26	↗	↖	↑	↗
	663	→	4	0	13
	10	↘			

Average Hourly Volumes (AHV)

			↖	↑	23
21	0	18	←		205
↙	↓	↘	↙		2
	15	↗	↖	↑	↗
	288	→	1	0	6
	4	↘			

Eight Hour Traffic Volumes:**

Hour	Major Road						Minor Road						Ped*
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
7:00 AM	35	487	5	4	265	42	1	0	12	30	0	32	0
8:00 AM	18	244	3	2	133	21	1	0	6	15	0	16	0
9:00 AM	18	244	3	2	133	21	1	0	6	15	0	16	0
10:00 AM	18	244	3	2	133	21	1	0	6	15	0	16	0
3:00 PM	26	663	10	5	555	51	4	0	13	41	0	53	0
4:00 PM	13	332	5	3	278	26	2	0	7	21	0	27	0
5:00 PM	13	332	5	3	278	26	2	0	7	21	0	27	0
6:00 PM	13	332	5	3	278	26	2	0	7	21	0	27	0

** Number of pedestrians crossing the major road*
*** These are projected 8-hour traffic volumes.*

Notes:

1. Vehicle volume warrant (1A) and (2A) for intersections of roadways having two or more moving lanes in one direction should be 25% higher than the values given above.

1 Lane per Direction

2. Warrant values for free flow apply when the 85th percentile speed of artery traffic equals or exceeds 70 km/h or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000. Warrant values for restricted flow apply to large urban communities when the 85th percentile speed of artery traffic does not exceed 70 km/h.

Restricted Flow

3. The lowest sectional percentage governs the entire warrant.

4. For "T" intersections the warrant values for the minor road should be increased by 50% (Warrant 1B only).

4-legged Intersection

5. All flow values for Justification 1 and 2 are to be increased by 20% in the case of new intersections, Justification 3 is to only be used for existing intersections and all flow values for Warrant 1 and Warrant 2 of Justification 7 are to be increased by 20% for existing intersections and by 50% in the case of new intersections.

Existing Intersection

6. The crossing volumes are defined as the sum of:
   (a) Left-turns from both minor road approaches.
   (b) The heaviest through volume from the minor road.
   (c) 50% of the heavier left turn movement from major road when both of the following are met:
      (i) the left-turn volume >120 vph
      (ii) the left-turn volume plus the opposing volume >720 vph
   (d) Pedestrians crossing the main road.

CONCLUSION: The intersection does NOT meet the minimum warrants for traffic control signals.

* "Ontario Traffic Manual, Book 12 (March 2012)", Ontario Ministry of Transportation.

All-Way Stop Control Warrants

ARCADIS

Tunney's Pasture Redevelopment
Transportation Impact Assessment

Internal Traffic Volume Projections
Future (2038) Total Traffic

PROJECT No. 139833
DATE: June 2025
SCALE: N.T.S.

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Colombine & Sir Frederick Bantin
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	Major Road Volume	Minor Road Volume	Total Peds Crossing Major	Minor Volume + Peds	Total Vehicle Volume
Hour 1	346	341	100	**441**	**687**
Hour 2	173	171	100	**271**	**344**
Hour 3	173	171	100	**271**	**344**
Hour 4	173	171	100	**271**	**344**
Hour 5	496	479	100	**579**	**975**
Hour 6	248	240	100	**340**	**488**
Hour 7	248	240	100	**340**	**488**
Hour 8	248	240	100	**340**	**488**
TOTAL	**2105**	**2053**	**800**	**2853**	**4158**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	Total Peds Crossing Leg 1	Crossing Distance Leg 1 (m)	Vehicle Conflict Leg 2 (if applicable)	Total Peds Crossing Leg 2 (if applicable)	Crossing Distance Leg 2 (m) (if applicable)
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**3**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**100**
Distance, in metres, to Nearest form of Intersection Control	60
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 50 / 50.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Visibility

Stopping Sight distance	
Operating Speed (km/h)	50
Date of speed survey	
Posted Speed Limit (km/h)	40
Required stopping sight distance of 65m met?	y

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Tunney's Pasture & Goldenrod
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	Major Road Volume	Minor Road Volume	Total Peds Crossing Major	Minor Volume + Peds	Total Vehicle Volume
Hour 1	506	356	100	**456**	**862**
Hour 2	253	178	100	**278**	**431**
Hour 3	253	178	100	**278**	**431**
Hour 4	253	178	100	**278**	**431**
Hour 5	575	417	100	**517**	**992**
Hour 6	288	209	100	**309**	**497**
Hour 7	288	209	100	**309**	**497**
Hour 8	288	209	100	**309**	**497**
TOTAL	**2704**	**1934**	**800**	**2734**	**4638**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	Total Peds Crossing Leg 1	Crossing Distance Leg 1 (m)	Vehicle Conflict Leg 2 (if applicable)	Total Peds Crossing Leg 2 (if applicable)	Crossing Distance Leg 2 (m) (if applicable)
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**3**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	150
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 58 / 42.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Visibility

Stopping Sight distance	
Operating Speed (km/h)	50
Date of speed survey	
Posted Speed Limit (km/h)	40
Required stopping sight distance of 65m met?	y

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Colombine & Goldenrod
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	**Major Road Volume**	**Minor Road Volume**	**Total Peds Crossing Major**	**Minor Volume + Peds**	**Total Vehicle Volume**
Hour 1	386	391	100	**491**	**777**
Hour 2	193	196	100	**296**	**389**
Hour 3	193	196	100	**296**	**389**
Hour 4	193	196	100	**296**	**389**
Hour 5	546	525	100	**625**	**1071**
Hour 6	273	263	100	**363**	**536**
Hour 7	273	263	100	**363**	**536**
Hour 8	273	263	100	**363**	**536**
TOTAL	**2330**	**2293**	**800**	**3093**	**4623**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	**Total Peds Crossing Leg 1**	**Crossing Distance Leg 1 (m)**	**Vehicle Conflict Leg 2 (if applicable)**	**Total Peds Crossing Leg 2 (if applicable)**	**Crossing Distance Leg 2 (m) (if applicable)**
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**4**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	80
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 50 / 50.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Visibility

Stopping Sight distance	
Operating Speed (km/h)	40
Date of speed survey	
Posted Speed Limit (km/h)	30
Required stopping sight distance of 50m met?	y

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Colombine & Chardon
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	Major Road Volume	Minor Road Volume	Total Peds Crossing Major	Minor Volume + Peds	Total Vehicle Volume
Hour 1	441	195	100	**295**	**636**
Hour 2	221	98	100	**198**	**319**
Hour 3	221	98	100	**198**	**319**
Hour 4	221	98	100	**198**	**319**
Hour 5	571	200	100	**300**	**771**
Hour 6	286	100	100	**200**	**386**
Hour 7	286	100	100	**200**	**386**
Hour 8	286	100	100	**200**	**386**
TOTAL	**2533**	**989**	**800**	**1789**	**3522**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	Total Peds Crossing Leg 1	Crossing Distance Leg 1 (m)	Vehicle Conflict Leg 2 (if applicable)	Total Peds Crossing Leg 2 (if applicable)	Crossing Distance Leg 2 (m) (if applicable)
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**3**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	80
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 71 / 29.	4
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	18.5/25pts - 74%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Visibility

Stopping Sight distance	
Operating Speed (km/h)	50
Date of speed survey	
Posted Speed Limit (km/h)	40
Required stopping sight distance of 65m met?	y

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Colombine & TP
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	Major Road Volume	Minor Road Volume	Total Peds Crossing Major	Minor Volume + Peds	Total Vehicle Volume
Hour 1	490	438	100	**538**	**928**
Hour 2	245	219	100	**319**	**464**
Hour 3	245	219	100	**319**	**464**
Hour 4	245	219	100	**319**	**464**
Hour 5	595	602	100	**702**	**1197**
Hour 6	298	301	100	**401**	**599**
Hour 7	298	301	100	**401**	**599**
Hour 8	298	301	100	**401**	**599**
TOTAL	**2714**	**2600**	**800**	**3400**	**5314**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	Total Peds Crossing Leg 1	Crossing Distance Leg 1 (m)	Vehicle Conflict Leg 2 (if applicable)	Total Peds Crossing Leg 2 (if applicable)	Crossing Distance Leg 2 (m) (if applicable)
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**3**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	180
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 51 / 49.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Visibility

Stopping Sight distance	
Operating Speed (km/h)	50
Date of speed survey	
Posted Speed Limit (km/h)	40
Required stopping sight distance of 65m met?	y

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Eglantine & Goldenrod
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	**Major Road Volume**	**Minor Road Volume**	**Total Peds Crossing Major**	**Minor Volume + Peds**	**Total Vehicle Volume**
Hour 1	177	177	100	**277**	**354**
Hour 2	89	89	100	**189**	**178**
Hour 3	89	89	100	**189**	**178**
Hour 4	89	89	100	**189**	**178**
Hour 5	200	150	100	**250**	**350**
Hour 6	100	75	100	**175**	**175**
Hour 7	100	75	100	**175**	**175**
Hour 8	100	75	100	**175**	**175**
TOTAL	**944**	**819**	**800**	**1619**	**1763**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	**Total Peds Crossing Leg 1**	**Crossing Distance Leg 1 (m)**	**Vehicle Conflict Leg 2 (if applicable)**	**Total Peds Crossing Leg 2 (if applicable)**	**Crossing Distance Leg 2 (m) (if applicable)**
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**3**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	80
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 53 / 47.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Visibility

Stopping Sight distance	
Operating Speed (km/h)	40
Date of speed survey	
Posted Speed Limit (km/h)	30
Required stopping sight distance of 50m met?	y

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Englantine & Chardon
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	**Major Road Volume**	**Minor Road Volume**	**Total Peds Crossing Major**	**Minor Volume + Peds**	**Total Vehicle Volume**
Hour 1	165	200	100	**300**	**365**
Hour 2	83	100	100	**200**	**183**
Hour 3	83	100	100	**200**	**183**
Hour 4	83	100	100	**200**	**183**
Hour 5	300	225	100	**325**	**525**
Hour 6	150	113	100	**213**	**263**
Hour 7	150	113	100	**213**	**263**
Hour 8	150	113	100	**213**	**263**
TOTAL	**1164**	**1064**	**800**	**1864**	**2228**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	**Total Peds Crossing Leg 1**	**Crossing Distance Leg 1 (m)**	**Vehicle Conflict Leg 2 (if applicable)**	**Total Peds Crossing Leg 2 (if applicable)**	**Crossing Distance Leg 2 (m) (if applicable)**
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**4**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	80
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 52 / 48.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Visibility

Stopping Sight distance	
Operating Speed (km/h)	40
Date of speed survey	
Posted Speed Limit (km/h)	30
Required stopping sight distance of 50m met?	y

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Englantine & Tunney's Pasture
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	Major Road Volume	Minor Road Volume	Total Peds Crossing Major	Minor Volume + Peds	Total Vehicle Volume
Hour 1	483	200	100	**300**	**683**
Hour 2	242	100	100	**200**	**342**
Hour 3	242	100	100	**200**	**342**
Hour 4	242	100	100	**200**	**342**
Hour 5	650	225	100	**325**	**875**
Hour 6	325	113	100	**213**	**438**
Hour 7	325	113	100	**213**	**438**
Hour 8	325	113	100	**213**	**438**
TOTAL	**2834**	**1064**	**800**	**1864**	**3898**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	Total Peds Crossing Leg 1	Crossing Distance Leg 1 (m)	Vehicle Conflict Leg 2 (if applicable)	Total Peds Crossing Leg 2 (if applicable)	Crossing Distance Leg 2 (m) (if applicable)
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**4**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	135
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 72 / 28.	2
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	16.5/25pts - 66%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Results

All-Way Stop Control NOT warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.
Does NOT qualify.

Visibility

Stopping Sight distance	
Operating Speed (km/h)	50
Date of speed survey	
Posted Speed Limit (km/h)	40
Required stopping sight distance of 65m met?	y

Note: Even though the stopping sight distance is met, the Intersection Sight Distance (ISD) for vehicles turning left from sidestreet to the mainstreet is likely not achievable due to the proposed 6-metre median on Tunney's Pasture Driveway. As such, all-way stop control is warranted on this basis.

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Sorrel & Sir Frederick Banting
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	Major Road Volume	Minor Road Volume	Total Peds Crossing Major	Minor Volume + Peds	Total Vehicle Volume
Hour 1	325	111	100	**211**	**436**
Hour 2	163	56	100	**156**	**219**
Hour 3	163	56	100	**156**	**219**
Hour 4	163	56	100	**156**	**219**
Hour 5	367	200	100	**300**	**567**
Hour 6	184	100	100	**200**	**284**
Hour 7	184	100	100	**200**	**284**
Hour 8	184	100	100	**200**	**284**
TOTAL	**1733**	**779**	**800**	**1579**	**2512**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	Total Peds Crossing Leg 1	Crossing Distance Leg 1 (m)	Vehicle Conflict Leg 2 (if applicable)	Total Peds Crossing Leg 2 (if applicable)	Crossing Distance Leg 2 (m) (if applicable)
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**3**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	140
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 68 / 32.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Visibility

Stopping Sight distance	
Operating Speed (km/h)	50
Date of speed survey	
Posted Speed Limit (km/h)	40
Required stopping sight distance of 65m met?	y

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Sorrel & Goldenrod
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	**Major Road Volume**	**Minor Road Volume**	**Total Peds Crossing Major**	**Minor Volume + Peds**	**Total Vehicle Volume**
Hour 1	317	297	100	**397**	**614**
Hour 2	159	149	100	**249**	**308**
Hour 3	159	149	100	**249**	**308**
Hour 4	159	149	100	**249**	**308**
Hour 5	317	297	100	**397**	**614**
Hour 6	159	149	100	**249**	**308**
Hour 7	159	149	100	**249**	**308**
Hour 8	159	149	100	**249**	**308**
TOTAL	**1588**	**1488**	**800**	**2288**	**3076**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	**Total Peds Crossing Leg 1**	**Crossing Distance Leg 1 (m)**	**Vehicle Conflict Leg 2 (if applicable)**	**Total Peds Crossing Leg 2 (if applicable)**	**Crossing Distance Leg 2 (m) (if applicable)**
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**4**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	85
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 51 / 49.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Visibility

Stopping Sight distance	
Operating Speed (km/h)	40
Date of speed survey	
Posted Speed Limit (km/h)	30
Required stopping sight distance of 50m met?	y

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Sorrel & Chardon
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	**Major Road Volume**	**Minor Road Volume**	**Total Peds Crossing Major**	**Minor Volume + Peds**	**Total Vehicle Volume**
Hour 1	220	156	100	**256**	**376**
Hour 2	110	78	100	**178**	**188**
Hour 3	110	78	100	**178**	**188**
Hour 4	110	78	100	**178**	**188**
Hour 5	297	250	100	**350**	**547**
Hour 6	149	125	100	**225**	**274**
Hour 7	149	125	100	**225**	**274**
Hour 8	149	125	100	**225**	**274**
TOTAL	**1294**	**1015**	**800**	**1815**	**2309**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	**Total Peds Crossing Leg 1**	**Crossing Distance Leg 1 (m)**	**Vehicle Conflict Leg 2 (if applicable)**	**Total Peds Crossing Leg 2 (if applicable)**	**Crossing Distance Leg 2 (m) (if applicable)**
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**4**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	85
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 56 / 44.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Visibility

Stopping Sight distance	
Operating Speed (km/h)	40
Date of speed survey	
Posted Speed Limit (km/h)	30
Required stopping sight distance of 50m met?	y

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Sorrel & Tunney's Pasture
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	Major Road Volume	Minor Road Volume	Total Peds Crossing Major	Minor Volume + Peds	Total Vehicle Volume
Hour 1	553	220	100	**320**	**773**
Hour 2	277	110	100	**210**	**387**
Hour 3	277	110	100	**210**	**387**
Hour 4	277	110	100	**210**	**387**
Hour 5	722	297	100	**397**	**1019**
Hour 6	361	149	100	**249**	**510**
Hour 7	361	149	100	**249**	**510**
Hour 8	361	149	100	**249**	**510**
TOTAL	**3189**	**1294**	**800**	**2094**	**4483**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	Total Peds Crossing Leg 1	Crossing Distance Leg 1 (m)	Vehicle Conflict Leg 2 (if applicable)	Total Peds Crossing Leg 2 (if applicable)	Crossing Distance Leg 2 (m) (if applicable)
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**3**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	135
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 71 / 29.	4
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	18.5/25pts - 74%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Visibility

Stopping Sight distance	
Operating Speed (km/h)	50
Date of speed survey	
Posted Speed Limit (km/h)	40
Required stopping sight distance of 65m met?	y

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Yarrow & Goldenrod
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	Major Road Volume	Minor Road Volume	Total Peds Crossing Major	Minor Volume + Peds	Total Vehicle Volume
Hour 1	342	157	100	**257**	**499**
Hour 2	171	79	100	**179**	**250**
Hour 3	171	79	100	**179**	**250**
Hour 4	171	79	100	**179**	**250**
Hour 5	367	250	100	**350**	**617**
Hour 6	184	125	100	**225**	**309**
Hour 7	184	125	100	**225**	**309**
Hour 8	184	125	100	**225**	**309**
TOTAL	**1774**	**1019**	**800**	**1819**	**2793**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	Total Peds Crossing Leg 1	Crossing Distance Leg 1 (m)	Vehicle Conflict Leg 2 (if applicable)	Total Peds Crossing Leg 2 (if applicable)	Crossing Distance Leg 2 (m) (if applicable)
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**3**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	80
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 63 / 37.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Visibility

Stopping Sight distance	
Operating Speed (km/h)	40
Date of speed survey	
Posted Speed Limit (km/h)	30
Required stopping sight distance of 50m met?	y

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

All-Way Stop Control Warrant (Local Residential/Collector Roadway)

For all local/collector, collector/collector in rural/urban areas, local/local near high pedestrian generator

Intersection: Yarrow & Chardon
Date of Review: 25-Jun-25

Date of Sightline Check: N/A
Date of Traffic Count: N/A

TSM #:

Volume Data

Overall Volume					
Hour	Major Road Volume	Minor Road Volume	Total Peds Crossing Major	Minor Volume + Peds	Total Vehicle Volume
Hour 1	157	157	100	**257**	**314**
Hour 2	79	79	100	**179**	**158**
Hour 3	79	79	100	**179**	**158**
Hour 4	79	79	100	**179**	**158**
Hour 5	250	250	100	**350**	**500**
Hour 6	125	125	100	**225**	**250**
Hour 7	125	125	100	**225**	**250**
Hour 8	125	125	100	**225**	**250**
TOTAL	**1019**	**1019**	**800**	**1819**	**2038**

Pedestrian Exposure

Total Conflicts on Roadway with no Control					
Vehicle Conflict Leg 1	Total Peds Crossing Leg 1	Crossing Distance Leg 1 (m)	Vehicle Conflict Leg 2 (if applicable)	Total Peds Crossing Leg 2 (if applicable)	Crossing Distance Leg 2 (m) (if applicable)
100	100	7	100	100	7
Pedestrian Exposure (Leg 1)			**Pedestrian Exposure (Leg 2)**		
0.084			**0.084**		

Intersection Data

3 or 4 Way Intersection?	**3**
Proximity, in metres, to Pedestrian Generator (0 if it's adjacent)	**50**
Distance, in metres, to Nearest form of Intersection Control	80
Syncro Analysis Required and Completed? (if distance < than 250m)	Yes
Were there any operational issues?	No

Weighted Criteria

Criteria	Points
Total Intersection Volume is 100% met.	5
Minor Road Volume + Peds Crossing Major is 100% me	5
Directional Split is 50 / 50.	5
Pedestrian Exposure	1
Proximity to Pedestrian Generator	3.5
TOTAL POINTS (Requires 17.5 out of 25 - 70%)	19.5/25pts - 78%

Does intersection have an average of 3 or more right-angle and/or turning movement type collisions per year during the past 3 year period?	
Year 1 Total	0
Year 2 Total	0
Year 3 Total	0

Results

PASS. All-Way Stop Control warranted based on weighted criteria.
All-Way Stop Control NOT warranted based on collision condition.
All-Way Stop Control NOT warranted based on sight distance condition.

PASS. Qualifies for All-Way Stop Control.

Visibility

Stopping Sight distance	
Operating Speed (km/h)	40
Date of speed survey	
Posted Speed Limit (km/h)	30
Required stopping sight distance of 50m met?	y

Volume Criteria:

-Total vehicle volume for all approaches is equal to or greater than an AVERAGE of 200 vehicles per hour over heaviest 8-hour period (between 7am and 6pm)

- Total minor street volume (including pedestrians crossing the major) is equal to or greater than 80 each hour over same 8-hr period

Directional Split:

- Four-Legged Intersection: 65/35
- Three-Legged Intersection: 75/25

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	70	10	35	24	16	231
Future Vol, veh/h	70	10	35	24	16	231
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	10	35	24	16	231
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	8.2	7.6	7.9
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	88%	0%	6%
Vol Thru, %	12%	59%	0%
Vol Right, %	0%	41%	94%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	80	59	247
LT Vol	70	0	16
Through Vol	10	35	0
RT Vol	0	24	231
Lane Flow Rate	80	59	247
Geometry Grp	1	1	1
Degree of Util (X)	0.102	0.069	0.249
Departure Headway (Hd)	4.592	4.189	3.623
Convergence, Y/N	Yes	Yes	Yes
Cap	773	843	973
Service Time	2.666	2.276	1.714
HCM Lane V/C Ratio	0.103	0.07	0.254
HCM Control Delay	8.2	7.6	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.2	1

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	50	25	212	100	25	144
Future Vol, veh/h	50	25	212	100	25	144
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	25	212	100	25	144
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8	10.5	8.5
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	15%	0%	68%
Vol Thru, %	0%	67%	32%
Vol Right, %	85%	33%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	169	75	312
LT Vol	25	0	212
Through Vol	0	50	100
RT Vol	144	25	0
Lane Flow Rate	169	75	312
Geometry Grp	1	1	1
Degree of Util (X)	0.204	0.093	0.393
Departure Headway (Hd)	4.349	4.465	4.533
Convergence, Y/N	Yes	Yes	Yes
Cap	826	802	796
Service Time	2.373	2.496	2.559
HCM Lane V/C Ratio	0.205	0.094	0.392
HCM Control Delay	8.5	8	10.5
HCM Lane LOS	A	A	B
HCM 95th-tile Q	0.8	0.3	1.9

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	94	20	20	75	130	20	20	20	52	37	117
Future Vol, veh/h	30	94	20	20	75	130	20	20	20	52	37	117
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	94	20	20	75	130	20	20	20	52	37	117
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9	9.1	8.4	9.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	21%	9%	25%
Vol Thru, %	33%	65%	33%	18%
Vol Right, %	33%	14%	58%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	60	144	225	206
LT Vol	20	30	20	52
Through Vol	20	94	75	37
RT Vol	20	20	130	117
Lane Flow Rate	60	144	225	206
Geometry Grp	1	1	1	1
Degree of Util (X)	0.082	0.191	0.275	0.261
Departure Headway (Hd)	4.898	4.773	4.404	4.558
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	727	749	812	785
Service Time	2.96	2.826	2.452	2.608
HCM Lane V/C Ratio	0.083	0.192	0.277	0.262
HCM Control Delay	8.4	9	9.1	9.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.7	1.1	1

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	116	50	45	225	50	50
Future Vol, veh/h	116	50	45	225	50	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	50	45	225	50	50
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.4	9.5	8.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	17%
Vol Thru, %	0%	70%	83%
Vol Right, %	50%	30%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	100	166	270
LT Vol	50	0	45
Through Vol	0	116	225
RT Vol	50	50	0
Lane Flow Rate	100	166	270
Geometry Grp	1	1	1
Degree of Util (X)	0.13	0.197	0.329
Departure Headway (Hd)	4.689	4.28	4.381
Convergence, Y/N	Yes	Yes	Yes
Cap	765	840	824
Service Time	2.716	2.301	2.399
HCM Lane V/C Ratio	0.131	0.198	0.328
HCM Control Delay	8.4	8.4	9.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.7	1.4

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	74	42	146	170	150	100
Future Vol, veh/h	74	42	146	170	150	100
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	42	146	170	150	100
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.6	11.3	10.3
HCM LOS	A	B	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	60%	0%	46%
Vol Thru, %	0%	64%	54%
Vol Right, %	40%	36%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	250	116	316
LT Vol	150	0	146
Through Vol	0	74	170
RT Vol	100	42	0
Lane Flow Rate	250	116	316
Geometry Grp	1	1	1
Degree of Util (X)	0.336	0.152	0.42
Departure Headway (Hd)	4.833	4.725	4.788
Convergence, Y/N	Yes	Yes	Yes
Cap	740	754	749
Service Time	2.887	2.787	2.838
HCM Lane V/C Ratio	0.338	0.154	0.422
HCM Control Delay	10.3	8.6	11.3
HCM Lane LOS	B	A	B
HCM 95th-tile Q	1.5	0.5	2.1

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	70	30	63	37	40
Future Vol, veh/h	30	70	30	63	37	40
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	70	30	63	37	40
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.4	7.2	7.8
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	30%	48%
Vol Thru, %	32%	0%	52%
Vol Right, %	68%	70%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	93	100	77
LT Vol	0	30	37
Through Vol	30	0	40
RT Vol	63	70	0
Lane Flow Rate	93	100	77
Geometry Grp	1	1	1
Degree of Util (X)	0.097	0.107	0.092
Departure Headway (Hd)	3.761	3.864	4.278
Convergence, Y/N	Yes	Yes	Yes
Cap	944	916	833
Service Time	1.818	1.936	2.327
HCM Lane V/C Ratio	0.099	0.109	0.092
HCM Control Delay	7.2	7.4	7.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.4	0.3

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	60	20	20	60	20	20	50	20	20	35	20
Future Vol, veh/h	20	60	20	20	60	20	20	50	20	20	35	20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	60	20	20	60	20	20	50	20	20	35	20
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.9	7.9	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	20%	20%	27%
Vol Thru, %	56%	60%	60%	47%
Vol Right, %	22%	20%	20%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	100	100	75
LT Vol	20	20	20	20
Through Vol	50	60	60	35
RT Vol	20	20	20	20
Lane Flow Rate	90	100	100	75
Geometry Grp	1	1	1	1
Degree of Util (X)	0.109	0.12	0.12	0.091
Departure Headway (Hd)	4.377	4.336	4.336	4.377
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	821	829	829	821
Service Time	2.392	2.35	2.35	2.391
HCM Lane V/C Ratio	0.11	0.121	0.121	0.091
HCM Control Delay	7.9	7.9	7.9	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.4	0.4	0.3

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	50	50	245	138	50
Future Vol, veh/h	50	50	50	245	138	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	50	50	245	138	50
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.6	9.9	8.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	17%	50%	0%
Vol Thru, %	83%	0%	73%
Vol Right, %	0%	50%	27%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	295	100	188
LT Vol	50	50	0
Through Vol	245	0	138
RT Vol	0	50	50
Lane Flow Rate	295	100	188
Geometry Grp	1	1	1
Degree of Util (X)	0.361	0.133	0.226
Departure Headway (Hd)	4.41	4.792	4.333
Convergence, Y/N	Yes	Yes	Yes
Cap	817	748	829
Service Time	2.431	2.823	2.357
HCM Lane V/C Ratio	0.361	0.134	0.227
HCM Control Delay	9.9	8.6	8.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.7	0.5	0.9

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	21	123	45	25	137
Future Vol, veh/h	20	21	123	45	25	137
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	21	123	45	25	137
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.7	7.9	8.2
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	49%	15%
Vol Thru, %	73%	0%	85%
Vol Right, %	27%	51%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	168	41	162
LT Vol	0	20	25
Through Vol	123	0	137
RT Vol	45	21	0
Lane Flow Rate	168	41	162
Geometry Grp	1	1	1
Degree of Util (X)	0.185	0.05	0.187
Departure Headway (Hd)	3.966	4.426	4.162
Convergence, Y/N	Yes	Yes	Yes
Cap	895	814	855
Service Time	2.031	2.426	2.222
HCM Lane V/C Ratio	0.188	0.05	0.189
HCM Control Delay	7.9	7.7	8.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.2	0.7

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	30	80	20	45	10	30	10	90	10	10	10
Future Vol, veh/h	10	30	80	20	45	10	30	10	90	10	10	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	30	80	20	45	10	30	10	90	10	10	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	7.8	7.7	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	8%	27%	33%
Vol Thru, %	8%	25%	60%	33%
Vol Right, %	69%	67%	13%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	120	75	30
LT Vol	30	10	20	10
Through Vol	10	30	45	10
RT Vol	90	80	10	10
Lane Flow Rate	130	120	75	30
Geometry Grp	1	1	1	1
Degree of Util (X)	0.142	0.13	0.089	0.036
Departure Headway (Hd)	3.924	3.888	4.282	4.355
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	898	907	824	827
Service Time	2.018	1.976	2.372	2.355
HCM Lane V/C Ratio	0.145	0.132	0.091	0.036
HCM Control Delay	7.7	7.6	7.8	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.4	0.3	0.1

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	90	20	20	60	20	15	31	15	15	55	15
Future Vol, veh/h	20	90	20	20	60	20	15	31	15	15	55	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	90	20	20	60	20	15	31	15	15	55	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	7.9	7.8	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	15%	20%	18%
Vol Thru, %	51%	69%	60%	65%
Vol Right, %	25%	15%	20%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	61	130	100	85
LT Vol	15	20	20	15
Through Vol	31	90	60	55
RT Vol	15	20	20	15
Lane Flow Rate	61	130	100	85
Geometry Grp	1	1	1	1
Degree of Util (X)	0.075	0.156	0.12	0.105
Departure Headway (Hd)	4.449	4.317	4.331	4.449
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	807	833	830	808
Service Time	2.465	2.33	2.344	2.464
HCM Lane V/C Ratio	0.076	0.156	0.12	0.105
HCM Control Delay	7.8	8.1	7.9	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.6	0.4	0.4

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	70	50	295	138	50
Future Vol, veh/h	50	70	50	295	138	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	70	50	295	138	50
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.8	10.8	8.8
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	14%	42%	0%
Vol Thru, %	86%	0%	73%
Vol Right, %	0%	58%	27%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	345	120	188
LT Vol	50	50	0
Through Vol	295	0	138
RT Vol	0	70	50
Lane Flow Rate	345	120	188
Geometry Grp	1	1	1
Degree of Util (X)	0.428	0.161	0.232
Departure Headway (Hd)	4.462	4.844	4.445
Convergence, Y/N	Yes	Yes	Yes
Cap	807	738	807
Service Time	2.49	2.886	2.477
HCM Lane V/C Ratio	0.428	0.163	0.233
HCM Control Delay	10.8	8.8	8.8
HCM Lane LOS	B	A	A
HCM 95th-tile Q	2.2	0.6	0.9

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	30	125	61	20	90
Future Vol, veh/h	66	30	125	61	20	90
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	30	125	61	20	90
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.2	8.2	8.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	69%	18%
Vol Thru, %	67%	0%	82%
Vol Right, %	33%	31%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	186	96	110
LT Vol	0	66	20
Through Vol	125	0	90
RT Vol	61	30	0
Lane Flow Rate	186	96	110
Geometry Grp	1	1	1
Degree of Util (X)	0.212	0.121	0.134
Departure Headway (Hd)	4.094	4.524	4.383
Convergence, Y/N	Yes	Yes	Yes
Cap	882	794	821
Service Time	2.094	2.54	2.397
HCM Lane V/C Ratio	0.211	0.121	0.134
HCM Control Delay	8.2	8.2	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.8	0.4	0.5

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	51	10	10	10	10	86
Future Vol, veh/h	51	10	10	10	10	86
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	10	10	10	10	86
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	7.6	7	7
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	84%	0%	10%
Vol Thru, %	16%	50%	0%
Vol Right, %	0%	50%	90%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	61	20	96
LT Vol	51	0	10
Through Vol	10	10	0
RT Vol	0	10	86
Lane Flow Rate	61	20	96
Geometry Grp	1	1	1
Degree of Util (X)	0.073	0.021	0.095
Departure Headway (Hd)	4.285	3.848	3.557
Convergence, Y/N	Yes	Yes	Yes
Cap	837	927	1001
Service Time	2.307	1.884	1.599
HCM Lane V/C Ratio	0.073	0.022	0.096
HCM Control Delay	7.6	7	7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.1	0.3

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	300	50	17	25	25	129
Future Vol, veh/h	300	50	17	25	25	129
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	300	50	17	25	25	129
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	11	7.6	8.4
HCM LOS	B	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	86%	0%	16%
Vol Thru, %	14%	40%	0%
Vol Right, %	0%	60%	84%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	350	42	154
LT Vol	300	0	25
Through Vol	50	17	0
RT Vol	0	25	129
Lane Flow Rate	350	42	154
Geometry Grp	1	1	1
Degree of Util (X)	0.44	0.05	0.187
Departure Headway (Hd)	4.521	4.313	4.378
Convergence, Y/N	Yes	Yes	Yes
Cap	802	829	819
Service Time	2.521	2.345	2.403
HCM Lane V/C Ratio	0.436	0.051	0.188
HCM Control Delay	11	7.6	8.4
HCM Lane LOS	B	A	A
HCM 95th-tile Q	2.3	0.2	0.7

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	108	25	201	50	25	216
Future Vol, veh/h	108	25	201	50	25	216
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	25	201	50	25	216
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.7	10.2	9.1
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	10%	0%	80%
Vol Thru, %	0%	81%	20%
Vol Right, %	90%	19%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	241	133	251
LT Vol	25	0	201
Through Vol	0	108	50
RT Vol	216	25	0
Lane Flow Rate	241	133	251
Geometry Grp	1	1	1
Degree of Util (X)	0.29	0.172	0.334
Departure Headway (Hd)	4.328	4.663	4.788
Convergence, Y/N	Yes	Yes	Yes
Cap	829	766	748
Service Time	2.362	2.712	2.832
HCM Lane V/C Ratio	0.291	0.174	0.336
HCM Control Delay	9.1	8.7	10.2
HCM Lane LOS	A	A	B
HCM 95th-tile Q	1.2	0.6	1.5

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	170	100	54	20	111	150	30	30	30	110	26	60
Future Vol, veh/h	170	100	54	20	111	150	30	30	30	110	26	60
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	170	100	54	20	111	150	30	30	30	110	26	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.6	11	9.7	11
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	52%	7%	56%
Vol Thru, %	33%	31%	40%	13%
Vol Right, %	33%	17%	53%	31%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	324	281	196
LT Vol	30	170	20	110
Through Vol	30	100	111	26
RT Vol	30	54	150	60
Lane Flow Rate	90	324	281	196
Geometry Grp	1	1	1	1
Degree of Util (X)	0.143	0.464	0.385	0.303
Departure Headway (Hd)	5.709	5.161	4.929	5.56
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	626	697	731	647
Service Time	3.756	3.195	2.965	3.599
HCM Lane V/C Ratio	0.144	0.465	0.384	0.303
HCM Control Delay	9.7	12.6	11	11
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.5	2.5	1.8	1.3

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	50	50	231	50	50
Future Vol, veh/h	240	50	50	231	50	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	240	50	50	231	50	50
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.8	10	8.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	18%
Vol Thru, %	0%	83%	82%
Vol Right, %	50%	17%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	100	290	281
LT Vol	50	0	50
Through Vol	0	240	231
RT Vol	50	50	0
Lane Flow Rate	100	290	281
Geometry Grp	1	1	1
Degree of Util (X)	0.138	0.354	0.353
Departure Headway (Hd)	4.983	4.389	4.528
Convergence, Y/N	Yes	Yes	Yes
Cap	717	821	795
Service Time	3.028	2.417	2.558
HCM Lane V/C Ratio	0.139	0.353	0.353
HCM Control Delay	8.8	9.8	10
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	1.6	1.6

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	156	184	125	126	105	188
Future Vol, veh/h	156	184	125	126	105	188
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	156	184	125	126	105	188
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	11.5	11.2	11.5
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	50%
Vol Thru, %	0%	46%	50%
Vol Right, %	64%	54%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	293	340	251
LT Vol	105	0	125
Through Vol	0	156	126
RT Vol	188	184	0
Lane Flow Rate	293	340	251
Geometry Grp	1	1	1
Degree of Util (X)	0.405	0.442	0.361
Departure Headway (Hd)	4.98	4.678	5.179
Convergence, Y/N	Yes	Yes	Yes
Cap	715	762	685
Service Time	3.076	2.768	3.278
HCM Lane V/C Ratio	0.41	0.446	0.366
HCM Control Delay	11.5	11.5	11.2
HCM Lane LOS	B	B	B
HCM 95th-tile Q	2	2.3	1.6

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	50	50	25	50	50
Future Vol, veh/h	25	50	50	25	50	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	50	50	25	50	50
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.3	7.4	7.8
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	33%	50%
Vol Thru, %	67%	0%	50%
Vol Right, %	33%	67%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	75	75	100
LT Vol	0	25	50
Through Vol	50	0	50
RT Vol	25	50	0
Lane Flow Rate	75	75	100
Geometry Grp	1	1	1
Degree of Util (X)	0.082	0.081	0.117
Departure Headway (Hd)	3.942	3.901	4.224
Convergence, Y/N	Yes	Yes	Yes
Cap	902	905	846
Service Time	1.995	1.982	2.265
HCM Lane V/C Ratio	0.083	0.083	0.118
HCM Control Delay	7.4	7.3	7.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.3	0.4

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	50	50	25	25	25	25	50	25	50	100	25
Future Vol, veh/h	50	50	50	25	25	25	25	50	25	50	100	25
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	50	50	25	25	25	25	50	25	50	100	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	8.1	8.3	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	33%	33%	29%
Vol Thru, %	50%	33%	33%	57%
Vol Right, %	25%	33%	33%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	150	75	175
LT Vol	25	50	25	50
Through Vol	50	50	25	100
RT Vol	25	50	25	25
Lane Flow Rate	100	150	75	175
Geometry Grp	1	1	1	1
Degree of Util (X)	0.127	0.189	0.096	0.221
Departure Headway (Hd)	4.563	4.529	4.618	4.546
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	785	792	775	789
Service Time	2.595	2.56	2.654	2.575
HCM Lane V/C Ratio	0.127	0.189	0.097	0.222
HCM Control Delay	8.3	8.6	8.1	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.7	0.3	0.8

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	75	50	50	216	309	50
Future Vol, veh/h	75	50	50	216	309	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	50	50	216	309	50
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.4	10.2	11.1
HCM LOS	A	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	19%	60%	0%
Vol Thru, %	81%	0%	86%
Vol Right, %	0%	40%	14%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	266	125	359
LT Vol	50	75	0
Through Vol	216	0	309
RT Vol	0	50	50
Lane Flow Rate	266	125	359
Geometry Grp	1	1	1
Degree of Util (X)	0.346	0.18	0.447
Departure Headway (Hd)	4.689	5.195	4.48
Convergence, Y/N	Yes	Yes	Yes
Cap	763	686	801
Service Time	2.734	3.256	2.52
HCM Lane V/C Ratio	0.349	0.182	0.448
HCM Control Delay	10.2	9.4	11.1
HCM Lane LOS	B	A	B
HCM 95th-tile Q	1.5	0.7	2.3

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	50	116	50	50	151
Future Vol, veh/h	50	50	116	50	50	151
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	50	116	50	50	151
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.2	8.2	8.8
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	50%	25%
Vol Thru, %	70%	0%	75%
Vol Right, %	30%	50%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	166	100	201
LT Vol	0	50	50
Through Vol	116	0	151
RT Vol	50	50	0
Lane Flow Rate	166	100	201
Geometry Grp	1	1	1
Degree of Util (X)	0.194	0.126	0.245
Departure Headway (Hd)	4.203	4.536	4.389
Convergence, Y/N	Yes	Yes	Yes
Cap	857	791	820
Service Time	2.218	2.558	2.405
HCM Lane V/C Ratio	0.194	0.126	0.245
HCM Control Delay	8.2	8.2	8.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.4	1

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	40	50	97	40	10	50	10	100	10	10	10
Future Vol, veh/h	10	40	50	97	40	10	50	10	100	10	10	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	40	50	97	40	10	50	10	100	10	10	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	8.6	8.2	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	10%	66%	33%
Vol Thru, %	6%	40%	27%	33%
Vol Right, %	62%	50%	7%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	100	147	30
LT Vol	50	10	97	10
Through Vol	10	40	40	10
RT Vol	100	50	10	10
Lane Flow Rate	160	100	147	30
Geometry Grp	1	1	1	1
Degree of Util (X)	0.188	0.118	0.186	0.038
Departure Headway (Hd)	4.219	4.242	4.553	4.541
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	851	846	789	789
Service Time	2.238	2.265	2.574	2.566
HCM Lane V/C Ratio	0.188	0.118	0.186	0.038
HCM Control Delay	8.2	7.8	8.6	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.4	0.7	0.1

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	100	25	25	97	25	25	50	25	25	100	25
Future Vol, veh/h	25	100	25	25	97	25	25	50	25	25	100	25
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	100	25	25	97	25	25	50	25	25	100	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.8	8.8	8.5	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	17%	17%	17%
Vol Thru, %	50%	67%	66%	67%
Vol Right, %	25%	17%	17%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	150	147	150
LT Vol	25	25	25	25
Through Vol	50	100	97	100
RT Vol	25	25	25	25
Lane Flow Rate	100	150	147	150
Geometry Grp	1	1	1	1
Degree of Util (X)	0.131	0.193	0.189	0.195
Departure Headway (Hd)	4.714	4.637	4.64	4.685
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	758	773	772	764
Service Time	2.759	2.677	2.68	2.726
HCM Lane V/C Ratio	0.132	0.194	0.19	0.196
HCM Control Delay	8.5	8.8	8.8	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.7	0.7	0.7

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	75	75	97	191	359	50
Future Vol, veh/h	75	75	97	191	359	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	75	97	191	359	50
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.9	11	12.6
HCM LOS	A	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	34%	50%	0%
Vol Thru, %	66%	0%	88%
Vol Right, %	0%	50%	12%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	288	150	409
LT Vol	97	75	0
Through Vol	191	0	359
RT Vol	0	75	50
Lane Flow Rate	288	150	409
Geometry Grp	1	1	1
Degree of Util (X)	0.389	0.22	0.522
Departure Headway (Hd)	4.857	5.289	4.598
Convergence, Y/N	Yes	Yes	Yes
Cap	737	672	781
Service Time	2.92	3.372	2.655
HCM Lane V/C Ratio	0.391	0.223	0.524
HCM Control Delay	11	9.9	12.6
HCM Lane LOS	B	A	B
HCM 95th-tile Q	1.8	0.8	3.1

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	50	110	50	50	107
Future Vol, veh/h	100	50	110	50	50	107
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	50	110	50	50	107
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.7	8.3	8.7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	67%	32%
Vol Thru, %	69%	0%	68%
Vol Right, %	31%	33%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	160	150	157
LT Vol	0	100	50
Through Vol	110	0	107
RT Vol	50	50	0
Lane Flow Rate	160	150	157
Geometry Grp	1	1	1
Degree of Util (X)	0.19	0.191	0.198
Departure Headway (Hd)	4.283	4.576	4.529
Convergence, Y/N	Yes	Yes	Yes
Cap	838	785	794
Service Time	2.303	2.599	2.549
HCM Lane V/C Ratio	0.191	0.191	0.198
HCM Control Delay	8.3	8.7	8.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.7	0.7

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	90	10	10	10	10	140
Future Vol, veh/h	90	10	10	10	10	140
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	10	10	10	10	140
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	8	7.1	7.3
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	90%	0%	7%
Vol Thru, %	10%	50%	0%
Vol Right, %	0%	50%	93%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	100	20	150
LT Vol	90	0	10
Through Vol	10	10	0
RT Vol	0	10	140
Lane Flow Rate	100	20	150
Geometry Grp	1	1	1
Degree of Util (X)	0.122	0.022	0.15
Departure Headway (Hd)	4.393	3.975	3.594
Convergence, Y/N	Yes	Yes	Yes
Cap	814	892	984
Service Time	2.43	2.038	1.666
HCM Lane V/C Ratio	0.123	0.022	0.152
HCM Control Delay	8	7.1	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.1	0.5

Appendix N – Monitoring Plan

Memo

SUBJECT
Monitoring Plan
Tunney's Pasture – Site Servicing and Public Road Redevelopment

DATE
June 27, 2025

DEPARTMENT
Transportation Engineering

COPIES TO
Katherine Constantine (CLC)
Mikaela Coon (CLC)

TO
Wally Dubyk, Transportation Project Manager, City of Ottawa

OUR REF
139833 Public Rd Redevelopment Tunney's Pasture - Internal Documents(1)\6.0_Technical\6.23_Traffic\03_Reports\TIA\Monitoring Plan

PROJECT NUMBER
139833

NAME
Ben Pascolo-Neveu – Transportation Engineer

Introduction

A Monitoring Plan has been prepared to support the Transportation Impact Assessment (TIA) Step 4 submission for the Tunney's Pasture redevelopment.

Canada Land Company's Role

Although a Monitoring Plan was not specifically required by the City through the Pre-Consultation Process and was identified by staff as an 'if required' study, Canada Lands Company (CLC) took the initiative to prepare this strategic long-term planning document to support various aspects of the Tunney's Pasture redevelopment which may require review at reoccurring intervals, including trip generation, mode share targets, cut-through traffic and parking.

CLC reserves the right to download the responsibility of the Monitoring Plan execution, reporting of results and implementation of suggested mitigation strategies to private developers and will work with the City to impose this as a condition of Site Plan Control (SPC) approval for subsequent development parcels, as necessary.

It is important to note as well that the scope of work does not include the execution of this plan (i.e. data collection, survey, or analysis) which will be determined at a later date through discussion with City technical staff. Any mitigation measures recommended through the execution of the monitoring plan which fall outside of the site limits or site access intersections are considered to be outside the scope of CLC's work.

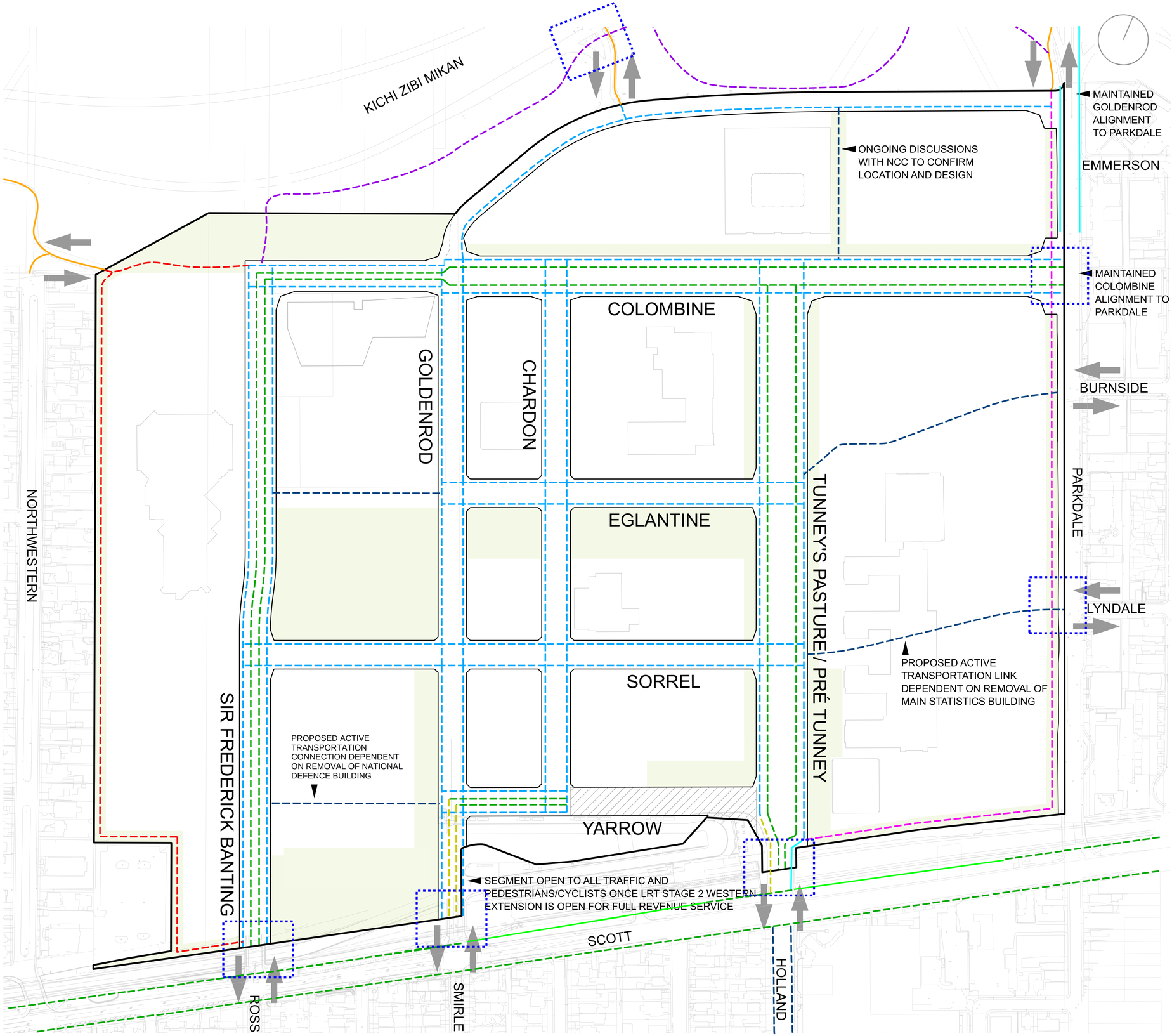
Objectives

This document is intended to track various transportation-related aspects as the site is built out, such as verifying timelines to implement mitigation strategies, confirming whether mode share targets are being met, reviewing the effectiveness of traffic calming measures to support the site's redevelopment, as well as evaluating the loss of parking. If there is a disconnect between key TIA study parameters and observed data collected as part of the Monitoring Plan, this process provides opportunities to correct course at regular intervals throughout redevelopment of the site.

This Monitoring Plan identifies the requirements for monitoring conditions every 5 years until 2046 when full build-out/occupancy of the Tunney's Pasture redevelopment is expected to be achieved.

Monitoring Plan Study Area

The monitoring plan study area will consist of the key study area intersections analysed in the TIA, including the six external site access intersections, as well as the Parkdale & Scott intersection, as shown in **Exhibit 1** below. These locations will capture the key activity across all modes in and out of the site.



Active Transportation Plan

- Site Boundary
- Yarrow Woonerf
- Monitoring Plan Study Area

Active Transportation

- Open Space
- Future Parkdale & Transitway Greenway (City Initiative) - includes In-Boulevard Cycle Tracks
- Proposed Sidewalks
- Proposed In-Boulevard Cycle Tracks
- Proposed On-Road Cycling Facilities
- Proposed Kichi Sibi Winter Trail Formalization to All-Season Facility
- Proposed Active Transportation Link
- Proposed Pedestrian Transportation Link
- Existing Sidewalk
- Existing NCC Pathway
- Existing On-Road Cycling Facilities
- Existing Multi-Use Pathway (MUP)
- External Connection Point for Active Users

Notes:
- Proposed road pattern by Arcadis IBI Group, July 2024.
- Plans are subject to change following NCC Board approvals.

Location

TUNNEY'S PASTURE

Date: 2025-06-02

Drafted By: SD

Scale: 0 100m, 1:1500

North

ARCADIS

Exhibit 1 - Monitoring Plan Screenlines

Survey Procedure

This section outlines the data collection process that will need to be undertaken at reoccurring intervals to support the execution of the monitoring plan as Tunney's Pasture is built out.

Turning Movement Data Collection

Turning movement counts will be conducted at the site access intersections to coincide with the City's standard weekday morning (7:00-10:00am) and weekday afternoon (3:00-6:00pm) peak periods at 5-year intervals until 2046 when the Tunney's Pasture redevelopment is expected to be fully built out/occupied:

- Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture
- Parkdale & Goldenrod (right-in/right-out)
- Parkdale & Colombine
- Scott & Holland/Tunney's Pasture
- Scott & Goldenrod/Smirle
- Scott & Sir Frederick Banting/Ross

One (1) traffic count survey at each location will be undertaken on a core weekday (i.e. Tuesday, Wednesday, or Thursday) to capture the weekday peak hour traffic volumes in the same relative season as the base condition data.

The purpose of collecting this traffic count data is to monitor the potential exacerbation or occurrence of issues such as cut-through traffic, traffic operational or queue spillback constraints at the above noted intersections.

Survey of Select Newly-Occupied Buildings

It is proposed that multi-modal traffic data collection at newly-constructed and occupied buildings be undertaken at the same reoccurring five-year intervals proposed for the traffic count data discussed in the preceding section, following the City's standard data collection periods of 7:00-10:00am and 3:00-6:00pm and on core weekdays (i.e. Tuesday, Wednesday or Thursday). This data will be collected in 15-minute increments at the primary entrances to track both active users and vehicular activity, and whether the trips are 'inbound' or 'outbound'.

Parking Data Collection

Parking data collection will be undertaken using drones to capture imagery of remaining surface parking lots within Tunney's Pasture at five-year intervals. This imagery will be shot at 10:00am and 2:00pm on a core weekday (i.e. Tuesday, Wednesday or Thursday) to coincide with the peak parking demand associated with existing office uses still on-site and will be used to calculate the overall parking utilization at 5-year increments as Tunney's Pasture is redeveloped.

Travel Surveys

An additional method of collecting transportation data could occur through the development and distribution of travel surveys to individuals living, working or visiting Tunney's Pasture. This method would serve as an indicator of how individuals typically travel to/from and within the site and affords the surveyor more in-depth information pertaining to specific users to help highlight pinchpoints, constraints or successful measures with respect to the ongoing build-out of the internal transportation network. These surveys could also potentially allow users to suggest possible improvements to help encourage a shift towards more sustainable modes of travel.

Monitoring Plan Components

This Monitoring Plan will consider four (4) main components for review and analysis:

- Site-Generated Traffic Impacts
- Mode Share Target Review
- Potential for Cut-through Traffic
- Loss of Parking for Existing Office Uses On site

Site-Generated Traffic Impacts

Based on the traffic count data collected at the six external access intersections, inbound/outbound traffic data will be used to calculate an approximate generation rate for comparison against traffic volume projections developed as part of TIA Step 2 at each phase of development.

Consideration will also be given to the overall directional 'splits' of the trip generation results derived through the TIA exercise, as these travel characteristics will have a bearing on the transportation network constraints within the study area as well.

It is anticipated that the overall trip generation methodology employed in this TIA, which was developed using local rates specific to the subject site, relevant land uses from the 2020 TRANS Trip Generation Summary Report, Institute of Transportation Engineers' (ITE) Trip Generation Manual (11th Edition) and 'first principles' methodologies, will provide a conservative estimate of site-generated traffic impacts during the weekday morning and afternoon peak hours when compared against the travel demand observations collected as part of this monitoring exercise.

In addition to a comparison of observed and calculated site-generated traffic impacts, the following site access intersections will be reviewed through a supplemental Synchro traffic modelling exercise to determine impacts as part of the reoccurring monitoring strategy execution:

- Kichi Zibi Mikan & Remic Rapids/Tunney's Pasture
  - Track queue spillback and vehicle volumes on the northbound approach during the weekday afternoon peak hour through Synchro analysis to determine if queuing on this approach is being incrementally reduced over time, as expected. Investigate signal timing plan optimization as a mitigation strategy to lessen queuing impacts, as needed.
- Parkdale & Colombine
  - If this intersection has not yet been upgraded to a signalized intersection, continue to perform Synchro analysis with newly collected traffic data every 5 years and conduct signal warrant analysis.
- Scott & Holland/Tunney's Pasture
  - Monitor southbound queuing to ensure that the proposed southbound through-right lane (if implemented) is not resulting in excessive queuing issues or traffic blockages.
- Scott & Goldenrod/Smirle
  - Evaluate north-south vehicular activity to determine whether movement prohibitions implemented are effective in mitigating cut-through traffic.
- Scott & Sir Frederick Banting/Ross
  - If this intersection has not yet been upgraded to a signalized intersection, continue to perform Synchro analysis with newly collected traffic data every 5 years and conduct signal warrant analysis.
  - Evaluate north-south vehicular activity to determine whether any movement prohibitions implemented are effective in mitigating cut-through traffic.

Mode Share Target Review

Based on the survey results counted across the six site access intersections, the overall auto/non-auto proportions will be calculated to determine if these align with the mode share targets which were established through the TIA's trip generation process for residential uses.

It will not be practical or necessary to conduct a site-wide survey to validate the mode share for every existing and proposed land use across the site. To supplement traffic count data collected at the external site access intersections, it is proposed to undertake individual surveys of select new, fully-occupied buildings within the site to determine if the projected residential mode share is on track at each 5-year monitoring intervals to achieving the targets set in the TIA. This sampling should provide sufficient data to determine if the residential mode share targets are being achieved.

Potential for Cut-through Traffic

Despite the subject site's multiple connections to the arterial and regional road network, there have been concerns expressed by Communities' Perspective Group (CPG) members regarding the potential exacerbation of any existing cut-through traffic patterns resulting from the Tunney's Pasture redevelopment. These concerns are based on the site's direct vehicular connections with adjacent neighborhoods and widely-known congestion issues on nearby key commuter routes, including Island Park Drive and Parkdale Avenue during the weekday peak periods. It is understood that there are longstanding concerns regarding the potential for the infiltration of site-generated traffic into the communities directly bordering Tunney's Pasture, including Mechanicsville, Hintonburg, Wellington Village and Champlain Park.

As such, a review of traffic count data will be conducted as part of this monitoring exercise to determine whether cut-through traffic movements are occurring and increasing, in comparison with the previous count period. This review would focus on key connection points with adjacent neighbourhoods, including Ross Avenue, Smirle Avenue and Burnside Avenue which either directly align or are slightly offset from site access intersections. If cut-through activity is shown to be increasing, then a mitigation strategy will be developed and its effectiveness will be observed at the next five-year interval.

The findings of these traffic count surveys every 5 years will help to determine whether more robust mitigation strategies need to be considered.

Loss of Parking

As discussed in Section 4.4 of the TIA, it is recognized that Phase 1 of the proposed development, in particular, will involve the loss of existing surface parking lots for office/employment uses which may remain on-site through the redevelopment timeframe of Tunney's Pasture. Communities' Perspective Group (CPG) Stream 1 members expressed concerns that this loss of parking may trigger parking infiltration within adjacent neighbourhoods.

To help document and monitor potential parking spillover impacts, parking utilization data collected for the remaining surface parking lots will be reviewed at five-year intervals to determine whether the demand remains within the 85% utilization threshold, or whether more robust mitigation strategies are required, as described in the following section.

Mitigation Strategies

Site-Generated Traffic Impacts or Mode Share Targets

In the event that either the site-generated traffic demands are higher than anticipated or the non-auto mode share targets at each phase of development are determined to be unachievable through these field surveys, strategies to shift the overall modal share to more sustainable modes should focus on improvements to local transit service reinstatement and prioritize the implementation of active transportation initiatives identified by the City:

- Boundary Street 'Protected Intersections': It is recommended that each of the major intersections along the Scott Street and Parkdale Avenue frontages of the site be upgraded to 'protected intersections' to prioritize the safety and accessibility for pedestrians and cyclists.
- Holland Avenue Cycling Infrastructure: The City should implement dedicated cycling infrastructure on Holland Avenue to provide a safe north-south active transportation corridor and divert cyclists from more congested parallel routes such as Parkdale Avenue and further encourage a shift away from automobile use for short trips.
- Transit: To ensure all residents of Tunney's Pasture are within an acceptable walking distance to public transit (particularly in the northwestern area of the site where the walking distance to Tunney's LRT station is in excess of 800 metres), OC Transpo should consider reinstating local bus service within Tunney's Pasture, which has been removed through the City's New Ways to Bus initiative, and realign the route(s) to conform to the collector road hierarchy of the proposed internal street network.
- Parkdale Greenway: An active transportation corridor with separated space for cyclists and pedestrians on the west side of Parkdale Avenue and abutting the site, as envisioned in the 2014 Scott Street Community Design Plan (CDP), should be introduced to encourage the shift towards active modes among site-generated trips.

Encouraging office workers to either work remotely or shift hours, if feasible, to avoid travelling during the weekday peak hour periods could also be considered as long-term strategies to help reduce site-generated travel impacts coinciding with peak travel demand constraints, if the observations are higher than the TIA trip generation estimates.

The successful implementation of any required mitigation strategies would be expected to provide relief to long-standing existing transportation network constraints verified through the analysis conducted in this TIA, including the northbound queueing at the Kichi Zibi Mikan & Tunney's Pasture/Remic Rapids intersections, as well as future potential constraints such as the westbound left-turn at the Scott & Holland/Tunney's Pasture intersection.

Turning movement counts and traffic operational/queuing observations will also help inform whether these potential constraints identified through the TIA analysis are present following each five-year survey data collection cycle.

Cut-Through Traffic

As discussed in the Neighbourhood Traffic Calming Strategy (see Appendix J of the TIA), Communities' Perspective Group (CPG) Stream 1 members have expressed concerns regarding the potential exacerbation of any existing cut-through traffic issues within adjacent communities, including Mechanicsville, Hintonburg, Wellington Village and Champlain Park, as Tunney's Pasture is redeveloped.

Of particular concern for CPG Stream 1 members are Ross Avenue and Smirle Avenue within Wellington Village which algin directly with internal streets within the site, as well as Burnside Avenue within Mechanicsville.

In the event that the Tunney's Pasture redevelopment is determined to be significantly exacerbating cut-through traffic levels at any of the above noted key locations, more robust traffic calming solutions will be investigated to mitigate these impacts. Any recommendations to include measures which are more intrusive should consider the continued need to maintain permeability for active modes between Tunney's Pasture and the above noted adjacent communities, as well as the circulation of City maintenance, transit and emergency vehicles. Consideration will be given to any new developments which were not in place during the traffic count data collected for the TIA as well.

Loss of Parking

Canada Lands Company (CLC) is committed to working with the existing federal tenants at Tunney's Pasture to develop a Parking Management Strategy. This strategy will manage the remaining parking supply and work to satisfy the functional need of the office uses still existing on site without creating spillover demand to adjacent communities.

The Parking Management Strategy will review the implications of this loss of parking supply through reoccurring parking surveys collected as part of this monitoring exercise so that these effects can be better understood and mitigated accordingly, with consideration of the four main strategies outlined below:

1) Determine if the remaining land outside the property parcel that is being disposed to public market can adequately fulfill the office parking demand;
2) Determine if the parking demand currently accommodated by the surface parking lot can be served by other parking lots on the remaining office lands across the Tunney's Pasture site;
3) Determine if additional parking (surface or structured) on the remaining office lands across the Tunney's Pasture site is required; and
4) Establish whether Transportation Demand Management (TDM) measures are required to reduce parking demand in alignment with the remaining parking supply.

A review of the parking utilization data collected as part of this monitoring exercise will help to determine whether the combination of strategies outlined above that were selected to address the loss of existing parking spaces were effective or whether further mitigation is required. The effectiveness of the parking mitigation strategy developed will be reviewed at the next five-year data collection interval of parking utilization data collection. If the parking occupancy data for the lots surveyed indicates that the 85% parking utilization threshold is exceeded, then a revised mitigation strategy should be developed and implemented for review at the next five-year interval. Similar to site-generated traffic impacts and mode share targets, it is expected that the implementation of City initiatives such as the Parkdale Greenway and Holland Avenue cycling infrastructure and on-site Transportation Demand Management (TDM) measures will help reduce auto-reliance and, in turn, overall parking demand across the site.

Conclusion

An overall Monitoring Program Memorandum will be prepared to document the analysis, results and findings of the surveys conducted as part of Monitoring Plan and will be circulated to the City technical staff for review.

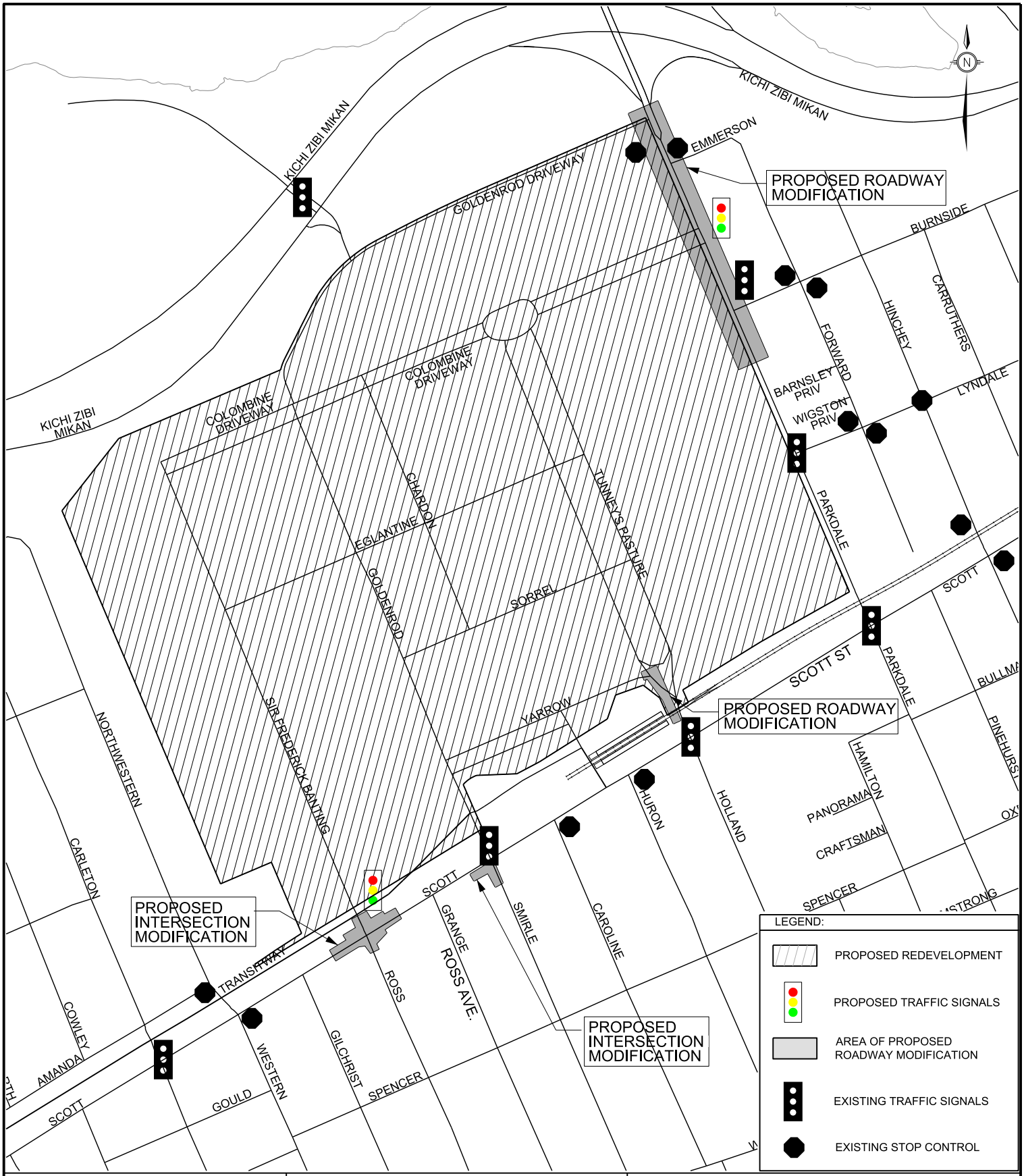
Mitigation measures or strategies will be recommended, as required, based on the outcomes of the monitoring surveys.

Prepared By:



Ben Pascolo-Neveu, P.Eng.
Transportation Engineer

Appendix O – Roadway Modification Application (RMA) Drawings



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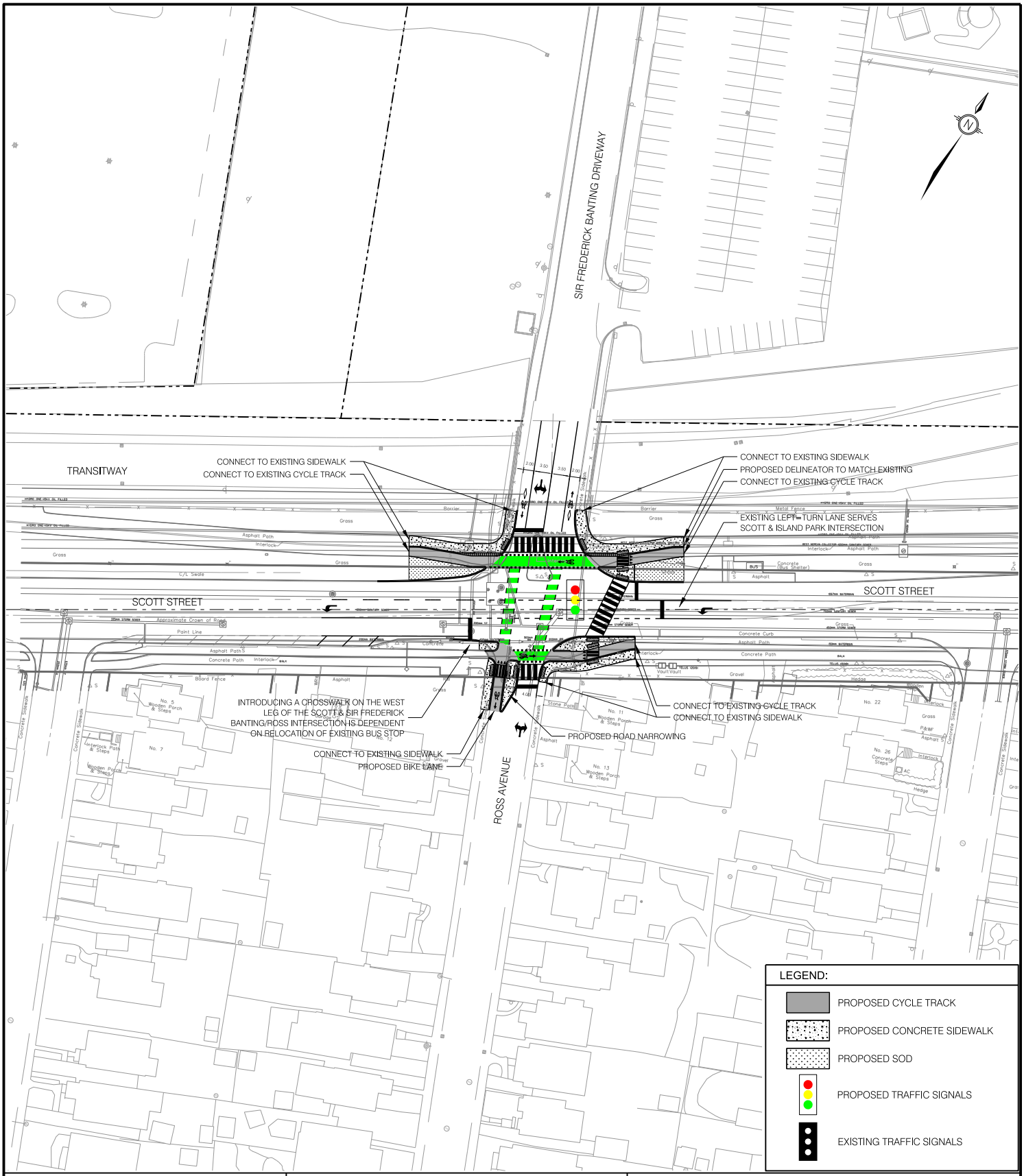
PLANNING, DEVELOPMENT AND BUILDING SERVICES

KEY PLAN

TUNNEY'S PASTURE - SITE SERVICING & PUBLIC ROAD REDEVELOPMENT

TRANSPORTATION ENGINEERING SERVICES

Approved By:	Drawing No.:
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Scale: N.T.S.	Date: JUNE 2025



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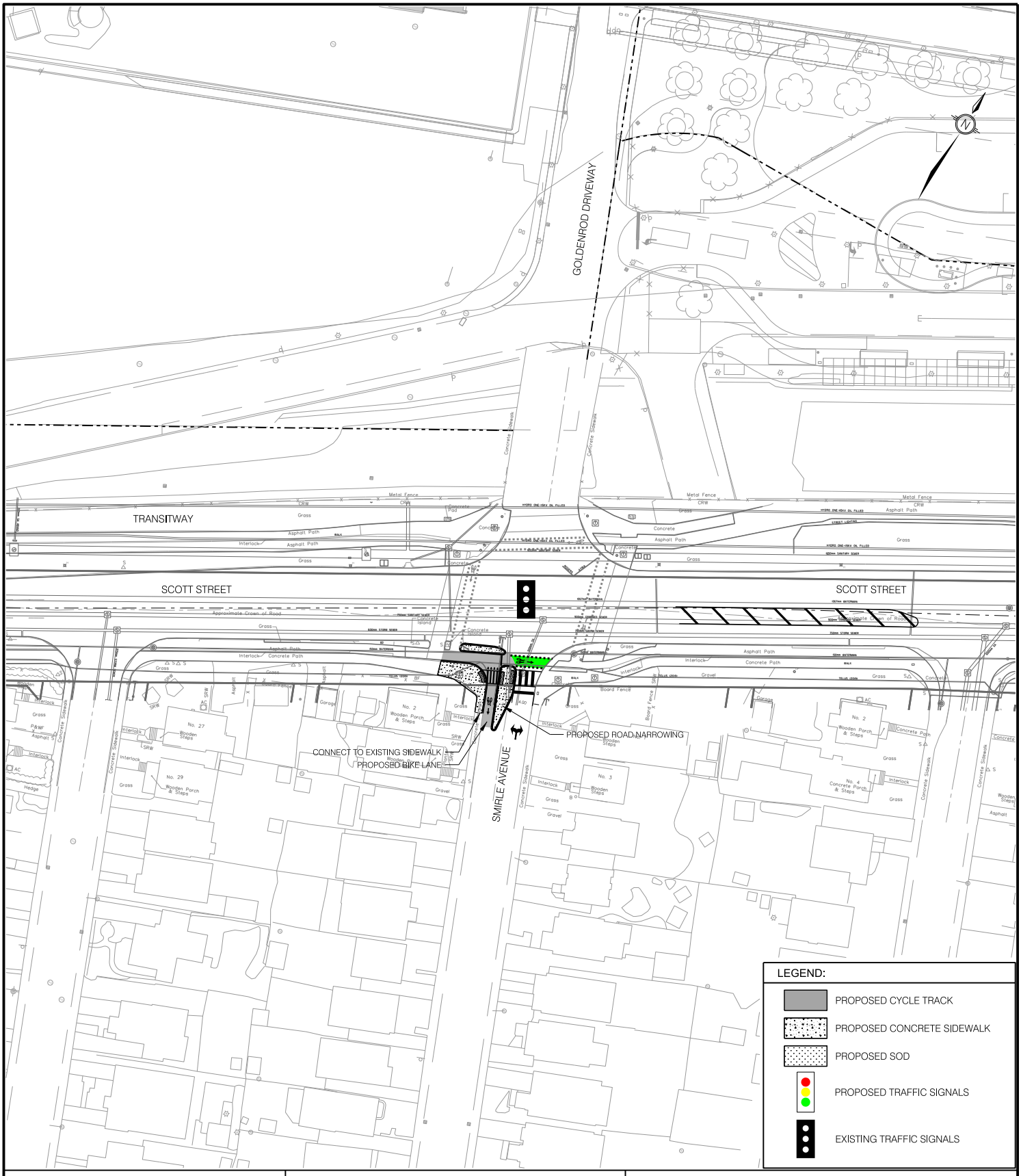
PLANNING, DEVELOPMENT AND BUILDING SERVICES

PROPOSED ROADWAY MODIFICATIONS

SIR FREDERICK BANTING DRIVEWAY / ROSS AVENUE AND SCOTT STREET INTERSECTION

TRANSPORTATION ENGINEERING SERVICES

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Scale: N.T.S.	Date: JUNE 2025



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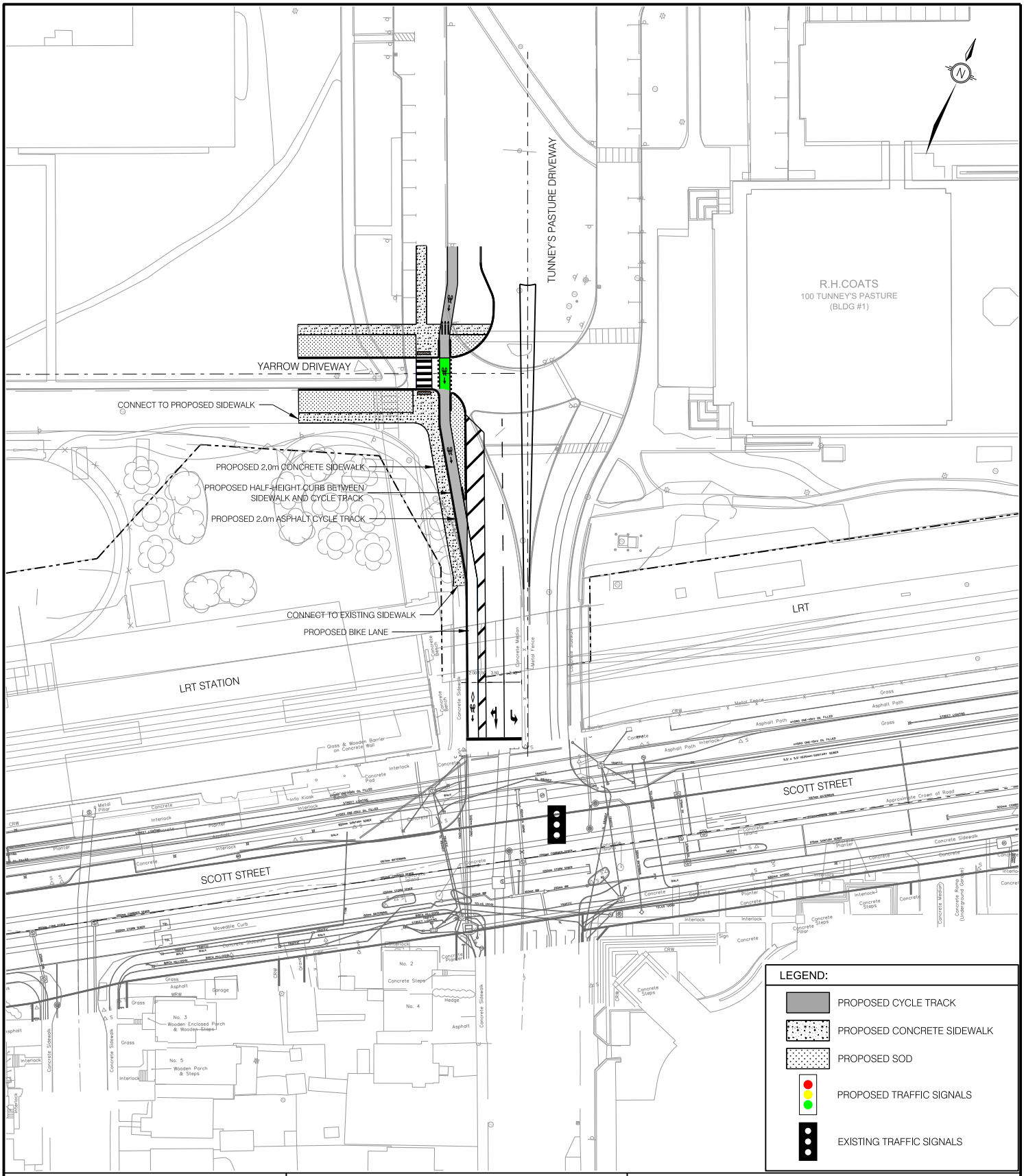
PLANNING, DEVELOPMENT AND BUILDING SERVICES

PROPOSED ROADWAY MODIFICATIONS

GOLDENROD DRIVEWAY / SMIRLE AVENUE AND SCOTT STREET INTERSECTION

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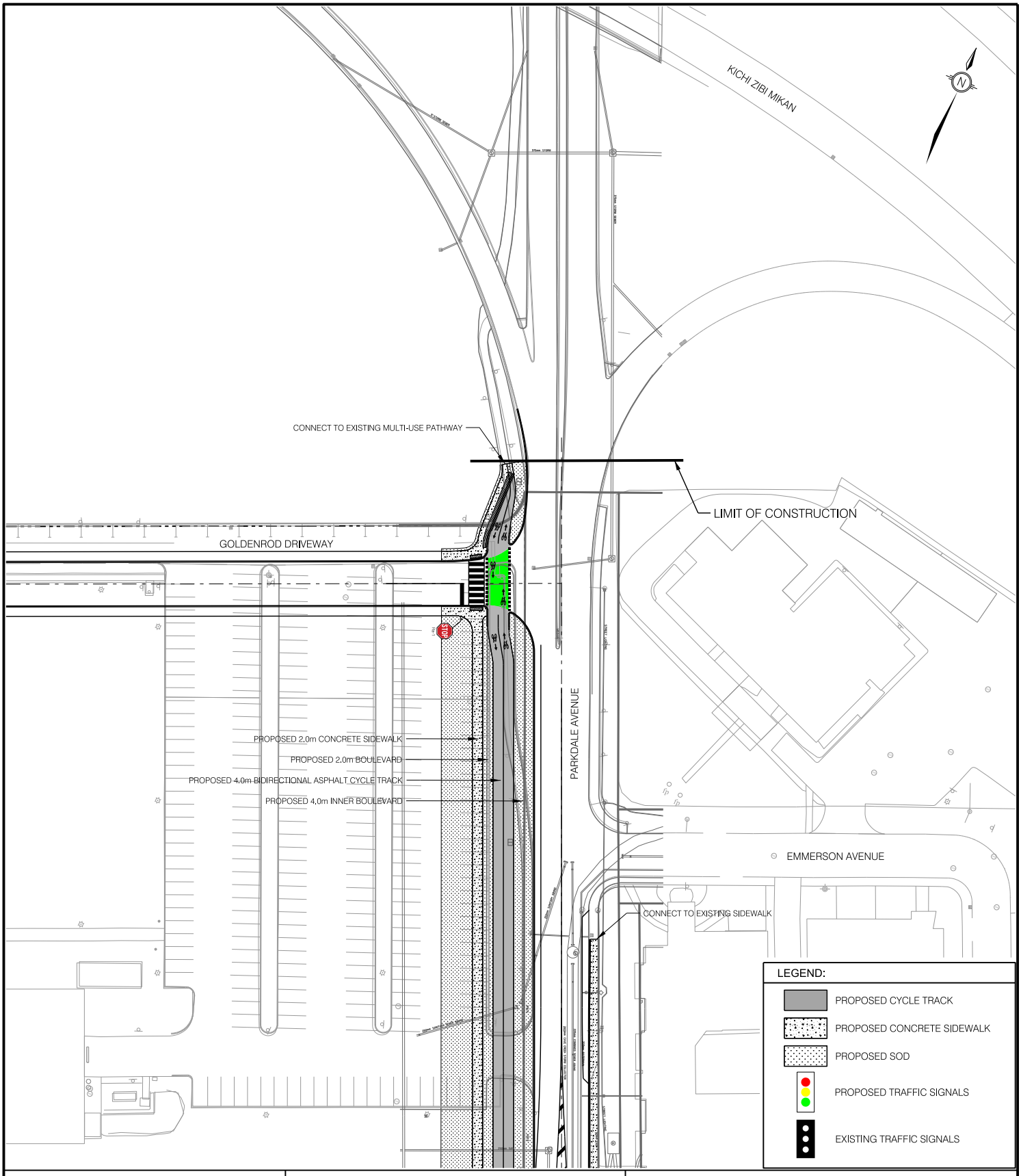
PLANNING, DEVELOPMENT AND BUILDING SERVICES

PROPOSED ROADWAY MODIFICATIONS

GOLDENROD DRIVEWAY / SMIRLE AVENUE AND SCOTT STREET INTERSECTION

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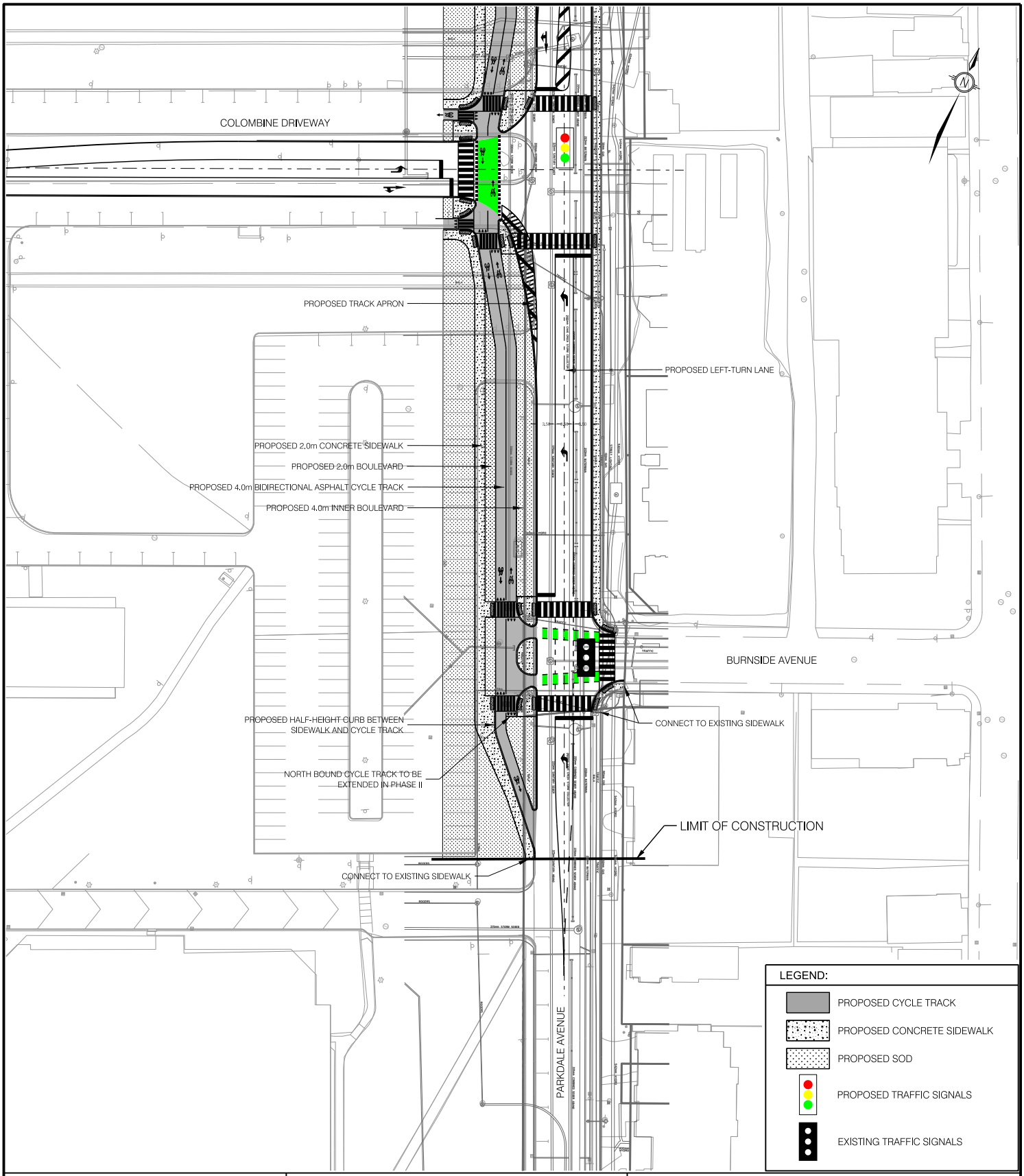
PLANNING, DEVELOPMENT AND BUILDING SERVICES

PROPOSED ROADWAY MODIFICATIONS

GOLDENROD DRIVEWAY AND PARKDALE AVENUE INTERSECTION

TRANSPORTATION ENGINEERING SERVICES

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PLANNING, DEVELOPMENT AND BUILDING SERVICES

PROPOSED ROADWAY MODIFICATIONS

COLOMBINE DRIVEWAY AND PARKDALE AVENUE INTERSECTION

TRANSPORTATION ENGINEERING SERVICES

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