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39 Years

99 Bill Leathem Drive, 2 Leikin Drive, and 20 Leikin Drive

Traffic Impact Assessment

Sortation Facility

99 Bill Leathem Drive, 2 Leikin Drive, and 20 Leikin Drive

Transportation Impact Assessment

Prepared By:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
K2M 1P6

June 2021

Novatech File: 121137
Ref: R-2021-072

NOVATECH
Engineers, Planners & Landscape Architects

June 2, 2021

City of Ottawa
Planning and Growth Management Department
110 Laurier Ave. W., 4th Floor,
Ottawa, Ontario K1P 1J1

Attention: **Mr. Mike Giampa, P.Eng.**
Senior Transportation Engineer, Infrastructure Applications

Dear Mr. Giampa:

Reference: **Sortation Facility**
Transportation Impact Assessment
Novatech File No. 121137

We are pleased to submit the following Transportation Impact Assessment in support of a Site Plan Application for 99 Bill Leathem Drive, 2 Leikin Drive, and 20 Leikin Drive and the former road allowance between Longfields Drive, Leikin Drive, and Paragon Avenue. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

If you have any questions or comments regarding this report, please feel free to contact Jennifer Luong, or the undersigned.

Yours truly,

NOVATECH

Patrick Hatton, P.Eng.
Transportation/Traffic

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

TIA Plan Reports

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 associated 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[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☑ or transportation planning ☐.

[1,2] **License of 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.**

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Dated at Ottawa (City) this 2nd day of June, 2021.

Name: Patrick Hatton, P.Eng.
(Please Print)

Professional Title: Project Manager, Transportation / Traffic

Signature of Individual certifier that s/he meets the above four criteria

Office Contact Information (Please Print)	
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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) report has been prepared in support of a Site Plan Application for 99 Bill Leathem Drive, 2 Leikin Drive, and 20 Leikin Drive and the former road allowance between Longfields Drive, Leikin Drive, and Paragon Avenue. It is understood that the east portions of 2 Leikin and 20 Leikin and the south portion of 99 Bill Leathem will be severed and form separate properties.

Existing uses in the business park include a 3-storey office at 61 Bill Leathem, Canada Post Depot and Enbridge at 90 Leikin Drive, and the RCMP Headquarters at 73 Leikin Drive. Further south is the Davidson Heights residential community.

The subject site is designated as 'Urban Employment Area' on Schedule 'B' of the City of Ottawa's Official Plan. It is currently zoned Light Industrial Zone – IL9. The proposed development consists of a 25,896m^2 (278,748ft^2) light industrial sortation facility. Buildout is anticipated in the next 5 years, by 2026.

The site includes a total of about 485 parking spaces, 32 bicycle parking spaces, as well as 100 loading bays and 314 trailer drop spaces. The development includes a private road running east-west between Paragon Avenue and Leikin Drive through the site. Two full movement driveways to the Longfields Drive / Bill Leathem Drive roundabout are proposed. Separate truck connections will be provided, with one truck entrance driveway from Paragon Avenue and one truck exit driveway to Longfields Drive.

The study area intersections are:

- Fallowfield at Woodroffe
- Longfields at Woodroffe
- Longfields at Bill Leathem
- Leikin at Bill Leathem
- Fallowfield at Merivale
- Merivale at Leikin
- Prince of Wales at Merivale
- Leikin at RCMP (73 Leikin Drive)

The weekday AM and PM peak hours are considered to represent the "worst case" combination of site-generated traffic and peak traffic conditions of the adjacent roadways. Intersection capacity analysis has been completed for the weekday AM and PM peak hours. Analysis of potential transportation impacts has been completed for a 2026 buildout year and the 2031 five-year horizon. Weekday AM and PM traffic counts were completed at the existing study area intersections by the City of Ottawa.

A 1.5% background growth rate was applied to arterial traffic in this area. Background traffic volumes for the 2026 opening year and the 2031 horizon year were forecast by applying the annual traffic growth rate to the peak hour traffic volumes.

The site is expected to operate 24-hours per day with multiple shifts that occur outside the peak periods of adjacent road traffic. Data on anticipated vehicle trips has been supplied by the proponent based on similar light industrial facilities. Site traffic was distributed and added to the projected background traffic to determine future total traffic volumes.

The main conclusions and recommendations of this TIA are:

Development Design and Parking

- Pedestrian facilities will be provided between the main building and the parking lot. A sidewalk will be provided along the north side of the Private Road, providing pedestrian connectivity between the site and Leikin Drive. Pedestrian walkways will also be constructed, providing connectivity to the Longfields Drive roundabout and along the south side of the truck ingress to Paragon. Additional right-of-way is required at the Paragon cul-de-sac to accommodate the sidewalk. There are spine walkways through the parking lot with raised crosswalks along the main north-south drive aisle.
- A multi-use path is recommended to replace the existing sidewalk on all four corners of the roundabout (additional right-of-way is required). A multi-use path will be provided connecting the roundabout to the bicycle parking. Bicycle parking is provided in front of the building near the employee entrance.
- An employee drop-off area is provided onsite between the roundabout approaches with concrete sidewalk connecting to the building.
- Localized widening is required at the southwest corner of Merivale / Beckstead.
- A restriction on northbound left trucks at Beckstead / Merivale is recommended considering the short northbound left turn lane and taper. Trucks will use Merivale / Leikin Drive where a longer left turn lane is provided.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.
- The proposed vehicular and bicycle parking as well as loading exceeds the minimum requirements of the City's Zoning By-law.
- The number of barrier-free spaces exceeds the Traffic and Parking By-law requirements.
- Bus stops #0730 and #0729 are the closest stops to the site (about 520m walking distance from the southwest external door).
- The private road will be constructed with 11m wide asphalt and sidewalk on one side, consistent with Paragon Avenue. It will run east-west between Paragon Avenue and Leikin Drive through the site. The existing cul-de-sac on Paragon Avenue is to remain.
- A garbage compactor will be located at the northwest portion of the truck court while recycling will be located at the southwest portion of the truck court.
- There will be two connections to the Bill Leathem / Longfields roundabout as well as one truck entrance from Paragon Avenue and one truck exit to Longfields Drive. The heavy vehicles (WB-20 design vehicle) are expected to travel via Fallowfield Road, Woodroffe Avenue and Longfields Drive, or via Prince of Wales Road, Merivale Road, Leikin Drive, and the private road.

Boundary Street Multi-Modal Level of Service (MMLOS)

The results of the segment MMLOS analysis can be summarized as follows:

- A 2m sidewalk along Bill Leathem Drive and Leikin Drive is recommended;
- Consider converting on road bicycle lanes on Leikin Drive to cycle tracks; and,
- A 1.5m bike lane can be installed on Bill Leathem Drive through line painting to meet the target Level of Service.

Segment MMLOS has also been completed for the proposed cross section along the private road and indicates that with trucks anticipated to be using the private road, bicyclists are better served on Leikin Drive and Bill Leathem Drive.

Access Design

The site includes a private east-west roadway that connects to Paragon Avenue, and Leikin Drive. Two full movement driveways to the Longfields Drive / Bill Leathem Drive roundabout are proposed. The east leg is currently constructed with a splitter island and a splitter island is recommended for the north leg. Truck connections will be separate with one truck entrance driveway from Paragon Avenue and one truck exit driveway to Longfields Drive.

- The employee and truck connections meet the applicable spacing requirements of Section 25 (m) of the *Private Approach By-Law.*
- The widths of the employee and truck connections exceed the maximum widths for a driveway; however, the widths are required to accommodate splitter islands at the roundabout (employee connections) or to accommodate heavy vehicle turning paths. A waiver will be required for these wider access widths.
- Adequate stopping sight distance is available along Longfields Drive, Leikin Drive, and Paragon Avenue.
- Adequate turning sight distance is available along Longfields Drive for heavy vehicles turning left from the egress driveway. Traffic circulating within and exiting the roundabout would be traveling slower than the 80km/h design speed. Turning sight distance is available for a right turning truck for a 30km/h design speed of vehicles approaching from the east.
- Adequate turning sight distance is available along Leikin Drive for heavy vehicles turning right from the private road. Turning sight distance is not available for heavy vehicles turning left from the private road due to the road curvature and trees. It is recommended that the left turn from the private road to Leikin Drive be restricted for trucks. Trucks exiting the private road will turn right onto Leikin Drive and access southbound Merivale Road via a right turn from Beckstead Road.
- The site connections to the roundabout will be yield controlled while all other site connections are expected to operate well with STOP control on the private approach.
- For this site, the clear throat requirement for a two-way driveway to a collector is 15m. More than 15m of clear throat is provided at each of the site driveways, meeting the requirement.
- A northbound left turn lane is not warranted along Leikin Drive at the private road.

Transportation Demand Management

- To encourage the use of sustainable modes, the following TDM measures are being considered:
    - Designate an internal coordinator, or contract with an external coordinator;
    - Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress;
    - Display local area maps with walking/cycling access routes and key destinations at major entrances;
    - Display relevant transit schedules and route maps at entrances;
    - Provide online links to OC Transpo and STO information;
    - Provide real-time arrival information display at entrances;
    - Provide a dedicated ridematching portal at OttawaRideMatch.com;
    - Provide a multimodal travel option information package to new/relocating employees;
    - Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes; and
    - Provide on-site amenities/services to minimize mid-day or mid-commute errands.

Neighbourhood Traffic Management

- There is sufficient lane capacity along Leikin Drive at Merivale Road and Longfields Drive to accommodate traffic generated by the development.
- Eastbound 2031 background traffic along Leikin Drive west of Bill Leathem Drive exceeds estimated lane capacity in the AM peak hour without development. Since background growth has not been applied to the collector roads in the park, the projected background traffic is equivalent to existing traffic. This is identified for further review as part of the City's Neighbourhood Traffic Calming Program, as required. The site is not expected to generate trips along this road segment in this direction during the AM peak hour since shift changes are expected to occur outside of the AM peak hour and heavy vehicles are not expected to arrive via Davidson Heights. The site trips are expected to account for about 4% of the total projected westbound volumes during the PM peak hour. None of the PM peak hour trips along this segment are expected to be heavy vehicles.

Transit

- Additional transit stops along Bill Leathem Drive or Longfields Drive near the roundabout should be considered.

Intersection Analysis:

- In existing and future traffic conditions, capacity issues have been identified for the following movements:
    - Woodroffe / Fallowfield
        - Eastbound left turn (AM and PM peak)
        - Eastbound right turn (PM peak)
        - Westbound left turn (PM peak)
        - Northbound left turn (PM peak)
        - Southbound through (PM peak)
    - Woodroffe / Longfields
        - Eastbound left turn (AM peak)
        - Northbound through (AM peak)
        - Southbound through (PM peak)
    - Merivale / Fallowfield
        - Eastbound left turn (AM peak)
        - Westbound through (PM peak)
        - Northbound through (AM peak)
        - Southbound through (PM peak)
    - Prince of Wales / Merivale
        - Eastbound right turn (PM peak)
    - Leikin / Bill Leathem / Driveway
        - Southbound approach (AM peak)

Modifications for Existing/Background Traffic:

These modifications are identified for the City's consideration without added site development:

- Signal timing modifications at the Woodroffe / Fallowfield, Woodroffe / Longfields, Merivale / Fallowfield, and Prince of Wales / Merivale intersections.
- Consider dual eastbound right turn lanes on Fallowfield Road at Woodroffe Avenue to improve the level of service and accommodate the existing and projected queues without and with site generated trips.

- Consider dual eastbound left turn lanes on Fallowfield Road at Merivale Road to improve the level of service and accommodate the existing and projected queues without and with site generated trips.
- Install traffic signals at Leikin / Bill Leathem based on high approach intersection delay during the AM peak hour (SB approach). The existing AM peak delay on the southbound approach is over 3 minutes and the 95th percentile queue is 100m. In the 2026 future background, the AM peak hour operations improve to 90 seconds at the southbound approach due to the 1.0 PHF in future conditions per City Guidelines. With signalization of the intersection, the intersection is expected to operate with LOS B. Based on the City's roundabout screening tool, the intersection is not a good candidate for a roundabout.

Modifications for Site Traffic:

- Localized widening is required at the southwest corner of Merivale / Beckstead.
- No other modifications have been identified as required to accommodate site generated trips.

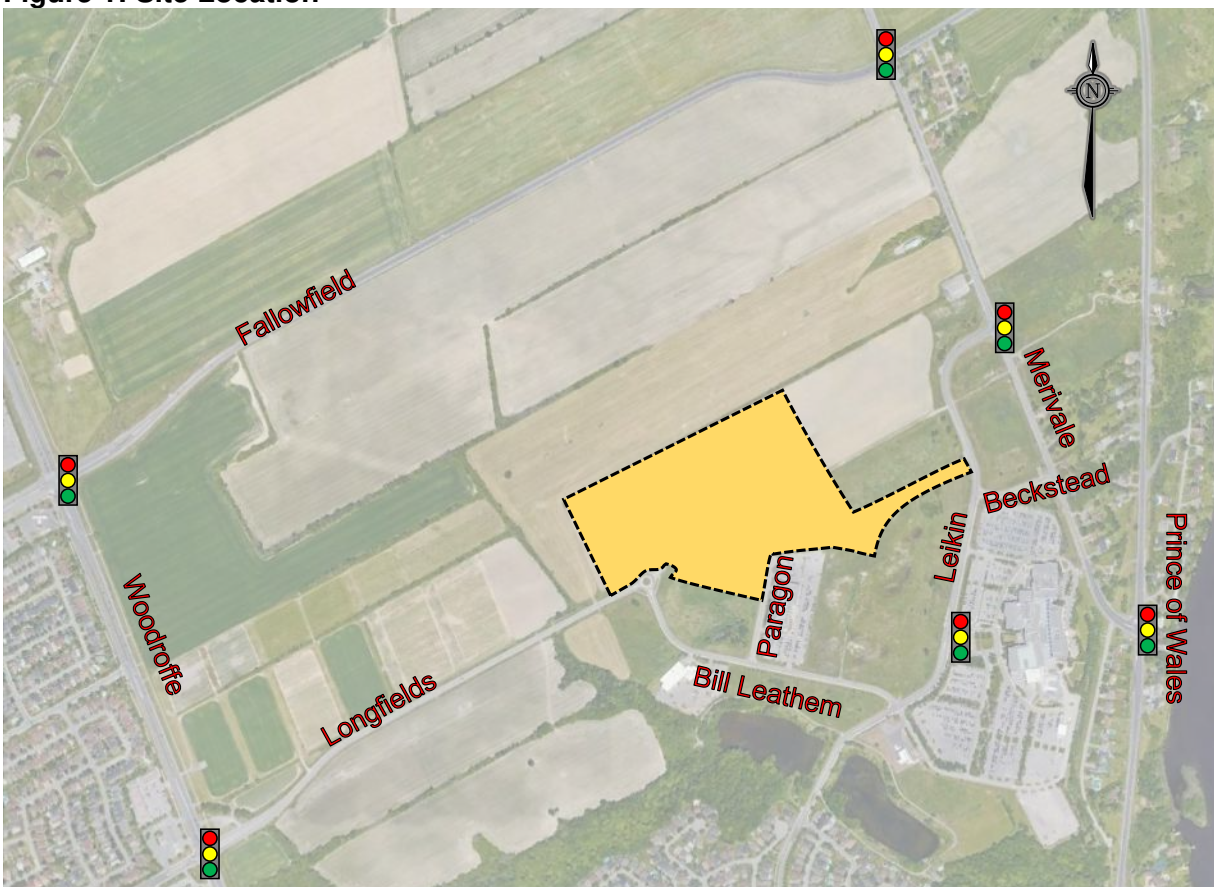
1.0 INTRODUCTION

This Transportation Impact Assessment (TIA) has been prepared in support of a Site Plan Application for 99 Bill Leathem Drive, 2 Leikin Drive, and 20 Leikin Drive and the former road allowance between Longfields Drive, Leikin Drive, and Paragon Avenue. It is understood that the east portions of 2 Leikin and 20 Leikin and the south portion of 99 Bill Leathem will be severed and form separate properties. The site (See **Figure 1**) is located in the South Merivale Business Park, is currently vacant, and is surrounded by the following:

- NCC Greenbelt to the north and west;
- Leikin Drive, Merivale Road and vacant Employment designated parcels to the east; and,
- Vacant and developed Employment designated parcels to the south.

Existing uses in the business park include a 3-storey office at 61 Bill Leathem, Canada Post Depot and Enbridge at 90 Leikin Drive, and the RCMP Headquarters at 73 Leikin Drive. Further south is the Davidson Heights residential community.

Figure 1: Site Location



The South Merivale Business Park report was prepared by Novatech in 1991 and considered the traffic impacts of full development within the park, including the subject lands. At that time, it was anticipated that a public road connection between Longfields and Leikin would be required to serve a number of smaller blocks within the Park. The subject lands will now be developed as larger blocks with a private access road. The former road allowance will be absorbed into the site.

2.0 PROPOSED DEVELOPMENT

The subject site is designated as 'Urban Employment Area' on Schedule 'B' of the City of Ottawa's Official Plan. It is currently zoned Light Industrial Zone – IL9.

The proposed development consists of a 25,896m^2 (278,748ft^2) light industrial sortation facility (See **Appendix A**). The site includes a total of about 485 parking spaces, 32 bicycle parking spaces, as well as 100 loading bays and 314 trailer parking spaces. The site will include a private east-west roadway that connects Paragon Avenue and Leikin Drive. Two full movement driveways to the Longfields Drive / Bill Leathem Drive roundabout are proposed. Truck connections will be separate and one-way with one truck entrance driveway from Paragon Avenue and one truck exit driveway to Longfields Drive. Buildout is anticipated in the next 5 years, by 2026.

3.0 SCREENING

The City's 2017 TIA Guidelines identifies three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form (See **Appendix B**).

The trigger results are as follows:

- **Trip Generation Trigger** – The site is anticipated to generate over 60 person trips/peak hour; further assessment **is required** based on this trigger.
- **Location Triggers** – The site is not within a DPA or proposes driveways onto Transit Priority or Spine Routes; further assessment **is not required** based on this trigger.
- **Safety Triggers** – The site proposes two connections to the Longfields / Bill Leathem roundabout as well as one driveway about 60m to the west of the roundabout; further assessment **is required** based on this trigger.

4.0 SCOPING

4.1 Existing Conditions

4.1.1 Roadways

Woodroffe Avenue is a four-lane divided arterial roadway with a mixed cross section (urban on the west side and rural on the east side) and is classified as a truck route, allowing full loads. It runs north-south and has a posted speed limit of 80km/h. The OP identifies a ROW protection of 44.5m between Fallowfield Road and the Greenbelt Boundary with an additional 5m on the Greenbelt side if required to construct a rural cross section.

Fallowfield Road in this area is a two-lane undivided arterial roadway with a rural cross section and is classified as a truck route, allowing full loads. It runs east-west and has a posted speed limit of 80km/h. The OP identifies Fallowfield between Woodroffe Avenue and Prince of Wales Drive is within the Greenbelt. ROW requirements are to be determined on a case-by-case basis with National Capital Commission involvement.

Merivale Road in this area is a two-lane undivided arterial roadway with a rural cross section and is classified as a truck route, allowing full loads. It runs north-south and has a posted speed limit of 80km/h. The OP identifies a ROW protection of 37.5m between the South Urban Community northern limit and Prince of Wales Drive.

Prince of Wales Drive in this area is a two-lane undivided arterial roadway with a rural cross section and is classified as a truck route, allowing full loads. It runs north-south and has a posted speed limit of 80km/h. The OP identifies a ROW protection of 40m between the South Urban Community - north and south limits.

Longfields Drive in this area is a two-lane undivided major collector roadway with a rural cross section. It runs east-west and has a posted speed limit of 70km/h.

Leikin Drive in this area is a three-lane undivided major collector roadway with an urban cross section running northeast-southwest and has a posted speed limit of 60km/h. Leikin Drive has a ROW protection of 26m and it appears that no widening is required.

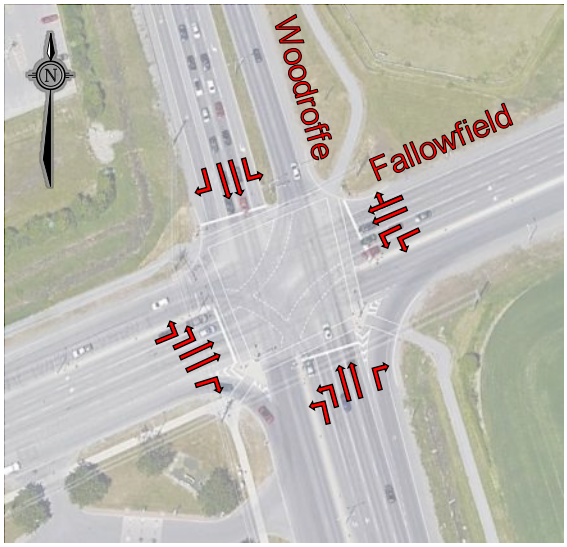
Bill Leathem Drive is a two-lane undivided major collector roadway running northwest-southeast with an urban cross section and has a regulatory speed limit of 50km/h. The OP identifies a ROW protection of 26m.

Paragon Avenue is a two-lane undivided local roadway running north-south to a cul-de-sac with an urban cross section and has a regulatory speed limit of 50km/h.

4.1.2 Intersections

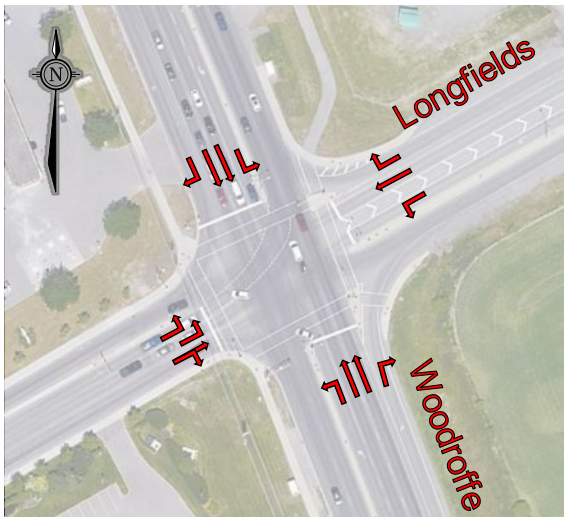
Woodroffe Avenue at Fallowfield Road

- Signalized four-legged intersection
- Northbound: two left turn lanes, two through lanes, one pocket bike lane, and one channelized right turn lane.
- Southbound: one left turn lane, two through lanes, one pocket bike lane, and one right turn lane.
- Westbound: two left turn lanes, one through lane, and one through / right turn lane.
- Eastbound: two left turn lanes, two through lanes, one bike lane, and one channelized right turn lane.
- Signalized crosswalks crossing all four approaches.



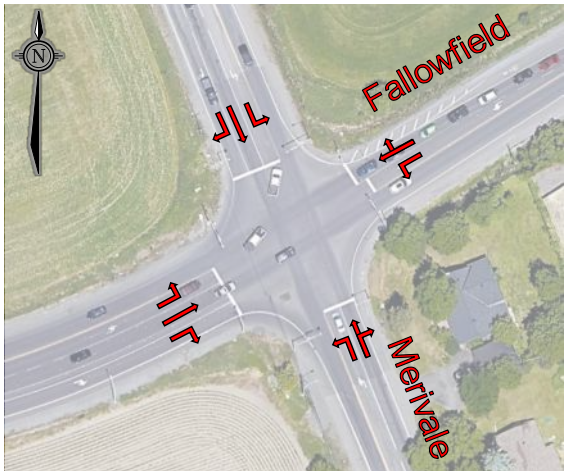
Woodroffe Avenue at Longfields Drive

- Signalized four-legged intersection
- Northbound: one left turn lane, two through lanes, one pocket bike lane, and one channelized right turn lane.
- Southbound: one left turn lane, two through lanes, one pocket bike lane, and one right turn lane.
- Westbound: one left turn lane, one through lane, one pocket bike lane, and one right turn lane.
- Eastbound: two left turn lanes, one through / right shared lane, and one bike lane.
- Signalized crosswalks crossing all four approaches.



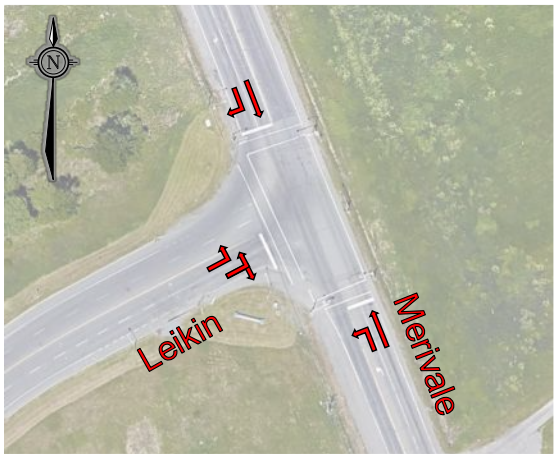
Merivale Road at Fallowfield Road

- Signalized four-legged intersection
- Northbound: one left turn lane and one through / right shared lane.
- Southbound: one left turn lane, one through lane, and one right turn lane.
- Westbound: one left turn lane and one through / right shared lane.
- Eastbound: one left turn lane, one through lane, one pocket bike lane, and one right turn lane.



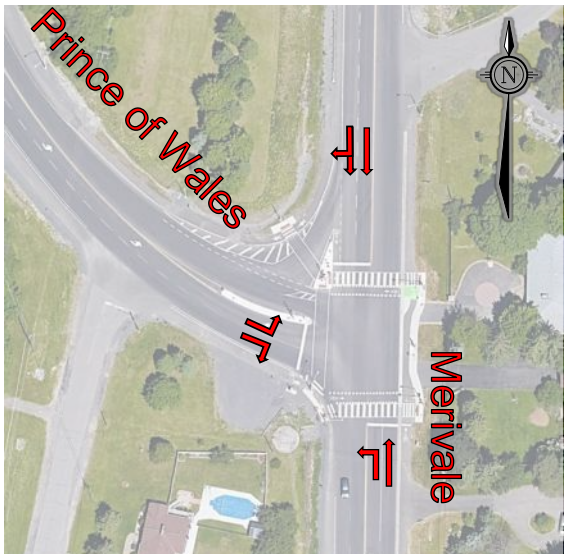
Merivale Road at Leikin Drive

- Signalized three-legged intersection
- Northbound: one left turn lane and one through lane.
- Southbound: one through lane and one right turn lane.
- Eastbound: one left turn lane, one left / right shared lane, and one bike lane.
- Signalized crosswalks crossing all three approaches.



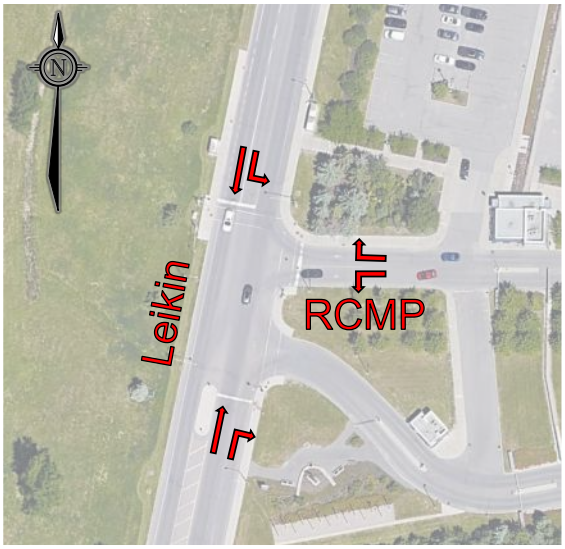
Prince of Wales Drive at Merivale Road

- Signalized three-legged intersection
- Northbound: one left turn lane and one through lane.
- Southbound: one through lane and one through / right shared lane with channelized island.
- Eastbound: one left turn lane and one right turn lane.
- Signalized crosswalks crossing all three approaches.
- Bicycle cross-rides crossing the north and south approaches.



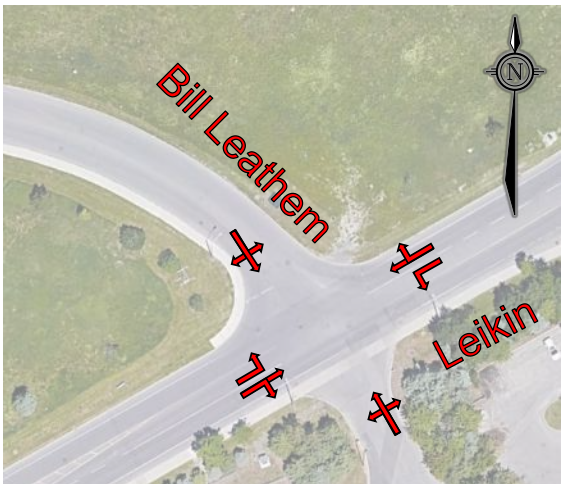
Leikin Drive at RCMP Access

- Signalized three-legged intersection
- Northbound: one through lane, one right turn lane, and one bike lane.
- Southbound: one left turn lane, one through lane, and one bike lane.
- Westbound: one left turn lane and one right turn lane.
- Signalized crosswalks crossing the north and east approaches.



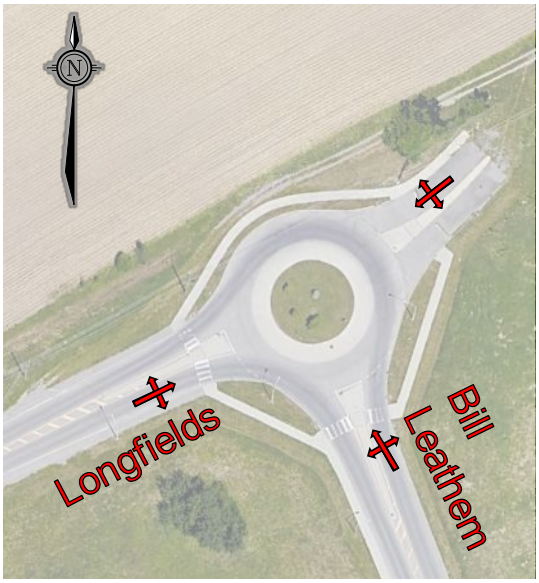
Leikin Drive at Bill Leathem Drive

- Unsignalized four-legged intersection with free flow on Leikin Drive
- Northbound / Southbound: single lane approach.
- Westbound / Eastbound: one left turn lane, one through / right shared lane, and one bike lane.



Longfields Drive at Bill Leathem Drive

- Three-legged roundabout intersection
- All approaches are a single lane.
- The westbound approach is constructed but terminates approximately 30m from the intersection.



4.1.3 Driveways

In accordance with the City's 2017 TIA guidelines, a review of adjacent driveways along the boundary roads is provided as follows:

Longfields Drive:
- Field driveways.

Bill Leathem Drive, North Side:
- One commercial driveway for the office at 61 Bill Leathem Drive.
- One field driveway to 50 Leikin Drive.

Bill Leathem Drive, South Side:
- Two commercial driveways to the Enbridge/ Canada Post Depot at 90 Bill Leathem Drive

Leikin Drive, West Side:
- One field driveway for 20 Leikin Drive (site).
- Field driveway for 50 Leikin Drive.

Leikin Drive, East Side:
- One signalized driveway and two unsignalized driveways for the RCMP Headquarters at 73 Leikin Drive.
- Field driveway for 11 Beckstead Road.

Paragon Avenue, West Side:
- No driveways on this side.

Paragon Avenue, East Side:
- Three commercial driveways for the office at 61 Bill Leathem Drive.

4.1.4 Pedestrian and Cycling Facilities

The existing pedestrian and cycling infrastructure provided in the vicinity of the subject site is shown in **Figure 2**. The City's Ultimate Cycling Network within the vicinity of the subject site is shown in **Figure 3**.

Woodroffe Avenue, Prince of Wales Drive, Merivale Road, and Fallowfield Road are identified as spine cycling routes in the City's Cycling Network and Prince of Wales Drive is a cross-town

Figure 2: Existing Pedestrian and Cycling Infrastructure

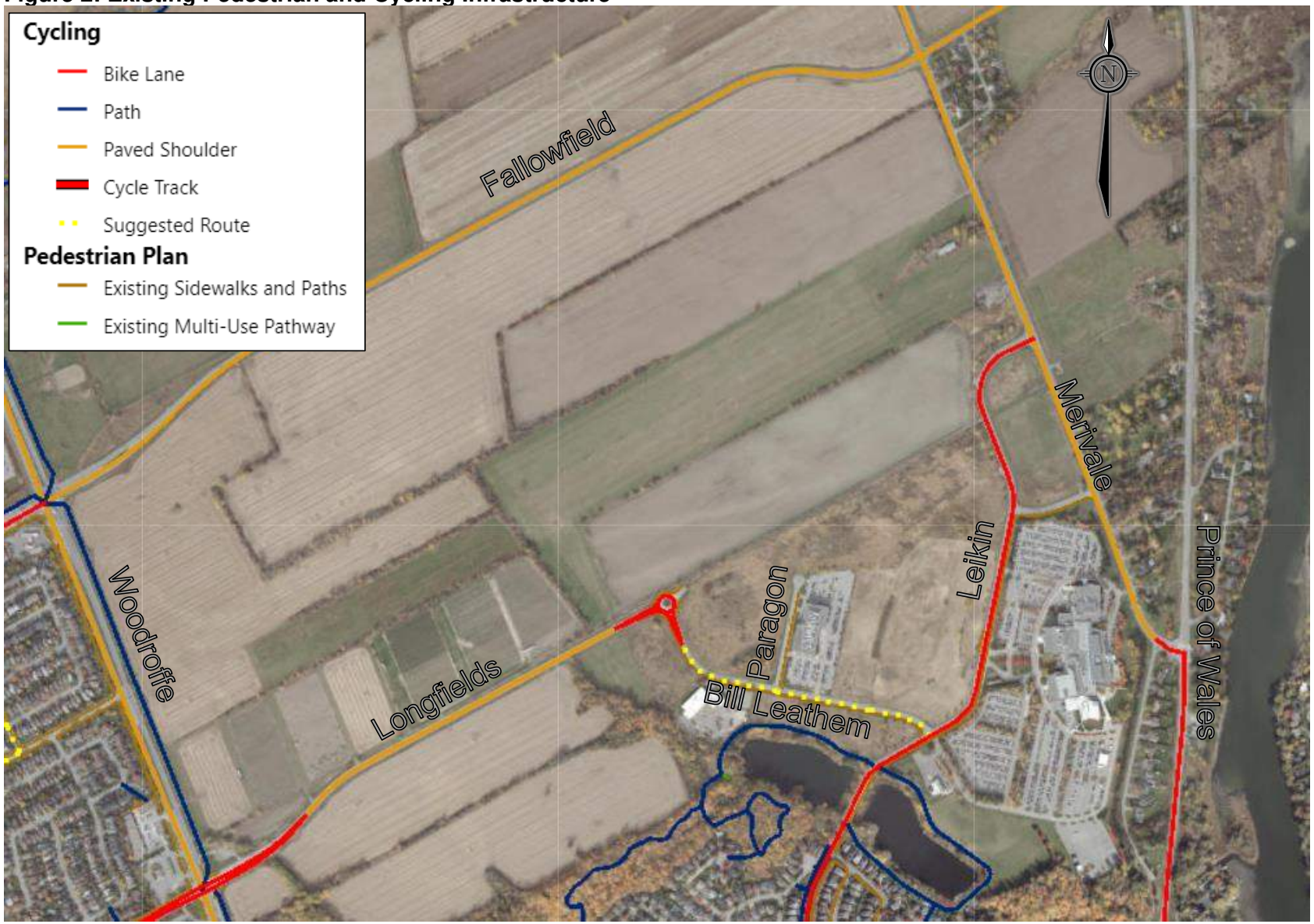
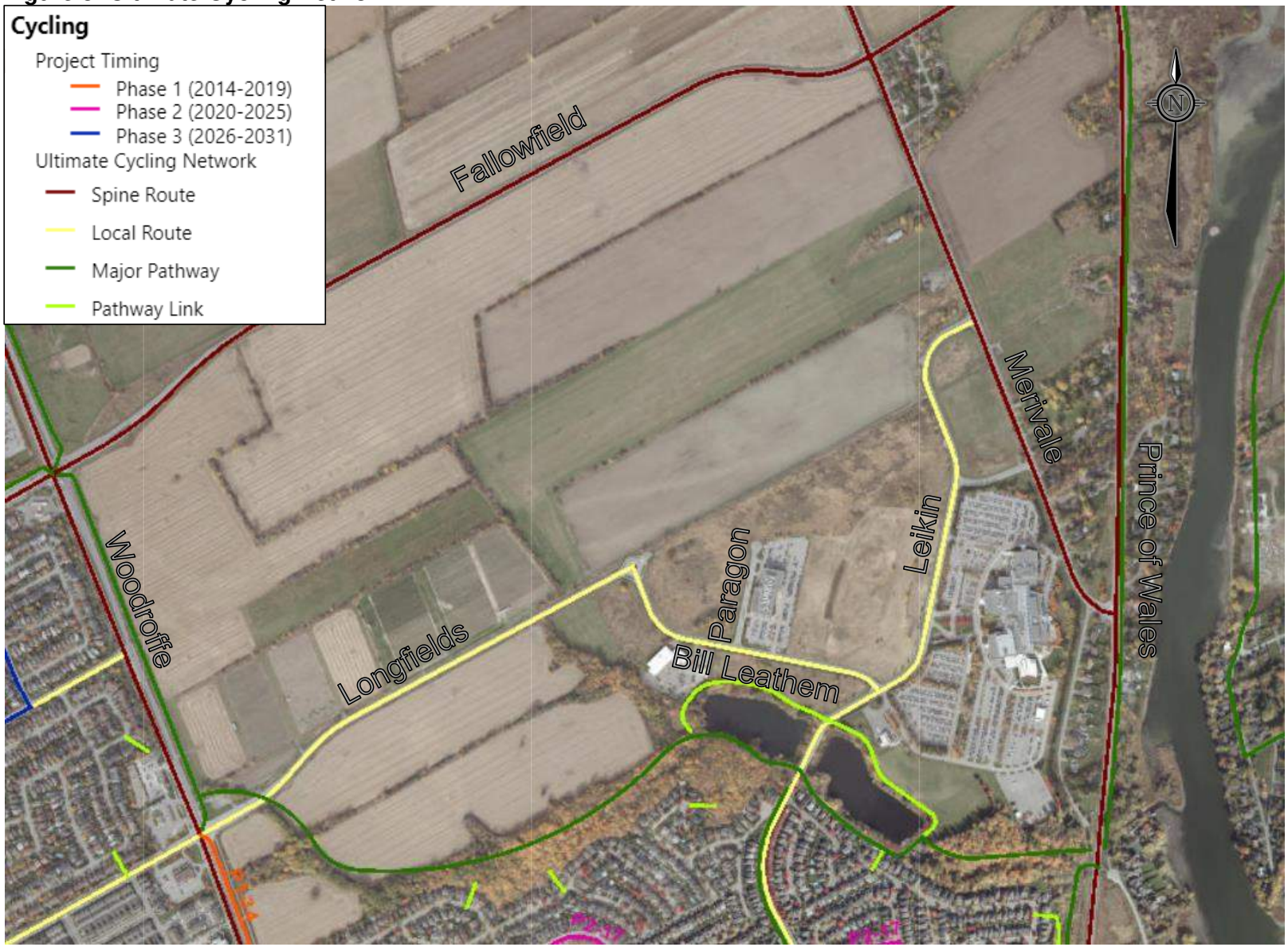


Figure 3: Ultimate Cycling Network



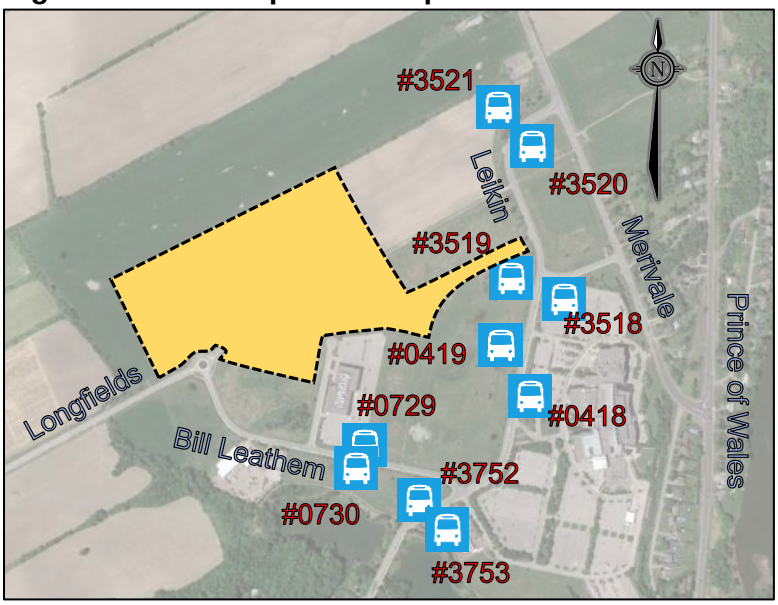
bikeway. Longfields Drive, Bill Leathem Drive, and Leikin Drive are identified as local cycling routes. There are currently on-street bicycle lanes along Leikin Drive and Woodroffe Avenue (southbound), paved shoulders along Longfields Drive, Merivale Road, Fallowfield Road, and Woodroffe Avenue (northbound) and a multi use path on the east side of Woodroffe Avenue. Bill Leathem Drive is a suggested route.

Concrete sidewalk is provided along Woodroffe Avenue (west side), Leikin Drive (east side running south from Beckstead Road), Bill Leathem Drive (south side), Paragon Avenue (east side), and Beckstead Road (south side). There is a multi-use pathway along the east side of Woodroffe Avenue.

4.1.5 Transit

The nearest bus stops to the subject site are stops #3519, #3518, #0729, #0730 and are along Leikin Drive and Bill Leathem Drive (See **Figure 4**). The Leikin stops are served by routes #80 and #199 while the Bill Leathem Drive stops are served by routes #73 and #278.

Figure 4: OC Transpo Bus Stop Locations



OC Transpo Route #73 travels between Leikin and Tunney's Pasture on 20-minute headways during weekday peak periods.

OC Transpo Route #80 travels between Barrhaven Centre and Tunney's Pasture on 15-minute headways with all-day service, 7-days per week.

OC Transpo Route #199 travels between Leikin and Hurdman Station on 60-minute headways during weekday peak periods.

OC Transpo Route #278 travels between Tunney's Pasture and Riverside South on 15-minute headways during weekday peak periods.

OC Transpo Route information is included in **Appendix C**.

4.1.6 Existing Area Traffic Management Measures

Currently, there are no completed or ongoing Area Traffic Management (ATM) studies within the study area.

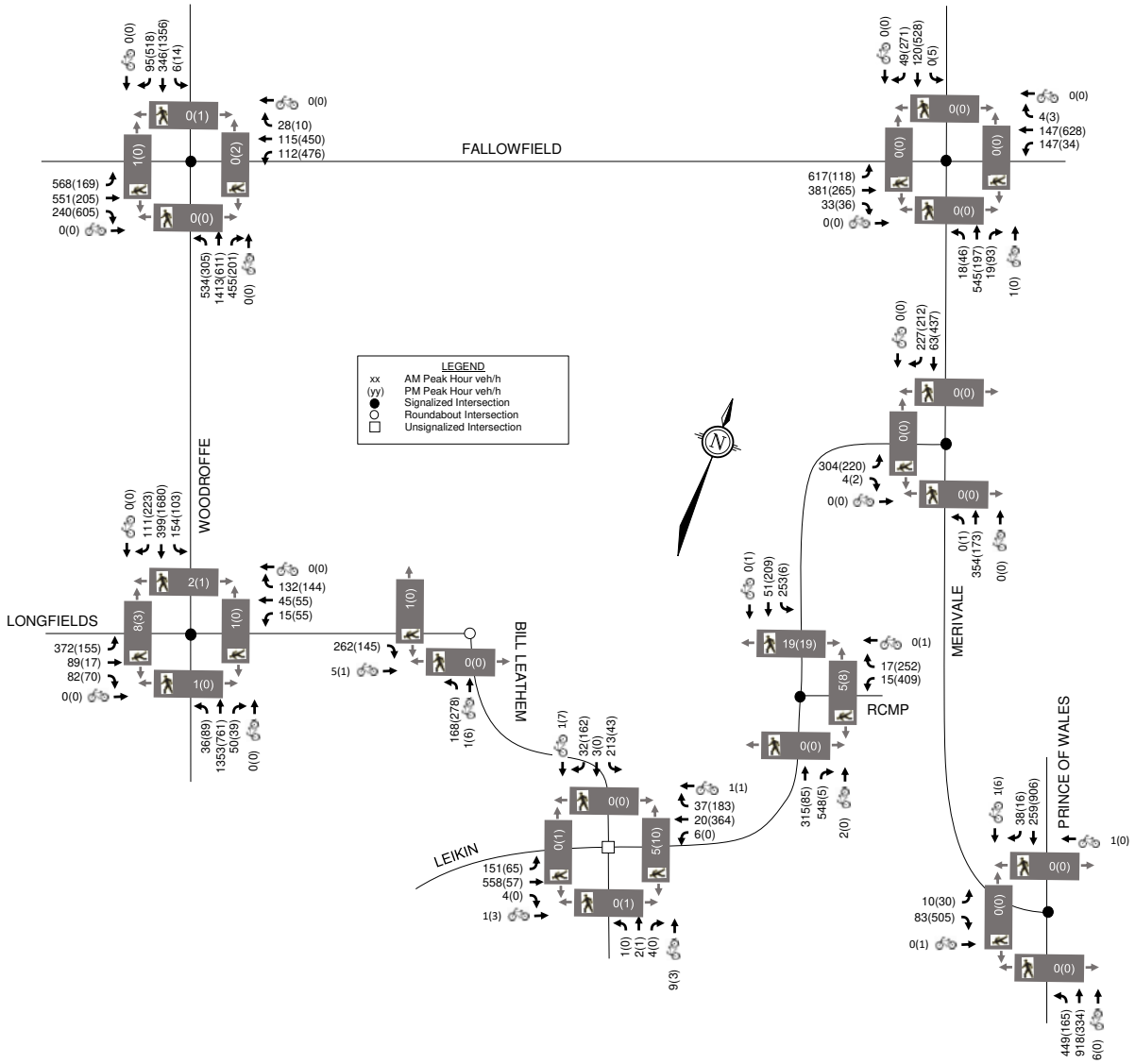
4.1.7 Existing Traffic Volumes

Weekday traffic counts were collected at the study area intersections to determine the existing pedestrian, cyclist and vehicular traffic volumes. The counts were completed by the City of Ottawa on the following dates:

- Longfields at Woodroffe — March 2, 2017
- Longfields at Bill Leathem — June 10, 2015
- Leikin at Bill Leathem — June 12, 2019
- Leikin at RCMP — January 14, 2020
- Merivale at Leikin — November 21, 2018
- Fallowfield at Merivale — March 2, 2017
- Fallowfield at Woodroffe — March 2, 2017
- Prince of Wales at Merivale — June 13, 2018

Observed weekday AM and PM peak hour traffic volumes at the study area intersections are shown in **Figure 5**. Peak hour summary sheets of the above traffic counts are included in **Appendix D**.

Figure 5: Existing Traffic Volumes



4.1.8 Collision Records

Historical collision data for the intersections shown in **Figure 5** from the last five years were obtained from the City's Public Works and Service Department. Copies of the collision summary reports are included in **Appendix E**.

The collision data have been evaluated to identify collision patterns. **Table 1** summarizes the number of collisions at each intersection from January 1, 2015 to December 31, 2019. During the five-year period there were no reported fatal collisions in the analyzed area.

Table 1: Reported Collisions

Intersection	Number of Collisions						
	SMV[1]/ Other	Rear-End	Angle	Turning Mvmt	Approa-ching	Side-swipe	Total
Woodroffe Avenue at Fallowfield Road	6	77	8	7	0	8	**106**
Woodroffe Avenue at Longfields Drive	6	15	4	10	0	7	**42**
Merivale Road at Fallowfield Road	5	28	8	9	0	2	**52**
Merivale Road at Leikin Drive	1	0	1	0	0	0	**2**
Prince of Wales Drive at Merivale Road	3	18	2	4	1	2	**30**
Leikin Drive at RCMP Access	0	0	1	0	0	0	**1**
Leikin Drive at Bill Leathem Drive	2	1	3	0	0	0	**6**

1. SMV: Single Motor Vehicle

Woodroffe Avenue at Fallowfield Road

Eleven of the one hundred and six collisions caused an injury. Eighty-six collisions occurred in clear conditions, seven in rain conditions, eleven in snow conditions, one in freezing rain, and one in fog. None of the collisions involved pedestrians.

Of the **seventy-seven rear-end** impacts at this intersection:

- Eleven occurred in poor driving conditions;
- Twenty-one occurred at the northbound approach;
- Twenty-eight occurred at the southbound approach;
- Seventeen occurred at the eastbound approach; and,
- Eleven occurred at the westbound approach.

High traffic volumes create the potential for more collisions of this type. Eastbound rear ends could be a function of multiple accesses in proximity of the intersection.

Of the **eight angle** impacts at this intersection:

- Four occurred in poor driving conditions;
- Three involved a northbound vehicle and a westbound vehicle;
- Four involved a northbound vehicle and an eastbound vehicle; and,
- Two involved a southbound vehicle and an eastbound vehicle.

Of the **eight sideswipe** impacts at this intersection:

- Two occurred in poor driving conditions;
- Seven occurred at the northbound approach; and,
- One occurred at the southbound approach.

High traffic volumes and multiple lanes create the potential for more collisions of this type. Northbound sideswipe could be a function of the northbound left driveway at 3320 Fallowfield Road.

Of the **seven turning movement** impacts at this intersection:

- One occurred in poor driving conditions;

- Two were between a southbound through vehicle and a northbound left turning vehicle;
- One was between a southbound right turning vehicle and a northbound left turning vehicle;
- One was between a westbound through vehicle and an eastbound left turning vehicle;
- One was between a westbound through vehicle and a westbound right turning vehicle;
- One was between an eastbound through vehicle and an eastbound U-turning vehicle; and,
- One was between an eastbound through vehicle and a westbound left turning vehicle.

Woodroffe Avenue at Longfields Drive

Ten of the forty-two collisions caused an injury. Thirty collisions occurred in clear conditions, four in rain conditions, seven in snow conditions, and one in freezing rain. None of the collisions involved pedestrians.

Of the **fifteen rear-end** impacts at this intersection:

- Five occurred in poor driving conditions;
- Nine occurred at the northbound approach;
- Four occurred at the southbound approach;
- One occurred at the eastbound approach; and,
- One occurred at the westbound approach.

High traffic volumes create the potential for more collisions of this type.

Of the **seven sideswipe** impacts at this intersection:

- Two occurred in poor driving conditions;
- Three occurred at the northbound approach;
- Three occurred at the southbound approach; and,
- One occurred at the westbound approach.

Of the **ten turning movement** impacts at this intersection:

- One occurred in poor driving conditions;
- Five were between a northbound through vehicle and a southbound left turning vehicle;
- Two were between a southbound through vehicle and a northbound left turning vehicle;
- One was between a southbound through vehicle and a northbound U-turning vehicle;
- One was between a northbound through vehicle and a southbound U-turning vehicle; and,
- One was between a northbound left turning vehicle and a southbound right turning vehicle.

Merivale Road at Fallowfield Road

Eleven of the fifty-two collisions caused an injury. Thirty-six collisions occurred in clear conditions, six in rain conditions, six in snow conditions, and four in freezing rain. None of the collisions involved pedestrians.

Of the **twenty-eight rear-end** impacts at this intersection:

- Ten occurred in poor driving conditions;
- Nine occurred at the northbound approach;
- Nine occurred at the southbound approach;
- Three occurred at the eastbound approach; and,
- Seven occurred at the westbound approach.

High traffic volumes create the potential for more collisions of this type. There is a local road (Ashdale Avenue) in proximity to the intersection along the WB approach with no turn lane. Northbound rear ends could be the result of multiple accesses in proximity of the intersection.

Of the **eight angle** impacts at this intersection:

- One occurred in poor driving conditions;
- Three involved a northbound vehicle and an eastbound vehicle;
- Three involved a southbound vehicle and an eastbound vehicle;
- One involved a northbound vehicle and a westbound vehicle; and,
- One involved a southbound vehicle and a westbound vehicle.

Of the **nine turning movement** impacts at this intersection:

- Two occurred in poor driving conditions;
- Five were between a westbound through vehicle and an eastbound left turning vehicle;
- Three were between a northbound through vehicle and a southbound left turning vehicle; and,
- One was between a southbound through vehicle and a northbound left turning vehicle.

Prince of Wales Drive at Merivale Road

Nine of the thirty collisions caused an injury. Twenty-two collisions occurred in clear conditions, five in rain conditions, one in snow conditions, one in freezing rain, and one in fog. None of the collisions involved pedestrians.

Of the **eighteen rear-end** impacts at this intersection:

- Five occurred in poor driving conditions;
- Three occurred at the northbound approach;
- Seven occurred at the southbound approach; and,
- Eight occurred at the eastbound approach.

High traffic volumes create the potential for more collisions of this type. There is horizontal curvature on the eastbound approach that may be contributing to these collisions. There is a local road (Queen Anne Crescent) in proximity to the intersection along the EB approach. Northbound rear ends could be the result of multiple accesses in proximity of the intersection.

4.2 Planned Conditions

4.2.1 Planned Infrastructure Projects

The 2031 Rapid Transit and Transit Priority (RTTP) Network identifies a bus rapid transit (BRT) project within the study area. The Southwest Transitway Extension BRT project (Network Concept) will provide at-grade BRT between Barrhaven Town Centre and Cambrian Road with potential extension to Barnsdale Road. The 2031 Network Concept will not be implemented until after 2031.

The 2031 RTTP Network identifies transit signal priority and queue jump lanes for Woodroffe Avenue between Fallowfield Road and Chapman Mills Drive (Network Concept, after 2031).

The City's TMP identifies Prince of Wales Drive between Merivale Road and Hunt Club Road for road widening (two lanes to four). The widening is part of the City's Affordable Plan (Phase 3, 2026-2031). The 2031 Network Concept includes widening of Prince of Wales Drive from two to four lanes between Strandherd Drive and Fisher Avenue.

The City's TMP identifies Fallowfield Road between Woodroffe Avenue and Prince of Wales Drive for road widening (two lanes to four). The widening is part of the City's 2031 Network Concept and will not be implemented until after 2031.

4.2.2 Other Study Area Developments

Other study area developments that are likely to occur within this study's horizon year include:

- 2 Bill Leathem Drive – Development of a 20,000 square foot office with accessory warehouse. A Transportation Impact Assessment was completed (McIntosh Perry, 2020) and estimated the site would generate 36 and 38 person trips during the AM and PM peak hours, respectively.
- 102 Bill Leathem Drive – Development of an approximately 11,000 square foot church. A Transportation Brief was prepared (Parsons 2016) and estimated that the site would generate 4 and 8 vehicle trips during the AM and PM peak hours, respectively. Vehicle trips were converted to person trips using the City of Ottawa ITE trip to person trip conversion factor of 1.28.

4.3 Study Area and Time Periods

A boundary street review will be conducted for Merivale Road, Leikin Drive, Bill Leathem Drive, Paragon Avenue, and Longfields Drive. The study intersections are:

- Longfields at Woodroffe
- Longfields at Bill Leathem
- Leikin at Bill Leathem
- Leikin at RCMP (73 Leikin Drive)
- Merivale at Leikin
- Fallowfield at Merivale
- Fallowfield at Woodroffe
- Prince of Wales at Merivale

It is expected that the weekday AM and PM peaks will represent the worst-case combination of site traffic and road traffic. Projection and analysis of site volumes will be completed for these peak hours of the street network.

A five-year buildout period has been considered. The analysis years for this study are therefore 2026 and 2031.

4.4 Exemptions Review

This module reviews possible exemptions from the final TIA, as outlined in the TIA Guidelines. The applicable exemptions for this site are shown in **Table 2**.

Table 2: TIA Exemptions

Module	Element	Exemption Criteria	Exemption Applies
Design Review Component			
4.1 Development Design	*4.1.2* Circulation and Access	• Only required for site plans	Not Exempt
	4.1.3 New Street Networks	• Only required for plans of subdivision	Exempt*
4.2 Parking	*4.2.1* Parking Supply	• Only required for site plans	Not Exempt
	4.2.2 Spillover Parking	• Only required for site plans where parking supply is 15% below unconstrained demand	Exempt
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	Not Exempt
4.6 Neighbourhood Traffic Management	*4.6.1* Adjacent Neighbourhoods	• Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	Not Exempt
4.8 Network Concept	*All elements*	• Only required when the proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning	Exempt

* While not a Plan of Subdivision, a review of the planned cross section for the private road is provided.

5.0 FORECASTING

5.1 Development Generated Traffic

5.1.1 Trip Generation

The proposed development consists of one approximately 25,896m^2 (278,748ft^2) light industrial sortation facility.

The site is expected to operate 24-hours per day with multiple shifts that occur outside the peak periods of adjacent road traffic. Data on anticipated vehicle trips has been supplied by the proponent (summarized in **Table 3**) based on similar light industrial facilities.

Table 3: Vehicle Trip Generation

Site	Vehicle Trips Generated[2]					
	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Site generated light vehicles[1]	0	237	237	0	238	238
Site generated heavy vehicles[1]	5	8	13	9	8	17
Total Vehicles[1]	5	245	250	9	246	255

Notes: 1. Estimated Trips based on data provided by the proponent.
2. Vehicle Trips per hour for peak hours.

The development is projected to generate 250 two-way vehicle trips during the AM peak hour and 255 two-way vehicle trips during the PM peak hour.

5.1.2 Trip Distribution / Assignment

The distribution of auto trips generated by the development has been estimated (see below) based on population centres in the Ottawa area, the major road network, and logical routing assumptions.

- 25% to/from the north via Prince of Wales Drive;
- 20% to/from the north via Merivale Road;
- 10% to/from the north along Woodroffe Avenue;
- 10% to/from the south along Merivale Road and Prince of Wales Drive;
- 10% to/from the south along Woodroffe Avenue;
- 10% to/from the south along Leikin Drive;
- 5% to/from the west along Longfields Drive; and,
- 10% to/from the west along Fallowfield Road.

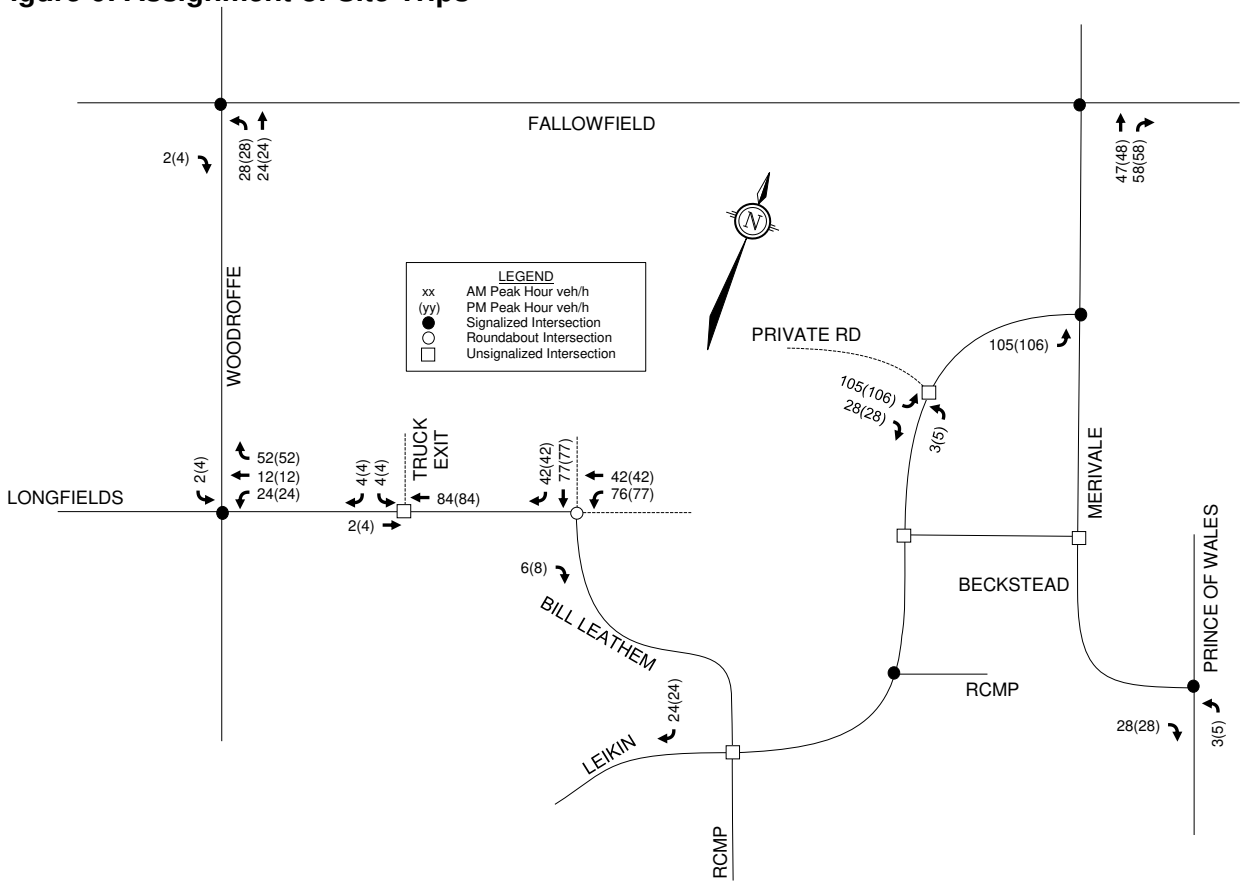
The distribution of heavy vehicle trips generated by the development has been estimated (see below).

- 50% to/from the south along Merivale Road and Prince of Wales Drive; and,
- 50% to/from the west along Fallowfield Road.

It is assumed that the site trips will use the private road connecting Paragon Avenue and Leikin Drive to travel east-west. Traffic to / from the south via Merivale Road and Prince of Wales Drive has been assigned to the Beckstead Road connection.

Site generated traffic volumes have been assigned to the study area intersections and are shown in **Figure 6**.

Figure 6: Assignment of Site Trips



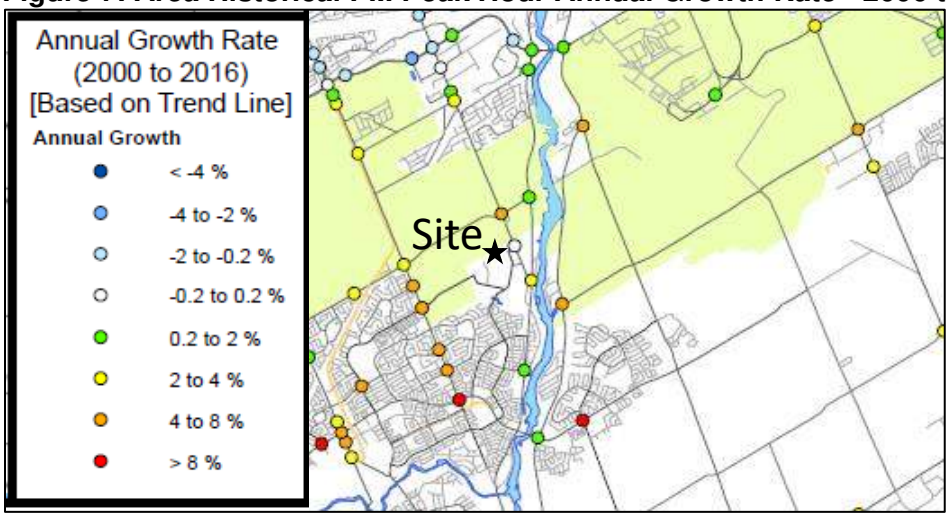
5.2 Background Traffic

5.2.1 Future Background Growth

A rate of background growth has been established through a review of the City of Ottawa's 2013 TMP and Strategic Long-Range Model (comparing snapshots of 2011 and 2031 AM peak volumes). The snapshots (See **Appendix D**) suggest a growth rate of -0.8% to 1.5% per year in the peak direction on arterial roadways within the study area. For the 'Barrhaven' area of Ottawa, Exhibit 2.10 of the 2013 TMP projects population and employment growth rates of approximately 2.5% and 4.8% per year, respectively. A 1.5% background growth rate has been applied to the arterial road traffic in this area.

This 1.5% background growth rate is in line with the annual historical (2000 to 2016) growth rate for this area (-0.2% to 8%) identified by the City of Ottawa (See **Figure 7**).

Figure 7: Area Historical PM Peak Hour Annual Growth Rate - 2000 to 2016



5.2.2 Other Area Development

Other study area developments are likely to occur within this study's horizon (See **Section 4.2.2**).

The Transportation Brief for a proposed church at 102 Bill Leathem Drive (See **Appendix F**) indicates that the weekday AM and PM peak hour vehicle trips are considered 'negligible' and the TIA for a proposed office with ancillary warehouse at 2 Bill Leathem Drive did not include trip distribution or assignment since that site generates fewer than 60 person trips (See **Appendix F**). These background studies considered the weekday AM and PM peak hour trips generated by the sites as negligible and the trips for these sites have not been considered in this study.

5.2.3 Projected Background and Total Traffic

Projected 2026 and 2031 background traffic volumes (with 1.5% background growth) are shown in **Figure 8** and **Figure 9**, respectively. Total Traffic Volumes (**Figures 10** and **11**) have been projected for the Study Area intersections for the weekday AM and PM peak hours in 2026 and 2031 and include background traffic as well as site development (**Figure 6**).

Figure 8: 2026 Future Background Traffic Volumes

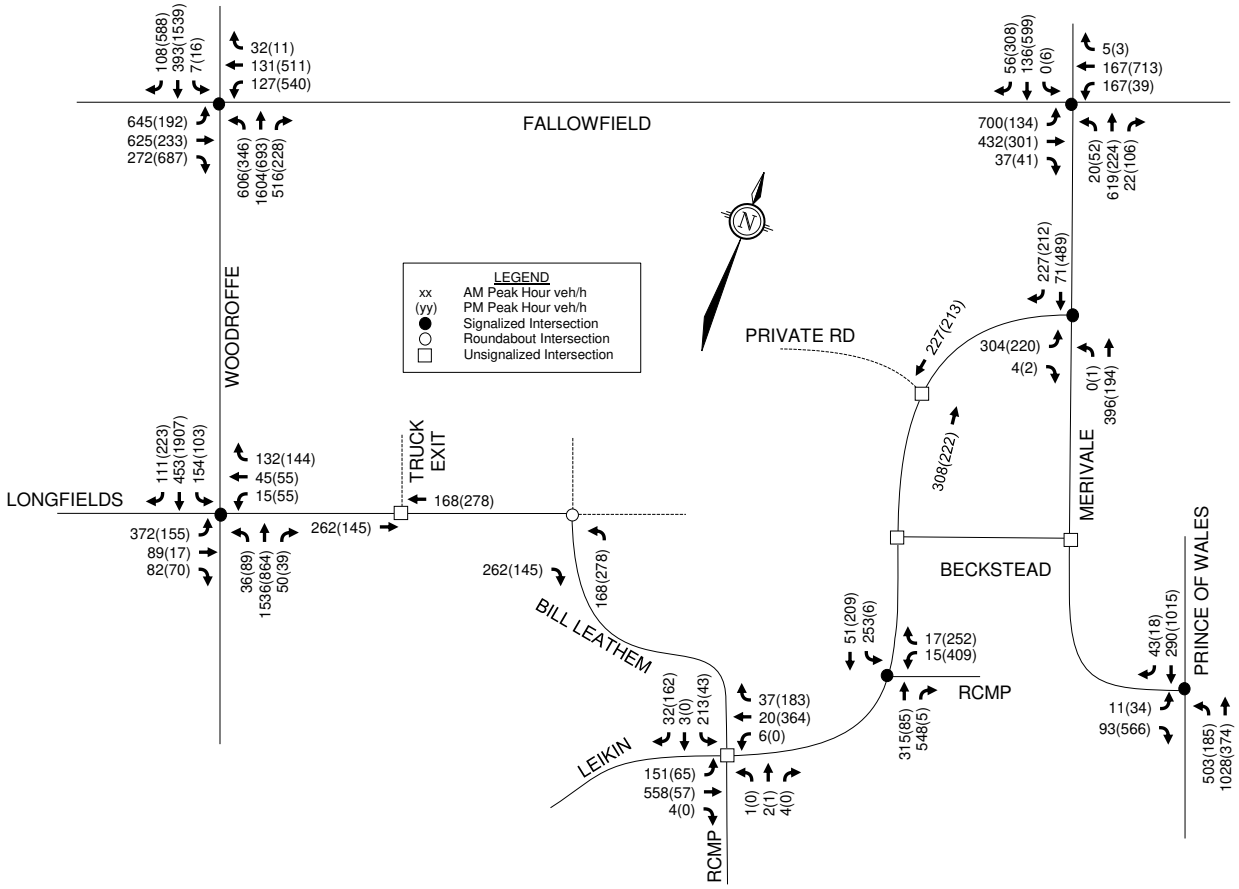


Figure 9: 2031 Future Background Traffic Volumes

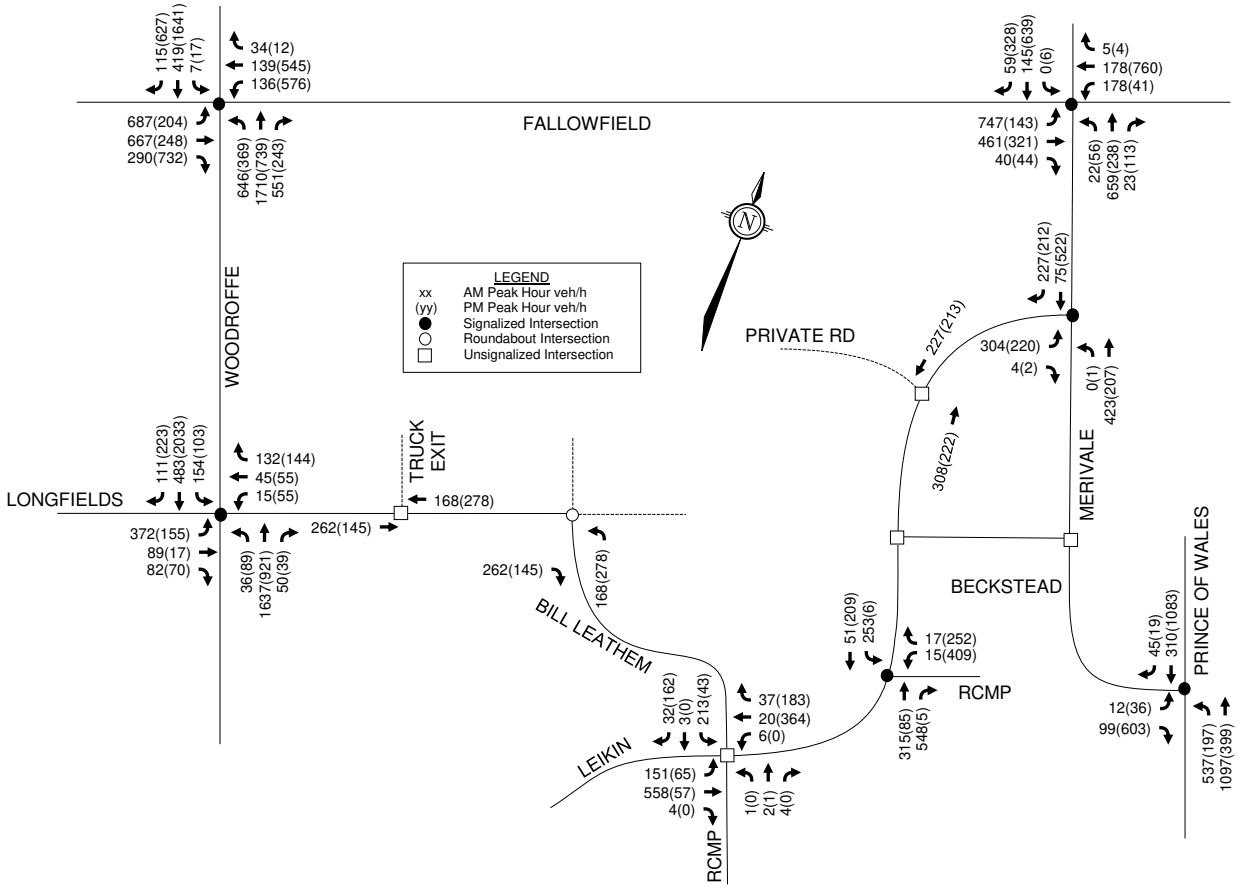


Figure 10: 2026 Total Traffic Volumes with Site Development

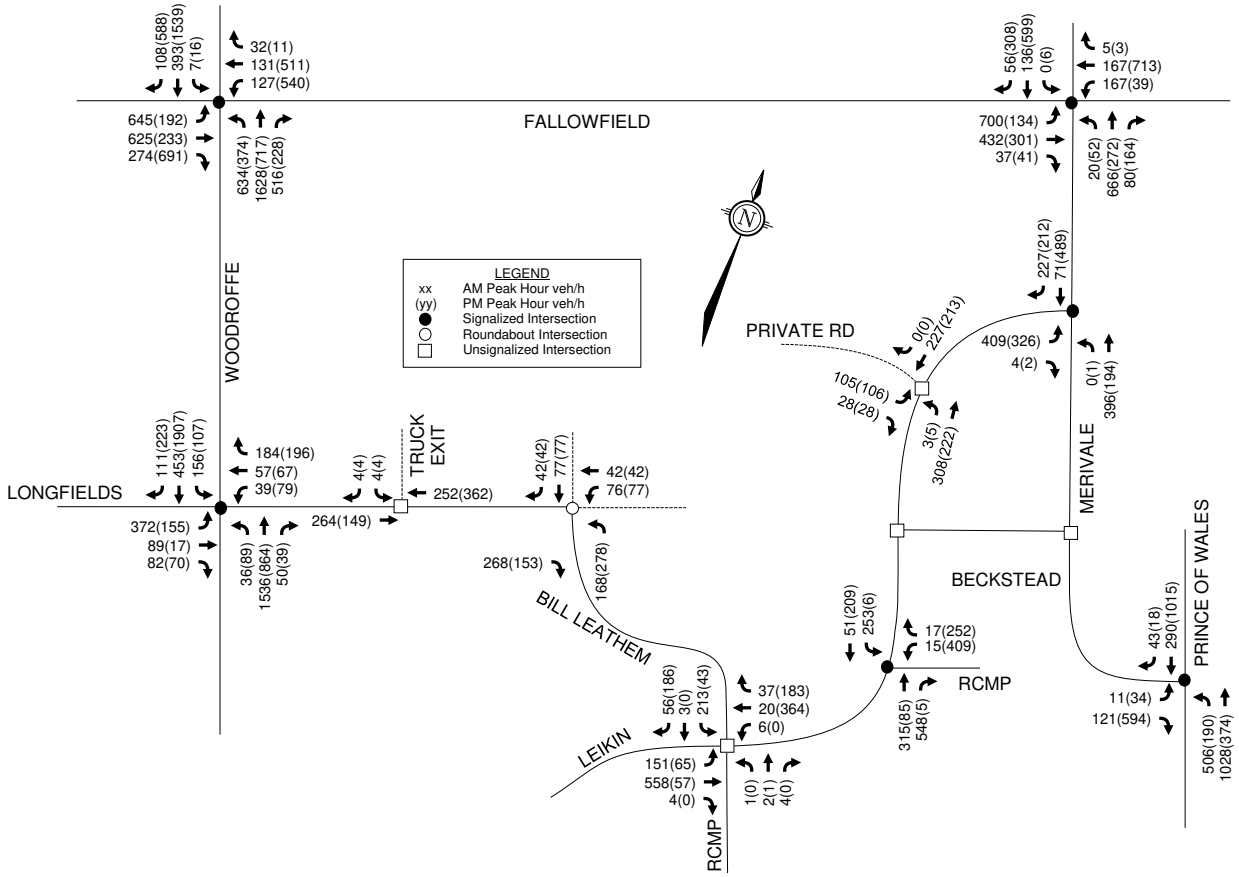
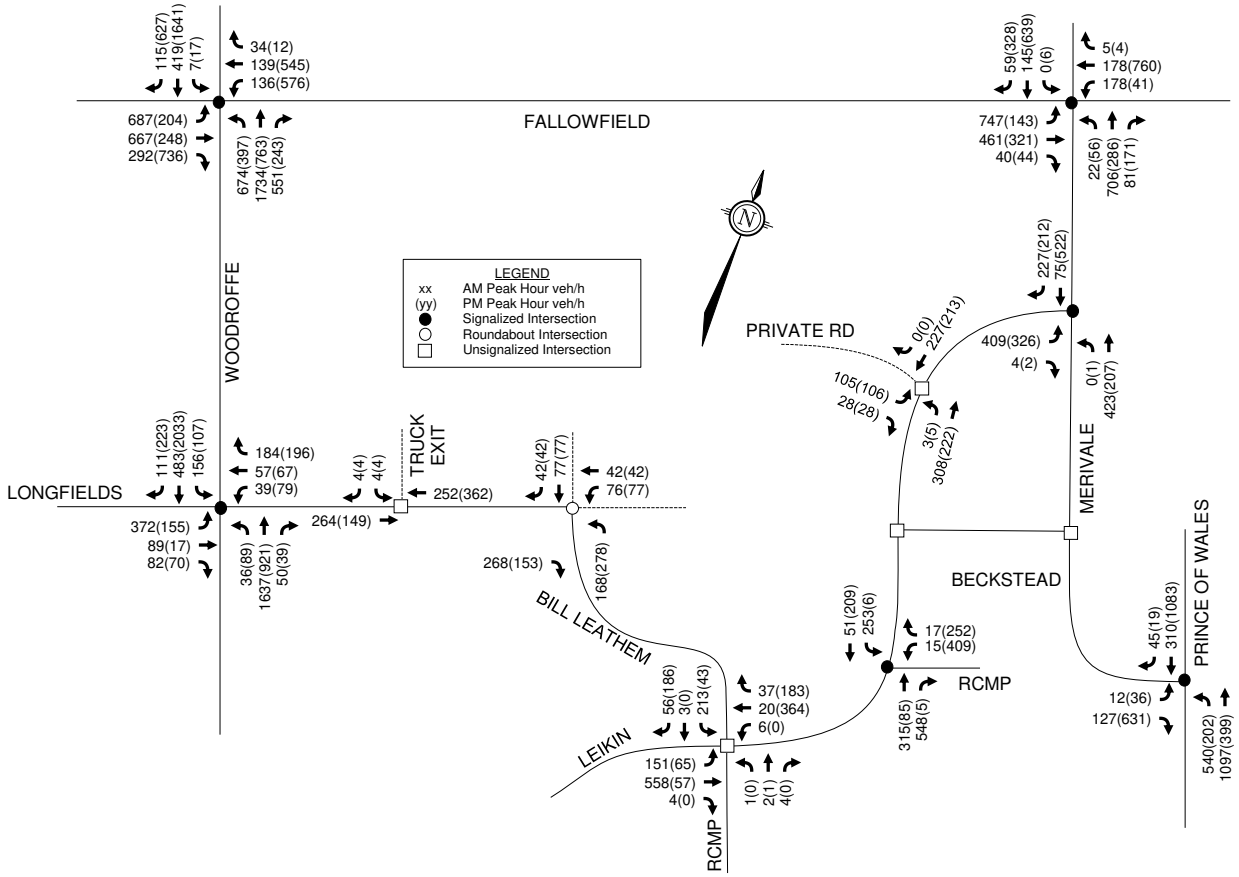


Figure 11: 2031 Total Traffic Volumes with Site Development



5.3 Demand Rationalization

Auto LOS (*Synchro 10*) analysis for the existing as well as the 2026 and 2031 peak periods without the addition of site generated trips are summarized in the following sections. Intersection parameters in the analysis are consistent with the City's TIA guidelines (saturation flow rate: 1800 vphpl, existing conditions PHF: 0.9, future conditions PHF: 1.0).

Existing signal timing plans obtained from the City of Ottawa are included in **Appendix G**. Detailed *Synchro 10* reports are included in **Appendix K**.

5.3.1 Existing Traffic – Intersection Operations

Intersection capacity analysis has been completed for the existing traffic volumes (See **Figure 5**) and summarized in **Table 4**. Approaches where long queuing is expected are shown with the associated 50th and 95th percentile queue lengths in **Table 5**.

Table 4: Existing Traffic – Intersection Operations

Intersection	AM Peak			PM Peak		
	Max V/C or Delay (sec)	LOS	Mvmt	Max V/C or Delay (sec)	LOS	Mvmt
Woodroffe at Fallowfield	0.95	E	EBL	**1.88**	**F**	**EBR**
Woodroffe at Longfields	**1.23**	**F**	**EBL**	**1.08**	**F**	**SBT**
Merivale at Fallowfield	**1.06**	**F**	**EBL**	**1.09**	**F**	**WBTR**
Merivale at Leikin	0.64	B	EB	0.45	A	EB
Prince of Wales at Merivale	0.76	C	NBT	**1.08**	**F**	**EBR**
Leikin at RCMP Driveway	0.62	B	NBR	0.85	D	WBL
Leikin at Bill Leathem / Driveway[1]	**201 sec**	**F**	**SB**	18 sec	C	SB

1. Unsignalized intersection

Table 5: Existing Traffic – Queuing

Intersection	Mvmt	AM Peak			PM Peak		
		v/c or Delay (sec)	50th % Queue (m)	95th % Queue (m)	v/c or Delay (sec)	50th % Queue (m)	95th % Queue (m)
Woodroffe at Fallowfield	EBL	0.95	89	#121	**1.10**	**~38**	**#63**
	EBR	0.51	0	21	**1.88**	**~311**	**#383**
	WBL	0.61	17	27	**1.01**	**~96**	**#133**
	NBL	0.61	43	#78	**1.33**	**~78**	**#109**
	NBT	0.87	180	#303	0.39	77	94
	SBT	0.72	52	67	0.99	270	#318
Woodroffe at Longfields	EBL	**1.23**	**~62**	**#91**	0.73	18	#32
	NBT	**0.99**	**178**	**#233**	0.52	54	89
	SBT	0.25	26	46	**1.08**	**~220**	**#303**
Merivale at Fallowfield	EBL	**1.06**	**~153**	**#237**	0.74	26	#59
	WBTR	0.54	39	64	**1.09**	**~242**	**#328**
	NBTR	**0.94**	**150**	**#211**	0.48	61	86
	SBT	0.24	25	41	**0.93**	**163**	**#216**
Prince of Wales at Merivale	EBR	0.20	0	9	**1.08**	**~111**	**#174**
	NBT	0.76	107	168	0.31	29	42
Leikin at Bill Leathem / Driveway[1]	SB	**201 sec**	**-**	**102**	18 sec	-	17

1. Unsignalized intersection
~: Volume exceeds capacity, queue is theoretically infinite
#: volume for the 95th percentile cycle exceeds capacity

Woodroffe at Fallowfield

During the Existing AM peak hour, the EBL movement operates with LOS E, meeting the target since the intersection is within 600m of a rapid transit station. The eastbound left queue on Fallowfield at Woodroffe is 121m in the AM peak, exceeding the available storage (90m). With signal timing adjustments (additional green time for the EBL movement and reduced time for the NBL leading phase) the EBL improves to LOS D, however the EBL queue (103m) would still exceed the available storage (See **Appendix K**). There is no opportunity to increase the EBL storage since the lane is back to back with the WBL for the shopping plaza.

During the Existing PM peak hour, the EBL, EBR, WBL, NBL, and SBT movements operate with LOS E or F. The eastbound queue on Fallowfield at Woodroffe is 383m in the PM peak and queues through the adjacent signal at the Fallowfield Transit Station (245m). The westbound left queue on Fallowfield is 133m, exceeding the available storage (85m). With signal timing adjustments (increased EBL phase) the EBL movement improves to LOS C (See **Appendix K**), however, the EBR, WBL, NBL, and SBT movements would still operate with LOS F. The addition of dual EB right turn lanes improves the EB queue to 152m, no longer extending through the Fallowfield Transit Station access, however the WBL, NBL, and SBT movements would continue to operate with LOS F. To achieve the target LOS E (with the dual EBR), a reduction in the PM peak hour traffic volumes for the following movements are required:

- Westbound left: reduction of approximately 15 vehicles;
- Northbound left: reduction of approximately 75 vehicles; and,
- Southbound through: reduction of approximately 30 vehicles.

To achieve the target (without road modifications), a further reduction of 235 vehicles is required for the Eastbound right.

Woodroffe at Longfields

During the Existing AM peak hour, the EBL and NBT movements operate with LOS F and E, respectively. With signal timing adjustments (increased cycle length to 140 seconds) the intersection improves to LOS E (See **Appendix K**). To achieve the target, a reduction in the AM peak hour traffic volumes for the following movements are required:

- Eastbound left: reduction of approximately 20 vehicles.
- Northbound through: reduction of approximately 120 vehicles.

During the Existing PM peak hour, the SBT movement operates with LOS F. With signal timing adjustments (increased cycle length to 130 seconds) the intersection improves to LOS E (See **Appendix K**). To achieve the target, a reduction in the PM peak hour traffic volumes for the following movement is required:

- Southbound through: reduction of approximately 140 vehicles.

Merivale at Fallowfield

During the Existing AM peak hour, the EBL and NBTR movements operate with LOS F and E, respectively. The eastbound left queue on Fallowfield at Merivale is 237m in the AM peak, exceeding the available storage (110m). The northbound through queue on Merivale is 211m in the AM peak, extending beyond the Boycrest Street intersection (160m). With signal timing adjustments (increased EBL phase) the movements improve to LOS E (See **Appendix K**). With over 600 EBL vehicles during the AM peak hour, dual left turn lanes are warranted. With the installation of dual EBL lanes (and added receiving lane on Merivale) the intersection improves to LOS D. The rights-of-way along Fallowfield and Merivale are constrained in this area with available ROW of about 26m on both streets. Property acquisition is required to accommodate the installation of dual eastbound left turn lanes. An Environmental Assessment (EA) has been completed for the widening of Fallowfield Road. The City's TMP identifies Fallowfield Road between Woodroffe Avenue and Prince of Wales Drive for road widening (two lanes to four). The widening is part of the City's 2031 Network Concept and will not be implemented until after 2031.

During the Existing PM peak hour, the WBTR and SBT movements operate with LOS F and E, respectively. The westbound through queue on Fallowfield at Merivale is 328m, extending beyond the Ashdale Avenue intersection (85m). With signal timing adjustments (additional green time for the WBT movement) the movements improve to LOS E (See **Appendix K**). To achieve the target,

a reduction in the PM peak hour traffic volumes for the following movements are required (with dual EBL, warranted from AM peak):

- Westbound through: reduction of approximately 65 vehicles; and,
- Southbound through: reduction of approximately 30 vehicles.

The need for additional through capacity will ultimately be addressed by the planned Fallowfield widening.

Prince of Wales at Merivale
During the Existing AM peak hour, all movements operate with LOS C or better.

During the Existing PM peak hour, the EBR movement operates with LOS F. The eastbound right queue on Merivale is 174m, extending beyond the Queen Anne Crescent intersection (45m). With signal timing adjustments to favour the EB phase the EBR improves to LOS D, however the EB queue (132m) still extends beyond Queen Anne Crescent (See **Appendix K**).

Leikin at Bill Leathem
The intersection (LOS F for the southbound approach during the AM peak hour) was found to not warrant traffic signals based on existing volumes (See **Appendix H**). However, signals are recommended based on high approach intersection delay during the AM peak hour (SB approach). Based on the City's roundabout screening tool (See **Appendix H**), the intersection is not a good candidate for a roundabout. With signalization of the intersection, the intersection is expected to operate with LOS C (See **Appendix K**).

5.3.2 2026 Background Traffic – Intersection Operations

Intersection capacity analysis has been completed for the projected 2026 background traffic volumes (See **Figure 8**) and summarized in **Table 6**. Approaches where long queuing is expected are shown with the associated 50th and 95th percentile queue lengths in **Table 7**.

Table 6: 2026 Background Traffic – Intersection Operations

Intersection	AM Peak			PM Peak		
	Max V/C or Delay (sec)	LOS	Mvmt	Max V/C or Delay (sec)	LOS	Mvmt
Woodroffe at Fallowfield	0.96	E	EBL	**1.92**	**F**	**EBR**
Woodroffe at Longfields	**1.10**	**F**	**EBL**	**1.09**	**F**	**SBT**
Merivale at Fallowfield	**1.10**	**F**	**EBL**	**1.12**	**F**	**WBTR**
Merivale at Leikin	0.61	B	EB	0.43	A	SBT
Prince of Wales at Merivale	0.76	C	NBT	**1.09**	**F**	**EBR**
Leikin at RCMP Driveway	0.53	A	NBR	0.84	D	WBL
Leikin at Bill Leathem / Driveway[1]	**92 sec**	**F**	**SB**	16 sec	C	SB

1. Unsignalized intersection

Table 7: 2026 Background Traffic – Queuing

Intersection	Mvmt	AM Peak			PM Peak		
		v/c or Delay (sec)	50th % Queue (m)	95th % Queue (m)	v/c or Delay (sec)	50th % Queue (m)	95th % Queue (m)
Woodroffe at Fallowfield	EBL	0.96	91	#125	**1.12**	**~39**	**#65**
	EBR	0.51	0	21	**1.92**	**~321**	**#394**
	WBL	0.62	18	28	**1.03**	**~102**	**#137**
	NBL	0.62	45	#87	**1.36**	**~80**	**#112**
	NBT	0.90	190	#315	0.40	79	97
	SBT	0.76	54	69	**1.01**	**~292**	**#330**
Woodroffe at Longfields	EBL	**1.10**	**~51**	**#80**	0.67	16	#28
	NBT	**0.99**	**178**	**#241**	0.50	55	91
	SBT	0.24	27	47	**1.09**	**~227**	**#312**
Merivale at Fallowfield	EBL	**1.10**	**~170**	**#248**	0.75	27	#61
	WBTR	0.56	41	66	**1.12**	**~257**	**#337**
	NBTR	**0.95**	**155**	**#219**	0.48	63	89
	SBT	0.25	26	42	**0.94**	**168**	**#228**
Prince of Wales at Merivale	EBR	0.21	0	9	**1.09**	**~114**	**#177**
	NBT	0.76	109	172	0.31	29	42
Leikin at Bill Leathem / Driveway[1]	SB	**92**	**-**	**65**	16	-	13

1. Unsignalized intersection
~: Volume exceeds capacity, queue is theoretically infinite
#: volume for the 95th percentile cycle exceeds capacity

Based on the previous tables, some of the background traffic conditions appear to improve when compared to the existing traffic conditions. This can be attributed to differences in the Peak Hour Factor (set to 0.90 in existing conditions and 1.0 in future conditions, as per the 2017 TIA Guidelines).

Woodroffe at Fallowfield

There is a marginal increase in the v/c ratios and queue lengths during the AM and PM peak hours. To achieve the target (with the dual EBR), a reduction in the PM peak hour traffic volumes for the following movements are required:

- Westbound left: reduction of approximately 30 vehicles;
- Northbound left: reduction of approximately 90 vehicles; and,
- Southbound through: reduction of approximately 60 vehicles.

To achieve the target (without roadway modifications), a further reduction of 280 vehicles is required in the PM peak hour for the Eastbound right.

Woodroffe at Longfields

During the 2026 Future Background AM peak hour, the EBL and NBT movements operate with LOS F and E, respectively. With signal timing adjustments (increased cycle length to 140 seconds) the intersection improves to LOS E (See **Appendix K**). To achieve the target, a reduction in the AM peak hour traffic volumes for the following movement is required:

- Northbound through: reduction of approximately 150 vehicles.

There is a marginal increase in the v/c ratios and queues during the PM peak hour. To achieve the target (with an increased cycle length of 130 seconds), a reduction in the PM peak hour traffic volumes for the following movement is required:

- Southbound through: reduction of approximately 150 vehicles.

Merivale at Fallowfield
There is a marginal increase in the v/c ratios and queues during the AM and PM peak hours. To achieve the target, a reduction in the PM peak hour traffic volumes for the following movements are required (with dual EBL, warranted from AM peak):

- Westbound through: reduction of approximately 90 vehicles; and,
- Southbound through: reduction of approximately 50 vehicles.

Prince of Wales at Merivale
There is a marginal increase in the v/c ratios and queues during the AM and PM peak hours.

Leikin at Bill Leathem
The 2026 results show a significant decrease in SB delay (200 seconds in existing conditions to 90 seconds in 2026) due to the 1.0 PHF in future conditions per City Guidelines. Signals were recommended based on the existing high approach delay (SB approach) during the AM peak hour and continue to be recommended. With signalization of the intersection, the intersection is expected to operate with LOS B (See **Appendix K**).

5.3.3 2031 Background Traffic – Intersection Operations

Intersection capacity analysis has been completed for the projected 2031 background traffic volumes (See **Figure 9**) and summarized in **Table 8**. Approaches where long queuing is expected are shown with the associated 50th and 95th percentile queue lengths in **Table 9**.

Table 8: 2031 Background Traffic – Intersection Operations

Intersection	AM Peak			PM Peak		
	Max V/C or Delay (sec)	LOS	Mvmt	Max V/C or Delay (sec)	LOS	Mvmt
Woodroffe at Fallowfield	**1.02**	**F**	**EBL**	**2.04**	**F**	**EBR**
Woodroffe at Longfields	**1.10**	**F**	**EBL**	**1.16**	**F**	**SBT**
Merivale at Fallowfield	**1.23**	**F**	**EBL**	**1.23**	**F**	**WBTR**
Merivale at Leikin	0.61	B	EB	0.46	A	SBT
Prince of Wales at Merivale	0.81	D	NBT	**1.19**	**F**	**EBR**
Leikin at RCMP Driveway	0.53	A	NBR	0.84	D	WBL
Leikin at Bill Leathem / Driveway[1]	**92 sec**	**F**	**SB**	16 sec	C	SB

1. Unsignalized intersection

Table 9: 2031 Background Traffic – Queuing

Intersection	Mvmt	AM Peak			PM Peak		
		v/c or Delay (sec)	50th % Queue (m)	95th % Queue (m)	v/c or Delay (sec)	50th % Queue (m)	95th % Queue (m)
Woodroffe at Fallowfield	EBL	**1.02**	**~102**	**#138**	**1.19**	**~43**	**#70**
	EBR	0.52	0	20	**2.04**	**~354**	**#427**
	WBL	0.65	19	30	**1.10**	**~115**	**#151**
	NBL	0.70	51	#109	**1.45**	**~89**	**#121**
	NBT	0.98	224	#355	0.42	86	105
	SBT	0.79	59	73	**1.08**	**~330**	**#367**
Woodroffe at Longfields	EBL	**1.10**	**~51**	**#80**	0.67	16	#28
	NBT	**1.06**	**~206**	**#267**	0.53	61	99
	SBT	0.26	29	50	**1.16**	**~255**	**#340**
Merivale at Fallowfield	EBL	**1.23**	**~211**	**#282**	0.81	32	#69
	WBTR	0.62	46	70	**1.23**	**~296**	**#368**
	NBTR	**0.96**	**171**	**#244**	0.50	69	96
	SBT	0.25	28	44	**0.96**	**185**	**#256**
Prince of Wales at Merivale	EBR	0.21	0	9	**1.19**	**~136**	**#200**
	NBT	0.81	128	#245	0.33	32	46
Leikin at Bill Leathem / Driveway[1]	SB	**92**	**-**	**65**	16	-	13

1. Unsignalized intersection
~: Volume exceeds capacity, queue is theoretically infinite
#: volume for the 95th percentile cycle exceeds capacity

Woodroffe at Fallowfield

There is a marginal increase in the v/c ratios and queues during the AM peak hour, notably the EBL operates with LOS F. With signal timing adjustments (additional green time for the EBL movement and reduced time for the NBL leading phase, See **Appendix K**) the intersection improves to LOS E.

There is a marginal increase in the v/c ratios and queues during the PM peak hour. To achieve the target (with the dual EBR), a reduction in the PM peak hour traffic volumes for the following movements are required:

- Westbound left: reduction of approximately 65 vehicles;
- Northbound left: reduction of approximately 110 vehicles; and,
- Southbound through: reduction of approximately 160 vehicles.

To achieve the target (without roadway modifications), a further reduction of 320 vehicles is required in the PM peak hour for the Eastbound right.

Woodroffe at Longfields

There is a marginal increase in the v/c ratios and queues during the AM peak hour. To achieve the target (with an increased cycle length of 140 seconds), a reduction in the AM peak hour traffic volumes for the following movement is required:

- Northbound through: reduction of approximately 230 vehicles.

There is a marginal increase in the v/c ratios and queues during the PM peak hour. To achieve the target (with an increased cycle length of 130 seconds), a reduction in the PM peak hour traffic volumes for the following movement is required:

- Southbound through: reduction of approximately 270 vehicles.

Merivale at Fallowfield
There is a marginal increase in the v/c ratios and queues during the AM peak hour. With the installation of dual EBL lanes (and added receiving lane on Merivale) the intersection improves to LOS E. To achieve the target (with dual EBL lanes), a reduction in the AM peak hour traffic volumes for the following movement is required:

- Northbound through: reduction of approximately 70 vehicles.

There is a marginal increase in the v/c ratios and queues during the PM peak hour. To achieve the target, a reduction in the PM peak hour traffic volumes for the following movements are required (with dual EBL lanes, warranted from the AM peak):

- Westbound through: reduction of approximately 130 vehicles; and,
- Southbound through reduction of approximately 100 vehicles.

Prince of Wales at Merivale
There is a marginal increase in the v/c ratios and queues during the AM and PM peak hours.

Leikin at Bill Leathem
There is no anticipated change in the v/c ratios and queues during the peak hours in 2031 Future Background. With signalization of the intersection, the intersection is expected to operate with LOS B (See **Appendix K**).

6.0 ANALYSIS

6.1 Development Design

Pedestrian facilities will be provided between the main building and the parking lot. A sidewalk will be provided along the north side of the Private Road, providing pedestrian connectivity between the site and Leikin Drive. Pedestrian walkways will also be constructed, providing connectivity to the Longfields Drive roundabout and along the south side of the truck ingress to Paragon. Additional right-of-way is required at the Paragon cul-de-sac to accommodate the sidewalk. There are spine walkways through the parking lot with raised crosswalks along the main north-south drive aisle, as shown on the site plan (**Appendix A**).

A multi-use path is recommended to replace the existing sidewalk on all four corners of the roundabout (right-of-way required). A multi-use path will be provided connecting the roundabout to the bicycle parking. Bicycle parking is provided in front of the building near the employee entrance. Since the private road is expected to accommodate heavy trucks and since bicycle lanes are provided along Leikin Drive and wide lanes provided along Bill Leathem (and painting of bicycle lanes is recommended, See **Section 6.3**), bicyclists would be better served to use Leikin and Bill Leathem. Bicycle lanes are not provided along the private road.

A review of the Transportation Demand Management (TDM) – *Supportive Development Design and Infrastructure Checklist* has been conducted. A copy of the TDM infrastructure checklist is included in **Appendix J**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

OC Transpo's service design guideline for peak period service is to provide service within a five minute (400m) walk of the home, school and work location of 95% of urban residents. The existing bus stops near the subject sites are described in **Section 4.1.5**.

Bus stops #0730 and #0729 are the closest stops to the site (about 520m walking distance from the southwest external door).

An employee drop-off area is provided onsite between the roundabout approaches with concrete sidewalk connecting to the building.

The private road will be constructed with 11m wide asphalt and sidewalk on one side, consistent with Paragon Avenue. It will run east-west between Paragon Avenue and Leikin Drive through the site. The existing cul-de-sac on Paragon Avenue is to remain.

There will be two connections to the Bill Leathem / Longfields roundabout as well as one truck entrance from Paragon Avenue and one truck exit to Longfields Drive. A garbage compactor will be located at the northwest portion of the truck court while recycling will be located at the southwest portion of the truck court. Turning paths of heavy vehicles and fire trucks (fire route indicated on the site plan) are included in **Appendix A**. The heavy vehicles (WB-20 design vehicle) are expected to travel via Fallowfield Road, Woodroffe Avenue and Longfields Drive, Bill Leathem Drive, and Paragon Avenue, or via Prince of Wales Road, Merivale Road, Leikin Drive, the private road, and Paragon Avenue. The northbound left turn lane along Merivale Road at Beckstead Road includes about 20m parallel and 60m of taper and does not appear to accommodate the required deceleration length for a 90km/h design speed. A restriction on northbound left trucks at Beckstead / Merivale is recommended. Trucks from the south will use the signalized connection at Leikin Drive where the northbound left turn lane includes sufficient parallel and taper. Localized widening is required at the southwest corner of Merivale / Beckstead.

6.2 Parking

The subject site is located in Area C on Schedule 1 and 1A of the City of Ottawa's ZBL. Minimum vehicular and bicycle parking as well as loading rates for the site are identified in the ZBL and are summarized in **Table 10**. The proposed vehicular parking spaces, bicycle parking spaces, and loading exceeds the minimum requirements of the ZBL while the number of barrier-free parking spaces exceeds the Traffic and Parking By-law requirements. In addition to the 100 loading bays there are also proposed to be 314 trailer parking spaces.

Table 10: Vehicular, Bicycle, Barrier Free Parking and Loading Requirements

Land Use		Rate	GFA/Units	Requirement	Provided
Vehicle Parking					
Site	Office	2.4 / 100 $m^2$of GFA	1,557 m^2	37	485
	Light Industrial	0.8 / 100 $m^2$of GFA 0.4 / 100 $m^2$of GFA above 5,000 $m^2$of GFA	24,339 m^2	117	
			Total	***154***	***485***
Bicycle Parking					
Site	Office	1 / 250m^2 of GFA	1,557 m^2	6	32
	Light Industrial	1 / 1,000m^2 of GFA	24,339 m^2	24	
			Total	***30***	***32***
Barrier Free Parking					
Site			485 public spaces	5	14
			Total	***5***	***14***

Vehicle Loading Spaces					
Site	Office	1 / 1,000-9,999m^2 of GFA	1,557 m^2	1	1
	Light Industrial	2 / 10,000-24,999m^2 of GFA	24,339 m^2	2	99
			Total	***3***	***100***

6.3 Boundary Streets

Schedule 'B' of the City of Ottawa's Official Plan indicates the site is in an Urban Employment Area. Targets for pedestrian level of service (PLOS), bicycle level of service (BLOS), transit level of service (TLOS), and truck level of service (TkLOS) for the boundary streets reflect those outlined for an arterial, major collector, and local roads located within an employment area in Exhibit 22 of the MMLOS guidelines. MMLOS for the private road has also been evaluated with PLOS, BLOS, and TkLOS targets for a local street. Segment MMLOS results and targets are summarized in **Table 11** with details included in **Appendix I**.

Table 11: Segment MMLOS Summary

Roadway	PLOS	BLOS	TLOS	TkLOS
Merivale Road	F	F	D	B
Target	**C**	**C**	**No Target**	**B**
Longfields Drive	F	F	D	C
Target	**C**	**C**	**No Target**	**D**
Bill Leathem Drive	F	F	D	B
Target	**C**	**C**	**No Target**	**D**
Leikin Drive	F	E	D	B
Target	**C**	**C**	**No Target**	**D**
Paragon Avenue	F	F	N/A	B
Target	**C**	**No Target**	**No Target**	**E**
Private Road	B	D	N/A	B
Target	**C**	**No Target**	**No Target**	**E**

The PLOS along Merivale Road, Longfields Drive, Bill Leathem Drive, Leikin Drive and Paragon Avenue fronting the site is currently failing. Merivale Road and Longfields Drive have posted speed limits of 60km/h or higher and more than 3,000 vehicles per day AADT. If sidewalk were installed, the highest attainable PLOS score for each of the roadways is D due to the roadway speed and volume. Merivale and Longfields have paved shoulders and are considered appropriate given the rural context. The PLOS of Bill Leathem Drive and Leikin Drive is F; to meet the target, a 2m sidewalk is recommended. The PLOS on the east side of Paragon Avenue is C, achieving the target. The PLOS on the west side of Paragon Avenue is F, however as a local road, sidewalk on one side is acceptable per typical City cross sections.

The BLOS along Merivale Road, Longfields Drive, Leikin Drive, and Bill Leathem Drive is currently failing. The paved shoulders along Merivale and Longfields don't achieve the BLOS target, however they are considered appropriate given the rural context. Due to the high operating speed on Leikin, a physically separated bikeway is required to meet the target BLOS. With a 60km/h operating speed on Bill Leathem, 1.5m bike lanes can be installed through line painting to achieve the target C.

The TkLOS along each roadway meets or exceeds the respective target.

With planned sidewalk and 40km/h posted speed along the private road, it is expected to exceed the targets for PLOS and TkLOS. Bicyclists are better served on Leikin Drive and Bill Leathem Drive.

6.4 Access Intersections

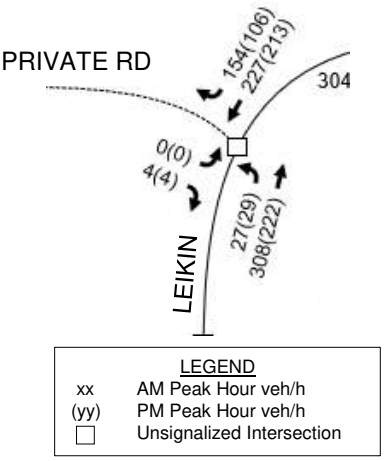
The site includes a private east-west roadway that connects to Paragon Avenue, and Leikin Drive. Two full movement driveways to the Longfields Drive / Bill Leathem Drive roundabout are proposed. The east leg is currently constructed with a splitter island. A splitter island is recommended for the north leg, as shown on the site plan. Truck connections will be separate with one truck entrance driveway from Paragon Avenue and one truck exit driveway to Longfields Drive.

The driveway configurations with respect to design guidelines and requirements of the City's Private Approach By-law are summarized below:

- Section 25 (a) of the City's Private Approach By-Law identifies a maximum number of private approaches that can be provided, based on the amount of frontage.
    - The number of private site connections to Leikin Drive and Bill Leathem Drive (one two-way each) meet the bylaw requirements.
    - The number of private site connections to Longfields Drive and Paragon Avenue (one two-way and one one-way each) meet the bylaw requirements.
- Section 25 (m) of the *Private Approach By-Law* identifies spacing between driveways and streets for properties abutting arterial and major collector roads. For industrial sites with over 300 parking spaces, the spacing requirement is 60m between driveways and intersections.
    - The site's two employee connections are both at the existing roundabout and meet the requirement.
    - The truck connection to Longfields Drive is about 78m from the north approach to the roundabout (nearest edge to nearest edge) and meets this requirement.
- The site connections to the roundabout are about 14.5m wide (north leg) and 12.3m wide (east leg). These widths are more than the 9m maximum width for a driveway but are required to accommodate splitter islands at the roundabout. A waiver will be required for these wider access widths.
- The private road is 17.9m wide at Leikin and 16.4m wide at Paragon, measured at the right-of-way line. These exceed the 9m maximum width for a private approach under the City's Private Approach by-law, but the width is required to accommodate the heavy trucks (See **Appendix A**). A waiver will be required for these wider access widths.
- The truck connections are 15m (entrance) and 15.8m (exit) wide, measured at the right-of-way line. These exceed the 7.5m maximum width for a one-way driveway under the City's Private Approach by-law, but the width is required to accommodate the heavy trucks (See **Appendix A**). A waiver will be required for these wider access widths.
- The Transportation Association of Canada (TAC) outlines minimum clear throat lengths for driveways based on the land use, development size, and type of roadway. For this site, the clear throat requirement for a two-way driveway to a collector is 15m. More than 15m of clear throat is provided at each of the site driveways, meeting the requirement.

- The Stopping Sight Distance (SSD) along roadways with design speeds of 60km/h and 70km/h (Bill Leathem and Leikin) are 85m and 105m, respectively. The available SSD at each driveway exceeds 105m, meeting the requirement.
- The Stopping Sight Distance (SSD) along roadways with design speeds of 50km/h (private road) is 65m. The available SSD at the truck ingress exceeds 90m, meeting the requirement.
- The Turning Sight Distance (TSD) requirements on a two-lane roadway with an 80km/h (Longfields) design speed for a left turning and right turning heavy vehicle from STOP are 256m and 233m, respectively. Available TSD looking right from the truck egress onto Longfields Drive is greater than 300m, exceeding the minimum 256m for a left turn. With about 88m between the right turning heavy vehicle and a circulating vehicle at the roundabout, the 233m TSD for a right turning vehicle onto an 80km/h design speed roadway is not available. Traffic circulating within and exiting the roundabout is expected to be traveling much slower than 80km/h. 88m TSD for a right turning heavy vehicle corresponds to a 30km/h design speed.
- The Turning Sight Distance (TSD) requirements on a two-lane roadway with an 70km/h (Leikin) design speed for a left turning and right turning heavy vehicle from STOP are 224m and 205m, respectively. Available TSD looking left from the private road onto Leikin Drive is greater than 205m, exceeding the minimum for a right turn. Available TSD looking right from the private road onto Leikin Drive is 137m due to the road curvature and trees, less than the minimum 224m for a left turn. Available TSD is close to the requirement for a left turning passenger car (146m). It is recommended that the left turn from the private road to Leikin Drive be restricted for trucks. Trucks exiting the private road will turn right onto Leikin Drive and access southbound Merivale Road via a right turn from Beckstead Road.
- The site connections to the roundabout will be yield controlled while all other site connections are expected to operate with STOP control.
- During the AM and PM peak hours the site is not expected to generate auto trips entering the site. Prior to a shift change, the site is expected to generate a peak of 238 entering auto trips in a one-hour period. Sensitivity volumes have been estimated for Leikin Drive at the private road connection assuming these entering trips arrive during the peak hours (a conservative assumption) by substituting the 238 auto arrivals instead of the expected peak hour auto trips for the peak hours. Left turn warrants have been prepared (See **Appendix H**) for these resulting 2031 sensitivity volumes (See **Figure 12**) and indicate that a northbound left turn lane is not warranted along Leikin Drive at the private road.

Figure 12: Projected 2031 Sensitivity Volumes – Leikin Drive at Private Road



6.5 Transportation Demand Management

A review of the Transportation Demand Management (TDM) Measures Checklist has been conducted. **Table 12** identifies the TDM measures that will be provided to encourage the use of sustainable modes. A copy of the TDM checklist is included in **Appendix J**.

Table 12: TDM Measures

Category	TDM Measure	Additional Description
TDM Program Management	Designate an internal coordinator who can liaise directly with OC Transpo to communicate transit-related needs, trends, challenges	On-site HR staff can be set up to coordinate with OC Transpo
	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	The tenant is willing to conduct surveys to support a TDM plan
Walking and Cycling	Display local area maps with walking/cycling access routes and key destinations at major entrances	This information can be provided physically on-site as well as on the intranet page.
Transit	Display relevant transit schedules and route maps at entrances	This information can be provided physically on-site.
	Provide online links to OC Transpo and STO information	This information will be provided on the intranet page
	Provide real-time arrival information display at entrances	Real-time arrival boards could be set up in the main lobby
Ridesharing	Provide a dedicated ridematching portal at OttawaRideMatch.com	Elsewhere in Ontario the tenant has used Commute Ontario as the platform for coordinating carpooling. However, if the City prefers this ridematching portal instead, the tenant is open to this as an alternative
TDM Marketing and Communications	Provide a multimodal travel option information package to new/relocating employees	A multimodal information package can be included as part of the new hire packet
	Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes; and	Incentive programs like this are commonly done at the tenant's other facilities
Other Incentives and Amenities	Provide on-site amenities/services to minimize mid-day or mid-commute errands.	Facilities like lunchrooms, refrigerators, microwaves, and a small market area for purchasing food and drinks is a standard practice for the tenant

6.6 Neighbourhood Traffic Management

The City of Ottawa Area Traffic Management (ATM) guidelines identify a maximum threshold of 5,000 vehicles per day, or 600 vehicles during the peak hour for major collector roadways. Leikin Drive and Longfields Drive are classified as major collector roadways and provide access to the subject site and were reviewed based on their 2031 background traffic, proposed additional traffic, and 2031 total traffic (See **Table 13**).

Table 13: Neighbourhood Traffic Impacts

Roadway	AM Peak			PM Peak		
	2031 Bkgd	Site	2031 Total	2031 Bkgd	Site	2031 Total
Leikin Dr at Merivale Rd						
Eastbound	308	105	**413**	222	106	**328**
Westbound	227	0	**227**	213	0	**213**
Two-way	535	105	**640**	435	106	**541**
Leikin Dr W of Bill Leathem Dr						
Eastbound	713	0	**713**	122	0	**122**
Westbound	53	24	**77**	526	24	**550**
Two-way	766	24	**790**	648	24	**672**
Longfields Dr at Woodroffe Ave						
Eastbound	293	2	**295**	159	4	**163**
Westbound	192	88	**280**	254	88	**342**
Two-way	485	90	**575**	413	92	**505**

The projected 2031 total traffic volumes along Leikin Drive in this area exceed the ATM threshold while the projected 2031 total traffic volumes along Longfields Drive do not exceed the ATM threshold. A further review of the intersection operations with site development is provided in **Section 6.8**. Overall lane capacity of a collector roadway is estimated at 600 vehicles per hour per lane (Ottawa TRANS Long Range Transportation Model).

Leikin Drive at Merivale Road

Based on the estimated lane capacity, total traffic volumes for the peak hour in the peak direction equate to a volume to capacity (v/c) ratio of 0.68 (LOS B) during the AM peak hour and 0.55 (LOS A) during the PM peak hour. There is sufficient lane capacity to accommodate the projected traffic.

Leikin Drive at Bill Leathem Drive

Based on the estimated lane capacity, total traffic volumes for the peak hour in the peak direction equate to a v/c ratio of 1.19 (LOS F) during the AM peak hour and 0.92 (LOS D) during the PM peak hour. The EB 2031 background traffic on Leikin at Bill Leathem exceeds estimated lane capacity in the AM peak hour without site development. As background growth has not been applied to the collector roads in the park, the projected background traffic is equivalent to existing traffic. This is identified for further review as part of the City's Neighbourhood Traffic Calming Program, as required. The site is not expected to generate trips along this road segment during the AM peak hour since shift changes are expected to occur outside of the AM peak and heavy vehicles are expected to use the private road connection. The site trips are expected to account for about 4% of the total projected westbound volumes during the PM peak hour. PM peak hour site trips of 24 vehicles are equivalent to 1 vehicle every 2.5 minutes. None of the PM peak hour trips along this segment are expected to be heavy vehicles.

Longfields Drive at Woodroffe Avenue

Based on the estimated lane capacity, total traffic volumes for the peak hour in the peak direction equate to a v/c ratio of 0.49 (LOS A) during the AM peak hour and 0.57 (LOS A) during the PM peak hour. There is sufficient lane capacity to accommodate the projected traffic.

6.7 Transit

Additional transit stops along Bill Leathem Drive or Longfields Drive near the roundabout should be considered to serve the site.

6.8 Intersection Analysis

MMLOS analysis has been completed for the existing conditions using the methodology presented in the City of Ottawa's MMLOS Guidelines. Auto LOS (*Synchro 10*) analysis for the existing as well as the 2026 and 2031 peak periods without site trips are summarized in **Section 5.3**. Auto LOS analysis with the addition of site generated trips are summarized in the following sections.

6.8.1 Existing MMLOS

The City's RTTP Network and Schedule 'B' of the City of Ottawa's Official Plan identify the land use designations and policy areas for the study intersections as follows:

Intersection	Land Use / Policy Area
Fallowfield at Woodroffe	Within 600m of a rapid transit station
Woodroffe at Longfields	General Urban Area
Merivale at Fallowfield	Agricultural Resource Area
Merivale at Leikin	Employment Area
Prince of Wales at Merivale	Employment Area
Leikin at RCMP	Employment Area
Leikin at Bill Leathem	Employment Area

The MMLOS targets for these policy areas are indicated in Exhibit 22 of the City's Multi-Modal Level of Service (MMLOS) Guidelines. Identified and target PLOS, BLOS, TLOS, TkLOS, and Auto LOS for the study area signalized intersections are summarized in **Table 14**. Existing traffic signal timings are included in **Appendix G** and detailed MMLOS calculations are included in **Appendix I**.

Table 14: Intersection MMLOS Summary

Intersection	PLOS	BLOS	TLOS	TkLOS	Auto LOS
Woodroffe at Fallowfield	F	F	F	B	F
Target	**A**	**C**	**D**	**D**	**E**
Woodroffe at Longfields	F	F	F	C	F
Target	**C**	**C**	**D**	**D**	**D**
Merivale at Fallowfield	F	F	F	E	F
Target	**D**	**C**	**No Target**	**D**	**D**
Merivale at Leikin	F	F	E	C	B
Target	**C**	**C**	**No Target**	**B**	**D**
Prince of Wales at Merivale	F	F	-	E	F

Intersection	PLOS	BLOS	TLOS	TkLOS	Auto LOS
Target	**C**	**B**	**No Target**	**B**	**D**
Leikin at RCMP Driveway	F	E	C	F	D
Target	**C**	**C**	**No Target**	**D**	**D**
Leikin at Bill Leathem / Driveway[1]	-	-	-	-	F
Target	**-**	**-**	**-**	**-**	**D**

1. Unsignalized intersection, evaluated for Auto LOS only

6.8.1.1 Woodroffe Avenue / Fallowfield Road

Woodroffe Avenue / Fallowfield Road does not meet the target PLOS A, BLOS C, TLOS D, or Auto LOS E.

All approaches have a divided cross-section with a width equivalent to ten lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. There is also limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

None of the approaches meet the target BLOS C based on both left and right turn characteristics. Given the high traffic volumes on both roadways, the existing right turn lanes and dual left turn lanes are required. Cyclists would be best served to perform turns at a different intersection. Therefore, no recommendations have been made in improving the BLOS at this intersection.

None of the transit movements (EBR and NBL) meet the target TLOS D. The City's RTTP Network concept designates Woodroffe Avenue in this area as Transit Priority Corridor (Isolated Measures). This planned modification and demand rationalization are required to improve the TLOS along Woodroffe Avenue.

Auto LOS is discussed in **Section 5.3.1**.

6.8.1.2 Woodroffe Avenue / Longfields Drive

Woodroffe Avenue / Longfields Drive does not meet the target PLOS C, BLOS C, TLOS D, or Auto LOS D.

All approaches have a divided cross-section. The north, south and east approaches all have widths equivalent to ten lanes crossed or more. The west approach has auxiliary turn lanes and a width equivalent to 7 lanes crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of lanes. Improving the delay scores for pedestrians crossing the north and south approaches would require reducing green time for the heavy northbound and southbound movements and is not desirable.

All approaches do not meet the target BLOS C based on both left and right turn characteristics. Given the high traffic volumes on both roadways, the existing right turn lanes and dual eastbound left turn lanes are required. Cyclists would be best served to perform turns at a different intersection. Therefore, no recommendations have been made in improving the BLOS at this intersection.

Other than the WBR movement (TLOS C), none of the transit movements (EBT, EBR, WBT, NBL, NBT, SBL, and SBT) meet the target TLOS D. The City's RTTP Network concept designates Woodroffe Avenue in this area as Transit Priority Corridor (Isolated Measures). This planned modification and demand rationalization are required to improve the TLOS along Woodroffe Avenue.

Auto LOS is discussed in **Section 5.3.1**.

6.8.1.3 Merivale Road / Fallowfield Road

Merivale Road / Fallowfield Road does not meet the target PLOS D, BLOS C, TkLOS D, or Auto LOS D.

All four approaches have cross-sections with widths equivalent to five or six lanes crossed. The intersection does not have marked crosswalks or pedestrian signal heads. There is limited opportunity in improving the PLOS at each approach without reducing the number of lanes. Improving the delay scores for pedestrians crossing the north and south approaches would require reducing green time for the heavy northbound and southbound movements and is not recommended.

All approaches do not meet the target BLOS C based on right turn and / or left turn characteristics. Given the high travel speeds and the high traffic volumes, there is limited opportunity for improving the BLOS.

The east and west approaches miss the target TkLOS D. An Environmental Assessment (EA) has been completed for the widening of Fallowfield Road. The City's TMP identifies Fallowfield Road between Woodroffe Avenue and Prince of Wales Drive for road widening (two lanes to four). The widening is part of the City's 2031 Network Concept. In the interim, wide paved shoulders are provided on the east and west approaches that assist truck turning movements.

Auto LOS is discussed in **Section 5.3.1**.

6.8.1.4 Merivale Road / Leikin Drive

Merivale Road / Leikin Drive does not meet the target PLOS C, BLOS C, or TkLOS B.

The west approach has a cross-section with a width equivalent to ten lanes crossed or more while the north and south approaches have widths equivalent to five and three lanes crossed. The south approach operates with a PETSI score equivalent to PLOS C. Increasing the available green time for the EB movement by about 6 seconds during the AM peak hour would improve the delay score and the PLOS of the south approach to C.

The south approach does not meet the target BLOS C based on left turn characteristics. Given the high through volumes along Merivale Road, the northbound left turn lane is recommended. Therefore, no recommendations have been made in improving the BLOS at this intersection.

The west approach misses the target TkLOS B, achieving a C. To achieve TkLOS B, a second receiving lane is required on the south approach, however, the TkLOS is close to meeting the City's target and large curb radii are provided to accommodate truck movements.

6.8.1.5 Prince of Wales Drive / Merivale Road

Prince of Wales Drive / Merivale Road does not meet the target PLOS C, BLOS B, TkLOS B, or Auto LOS D.

The north and west approaches have a cross-section with a width equivalent to ten lanes crossed or more while the south approach has a width equivalent to six lanes crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of lanes. Improving the delay scores for pedestrians crossing the north and south approaches would require reducing green time for the heavy northbound and southbound movements. While timing modifications have been identified to improve the overall intersection operations (See **Appendix K**), the delay score is expected to continue to operate with PLOS E. Recent modifications including zebra markings and smart channels have been implemented and are considered the best trade-off. There are no further recommendations to improve the PLOS.

The south and west approaches do not meet the target BLOS B based on left turn characteristics. Given the high volumes, the northbound and eastbound left turn lanes are recommended. Recent modifications including east-west cross rides and a northbound left turn bike box have been implemented and are considered the best trade-off. There are no further recommendations to improve the BLOS.

The north approach misses the target TkLOS B, achieving E. To achieve TkLOS B, a second receiving lane is required on the west approach, however, the single receiving lane is wide (about 6m) and large curb radii are provided to accommodate truck movements.

Auto LOS is discussed in **Section 5.3.1**.

6.8.1.6 Leikin Drive / RCMP Driveway

Leikin Drive / RCMP Driveway does not meet the target PLOS C, BLOS C, or TkLOS B.

The east approach has a cross-section with a width equivalent to ten lanes crossed or more while the north approach has a width equivalent to five lanes crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of lanes. With a heavy SBL movement during the AM peak hour (250 vehicles) maintaining the SBL lane is recommended. Improving the delay scores for pedestrians crossing the north approach would require reducing green time for the heavier northbound and southbound movements and is not recommended.

All approaches do not meet the target BLOS C based on left turn or right turn characteristics. Given the volumes, the southbound and westbound left turn lanes are recommended. Therefore, no recommendations have been made in improving the BLOS at this intersection.

The south and east approaches miss the target TkLOS B, achieving D and E, respectively. To achieve TkLOS B, a second receiving lane is required on the north approach and a radius of 10-15 m is required on the southeast corner. This intersection is the access for the RCMP and not a public street. No modifications are recommended at this intersection to accommodate heavy trucks.

6.8.1.7 Leikin Drive / Bill Leathem Drive

Auto LOS is discussed in **Section 5.3.1**.

6.8.2 2026 Intersection Operations – Total Traffic with Site Generated Trips

Intersection capacity analysis has been completed for the projected 2026 total traffic volumes (See **Figure 10**) and summarized in **Table 15**. Approaches where long queuing is expected are shown with the associated 50th and 95th percentile queue lengths in **Table 16**.

Table 15: 2026 Total Traffic – Intersection Operations

Intersection	AM Peak			PM Peak		
	Max V/C or Delay (sec)	LOS	Mvmt	Max V/C or Delay (sec)	LOS	Mvmt
Woodroffe at Fallowfield	0.96	E	EBL	**1.93**	**F**	**EBR**
Woodroffe at Longfields	**1.10**	**F**	**EBL**	**1.10**	**F**	**SBT**
Merivale at Fallowfield	**1.17**	**F**	**EBL**	**1.12**	**F**	**WBTR**
Merivale at Leikin	0.69	B	EB	0.55	A	EB
Prince of Wales at Merivale	0.82	C	NBT	**1.14**	**F**	**EBR**
Leikin at RCMP Driveway	0.53	A	NBR	0.84	D	WBL
Leikin at Bill Leathem / Driveway[1]	**94 sec**	**F**	**SB**	16 sec	C	SB
Longfields at Bill Leathem[1]	8 sec	A	EB	7 sec	A	EB
Leikin at Private Road[1]	14 sec	B	EB	13 sec	B	EB
Longfields at Truck Exit[1]	15 sec	B	SBL	15 sec	B	SBL

1. Unsignalized intersection

Table 16: 2026 Total Traffic – Queuing

Intersection	Mvmt	AM Peak			PM Peak		
		v/c or Delay (sec)	50th % Queue (m)	95th % Queue (m)	v/c or Delay (sec)	50th % Queue (m)	95th % Queue (m)
Woodroffe at Fallowfield	EBL	0.96	91	#125	**1.12**	**~39**	**#65**
	EBR	0.51	0	20	**1.93**	**~324**	**#398**
	WBL	0.62	18	28	**1.03**	**~102**	**#137**
	NBL	0.64	48	#95	**1.47**	**~91**	**#123**
	NBT	0.91	195	#323	0.41	83	101
	SBT	0.77	55	69	**1.01**	**~292**	**#330**
Woodroffe at Longfields	EBL	**1.10**	**~51**	**#80**	0.67	16	#28
	NBT	**1.01**	**187**	**#241**	0.50	56	91
	SBT	0.25	28	47	**1.10**	**~227**	**#312**
Merivale at Fallowfield	EBL	**1.17**	**~181**	**#251**	0.75	28	#61
	WBTR	0.59	43	66	**1.12**	**~257**	**#337**
	NBTR	**1.03**	**~211**	**#282**	0.64	92	125
	SBT	0.22	26	42	**0.94**	**168**	**#229**
Prince of Wales at Merivale	EBR	0.23	0	10	**1.14**	**~127**	**#191**
	NBT	0.82	109	175	0.31	29	42
Leikin at Bill Leathem / Driveway[1]	SB	**94**	**-**	**70**	16	-	15

1. Unsignalized intersection
~: Volume exceeds capacity, queue is theoretically infinite
#: volume for the 95th percentile cycle exceeds capacity

Woodroffe at Fallowfield

There is a marginal increase in the v/c ratios and queue lengths during the AM and PM peak hours.

To achieve the target (with the dual EBR), a further reduction in the PM peak hour traffic volumes is required for the following movement in addition to the reduction for background traffic:

- Northbound left: further reduction of approximately 25 vehicles.

To achieve the target (without roadway modifications), no further reduction is required for the Eastbound right in addition to the reduction for background traffic.

Woodroffe at Longfields

During the 2026 AM peak hour with site generated trips, the EBL and NBT movements both operate with LOS F. With signal timing adjustments (increased cycle length to 140 seconds) the intersection improves but remains LOS F (See **Appendix K**). To achieve the target, a further reduction in the AM peak hour traffic volumes is required for the following movement in addition to the reduction for background traffic:

- Northbound through: further reduction of approximately 10 vehicles.

There is an increase in the v/c ratios and queues during the PM peak hour. To achieve the target, a further reduction in the PM peak hour traffic volumes is required for the following movements in addition to the reduction for background traffic:

- Southbound through: further reduction of approximately 10 vehicles.

Merivale at Fallowfield
There is an increase in the v/c ratios and queues during the AM and PM peak hours with site generated trips. To achieve the target, a reduction in the AM peak hour traffic volumes is required for the following movement (with dual EBL):

- Northbound through: reduction of approximately 110 vehicles.

To achieve the target, no further reduction in the PM peak hour traffic volumes is required in addition to the reduction for background traffic.

Prince of Wales at Merivale
There is a marginal increase in the v/c ratios and queues during the AM and PM peak hours.

Leikin at Bill Leathem
Without signalization, the AM peak hour average delay on the SB approach worsens from 90 seconds to 95 seconds with the addition of site generated trips. Signals were recommended based on the existing high approach delay (SB approach) during the AM peak hour and continue to be recommended. Based on the City's roundabout screening tool (See **Appendix H**), the intersection is not a good candidate for a roundabout. With signalization of the intersection, the intersection is expected to operate with LOS B (See **Appendix K**).

Longfields at Bill Leathem
With the added WB and SB approaches, the roundabout is expected to operate with LOS A and minimal queues during the AM and PM peak hours.

6.8.3 2031 Intersection Operations – Total Traffic with Site Generated Trips

Intersection capacity analysis has been completed for the 2031 AM and PM peak hours with the addition of site generated trips (See **Figure 11**). The results of the analysis are summarized in **Table 17** for the weekday AM and PM peak hours. Approaches where long queuing is expected are shown with the associated 50th and 95th percentile queue lengths in **Table 18**.

Table 17: 2031 Total Traffic - Intersection Operations

Intersection	AM Peak			PM Peak		
	Max V/C or Delay (sec)	LOS	Mvmt	Max V/C or Delay (sec)	LOS	Mvmt
Woodroffe at Fallowfield	**1.02**	**F**	**EBL**	**2.06**	**F**	**EBR**
Woodroffe at Longfields	**1.10**	**F**	**EBL**	**1.17**	**F**	**SBT**
Merivale at Fallowfield	**1.27**	**F**	**EBL**	**1.23**	**F**	**WBTR**
Merivale at Leikin	0.69	B	EB	0.55	A	SBT
Prince of Wales at Merivale	0.88	C	NBT	**1.24**	**F**	**EBR**
Leikin at RCMP Driveway	0.53	A	NBR	0.84	D	WBL
Leikin at Bill Leathem / Driveway[1]	**94 sec**	**F**	**SB**	16 sec	C	SB
Longfields at Bill Leathem[1]	8 sec	A	EB	7 sec	A	EB
Leikin at Private Road[1]	14 sec	B	EB	13 sec	B	EB
Longfields at Truck Exit[1]	15 sec	B	SBL	15 sec	B	SBL

1. Unsignalized intersection

Table 18: 2031 Total Traffic - Queuing

Intersection	Mvmt	AM Peak			PM Peak		
		v/c or Delay (sec)	50th % Queue (m)	95th % Queue (m)	v/c or Delay (sec)	50th % Queue (m)	95th % Queue (m)
Woodroffe at Fallowfield	EBL	**1.02**	**~102**	**#138**	**1.19**	**~43**	**#70**
	EBR	0.52	0	21	**2.06**	**~357**	**#431**
	WBL	0.65	19	30	**1.10**	**~115**	**#151**
	NBL	0.73	53	#117	**1.56**	**~99**	**#132**
	NBT	0.99	230	#362	0.44	90	109
	SBT	0.79	59	73	**1.08**	**~330**	**#367**
Woodroffe at Longfields	EBL	**1.10**	**~51**	**#80**	0.67	16	#28
	NBT	**1.07**	**~223**	**#267**	0.54	61	99
	SBT	0.26	30	50	**1.17**	**~255**	**#340**
Merivale at Fallowfield	EBL	**1.27**	**~213**	**#283**	0.81	32	#69
	WBTR	0.63	46	70	**1.23**	**~296**	**#368**
	NBTR	**1.08**	**~234**	**#305**	0.65	98	134
	SBT	0.24	28	45	**0.96**	**185**	**#256**
Prince of Wales at Merivale	EBR	0.24	0	10	**1.24**	**~149**	**#213**
	NBT	0.88	128	#247	0.33	32	46
Leikin at Bill Leathem / Driveway[1]	SB	**94**	**-**	**70**	16	-	15

1. Unsignalized intersection
~: Volume exceeds capacity, queue is theoretically infinite
#: volume for the 95th percentile cycle exceeds capacity

Woodroffe at Fallowfield

There is a marginal increase in the v/c ratios and queues during the AM peak hour and PM peak hour. With signal timing adjustments (additional green time for the EBL movement and reduced time for the NBL leading phase, (See **Appendix K**) the intersection improves to LOS E.

To achieve the target (with the dual EBR), a further reduction in the PM peak hour traffic volumes is required for the following movement in addition to the reduction for background traffic:

- Northbound left: further reduction of approximately 30 vehicles.

To achieve the target (without roadway modifications), no further reduction is required in the PM peak hour for the Eastbound right.

Woodroffe at Longfields

There is an increase in the v/c ratios and queues during the AM peak hour. To achieve the target, a further reduction in the AM peak hour traffic volumes is required for the following movement in addition to the reduction for background traffic:

- Northbound through: further reduction of approximately 10 vehicles.

There is an increase in the v/c ratios and queues during the PM peak hour. To achieve the target, a further reduction in the PM peak hour traffic volumes is required for the following movement in addition to the reduction for background traffic:

- Southbound through: further reduction of approximately 20 vehicles.

Merivale at Fallowfield

There is an increase in the v/c ratios and queues during the AM peak hour and PM peak hour. With the installation of dual EBL lanes (and added receiving lane on Merivale) the intersection improves to LOS E. To achieve the target (with dual EBL lanes), a further reduction in the AM

peak hour traffic volumes is required for the following movement in addition to the reduction for background traffic:

- Northbound through: further reduction of approximately 110 vehicles.

To achieve the target, no further reduction in the PM peak hour traffic volumes is required in addition to the reduction for background traffic.

Prince of Wales at Merivale
There is a marginal increase in the v/c ratios and queues during the AM and PM peak hours.

Leikin at Bill Leathem
There is no anticipated change in the v/c ratios and queues during the peak hours in 2031 Total Traffic. With signalization of the intersection, the intersection is expected to operate with LOS B (See **Appendix K**).

7.0 CONCLUSIONS AND RECOMMENDATIONS

Development Design and Parking

- Pedestrian facilities will be provided between the main building and the parking lot. A sidewalk will be provided along the north side of the Private Road, providing pedestrian connectivity between the site and Leikin Drive. Pedestrian walkways will also be constructed, providing connectivity to the Longfields Drive roundabout and along the south side of the truck ingress to Paragon. Additional right-of-way is required at the Paragon cul-de-sac to accommodate the sidewalk. There are spine walkways through the parking lot with raised crosswalks along the main north-south drive aisle.
- A multi-use path is recommended to replace the existing sidewalk on all four corners of the roundabout (additional right-of-way is required). A multi-use path will be provided connecting the roundabout to the bicycle parking. Bicycle parking is provided in front of the building near the employee entrance.
- An employee drop-off area is provided onsite between the roundabout approaches with concrete sidewalk connecting to the building.
- Localized widening is required at the southwest corner of Merivale / Beckstead.
- A restriction on northbound left trucks at Beckstead / Merivale is recommended considering the short northbound left turn lane and taper. Trucks will use Merivale / Leikin Drive where a longer left turn lane is provided.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.
- The proposed vehicular and bicycle parking as well as loading exceeds the minimum requirements of the City's Zoning By-law.
- The number of barrier-free spaces exceeds the Traffic and Parking By-law requirements.
- Bus stops #0730 and #0729 are the closest stops to the site (about 520m walking distance from the southwest external door).
- The private road will be constructed with 11m wide asphalt and sidewalk on one side, consistent with Paragon Avenue. It will run east-west between Paragon Avenue and Leikin Drive through the site. The existing cul-de-sac on Paragon Avenue is to remain.
- A garbage compactor will be located at the northwest portion of the truck court while recycling will be located at the southwest portion of the truck court.
- There will be two connections to the Bill Leathem / Longfields roundabout as well as one truck entrance from Paragon Avenue and one truck exit to Longfields Drive. The heavy

vehicles (WB-20 design vehicle) are expected to travel via Fallowfield Road, Woodroffe Avenue and Longfields Drive, or via Prince of Wales Road, Merivale Road, Leikin Drive, and the private road.

Boundary Street Multi-Modal Level of Service (MMLOS)

The results of the segment MMLOS analysis can be summarized as follows:

- A 2m sidewalk along Bill Leathem Drive and Leikin Drive is recommended;
- Consider converting on road bicycle lanes on Leikin Drive to cycle tracks; and,
- A 1.5m bike lane can be installed on Bill Leathem Drive through line painting to meet the target Level of Service.

Segment MMLOS has also been completed for the proposed cross section along the private road and indicates that with trucks anticipated to be using the private road, bicyclists are better served on Leikin Drive and Bill Leathem Drive.

Access Design

The site includes a private east-west roadway that connects to Paragon Avenue, and Leikin Drive. Two full movement driveways to the Longfields Drive / Bill Leathem Drive roundabout are proposed. The east leg is currently constructed with a splitter island and a splitter island is recommended for the north leg. Truck connections will be separate with one truck entrance driveway from Paragon Avenue and one truck exit driveway to Longfields Drive.

- The employee and truck connections meet the applicable spacing requirements of Section 25 (m) of the *Private Approach By-Law.*
- The widths of the employee and truck connections exceed the maximum widths for a driveway; however, the widths are required to accommodate splitter islands at the roundabout (employee connections) or to accommodate heavy vehicle turning paths. A waiver will be required for these wider access widths.
- Adequate stopping sight distance is available along Longfields Drive, Leikin Drive, and Paragon Avenue.
- Adequate turning sight distance is available along Longfields Drive for heavy vehicles turning left from the egress driveway. Traffic circulating within and exiting the roundabout would be traveling slower than the 80km/h design speed. Turning sight distance is available for a right turning truck for a 30km/h design speed of vehicles approaching from the east.
- Adequate turning sight distance is available along Leikin Drive for heavy vehicles turning right from the private road. Turning sight distance is not available for heavy vehicles turning left from the private road due to the road curvature and trees. It is recommended that the left turn from the private road to Leikin Drive be restricted for trucks. Trucks exiting the private road will turn right onto Leikin Drive and access southbound Merivale Road via a right turn from Beckstead Road.
- The site connections to the roundabout will be yield controlled while all other site connections are expected to operate well with STOP control on the private approach.
- For this site, the clear throat requirement for a two-way driveway to a collector is 15m. More than 15m of clear throat is provided at each of the site driveways, meeting the requirement.
- A northbound left turn lane is not warranted along Leikin Drive at the private road.

Transportation Demand Management

- To encourage the use of sustainable modes, the following TDM measures are being considered:
    - Designate an internal coordinator, or contract with an external coordinator;
    - Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress;
    - Display local area maps with walking/cycling access routes and key destinations at major entrances;
    - Display relevant transit schedules and route maps at entrances;
    - Provide online links to OC Transpo and STO information;
    - Provide real-time arrival information display at entrances;
    - Provide a dedicated ridematching portal at OttawaRideMatch.com;
    - Provide a multimodal travel option information package to new/relocating employees;
    - Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes; and
    - Provide on-site amenities/services to minimize mid-day or mid-commute errands.

Neighbourhood Traffic Management

- There is sufficient lane capacity along Leikin Drive at Merivale Road and Longfields Drive to accommodate traffic generated by the development.
- Eastbound 2031 background traffic along Leikin Drive west of Bill Leathem Drive exceeds estimated lane capacity in the AM peak hour without development. Since background growth has not been applied to the collector roads in the park, the projected background traffic is equivalent to existing traffic. This is identified for further review as part of the City's Neighbourhood Traffic Calming Program, as required. The site is not expected to generate trips along this road segment in this direction during the AM peak hour since shift changes are expected to occur outside of the AM peak hour and heavy vehicles are not expected to arrive via Davidson Heights. The site trips are expected to account for about 4% of the total projected westbound volumes during the PM peak hour. None of the PM peak hour trips along this segment are expected to be heavy vehicles.

Transit

- Additional transit stops along Bill Leathem Drive or Longfields Drive near the roundabout should be considered.

Intersection Analysis:

- In existing and future traffic conditions, capacity issues have been identified for the following movements:
    - Woodroffe / Fallowfield
        - Eastbound left turn (AM and PM peak)
        - Eastbound right turn (PM peak)
        - Westbound left turn (PM peak)
        - Northbound left turn (PM peak)
        - Southbound through (PM peak)
    - Woodroffe / Longfields
        - Eastbound left turn (AM peak)
        - Northbound through (AM peak)
        - Southbound through (PM peak)
    - Merivale / Fallowfield

        - Eastbound left turn (AM peak)
        - Westbound through (PM peak)
        - Northbound through (AM peak)
        - Southbound through (PM peak)
    - Prince of Wales / Merivale
        - Eastbound right turn (PM peak)
    - Leikin / Bill Leathem / Driveway
        - Southbound approach (AM peak)

Modifications for Existing/Background Traffic:

These modifications are identified for the City's consideration without added site development:

- Signal timing modifications at the Woodroffe / Fallowfield, Woodroffe / Longfields, Merivale / Fallowfield, and Prince of Wales / Merivale intersections.
- Consider dual eastbound right turn lanes on Fallowfield Road at Woodroffe Avenue to improve the level of service and accommodate the existing and projected queues without and with site generated trips.
- Consider dual eastbound left turn lanes on Fallowfield Road at Merivale Road to improve the level of service and accommodate the existing and projected queues without and with site generated trips.
- Install traffic signals at Leikin / Bill Leathem based on high approach intersection delay during the AM peak hour (SB approach). The existing AM peak delay on the southbound approach is over 3 minutes and the 95th percentile queue is 100m. In the 2026 future background, the AM peak hour operations improve to 90 seconds at the southbound approach due to the 1.0 PHF in future conditions per City Guidelines. With signalization of the intersection, the intersection is expected to operate with LOS B. Based on the City's roundabout screening tool, the intersection is not a good candidate for a roundabout.

Modifications for Site Traffic:

- Localized widening is required at the southwest corner of Merivale / Beckstead.
- No other modifications have been identified as required to accommodate site generated trips.

NOVATECH

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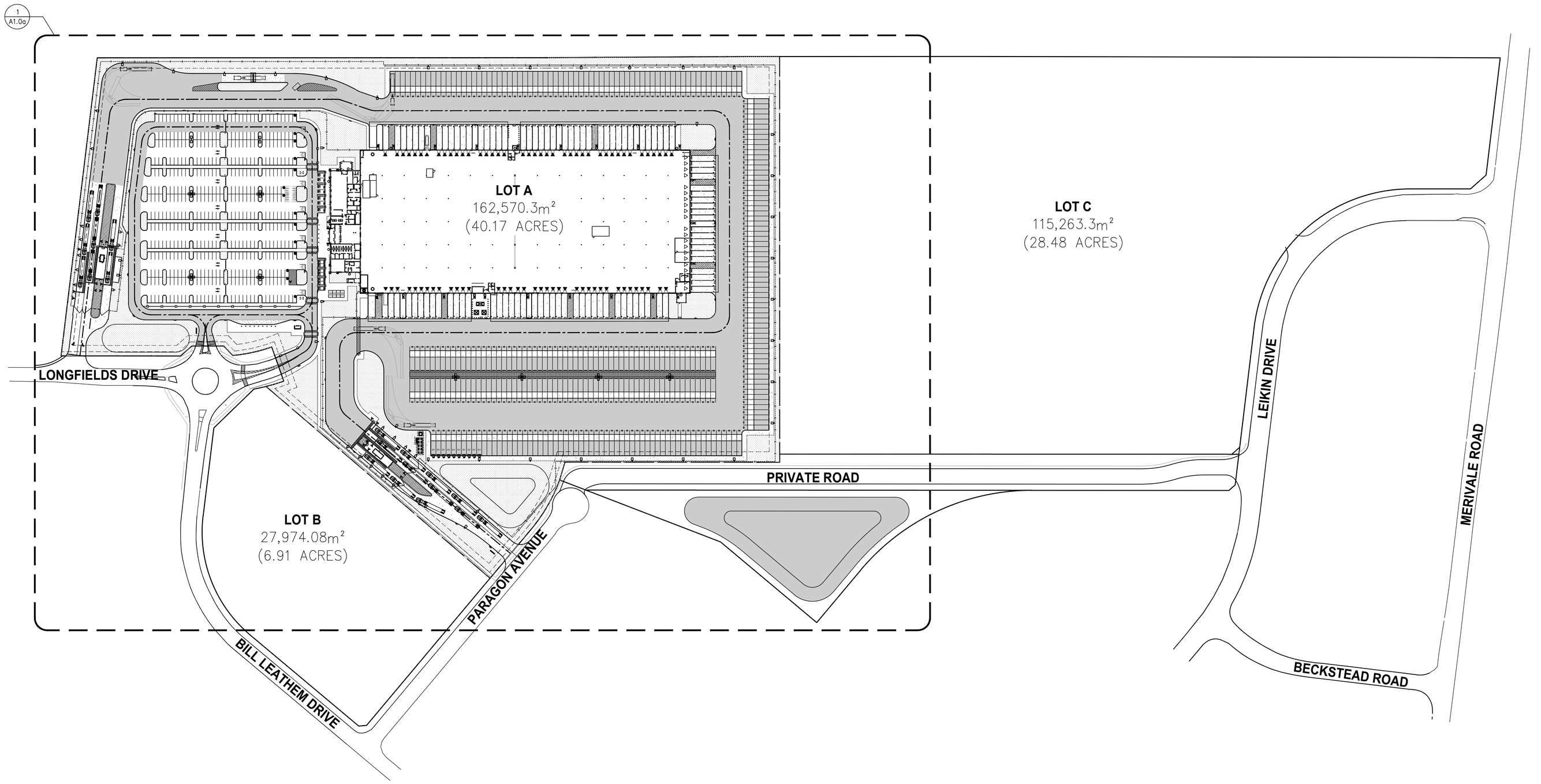
APPENDIX A

Site Plan

CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT



OVERALL SITE PLAN
SCALE: 1:1400

SITE LEGEND

- HEAVY DUTY PAVEMENT (HATCHED) REFER TO CIVIL DWG'S
- LANDSCAPED AREA (HATCHED) REFER TO LANDSCAPE DWG'S
- CARPOOL SPACE (HATCHED)
- FIRE ACCESS ROUTE WITH 12.0M TURNING RADIUS
- TRUCK LOADING DOCK DOOR
- SERVICE DOOR
- KNOCKOUT PANEL
- FIRE DEPT CONNECTION (VERIFY LOCATION WITH CIVIL DRAWINGS)
- PROPOSED FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- PIV — PROPOSED PIV (VERIFY LOCATION WITH CIVIL DRAWINGS)
- EXISTING FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- PROPOSED WALL MOUNTED LIGHTING (VERIFY WITH ELECTRICAL DRAWINGS)
- PROPOSED STOP SIGN
- PROPOSED LIGHTING POLE (VERIFY WITH ELECTRICAL DRAWINGS)
- FIRE ACCESS ROUTE SIGN

PROJECT DATA
ZONING DESIGNATION: "IL-9"

PROPOSED USE: Light Industrial Sortation Centre and Office

SITE AREA:

TOTAL SITE AREA: 305,807.6m² (75.56 ACRES)

SITE "A"
AREA OF DEVELOPMENT: 162,570.3m² (40.17 ACRES)

SITE "B"
AREA OF DEVELOPMENT: 27,974.08m² (6.91 ACRES)

SITE "C"
AREA OF DEVELOPMENT: 115,263.3m² (28.48 ACRES)

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SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE
AND 20 LEIKIN DRIVE
OTTAWA, ONTARIO

OVERALL SITE PLAN

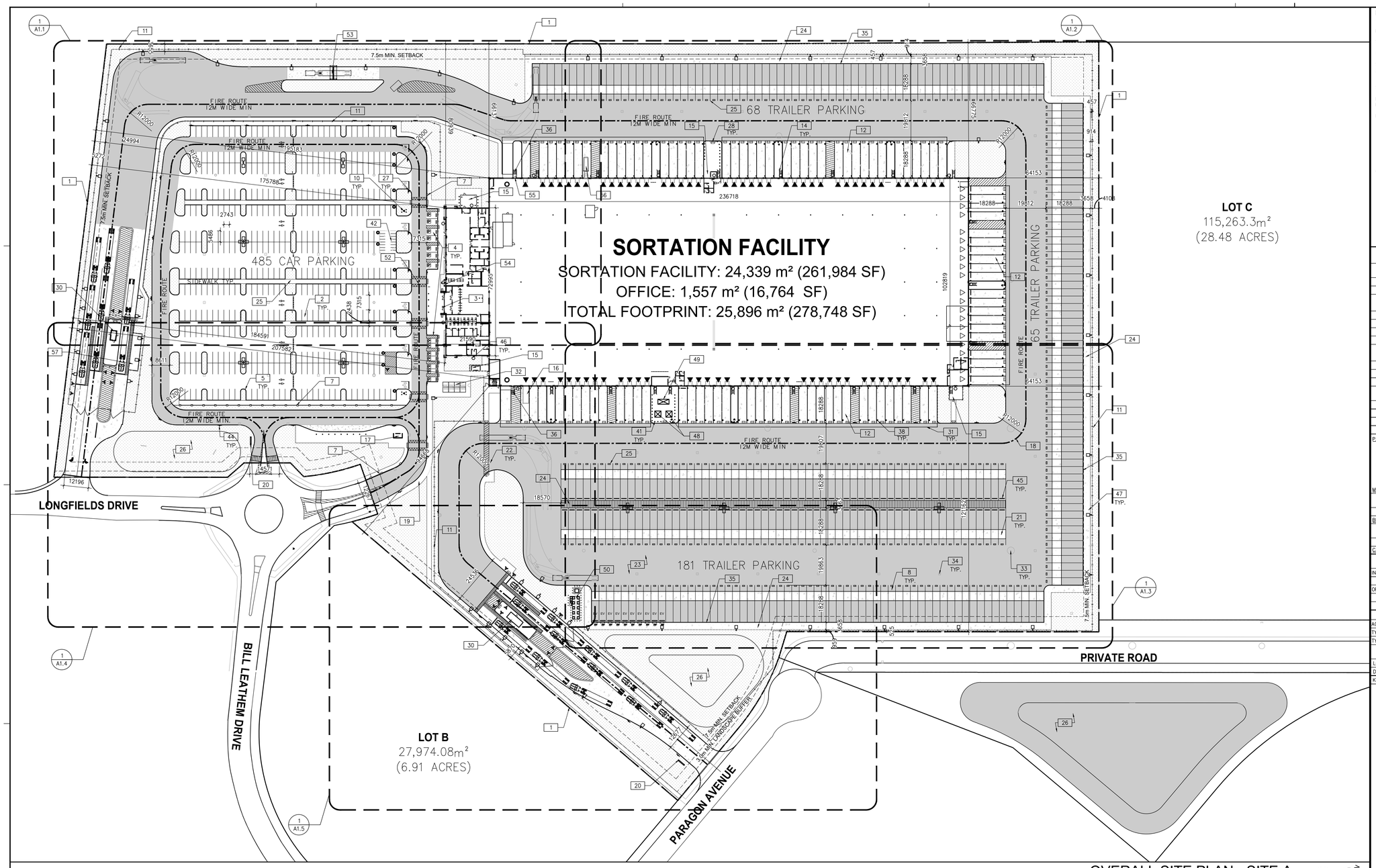
DATE	REMARKS
2021-05-28	ISSUE FOR SITE PLAN APPROVAL AND ISMP

PA/PM:	A. SANABRIA
DRAWN BY.:	D.V.
JOB NO.:	TOR21-5008

SHEET
A1.0

2021-05-28 ISSUE FOR SITE PLAN APPROVAL

CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT



OVERALL SITE PLAN - SITE A

SCALE: 1:800 (1)

PROJECT DATA

ZONING DESIGNATION: "IL-9"

PROPOSED USE: Light Industrial Sortation Centre and Office

SITE AREA:

TOTAL SITE AREA: 305,807.6m² (75.56 ACRES)

SITE "A"
AREA OF DEVELOPMENT: 162,570.3m² (40.17 ACRES)

SITE "A" STATISTICS

PAVED AREA	81,908.21 SM	(881,652 SF)
LANDSCAPED AREA	32,284.1 SM	(347,503 SF)

BUILDING AREA:

OFFICE	1,557 SM	16,764 SF
SORTATION FACILITY	24,339 SM	261,984 SF
TOTAL	25,896 SM	278,748 SF
GUARDHOUSE	39.52 SM	425.3 SF
(PRIMARY GUARDHOUSE	25.77 SM	277.3 SF)
(SECONDARY GUARDHOUSE	13.75 SM	148 SF)

GROSS LOT COVERAGE 15.92%

ZONING BY-LAW MATRIX

ZONING STANDARD	REQUIREMENTS	PROPOSED
MIN. LOT AREA	3,000m²	140,529.8 sm
MIN. LOT WIDTH	50m	–
MAX. FLOOR SPACE INDEX	2.0	0.08 SM
MAX. BUILDING COVERAGE	60%	15.92%
MIN. FRONT YARD	6m	94.66m
MIN. CORNER SIDE YARD	6m	175.78m
MIN. REAR YARD	6m	74.36m
MIN. INTERIOR SIDE YARD	7.5m	64.15m
MAX. BUILDING HT.	22m	–
MIN. LANDSCAPING COVERAGE	N/A	19.85% GROSS
PAVED AREA	N/A	50.38% GROSS
LANDSCAPE BUFFER		
MIN. FRONT YARD	3.0m	5.87m
MIN. EXTERIOR SIDE YARD	0m	5.2m
MIN. REAR YARD	0m	3.6m
MIN. INTERIOR SIDE YARD	0m	4.1m

PARKING REQUIREMENTS

APPLICABLE PARKING STALL REQUIREMENTS:
MINIMUM EXTERIOR PARKING SPACE DIMENSION: 2.6M X 5.2M

INDUSTRIAL: 0.8 SPACES PER 100M² FOR FIRST 5000M² G.F.A
0.4 SPACES PER 100M² ABOVE 5000M² G.F.A.
OFFICE: 2.4 SPACES PER 100M² OF G.F.A.

MOTORCYCLE PARKING REQUIREMENTS:

		MIN RATE	REQUIREMENTS	PROPOSED
		–	–	16

BICYCLE PARKING REQUIREMENTS:

		MIN RATE	REQUIREMENTS	PROPOSED
		–	31	32

CAR PARKING REQUIREMENTS:

	GFA	MIN RATE	REQUIREMENTS	PROPOSED
INDUSTRIAL	5,000 sm	0.8/100m²	40	
	19,348 sm	0.4/100m²	78	
OFFICE	1,557 sm	2.4/100m²	38	
				–
		TOTAL	156	485
ACCESSIBLE PARKING TOTAL			12	14
TYPE A PARKING SPACES			6	7
TYPE B PARKING SPACES			6	7
			REQUIREMENTS	PROPOSED
LOADING SPACES			5	100
DOCK DOORS			–	79
KNOCKOUT PANELS			–	21

GENERAL NOTES

1. PROPERTY LINE
2. 2743mmx5486mm PARKING STALL
3. PRINCIPLE ENTRY
4. BARRIER FREE ACCESSIBLE PARKING STALLS WITH PAINTED PARKING STRIPING WITH MINIMUM DIMENSIONS OF 3.4m BY 5.2m (TYPE A) AND 2.4m BY 5.2m (TYPE B) WITH 1.5m ACCESSIBLE AISLES ADJACENT.
5. 150mm WIDE CONCRETE CURB – REFER TO CIVIL DWG'S
6. POST INDICATOR VALVE. PROVIDE 4 BOLLARDS – REFER TO SPRINKLER DWG'S
7. DECORATIVE HALF-HEIGHT PEDESTRIAN GUARDRAIL. – REFER TO LANDSCAPE
8. TRAILER PARKING
9. FIRE DEPARTMENT CONNECTION / SIAMESE
10. FIRE HYDRANT. PROVIDE 4 BOLLARDS – REFER TO SPRINKLER DWGS
11. CHAIN LINK FENCE
12. CONCRETE APRON
13. LANDSCAPE AREA – SEE LANDSCAPE DWGS.
14. EXTERIOR GALVANIZED STEEL STAIRS W/ TUBE STEEL GUARDRAIL, TYP.
15. SMOKER'S SHELTER
16. RECYCLING BIN
17. PREFABRICATED SHELTER & DROP-OFF AREA. PROVIDE CONCRETE PAD BASE.
18. FIRE ACCESS ROUTE W/ 12.0M TURNING RADIUS
19. 3m WIDE ASPHALT MULTI-USE PATH
20. MONUMENT SIGNAGE
21. CONCRETE DOLLY PAD
22. PEDESTRIAN PATHWAY YELLOW PAINTED LINES
23. HATCHED AREA DENOTES HEAVY DUTY ASHPHALT,TYPICAL FOR ALL AREAS REQUIRING FIRE TRUCK OR TRACTOR TRUCK ACCESS – REFER TO CIVIL DWG'S
24. INSPECTION SIDEWALK
25. MUSTER POINT
26. STORMWATER MANAGEMENT POND – REFER TO CIVIL DWG'S
27. PROPOSED STOP SIGN LOCATION
28. TYPICAL CURB RAMP – REFER TO DETAIL 2/A1.0
29. SIGHT TRIANGLE – REFER TO TRAFFIC
30. PRECAST GUARDHOUSE WITH TRUCK QUEUING
31. WARNING LINE
32. BIKE STORAGE
33. MANHOLE – REFER TO CIVIL DWGS.
34. CATCH BASIN – REFER TO CIVIL DWGS.
35. 305mm HIGH REQUIRED CONCRETE CURB
36. CONCRETE STAIR
37. RESERVED
38. LOADING DOCK LINEWORK AS PER CLIENT STANDARDS
39. RESERVED
40. SNOW STORAGE
41. CONCRETE SAFETY BOLLARD
42. 1420MM x 2840MM MOTORCYCLE PARKING SPACE
43. RESERVED
44. FIRE ROUTE ACCESS SIGNAGE
45. WHEELSTOPS
46. WALL PACK LIGHTING FIXTURE – REFER TO ELECTRICAL DWGS
47. POLE LIGHTING FIXTURE – REFER TO ELECTRICAL DWGS
48. PROPOSED TRANSFORMER – REFER TO ELECTRICAL DWGS
49. PROPOSED GENERATOR – REFER TO ELECTRICAL DWGS
50. ELECTRICAL VEHICLE CHARGING STATION – REFER TO ELECTRICAL DWGS.
51. RESERVED
52. SPEED HUMP – LEVEL WITH SIDEWALK WITH NO CURB DEPRESSION
53. YETI SNOW REMOVAL
54. FLAG POLE
55. TOM DOOR
56. COMPACTOR
57. HOLSTER PARKING

SITE LEGEND

- HEAVY DUTY PAVEMENT (HATCHED) REFER TO CIVIL DWG'S
- LANDSCAPED AREA (HATCHED) REFER TO LANDSCAPE DWG'S
- CARPOOL SPACE (HATCHED)
- FIRE ACCESS ROUTE WITH 12.0M TURNING RADIUS
- TRUCK LOADING DOCK DOOR
- SERVICE DOOR
- KNOCKOUT PANEL
- FIRE DEPT CONNECTION (VERIFY LOCATION WITH CIVIL DRAWINGS)
- PROPOSED FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- PROPOSED PIV (VERIFY LOCATION WITH CIVIL DRAWINGS)
- EXISTING FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
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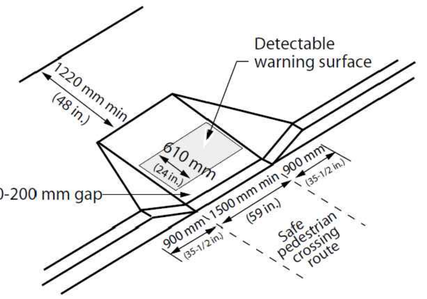
- PROPOSED STOP SIGN
- PROPOSED LIGHTING POLE (VERIFY WITH ELECTRICAL DRAWINGS)
- FIRE ACCESS ROUTE SIGN



CURB RAMP DETAIL

SCALE: NTS (2)

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OTTAWA, ONTARIO

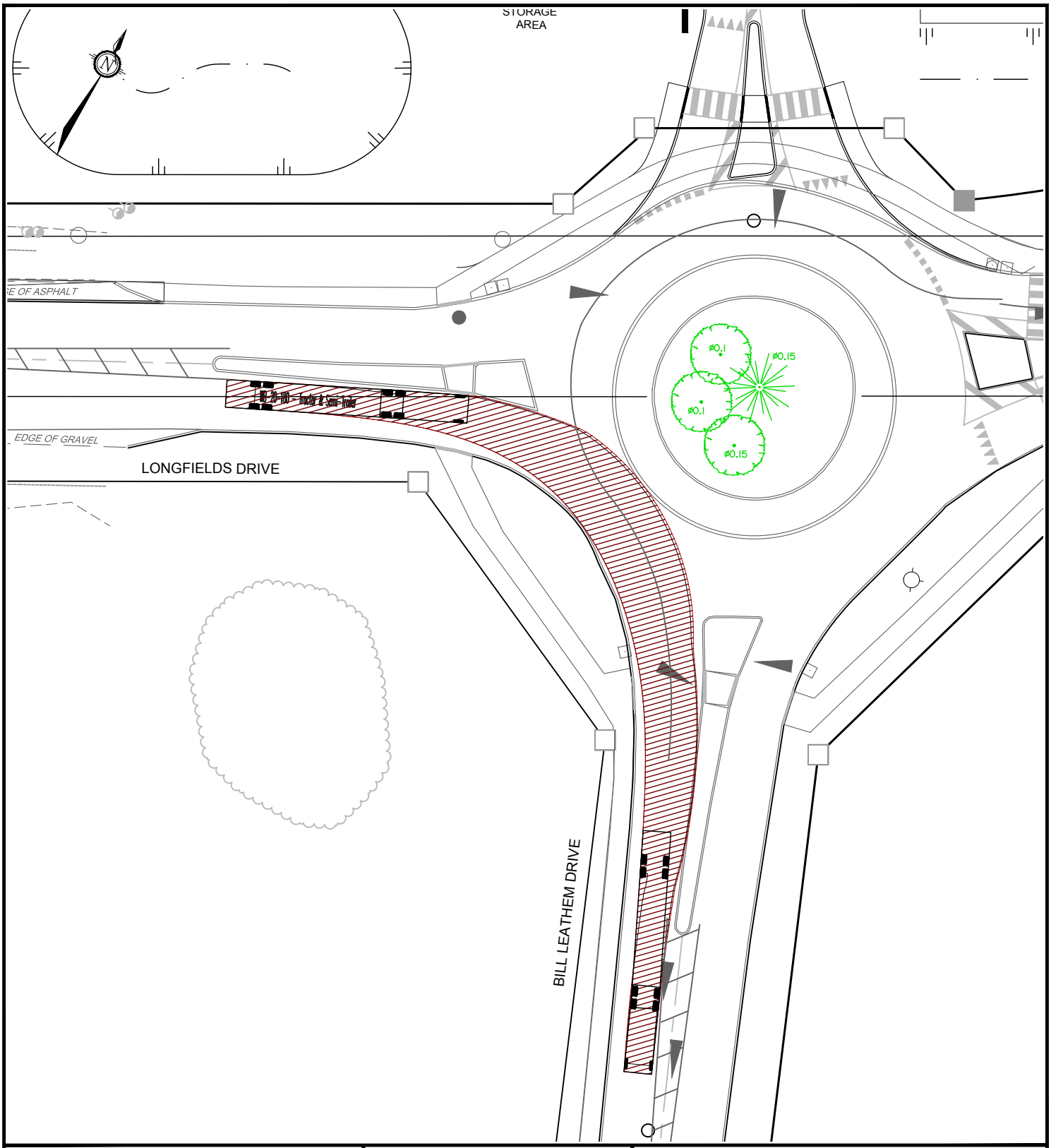
OVERALL SITE PLAN - SITE A

DATE	REMARKS
2021-05-28	ISSUE FOR SITE PLAN APPROVAL AND IGMP

PA/PM:	A. SANABRIA
DRAWN BY.:	D.V.
JOB NO.:	TOR21-5008

SHEET
A1.0a

2021-05-28_ISSUE FOR SITE PLAN APPROVAL



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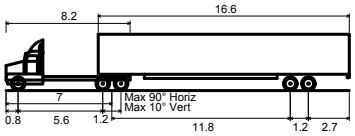

WB-20 - Tractor & Semi-Trailer

Overall Length	22.700m
Overall Width	2.600m
Overall Body Height	3.730m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS ROUND-A-BOUT (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE MAY 2021 | JOB 121137 | FIGURE TM-1

SHT8X11.DWG - 216mmx279mm

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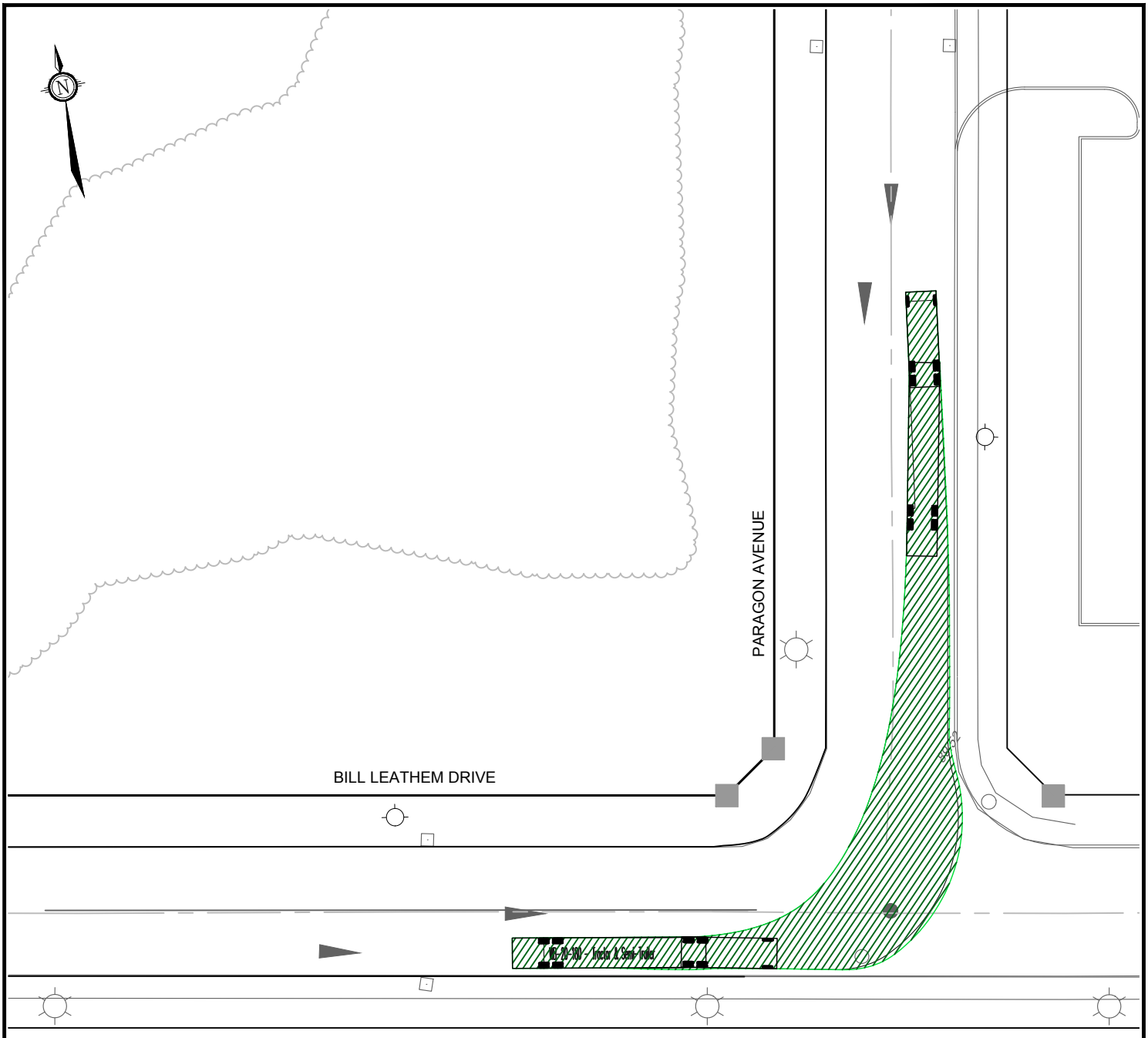

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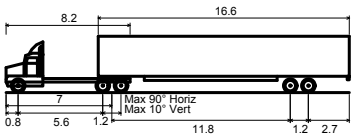

WB-20 - Tractor & Semi-Trailer

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SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS
BILL LEATHAM DR & PARAGON AVE (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE	JOB	FIGURE
MAY 2021	121137	TM-2

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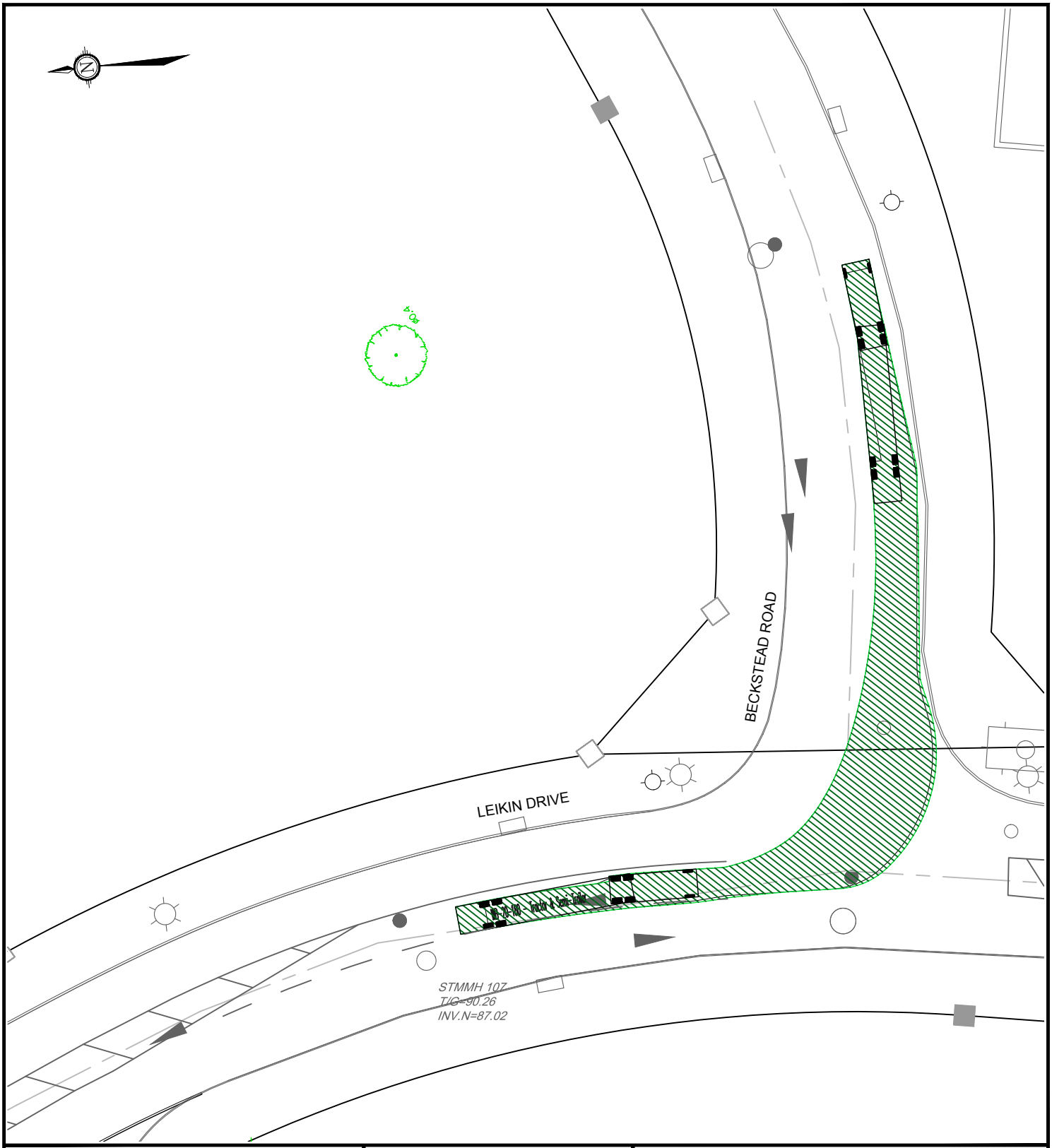

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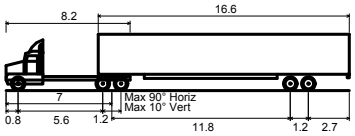

WB-20 - Tractor & Semi-Trailer

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Overall Width	2.600m
Overall Body Height	3.730m
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Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS
LEIKIN DR & BECKSTEAD RD (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE	JOB	FIGURE
MAY 2021	121137	TM-3

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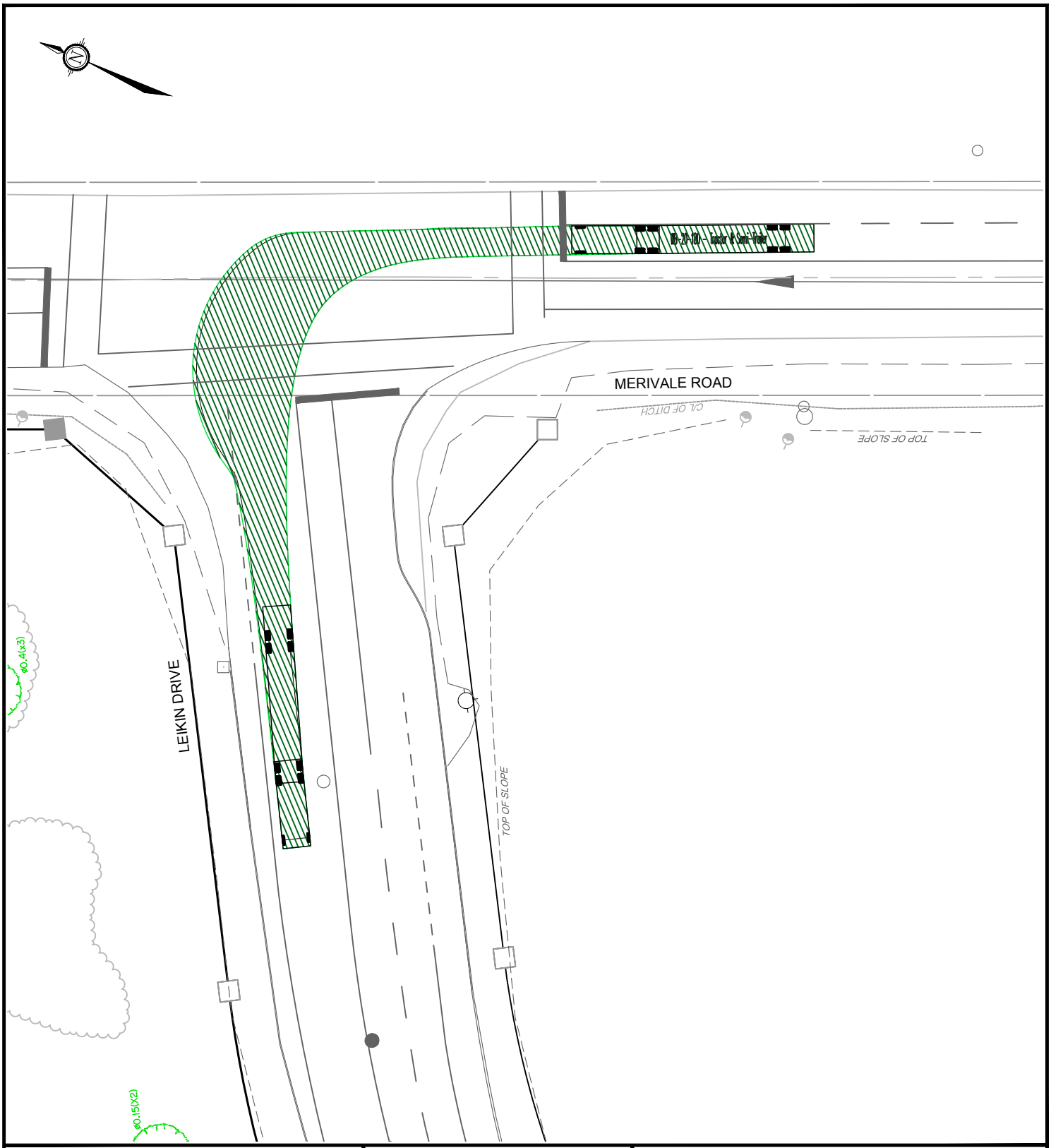

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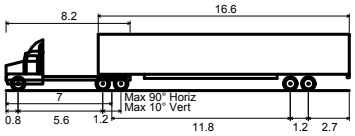

WB-20 - Tractor & Semi-Trailer

Overall Length	22.700m
Overall Width	2.600m
Overall Body Height	3.730m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS
LEIKIN DR & MERIVALE RD (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE MAY 2021 | JOB 121137 | FIGURE TM-4

SHT8X11.DWG - 216mmx279mm

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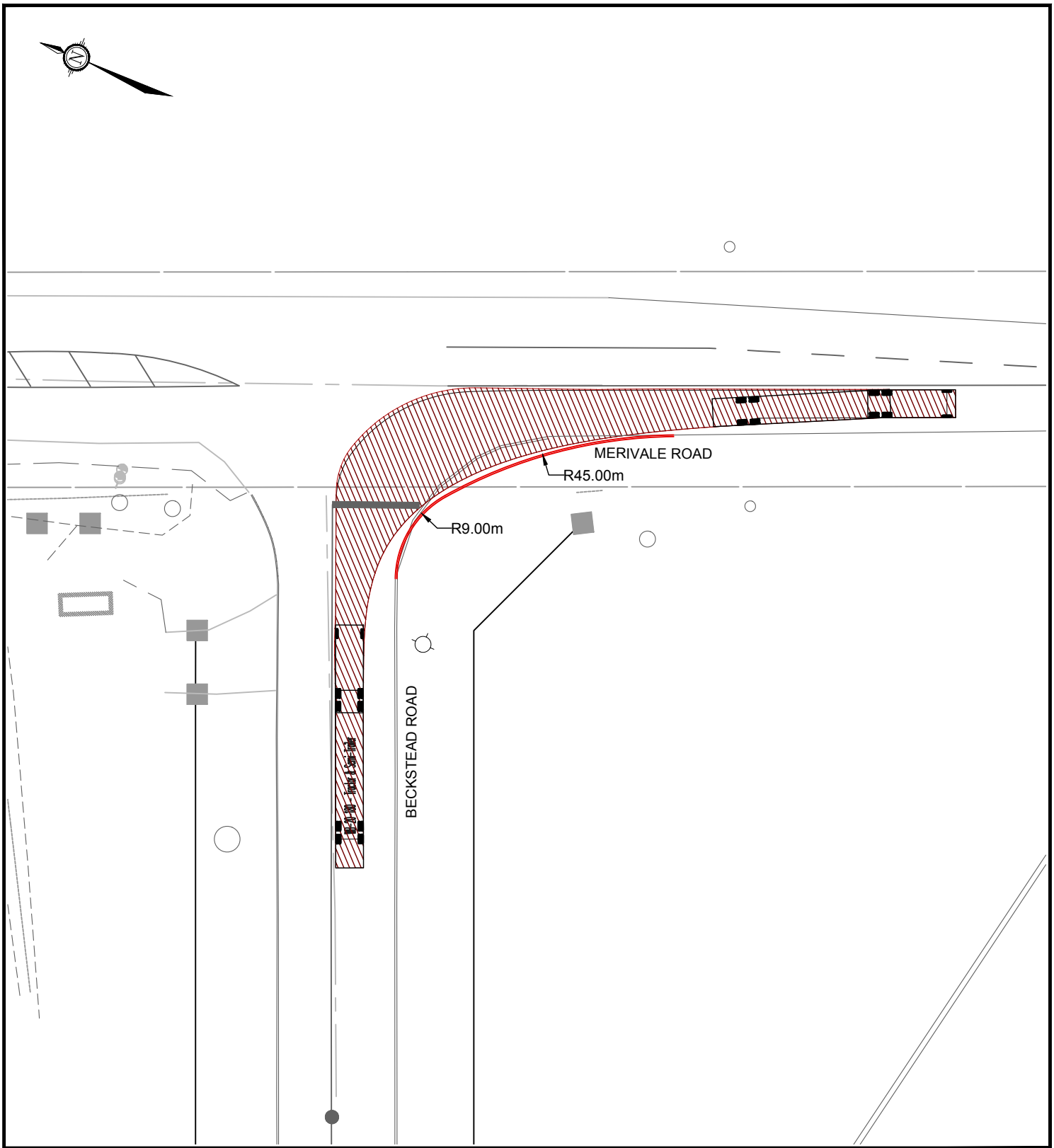

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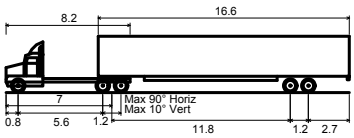

WB-20 - Tractor & Semi-Trailer

Overall Length	22.700m
Overall Width	2.600m
Overall Body Height	3.730m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS
BECKSTEAD RD & MERIVALE RD
(WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE	JOB	FIGURE
MAY 2021	121137	TM-5

SHT8X11.DWG - 216mmx279mm

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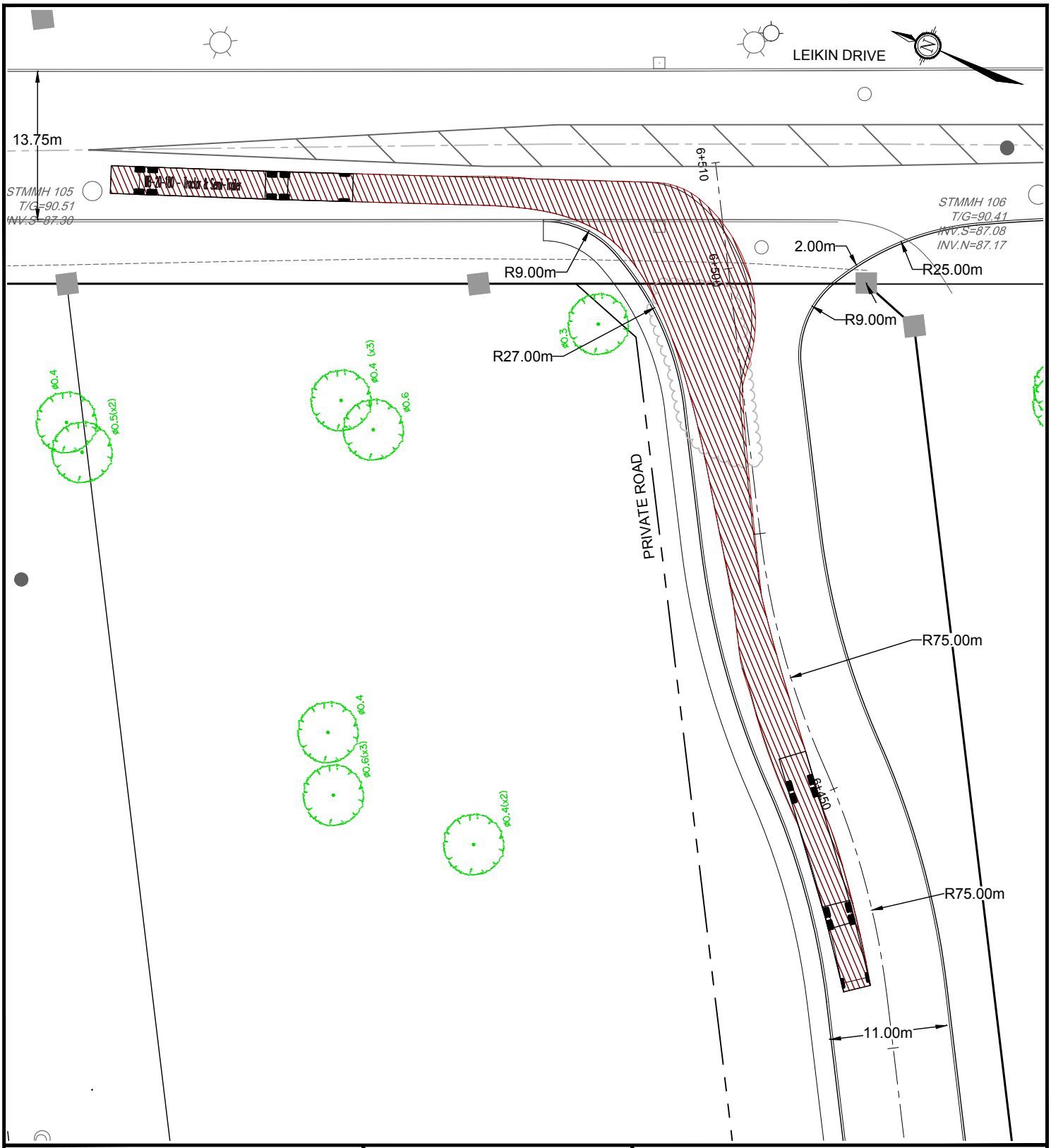

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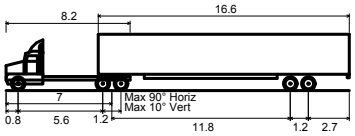

WB-20 - Tractor & Semi-Trailer

Overall Length	22.700m
Overall Width	2.600m
Overall Body Height	3.730m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS
LEIKIN DR & PRIVATE RD (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE	JOB	FIGURE
MAY 2021	121137	TM-6

SHT8X11.DWG - 216mmx279mm

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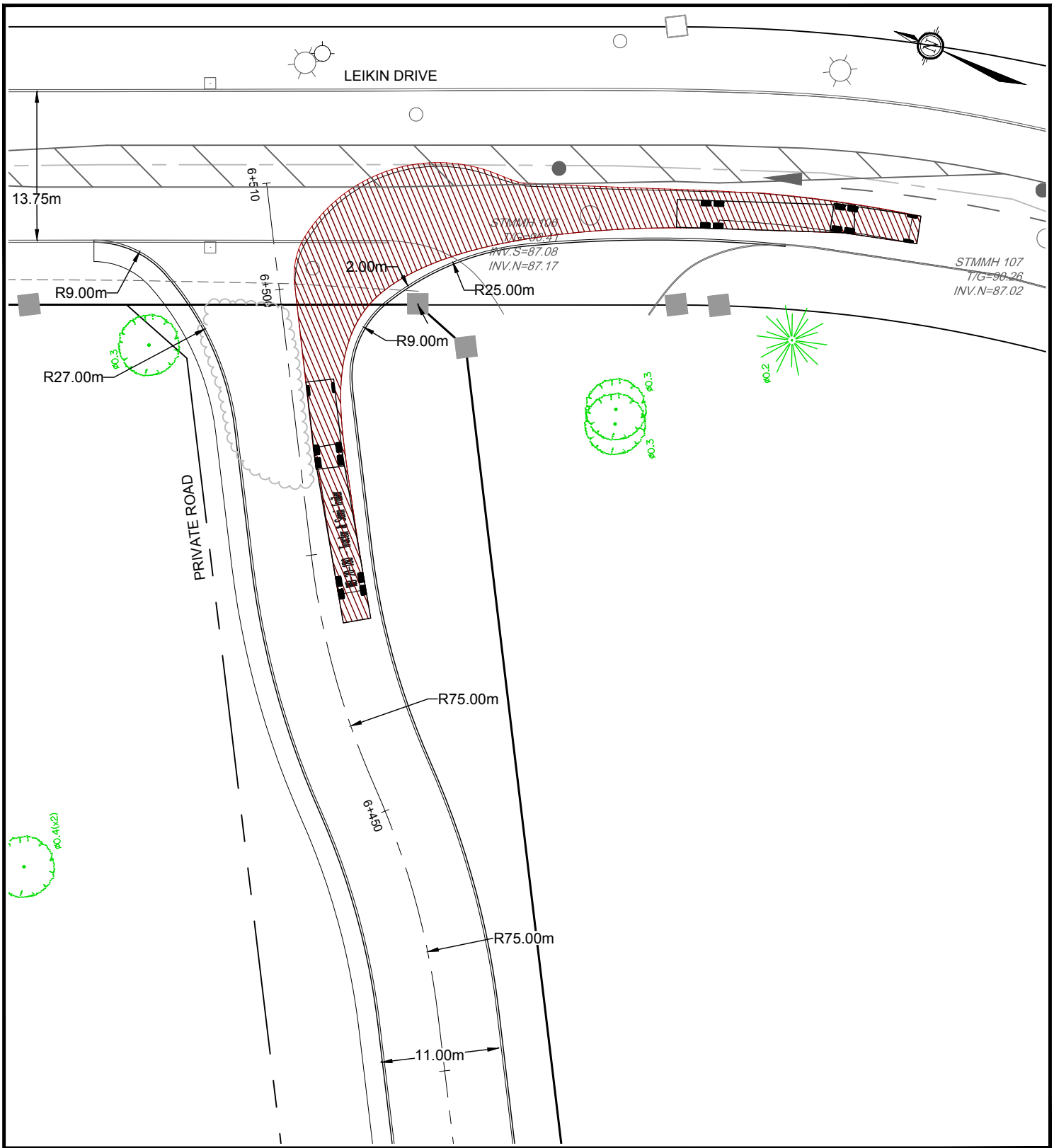

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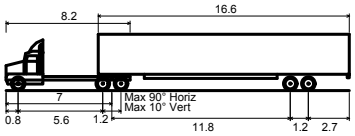

WB-20 - Tractor & Semi-Trailer

Overall Length	22.700m
Overall Width	2.600m
Overall Body Height	3.730m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS
LEIKIN DR & PRIVATE RD (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE	JOB	FIGURE
MAY 2021	121137	TM-7

SHT8X11.DWG - 216mmx279mm

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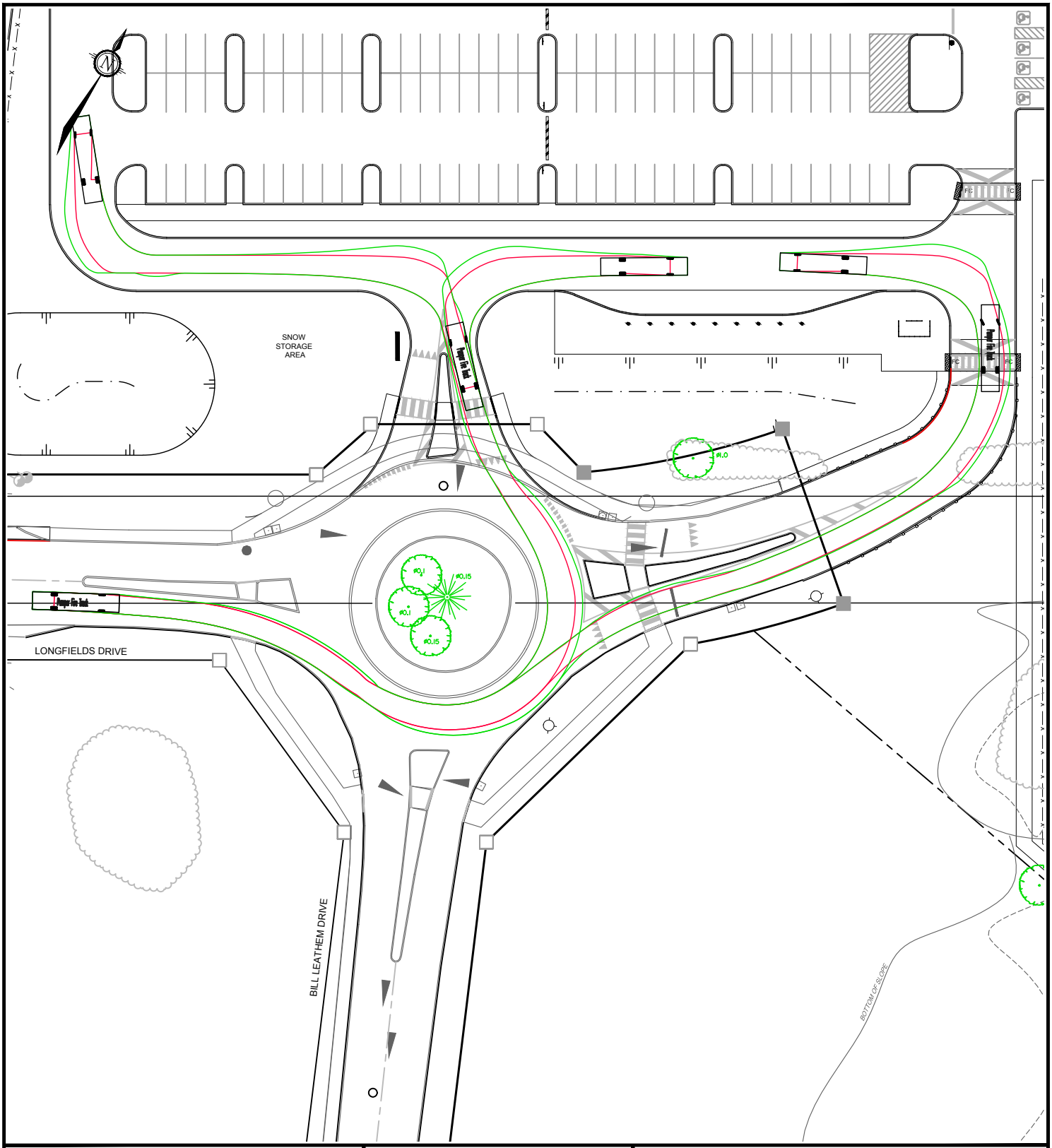

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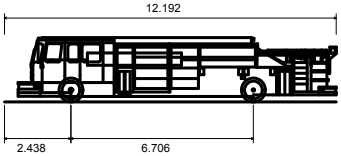

Pumper Fire Truck

Overall Length	12.192m
Overall Width	2.489m
Overall Body Height	2.361m
Min Body Ground Clearance	0.200m
Track Width	2.489m
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS ROUND-A-BOUT (FIRE TRUCK)

SCALE 1 : 750 (0, 10, 20, 30)

DATE MAY 2021 | JOB 121137 | FIGURE TM-8

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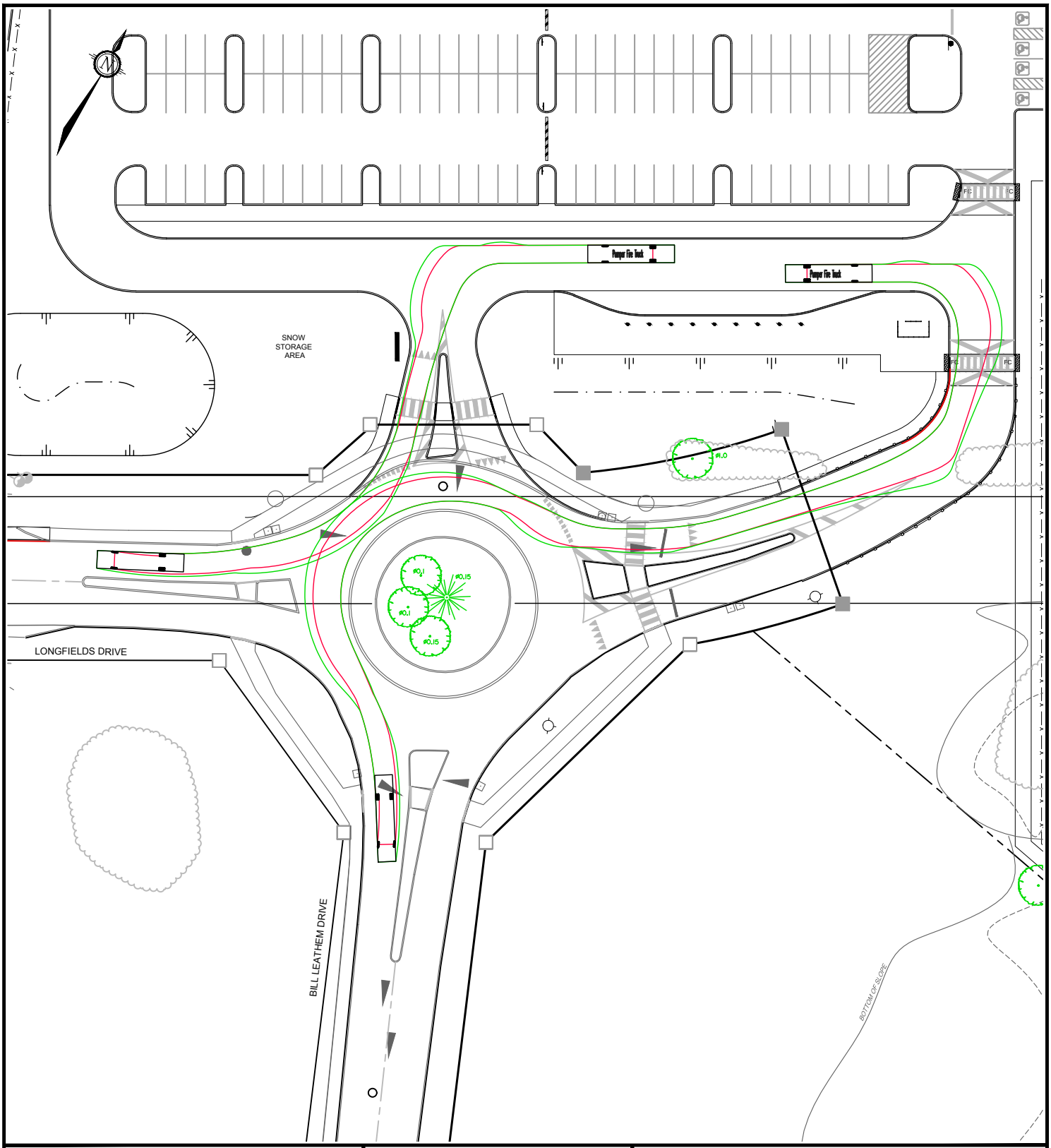

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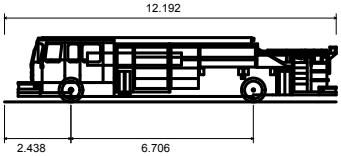
Website www.novatech-eng.com



Pumper Fire Truck

Overall Length	12.192m
Overall Width	2.489m
Overall Body Height	2.361m
Min Body Ground Clearance	0.200m
Track Width	2.489m
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS ROUND-A-BOUT (FIRE TRUCK)

SCALE 1 : 750 (0, 10, 20, 30)

DATE MAY 2021 | JOB 121137 | FIGURE TM-9

SHT8X11.DWG - 216mmx279mm

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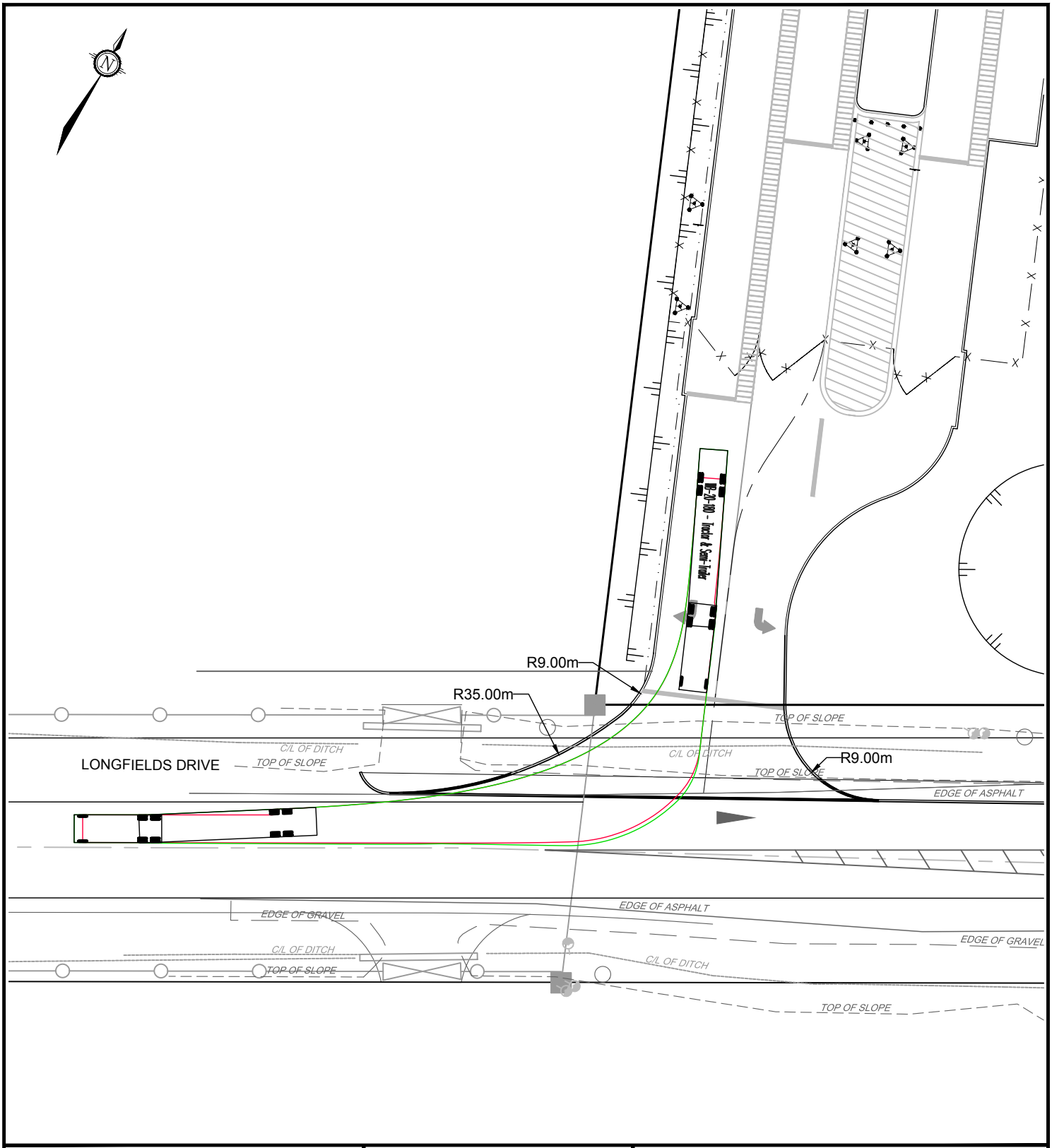
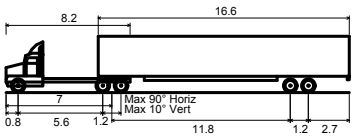


NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone	(613) 254-9643
Facsimile	(613) 254-5867
Website	www.novatech-eng.com



WB-20 - Tractor & Semi-Trailer

Overall Length	22.700m
Overall Width	2.600m
Overall Body Height	3.730m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

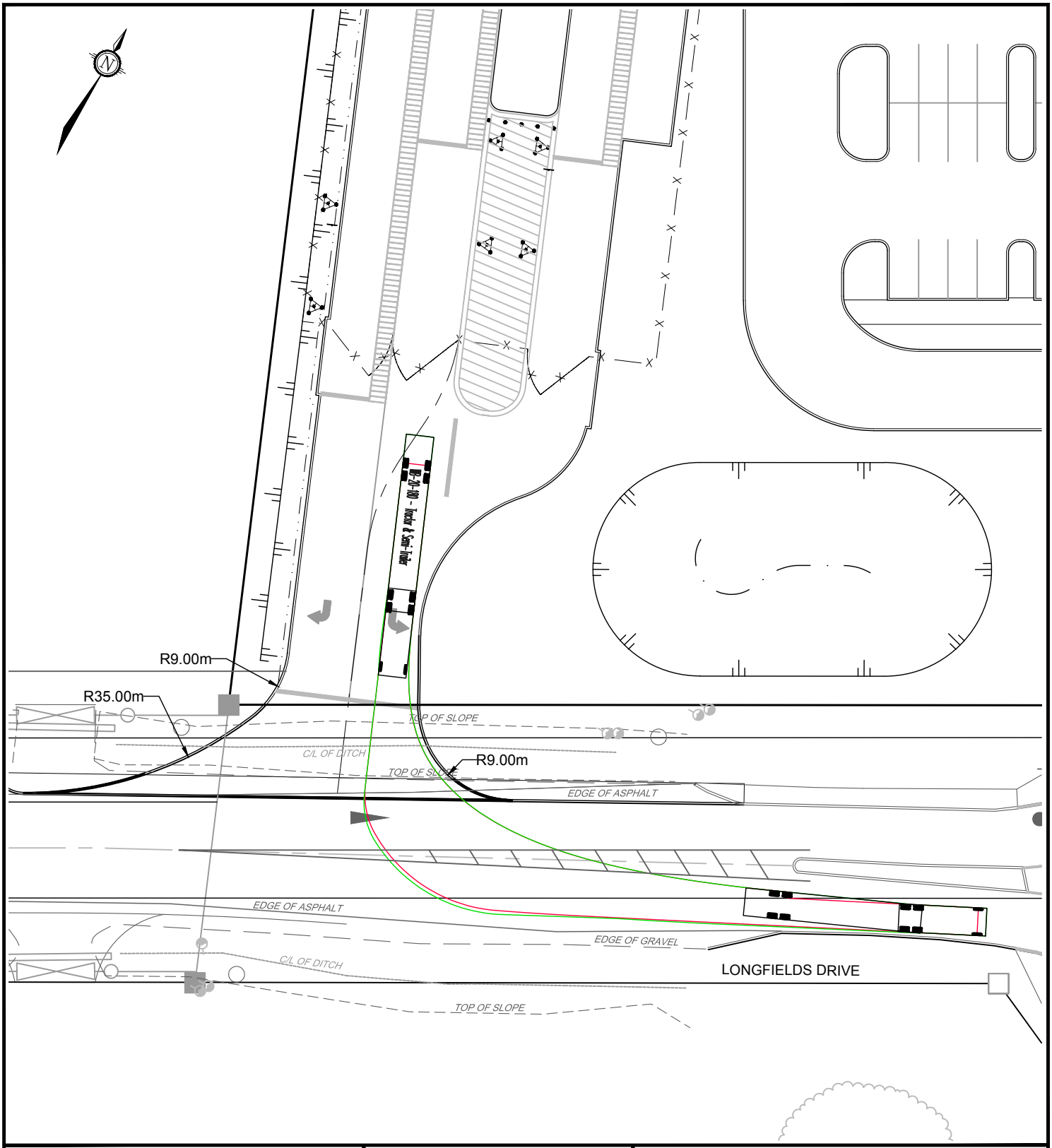
TURNING MOVEMENTS
SITE TRUCK EGRESS (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE	JOB	FIGURE
MAY 2021	121137	TM-10

SHT8X11.DWG - 216mmx279mm

C:\temp\AcPublish_16904\121137-FD.dwg, TM10, May 28, 2021 - 2:08pm, rhillier



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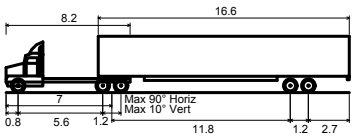

WB-20 - Tractor & Semi-Trailer

Overall Length	22.700m
Overall Width	2.600m
Overall Body Height	3.730m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS
SITE TRUCK EGRESS (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE	JOB	FIGURE
MAY 2021	121137	TM-11

SHT8X11.DWG - 216mmx279mm

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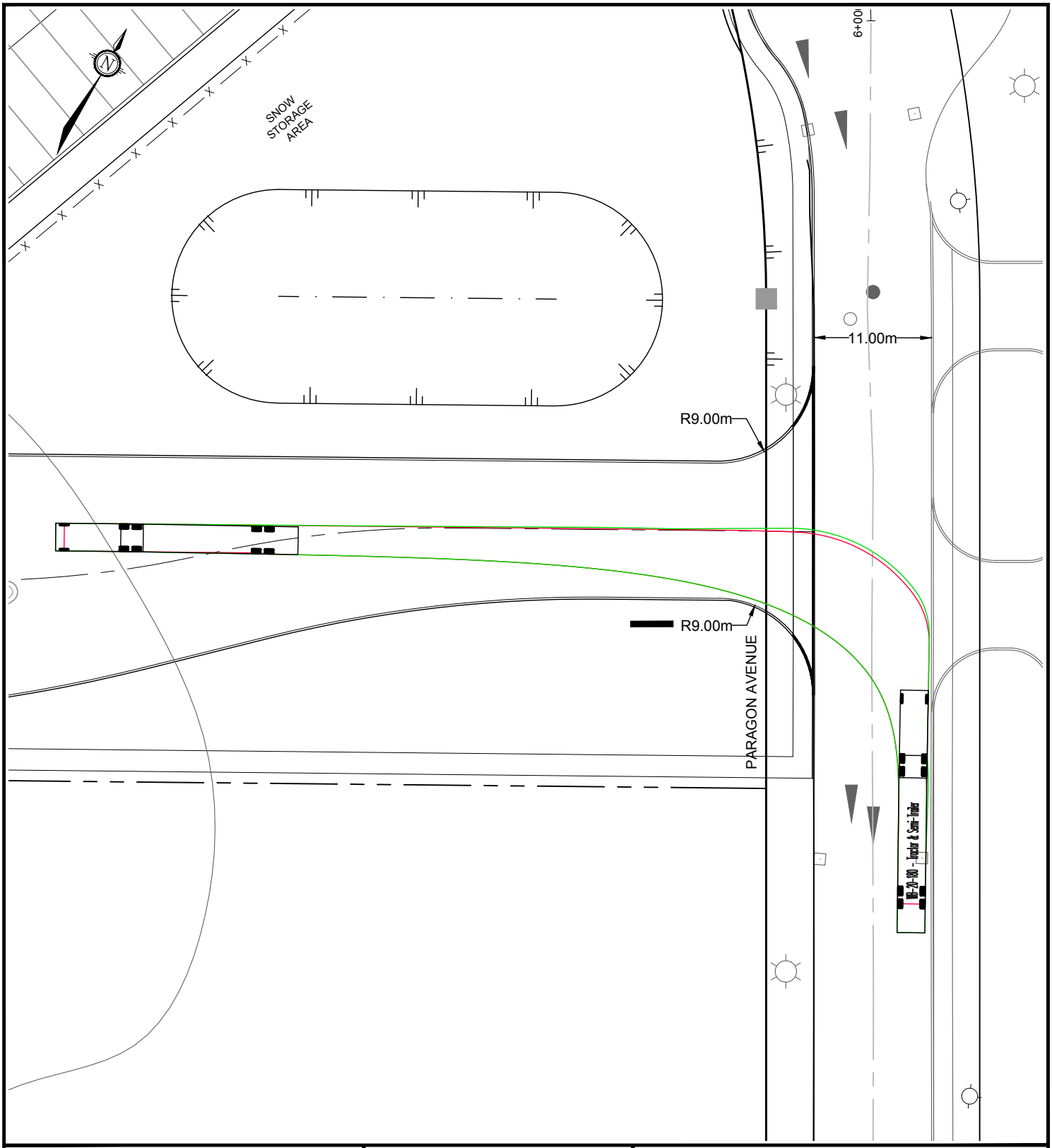

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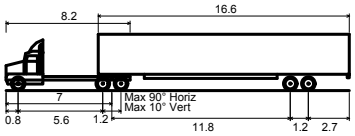

WB-20 - Tractor & Semi-Trailer

Overall Length	22.700m
Overall Width	2.600m
Overall Body Height	3.730m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS
SITE TRUCK INGRESS (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE MAY 2021 | JOB 121137 | FIGURE TM-12

SHT8X11.DWG - 216mmx279mm

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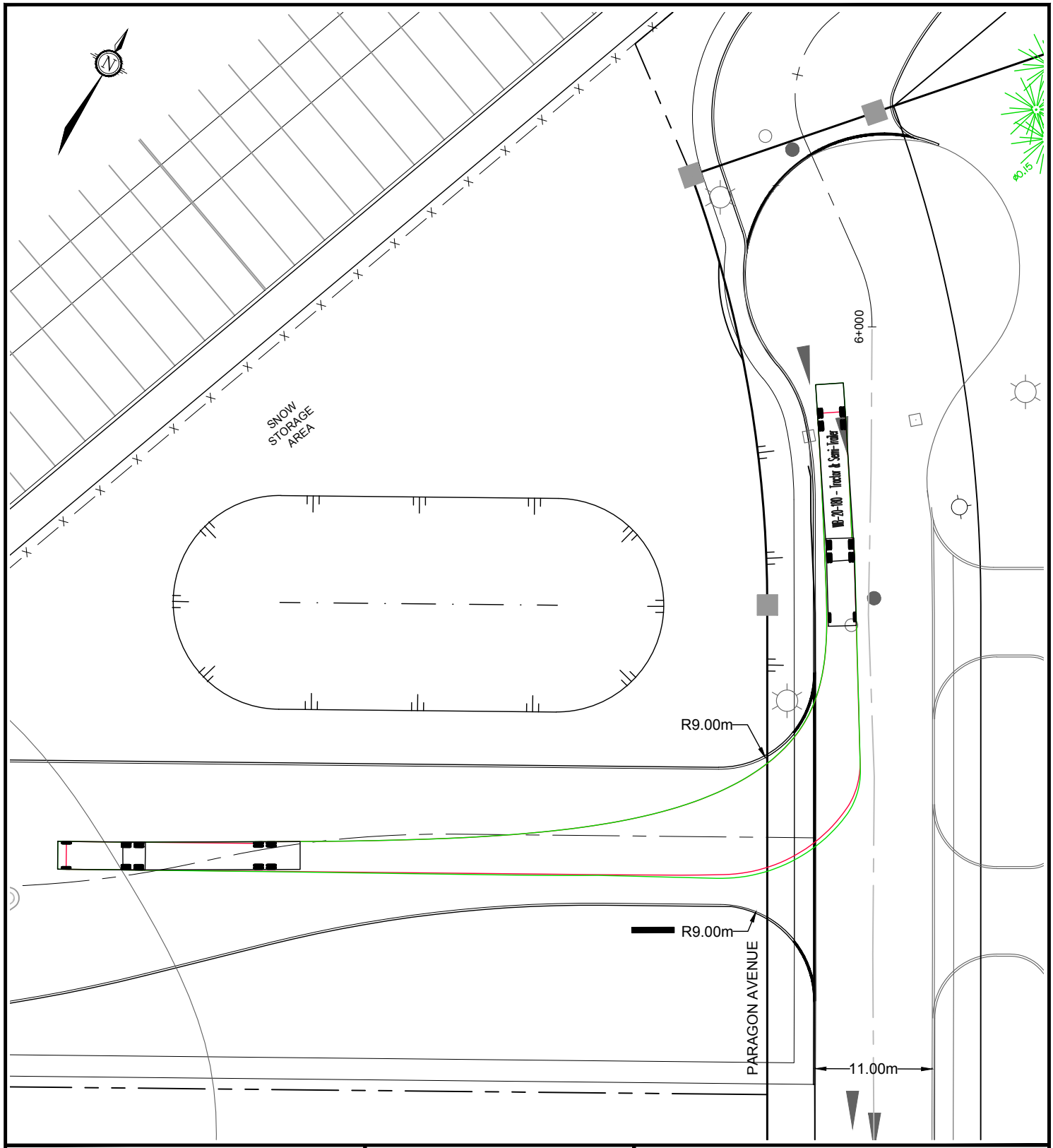

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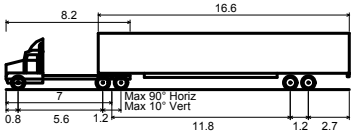

WB-20 - Tractor & Semi-Trailer

Overall Length	22.700m
Overall Width	2.600m
Overall Body Height	3.730m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS
SITE TRUCK INGRESS (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE MAY 2021 | JOB 121137 | FIGURE TM-13

SHT8X11.DWG - 216mmx279mm

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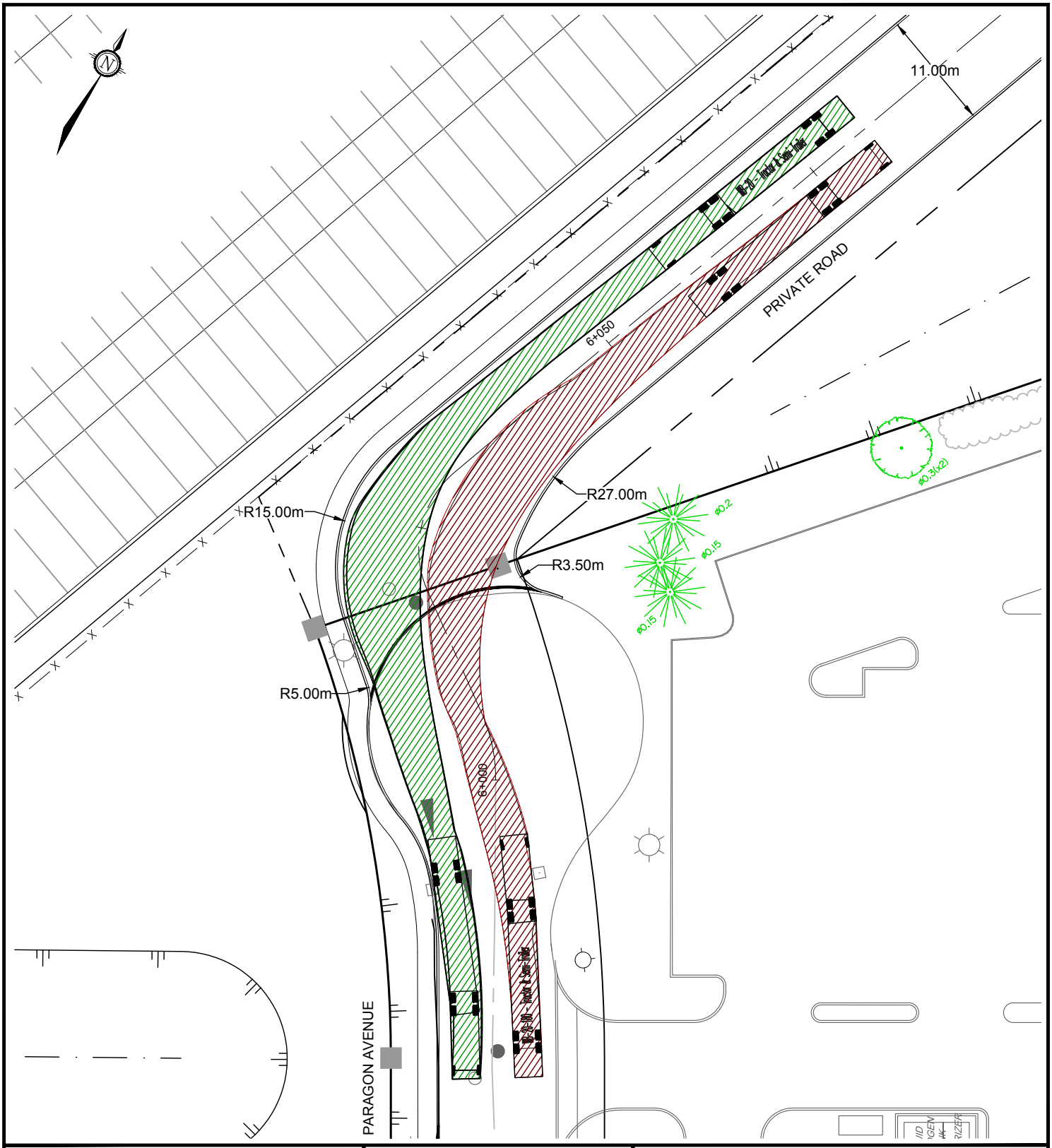

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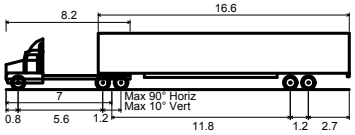

WB-20 - Tractor & Semi-Trailer

Overall Length	22.700m
Overall Width	2.600m
Overall Body Height	3.730m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.300m

SORTATION FACILITY

99 BILL LEATHEM DRIVE, 2 LEIKIN DRIVE &
20 LEIKIN DRIVE

TURNING MOVEMENTS
PRIVATE RD AND PARAGON AVE (WB-20)

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE	JOB	FIGURE
MAY 2021	121137	TM-14

SHT8X11.DWG - 216mmx279mm

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APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	**99 Bill Leathem Drive, 2 Leikin Drive, and 20 Leikin Drive**
Description of Location	**North of Bill Leathem / Longfields**
Land Use Classification	**Light Industrial**
Development Size (units)	
Development Size (m^2)	**25,905**
Number of Accesses and Locations	**Private road running between Paragon Avenue and Leikin Drive. Connections to Longfields Drive, Paragon Avenue, and Longfields / Bill Leathem roundabout**
Phase of Development	
Buildout Year	**2026**

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

2. Trip Generation 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
Single-family homes	40 units
Townhomes or apartments	90 units
Office	3,500 m^2
Industrial	5,000 m^2
Fast-food restaurant or coffee shop	100 m^2
Destination retail	1,000 m^2
Gas station or convenience market	75 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.*

If the proposed development size is greater than the sizes identified 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 Spine Bicycle Networks?		✓
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*		✓

**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).*

If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 km/hr or greater?		✓
Are there any horizontal/vertical curvatures on a boundary street limits 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 is 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?		✓

If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

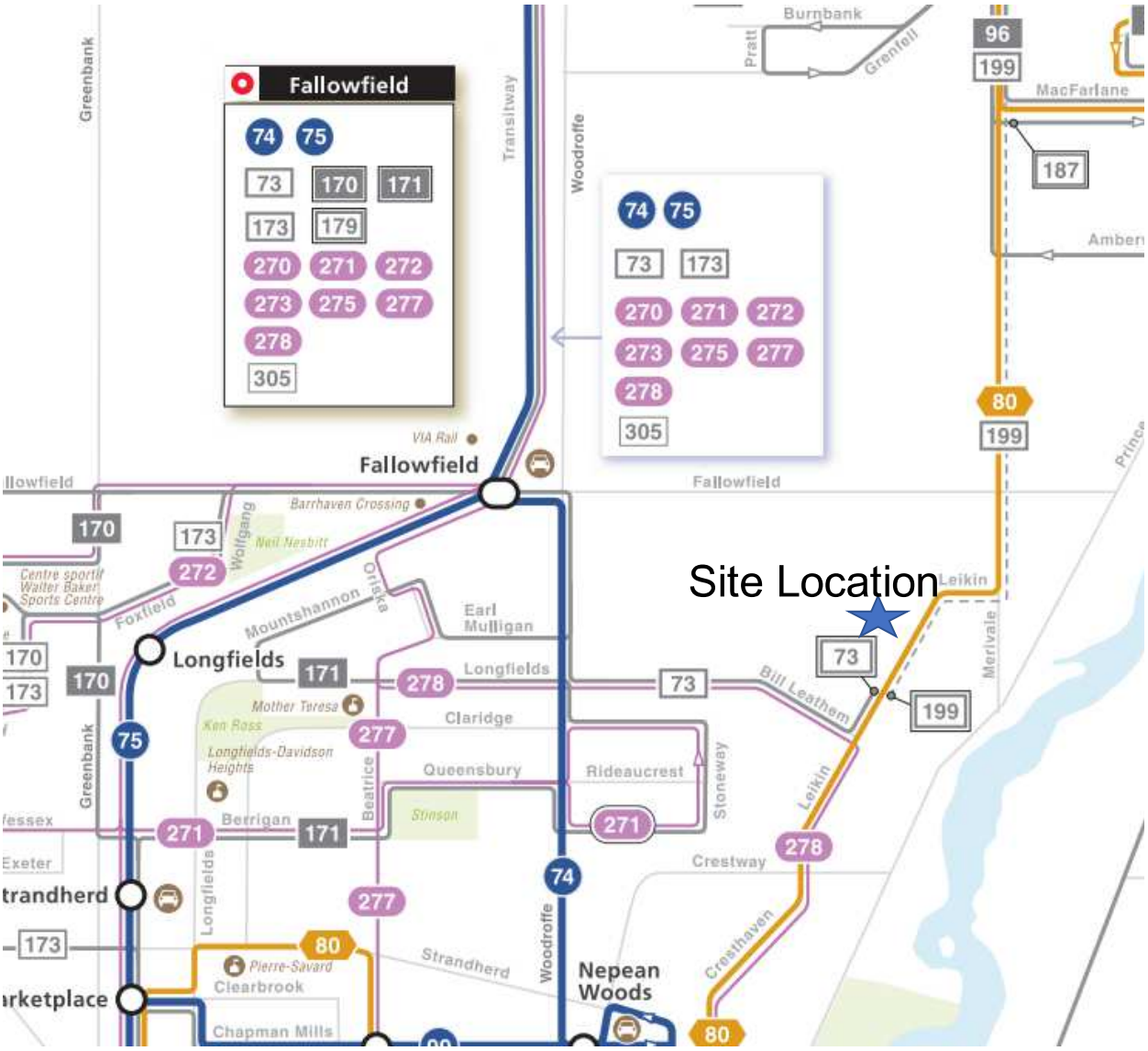
5. Summary

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

If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

APPENDIX C

OC Transpo System Information


Fallowfield
74 75
73 170 171
173 179
270 271 272
273 275 277
278
305
74 75
73 173
270 271 272
273 275 277
278
305
Site Location
Greenbank
Transitway
Woodroffe
Burnbank
Pratt
Grenfell
96
199
MacFarlane
187
80
199
Fallowfield
VIA Rail
Barrhaven Crossing
Wolfgang
Neil Nesbitt
Centre sportif Walter Baker Sports Centre
Foxfield
Mountshannon
Orrska
Earl Mulligan
Longfields
Mother Teresa
Ken Ross
Longfields-Davidson Heights
Claridge
Queensbury
Rideaucrest
Stinson
Beatrice
Stoneway
Berrigan
Exeter
Longfields
Strandherd
Pierre-Savard
Clearbrook
Chapman Mills
Nepean Woods
Crestway
Cresthaven
Leikin
Bill Leathem
Merivale
Amber
Princ
170
173
272
75
171
278
277
271
74
73
199
80

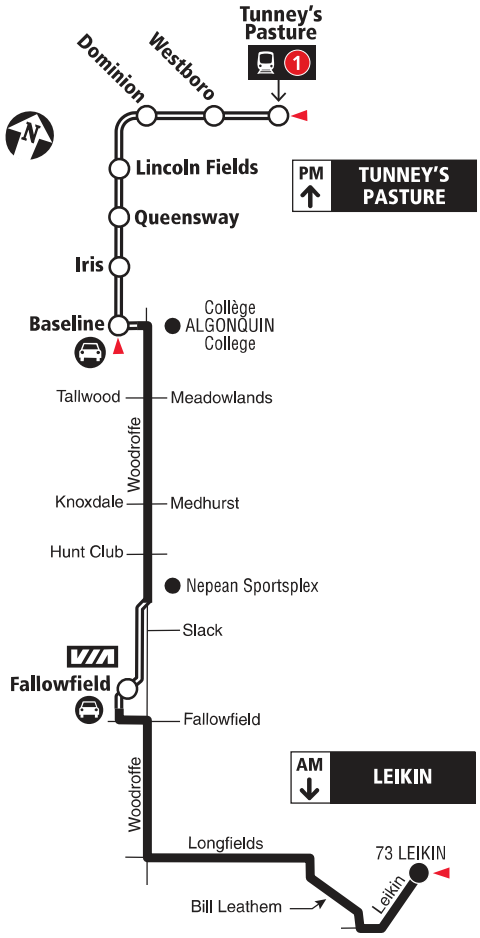
73 LEIKIN / TUNNEY'S PASTURE

Local

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



Transitway & Station

Park & Ride / Parc-o-bus

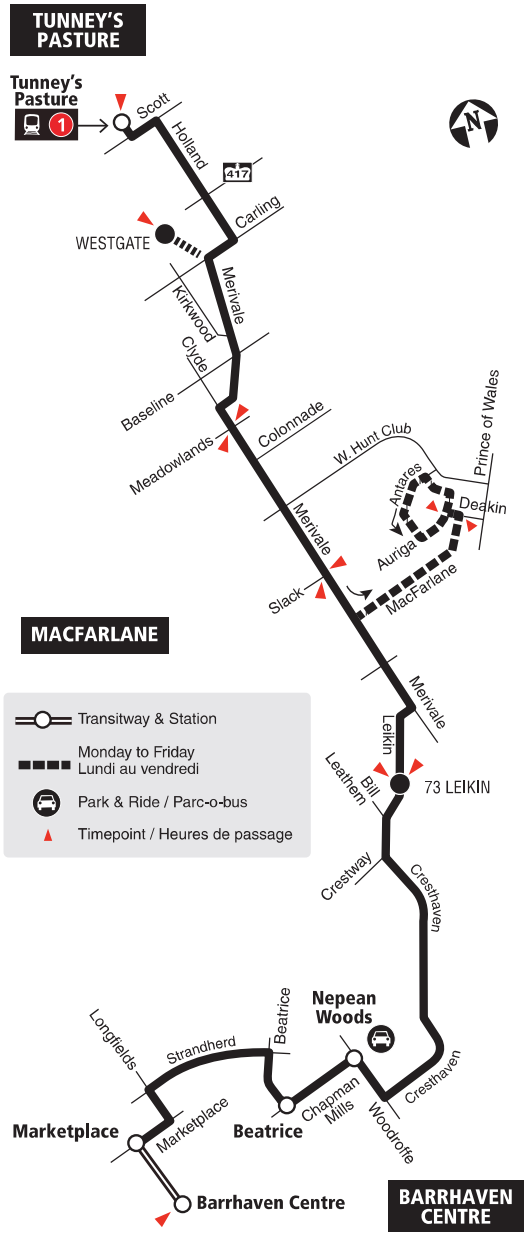
Timepoint / Heures de passage

2019.07

80 BARRHAVEN CENTRE / TUNNEY'S PASTURE

Fréquent

7 days a week / 7 jours par semaine
All day service
Service toute la journée



2018.12

Schedule / Horaire.....613-560-1000
Text / Texto 560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Customer Relations
Service à la clientèle **613-842-3600**
Lost and Found / Objets perdus.....**613-563-4011**
Security / Sécurité.....**613-741-2478**

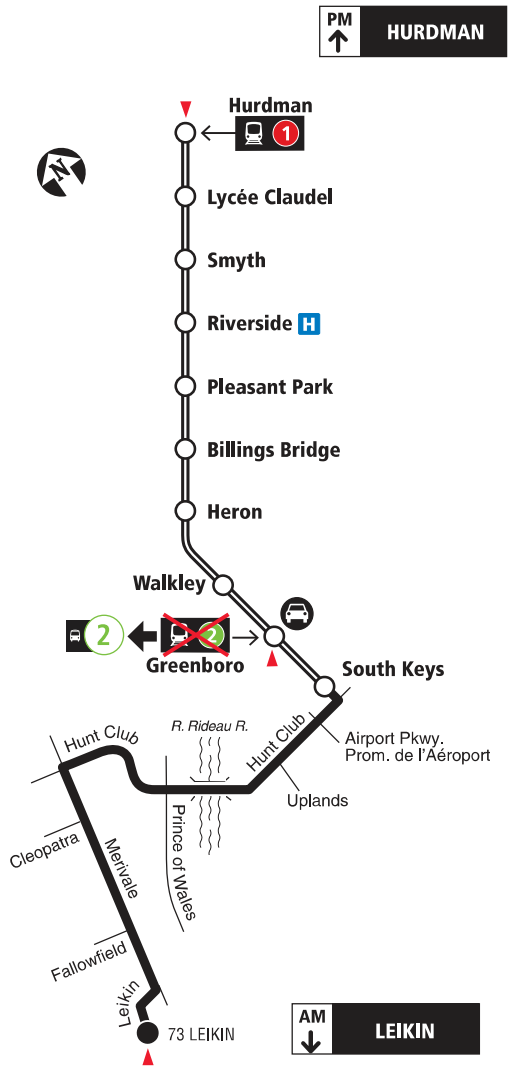
Effective June 24, 2018
En vigueur 24 june 2018

OC Transpo
INFO 613-741-4390
octranspo.com

199 LEIKIN / HURDMAN

Local

Monday to Friday / Lundi au vendredi
Peak periods only
Périodes de pointe seulement



Transitway & Station
Park & Ride / Parc-o-bus
Timepoint / Heures de passage

2020.04

Schedule / Horaire.....613-560-1000
Text / Texto 560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Customer Service
Service à la clientèle **613-741-4390**
Lost and Found / Objets perdus..... **613-563-4011**
Security / Sécurité **613-741-2478**

Effective May 3, 2020
En vigueur 3 mai 2020

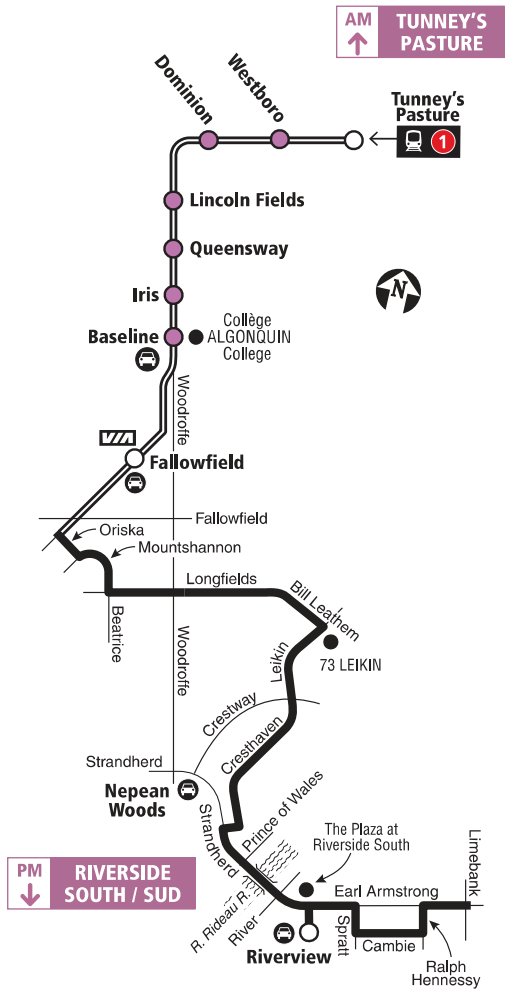
OC Transpo
INFO 613-741-4390
octranspo.com

278 RIVERSIDE SOUTH / SUD TUNNEY'S PASTURE

Connexion

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



2020.01

Schedule / Horaire.....613-560-1000
Text / Texto 560560

plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Customer Service
Service à la clientèle 613-741-4390

Lost and Found / Objets perdus.....613-563-4011

Security / Sécurité 613-741-2478

Effective December 2, 2018
En vigueur 2 décembre 2018

OC Transpo

INFO 613-741-4390
octranspo.com

APPENDIX D

Traffic Count Data

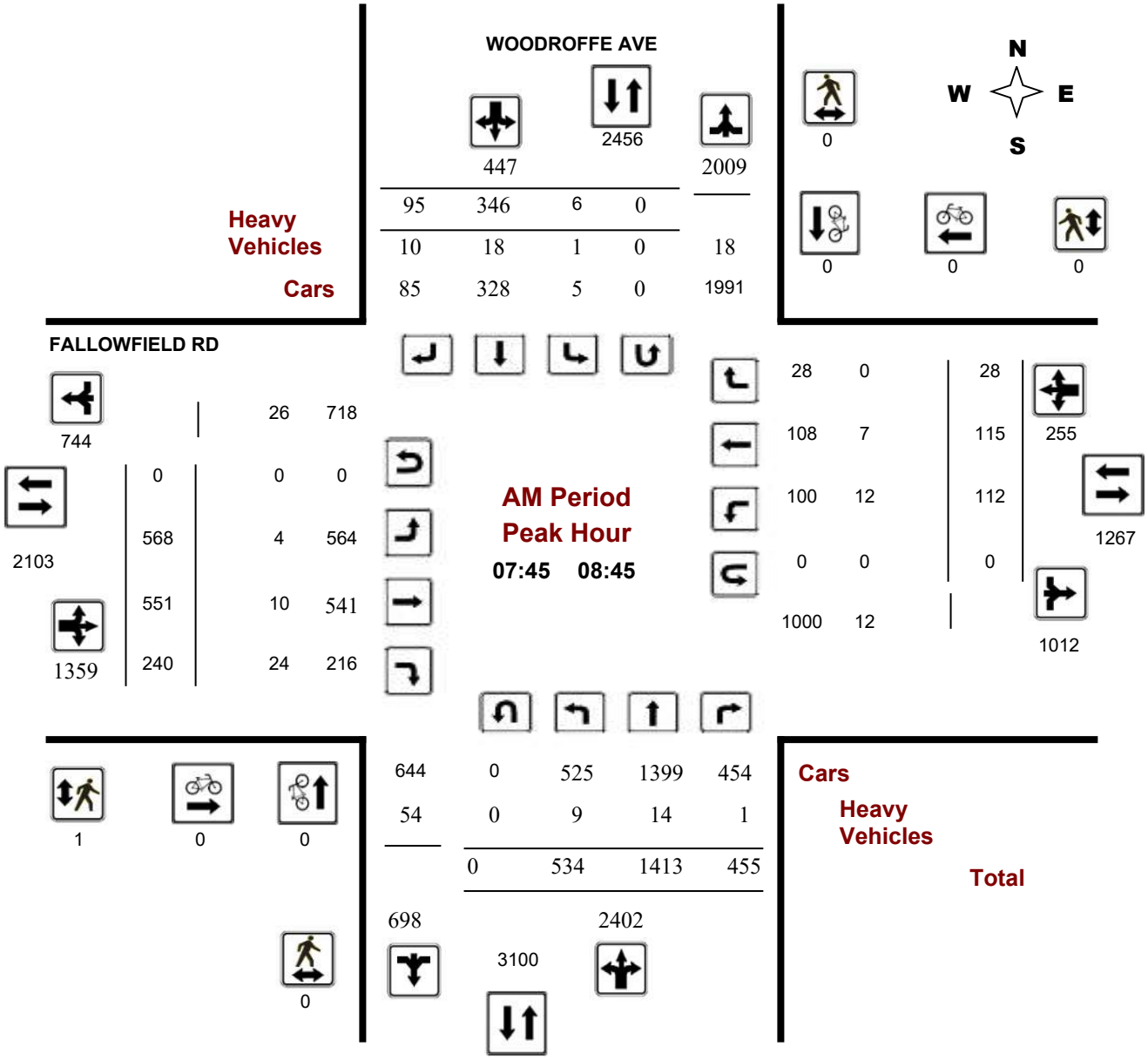
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

FALLOWFIELD RD @ WOODROFFE AVE

Survey Date: Thursday, March 02, 2017 **WO No:** 36731

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



Comments

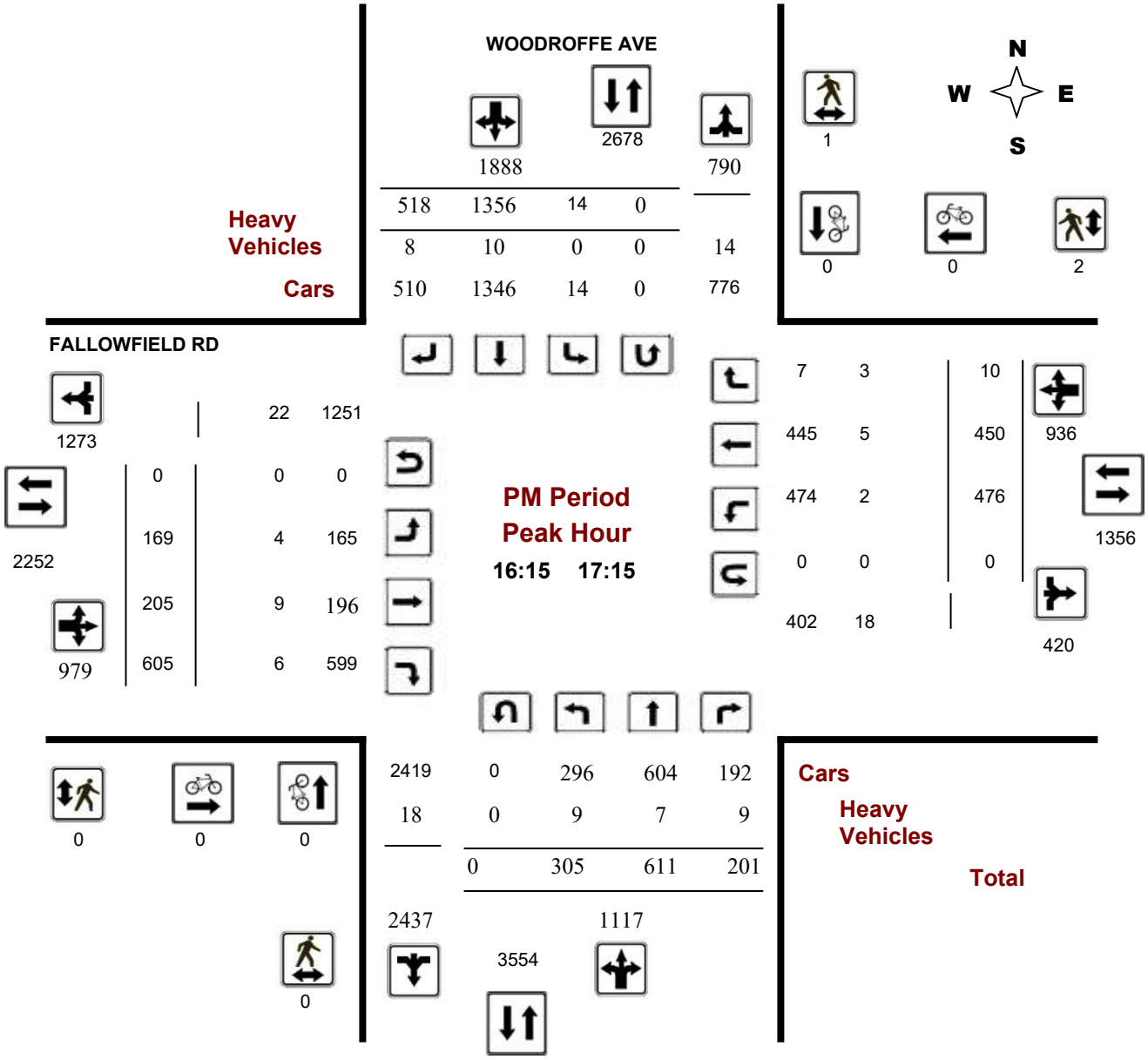
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

FALLOWFIELD RD @ WOODROFFE AVE

Survey Date: Thursday, March 02, 2017 **WO No:** 36731

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



Comments

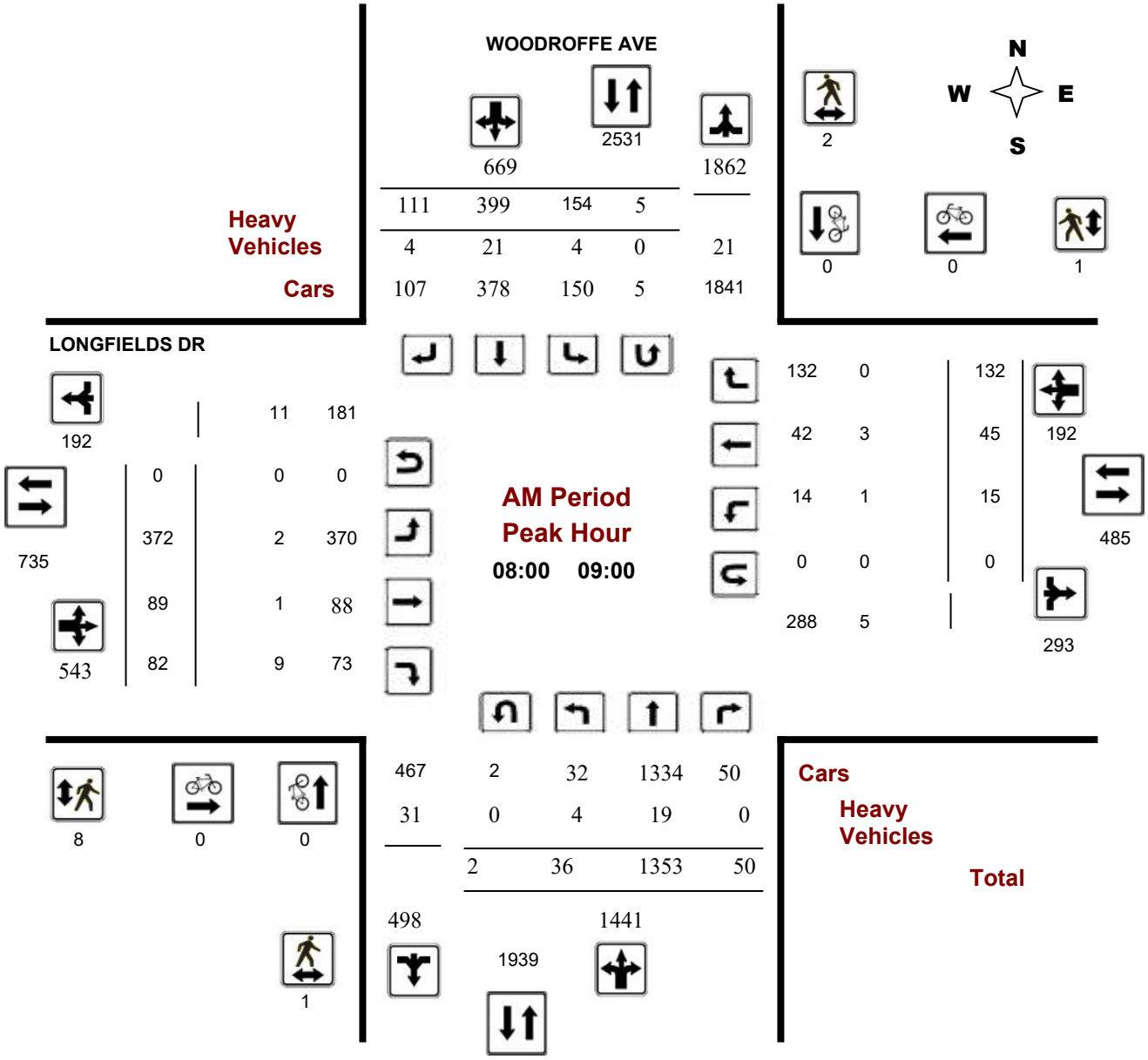
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LONGFIELDS DR @ WOODROFFE AVE

Survey Date: Thursday, March 02, 2017 **WO No:** 36732

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



Comments

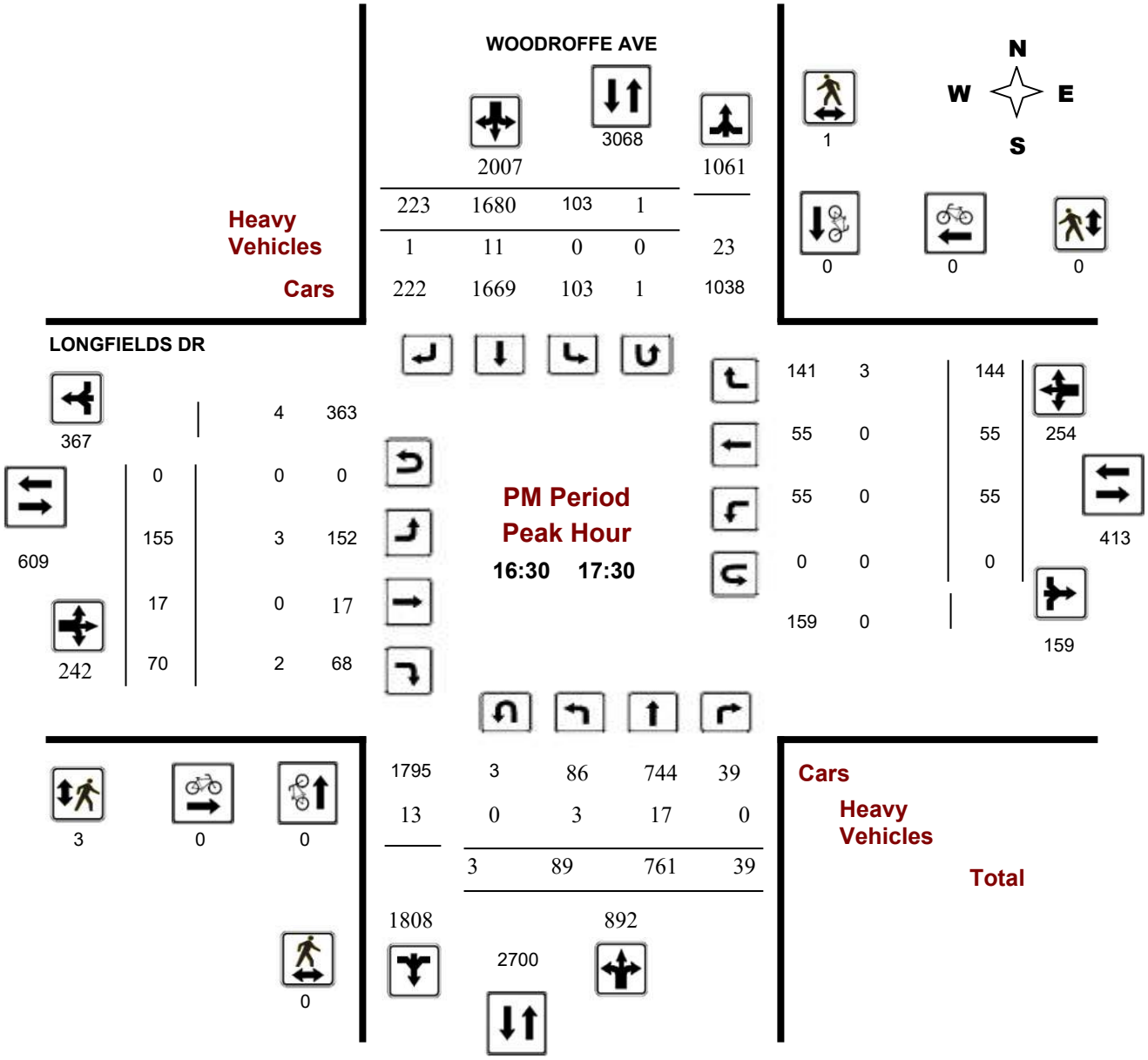
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LONGFIELDS DR @ WOODROFFE AVE

Survey Date: Thursday, March 02, 2017
Start Time: 07:00

WO No: 36732
Device: Miovision



Comments

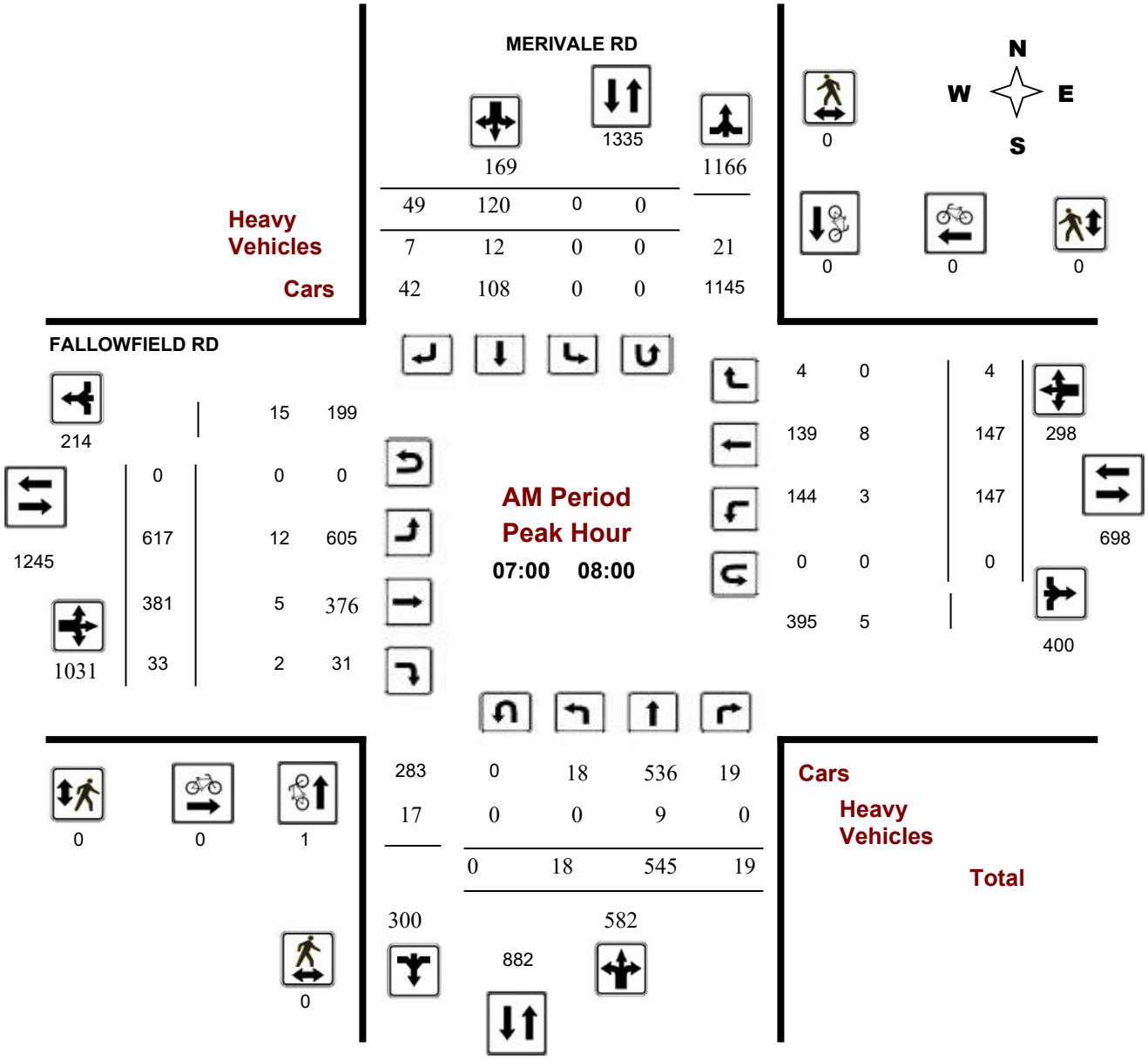
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

FALLOWFIELD RD @ MERIVALE RD

Survey Date: Thursday, March 02, 2017 **WO No:** 36728

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



Comments

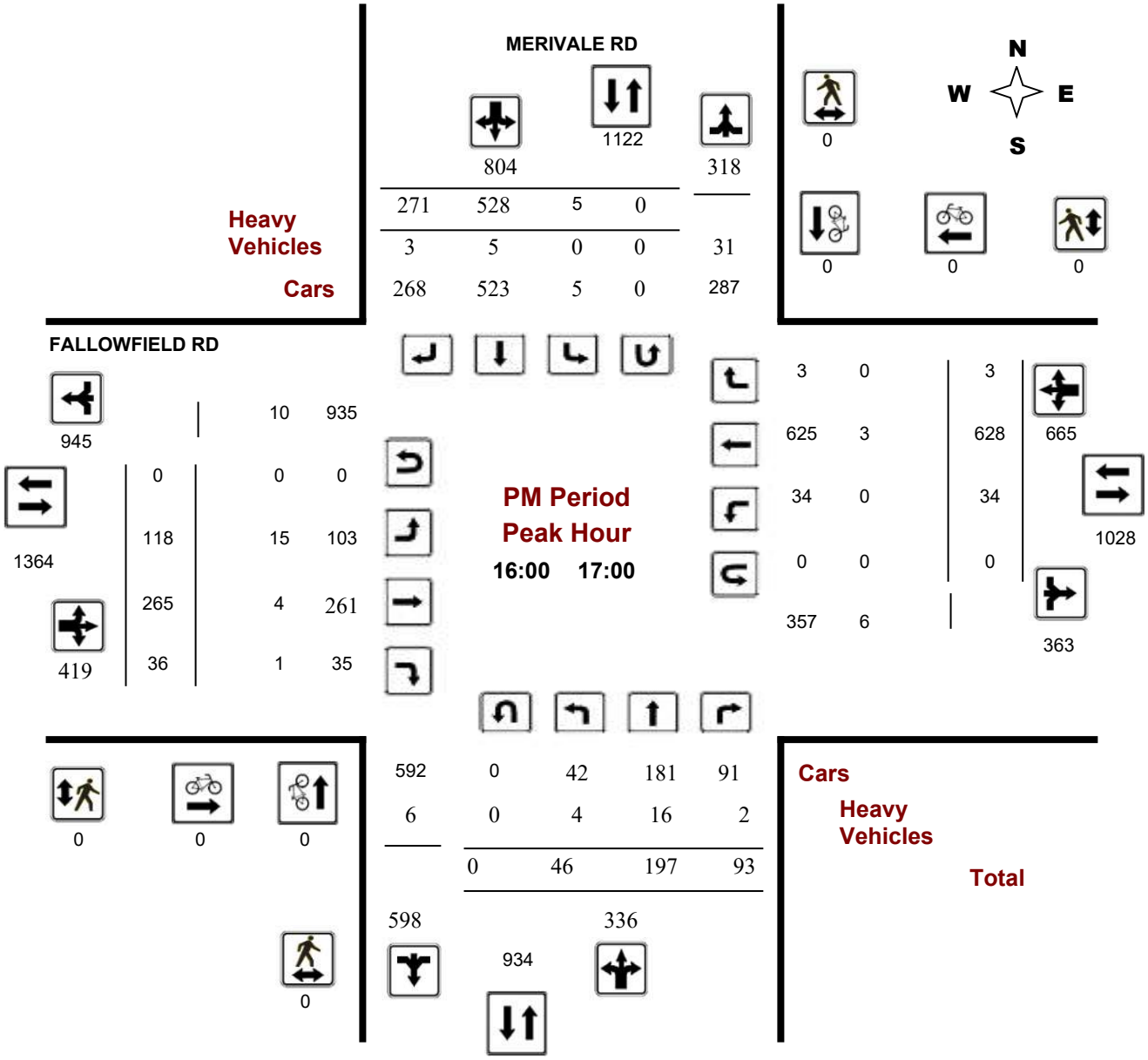
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

FALLOWFIELD RD @ MERIVALE RD

Survey Date: Thursday, March 02, 2017 **WO No:** 36728

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



Comments

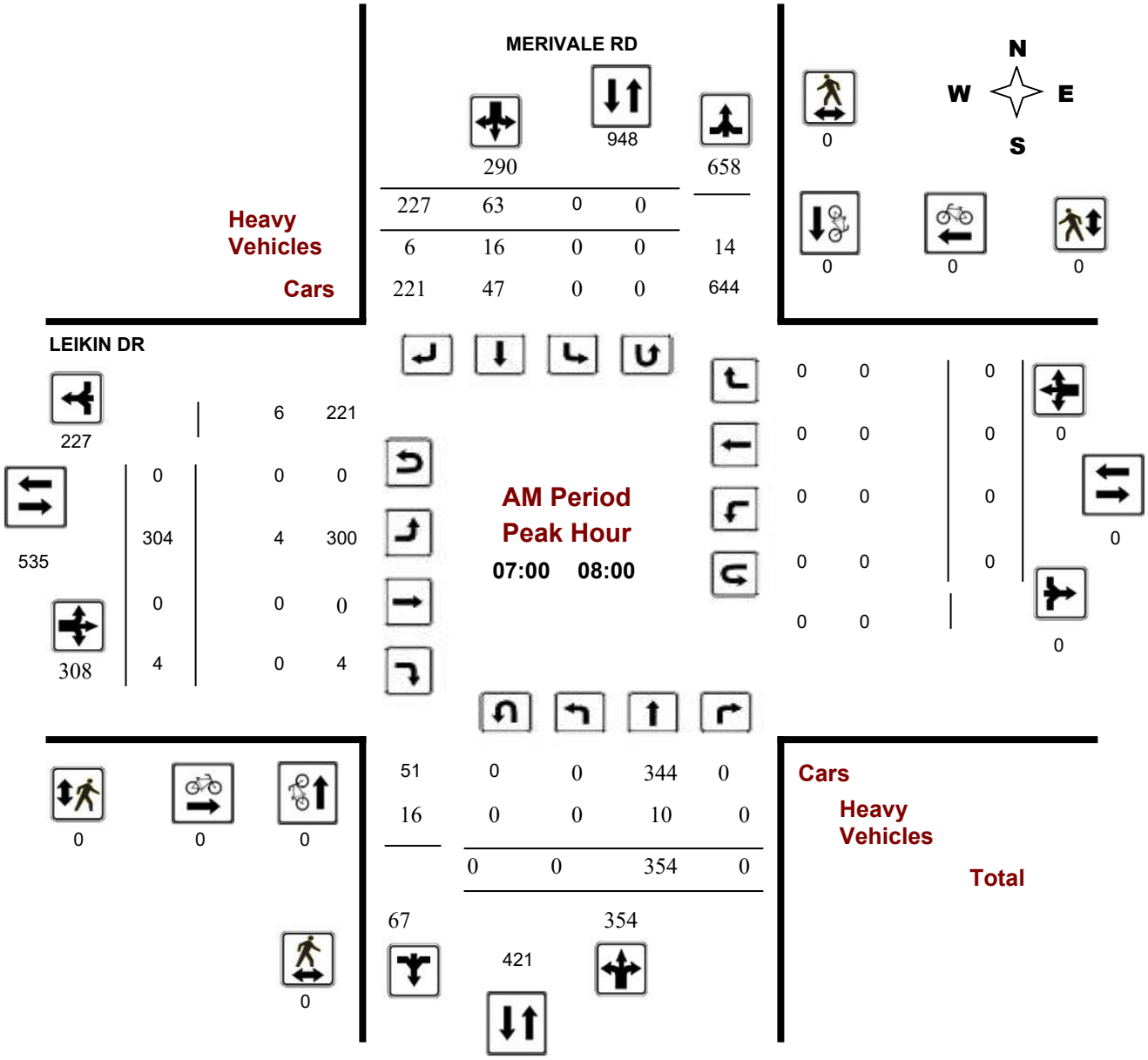
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LEIKIN DR @ MERIVALE RD

Survey Date: Wednesday, November 21, 2018 **WO No:** 38135

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



Comments

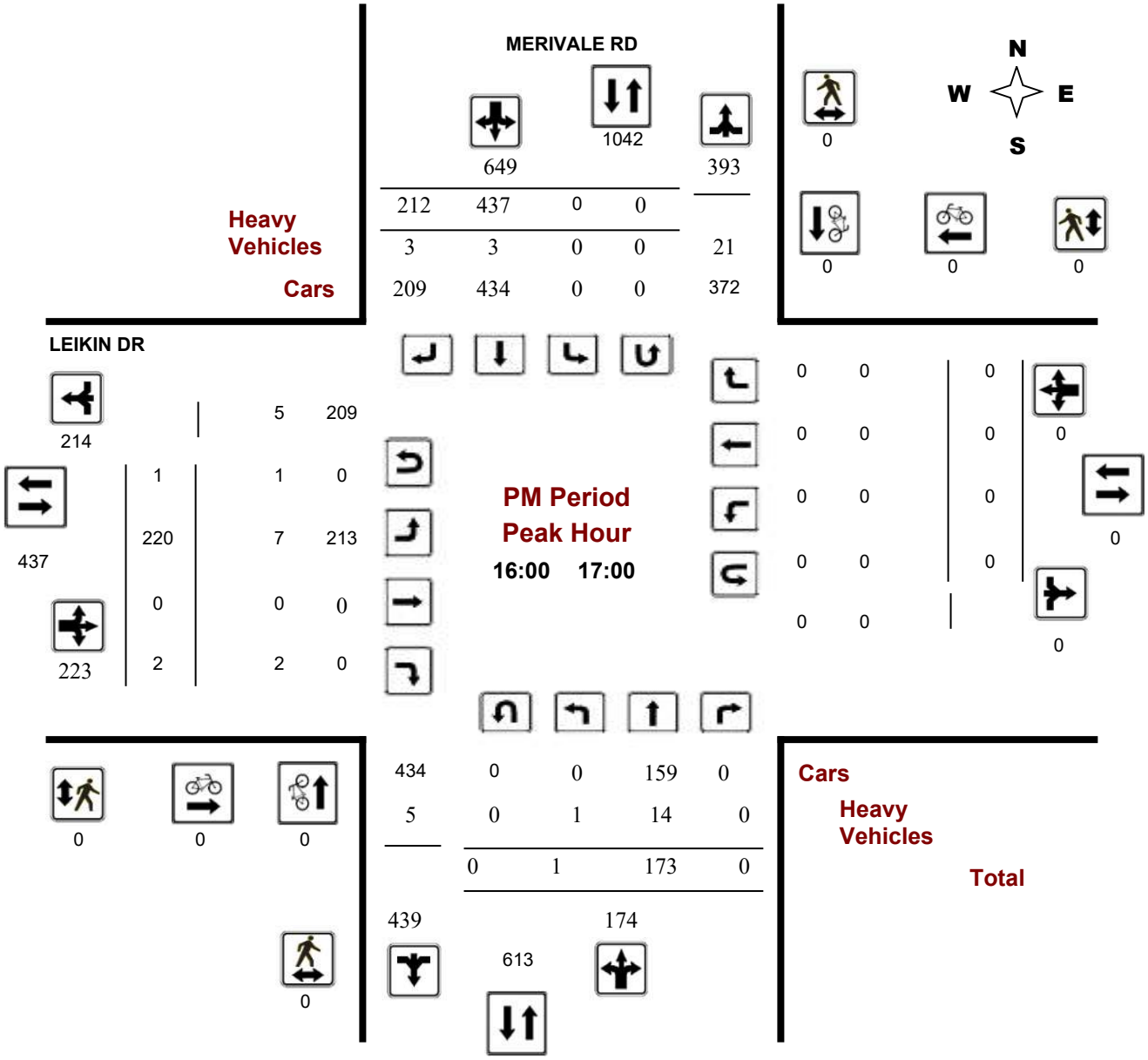
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LEIKIN DR @ MERIVALE RD

Survey Date: Wednesday, November 21, 2018 **WO No:** 38135

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



Comments

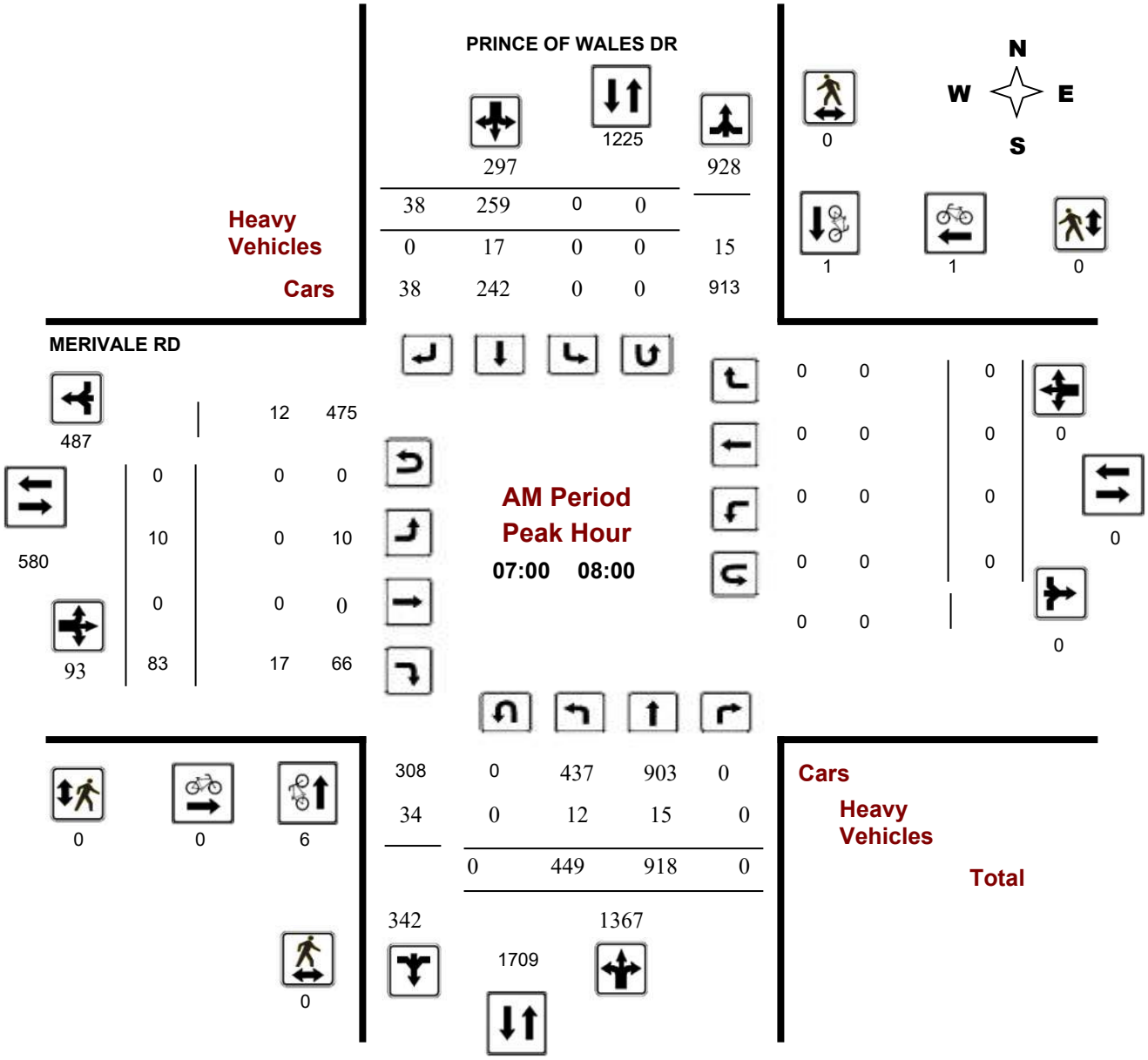
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PRINCE OF WALES DR @ MERIVALE RD

Survey Date: Wednesday, June 13, 2018
Start Time: 07:00

WO No: 37904
Device: Miovision



Comments

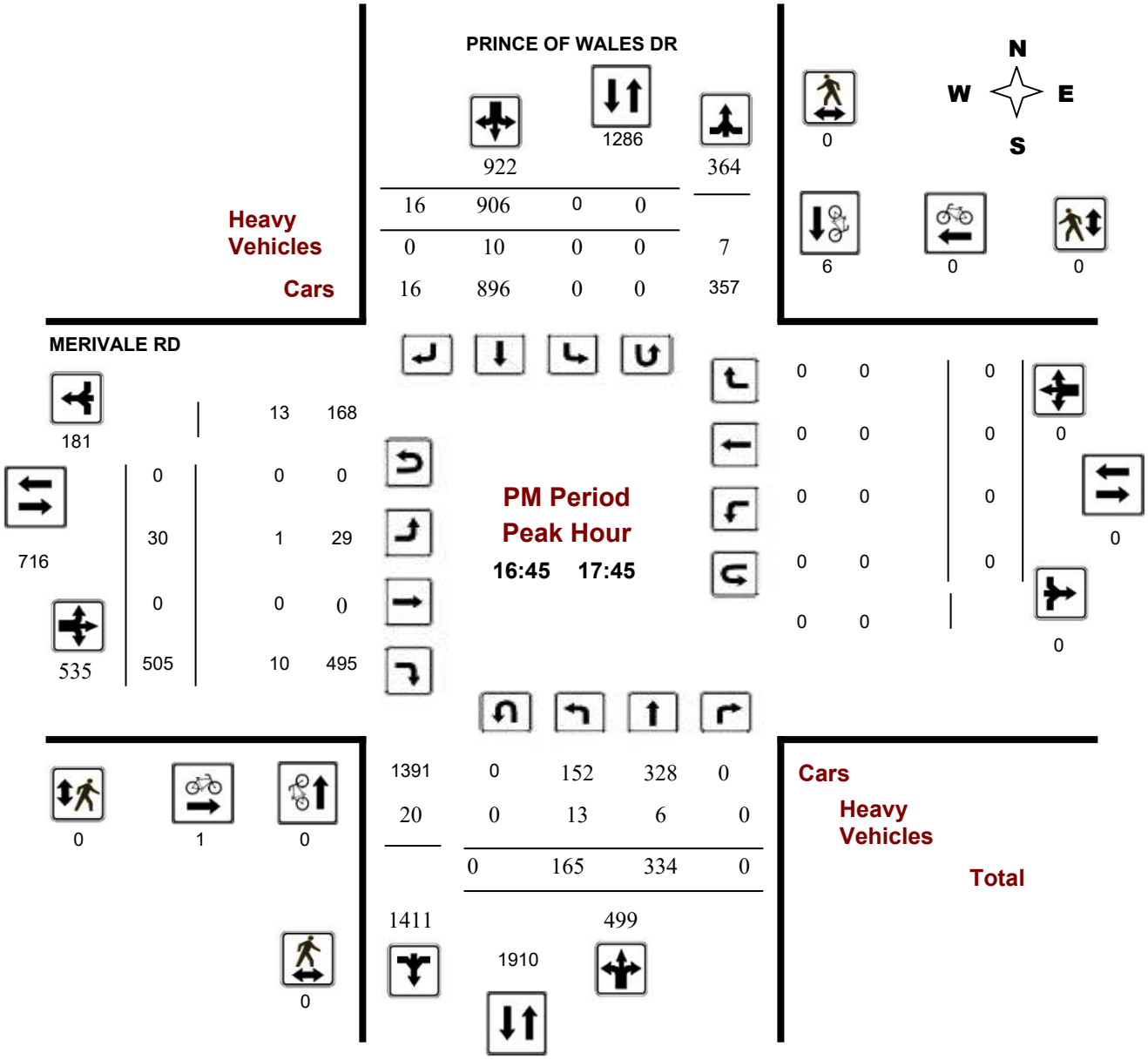
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PRINCE OF WALES DR @ MERIVALE RD

Survey Date: Wednesday, June 13, 2018 **WO No:** 37904

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



Comments

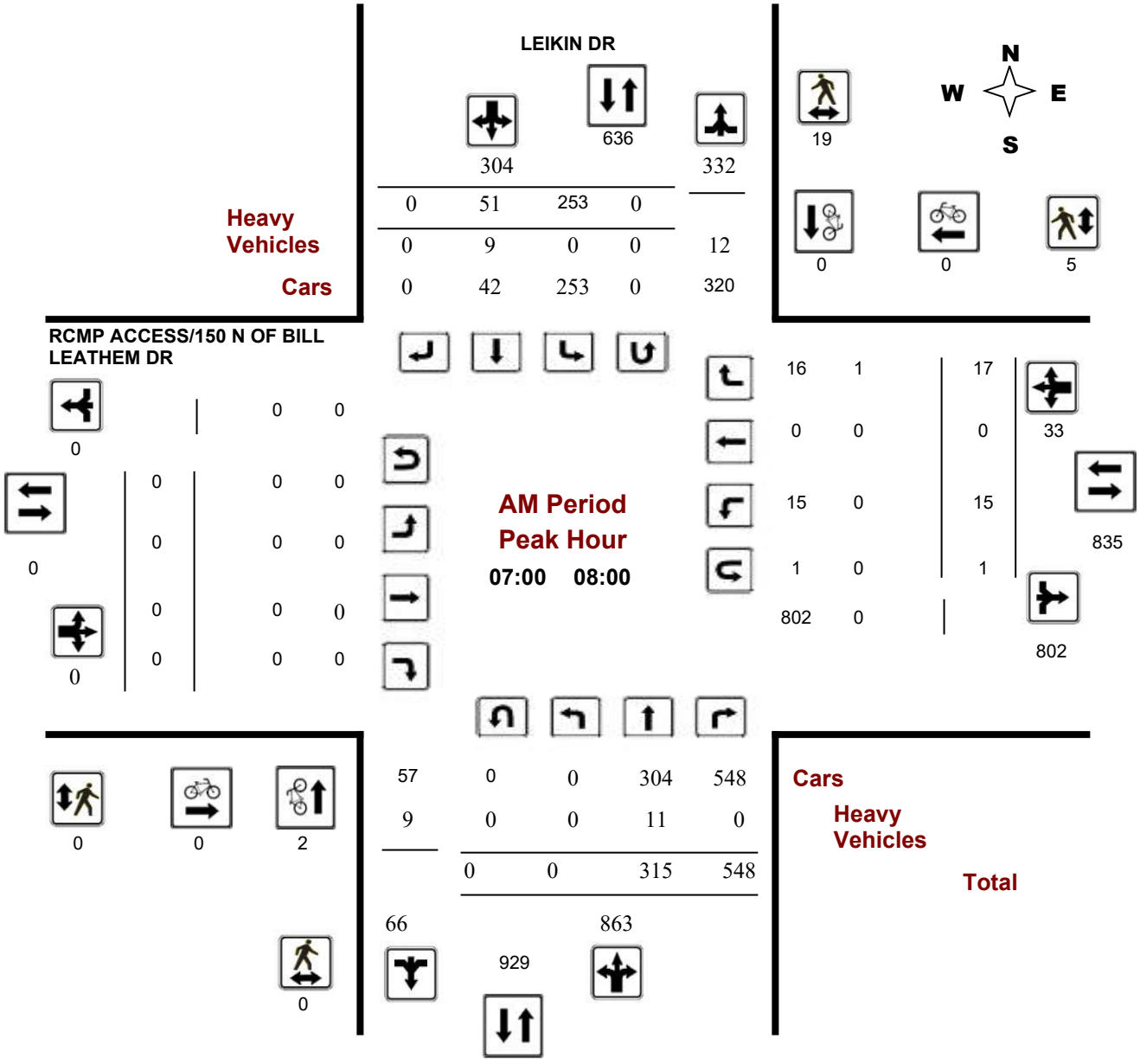
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LEIKIN DR @ RCMP ACCESS/150 N OF BILL LEATHEM DR

Survey Date: Tuesday, January 14, 2020 **WO No:** 39311

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



Comments 5470790 - TUE JAN 14, 2020 - 8HRS - LORETTA

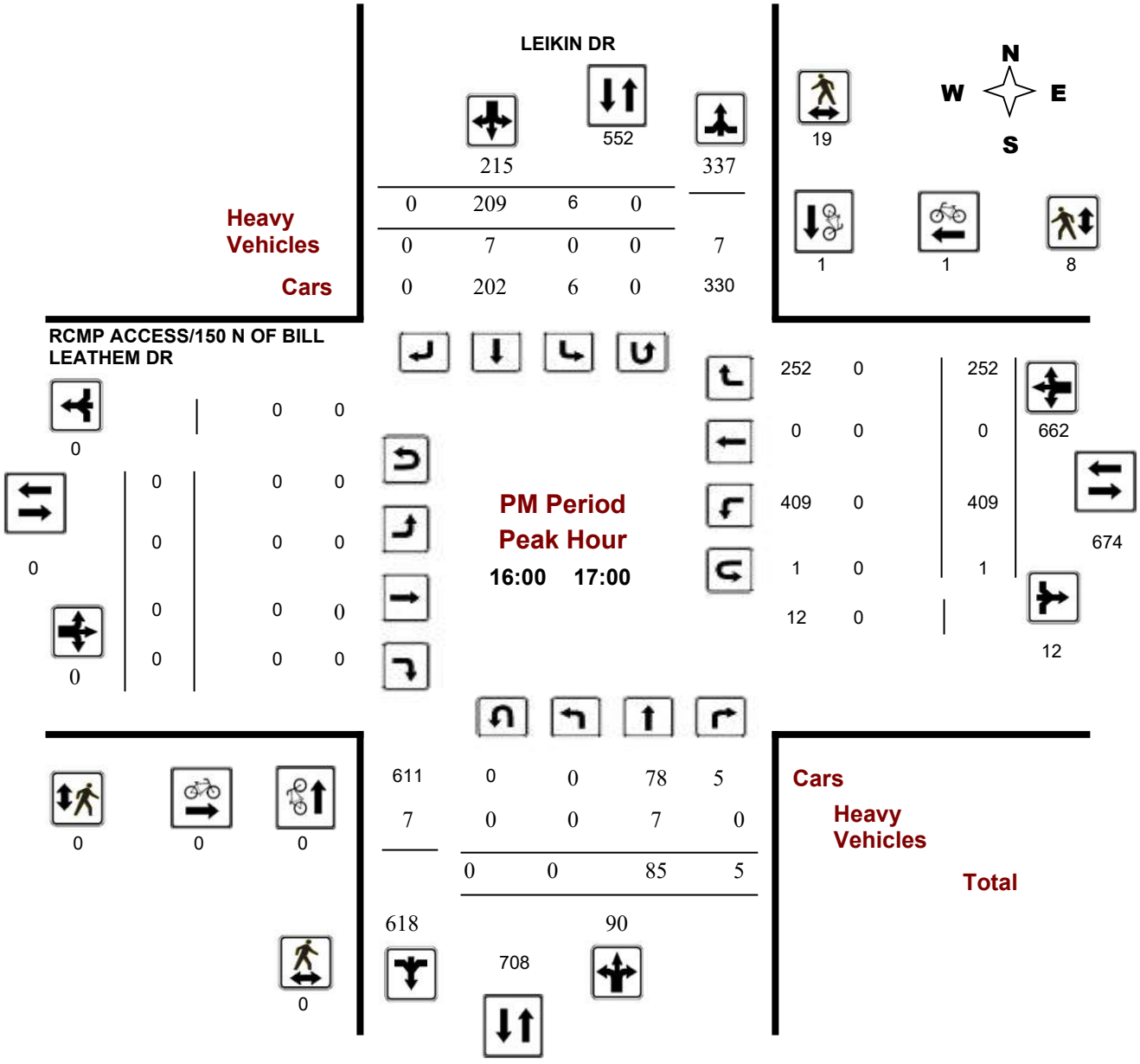
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LEIKIN DR @ RCMP ACCESS/150 N OF BILL LEATHEM DR

Survey Date: Tuesday, January 14, 2020 **WO No:** 39311

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



Comments 5470790 - TUE JAN 14, 2020 - 8HRS - LORETTA

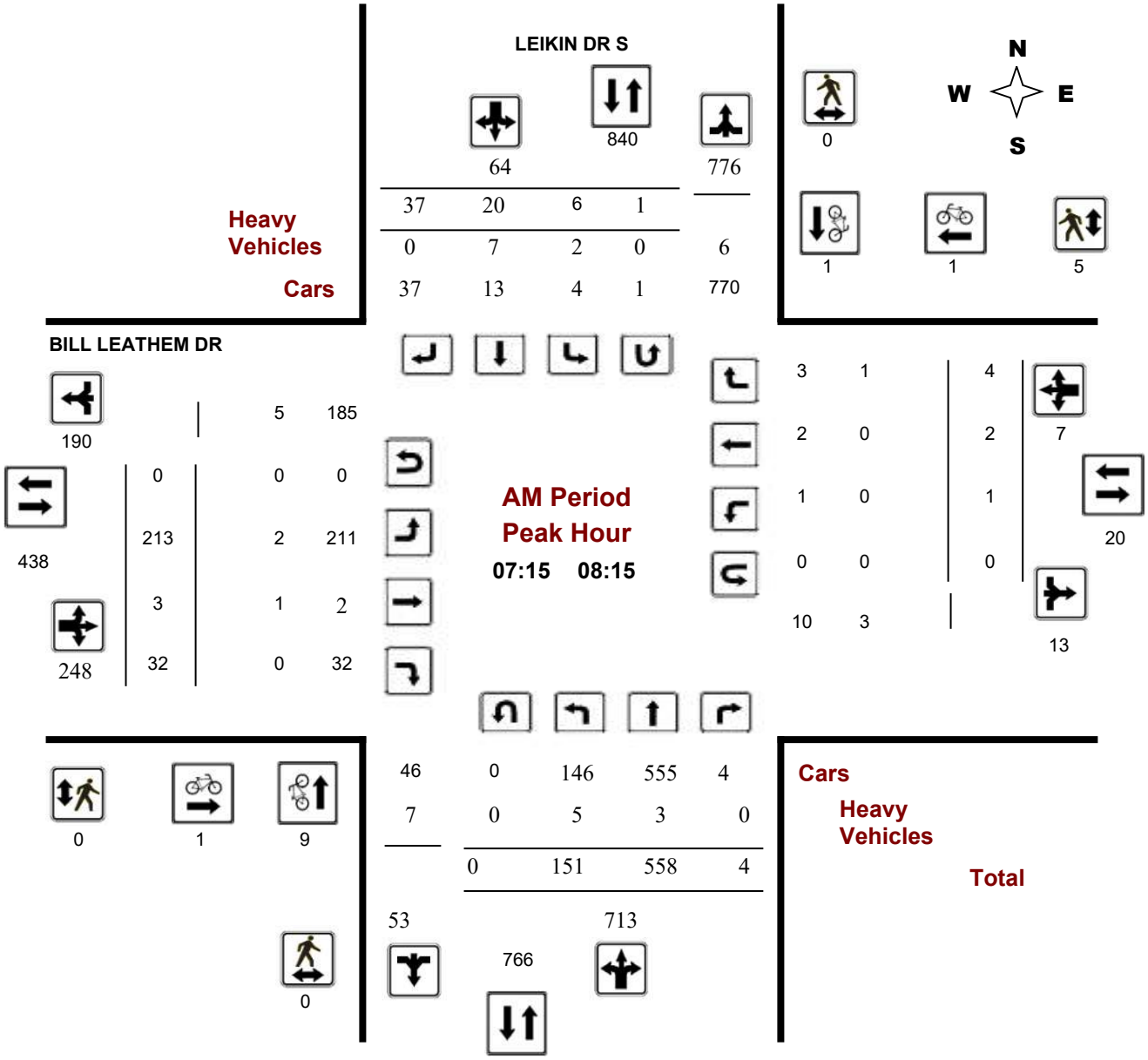
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BILL LEATHEM DR @ LEIKIN DR S

Survey Date: Wednesday, June 12, 2019 **WO No:** 38659

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



Comments

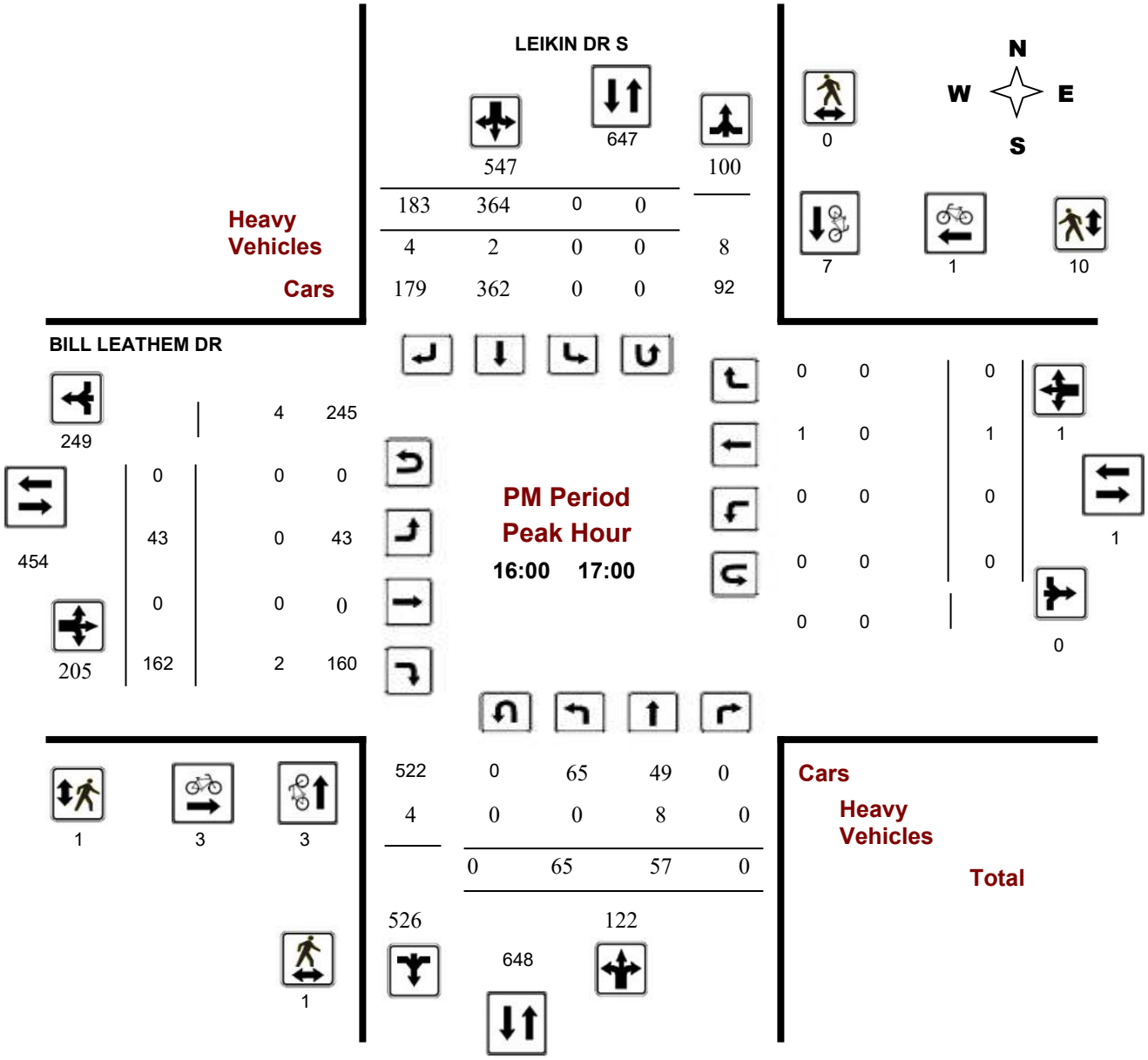
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BILL LEATHEM DR @ LEIKIN DR S

Survey Date: Wednesday, June 12, 2019 **WO No:** 38659

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



Comments

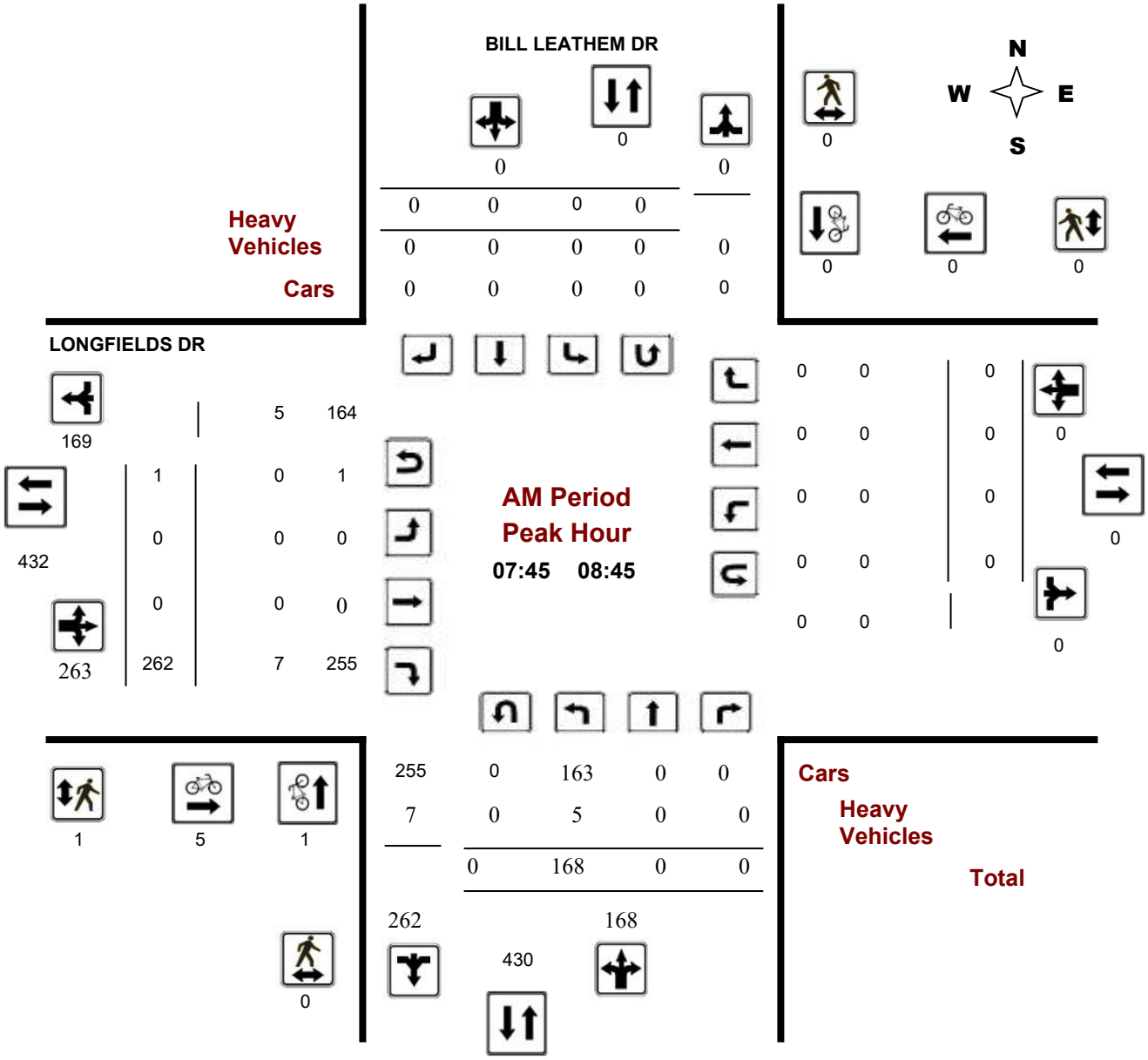
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BILL LEATHEM DR @ LONGFIELDS DR

Survey Date: Wednesday, June 10, 2015 **WO No:** 35082

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



Comments

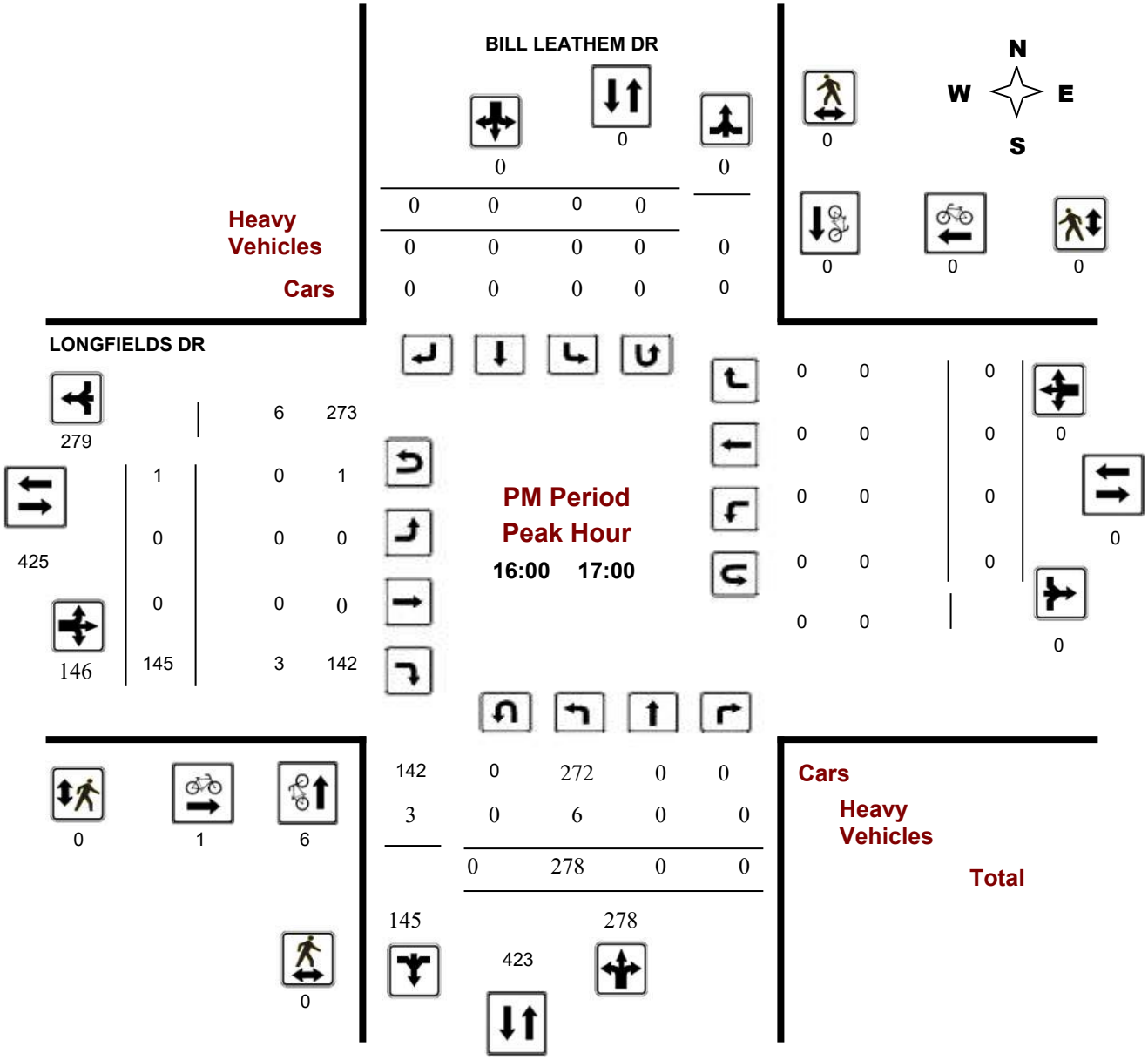
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BILL LEATHEM DR @ LONGFIELDS DR

Survey Date: Wednesday, June 10, 2015 **WO No:** 35082

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



Comments

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Woodroffe/PrinceofWales

2011 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: Feb 2, 2020
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

200 400 600 800

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Woodroffe/PrinceofWales

2031 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: Feb 2, 2020
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

200 400 600 800

APPENDIX E

Collision Records

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: BILL LEATHEM DR @ LEIKIN DR S

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
2016-Feb-14, Sun,11:12	Drifting Snow	SMV other	P.D. only	Ice	East	Going ahead	Automobile, station wagon	Skidding/sliding	0
2016-Mar-28, Mon,15:59	Clear	Rear end	P.D. only	Wet	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2017-Sep-29, Fri,22:50	Rain	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Dec-06, Thu,14:10	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Truck - closed	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-23, Mon,07:42	Rain	Other	P.D. only	Wet	North	Reversing	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Oct-31, Thu,07:25	Rain	Angle	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: FALLOWFIELD RD @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-17, Sat,05:52	Clear	Rear end	P.D. only	Packed snow	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jan-17, Sat,14:00	Clear	SMV other	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Ditch	0
2015-Feb-15, Sun,13:04	Clear	Angle	P.D. only	Loose snow	South	Turning right	Pick-up truck	Skidding/sliding	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2015-Apr-06, Mon,15:27	Snow	SMV other	Non-fatal injury	Wet	East	Slowing or stopping	Automobile, station wagon	Pole (utility, power)	0
2015-May-25, Mon,13:49	Rain	Rear end	P.D. only	Other	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Turning left	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jul-28, Tue,17:36	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Aug-16, Sun,17:39	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2015-Aug-25, Tue,08:00	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	
2015-Aug-28, Fri,22:38	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Oct-03, Sat,04:29	Clear	Angle	P.D. only	Dry	North	Turning right	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Nov-18, Wed,17:03	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
					North	Slowing or stopping	Pick-up truck	Other motor vehicle	
2015-Dec-01, Tue,14:19	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2015-Dec-09, Wed,15:37	Clear	Sideswipe	P.D. only	Dry	South	Turning right	Truck - closed	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Dec-17, Thu,12:51	Clear	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Dec-28, Mon,19:57	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-18, Mon,09:40	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Feb-10, Wed,10:31	Clear	Turning movement	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-21, Mon,15:28	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Apr-06, Wed,17:02	Snow	Rear end	P.D. only	Slush	North	Slowing or stopping	Passenger van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-May-01, Sun,15:48	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	
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-May-02, Mon,07:44	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Ran off road	0
2016-Jul-12, Tue,18:31	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2016-Aug-12, Fri,07:44	Clear	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Sep-24, Sat,18:24	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Oct-11, Tue,11:50	Clear	Rear end	P.D. only	Dry	North	Stopped	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Nov-22, Tue,15:49	Clear	Turning movement	Non-fatal injury	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-19, Mon,02:47	Freezing Rain	SMV other	Non-fatal injury	Ice	East	Going ahead	Automobile, station wagon	Skidding/sliding	0
2017-Jan-05, Thu,17:15	Clear	Rear end	P.D. only	Slush	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-Jan-05, Thu,18:32	Freezing Rain	Turning movement	P.D. only	Ice	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Municipal transit bus	Other motor vehicle	
2017-Jan-05, Thu,20:01	Freezing Rain	Rear end	P.D. only	Ice	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-19, Thu,16:16	Clear	Rear end	P.D. only	Wet	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-14, Tue,13:08	Snow	Rear end	P.D. only	Ice	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Apr-28, Fri,18:30	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-Jul-31, Mon,16:53	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-08, Fri,15:58	Clear	Rear end	Non-fatal injury	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	
2017-Oct-17, Tue,11:38	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Oct-30, Mon,10:55	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Nov-15, Wed,18:46	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Nov-18, Sat,11:50	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-09, Sat,22:30	Snow	SMV other	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
2018-Feb-06, Tue,08:45	Clear	Rear end	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-31, Sat,12:50	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-10, Thu,11:28	Rain	Angle	Non-fatal injury	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-28, Mon,11:59	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-24, Wed,20:38	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2018-Nov-20, Tue,18:34	Snow	Rear end	P.D. only	Wet	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-25, Fri,21:57	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-25, Sun,16:20	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Sep-25, Wed,08:37	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	
2019-Oct-08, Tue,22:02	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-25, Mon,14:36	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Dec-27, Fri,13:13	Freezing Rain	Rear end	Non-fatal injury	Ice	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	

Location: FALLOWFIELD RD @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 106

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-02, Fri,12:30	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jan-31, Sat,19:01	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-Feb-01, Sun,18:50	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Mar-13, Fri,17:12	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Mar-14, Sat,21:15	Snow	Rear end	P.D. only	Loose snow	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2015-Mar-23, Mon,07:14	Clear	Rear end	P.D. only	Dry	North	Turning right	Passenger van	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 106

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Apr-08, Wed,10:15	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2015-Apr-09, Thu,20:13	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-May-29, Fri,07:18	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2015-May-29, Fri,08:58	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-Jun-01, Mon,16:30	Clear	Angle	P.D. only	Dry	East	Turning right	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jun-04, Thu,18:10	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jul-05, Sun,08:52	Clear	Angle	Non-fatal injury	Dry	North	Turning right	Pick-up truck	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2015-Jul-22, Wed,22:34	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Aug-12, Wed,08:48	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	
2015-Aug-20, Thu,21:00	Rain	Sideswipe	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Pick-up truck	Other motor vehicle	
2015-Aug-27, Thu,19:03	Clear	Turning movement	P.D. only	Dry	East	Turning left	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, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 106

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Aug-27, Thu,20:15	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Sep-08, Tue,11:27	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	
2015-Sep-29, Tue,08:05	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Delivery van	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Nov-02, Mon,18:10	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-04, Wed,08:55	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2015-Nov-17, Tue,07:41	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Nov-17, Tue,20:48	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jan-16, Sat,15:55	Clear	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Passenger van	Other motor vehicle	
2016-Jan-26, Tue,16:32	Clear	Rear end	Non-fatal injury	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2016-Feb-16, Tue,20:50	Snow	Sideswipe	P.D. only	Loose snow	North	Turning left	Snow plow	Other motor vehicle	0
					North	Turning left	Municipal transit bus	Other motor vehicle	
2016-Feb-19, Fri,10:22	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Delivery van	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 106

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Mar-08, Tue,07:15	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2016-Mar-09, Wed,08:08	Clear	Rear end	P.D. only	Wet	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Mar-24, Thu,17:52	Freezing Rain	SMV other	P.D. only	Loose snow	West	Going ahead	Pick-up truck	Pole (sign, parking meter)	0
2016-May-06, Fri,16:46	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-May-19, Thu,18:53	Clear	Rear end	Non-fatal injury	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jun-24, Fri,23:03	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Aug-16, Tue,12:00	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	
2016-Sep-08, Thu,07:34	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Passenger van	Other motor vehicle	
2016-Nov-08, Tue,09:00	Clear	Rear end	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Passenger van	Other motor vehicle	
2016-Nov-11, Fri,17:59	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Nov-12, Sat,15:48	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-21, Mon,16:50	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 106

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Nov-22, Tue,00:25	Snow	Angle	P.D. only	Loose snow	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2016-Dec-22, Thu,08:27	Clear	Rear end	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-17, Tue,16:20	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Feb-01, Wed,12:54	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-10, Fri,17:02	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-02, Thu,13:40	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Apr-05, Wed,13:33	Clear	SMV other	P.D. only	Dry	North	Turning left	Automobile, station wagon	Pole (sign, parking meter)	0
2017-Apr-18, Tue,16:22	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Jul-05, Wed,15:44	Clear	Turning movement	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2017-Jul-15, Sat,22:00	Clear	Sideswipe	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Aug-08, Tue,08:30	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	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 106

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Aug-30, Wed,18:48	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Sep-16, Sat,10:02	Clear	Turning movement	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Making "U" turn	Passenger van	Other motor vehicle	
2017-Sep-27, Wed,18:15	Clear	Turning movement	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Oct-03, Tue,17:42	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	
2017-Nov-29, Wed,06:04	Clear	Sideswipe	Non-fatal injury	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Dec-02, Sat,17:11	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-Dec-11, Mon,18:26	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-18, Mon,08:11	Snow	Rear end	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-22, Fri,19:47	Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Truck - closed	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Jan-11, Thu,20:06	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-02, Fri,19:52	Snow	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 106

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-07, Wed,13:32	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Truck - tank	Other motor vehicle	
2018-Mar-14, Wed,16:30	Snow	Rear end	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-17, Sat,22:46	Clear	SMV other	P.D. only	Dry	North	Turning left	Automobile, station wagon	Pole (sign, parking meter)	0
2018-Apr-01, Sun,10:20	Clear	Rear end	P.D. only	Dry	North	Turning right	Unknown	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-May-22, Tue,11:15	Rain	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Jun-12, Tue,16:53	Clear	Rear end	P.D. only	Dry	North	Turning right	Unknown	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Jun-15, Fri,17:15	Clear	Rear end	P.D. only	Dry	South	Going ahead	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-20, Fri,16:35	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Passenger van	Other motor vehicle	
2018-Aug-12, Sun,19:32	Clear	Turning movement	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Aug-14, Tue,16:55	Rain	Rear end	P.D. only	Wet	West	Going ahead	Passenger van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-19, Wed,19:20	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-22, Sat,17:45	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	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 106

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Sep-30, Sun,11:53	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Oct-01, Mon,16:55	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-13, Sat,08:40	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-Oct-17, Wed,18:05	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-15, Thu,06:26	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	
2018-Nov-16, Fri,08:20	Snow	Other	P.D. only	Wet	North	Reversing	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-28, Wed,19:25	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-07, Fri,16:55	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-14, Fri,07:55	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	
2019-Feb-03, Sun,15:20	Snow	Angle	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Feb-07, Thu,06:55	Clear	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 106

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Mar-05, Tue,09:13	Clear	Sideswipe	P.D. only	Dry	South	Turning right	Truck - open	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Mar-07, Thu,07:15	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-18, Thu,21:21	Clear	SMV other	Non-fatal injury	Wet	North	Changing lanes	Automobile, station wagon	Curb	0
2019-Apr-26, Fri,16:50	Rain	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-May-10, Fri,11:55	Rain	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-13, Mon,13:35	Clear	Sideswipe	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-May-13, Mon,14:22	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	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-15, Wed,06:42	Fog, mist, smoke, dust	Rear end	P.D. only	Dry	North	Turning right	Motorcycle	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-May-27, Mon,16:35	Clear	Other	P.D. only	Dry	South	Reversing	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jun-11, Tue,18:05	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jul-02, Tue,17:02	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: FALLOWFIELD RD @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 106

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-13, Sat,12:45	Clear	Rear end	P.D. only	Dry	South	Turning right	Passenger van	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jul-17, Wed,20:30	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-31, Wed,20:01	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Aug-14, Wed,17:20	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-21, Wed,16:00	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-22, Thu,06:40	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	
2019-Oct-29, Tue,17:03	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Nov-22, Fri,18:59	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	
2019-Dec-11, Wed,10:29	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	
2019-Dec-20, Fri,08:25	Clear	Rear end	P.D. only	Dry	East	Stopped	Pick-up truck	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, 2015 **To:** December 31, 2019

Location: LEIKIN DR @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Oct-31, Tue,14:34	Clear	Angle	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Nov-02, Thu,09:04	Rain	SMV other	Non-fatal injury	Wet	East	Going ahead	Pick-up truck	Ran off road	0

Location: LEIKIN DR @ RCMP ACCESS/150 N OF BILL LEATHEM DR

Traffic Control: Traffic signal **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Dec-19, Wed,14:55	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: LONGFIELDS DR @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 42

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-09, Fri,12:15	Clear	Turning movement	P.D. only	Dry	South	Making "U" turn	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jan-13, Tue,12:34	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jan-26, Mon,06:54	Clear	Rear end	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Feb-08, Sun,13:59	Snow	SMV other	Non-fatal injury	Loose snow	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
2015-Feb-11, Wed,17:44	Snow	Rear end	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2015-Feb-13, Fri,08:16	Clear	Sideswipe	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: LONGFIELDS DR @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 42

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Apr-02, Thu,15:44	Clear	Angle	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-May-27, Wed,16:48	Clear	Turning movement	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Oct-22, Thu,18:18	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-19, Thu,08:20	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Jan-18, Mon,11:10	Clear	Angle	P.D. only	Slush	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Passenger van	Other motor vehicle	
2016-Mar-09, Wed,17:46	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2016-Oct-25, Tue,16:05	Rain	Rear end	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
					North	Turning left	Municipal transit bus	Other	
2017-Jan-13, Fri,17:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-07, Tue,16:42	Freezing Rain	SMV other	Non-fatal injury	Ice	West	Going ahead	Automobile, station wagon	Ran off road	0
2017-Feb-14, Tue,23:36	Snow	SMV other	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Pole (sign, parking meter)	0
2017-Feb-17, Fri,11:29	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	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: LONGFIELDS DR @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 42

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Mar-10, Fri,09:11	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-24, Fri,09:28	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-25, Sat,12:35	Clear	Rear end	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jun-30, Fri,16:07	Rain	Rear end	Non-fatal injury	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-27, Sun,12:02	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	
2017-Sep-27, Wed,15:05	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-30, Mon,11:50	Clear	Other	P.D. only	Wet	West	Reversing	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Nov-21, Tue,16:31	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Nov-24, Fri,16:29	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Making "U" turn	Pick-up truck	Other motor vehicle	
2017-Dec-15, Fri,19:44	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	
2017-Dec-25, Mon,13:30	Snow	SMV other	P.D. only	Packed snow	South	Turning right	Automobile, station wagon	Skidding/sliding	0

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: LONGFIELDS DR @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 42

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Mar-06, Tue,12:31	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-09, Fri,20:18	Snow	Sideswipe	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jul-14, Sat,16:29	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Municipal transit bus	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2018-Sep-28, Fri,07:43	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-16, Fri,18:27	Snow	Turning movement	Non-fatal injury	Packed snow	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-30, Fri,17:06	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-10, Thu,18:21	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	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-26, Tue,20:54	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2019-Apr-19, Fri,14:15	Rain	Rear end	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-May-08, Wed,03:32	Clear	SMV other	P.D. only	Dry	North	Turning left	Automobile, station wagon	Ran off road	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: LONGFIELDS DR @ WOODROFFE AVE

Traffic Control: Traffic signal **Total Collisions:** 42

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-12, Fri,12:51	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-21, Sat,06:40	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Sep-26, Thu,08:13	Rain	Sideswipe	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2019-Nov-29, Fri,17:38	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: PRINCE OF WALES DR @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 30

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Apr-06, Mon,17:09	Clear	Angle	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-May-07, Thu,11:59	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jun-16, Tue,11:59	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	
2015-Aug-25, Tue,09:41	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Truck - dump	Other motor vehicle	
2015-Sep-05, Sat,20:56	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: PRINCE OF WALES DR @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 30

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Sep-08, Tue,17:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Delivery van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Oct-25, Sun,14:38	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-28, Sat,16:09	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2015-Dec-14, Mon,19:00	Rain	Rear end	P.D. only	Wet	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Jan-08, Fri,16:59	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	
2016-Oct-21, Fri,16:37	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-22, Tue,17:05	Clear	Rear end	P.D. only	Ice	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Jan-20, Fri,14:50	Clear	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-06, Mon,22:55	Freezing Rain	SMV other	P.D. only	Ice	North	Turning left	Pick-up truck	Pole (utility, power)	0
2017-Apr-02, Sun,05:20	Fog, mist, smoke, dust	SMV other	P.D. only	Wet	South	Turning right	Automobile, station wagon	Ran off road	0
2017-Apr-04, Tue,14:43	Rain	Rear end	Non-fatal injury	Wet	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Apr-11, Tue,10:16	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: PRINCE OF WALES DR @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 30

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jun-30, Fri,17:10	Rain	Rear end	P.D. only	Wet	North	Turning left	Delivery van	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Jul-26, Wed,12:59	Clear	SMV other	P.D. only	Dry	North	Turning left	Truck - closed	Pole (utility, power)	0
2017-Aug-25, Fri,09:51	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Truck - open	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-31, Sat,15:57	Clear	Approaching	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jun-18, Mon,23:05	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-23, Sun,03:00	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2018-Nov-09, Fri,17:00	Snow	Sideswipe	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Truck - tank	Other motor vehicle	
2019-Apr-11, Thu,00:00	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Apr-18, Thu,10:53	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-05, Wed,07:03	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-02, Tue,23:45	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Unknown	Automobile, station wagon	Other motor vehicle	
2019-Sep-23, Mon,17:15	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	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: PRINCE OF WALES DR @ MERIVALE RD

Traffic Control: Traffic signal **Total Collisions:** 30

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-25, Mon,21:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Delivery van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

APPENDIX F

Excerpts from Relevant Traffic Studies

4. Demand Forecasting

4.1 Site Trip Generation – Phase 1

The proposed Phase 1 development will consist of an approximate 7,000 ft^2 (GFA) church. The appropriate trip generation rates for the proposed land use were obtained from the 9th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual, which are summarized in Table 2. Given the church land use does not generate high vehicle volumes during the weekdays, the Sunday peak hour trip generation rates are also provided.

Table 2: ITE Trip Generation Rates

Land Use	Data Source	Trip Rates		
		AM Peak	PM Peak	SUN Peak
Church	ITE 560	T = 0.56 (X)	T = 0.55(X); T = 0.34(X) + 5.24	T = 12.04 (X); T = 9.48(X) + 82.08
Notes:	*T = Average Vehicle Trip Ends* *X = 1000 ft^2 Gross Floor Area*			

Using the above noted trip generation rates for the weekday morning, afternoon and Sunday peak hours, and assuming minimal non-auto modes, the following Table 3 summarizes the Phase 1 site trip generation.

Table 3: Phase 1 Site Generated Vehicle Trip Generation

Land Use	Area	AM Peak (veh/h)			PM Peak (veh/h)			SUN Peak (veh/h)		
		In	Out	Total	In	Out	Total	In	Out	Total
Church	7,060 ft^2	2	2	4	3	5	8	73	76	149

As shown in Table 3, the resulting number of potential 'new' two-way vehicle trips generated by Phase 1 of the proposed development during the weekday peak hours is approximately 4 to 8 veh/h. As this amount of vehicle traffic is considered negligible, further weekday peak hour traffic analysis is not required. The projected vehicle traffic travelling to/from the proposed Phase 1 development on a Sunday during the church's peak hour is approximately 150 veh/h, which has little impact given it is off peak for the roadway network.

4.2 Site Trip Generation – Phase 2

As mentioned previously, Phase 2 of the development will consist of an approximate 4,000 ft^2 expansion of the church (total of 11,055 ft^2). As such, the increased GFA could result in an increase in vehicle trips generated by the site as there will be more seating in the church. The following Table 4 summarizes the Phase 2 site trip generation based on the above-noted vehicle trip generation rates and the expansion of the church GFA.

Table 4: Phase 2 Site Generated Vehicle Trip Generation

Land Use	Area	AM Peak (veh/h)			PM Peak (veh/h)			SUN Peak (veh/h)		
		In	Out	Total	In	Out	Total	In	Out	Total
Church	11,055 ft^2	3	3	6	4	5	9	91	96	187

As shown in Table 4, the total projected vehicle traffic travelling to/from the proposed Phase 2 development on a Sunday during the peak hour is approximately 190 veh/h. Similarly, this has very little impact to the roadway network.

4.3 Traffic Distribution and Assignment

The following assumed traffic distribution was based the site's local context and our knowledge of the surrounding area:

- 40% to/from the south;
- 30% to/from the west;
- 20% to/from the southeast; and
- 10% to/from the northeast.

The Phase 1 'new' site-generated Sunday peak hour vehicle trips assigned to the proposed driveway connections and to the study area network are illustrated as Figure 8.

Figure 8: 'New' Phase 1 Site-Generated Traffic Volumes

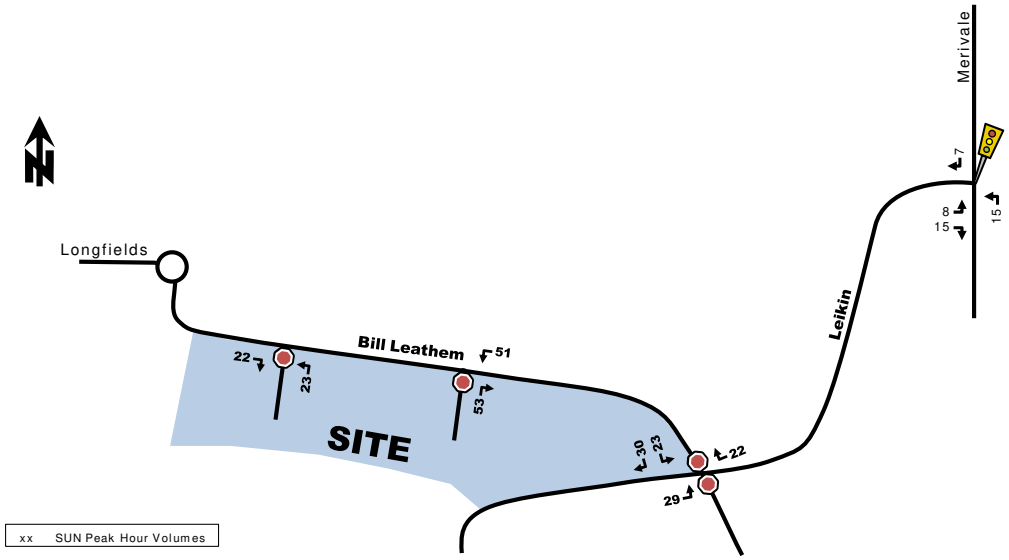
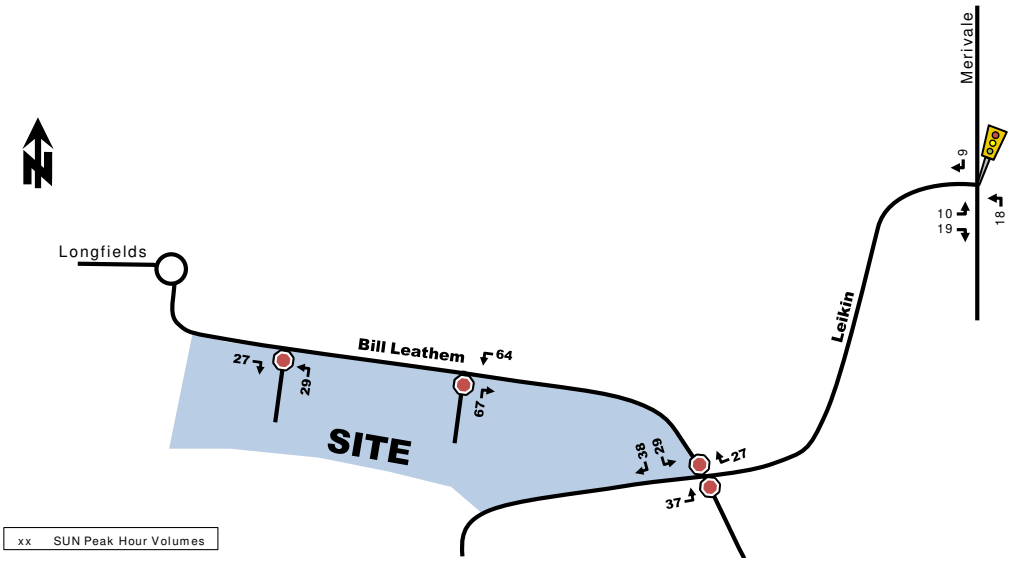


Figure 9 illustrates the proposed Phase 2 'new' site-generated Sunday peak hour vehicle trips assigned to the proposed driveway connections and to the study area network.

Figure 9: 'New' Phase 2 Site-Generated Traffic Volumes



1.0 SCREENING FORM

The following section describes the initial assessment of the proposal with respect to the Traffic Impact Assessment (TIA) Screening Form and will provide reasoning for potential triggers. The TIA screening form is attached in Appendix A.

1.1 Trips Generation Triggers

The volume of development-generated vehicular traffic was calculated in accordance with the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. The City of Ottawa TIA Guidelines (2017) recommends that when using ITE Trip Generation Manual, assume a 10% non-auto mode share and an average vehicle occupancy of 1.15. As such, a factor of 1.28 was applied to the site generated trips in order to estimate the total site generated person-trips.

Table 1.1.1 Illustrates the total person-trip generation for the AM and PM peak hour.

Table 1.1.1 ITE Development-Generated Trips

ITE Land Use	Unit of Measure	Quantity	Rate		AM Peak Hour			PM Peak Hour		
			AM	PM	In	Out	Total	In	Out	Total
Warehousing (Code 150)	Ksf	20	*	**	27	9	36	10	28	38

** Fitted Curve Equation: T=0.12(X) +25.32, Trips multiplied by 1.28 As per TIA Guidelines*

*** Fitted Curve Equation: T=0.12(X) +27.82, Trips multiplied by 1.28 As per TIA Guidelines*

It is anticipated due to the use of the proposed development that there will not be any pass-by trips associated with the proposed development. As such, the development is expected to generate 36 person-trips in the AM peak hour and 38 in the PM peak hour

1.2 Location Trigger

The development is neither located within a Design Priority Are (DPA) or a Transit-oriented Development (TOD) zone. The development also does not propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks. As such, the criteria for a location trigger has not been met.

1.3 Safety Trigger

The development includes two proposed driveway providing access to Bill Leathem Drive, both within 150 m from the roundabout to the north of the proposed development, connecting Longfields Drive and Bill Leathem Drive. As such, the criteria for a safety trigger is met.

APPENDIX G

Existing Signal Timing Plans

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

Intersection:	**Main:** Fallowfield	**Side:** Woodroffe	
Controller:	**ATC 3**	**TSD:**	**5531**
Author:	Matthew Anderson	**Date:**	02-Feb-2021

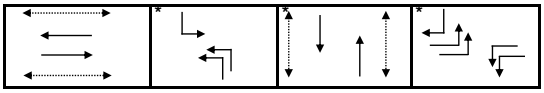
Existing Timing Plans†

	Plan								**Ped Minimum Time**		
	Off Peak	**Night**	**Weekend**	**AM**	**AM**	**AM**	**PM Peak**	**PM Rush**	***Walk***	***DW***	***A+R***
	2	4	5	11	31	32	23	25			
Cycle	FREE	FREE	FREE	FREE	150	150	FREE	FREE			
Offset	X	X	X	X	150	150	X	X			
EB Thru	max=39.8	max=39.8	max=39.8	max=39.8	55	60	max=39.8	max=36.8	7	26	4.6+2.2
WB Thru	max=39.8	max=39.8	max=39.8	max=39.8	40	40	max=39.8	max=36.8	7	26	4.6+2.2
NB Left (fp)	max=21.8	max=21.8	max=18.8	max=42.8	21	21	max=19.8	max=21.8	-	-	4.6+2.2
SB Left (fp)	max=16.8	max=21.8	max=18.8	max=32.8	12	12	max=16.8	max=16.8	-	-	4.6+2.2
NB Thru	max=36.8	max=36.8	max=36.8	max=85.8	66	60	max=36.8	max=66.8	7	23	4.6+2.2
SB Thru	max=36.8	max=36.8	max=36.8	max=36.8	37	37	max=71.8	max=91.8	7	23	4.6+2.2
NB Left (fp)	-	-	-	-	20	14	-	-	-	-	4.6+2.2
WB Left (fp)	max=21.8	max=20.8	max=17.8	max=32.8	17	18	max=36.8	max=36.8	-	-	4.6+2.2
EB Left (fp)	max=21.8	max=20.8	max=17.8	max=32.8	32	38	max=16.8	max=16.8	-	-	4.6+2.2
SB Right	max=21.8	max=20.8	max=17.8	max=32.8	32	38	max=16.8	max=16.8	-	-	4.6+2.2

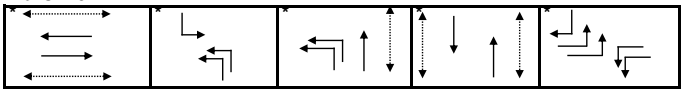
Notes: 1) For plans 31 and 32, if the east-west pedestrian movements are not actuated, the east-west thru movements will be forced off 18 seconds early.

Phasing Sequence‡

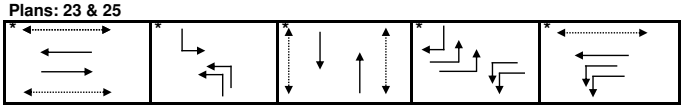
Plans: 4 & 5



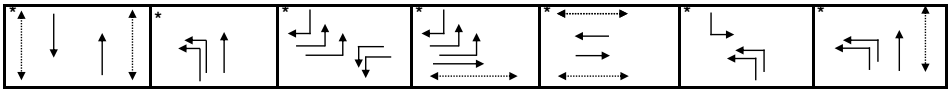
Plans: 2 & 11



Plans: 23 & 25



Plans: 31 & 32



Notes: 1) All plans have minimum recalls for north-south thru and east-west thru of 10 seconds green.

Schedule

Weekday

Time	Plan
0:10	4
6:30	11
7:00	31
7:40	32
8:30	31
9:00	11
9:30	2
15:00	23
16:00	25
17:30	23
18:30	2
22:30	4

Weekend

Time	Plan
0:10	4
8:30	5
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

Cost is $59.96 ($53.06 + HST)

Traffic Signal Timing

City of Ottawa, Public Works & Services Department

Traffic Operations Unit

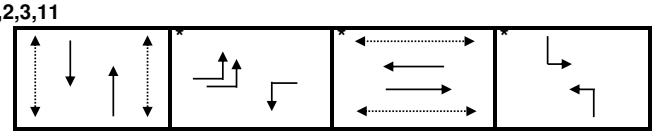
Intersection:	***Main:*** Woodroffe	***Side:*** Longfields	
Controller:	**ATC3**	**TSD:**	6543
Author:	Matthew Anderson	**Date:**	02-Feb-21

Existing Timing Plans†

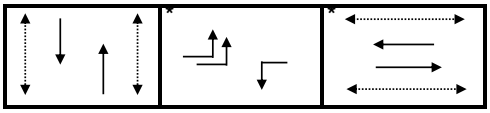
	Plan						**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**AM Heavy** 11	***Walk***	***DW***	***A+R***
Cycle	110	105	115	80	90	130			
Offset	80	88	92	X	72	86			
NB Thru	50	46	55	30	42	65	7	16	4.6+1.9
SB Thru	50	46	55	30	42	65	7	16	4.6+1.9
EB Left (fp)	15	14	15	17	15	20	-	-	3.7+2.8
WB Left (fp)	15	14	15	17	15	20	-	-	3.7+2.8
EB Thru	33	33	33	33	33	33	7	19	3.7+2.8
WB Thru	33	33	33	33	33	33	7	19	3.7+2.8
SB Left	12	12	12	-	-	12	-	-	4.6+1.9
NB Left	12	12	12	-	-	12	-	-	4.6+1.9

Phasing Sequence‡

Plans: 1,2,3,11



Plans: 4,5



Schedule

Weekday

Time	Plan
0:15	4
6:00	1
7:00	11
9:00	1
9:30	2
15:00	3
18:30	2
22:30	4

Weekend

Time	Plan
0:15	4
8:30	5
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

Pedestrian signal

Cost is $59.96 ($53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

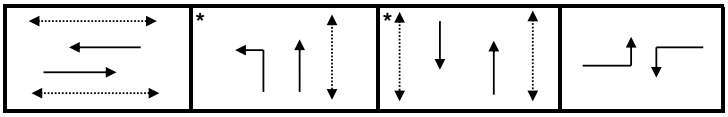
Intersection:	***Main:*** Fallowfield	***Side:***	Merivale
Controller:	**MS 3200**	**TSD:**	**5573**
Author:	Matthew Anderson	**Date:**	02-Feb-2021

Existing Timing Plans†

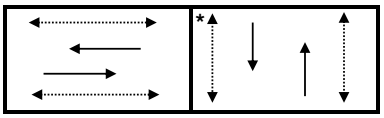
	Plan					**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**AM Heavy** 11	***Walk***	***DW***	***A+R***
Cycle	Free	Free	Free	Free	Free			
Offset	X	X	X	X	X			
EB Thru	max = 51.6	max = 36.6	max = 46.6	max = 31.6	max = 31.6	10	10	4.6+2.0
WB Thru	max = 26.6	max = 36.6	max = 61.6	max = 31.6	max = 31.6	10	10	4.6+2.0
NB Left	max = 11.6	max = 16.6	max = 11.6	-	max = 11.6	-	-	4.6+2.0
NB Thru	max = 51.4	max = 36.4	max = 66.4	max = 30.4	max = 61.4	7	10	4.6+1.8
SB Thru	max = 41.4	max = 36.4	max = 71.4	max = 30.4	max = 56.4	7	10	4.6+1.8
EB Left	max = 36.5	max = 16.5	max = 21.5	-	max = 46.5	-	-	4.6+1.9
WB Left	max = 11.5	max = 16.5	max = 21.5	-	max = 16.5	-	-	4.6+1.9

Phasing Sequence‡

Plan: 1, 2, 3 & 11



Plan: 4



Schedule

Weekday

Time	Plan
0:15	4
6:00	1
7:15	11
9:30	2
15:00	3
18:30	2
22:30	4

Weekend

Time	Plan
0:15	4
8:30	2
22:30	4

NOTES

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

Cost is $59.96 ($53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

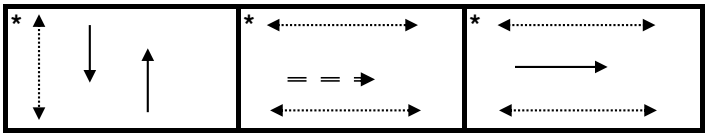
Intersection:	***Main:*** Merivale	***Side:***	Leikin
Controller:	**MS 3200**	**TSD:**	**6493**
Author:	Matthew Anderson	**Date:**	02-Feb-2021

Existing Timing Plans†

	Plan						**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**AM Heavy** 11	***Walk***	***DW***	***A+R***
Cycle	Free	Free	Free	Free	Free	Free			
Offset	X	X	X	X	X	X			
NB Thru	max = 46.5	max = 41.5	max = 46.5	max = 41.5	max = 41.5	max = 66.5	-	-	4.6+1.9
SB Thru	max = 46.5	max = 41.5	max = 46.5	max = 41.5	max = 41.5	max = 66.5	7	21	4.6+1.9
EB Bus	max = 8.0	max = 8.0	max = 8.0	max = 8.0	max = 8.0	max = 8.0	-	-	2.0
EB Thru	max = 30.1	max = 25.1	max = 30.1	max = 15.1	max = 25.1	max = 30.1	7	10	3.3+1.8

Phasing Sequence‡

Plan: All



Notes: 1) In all plans; the NS phases have a max recall

Schedule

Weekday

Time	Plan
0:15	4
5:30	1
7:45	11
9:30	2
15:00	3
18:30	2
22:00	4

Weekend

Time	Plan
0:10	4
8:30	5
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

═ ═ ► Transit signal

Cost is $59.96 ($53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

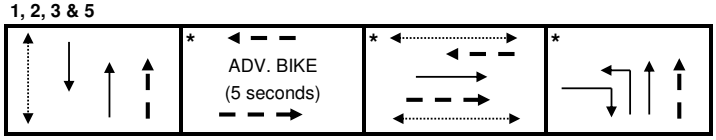
Intersection:	***Main:*** Prince of Wales	***Side:***	Merivale
Controller:	**MS 3200**	**TSD:**	**6494**
Author:	Matthew Anderson	**Date:**	02-Feb-2021

Existing Timing Plans†

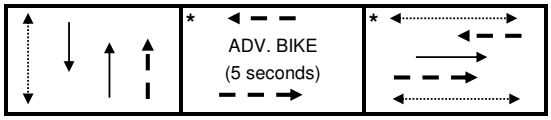
	Plan					**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	***Walk***	***DW***	***A+R***
Cycle	100	Free	120	Free	Free			
Offset	15	X	112	X	X			
NB Thru	72	max = 51.5	89	max = 56.5	max = 51.5	-	-	4.6+1.9
SB Thru	50	max = 51.5	75	max = 56.5	max = 51.5	7	19	4.6+1.9
EB Veh	28	max = 23.8	31	max = 21.8	max = 23.4	-	-	4.6+2.2
EW Bike/Ped	28	max = 23.8	31	max = 21.8	max = 23.4	7	14	4.6+2.2
NB Left	22	max = 16.4	14	-	max = 16.4	-	-	4.6+1.8
EB Right	22	max = 16.4	14	-	max = 16.4	-	-	4.6+1.8

Phasing Sequence‡

Plan: 1, 2, 3 & 5



Plan: 4



Notes: 1) The Advanced EW Bike phase will display only if the WB bike phase is actuated by demand. Otherwise the split timing is governed by EB vehicle demand and max times.

2) If the EW Ped crossings are actuated the max time will be extended to accommodate the higher crossing times.

Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	3
18:30	2
22:30	4

Weekend

Time	Plan
0:15	4
6:30	2
11:00	5
19:30	2
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

– – ► Bike signal

Cost is $59.96 ($53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

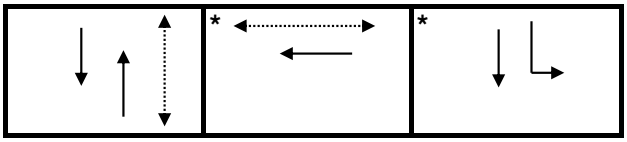
Intersection:	***Main:*** Leikin	***Side:***	RCMP / 150m N of Bill Leathem
Controller:	**MS 3200**	**TSD:**	**6754**
Author:	Matthew Anderson	**Date:**	02-Feb-2021

Existing Timing Plans†

	Plan					**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	***Walk***	***DW***	***A+R***
Cycle	Free	Free	Free	Free	Free			
Offset	-	-	-	-	-			
NB Thru	max=36.4	max=31.4	max=56.4	max=36.4	max=41.4	18	7	3.7+2.7
SB Thru	max=36.4	max=46.4	max=66.4	max=36.4	max=56.4	-	-	3.7+2.7
WB Thru	max=26.7	max=31.7	max=41.7	max=21.7	max=31.7	7	11	3.3+3.4
SB Left	max=36.4	max=21.4	max=16.4	-	max=21.4	-	-	3.7+2.7

Phasing Sequence‡

Plan:



Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	3
18:30	2
22:30	4

Weekend

Time	Plan
0:10	4
8:30	5
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

Cost is $59.96 ($53.06 + HST)

APPENDIX H

Signalization and Left Turn Lane Warrants

NOVATECH ENGINEERING CONSULTANTS LTD.

TRAFFIC SIGNAL JUSTIFICATION

LOCATION: Leikin Drive at Bill Leathem Drive

DATE: June 12, 2019

JUSTIFICATION 1 – Minimum Vehicular Volume

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				PERCENTAGE WARRANT								
APPROACH LANES	1		2 or MORE		HOUR ENDING								
FLOW CONDITION	FREE FLOW	RESTR FLOW	FREE FLOW	RESTR FLOW	8:00	9:00	10:00	12:30	13:30	16:00	17:00	18:00	TOTAL ACROSS
A.	480	720	600	900	**957**	**863**	**424**	**498**	**392**	**745**	**875**	**690**	
	(385)	(575)	(480)	(720)									
ALL APPROACHES	100% FULFILLED				✓	✓				✓	✓		400
	80% FULFILLED											✓	80
	ACTUAL % IF BELOW 80% VALUE						59%	69%	54%				183
												TOTAL DOWN:	663
												AVERAGE (TOTAL/8):	**83%**

	T Intersection Add 50%												
	180	255	180	255									
	(143)	(203)	(143)	(203)									
B.	120	170	120	170	**211**	**236**	**121**	**194**	**142**	**317**	**206**	**225**	TOTAL ACROSS
MINOR STREET BOTH APPROACHES	(95)	(135)	(95)	(135)									
	100% FULFILLED				✓	✓		✓		✓	✓	✓	600
	80% FULFILLED								✓				80
	ACTUAL % IF BELOW 80% VALUE						71%						71
												TOTAL DOWN:	751
												AVERAGE (TOTAL/8):	**94%**

JUSTIFICATION 2 – Delay to Cross Traffic

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				PERCENTAGE WARRANT								
APPROACH LANES	1		2 or MORE		HOUR ENDING								
FLOW CONDITION	FREE FLOW	RESTR FLOW	FREE FLOW	RESTR FLOW	8:00	9:00	10:00	12:30	13:30	16:00	17:00	18:00	TOTAL ACROSS
A.	480	720	600	900	**746**	**627**	**303**	**304**	**250**	**428**	**669**	**465**	
MAJOR STREET BOTH APPROACHES	(385)	(575)	(480)	(720)									
	100% FULFILLED				✓								100
	80% FULFILLED					✓					✓		160
	ACTUAL % IF BELOW 80% VALUE						42%	42%	35%	59%		65%	243
												TOTAL DOWN:	503
												AVERAGE (TOTAL/8):	**63%**

B.	50	75	50	75	**181**	**173**	**72**	**139**	**99**	**181**	**45**	**39**	TOTAL ACROSS
TRAFFIC CROSSING MAJOR STREET	(40)	(60)	(40)	(60)									
	100% FULFILLED				✓	✓		✓	✓	✓			500
	80% FULFILLED						✓						80
	ACTUAL % IF BELOW 80% VALUE										60%	52%	112
												TOTAL DOWN:	692
												AVERAGE (TOTAL/8):	**87%**

NOVATECH ENGINEERING CONSULTANTS LTD.

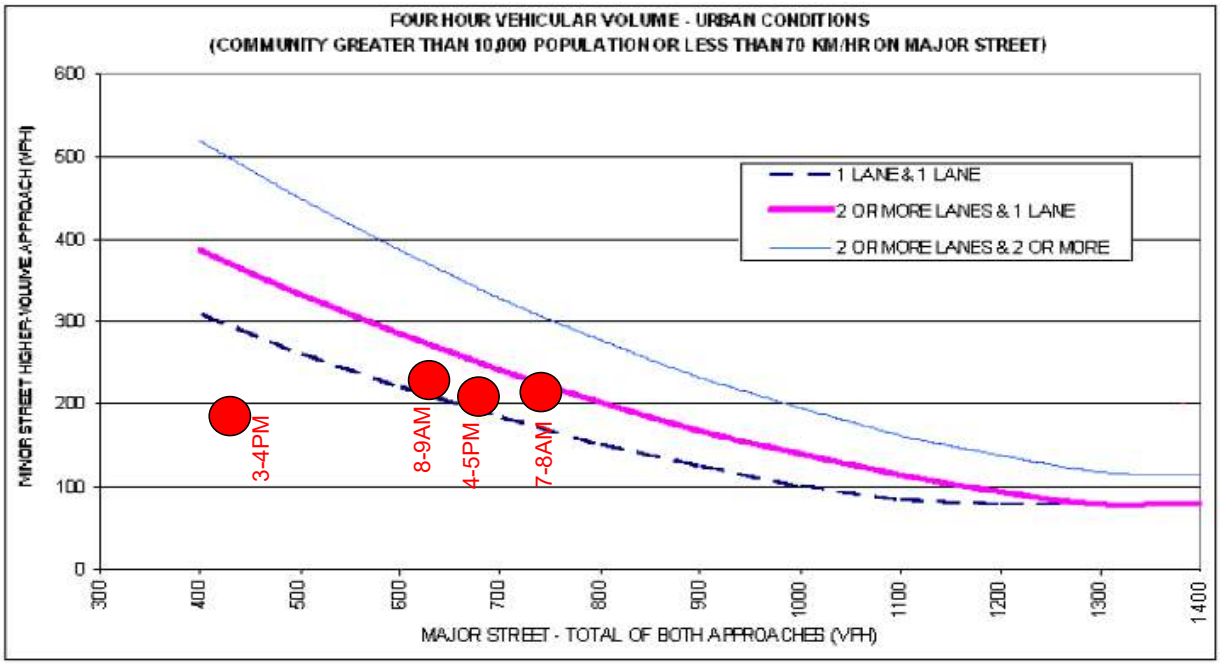
TRAFFIC SIGNAL JUSTIFICATION

LOCATION: Leikin Drive at Bill Leathem Drive

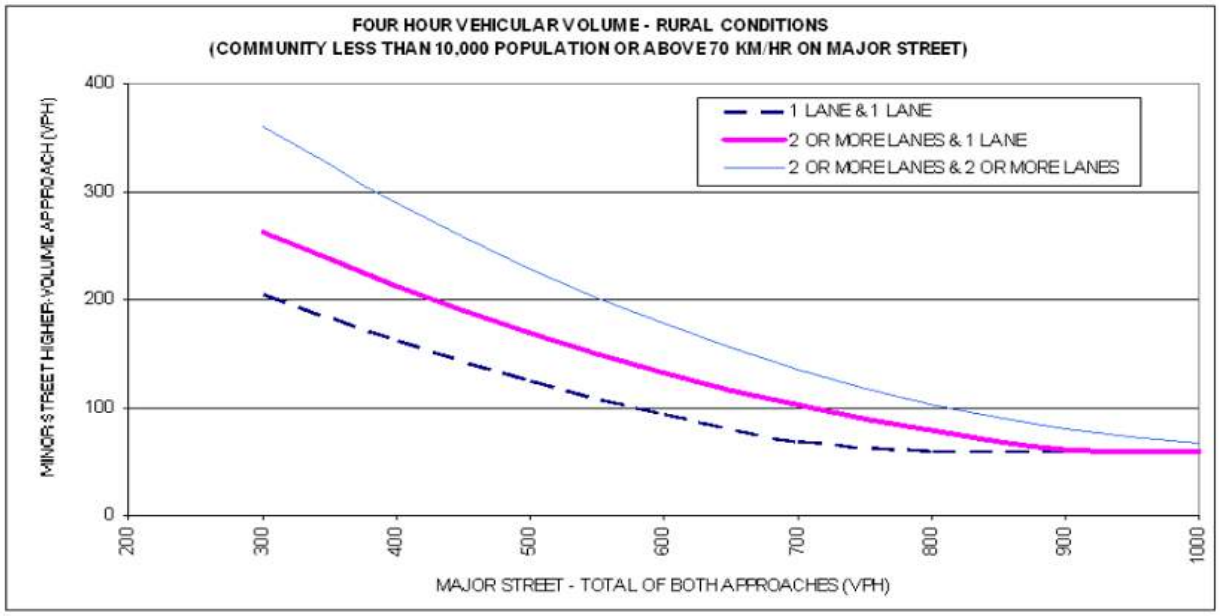
DATE: June 12, 2019

JUSTIFICATION 4 – Minimum Four-Hour Vehicle Volume

A. Restricted Flow



B. Free Flow



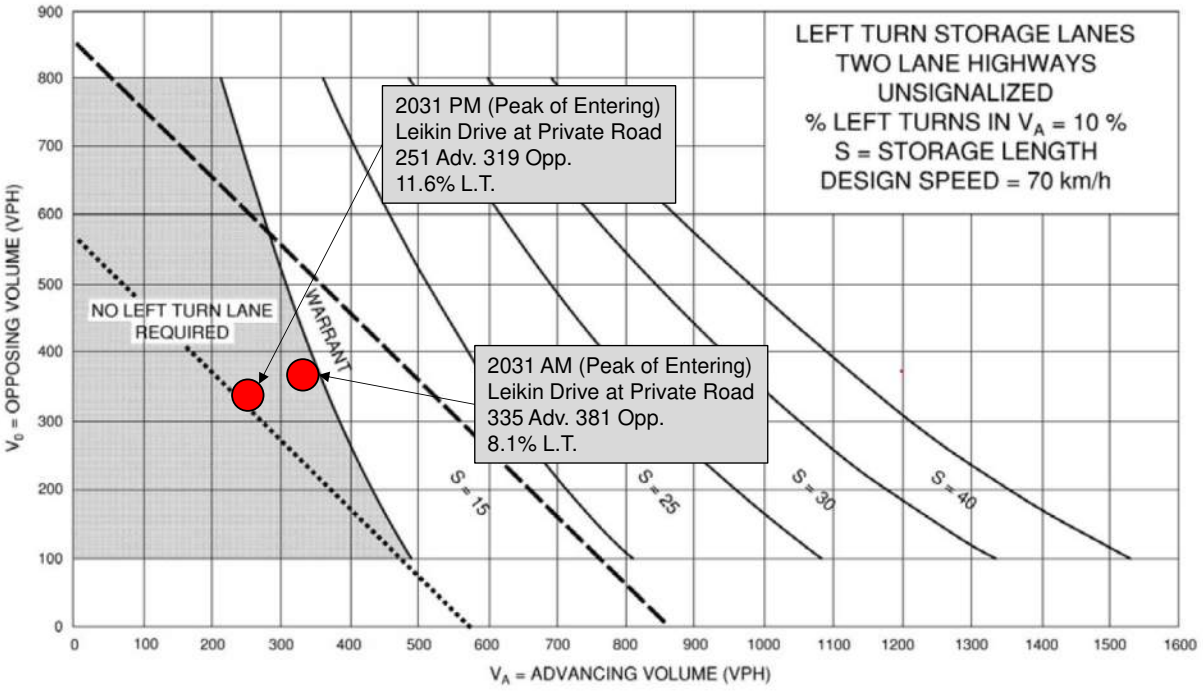
NOVATECH ENGINEERING CONSULTANTS LTD.

TRAFFIC SIGNAL JUSTIFICATION

LOCATION: Leikin Drive at Bill Leathem Drive

DATE: June 12, 2019

JUSTIFICATION	DESCRIPTION	Minimum Requirement		Compliance	
		Free Flow	Restricted Flow	Sectional %	Entire % (2)
		Operating Speed ≥ 70km/h	Operating Speed < 70 km/h		
1. MINIMUM VEHICULAR WARRANT	A. Vehicle volume, all approaches for each of the heaviest 8 hours of an average day, and	480 600 (2 or more lane approach)	720 900 (2 or more lane approach)	83%	83%
	B. Vehicle volume, along minor street, for each of the same 8 hours.	120 180 (tee intersection)	170 255 (tee intersection)	94%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volume, along major street for each for the heaviest 8 hours of an average day, and	480 600 (2 or more lane approach)	720 900 (2 or more lane approach)	63%	63%
	B (1). Combined vehicle and pedestrian volume crossing the major street for each of the same 8 hours	50	75	87%	
3. VOLUME/DELAY COMBINATION	The above Justifications (1 and 2) both satisfied to the extent of 80% or more	No			
4. MINIMUM FOUR HOUR VEHICLE VOLUME	Plotted point representing hourly volume for minor approach vs. major approach for four highest hours of an average day fall above the applicable curve	No			
5. COLLISION EXPERIENCE	A. Total reported accidents of types susceptible to correction by a traffic signal, per 12 month period averaged over a 36 month period, and	5			
	B. Adequate trial of less restrictive remedies, where satisfactory observance and enforcement have failed to reduce the number of accidents	No			
6. PEDESTRIAN VOLUME AND DELAY	A. Plotted point representing 8 hour pedestrian volume vs. 8 hour vehicular volume fall in justified zone, and	No			
	B. Plotted point representing 8 hour volume of pedestrian experiencing delays of 10 s or more vs. 8 hour pedestrian volume fall in justified zone	No			


LEFT TURN STORAGE LANES
TWO LANE HIGHWAYS
UNSIGNALIZED
% LEFT TURNS IN V_A = 10 %
S = STORAGE LENGTH
DESIGN SPEED = 70 km/h
2031 PM (Peak of Entering)
Leikin Drive at Private Road
251 Adv. 319 Opp.
11.6% L.T.
2031 AM (Peak of Entering)
Leikin Drive at Private Road
335 Adv. 381 Opp.
8.1% L.T.
NO LEFT TURN LANE REQUIRED
WARRANT
S = 15
S = 25
S = 30
S = 40
V_0 = OPPOSING VOLUME (VPH)
V_A = ADVANCING VOLUME (VPH)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600

City of Ottawa
Roundabout Initial Feasibility Screening Tool

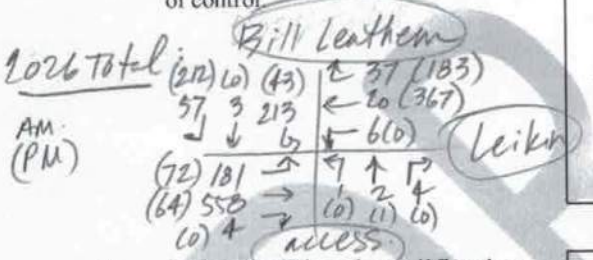
The intent of this screening tool is to provide a relatively quick assessment of the feasibility of a roundabout at a particular intersection in comparison to other appropriate forms of traffic control or road modifications including all-way stop control, traffic signals, auxiliary lanes, etc. The intended outcome of this tool is to provide enough information to assist staff in deciding whether or not to proceed with an Intersection Control Study to investigate the feasibility of a roundabout in more detail.

1 Project Name: South Merivale Business Park – Zoning

2 Intersection: Bill Leathem / Leikin.

3 Location and Description of Intersection:
Lane configuration, total or approach AADT, distance to nearby intersection(s), etc. Attach or sketch a diagram and include existing and/or horizon-year turning movements. If an existing intersection then indicate type of control.

- tee intersection; side street stop
- left turn lanes on main rd; single lane approach on minor
- AADT: Leikin 6,200 vpd.
  Bill Leathem 2,700 vpd.
- 200m south of Leikin/RCMP signal



4 What traditional modifications are proposed?
All-way stop control, traffic signals, auxiliary lanes, etc. Attach or sketch a diagram if necessary.

Signals.

5 What size of roundabout is being considered?
Describe, and attach a Roundabout Traffic Flow Worksheet.

40m

6 Why is a roundabout being considered?

failing LOS on SB approach in existing AM peak.

7 Are there contra-indications for a roundabout?

If "Yes" is indicated for one or more of the contra-indications then a roundabout may be problematic at the subject intersection. That is not to say that a roundabout is not possible, just that there may be difficulties or high costs.

yes.

No.	Contra-Indication	Outcome
1	Is there insufficient property at the intersection (i.e. less than 44 metres diameter if considering a single-lane roundabout, and less than 60 metres if considering a two-lane roundabout) or property constraints that would require demolition of adjacent structures?	Yes ☑ No ☐
2	Are there any instances where stopping sight distance (SSD) of a roundabout yield line may not be attainable (i.e. the intersection is on a crest vertical curve)?	Yes ☐ No ☑
3	Is there an existing uncontrolled approach with a grade in excess of 4 percent?	Yes ☐ No ☑
4	Is the intersection located within a coordinated signal system?	Yes ☐ No ☑
5	Is there a closely-spaced traffic signal or railway crossing that could not be controlled with a nearby roundabout?	Yes ☐ No ☑
6	Are significant differences in directional flows or any situations of sudden high demand expected?	Yes ☑ No ☐
7	Are there known visually-impaired pedestrians that cross this intersection?	Yes ☐ No ☑

8 Are there suitability factors for a roundabout?

If "Yes" is indicated for two or more of the suitability factors then a roundabout should be technically feasible at the subject intersection.

no.

No.	Suitability Factor	Outcome
1	Does the intersection currently experience an average collision frequency of more than 1.5 injury crashes per year, or a collision rate in excess of 1injury crash per 1 million vehicles entering (MVE)?	Yes ☐ No ☑
2	Has there been a fatal crash at the intersection in the last 10 years?	Yes ☐ No ☑
3	Are capacity problems currently being experienced, or expected in the future?	Yes ☑ No ☐
4	Are traffic signals warranted, or expected to be warranted in the future?	Yes ☐ No ☑
5	Does the intersection have more than 4 legs, or unusual geometry?	Yes ☐ No ☑
6	Will planned modifications to the intersection require that nearby structures be widened (i.e. to accommodate left-turn lanes)?	Yes ☐ No ☑
7	Is the intersection located at a transition between rural and urban environments (i.e. an urban boundary) such that a roundabout could act as a means of speed transition?	Yes ☐ No ☑

9	Conclusions/recommendation whether to proceed with an Intersection Control Study:	RAB not feasible.

APPENDIX I

Multi-Modal Level of Service (MMLOS)

Segment Level of Service

Pedestrian Level of Service (PLOS)

Side	Sidewalk Width	Boulevard Width	Motor Vehicle Traffic Volume (AADT)	Presence of On-Street Parking	Operating Speed	Segment PLOS
Merivale Road						
East	2	0	> 3,000 vpd	No	90 km/h	F
West	2	0	> 3,000 vpd	No	90 km/h	F
Longfields Drive						
North	2	0	> 3,000 vpd	No	80 km/h	F
South	2	0	> 3,000 vpd	No	80 km/h	F
Bill Leathem Drive						
North	None	0	< 3,000 vpd	No	60 km/h	F
South	2	0	< 3,000 vpd	No	60 km/h	C
Leikin Drive						
East	None	0	< 3,000 vpd	No	70 km/h	F
West	None	0	< 3,000 vpd	No	70 km/h	F
Paragon Avenue						
East	2	0	< 3,000 vpd	No	60 km/h	C
West	None	0	< 3,000 vpd	No	60 km/h	F
Private Road						
North	2	0	< 3,000 vpd	No	50 km/h	B
South	None	0	< 3,000 vpd	No	50 km/h	F

Bicycle Level of Service (BLOS)

Bike Route	Type of Bikeway	Travel Lanes	Centreline Markings	Operating Speed	Segment BLOS
Merivale Road					
Spine	Mixed Traffic	2	Yes	90 km/h	F
Longfields Drive					
Local	Mixed Traffic	2	Yes	80 km/h	F
Bill Leathem Drive					
Local	Mixed Traffic	2	Yes	60 km/h	F
Leikin Drive					
Local	Bike Lane	3	Yes	70 km/h	E
Paragon Avenue					
None	Mixed Traffic	2	None	60 km/h	F
Private Road					
None	Mixed Traffic	2	Yes	50 km/h	D

Transit Level of Service (TLOS)

Facility Type	Congestion, Friction, and Potential Incidents	Segment TLOS
Merivale Road		
Mixed Traffic Limited parking/driveway friction	Congestion, Low Friction, Medium Incident Type	D
Longfields Drive		
Mixed Traffic Limited parking/driveway friction	Congestion, Low Friction, Medium Incident Type	D
Bill Leathem Drive		
Mixed Traffic Limited parking/driveway friction	Congestion, Low Friction, Medium Incident Type	D
Leikin Drive		
Mixed Traffic Limited parking/driveway friction	Congestion, Low Friction, Medium Incident Type	D

Truck Level of Service (TkLOS)

Curb Lane Width	Travel Lanes	Segment TkLOS
Merivale Road		
3.75m	2 travel lanes	B
Longfields Drive		
3.5m	2 travel lanes	C
Bill Leathem Drive		
>3.7m	2 travel lanes	B
Leikin Drive		
>3.7m	2 travel lanes	B
Paragon Avenue		
>3.7m	2 travel lanes	B
Private Road		
>3.7m	2 travel lanes	B

Intersection MMLOS Pedestrian Level of Service

Criteria	North Approach		South Approach		East Approach		West Approach	
Woodroffe at Fallowfield								
PETSI SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	-10	No	-10	No	-10	No	-10
Lanes Crossed (3.5m Lane Width)	10 +		10 +		10 +		10 +	
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Protected	0	Protected	0	Protected	0	Protected	0
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Perm + Prot	-5
Right Turn on Red	RTOR Allowed	-3	N/A	0	RTOR Allowed	-3	N/A	0
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 10m to 15m	-6	> 10m to 15m	-6	> 25m	-9	> 10m to 15m	-6
Parallel Right Turn Channel	No Right Turn Channel	-4	Conventional with Receiving	-3	Conventional without Receiving	0	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	> 25m	-9	N/A	0	> 10m to 15m	-6
Perpendicular Right Turn Channel	N/A	0	Conventional without Receiving	0	N/A	0	Conventional with Receiving	-3
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		**-37**		**-42**		**-36**		**-43**
LOS		**F**		**F**		**F**		**F**
DELAY SCORE								
Cycle Length		187.2		187.2		150		150
Pedestrian Walk Time		24		4		30.2		7.2
DELAY SCORE		**71.1**		**89.6**		**47.8**		**68**
LOS		**F**		**F**		**E**		**F**
OVERALL		**F**		**F**		**F**		**F**

Sortation Facility –MMLOS Analysis – Existing

Criteria	North Approach		South Approach		East Approach		West Approach	
Woodroffe at Longfields								
PETSI SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	-10	No	-10	No	-10	No	39
Lanes Crossed (3.5m Lane Width)	10 +		10 +		10 +		7	
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Protected	0	Protected	0	Perm + Prot	-8	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	N/A	0	N/A	0	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 15m to 25m	-8	> 10m to 15m	-6	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	Smart Channel	2	No Right Turn Channel	-4	Smart Channel	2	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	> 15m to 25m	-8	> 15m to 25m	-8	N/A	0
Perpendicular Right Turn Channel	N/A	0	Smart Channel	2	Smart Channel	2	N/A	0
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		**-33**		**-40**		**-44**		**2**
LOS		**F**		**F**		**F**		**F**
DELAY SCORE								
Cycle Length		130		130		115		115
Pedestrian Walk Time		7.5		7.5		32.5		32.5
DELAY SCORE		**57.7**		**57.7**		**29.6**		**29.6**
LOS		**E**		**E**		**C**		**C**
OVERALL		**F**		**F**		**F**		**F**

Sortation Facility –MMLOS Analysis – Existing

Criteria	North Approach		South Approach		East Approach		West Approach	
Merivale at Fallowfield								
PETSI SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	55	No	72	No	72	No	72
Lanes Crossed (3.5m Lane Width)	6		5		5		5	
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Perm + Prot	-8	Perm + Prot	-8	Permissive	-8	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 10m to 15m	-6	> 10m to 15m	-6	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		**20**		**37**		**35**		**35**
LOS		**F**		**E**		**E**		**E**
DELAY SCORE								
Cycle Length		146.1		166.1		146.1		146.1
Pedestrian Walk Time		15		45.2		51.6		40
DELAY SCORE		**58.8**		**44**		**30.6**		**38.5**
LOS		**E**		**E**		**D**		**D**
OVERALL		**F**		**E**		**E**		**E**

Criteria	North Approach		South Approach		West Approach	
Merivale at Leikin						
PETSI SCORE						
CROSSING DISTANCE CONDITIONS						
Median > 2.4m in Width	No	72	No	88	No	-10
Lanes Crossed (3.5m Lane Width)	5		4		10 +	
SIGNAL PHASING AND TIMING						
Left Turn Conflict	Permissive	-8	No Left Turn/Prohibited	0	Permissive	-8
Right Turn Conflict	No Right Turn/Prohibited	0	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	N/A	0	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2
CORNER RADIUS						
Parallel Radius	No Right Turn	0	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	No Right Turn	0	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	No Right Turn	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	No Right Turn	0	N/A	0
CROSSING TREATMENT						
Treatment	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		**52**		**62**		**-47**
LOS		**D**		**C**		**F**
DELAY SCORE						
Cycle Length		96.6		96.6		76.6
Pedestrian Walk Time		15		15		19
DELAY SCORE		**34.5**		**34.5**		**21.7**
LOS		**D**		**D**		**C**
OVERALL		**D**		**D**		**F**

Criteria	North Approach		South Approach		West Approach	
Prince of Wales at Merivale						
PETSI SCORE						
CROSSING DISTANCE CONDITIONS						
Median > 2.4m in Width	No	-10	No	55	No	-10
Lanes Crossed (3.5m Lane Width)	10 +		6		10 +	
SIGNAL PHASING AND TIMING						
Left Turn Conflict	Permissive	-8	No Left Turn/Prohibited	0	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	Perm + Prot	-5	Permissive or Yield	-5
Right Turn on Red	N/A	0	N/A	0	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2
CORNER RADIUS						
Parallel Radius	No Right Turn	0	> 15m to 25m	-8	> 10m to 15m	-6
Parallel Right Turn Channel	No Right Turn	0	No Right Turn Channel	-4	Smart Channel	2
Perpendicular Radius	> 10m to 15m	-6	No Right Turn	0	N/A	0
Perpendicular Right Turn Channel	Smart Channel	2	No Right Turn	0	N/A	0
CROSSING TREATMENT						
Treatment	Zebra Stripe	-4	Zebra Stripe	-4	Zebra Stripe	-4
PETSI SCORE		**-33**		**32**		**-36**
LOS		**F**		**E**		**F**
DELAY SCORE						
Cycle Length		120		120		100
Pedestrian Walk Time		10.2		10.2		24.5
DELAY SCORE		**50.2**		**50.2**		**28.5**
LOS		**E**		**E**		**C**
OVERALL		**F**		**E**		**F**

Criteria	North Approach		South Approach		East Approach	
Leikin at RCMP						
PETSI SCORE						
CROSSING DISTANCE CONDITIONS						
Median > 2.4m in Width	No	72	N/A	N/A	Yes	0
Lanes Crossed (3.5m Lane Width)	5		N/A		10 +	
SIGNAL PHASING AND TIMING						
Left Turn Conflict	No Left Turn/Prohibited	0	N/A	N/A	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	N/A	N/A	Permissive or Yield	-5
Right Turn on Red	N/A	0	N/A	N/A	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	N/A	N/A	No	-2
CORNER RADIUS						
Parallel Radius	> 5m to 10m	-5	N/A	N/A	> 5m to 10m	-5
Parallel Right Turn Channel	No Right Turn Channel	-4	N/A	N/A	No Right Turn Channel	-4
Perpendicular Radius	No Right Turn	0	N/A	N/A	N/A	0
Perpendicular Right Turn Channel	No Right Turn	0	N/A	N/A	N/A	0
CROSSING TREATMENT						
Treatment	Standard	-7	N/A	N/A	Standard	-7
PETSI SCORE		**49**		**N/A**		**-34**
LOS		**D**		**N/A**		**F**
DELAY SCORE						
Cycle Length		99.5		99.5		99.5
Pedestrian Walk Time		9		N/A		23
DELAY SCORE		**41.2**		**N/A**		**29.4**
LOS		**E**		**N/A**		**C**
OVERALL		**E**		**N/A**		**F**

Bicycle Level of Service

Approach	Bikeway Facility Type	Criteria	Travel Lanes and/or Speed[1]	BLOS
Woodroffe at Fallowfield – F Overall				
North Approach	Pocket Bike Lane	Right turn lane characteristics	Right turn lane >50m; turning speed ≤30km/h	**D**
		Left turn accommodation	2 or more lanes crossed; ≥ 50km/hr	**F**
South Approach	Pocket Bike Lane	Right turn lane characteristics	Bike lane shifts to the left; Turning speed ≤25km/h	**D**
		Left turn accommodation	Dual left turn lanes	**F**
East Approach	Mixed Traffic Approach	Right turn lane characteristics	No impact to LTS	-
		Left turn accommodation	Dual left turn lanes	**F**
West Approach	Pocket Bike Lake	Right turn lane characteristics	Right turn lane >50m; turning speed ≤30km/h	**D**
		Left turn accommodation	Dual left turn lanes	**F**
Woodroffe at Longfields – F Overall				
North Approach	Pocket Bike Lane	Right turn lane characteristics	Right turn lane >50m; turning speed ≤30km/h	**D**
		Left turn accommodation	2 or more lanes crossed; ≥ 50km/hr	**F**
South Approach	Pocket Bike Lane	Right turn lane characteristics	Right turn lane >50m; turning speed ≤30km/h	**D**
		Left turn accommodation	2 or more lanes crossed; ≥ 50km/hr	**F**
East Approach	Pocket Bike Lane	Right turn lane characteristics	Right turn lane >50m; turning speed ≤30km/h	**D**
		Left turn accommodation	1 lane crossed; ≥ 60km/hr	**E**
West Approach	Bike Lane or higher order facility	Right turn lane characteristics	No impact to LTS	-
		Left turn accommodation	Dual left turn lanes	**F**
Merivale at Fallowfield – F Overall				
North Approach	Mixed Traffic Approach	Right turn lane characteristics	Right turn lane longer than 50m	**F**
		Left turn accommodation	1 lane crossed; ≥ 60km/hr	**F**
South Approach	Mixed Traffic Approach	Right turn lane characteristics	No impact to LTS	-
		Left turn accommodation	1 lane crossed; ≥ 60km/hr	**F**

Approach	Bikeway Facility Type	Criteria	Travel Lanes and/or Speed[1]	BLOS
East Approach	Mixed Traffic Approach	Right turn lane characteristics	No impact to LTS	-
		Left turn accommodation	1 lane crossed; ≥ 60km/hr	**F**
West Approach	Pocket Bike Lane	Right turn lane characteristics	Right turn lane >50m; turning speed ≤30km/h	**D**
		Left turn accommodation	1 lane crossed; ≥ 60km/hr	**E**
Merivale at Leikin – F Overall				
North Approach	Mixed Traffic Approach	Right turn lane characteristics	Right turn lane > 50m	F
South Approach	Mixed Traffic Approach	Left turn accommodation	1 lane crossed; ≥ 60km/hr	**F**
West Approach	Bike Lane or higher order facility	Right turn lane characteristics	No impact to LTS	-
		Left turn accommodation	No lane crossed; ≥ 60km/hr	C
Prince of Wales at Merivale – F Overall				
North Approach	Pocket Bike Lane	Right turn lane characteristics	Right turn lane ≤50m; turning speed ≤25km/h	B
South Approach	Mixed Traffic Approach	Left turn accommodation	1 lane crossed; ≥ 60km/hr	**F**
West Approach	Mixed Traffic Approach	Right turn lane characteristics	No impact to LTS	-
		Left turn accommodation	1 lane crossed; ≥ 60km/hr	**F**
Leikin at RCMP Driveway – E Overall				
North Approach	Bike Lane or higher order facility	Left turn accommodation	1 lane crossed; ≥ 60km/hr	**E**
South Approach	Pocket Bike Lane	Right turn lane characteristics	Right turn lane >50m; turning speed ≤30km/h	**D**
East Approach	Mixed Traffic Approach	Right turn lane characteristics	Right turn lane < 50m, turning speed ≤ 25km/h	**D**
		Left turn accommodation	1 lane crossed; <40km/hr	**B**

Transit Level of Service

Transit Movement	AM (PM) Delay	LOS
Woodroffe at Fallowfield – F Overall		
EB Right	8 (434)	**F**
NB Left	31 (232)	**F**
Woodroffe at Longfields – F Overall		
EB Through	43 (17)	**F**
EB Right	43 (17)	**F**
WB Through	54 (48)	**F**
WB Right	16 (12)	C
NB Left	12 (32)	**E**
NB Through	57 (20)	**F**
SB Left	39 (12)	**E**
SB Through	17 (74)	**F**
Merivale at Fallowfield – F Overall		
NB Through	63 (32)	F
SB Through	35 (70)	F
Merivale at Leikin– E Overall		
EB Left	39 (26)	E
SB Right	1 (1)	B
Leikin at RCMP Driveway – C Overall		
NB Through	16 (14)	C
SB Through	5 (13)	C

Truck Level of Service

Approach	Effective Corner Radius (m)	Number of Receiving Lanes on Departure from Intersection	LOS
Woodroffe at Fallowfield – B Overall			
North Approach	10-15m	2	B
South Approach	> 15m	2	A
East Approach	10-15m	2	B
West Approach	10-15m	2	B
Woodroffe at Longfields – C Overall			
North Approach	> 15m	1	**C**
South Approach	> 15m	1	**C**
East Approach	> 15m	2	A
West Approach	10-15m	2	B
Merivale at Fallowfield – E Overall			
North Approach	> 15m	1	**C**
South Approach	> 15m	1	**C**
East Approach	10-15m	1	**E**
West Approach	10-15m	1	**E**
Merivale at Leikin – C Overall			
North Approach	> 15m	2	A
South Approach	-	-	-
West Approach	> 15m	1	**C**
Prince of Wales at Merivale – E Overall			
North Approach	10-15m	1	**E**
South Approach	-	-	-
West Approach	> 15m	2	A
Leikin at RCMP Driveway – F Overall			
North Approach	-	-	-
South Approach	< 10m	2	**D**
East Approach	< 10m	1	**F**

APPENDIX J

Transportation Demand Management

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)*	N/A
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)*	N/A
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)*	N/A
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 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	✓

APPENDIX K

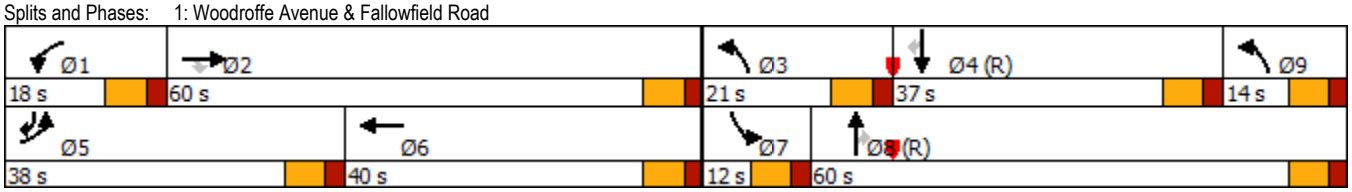
Traffic Analysis Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	568	551	240	112	115	28	534	1413	455	6	346	95
Future Volume (vph)	568	551	240	112	115	28	534	1413	455	6	346	95
Satd. Flow (prot)	3248	3316	1375	2955	3133	0	3216	3349	1513	1445	3221	1363
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3316	1375	2955	3133	0	3211	3349	1513	1445	3221	1345
Satd. Flow (RTOR)			267		18				347			176
Lane Group Flow (vph)	631	612	267	124	159	0	593	1570	506	7	384	106
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3 9	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	38.0	60.0	60.0	18.0	40.0			60.0	60.0	12.0	37.0	38.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8			6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	30.8	35.3	35.3	10.4	14.9		45.4	81.0	81.0	6.4	24.9	55.6
Actuated g/C Ratio	0.21	0.24	0.24	0.07	0.10		0.30	0.54	0.54	0.04	0.17	0.37
v/c Ratio	0.95	0.78	0.51	0.61	0.48		0.61	0.87	0.52	0.11	0.72	0.17
Control Delay	82.7	61.2	8.1	80.7	60.5		30.8	36.9	9.5	72.5	66.9	0.6
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	82.7	61.2	8.1	80.7	60.5		30.8	36.9	9.5	72.5	66.9	0.6
LOS	F	E	A	F	E		C	D	A	E	E	A
Approach Delay		60.8			69.3			30.4			52.9	
Approach LOS		E			E			C			D	
Queue Length 50th (m)	88.5	84.5	0.0	17.2	19.6		43.4	180.0	21.6	1.9	52.1	0.0
Queue Length 95th (m)	#120.6	97.6	20.5	27.4	29.1		#78.3	#302.6	66.6	6.7	67.1	0.0
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	675	1176	659	220	707		974	1807	976	61	648	616
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	0.52	0.41	0.56	0.22		0.61	0.87	0.52	0.11	0.59	0.17

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:SBT and 8:NBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 44.1 Intersection LOS: D
Intersection Capacity Utilization 93.5% 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: 1: Woodroffe Avenue & Fallowfield Road



Lane Group	Ø3	Ø9
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	9
Permitted Phases		
Total Split (s)	21.0	14.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
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		

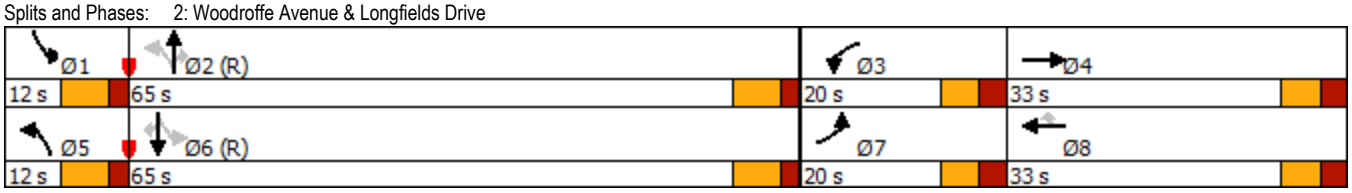
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	15	45	132	36	1353	50	154	399	111
Future Volume (vph)	372	89	82	15	45	132	36	1353	50	154	399	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.495			0.065		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	785	3349	1479	112	3221	1393
Satd. Flow (RTOR)		32				138			138			138
Lane Group Flow (vph)	413	190	0	17	50	147	40	1503	56	171	443	123
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	20.0	33.0		20.0	33.0	33.0	12.0	65.0	65.0	12.0	65.0	65.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	13.5	28.5		7.0	14.4	14.4	65.2	58.9	58.9	81.3	72.2	72.2
Actuated g/C Ratio	0.10	0.22		0.05	0.11	0.11	0.50	0.45	0.45	0.63	0.56	0.56
v/c Ratio	1.23	0.52		0.20	0.27	0.51	0.09	0.99	0.08	0.63	0.25	0.15
Control Delay	172.7	43.1		63.7	54.1	15.5	12.1	56.5	0.2	38.8	17.0	2.8
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	172.7	43.1		63.7	54.1	15.5	12.1	56.5	0.2	38.8	17.0	2.8
LOS	F	D		E	D	B	B	E	A	D	B	A
Approach Delay		131.9			28.3			53.4			19.7	
Approach LOS		F			C			D			B	
Queue Length 50th (m)	~61.7	32.5		3.9	11.4	2.0	3.0	177.5	0.0	22.3	26.3	0.0
Queue Length 95th (m)	#91.2	54.1		11.1	20.3	18.1	9.4	#232.5	0.0	#82.8	45.7	7.9
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	337	375		164	339	413	429	1517	745	272	1788	834
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	1.23	0.51		0.10	0.15	0.36	0.09	0.99	0.08	0.63	0.25	0.15

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 86 (66%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 58.8 Intersection LOS: E
Intersection Capacity Utilization 82.7% ICU Level of Service E
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: 2: Woodroffe Avenue & Longfields Drive

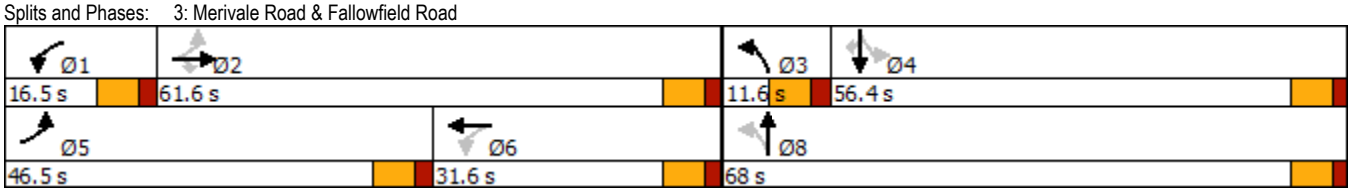


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	617	381	33	147	147	4	18	545	19	0	120	49
Future Volume (vph)	617	381	33	147	147	4	18	545	19	0	120	49
Satd. Flow (prot)	1658	1762	1427	1658	1690	0	1691	1736	0	1780	1618	1327
Flt Permitted	0.410			0.515			0.574					
Satd. Flow (perm)	715	1762	1427	899	1690	0	1022	1736	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			1				173
Lane Group Flow (vph)	686	423	37	163	167	0	20	627	0	0	133	54
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	46.5	61.6	61.6	16.5	31.6		11.6	68.0		56.4	56.4	56.4
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	71.9	55.6	55.6	34.8	25.1		52.9	53.1			46.4	46.4
Actuated g/C Ratio	0.52	0.40	0.40	0.25	0.18		0.38	0.39			0.34	0.34
v/c Ratio	1.06	0.60	0.06	0.58	0.54		0.05	0.94			0.24	0.10
Control Delay	81.2	38.3	0.2	35.7	60.1		25.6	63.2			35.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	81.2	38.3	0.2	35.7	60.1		25.6	63.2			35.2	0.3
LOS	F	D	A	D	E		C	E			D	A
Approach Delay		62.7			48.0			62.1			25.1	
Approach LOS		E			D			E			C	
Queue Length 50th (m)	~153.1	86.4	0.0	22.2	39.3		3.1	149.6			25.4	0.0
Queue Length 95th (m)	#237.2	126.2	0.0	37.4	64.2		8.1	#211.0			40.9	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	647	710	648	284	308		416	779			588	592
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	1.06	0.60	0.06	0.57	0.54		0.05	0.80			0.23	0.09

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 137.9
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 57.4 Intersection LOS: E
Intersection Capacity Utilization 92.2% 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.

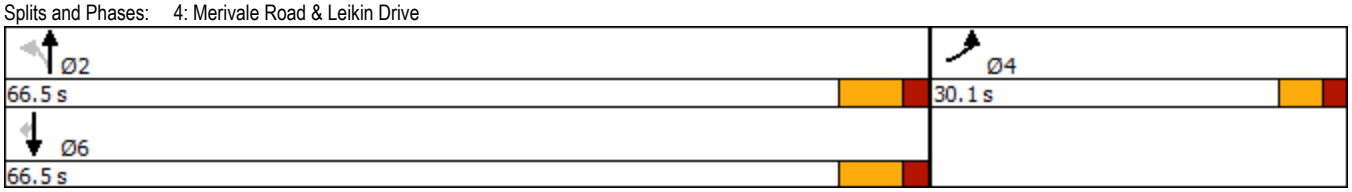
Splits and Phases: 3: Merivale Road & Fallowfield Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	304	4	0	354	63	227
Future Volume (vph)	304	4	0	354	63	227
Satd. Flow (prot)	3252	0	1728	1745	1424	1469
Flt Permitted	0.953					
Satd. Flow (perm)	3252	0	1728	1745	1424	1469
Satd. Flow (RTOR)	1					252
Lane Group Flow (vph)	342	0	0	393	70	252
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Total Split (s)	30.1		66.5	66.5	66.5	66.5
Total Lost Time (s)	5.1		6.5	6.5	6.5	6.5
Act Effct Green (s)	14.1			60.1	60.1	60.1
Actuated g/C Ratio	0.16			0.70	0.70	0.70
v/c Ratio	0.64			0.32	0.07	0.23
Control Delay	39.0			6.2	4.9	1.3
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	39.0			6.2	4.9	1.3
LOS	D			A	A	A
Approach Delay	39.0			6.2	2.0	
Approach LOS	D			A	A	
Queue Length 50th (m)	25.0			19.5	2.8	0.0
Queue Length 95th (m)	37.0			36.5	7.3	6.3
Internal Link Dist (m)	50.7			445.8	100.5	
Turn Bay Length (m)						85.0
Base Capacity (vph)	949			1221	996	1103
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	0.36			0.32	0.07	0.23

Intersection Summary	
Cycle Length: 96.6	
Actuated Cycle Length: 85.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 15.6	Intersection LOS: B
Intersection Capacity Utilization 38.6%	ICU Level of Service A
Analysis Period (min) 15	

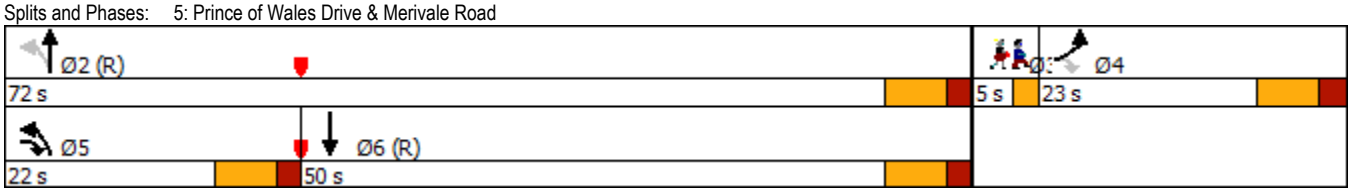
Splits and Phases: 4: Merivale Road & Leikin Drive



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	10	83	449	918	259	38	
Future Volume (vph)	10	83	449	918	259	38	
Satd. Flow (prot)	1691	1261	1642	1745	3118	0	
Flt Permitted	0.950		0.492				
Satd. Flow (perm)	1691	1261	850	1745	3118	0	
Satd. Flow (RTOR)		92			20		
Lane Group Flow (vph)	11	92	499	1020	330	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	23.0	22.0	22.0	72.0	50.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	10.0	30.6	76.2	77.4	53.5		
Actuated g/C Ratio	0.10	0.31	0.76	0.77	0.54		
v/c Ratio	0.07	0.20	0.64	0.76	0.20		
Control Delay	41.9	5.6	9.4	13.5	14.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	41.9	5.6	9.4	13.5	14.3		
LOS	D	A	A	B	B		
Approach Delay	9.5			12.2	14.3		
Approach LOS	A			B	B		
Queue Length 50th (m)	1.8	0.0	31.0	106.6	16.3		
Queue Length 95th (m)	6.7	8.7	46.1	167.7	26.4		
Internal Link Dist (m)	226.4			296.0	233.3		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	273	462	791	1350	1676		
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	0.04	0.20	0.63	0.76	0.20		

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 15 (15%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 12.4	Intersection LOS: B
Intersection Capacity Utilization 70.4%	ICU Level of Service C
Analysis Period (min) 15	

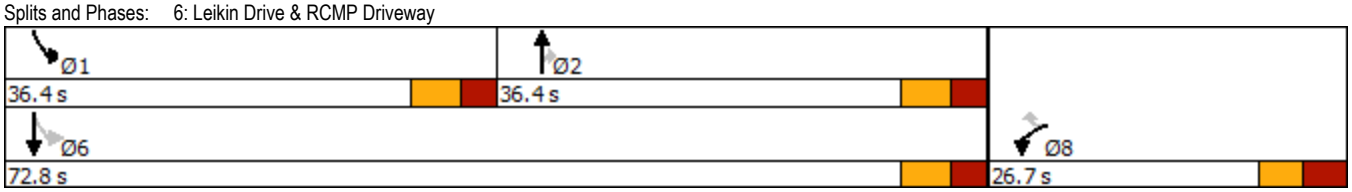
Splits and Phases: 5: Prince of Wales Drive & Merivale Road

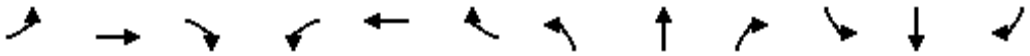


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	17	315	548	253	51
Future Volume (vph)	15	17	315	548	253	51
Satd. Flow (prot)	1691	1427	1728	1513	1691	1508
Flt Permitted	0.950				0.429	
Satd. Flow (perm)	1691	1325	1728	1468	761	1508
Satd. Flow (RTOR)		19		609		
Lane Group Flow (vph)	17	19	350	609	281	57
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Total Split (s)	26.7	26.7	36.4	36.4	36.4	72.8
Total Lost Time (s)	6.7	6.7	6.4	6.4	6.4	6.4
Act Effct Green (s)	11.7	11.7	31.4	31.4	47.3	50.7
Actuated g/C Ratio	0.18	0.18	0.49	0.49	0.74	0.79
v/c Ratio	0.05	0.07	0.41	0.59	0.40	0.05
Control Delay	26.5	13.2	16.4	4.5	6.4	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	13.2	16.4	4.5	6.4	4.7
LOS	C	B	B	A	A	A
Approach Delay	19.5		8.8			6.2
Approach LOS	B		A			A
Queue Length 50th (m)	1.8	0.0	28.7	0.0	11.2	2.0
Queue Length 95th (m)	6.6	4.7	63.9	20.3	27.0	6.7
Internal Link Dist (m)	69.4		182.1			276.7
Turn Bay Length (m)					200.0	
Base Capacity (vph)	554	447	850	1031	1020	1416
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.04	0.41	0.59	0.28	0.04

Intersection Summary	
Cycle Length: 99.5	
Actuated Cycle Length: 63.9	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 8.4	Intersection LOS: A
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Leikin Drive & RCMP Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	558	4	6	20	37	1	2	4	213	3	32
Future Volume (Veh/h)	151	558	4	6	20	37	1	2	4	213	3	32
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	168	620	4	7	22	41	1	2	4	237	3	36
Pedestrians								5				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					206							
pX, platoon unblocked												
vC, conflicting volume	63			629			1036	1040	627	1018	1022	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	63			629			1036	1040	627	1018	1022	42
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			99			99	99	99	0	99	97
cM capacity (veh/h)	1521			948			182	204	483	193	208	1034

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	168	624	7	63	7	276
Volume Left	168	0	7	0	1	237
Volume Right	0	4	0	41	4	36
cSH	1521	1700	948	1700	297	216
Volume to Capacity	0.11	0.37	0.01	0.04	0.02	1.28
Queue Length 95th (m)	2.6	0.0	0.2	0.0	0.5	102.2
Control Delay (s)	7.7	0.0	8.8	0.0	17.4	200.7
Lane LOS	A		A		C	F
Approach Delay (s)	1.6		0.9		17.4	200.7
Approach LOS					C	F

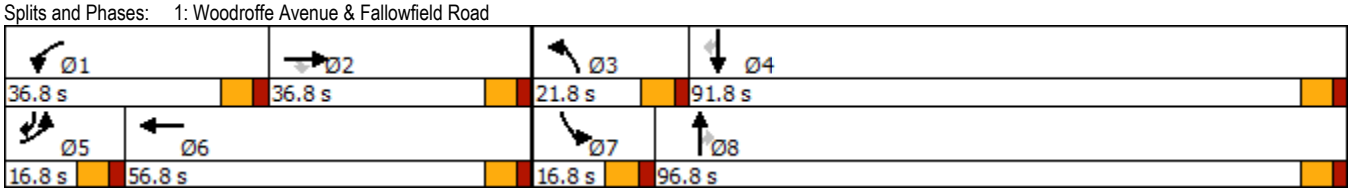
Intersection Summary				
Average Delay	49.7			
Intersection Capacity Utilization	59.3%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	205	605	476	450	10	305	611	201	14	1356	518
Future Volume (vph)	169	205	605	476	450	10	305	611	201	14	1356	518
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			141		1				223			101
Lane Group Flow (vph)	188	228	672	529	511	0	339	679	223	16	1507	576
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	16.8	36.8	36.8	36.8	56.8		21.8	96.8	96.8	16.8	91.8	16.8
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	10.0	30.0	30.0	30.0	50.0		15.0	97.7	97.7	7.3	85.0	101.8
Actuated g/C Ratio	0.05	0.16	0.16	0.16	0.27		0.08	0.52	0.52	0.04	0.45	0.54
v/c Ratio	1.10	0.44	1.88	1.01	0.58		1.33	0.39	0.26	0.24	0.99	0.68
Control Delay	173.8	74.0	433.6	117.0	62.4		232.3	28.6	3.6	95.2	71.0	29.5
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	173.8	74.0	433.6	117.0	62.4		232.3	28.6	3.6	95.2	71.0	29.5
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		313.4			90.2			79.7			59.8	
Approach LOS		F			F			E			E	
Queue Length 50th (m)	~37.5	37.9	~310.5	~96.3	80.9		~77.6	77.1	0.0	5.5	269.8	118.0
Queue Length 95th (m)	#63.2	51.7	#383.2	#133.4	99.5		#109.2	94.4	14.0	14.0	#317.9	160.0
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	171	521	358	525	886		255	1748	846	90	1520	852
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	1.10	0.44	1.88	1.01	0.58		1.33	0.39	0.26	0.18	0.99	0.68

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.88
Intersection Signal Delay: 120.5 Intersection LOS: F
Intersection Capacity Utilization 110.4% 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: 1: Woodroffe Avenue & Fallowfield Road

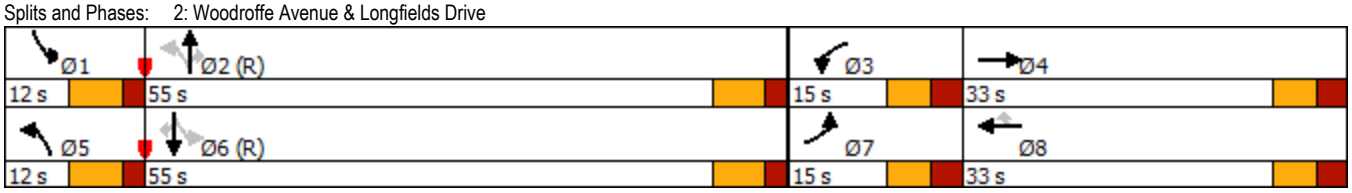


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	55	55	144	89	761	39	103	1680	223
Future Volume (vph)	155	17	70	55	55	144	89	761	39	103	1680	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.068			0.266		
Satd. Flow (perm)	3216	1528	0	1691	1780	1464	118	3316	1513	473	3349	1472
Satd. Flow (RTOR)		78				160			157			248
Lane Group Flow (vph)	172	97	0	61	61	160	99	846	43	114	1867	248
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	15.0	33.0		15.0	33.0	33.0	12.0	55.0	55.0	12.0	55.0	55.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	8.5	16.4		7.9	13.4	13.4	67.4	59.8	59.8	66.9	59.5	59.5
Actuated g/C Ratio	0.07	0.14		0.07	0.12	0.12	0.59	0.52	0.52	0.58	0.52	0.52
v/c Ratio	0.73	0.34		0.53	0.30	0.51	0.58	0.49	0.05	0.32	1.08	0.28
Control Delay	70.3	16.8		68.5	48.2	12.4	31.6	20.0	0.1	12.3	74.1	3.2
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	70.3	16.8		68.5	48.2	12.4	31.6	20.0	0.1	12.3	74.1	3.2
LOS	E	B		E	D	B	C	C	A	B	E	A
Approach Delay		51.0			32.3			20.3			63.0	
Approach LOS		D			C			C			E	
Queue Length 50th (m)	18.2	3.7		12.4	12.2	0.0	6.6	54.3	0.0	7.6	~219.1	0.0
Queue Length 95th (m)	#32.3	15.6		25.2	20.8	15.1	#34.2	89.0	0.0	20.1	#302.9	13.5
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	237	412		124	410	460	170	1723	861	353	1732	881
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	0.73	0.24		0.49	0.15	0.35	0.58	0.49	0.05	0.32	1.08	0.28

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 115
Offset: 92 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 48.7 Intersection LOS: D
Intersection Capacity Utilization 81.8% ICU Level of Service D
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: 2: Woodroffe Avenue & Longfields Drive

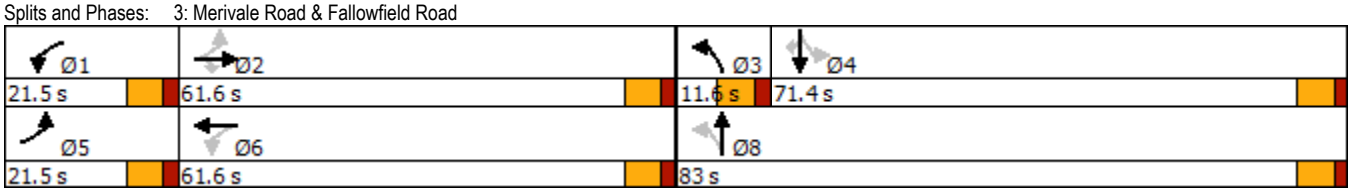


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	265	36	34	628	3	45	197	93	5	528	271
Future Volume (vph)	118	265	36	34	628	3	45	197	93	5	528	271
Satd. Flow (prot)	1496	1745	1469	1691	1778	0	1551	1597	0	1691	1762	1498
Flt Permitted	0.063			0.551			0.087			0.534		
Satd. Flow (perm)	99	1745	1469	981	1778	0	142	1597	0	951	1762	1498
Satd. Flow (RTOR)			108					19				162
Lane Group Flow (vph)	131	294	40	38	701	0	50	322	0	6	587	301
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	21.5	61.6	61.6	21.5	61.6		11.6	83.0		71.4	71.4	71.4
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.5	65.6	65.6	63.3	55.7		63.5	63.7		54.8	54.8	54.8
Actuated g/C Ratio	0.50	0.43	0.43	0.41	0.36		0.41	0.42		0.36	0.36	0.36
v/c Ratio	0.74	0.39	0.06	0.09	1.09		0.48	0.48		0.02	0.93	0.47
Control Delay	61.7	36.7	0.2	24.8	107.0		40.8	32.3		31.6	70.2	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	61.7	36.7	0.2	24.8	107.0		40.8	32.3		31.6	70.2	19.0
LOS	E	D	A	C	F		D	C		C	E	B
Approach Delay		40.6			102.8			33.5			52.7	
Approach LOS		D			F			C			D	
Queue Length 50th (m)	26.0	63.4	0.0	5.9	~242.1		8.4	61.4		1.1	162.8	29.8
Queue Length 95th (m)	#58.8	95.2	0.0	13.1	#327.7		16.3	86.0		4.4	#216.2	54.8
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	187	746	689	524	646		105	817		408	756	735
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	0.70	0.39	0.06	0.07	1.09		0.48	0.39		0.01	0.78	0.41

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 153.4
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 62.5 Intersection LOS: E
Intersection Capacity Utilization 97.2% 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.

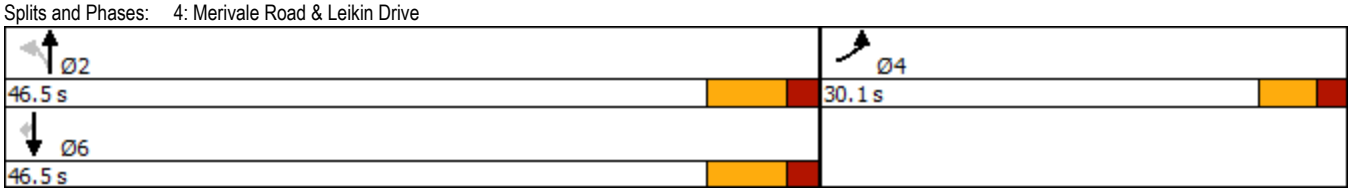
Splits and Phases: 3: Merivale Road & Fallowfield Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	220	2	1	173	437	212
Future Volume (vph)	220	2	1	173	437	212
Satd. Flow (prot)	3184	0	1271	1648	1762	1498
Flt Permitted	0.953		0.465			
Satd. Flow (perm)	3184	0	622	1648	1762	1498
Satd. Flow (RTOR)	1					236
Lane Group Flow (vph)	246	0	1	192	486	236
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Total Split (s)	30.1		46.5	46.5	46.5	46.5
Total Lost Time (s)	5.1		6.5	6.5	6.5	6.5
Act Effct Green (s)	10.8		40.0	40.0	40.0	40.0
Actuated g/C Ratio	0.17		0.64	0.64	0.64	0.64
v/c Ratio	0.45		0.00	0.18	0.43	0.23
Control Delay	25.8		5.0	5.3	7.2	1.4
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	25.8		5.0	5.3	7.2	1.4
LOS	C		A	A	A	A
Approach Delay	25.8			5.3	5.3	
Approach LOS	C			A	A	
Queue Length 50th (m)	12.1		0.0	6.6	20.4	0.0
Queue Length 95th (m)	20.5		0.4	14.7	40.1	5.9
Internal Link Dist (m)	51.0			445.8	100.5	
Turn Bay Length (m)			100.0			85.0
Base Capacity (vph)	1276		398	1057	1130	1045
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	0.19		0.00	0.18	0.43	0.23

Intersection Summary	
Cycle Length: 76.6	
Actuated Cycle Length: 62.4	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 42.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Merivale Road & Leikin Drive

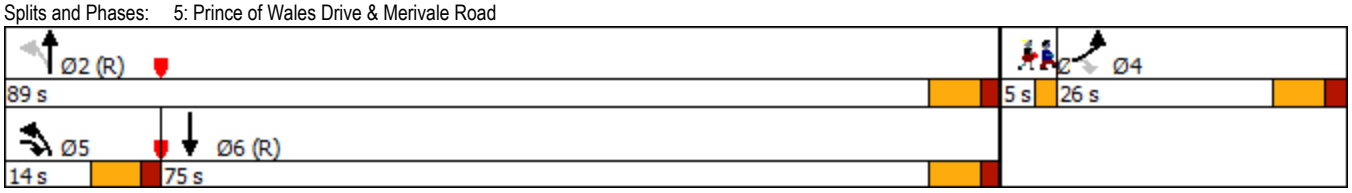


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	30	505	165	334	906	16	
Future Volume (vph)	30	505	165	334	906	16	
Satd. Flow (prot)	1642	1483	1566	1745	3338	0	
Flt Permitted	0.950		0.198				
Satd. Flow (perm)	1642	1483	326	1745	3338	0	
Satd. Flow (RTOR)		147			2		
Lane Group Flow (vph)	33	561	183	371	1025	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	26.0	14.0	14.0	89.0	75.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	19.2	33.6	82.6	82.5	68.5		
Actuated g/C Ratio	0.16	0.28	0.69	0.69	0.57		
v/c Ratio	0.13	1.08	0.61	0.31	0.54		
Control Delay	44.7	92.7	15.5	8.3	17.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	44.7	92.7	15.5	8.3	17.2		
LOS	D	F	B	A	B		
Approach Delay	90.0			10.7	17.2		
Approach LOS	F			B	B		
Queue Length 50th (m)	6.2	~111.2	12.7	28.9	68.7		
Queue Length 95th (m)	14.9	#173.6	20.4	41.9	85.1		
Internal Link Dist (m)	226.4			296.0	231.6		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	262	521	302	1199	1906		
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	0.13	1.08	0.61	0.31	0.54		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 35.4 — Intersection LOS: D
Intersection Capacity Utilization 70.7% — ICU Level of Service C
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Prince of Wales Drive & Merivale Road

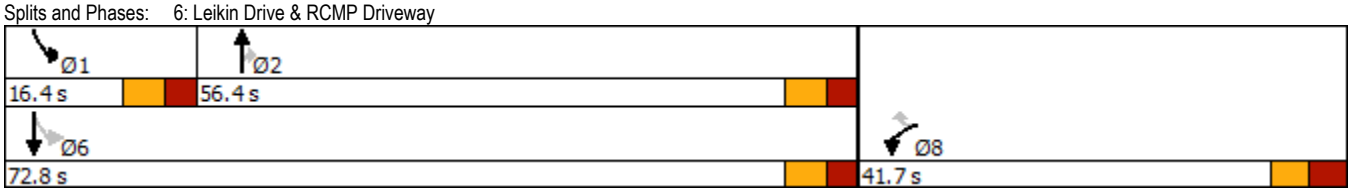


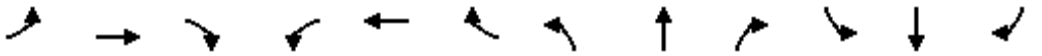
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	409	252	85	5	6	209
Future Volume (vph)	409	252	85	5	6	209
Satd. Flow (prot)	1691	1513	1648	1513	1691	1728
Flt Permitted	0.950				0.618	
Satd. Flow (perm)	1691	1391	1648	1456	1085	1728
Satd. Flow (RTOR)		280		6		
Lane Group Flow (vph)	454	280	94	6	7	232
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Total Split (s)	41.7	41.7	56.4	56.4	16.4	72.8
Total Lost Time (s)	6.7	6.7	6.4	6.4	6.4	6.4
Act Effct Green (s)	30.3	30.3	50.4	50.4	52.6	52.6
Actuated g/C Ratio	0.32	0.32	0.52	0.52	0.55	0.55
v/c Ratio	0.85	0.44	0.11	0.01	0.01	0.25
Control Delay	47.5	5.6	14.2	9.0	11.0	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	5.6	14.2	9.0	11.0	12.9
LOS	D	A	B	A	B	B
Approach Delay	31.5		13.9			12.8
Approach LOS	C		B			B
Queue Length 50th (m)	68.9	0.0	7.7	0.0	0.5	20.6
Queue Length 95th (m)	#133.5	16.8	19.8	2.2	2.4	34.4
Internal Link Dist (m)	69.4		182.1			276.7
Turn Bay Length (m)					200.0	
Base Capacity (vph)	620	687	863	765	656	1202
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.41	0.11	0.01	0.01	0.19

Intersection Summary

Cycle Length: 114.5
Actuated Cycle Length: 96.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 25.7 — Intersection LOS: C
Intersection Capacity Utilization 55.7% — ICU Level of Service B
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Leikin Drive & RCMP Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	57	0	0	364	183	0	1	0	43	0	162
Future Volume (Veh/h)	65	57	0	0	364	183	0	1	0	43	0	162
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	72	63	0	0	404	203	0	1	0	48	0	180
Pedestrians		1						10			1	
Lane Width (m)		3.5						3.5			3.5	
Walking Speed (m/s)		1.0						1.0			1.0	
Percent Blockage		0						1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					206							
pX, platoon unblocked	0.96						0.96	0.96		0.96	0.96	0.96
vC, conflicting volume	608			73			802	825	73	714	724	508
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	576			73			777	801	73	685	695	471
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			100			100	100	100	85	100	69
cM capacity (veh/h)	971			1525			194	283	985	328	325	573

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	72	63	0	607	1	228
Volume Left	72	0	0	0	0	48
Volume Right	0	0	0	203	0	180
cSH	971	1700	1700	1700	283	495
Volume to Capacity	0.07	0.04	0.00	0.36	0.00	0.46
Queue Length 95th (m)	1.7	0.0	0.0	0.0	0.1	16.7
Control Delay (s)	9.0	0.0	0.0	0.0	17.8	18.3
Lane LOS	A				C	C
Approach Delay (s)	4.8		0.0		17.8	18.3
Approach LOS					C	C

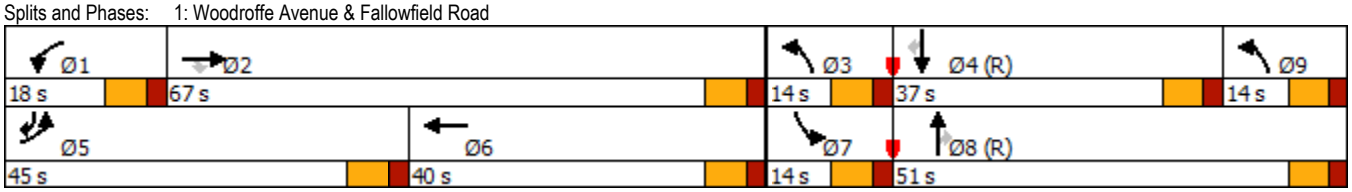
Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	65.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	568	551	240	112	115	28	534	1413	455	6	346	95
Future Volume (vph)	568	551	240	112	115	28	534	1413	455	6	346	95
Satd. Flow (prot)	3248	3316	1375	2955	3133	0	3216	3349	1513	1445	3221	1363
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3316	1375	2955	3133	0	3211	3349	1513	1445	3221	1345
Satd. Flow (RTOR)			267		18				370			127
Lane Group Flow (vph)	631	612	267	124	159	0	593	1570	506	7	384	106
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3 9	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	45.0	67.0	67.0	18.0	40.0			51.0	51.0	14.0	37.0	45.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8			6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	33.8	35.9	35.9	10.4	12.5		46.4	80.4	80.4	6.4	23.4	57.1
Actuated g/C Ratio	0.23	0.24	0.24	0.07	0.08		0.31	0.54	0.54	0.04	0.16	0.38
v/c Ratio	0.86	0.77	0.50	0.61	0.57		0.60	0.88	0.52	0.11	0.77	0.18
Control Delay	68.5	60.0	7.9	80.7	66.7		30.5	37.9	8.7	72.5	70.9	2.0
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	68.5	60.0	7.9	80.7	66.7		30.5	37.9	8.7	72.5	70.9	2.0
LOS	E	E	A	F	E		C	D	A	E	E	A
Approach Delay		54.3			72.8			30.7			56.2	
Approach LOS		D			E			C			E	
Queue Length 50th (m)	86.1	83.5	0.0	17.2	19.9		44.4	184.2	17.8	1.9	53.9	0.0
Queue Length 95th (m)	103.4	96.8	20.3	27.4	30.6		#83.3	#305.3	60.6	6.7	67.1	4.7
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	827	1330	711	220	707		994	1794	982	70	648	631
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	0.46	0.38	0.56	0.22		0.60	0.88	0.52	0.10	0.59	0.17

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:SBT and 8:NBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 42.9 Intersection LOS: D
Intersection Capacity Utilization 93.5% 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: 1: Woodroffe Avenue & Fallowfield Road



Lane Group	Ø3	Ø9
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	9
Permitted Phases		
Total Split (s)	14.0	14.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
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		

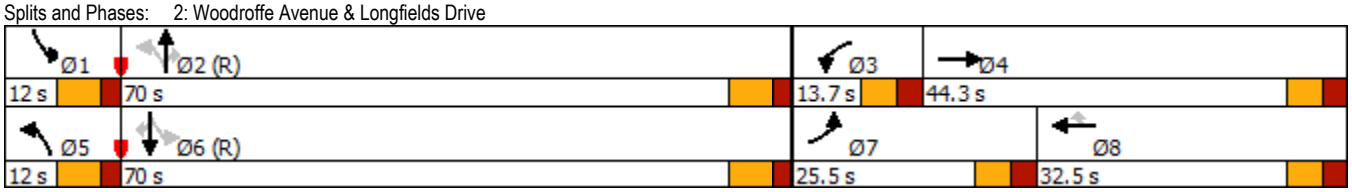
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	15	45	132	36	1353	50	154	399	111
Future Volume (vph)	372	89	82	15	45	132	36	1353	50	154	399	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.495			0.061		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	784	3349	1478	105	3221	1391
Satd. Flow (RTOR)		32				179			179			179
Lane Group Flow (vph)	413	190	0	17	50	147	40	1503	56	171	443	123
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	25.5	44.3		13.7	32.5	32.5	12.0	70.0	70.0	12.0	70.0	70.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	19.0	33.5		6.6	13.5	13.5	69.8	63.5	63.5	86.7	77.6	77.6
Actuated g/C Ratio	0.14	0.24		0.05	0.10	0.10	0.50	0.45	0.45	0.62	0.55	0.55
v/c Ratio	0.94	0.48		0.23	0.31	0.48	0.09	0.99	0.07	0.65	0.25	0.14
Control Delay	89.6	42.8		71.6	62.0	8.5	13.1	58.6	0.2	42.7	18.0	0.9
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	89.6	42.8		71.6	62.0	8.5	13.1	58.6	0.2	42.7	18.0	0.9
LOS	F	D		E	E	A	B	E	A	D	B	A
Approach Delay		74.8			26.0			55.4			20.9	
Approach LOS		E			C			E			C	
Queue Length 50th (m)	54.5	34.1		4.2	12.4	0.0	3.4	196.7	0.0	25.8	29.3	0.0
Queue Length 95th (m)	#83.0	54.8		11.7	21.9	9.5	10.1	#246.0	0.0	#91.8	48.5	2.1
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	440	442		81	309	422	424	1519	768	262	1786	851
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	0.94	0.43		0.21	0.16	0.35	0.09	0.99	0.07	0.65	0.25	0.14

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 86 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 49.0 Intersection LOS: D
Intersection Capacity Utilization 82.7% 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: 2: Woodroffe Avenue & Longfields Drive

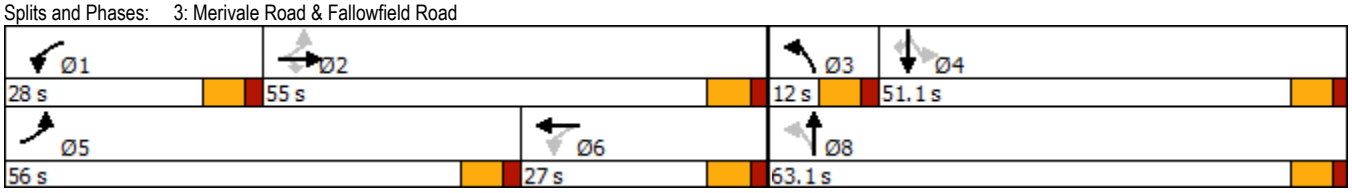


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	617	381	33	147	147	4	18	545	19	0	120	49
Future Volume (vph)	617	381	33	147	147	4	18	545	19	0	120	49
Satd. Flow (prot)	1658	1762	1427	1658	1690	0	1691	1736	0	1780	1618	1327
Flt Permitted	0.343			0.515			0.570					
Satd. Flow (perm)	599	1762	1427	899	1690	0	1015	1736	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			1				173
Lane Group Flow (vph)	686	423	37	163	167	0	20	627	0	0	133	54
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	56.0	55.0	55.0	28.0	27.0		12.0	63.1		51.1	51.1	51.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.6	57.1	57.1	33.4	20.4		53.5	53.7			46.7	46.7
Actuated g/C Ratio	0.53	0.40	0.40	0.23	0.14		0.37	0.38			0.33	0.33
v/c Ratio	1.00	0.60	0.06	0.59	0.69		0.05	0.96			0.25	0.10
Control Delay	64.4	40.0	0.2	34.5	74.6		28.3	70.8			38.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	64.4	40.0	0.2	34.5	74.6		28.3	70.8			38.3	0.4
LOS	E	D	A	C	E		C	E			D	A
Approach Delay		53.4			54.8			69.5			27.3	
Approach LOS		D			D			E			C	
Queue Length 50th (m)	~162.0	90.0	0.0	22.4	42.9		3.3	159.0			26.9	0.0
Queue Length 95th (m)	#231.5	130.0	0.0	34.7	#70.4		8.5	#227.5			43.3	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	686	702	642	378	241		404	688			528	549
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	1.00	0.60	0.06	0.43	0.69		0.05	0.91			0.25	0.10

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 143.2
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 56.0 Intersection LOS: E
Intersection Capacity Utilization 92.2% 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: 3: Merivale Road & Fallowfield Road

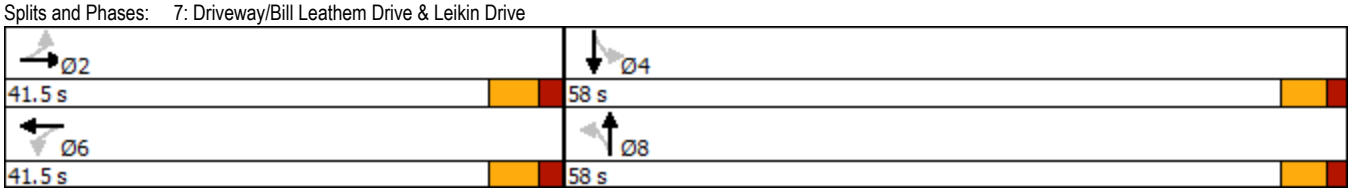


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	558	4	6	20	37	1	2	4	213	3	32
Future Volume (vph)	151	558	4	6	20	37	1	2	4	213	3	32
Satd. Flow (prot)	1610	1726	0	1658	1546	0	0	1611	0	0	1643	0
Flt Permitted	0.716			0.301				0.964			0.751	
Satd. Flow (perm)	1214	1726	0	525	1546	0	0	1564	0	0	1287	0
Satd. Flow (RTOR)					41			4			12	
Lane Group Flow (vph)	168	624	0	7	63	0	0	7	0	0	276	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	41.5	41.5		41.5	41.5		58.0	58.0		58.0	58.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6			5.0			5.0	
Act Effct Green (s)	32.9	32.9		32.9	32.9			18.3			18.3	
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.30			0.30	
v/c Ratio	0.26	0.68		0.03	0.08			0.02			0.71	
Control Delay	10.6	16.8		9.3	4.9			11.8			29.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.6	16.8		9.3	4.9			11.8			29.6	
LOS	B	B		A	A			B			C	
Approach Delay		15.5			5.4			11.8			29.6	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	8.7	43.4		0.3	1.0			0.3			24.1	
Queue Length 95th (m)	23.0	96.7		2.2	6.5			2.3			47.5	
Internal Link Dist (m)		337.1			182.1			90.9			596.0	
Turn Bay Length (m)	30.0			30.0								
Base Capacity (vph)	713	1014		308	925			1351			1113	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.24	0.62		0.02	0.07			0.01			0.25	

Intersection Summary

Cycle Length: 99.5
Actuated Cycle Length: 62
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 18.2 — Intersection LOS: B
Intersection Capacity Utilization 61.4% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: Driveway/Bill Leathem Drive & Leikin Drive

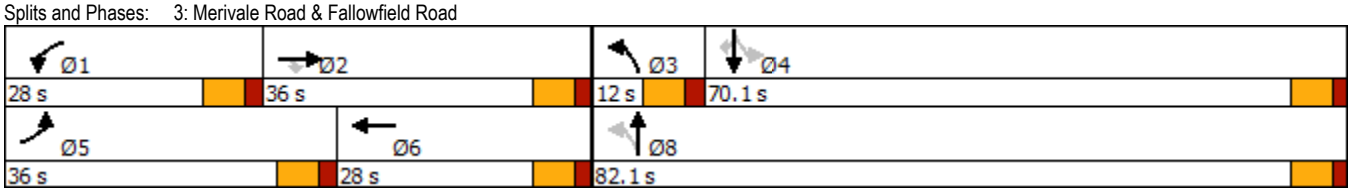


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	617	381	33	147	147	4	18	545	19	0	120	49
Future Volume (vph)	617	381	33	147	147	4	18	545	19	0	120	49
Satd. Flow (prot)	3216	1762	1427	1658	1690	0	1691	1736	0	1780	1618	1327
Flt Permitted	0.950			0.950			0.582					
Satd. Flow (perm)	3216	1762	1427	1658	1690	0	1036	1736	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			2				173
Lane Group Flow (vph)	686	423	37	163	167	0	20	627	0	0	133	54
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	36.0	36.0	36.0	28.0	28.0		12.0	82.1		70.1	70.1	70.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	29.8	35.3	35.3	16.1	21.6		46.9	47.1			42.8	42.8
Actuated g/C Ratio	0.25	0.30	0.30	0.14	0.18		0.40	0.40			0.36	0.36
v/c Ratio	0.85	0.80	0.07	0.72	0.54		0.05	0.90			0.23	0.09
Control Delay	54.4	53.9	0.3	68.9	53.6		20.2	50.5			27.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	54.4	53.9	0.3	68.9	53.6		20.2	50.5			27.8	0.3
LOS	D	D	A	E	D		C	D			C	A
Approach Delay		52.5			61.2			49.5			19.9	
Approach LOS		D			E			D			B	
Queue Length 50th (m)	71.1	82.7	0.0	33.2	32.0		2.5	122.6			18.2	0.0
Queue Length 95th (m)	#125.3	#179.5	0.0	61.0	61.7		6.8	166.5			35.3	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	810	526	512	304	309		441	1123			880	800
Starvation Cap Reductn	0	0	0	0	0		0	0			0	0
Spillback Cap Reductn	0	0	0	0	0		0	0			0	0
Storage Cap Reductn	0	0	0	0	0		0	0			0	0
Reduced v/c Ratio	0.85	0.80	0.07	0.54	0.54		0.05	0.56			0.15	0.07

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 118.2
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 50.3 Intersection LOS: D
Intersection Capacity Utilization 77.5% 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: 3: Merivale Road & Fallowfield Road

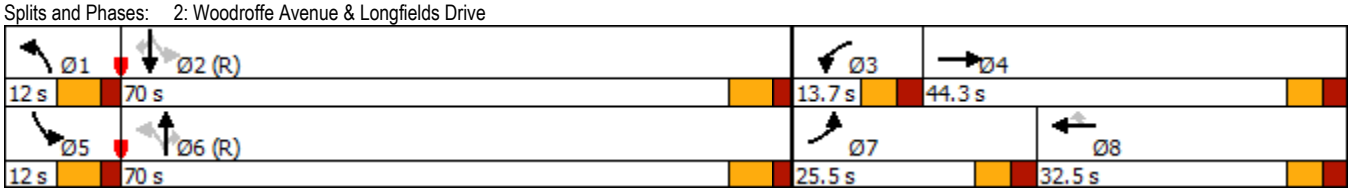


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	89	82	15	45	132	36	1233	50	154	399	111
Future Volume (vph)	352	89	82	15	45	132	36	1233	50	154	399	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.495			0.061		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	784	3349	1478	105	3221	1391
Satd. Flow (RTOR)		32				179			179			179
Lane Group Flow (vph)	391	190	0	17	50	147	40	1370	56	171	443	123
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8	6		6	2		2
Total Split (s)	25.5	44.3		13.7	32.5	32.5	12.0	70.0	70.0	12.0	70.0	70.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	18.7	33.2		6.6	13.5	13.5	69.8	63.5	63.5	87.0	77.9	77.9
Actuated g/C Ratio	0.13	0.24		0.05	0.10	0.10	0.50	0.45	0.45	0.62	0.56	0.56
v/c Ratio	0.90	0.48		0.23	0.31	0.48	0.09	0.90	0.07	0.65	0.25	0.14
Control Delay	83.9	43.0		71.6	62.0	8.5	13.1	44.8	0.2	42.2	17.9	0.9
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	83.9	43.0		71.6	62.0	8.5	13.1	44.8	0.2	42.2	17.9	0.9
LOS	F	D		E	E	A	B	D	A	D	B	A
Approach Delay		70.5			26.0			42.2			20.7	
Approach LOS		E			C			D			C	
Queue Length 50th (m)	51.2	34.1		4.2	12.4	0.0	3.4	167.3	0.0	25.8	29.3	0.0
Queue Length 95th (m)	#76.2	54.8		11.7	21.9	9.5	10.1	198.7	0.0	#91.8	48.5	2.1
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	440	442		81	309	422	424	1519	768	265	1792	853
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	0.89	0.43		0.21	0.16	0.35	0.09	0.90	0.07	0.65	0.25	0.14

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 80 (57%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 41.3 Intersection LOS: D
Intersection Capacity Utilization 78.6% 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: 2: Woodroffe Avenue & Longfields Drive

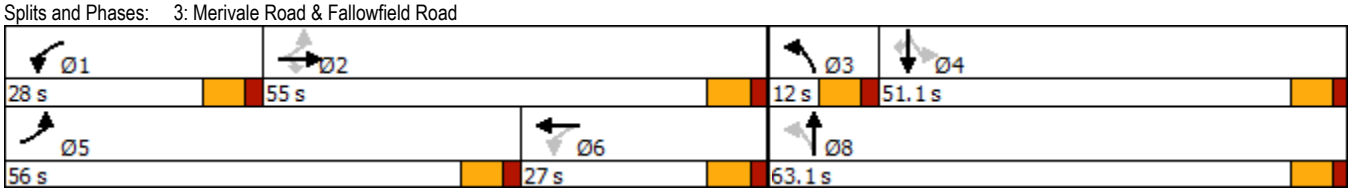


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	607	381	33	147	147	4	18	440	19	0	120	49
Future Volume (vph)	607	381	33	147	147	4	18	440	19	0	120	49
Satd. Flow (prot)	1658	1762	1427	1658	1690	0	1691	1735	0	1780	1618	1327
Flt Permitted	0.370			0.515			0.545					
Satd. Flow (perm)	646	1762	1427	899	1690	0	970	1735	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			2				173
Lane Group Flow (vph)	674	423	37	163	167	0	20	510	0	0	133	54
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	56.0	55.0	55.0	28.0	27.0		12.0	63.1		51.1	51.1	51.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.9	58.4	58.4	32.5	20.5		42.9	43.1			36.3	36.3
Actuated g/C Ratio	0.58	0.44	0.44	0.24	0.15		0.32	0.32			0.27	0.27
v/c Ratio	0.90	0.55	0.05	0.57	0.64		0.06	0.90			0.30	0.11
Control Delay	39.4	33.7	0.2	31.3	66.5		29.6	63.1			41.1	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	39.4	33.7	0.2	31.3	66.5		29.6	63.1			41.1	0.5
LOS	D	C	A	C	E		C	E			D	A
Approach Delay		36.0			49.1			61.8			29.4	
Approach LOS		D			D			E			C	
Queue Length 50th (m)	114.0	74.3	0.0	17.8	38.2		3.3	116.6			26.9	0.0
Queue Length 95th (m)	#219.3	130.0	0.0	34.7	#70.4		8.5	157.9			43.3	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	752	773	695	408	261		342	744			546	562
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	0.90	0.55	0.05	0.40	0.64		0.06	0.69			0.24	0.10

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 133
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 43.7 Intersection LOS: D
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: 3: Merivale Road & Fallowfield Road

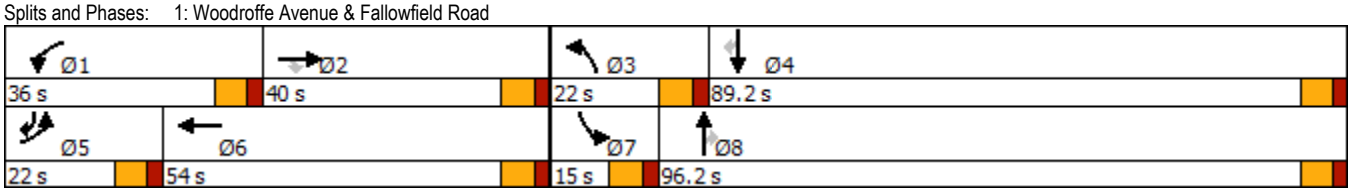


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	205	605	476	450	10	305	611	201	14	1356	518
Future Volume (vph)	169	205	605	476	450	10	305	611	201	14	1356	518
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			181		1				223			141
Lane Group Flow (vph)	188	228	672	529	511	0	339	679	223	16	1507	576
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	22.0	40.0	40.0	36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.4	33.2	33.2	29.2	48.0		15.2	95.6	95.6	7.1	82.4	103.6
Actuated g/C Ratio	0.08	0.18	0.18	0.16	0.26		0.08	0.51	0.51	0.04	0.44	0.55
v/c Ratio	0.76	0.40	1.62	1.04	0.60		1.31	0.40	0.27	0.25	1.02	0.65
Control Delay	104.4	70.5	322.0	123.2	64.7		226.5	29.8	3.7	96.6	79.8	25.1
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	104.4	70.5	322.0	123.2	64.7		226.5	29.8	3.7	96.6	79.8	25.1
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		231.7			94.5			78.8			64.9	
Approach LOS		F			F			E			E	
Queue Length 50th (m)	33.1	37.1	~279.0	~100.3	82.6		~77.0	79.2	0.0	5.5	~288.7	103.6
Queue Length 95th (m)	46.7	50.6	#351.7	#135.9	101.6		#108.6	95.5	14.1	14.2	#326.6	142.9
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	414	511	851		258	1710	832	74	1474	883
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	0.72	0.40	1.62	1.04	0.60		1.31	0.40	0.27	0.22	1.02	0.65

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.62
Intersection Signal Delay: 106.9 Intersection LOS: F
Intersection Capacity Utilization 110.4% 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: 1: Woodroffe Avenue & Fallowfield Road

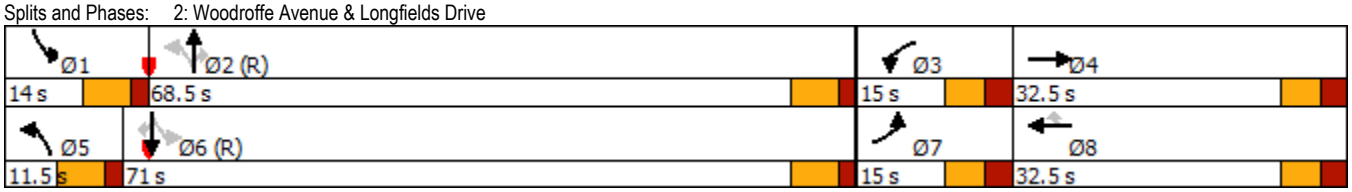


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	55	55	144	89	761	39	103	1680	223
Future Volume (vph)	155	17	70	55	55	144	89	761	39	103	1680	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.055			0.281		
Satd. Flow (perm)	3216	1528	0	1691	1780	1463	95	3316	1513	500	3349	1470
Satd. Flow (RTOR)		78				160			138			248
Lane Group Flow (vph)	172	97	0	61	61	160	99	846	43	114	1867	248
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	15.0	32.5		15.0	32.5	32.5	11.5	68.5	68.5	14.0	71.0	71.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	8.5	16.5		8.0	13.5	13.5	82.8	74.3	74.3	81.3	73.5	73.5
Actuated g/C Ratio	0.07	0.13		0.06	0.10	0.10	0.64	0.57	0.57	0.63	0.57	0.57
v/c Ratio	0.82	0.37		0.59	0.33	0.54	0.61	0.45	0.05	0.30	0.99	0.26
Control Delay	88.7	19.2		81.8	57.0	14.2	38.4	17.9	0.1	10.5	45.8	2.7
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	88.7	19.2		81.8	57.0	14.2	38.4	17.9	0.1	10.5	45.8	2.7
LOS	F	B		F	E	B	D	B	A	B	D	A
Approach Delay		63.7			38.1			19.2			39.2	
Approach LOS		E			D			B			D	
Queue Length 50th (m)	21.0	4.3		14.2	14.0	0.0	8.2	54.3	0.0	7.6	207.7	0.0
Queue Length 95th (m)	#38.4	17.4		#29.8	23.7	16.6	#44.3	89.3	0.0	19.4	#306.0	12.2
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	210	368		110	356	420	161	1894	923	386	1894	939
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	0.82	0.26		0.55	0.17	0.38	0.61	0.45	0.05	0.30	0.99	0.26

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 35.6 Intersection LOS: D
Intersection Capacity Utilization 81.8% 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: 2: Woodroffe Avenue & Longfields Drive

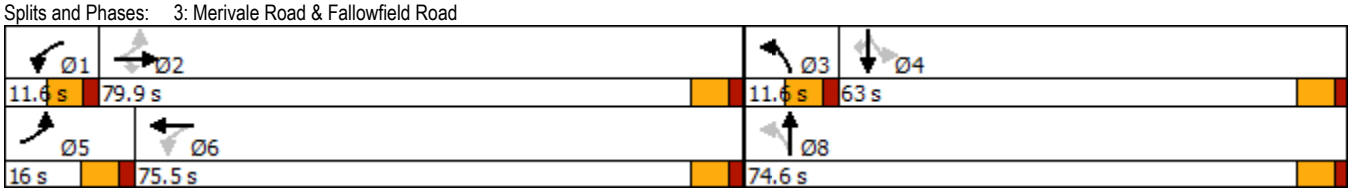


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	265	36	34	628	3	45	197	93	5	528	271
Future Volume (vph)	118	265	36	34	628	3	45	197	93	5	528	271
Satd. Flow (prot)	1496	1745	1469	1691	1778	0	1551	1597	0	1691	1762	1498
Flt Permitted	0.073			0.537			0.070			0.523		
Satd. Flow (perm)	115	1745	1469	956	1778	0	114	1597	0	931	1762	1498
Satd. Flow (RTOR)			108					17				149
Lane Group Flow (vph)	131	294	40	38	701	0	50	322	0	6	587	301
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	16.0	79.9	79.9	11.6	75.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	80.0	72.6	72.6	70.5	65.3		63.5	63.7		54.8	54.8	54.8
Actuated g/C Ratio	0.51	0.46	0.46	0.45	0.41		0.40	0.40		0.35	0.35	0.35
v/c Ratio	0.92	0.37	0.05	0.08	0.96		0.55	0.49		0.02	0.96	0.49
Control Delay	90.3	31.3	0.1	21.2	69.7		53.5	36.6		36.8	79.6	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	90.3	31.3	0.1	21.2	69.7		53.5	36.6		36.8	79.6	23.5
LOS	F	C	A	C	E		D	D		D	E	C
Approach Delay		45.2			67.2			38.9			60.4	
Approach LOS		D			E			D			E	
Queue Length 50th (m)	24.1	59.7	0.0	5.7	205.2		9.3	68.1		1.2	177.2	36.1
Queue Length 95th (m)	#65.3	82.8	0.0	11.8	#280.8		#19.2	95.2		4.8	#249.6	63.6
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	142	817	745	450	783		91	705		337	637	636
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	0.92	0.36	0.05	0.08	0.90		0.55	0.46		0.02	0.92	0.47

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 158.3
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 56.3 Intersection LOS: E
Intersection Capacity Utilization 97.2% 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: 3: Merivale Road & Fallowfield Road

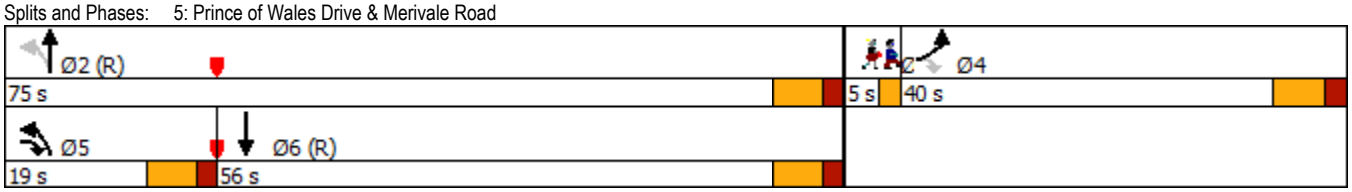


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	30	505	165	334	906	16	
Future Volume (vph)	30	505	165	334	906	16	
Satd. Flow (prot)	1642	1483	1566	1745	3338	0	
Flt Permitted	0.950		0.139				
Satd. Flow (perm)	1642	1483	229	1745	3338	0	
Satd. Flow (RTOR)		101			2		
Lane Group Flow (vph)	33	561	183	371	1025	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	40.0	19.0	19.0	75.0	56.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	32.1	50.4	69.7	69.6	51.7		
Actuated g/C Ratio	0.27	0.42	0.58	0.58	0.43		
v/c Ratio	0.08	0.82	0.70	0.37	0.71		
Control Delay	32.8	36.2	29.5	15.0	31.9		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	32.8	36.2	29.5	15.0	31.9		
LOS	C	D	C	B	C		
Approach Delay	36.0			19.8	31.9		
Approach LOS	D			B	C		
Queue Length 50th (m)	5.3	86.5	18.3	41.7	97.4		
Queue Length 95th (m)	12.7	132.1	#36.6	60.5	120.6		
Internal Link Dist (m)	226.4			296.0	231.6		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	454	678	273	1012	1440		
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	0.07	0.83	0.67	0.37	0.71		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 30.0 — Intersection LOS: C
Intersection Capacity Utilization 70.7% — ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

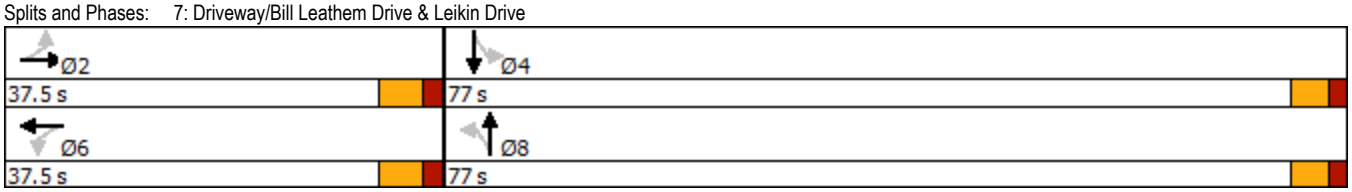
Splits and Phases: 5: Prince of Wales Drive & Merivale Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	57	0	0	364	183	0	1	0	43	0	162
Future Volume (vph)	65	57	0	0	364	183	0	1	0	43	0	162
Satd. Flow (prot)	1691	1534	0	1780	1651	0	0	1780	0	0	1532	0
Flt Permitted	0.368										0.928	
Satd. Flow (perm)	655	1534	0	1780	1651	0	0	1780	0	0	1436	0
Satd. Flow (RTOR)					22						160	
Lane Group Flow (vph)	72	63	0	0	607	0	0	1	0	0	228	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	37.5	37.5		37.5	37.5		77.0	77.0		77.0	77.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6			5.0			5.0	
Act Effct Green (s)	33.6	33.6			33.6			10.5			10.5	
Actuated g/C Ratio	0.61	0.61			0.61			0.19			0.19	
v/c Ratio	0.18	0.07			0.59			0.00			0.56	
Control Delay	6.4	4.9			9.5			17.0			12.8	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	6.4	4.9			9.5			17.0			12.8	
LOS	A	A			A			B			B	
Approach Delay		5.7			9.5			17.0			12.8	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	2.3	1.9			26.0			0.1			5.1	
Queue Length 95th (m)	7.5	5.6			55.3			0.9			19.4	
Internal Link Dist (m)		337.1			182.1			90.9			596.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	401	941			1021			1780			1436	
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	0.18	0.07			0.59			0.00			0.16	

Intersection Summary	
Cycle Length: 114.5	
Actuated Cycle Length: 54.8	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 9.7	Intersection LOS: A
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Driveway/Bill Leathem Drive & Leikin Drive

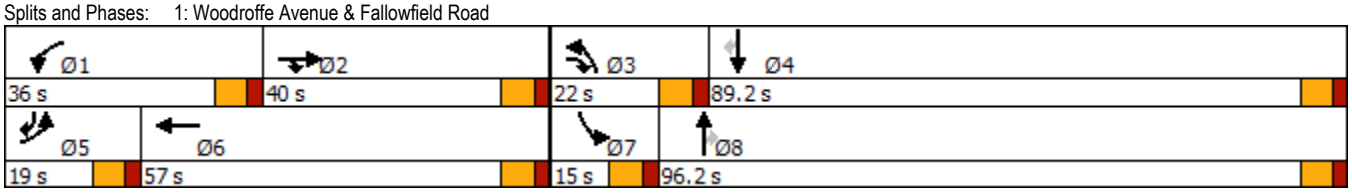


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	205	605	476	450	10	305	611	201	14	1356	518
Future Volume (vph)	169	205	605	476	450	10	305	611	201	14	1356	518
Satd. Flow (prot)	3216	3252	2637	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	2637	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)					1				223			141
Lane Group Flow (vph)	188	228	672	529	511	0	339	679	223	16	1507	576
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	2 3	1	6		3	8		7	4	5
Permitted Phases									8			4
Total Split (s)	19.0	40.0		36.0	57.0		22.0	96.2	96.2	15.0	89.2	19.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	12.2	33.2	55.2	29.2	50.2		15.2	95.6	95.6	7.1	82.4	101.4
Actuated g/C Ratio	0.07	0.18	0.29	0.16	0.27		0.08	0.51	0.51	0.04	0.44	0.54
v/c Ratio	0.90	0.40	0.86	1.04	0.57		1.31	0.40	0.27	0.25	1.02	0.66
Control Delay	125.4	70.5	75.0	123.2	62.2		226.5	29.8	3.7	96.6	79.8	26.7
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	125.4	70.5	75.0	123.2	62.2		226.5	29.8	3.7	96.6	79.8	26.7
LOS	F	E	E	F	E		F	C	A	F	E	C
Approach Delay		82.7			93.2			78.8			65.4	
Approach LOS		F			F			E			E	
Queue Length 50th (m)	33.8	37.1	125.5	~100.3	80.7		~77.0	79.2	0.0	5.5	~288.7	107.7
Queue Length 95th (m)	#56.2	50.6	152.2	#135.9	99.4		#108.6	95.5	14.1	14.2	#326.6	148.6
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	209	576	777	511	890		258	1710	832	74	1474	867
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	0.90	0.40	0.86	1.04	0.57		1.31	0.40	0.27	0.22	1.02	0.66

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.31
Intersection Signal Delay: 77.2 Intersection LOS: E
Intersection Capacity Utilization 94.1% 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: 1: Woodroffe Avenue & Fallowfield Road

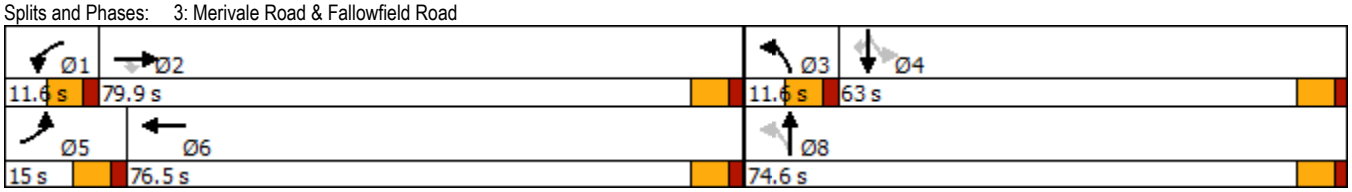


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	265	36	34	628	3	45	197	93	5	528	271
Future Volume (vph)	118	265	36	34	628	3	45	197	93	5	528	271
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1597	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.073			0.526		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	119	1597	0	936	1762	1498
Satd. Flow (RTOR)			108					17				149
Lane Group Flow (vph)	131	294	40	38	701	0	50	322	0	6	587	301
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	15.0	79.9	79.9	11.6	76.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	8.6	71.3	71.3	5.2	64.9		63.2	63.4		54.6	54.6	54.6
Actuated g/C Ratio	0.05	0.46	0.46	0.03	0.41		0.40	0.40		0.35	0.35	0.35
v/c Ratio	0.82	0.37	0.06	0.69	0.95		0.53	0.49		0.02	0.96	0.49
Control Delay	110.5	31.4	0.1	130.1	68.3		51.5	36.1		36.8	77.7	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	110.5	31.4	0.1	130.1	68.3		51.5	36.1		36.8	77.7	23.3
LOS	F	C	A	F	E		D	D		D	E	C
Approach Delay		51.0			71.5			38.2			59.1	
Approach LOS		D			E			D			E	
Queue Length 50th (m)	20.8	59.7	0.0	11.7	203.0		9.3	68.1		1.2	177.2	36.1
Queue Length 95th (m)	#39.8	82.8	0.0	#32.2	#277.4		#18.6	95.2		4.8	#249.6	63.6
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	159	828	753	55	804		94	714		342	645	643
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.82	0.36	0.05	0.69	0.87		0.53	0.45		0.02	0.91	0.47

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 156.7
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 58.1 Intersection LOS: E
Intersection Capacity Utilization 94.5% 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: 3: Merivale Road & Fallowfield Road

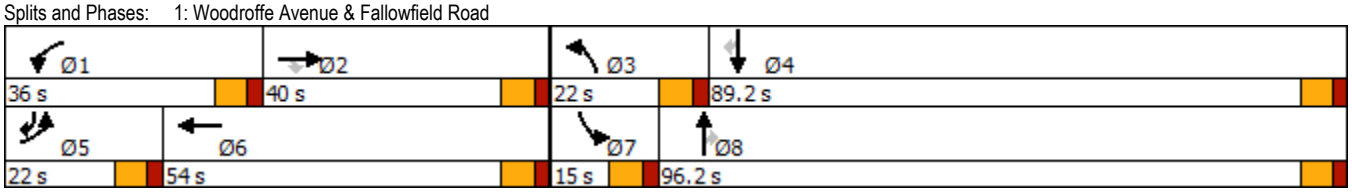


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	205	370	461	450	10	230	611	201	14	1326	518
Future Volume (vph)	169	205	370	461	450	10	230	611	201	14	1326	518
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			181		1				223			141
Lane Group Flow (vph)	188	228	411	512	511	0	256	679	223	16	1473	576
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	22.0	40.0	40.0	36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.4	33.2	33.2	29.2	48.0		15.2	95.6	95.6	7.1	82.4	103.6
Actuated g/C Ratio	0.08	0.18	0.18	0.16	0.26		0.08	0.51	0.51	0.04	0.44	0.55
v/c Ratio	0.76	0.40	0.99	1.00	0.60		0.99	0.40	0.27	0.25	1.00	0.65
Control Delay	104.4	70.5	83.5	117.0	64.7		137.0	29.8	3.7	96.6	74.6	25.1
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	104.4	70.5	83.5	117.0	64.7		137.0	29.8	3.7	96.6	74.6	25.1
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		84.7			90.9			48.5			61.0	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	33.1	37.1	88.3	~92.4	82.6		46.3	79.2	0.0	5.5	265.8	103.6
Queue Length 95th (m)	46.7	50.6	#155.8	#129.3	101.6		#75.2	95.5	14.1	14.2	#314.3	142.9
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	414	511	851		258	1710	832	74	1474	883
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	0.72	0.40	0.99	1.00	0.60		0.99	0.40	0.27	0.22	1.00	0.65

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 68.0 Intersection LOS: E
Intersection Capacity Utilization 93.8% 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: 1: Woodroffe Avenue & Fallowfield Road

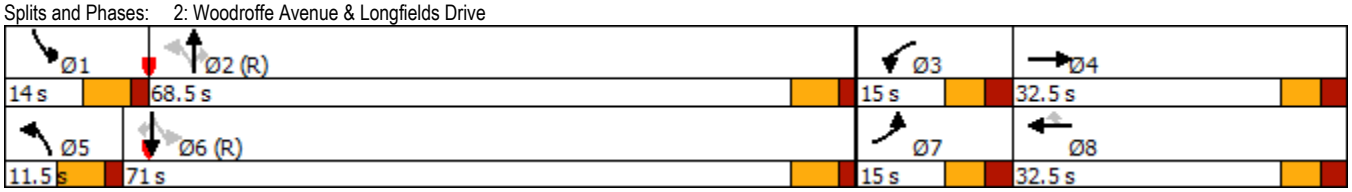


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	55	55	144	89	761	39	103	1540	223
Future Volume (vph)	155	17	70	55	55	144	89	761	39	103	1540	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.055			0.281		
Satd. Flow (perm)	3216	1528	0	1691	1780	1463	95	3316	1513	500	3349	1470
Satd. Flow (RTOR)		78				160			138			248
Lane Group Flow (vph)	172	97	0	61	61	160	99	846	43	114	1711	248
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	15.0	32.5		15.0	32.5	32.5	11.5	68.5	68.5	14.0	71.0	71.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	8.5	16.5		8.0	13.5	13.5	82.8	74.3	74.3	81.3	73.5	73.5
Actuated g/C Ratio	0.07	0.13		0.06	0.10	0.10	0.64	0.57	0.57	0.63	0.57	0.57
v/c Ratio	0.82	0.37		0.59	0.33	0.54	0.61	0.45	0.05	0.30	0.90	0.26
Control Delay	88.7	19.2		81.8	57.0	14.2	38.4	17.9	0.1	10.5	33.7	2.7
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	88.7	19.2		81.8	57.0	14.2	38.4	17.9	0.1	10.5	33.7	2.7
LOS	F	B		F	E	B	D	B	A	B	C	A
Approach Delay		63.7			38.1			19.2			28.7	
Approach LOS		E			D			B			C	
Queue Length 50th (m)	21.0	4.3		14.2	14.0	0.0	8.2	54.3	0.0	7.6	172.4	0.0
Queue Length 95th (m)	#38.4	17.4		#29.8	23.7	16.6	#44.3	89.3	0.0	19.4	#266.0	12.2
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	210	368		110	356	420	161	1894	923	386	1894	939
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	0.82	0.26		0.55	0.17	0.38	0.61	0.45	0.05	0.30	0.90	0.26

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 29.4 Intersection LOS: C
Intersection Capacity Utilization 77.7% 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: 2: Woodroffe Avenue & Longfields Drive

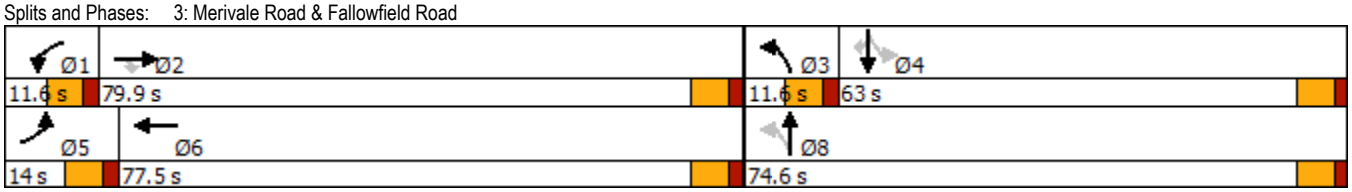


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	265	36	34	563	3	45	197	93	5	498	271
Future Volume (vph)	118	265	36	34	563	3	45	197	93	5	498	271
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1597	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.111			0.544		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	181	1597	0	968	1762	1498
Satd. Flow (RTOR)			108					17				158
Lane Group Flow (vph)	131	294	40	38	629	0	50	322	0	6	553	301
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	14.0	79.9	79.9	11.6	77.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	7.9	62.2	62.2	5.4	56.1		58.1	58.3		49.7	49.7	49.7
Actuated g/C Ratio	0.06	0.44	0.44	0.04	0.39		0.41	0.41		0.35	0.35	0.35
v/c Ratio	0.82	0.39	0.06	0.60	0.90		0.40	0.49		0.02	0.90	0.48
Control Delay	105.5	31.8	0.2	111.0	59.0		38.1	33.2		35.6	65.0	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	105.5	31.8	0.2	111.0	59.0		38.1	33.2		35.6	65.0	20.8
LOS	F	C	A	F	E		D	C		D	E	C
Approach Delay		49.8			62.0			33.8			49.3	
Approach LOS		D			E			C			D	
Queue Length 50th (m)	19.4	59.7	0.0	10.9	168.9		8.1	59.7		1.1	144.7	29.8
Queue Length 95th (m)	#42.7	82.8	0.0	#32.2	219.5		17.9	95.2		4.8	#226.9	61.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	160	940	841	63	927		124	809		402	733	715
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.82	0.31	0.05	0.60	0.68		0.40	0.40		0.01	0.75	0.42

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 142.7
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 50.5 — Intersection LOS: D
Intersection Capacity Utilization 89.2% — 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: 3: Merivale Road & Fallowfield Road

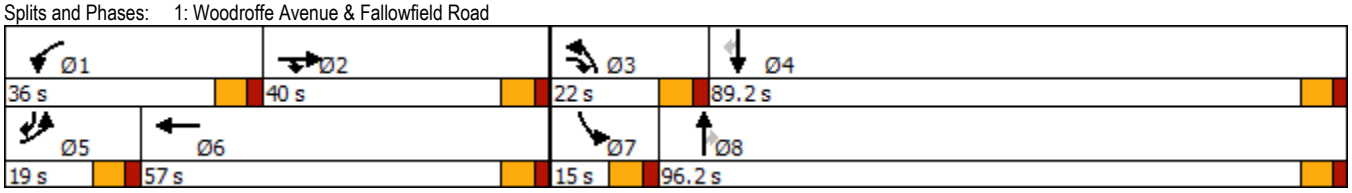


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	205	605	461	450	10	230	611	201	14	1326	518
Future Volume (vph)	169	205	605	461	450	10	230	611	201	14	1326	518
Satd. Flow (prot)	3216	3252	2637	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	2637	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)					1				223			141
Lane Group Flow (vph)	188	228	672	512	511	0	256	679	223	16	1473	576
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	2 3	1	6		3	8		7	4	5
Permitted Phases									8			4
Total Split (s)	19.0	40.0		36.0	57.0		22.0	96.2	96.2	15.0	89.2	19.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	12.2	33.2	55.2	29.2	50.2		15.2	95.6	95.6	7.1	82.4	101.4
Actuated g/C Ratio	0.07	0.18	0.29	0.16	0.27		0.08	0.51	0.51	0.04	0.44	0.54
v/c Ratio	0.90	0.40	0.86	1.00	0.57		0.99	0.40	0.27	0.25	1.00	0.66
Control Delay	125.4	70.5	75.0	117.0	62.2		137.0	29.8	3.7	96.6	74.6	26.7
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	125.4	70.5	75.0	117.0	62.2		137.0	29.8	3.7	96.6	74.6	26.7
LOS	F	E	E	F	E		F	C	A	F	E	C
Approach Delay		82.7			89.6			48.5			61.4	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	33.8	37.1	125.5	~92.4	80.7		46.3	79.2	0.0	5.5	265.8	107.7
Queue Length 95th (m)	#56.2	50.6	152.2	#129.3	99.4		#75.2	95.5	14.1	14.2	#314.3	148.6
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	209	576	777	511	890		258	1710	832	74	1474	867
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	0.90	0.40	0.86	1.00	0.57		0.99	0.40	0.27	0.22	1.00	0.66

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 68.4 Intersection LOS: E
Intersection Capacity Utilization 91.9% 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: 1: Woodroffe Avenue & Fallowfield Road

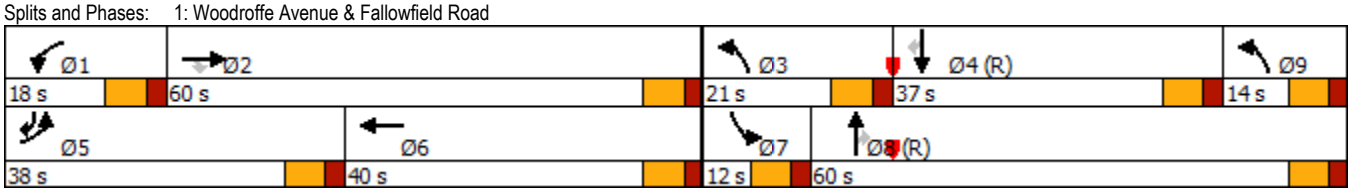


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	645	625	272	127	131	32	606	1604	516	7	393	108
Future Volume (vph)	645	625	272	127	131	32	606	1604	516	7	393	108
Satd. Flow (prot)	3248	3316	1375	2955	3133	0	3216	3349	1513	1445	3221	1363
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3316	1375	2955	3133	0	3212	3349	1513	1445	3221	1345
Satd. Flow (RTOR)			272		18				343			176
Lane Group Flow (vph)	645	625	272	127	163	0	606	1604	516	7	393	108
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3 9	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	38.0	60.0	60.0	18.0	40.0			60.0	60.0	12.0	37.0	38.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8			6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	31.1	36.0	36.0	10.4	15.4		45.4	80.2	80.2	6.4	24.1	55.2
Actuated g/C Ratio	0.21	0.24	0.24	0.07	0.10		0.30	0.53	0.53	0.04	0.16	0.37
v/c Ratio	0.96	0.79	0.51	0.62	0.48		0.62	0.90	0.53	0.11	0.76	0.18
Control Delay	84.5	60.8	8.0	81.3	60.2		31.2	39.4	10.3	72.6	69.7	0.6
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	84.5	60.8	8.0	81.3	60.2		31.2	39.4	10.3	72.6	69.7	0.6
LOS	F	E	A	F	E		C	D	B	E	E	A
Approach Delay		61.4			69.4			32.1			55.0	
Approach LOS		E			E			C			E	
Queue Length 50th (m)	90.9	86.2	0.0	17.6	20.1		45.0	189.8	24.6	1.9	54.2	0.0
Queue Length 95th (m)	#125.1	99.2	20.6	27.9	29.5		#87.0	#315.1	72.4	6.7	68.7	0.0
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	675	1176	663	220	707		974	1790	968	61	648	611
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	0.96	0.53	0.41	0.58	0.23		0.62	0.90	0.53	0.11	0.61	0.18

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:SBT and 8:NBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 45.4 Intersection LOS: D
Intersection Capacity Utilization 101.4% 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: 1: Woodroffe Avenue & Fallowfield Road



Lane Group	Ø3	Ø9
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	9
Permitted Phases		
Total Split (s)	21.0	14.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
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		

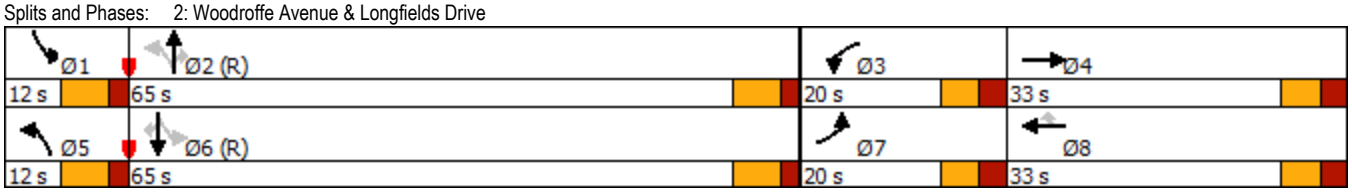
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	15	45	132	36	1536	50	154	453	111
Future Volume (vph)	372	89	82	15	45	132	36	1536	50	154	453	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.491			0.064		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	779	3349	1479	111	3221	1393
Satd. Flow (RTOR)		32				138			138			138
Lane Group Flow (vph)	372	171	0	15	45	132	36	1536	50	154	453	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	20.0	33.0		20.0	33.0	33.0	12.0	65.0	65.0	12.0	65.0	65.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	13.5	28.2		6.9	14.0	14.0	66.2	60.0	60.0	81.7	75.1	75.1
Actuated g/C Ratio	0.10	0.22		0.05	0.11	0.11	0.51	0.46	0.46	0.63	0.58	0.58
v/c Ratio	1.10	0.47		0.18	0.25	0.46	0.08	0.99	0.07	0.59	0.24	0.13
Control Delay	132.6	41.2		63.2	54.0	12.3	11.8	56.5	0.2	35.3	15.8	2.0
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	132.6	41.2		63.2	54.0	12.3	11.8	56.5	0.2	35.3	15.8	2.0
LOS	F	D		E	D	B	B	E	A	D	B	A
Approach Delay		103.8			26.0			53.8			17.8	
Approach LOS		F			C			D			B	
Queue Length 50th (m)	~51.3	28.2		3.5	10.3	0.0	2.7	178.2	0.0	18.6	26.9	0.0
Queue Length 95th (m)	#79.9	48.2		10.1	18.8	14.0	8.6	#241.1	0.0	#72.6	46.7	5.8
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	337	375		164	339	413	432	1544	756	263	1861	863
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	1.10	0.46		0.09	0.13	0.32	0.08	0.99	0.07	0.59	0.24	0.13

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 86 (66%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 52.5 Intersection LOS: D
Intersection Capacity Utilization 88.1% ICU Level of Service E
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: 2: Woodroffe Avenue & Longfields Drive

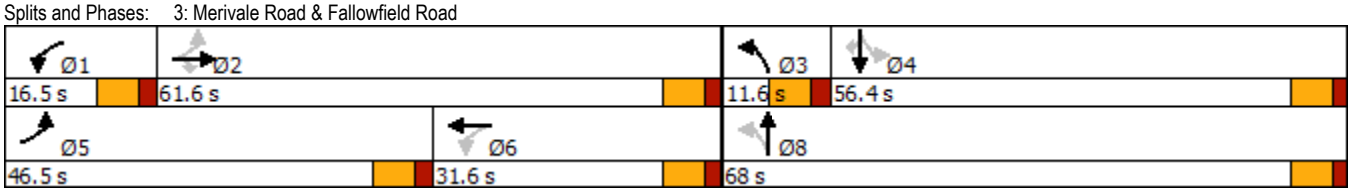


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	700	432	37	167	167	5	20	619	22	0	136	56
Future Volume (vph)	700	432	37	167	167	5	20	619	22	0	136	56
Satd. Flow (prot)	1658	1762	1427	1658	1691	0	1691	1736	0	1780	1618	1327
Flt Permitted	0.398			0.511			0.572					
Satd. Flow (perm)	695	1762	1427	892	1691	0	1018	1736	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			2				173
Lane Group Flow (vph)	700	432	37	167	172	0	20	641	0	0	136	56
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	46.5	61.6	61.6	16.5	31.6		11.6	68.0		56.4	56.4	56.4
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	71.9	55.6	55.6	34.9	25.1		54.1	54.3			47.6	47.6
Actuated g/C Ratio	0.52	0.40	0.40	0.25	0.18		0.39	0.39			0.34	0.34
v/c Ratio	1.10	0.61	0.06	0.61	0.56		0.05	0.95			0.25	0.10
Control Delay	94.4	39.3	0.2	37.3	61.3		25.6	64.1			35.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	94.4	39.3	0.2	37.3	61.3		25.6	64.1			35.1	0.3
LOS	F	D	A	D	E		C	E			D	A
Approach Delay		71.1			49.5			62.9			24.9	
Approach LOS		E			D			E			C	
Queue Length 50th (m)	~169.5	91.3	0.0	23.6	41.4		3.1	154.7			26.0	0.0
Queue Length 95th (m)	#247.5	129.6	0.0	38.5	65.7		8.1	#219.1			41.8	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	637	704	643	281	305		419	772			585	590
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	1.10	0.61	0.06	0.59	0.56		0.05	0.83			0.23	0.09

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 139.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 61.9 Intersection LOS: E
Intersection Capacity Utilization 102.6% 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.

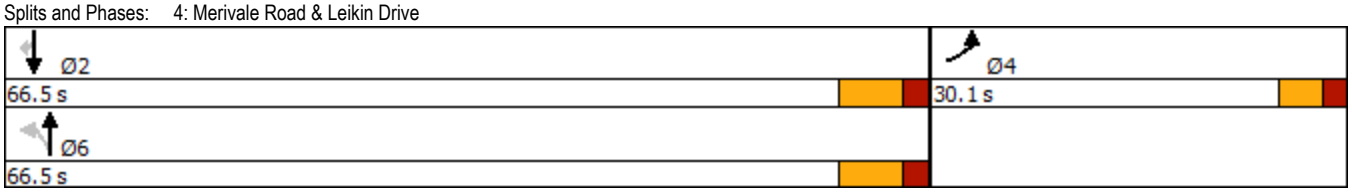
Splits and Phases: 3: Merivale Road & Fallowfield Road

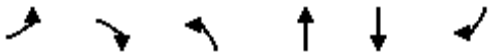


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	304	4	0	396	71	227
Future Volume (vph)	304	4	0	396	71	227
Satd. Flow (prot)	3252	0	1728	1745	1424	1469
Flt Permitted	0.953					
Satd. Flow (perm)	3252	0	1728	1745	1424	1469
Satd. Flow (RTOR)	1					227
Lane Group Flow (vph)	308	0	0	396	71	227
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			6	2	
Permitted Phases			6			2
Total Split (s)	30.1		66.5	66.5	66.5	66.5
Total Lost Time (s)	5.1		6.5	6.5	6.5	6.5
Act Effct Green (s)	13.3			60.1	60.1	60.1
Actuated g/C Ratio	0.16			0.71	0.71	0.71
v/c Ratio	0.61			0.32	0.07	0.21
Control Delay	38.5			5.9	4.6	1.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	38.5			5.9	4.6	1.2
LOS	D			A	A	A
Approach Delay	38.5			5.9	2.0	
Approach LOS	D			A	A	
Queue Length 50th (m)	22.3			18.8	2.7	0.0
Queue Length 95th (m)	33.6			35.1	7.0	5.8
Internal Link Dist (m)	50.7			445.8	100.5	
Turn Bay Length (m)						85.0
Base Capacity (vph)	958			1233	1006	1104
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	0.32			0.32	0.07	0.21

Intersection Summary	
Cycle Length: 96.6	
Actuated Cycle Length: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 14.8	Intersection LOS: B
Intersection Capacity Utilization 41.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Merivale Road & Leikin Drive

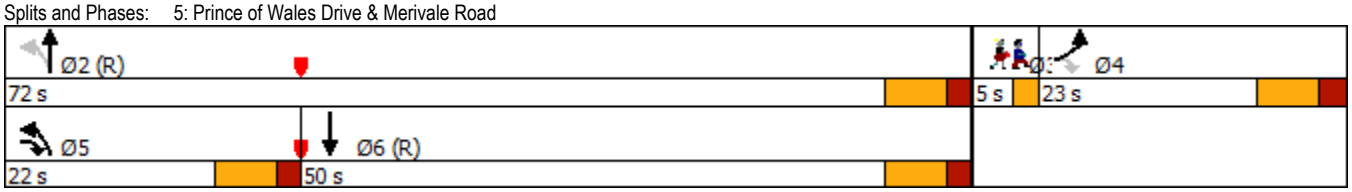




Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	11	93	503	1028	290	43	
Future Volume (vph)	11	93	503	1028	290	43	
Satd. Flow (prot)	3281	1261	1642	1745	3119	0	
Flt Permitted	0.950		0.490				
Satd. Flow (perm)	3281	1261	847	1745	3119	0	
Satd. Flow (RTOR)		93			21		
Lane Group Flow (vph)	11	93	503	1028	333	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	23.0	22.0	22.0	72.0	50.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	10.0	30.7	76.2	77.4	53.3		
Actuated g/C Ratio	0.10	0.31	0.76	0.77	0.53		
v/c Ratio	0.03	0.21	0.65	0.76	0.20		
Control Delay	41.0	5.5	9.5	13.8	14.4		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	41.0	5.5	9.5	13.8	14.4		
LOS	D	A	A	B	B		
Approach Delay	9.3			12.4	14.4		
Approach LOS	A			B	B		
Queue Length 50th (m)	0.9	0.0	31.3	108.6	16.5		
Queue Length 95th (m)	3.4	8.7	46.7	171.6	26.6		
Internal Link Dist (m)	226.4			296.0	233.3		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	531	464	790	1350	1673		
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	0.02	0.20	0.64	0.76	0.20		

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 15 (15%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	

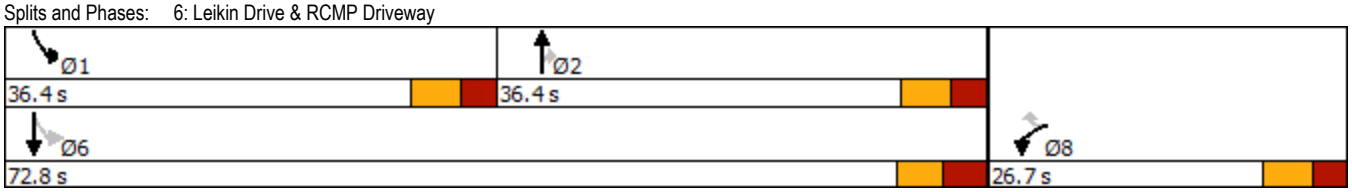
Splits and Phases: 5: Prince of Wales Drive & Merivale Road

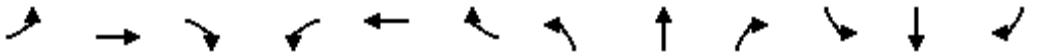


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	17	315	548	253	51
Future Volume (vph)	15	17	315	548	253	51
Satd. Flow (prot)	1691	1427	1728	1513	1691	1508
Flt Permitted	0.950				0.466	
Satd. Flow (perm)	1691	1325	1728	1468	826	1508
Satd. Flow (RTOR)		17		548		
Lane Group Flow (vph)	15	17	315	548	253	51
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Total Split (s)	26.7	26.7	36.4	36.4	36.4	72.8
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.4	6.7
Act Effct Green (s)	11.6	11.6	31.4	31.4	46.9	51.4
Actuated g/C Ratio	0.19	0.19	0.52	0.52	0.78	0.86
v/c Ratio	0.05	0.06	0.35	0.53	0.33	0.04
Control Delay	24.5	13.2	13.7	3.9	4.9	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	13.2	13.7	3.9	4.9	4.0
LOS	C	B	B	A	A	A
Approach Delay	18.5		7.5			4.8
Approach LOS	B		A			A
Queue Length 50th (m)	1.1	0.0	12.2	0.0	0.3	0.0
Queue Length 95th (m)	5.9	4.5	55.2	18.3	24.0	6.1
Internal Link Dist (m)	69.4		182.1			276.7
Turn Bay Length (m)					200.0	
Base Capacity (vph)	598	479	903	1029	1097	1436
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.04	0.35	0.53	0.23	0.04

Intersection Summary			
Cycle Length: 99.5			
Actuated Cycle Length: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 7.1		Intersection LOS: A	
Intersection Capacity Utilization 63.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Leikin Drive & RCMP Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	558	4	6	20	37	1	2	4	213	3	32
Future Volume (Veh/h)	151	558	4	6	20	37	1	2	4	213	3	32
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	151	558	4	6	20	37	1	2	4	213	3	32
Pedestrians								5				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					206							
pX, platoon unblocked												
vC, conflicting volume	57			567			932	936	565	916	920	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57			567			932	936	565	916	920	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			99			100	99	99	7	99	97
cM capacity (veh/h)	1528			1000			218	238	524	229	243	1039

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	151	562	6	57	7	248
Volume Left	151	0	6	0	1	213
Volume Right	0	4	0	37	4	32
cSH	1528	1700	1000	1700	339	255
Volume to Capacity	0.10	0.33	0.01	0.03	0.02	0.97
Queue Length 95th (m)	2.3	0.0	0.1	0.0	0.4	64.6
Control Delay (s)	7.6	0.0	8.6	0.0	15.8	92.1
Lane LOS	A		A		C	F
Approach Delay (s)	1.6		0.8		15.8	92.1
Approach LOS					C	F

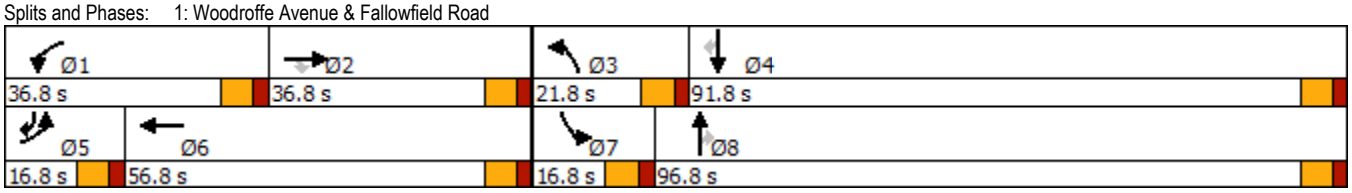
Intersection Summary				
Average Delay	23.4			
Intersection Capacity Utilization	59.3%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	233	687	540	511	11	346	693	228	16	1539	588
Future Volume (vph)	192	233	687	540	511	11	346	693	228	16	1539	588
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			141		1				228			101
Lane Group Flow (vph)	192	233	687	540	522	0	346	693	228	16	1539	588
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	16.8	36.8	36.8	36.8	56.8		21.8	96.8	96.8	16.8	91.8	16.8
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	10.0	30.0	30.0	30.0	50.0		15.0	97.7	97.7	7.3	85.0	101.8
Actuated g/C Ratio	0.05	0.16	0.16	0.16	0.27		0.08	0.52	0.52	0.04	0.45	0.54
v/c Ratio	1.12	0.45	1.92	1.03	0.59		1.36	0.40	0.27	0.24	1.01	0.69
Control Delay	179.7	74.2	451.7	121.0	62.8		242.2	28.7	3.6	95.2	75.9	30.2
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	179.7	74.2	451.7	121.0	62.8		242.2	28.7	3.6	95.2	75.9	30.2
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		325.6			92.4			82.5			63.5	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	~38.9	38.8	~321.3	~101.8	83.0		~80.2	79.0	0.0	5.5	~292.0	122.7
Queue Length 95th (m)	#65.0	52.8	#394.0	#137.4	101.7		#111.8	96.9	14.0	14.0	#329.9	166.4
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	171	521	358	525	886		255	1748	848	90	1520	852
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	1.12	0.45	1.92	1.03	0.59		1.36	0.40	0.27	0.18	1.01	0.69

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.92
Intersection Signal Delay: 125.5 Intersection LOS: F
Intersection Capacity Utilization 123.1% 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: 1: Woodroffe Avenue & Fallowfield Road

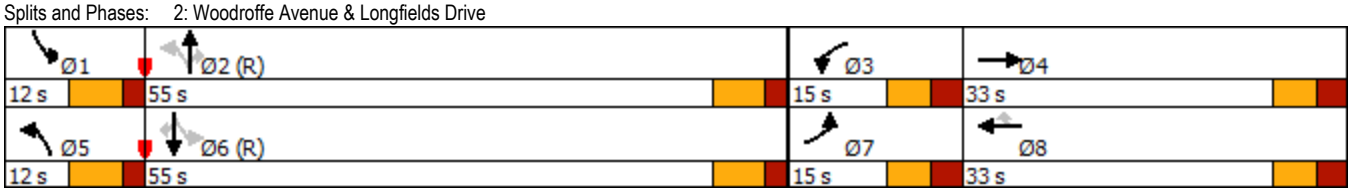


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	55	55	144	89	864	39	103	1907	223
Future Volume (vph)	155	17	70	55	55	144	89	864	39	103	1907	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.068			0.259		
Satd. Flow (perm)	3216	1528	0	1691	1780	1464	118	3316	1513	461	3349	1472
Satd. Flow (RTOR)		70				157			157			223
Lane Group Flow (vph)	155	87	0	55	55	144	89	864	39	103	1907	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	15.0	33.0		15.0	33.0	33.0	12.0	55.0	55.0	12.0	55.0	55.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	8.4	16.3		7.7	13.3	13.3	67.5	60.2	60.2	67.3	60.1	60.1
Actuated g/C Ratio	0.07	0.14		0.07	0.12	0.12	0.59	0.52	0.52	0.59	0.52	0.52
v/c Ratio	0.67	0.32		0.49	0.27	0.47	0.54	0.50	0.05	0.30	1.09	0.25
Control Delay	66.3	16.9		66.1	47.6	10.2	28.5	19.9	0.1	11.8	78.0	3.2
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	66.3	16.9		66.1	47.6	10.2	28.5	19.9	0.1	11.8	78.0	3.2
LOS	E	B		E	D	B	C	B	A	B	E	A
Approach Delay		48.5			30.4			19.9			67.5	
Approach LOS		D			C			B			E	
Queue Length 50th (m)	16.3	3.3		11.1	10.9	0.0	5.9	55.4	0.0	6.8	~226.6	0.0
Queue Length 95th (m)	#27.6	14.7		23.2	19.1	12.2	#28.0	91.4	0.0	18.4	#311.7	12.8
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	237	405		124	410	458	165	1736	866	346	1750	875
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	0.65	0.21		0.44	0.13	0.31	0.54	0.50	0.05	0.30	1.09	0.25

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 115
Offset: 92 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 51.1 Intersection LOS: D
Intersection Capacity Utilization 88.4% ICU Level of Service E
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: 2: Woodroffe Avenue & Longfields Drive

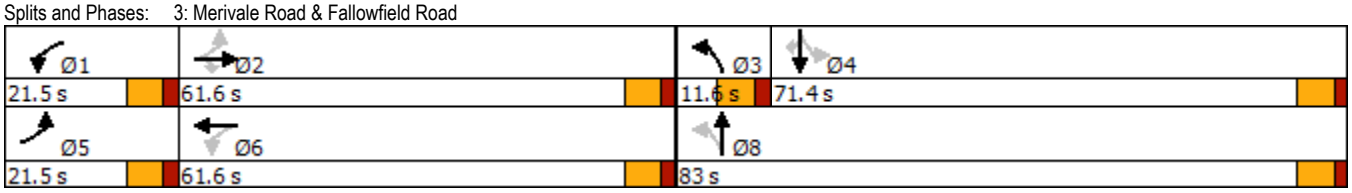


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	301	41	39	713	3	52	224	106	6	599	308
Future Volume (vph)	134	301	41	39	713	3	52	224	106	6	599	308
Satd. Flow (prot)	1496	1745	1469	1691	1778	0	1551	1598	0	1691	1762	1498
Flt Permitted	0.063			0.540			0.082			0.525		
Satd. Flow (perm)	99	1745	1469	961	1778	0	134	1598	0	934	1762	1498
Satd. Flow (RTOR)			108					19				162
Lane Group Flow (vph)	134	301	41	39	716	0	52	330	0	6	599	308
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	21.5	61.6	61.6	21.5	61.6		11.6	83.0		71.4	71.4	71.4
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.5	65.5	65.5	63.3	55.7		64.6	64.8		56.0	56.0	56.0
Actuated g/C Ratio	0.49	0.42	0.42	0.41	0.36		0.42	0.42		0.36	0.36	0.36
v/c Ratio	0.75	0.41	0.06	0.09	1.12		0.51	0.48		0.02	0.94	0.48
Control Delay	64.5	37.4	0.2	25.1	118.2		43.3	32.4		31.5	71.1	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	64.5	37.4	0.2	25.1	118.2		43.3	32.4		31.5	71.1	19.5
LOS	E	D	A	C	F		D	C		C	E	B
Approach Delay		41.8			113.4			33.9			53.5	
Approach LOS		D			F			C			D	
Queue Length 50th (m)	27.6	66.8	0.0	6.2	~257.1		8.8	63.4		1.1	167.8	31.7
Queue Length 95th (m)	#61.4	97.8	0.0	13.3	#337.1		16.7	88.6		4.4	#228.4	56.9
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	186	739	684	513	640		102	811		397	750	730
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	0.41	0.06	0.08	1.12		0.51	0.41		0.02	0.80	0.42

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 154.6
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 66.2 Intersection LOS: E
Intersection Capacity Utilization 106.8% 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.

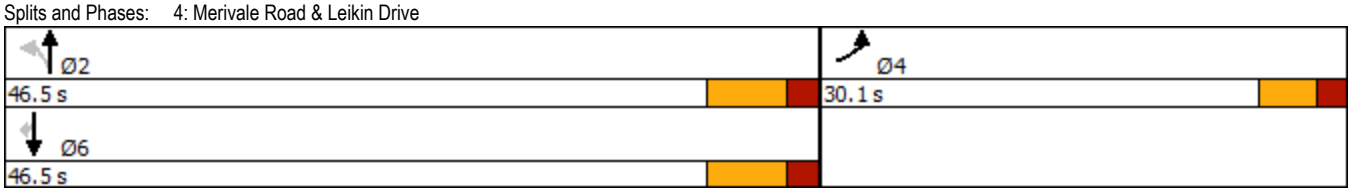
Splits and Phases: 3: Merivale Road & Fallowfield Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	220	2	1	194	489	212
Future Volume (vph)	220	2	1	194	489	212
Satd. Flow (prot)	3183	0	1271	1648	1762	1498
Flt Permitted	0.953		0.463			
Satd. Flow (perm)	3183	0	620	1648	1762	1498
Satd. Flow (RTOR)	1					212
Lane Group Flow (vph)	222	0	1	194	489	212
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Total Split (s)	30.1		46.5	46.5	46.5	46.5
Total Lost Time (s)	5.1		6.5	6.5	6.5	6.5
Act Effct Green (s)	10.6		40.0	40.0	40.0	40.0
Actuated g/C Ratio	0.17		0.64	0.64	0.64	0.64
v/c Ratio	0.41		0.00	0.18	0.43	0.20
Control Delay	25.4		4.0	5.1	7.1	1.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	25.4		4.0	5.1	7.1	1.3
LOS	C		A	A	A	A
Approach Delay	25.4			5.1	5.3	
Approach LOS	C			A	A	
Queue Length 50th (m)	10.8		0.0	6.7	20.5	0.0
Queue Length 95th (m)	18.7		0.4	14.2	38.9	5.4
Internal Link Dist (m)	51.0			445.8	100.5	
Turn Bay Length (m)			100.0			85.0
Base Capacity (vph)	1280		398	1060	1134	1040
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	0.17		0.00	0.18	0.43	0.20

Intersection Summary	
Cycle Length: 76.6	
Actuated Cycle Length: 62.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 45.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Merivale Road & Leikin Drive

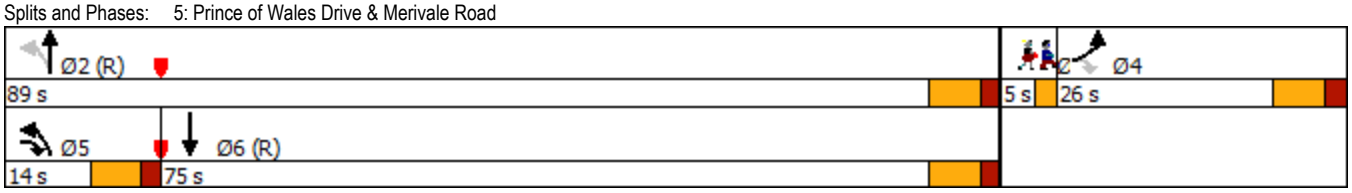


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	34	566	185	374	1015	18	
Future Volume (vph)	34	566	185	374	1015	18	
Satd. Flow (prot)	1642	1483	1566	1745	3338	0	
Flt Permitted	0.950		0.195				
Satd. Flow (perm)	1642	1483	321	1745	3338	0	
Satd. Flow (RTOR)		145			2		
Lane Group Flow (vph)	34	566	185	374	1033	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	26.0	14.0	14.0	89.0	75.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	19.2	33.6	82.6	82.5	68.5		
Actuated g/C Ratio	0.16	0.28	0.69	0.69	0.57		
v/c Ratio	0.13	1.09	0.62	0.31	0.54		
Control Delay	44.8	97.4	16.1	8.3	17.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	44.8	97.4	16.1	8.3	17.3		
LOS	D	F	B	A	B		
Approach Delay	94.4			10.9	17.3		
Approach LOS	F			B	B		
Queue Length 50th (m)	6.4	~114.2	12.8	29.2	69.6		
Queue Length 95th (m)	15.1	#176.6	20.6	42.1	86.1		
Internal Link Dist (m)	226.4			296.0	231.6		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	262	519	299	1199	1906		
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	0.13	1.09	0.62	0.31	0.54		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 36.8 — Intersection LOS: D
Intersection Capacity Utilization 78.0% — ICU Level of Service D
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: 5: Prince of Wales Drive & Merivale Road

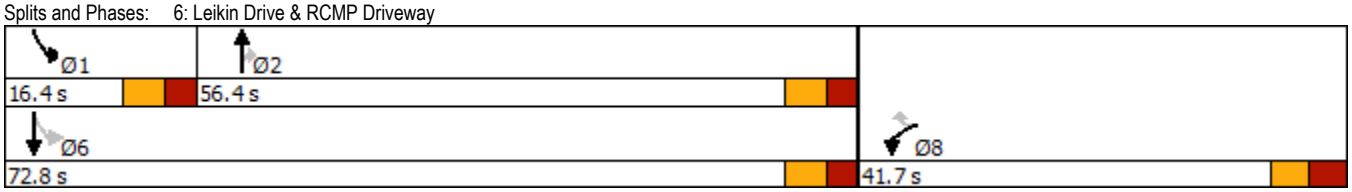


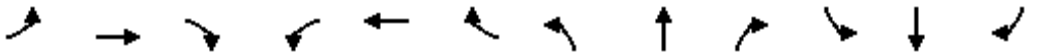
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	409	252	85	5	6	209
Future Volume (vph)	409	252	85	5	6	209
Satd. Flow (prot)	1691	1513	1648	1513	1691	1728
Flt Permitted	0.950				0.623	
Satd. Flow (perm)	1691	1391	1648	1456	1093	1728
Satd. Flow (RTOR)		252		5		
Lane Group Flow (vph)	409	252	85	5	6	209
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Total Split (s)	41.7	41.7	56.4	56.4	16.4	72.8
Total Lost Time (s)	6.7	6.7	6.4	6.4	6.4	6.4
Act Effct Green (s)	26.8	26.8	50.6	50.6	52.7	52.7
Actuated g/C Ratio	0.29	0.29	0.55	0.55	0.57	0.57
v/c Ratio	0.84	0.43	0.09	0.01	0.01	0.21
Control Delay	47.2	6.0	13.2	9.0	10.3	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	6.0	13.2	9.0	10.3	11.4
LOS	D	A	B	A	B	B
Approach Delay	31.5		13.0			11.4
Approach LOS	C		B			B
Queue Length 50th (m)	59.9	0.0	6.0	0.0	0.4	15.9
Queue Length 95th (m)	#108.2	16.0	18.2	1.9	2.2	31.1
Internal Link Dist (m)	69.4		182.1			276.7
Turn Bay Length (m)					200.0	
Base Capacity (vph)	645	686	899	796	685	1251
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.37	0.09	0.01	0.01	0.17

Intersection Summary

Cycle Length: 114.5
Actuated Cycle Length: 92.7
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 25.3 — Intersection LOS: C
Intersection Capacity Utilization 55.7% — ICU Level of Service B
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Leikin Drive & RCMP Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	57	0	0	364	183	0	1	0	43	0	162
Future Volume (Veh/h)	65	57	0	0	364	183	0	1	0	43	0	162
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	65	57	0	0	364	183	0	1	0	43	0	162
Pedestrians		1						10			1	
Lane Width (m)		3.5						3.5			3.5	
Walking Speed (m/s)		1.0						1.0			1.0	
Percent Blockage		0						1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					206							
pX, platoon unblocked	0.98						0.98	0.98		0.98	0.98	0.98
vC, conflicting volume	548			67			724	745	67	644	654	458
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530			67			709	730	67	627	637	437
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			100	100	100	88	100	73
cM capacity (veh/h)	1027			1532			236	320	992	368	361	608

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	65	57	0	547	1	205
Volume Left	65	0	0	0	0	43
Volume Right	0	0	0	183	0	162
cSH	1027	1700	1700	1700	320	535
Volume to Capacity	0.06	0.03	0.00	0.32	0.00	0.38
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.1	12.5
Control Delay (s)	8.7	0.0	0.0	0.0	16.3	15.8
Lane LOS	A				C	C
Approach Delay (s)	4.7		0.0		16.3	15.8
Approach LOS					C	C

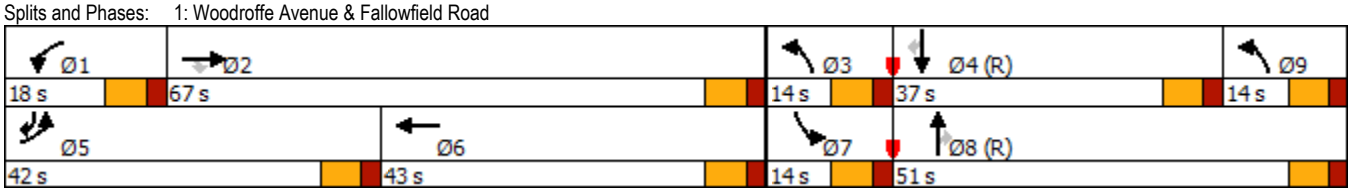
Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	65.6%	ICU Level of Service		C
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	645	625	272	127	131	32	606	1604	516	7	393	108
Future Volume (vph)	645	625	272	127	131	32	606	1604	516	7	393	108
Satd. Flow (prot)	3248	3316	1375	2955	3133	0	3216	3349	1513	1445	3221	1363
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3316	1375	2955	3133	0	3212	3349	1513	1445	3221	1345
Satd. Flow (RTOR)			272		19				365			127
Lane Group Flow (vph)	645	625	272	127	163	0	606	1604	516	7	393	108
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3 9	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	42.0	67.0	67.0	18.0	43.0			51.0	51.0	14.0	37.0	42.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8			6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	33.2	35.9	35.9	10.4	13.1		46.0	80.4	80.4	6.4	23.7	56.9
Actuated g/C Ratio	0.22	0.24	0.24	0.07	0.09		0.31	0.54	0.54	0.04	0.16	0.38
v/c Ratio	0.90	0.79	0.51	0.62	0.56		0.61	0.89	0.53	0.11	0.77	0.18
Control Delay	72.8	61.0	8.0	81.3	64.9		30.9	39.2	9.2	72.6	71.1	2.2
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	72.8	61.0	8.0	81.3	64.9		30.9	39.2	9.2	72.6	71.1	2.2
LOS	E	E	A	F	E		C	D	A	E	E	A
Approach Delay		56.6			72.1			31.7			56.5	
Approach LOS		E			E			C			E	
Queue Length 50th (m)	87.7	84.8	0.0	17.6	20.3		46.3	195.2	21.1	1.9	55.2	0.0
Queue Length 95th (m)	#109.6	99.4	20.7	27.9	30.4		#86.4	#314.4	65.6	6.7	68.7	5.4
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	762	1330	714	220	770		987	1794	980	70	648	609
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	0.85	0.47	0.38	0.58	0.21		0.61	0.89	0.53	0.10	0.61	0.18

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:SBT and 8:NBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 44.1 Intersection LOS: D
Intersection Capacity Utilization 101.4% 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: 1: Woodroffe Avenue & Fallowfield Road



Lane Group	Ø3	Ø9
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	9
Permitted Phases		
Total Split (s)	14.0	14.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
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		

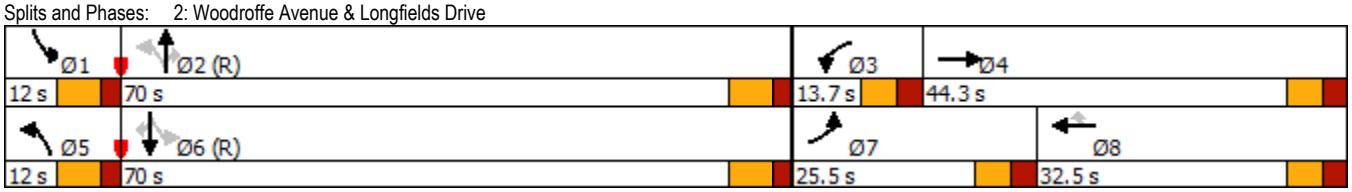
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	15	45	132	36	1536	50	154	453	111
Future Volume (vph)	372	89	82	15	45	132	36	1536	50	154	453	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.491			0.060		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	778	3349	1478	104	3221	1391
Satd. Flow (RTOR)		32				179			179			179
Lane Group Flow (vph)	372	171	0	15	45	132	36	1536	50	154	453	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	25.5	44.3		13.7	32.5	32.5	12.0	70.0	70.0	12.0	70.0	70.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	18.5	32.9		6.5	13.3	13.3	70.4	64.2	64.2	87.4	78.4	78.4
Actuated g/C Ratio	0.13	0.24		0.05	0.10	0.10	0.50	0.46	0.46	0.62	0.56	0.56
v/c Ratio	0.87	0.44		0.21	0.28	0.44	0.08	1.00	0.06	0.59	0.25	0.13
Control Delay	80.0	41.1		70.5	61.3	6.5	12.9	60.6	0.2	38.2	17.8	0.3
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	80.0	41.1		70.5	61.3	6.5	12.9	60.6	0.2	38.2	17.8	0.3
LOS	F	D		E	E	A	B	E	A	D	B	A
Approach Delay		67.8			24.3			57.6			19.4	
Approach LOS		E			C			E			B	
Queue Length 50th (m)	48.4	29.5		3.7	11.2	0.0	3.1	199.1	0.0	21.8	30.0	0.0
Queue Length 95th (m)	#70.8	48.7		10.7	20.2	5.6	9.2	#255.4	0.0	#81.3	49.7	0.0
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	440	442		81	309	422	424	1536	775	261	1803	857
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	0.85	0.39		0.19	0.15	0.31	0.08	1.00	0.06	0.59	0.25	0.13

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 86 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 48.4 Intersection LOS: D
Intersection Capacity Utilization 88.1% 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: 2: Woodroffe Avenue & Longfields Drive

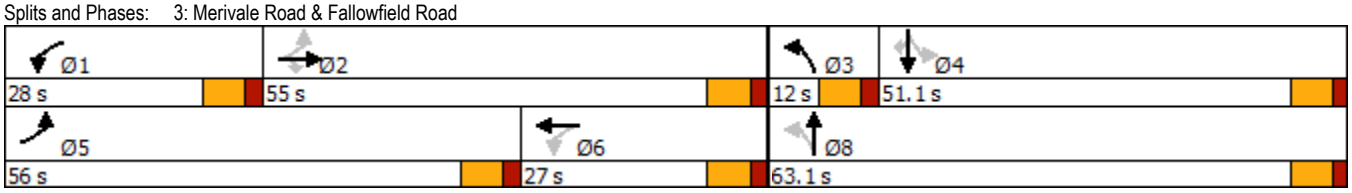


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	700	432	37	167	167	5	20	619	22	0	136	56
Future Volume (vph)	700	432	37	167	167	5	20	619	22	0	136	56
Satd. Flow (prot)	1658	1762	1427	1658	1691	0	1691	1736	0	1780	1618	1327
Flt Permitted	0.330			0.511			0.568					
Satd. Flow (perm)	576	1762	1427	892	1691	0	1011	1736	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			1				173
Lane Group Flow (vph)	700	432	37	167	172	0	20	641	0	0	136	56
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	56.0	55.0	55.0	28.0	27.0		12.0	63.1		51.1	51.1	51.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.5	56.7	56.7	33.7	20.4		54.7	54.9			47.8	47.8
Actuated g/C Ratio	0.53	0.39	0.39	0.23	0.14		0.38	0.38			0.33	0.33
v/c Ratio	1.03	0.62	0.06	0.60	0.72		0.05	0.97			0.25	0.10
Control Delay	74.5	41.3	0.2	35.2	76.8		28.3	72.3			38.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	74.5	41.3	0.2	35.2	76.8		28.3	72.3			38.2	0.4
LOS	E	D	A	D	E		C	E			D	A
Approach Delay		59.9			56.3			70.9			27.2	
Approach LOS		E			E			E			C	
Queue Length 50th (m)	~172.3	92.9	0.0	22.9	44.3		3.3	164.6			27.6	0.0
Queue Length 95th (m)	#241.8	133.9	0.0	35.8	#73.1		8.5	#235.9			44.3	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	677	692	635	374	239		408	683			535	555
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	1.03	0.62	0.06	0.45	0.72		0.05	0.94			0.25	0.10

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 144.3
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 59.8 Intersection LOS: E
Intersection Capacity Utilization 102.6% 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: 3: Merivale Road & Fallowfield Road

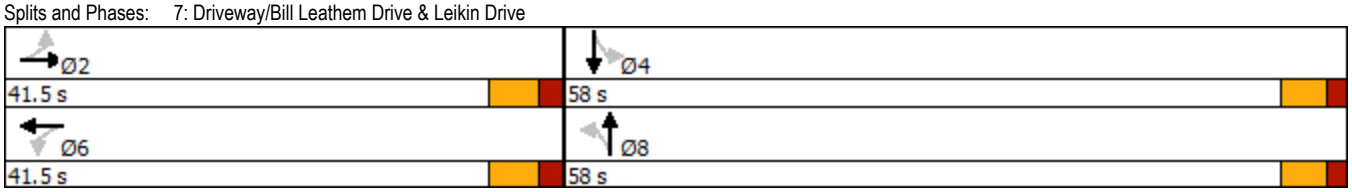


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	558	4	6	20	37	1	2	4	213	3	32
Future Volume (vph)	151	558	4	6	20	37	1	2	4	213	3	32
Satd. Flow (prot)	1610	1726	0	1658	1547	0	0	1611	0	0	1645	0
Flt Permitted	0.720			0.333				0.964			0.751	
Satd. Flow (perm)	1221	1726	0	580	1547	0	0	1564	0	0	1288	0
Satd. Flow (RTOR)					37			4			11	
Lane Group Flow (vph)	151	562	0	6	57	0	0	7	0	0	248	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	41.5	41.5		41.5	41.5		58.0	58.0		58.0	58.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6			5.0			5.0	
Act Effct Green (s)	25.5	25.5		25.5	25.5			16.6			16.6	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.31			0.31	
v/c Ratio	0.26	0.68		0.02	0.07			0.01			0.61	
Control Delay	10.5	16.4		8.7	4.9			11.4			22.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.5	16.4		8.7	4.9			11.4			22.9	
LOS	B	B		A	A			B			C	
Approach Delay		15.1			5.3			11.4			22.9	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	7.1	34.4		0.3	0.8			0.2			16.6	
Queue Length 95th (m)	19.3	76.2		1.9	5.7			2.4			42.5	
Internal Link Dist (m)		337.1			182.1			90.9			596.0	
Turn Bay Length (m)	30.0			30.0								
Base Capacity (vph)	860	1216		409	1101			1454			1198	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.18	0.46		0.01	0.05			0.00			0.21	

Intersection Summary

Cycle Length: 99.5
Actuated Cycle Length: 53.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 16.4 — Intersection LOS: B
Intersection Capacity Utilization 61.4% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: Driveway/Bill Leathem Drive & Leikin Drive

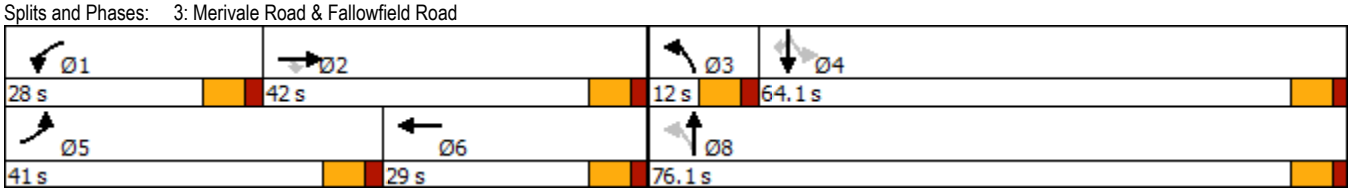


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	700	432	37	167	167	5	20	619	22	0	136	56
Future Volume (vph)	700	432	37	167	167	5	20	619	22	0	136	56
Satd. Flow (prot)	3216	1762	1427	1658	1691	0	1691	1736	0	1780	1618	1327
Flt Permitted	0.950			0.950			0.583					
Satd. Flow (perm)	3216	1762	1427	1658	1691	0	1038	1736	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			2				173
Lane Group Flow (vph)	700	432	37	167	172	0	20	641	0	0	136	56
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	41.0	42.0	42.0	28.0	29.0		12.0	76.1		64.1	64.1	64.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	31.2	37.0	37.0	17.1	22.9		50.8	51.0			46.8	46.8
Actuated g/C Ratio	0.25	0.30	0.30	0.14	0.18		0.41	0.41			0.37	0.37
v/c Ratio	0.87	0.83	0.07	0.74	0.55		0.04	0.90			0.22	0.09
Control Delay	58.8	58.2	0.3	73.5	57.7		21.8	51.7			29.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	58.8	58.2	0.3	73.5	57.7		21.8	51.7			29.0	0.3
LOS	E	E	A	E	E		C	D			C	A
Approach Delay		56.7			65.5			50.8			20.6	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	78.4	92.4	0.0	37.5	36.8		2.8	138.5			20.3	0.0
Queue Length 95th (m)	#126.5	#181.6	0.0	#67.3	67.2		7.2	186.0			38.2	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	903	521	508	290	311		450	986			760	715
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	0.78	0.83	0.07	0.58	0.55		0.04	0.65			0.18	0.08

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 125
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 53.4 — Intersection LOS: D
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: 3: Merivale Road & Fallowfield Road

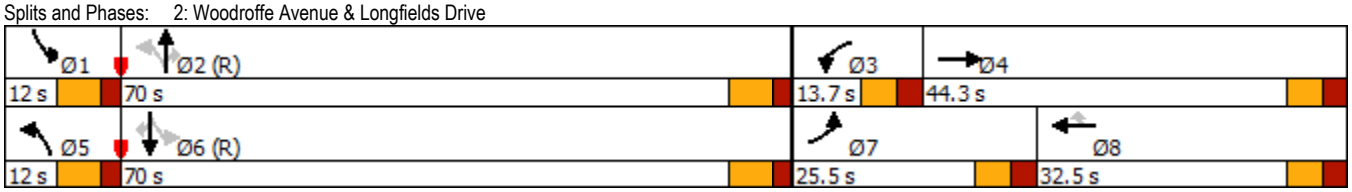


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	15	45	132	36	1386	50	154	453	111
Future Volume (vph)	372	89	82	15	45	132	36	1386	50	154	453	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.491			0.060		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	778	3349	1478	104	3221	1391
Satd. Flow (RTOR)		32				179			179			179
Lane Group Flow (vph)	372	171	0	15	45	132	36	1386	50	154	453	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	25.5	44.3		13.7	32.5	32.5	12.0	70.0	70.0	12.0	70.0	70.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	18.5	32.9		6.5	13.3	13.3	70.4	64.2	64.2	87.4	78.4	78.4
Actuated g/C Ratio	0.13	0.24		0.05	0.10	0.10	0.50	0.46	0.46	0.62	0.56	0.56
v/c Ratio	0.87	0.44		0.21	0.28	0.44	0.08	0.90	0.06	0.59	0.25	0.13
Control Delay	80.0	41.1		70.5	61.3	6.5	12.9	44.3	0.2	38.2	17.8	0.3
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	80.0	41.1		70.5	61.3	6.5	12.9	44.3	0.2	38.2	17.8	0.3
LOS	F	D		E	E	A	B	D	A	D	B	A
Approach Delay		67.8			24.3			42.0			19.4	
Approach LOS		E			C			D			B	
Queue Length 50th (m)	48.4	29.5		3.7	11.2	0.0	3.1	165.8	0.0	21.8	30.0	0.0
Queue Length 95th (m)	#70.8	48.7		10.7	20.2	5.6	9.2	#204.6	0.0	#81.3	49.7	0.0
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	440	442		81	309	422	424	1536	775	261	1803	857
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	0.85	0.39		0.19	0.15	0.31	0.08	0.90	0.06	0.59	0.25	0.13

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 86 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 40.1 Intersection LOS: D
Intersection Capacity Utilization 83.7% 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: 2: Woodroffe Avenue & Longfields Drive

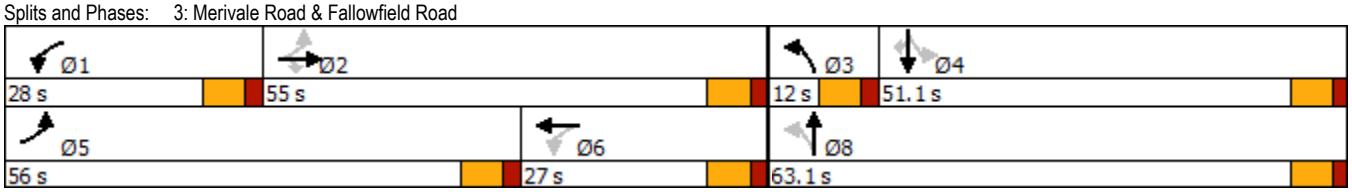


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	432	37	167	167	5	20	499	22	0	136	56
Future Volume (vph)	650	432	37	167	167	5	20	499	22	0	136	56
Satd. Flow (prot)	1658	1762	1427	1658	1691	0	1691	1735	0	1780	1618	1327
Flt Permitted	0.364			0.511			0.545					
Satd. Flow (perm)	635	1762	1427	892	1691	0	970	1735	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			2				173
Lane Group Flow (vph)	650	432	37	167	172	0	20	521	0	0	136	56
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	56.0	55.0	55.0	28.0	27.0		12.0	63.1		51.1	51.1	51.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	74.8	56.0	56.0	32.8	20.6		43.5	43.7			37.0	37.0
Actuated g/C Ratio	0.57	0.43	0.43	0.25	0.16		0.33	0.33			0.28	0.28
v/c Ratio	0.89	0.58	0.05	0.57	0.65		0.06	0.90			0.30	0.11
Control Delay	39.1	35.2	0.2	31.2	66.7		29.4	61.8			40.5	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	39.1	35.2	0.2	31.2	66.7		29.4	61.8			40.5	0.5
LOS	D	D	A	C	E		C	E			D	A
Approach Delay		36.3			49.2			60.6			28.9	
Approach LOS		D			D			E			C	
Queue Length 50th (m)	108.5	78.1	0.0	18.6	39.8		3.3	120.3			27.6	0.0
Queue Length 95th (m)	#206.5	133.9	0.0	35.8	#73.1		8.5	162.2			44.3	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	750	749	677	414	265		350	756			555	569
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	0.87	0.58	0.05	0.40	0.65		0.06	0.69			0.25	0.10

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 131.5
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 43.7 Intersection LOS: D
Intersection Capacity Utilization 93.0% 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: 3: Merivale Road & Fallowfield Road

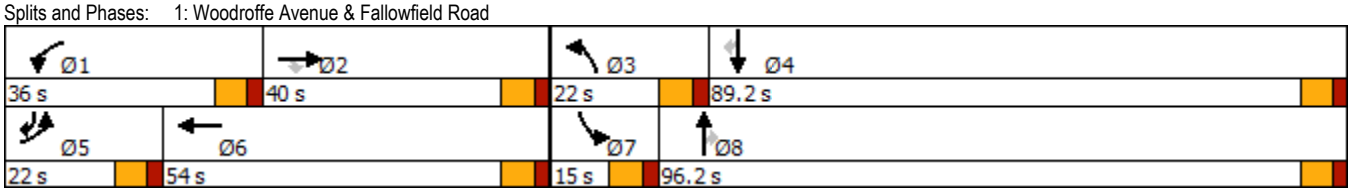


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	233	687	540	511	11	346	639	228	16	1539	588
Future Volume (vph)	192	233	687	540	511	11	346	639	228	16	1539	588
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			181		1				228			141
Lane Group Flow (vph)	192	233	687	540	522	0	346	639	228	16	1539	588
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	22.0	40.0	40.0	36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.5	33.2	33.2	29.2	47.9		15.2	95.6	95.6	7.1	82.4	103.7
Actuated g/C Ratio	0.08	0.18	0.18	0.16	0.26		0.08	0.51	0.51	0.04	0.44	0.55
v/c Ratio	0.77	0.40	1.66	1.06	0.61		1.34	0.37	0.27	0.25	1.04	0.67
Control Delay	105.0	70.7	337.4	128.0	65.2		236.2	29.4	3.7	96.6	85.7	25.7
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	105.0	70.7	337.4	128.0	65.2		236.2	29.4	3.7	96.6	85.7	25.7
LOS	F	E	F	F	E		F	C	A	F	F	C
Approach Delay		241.4			97.2			83.5			69.3	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	33.9	38.0	~289.8	~104.3	84.7		~79.5	73.4	0.0	5.5	~300.7	107.9
Queue Length 95th (m)	#48.0	51.7	#362.5	#140.0	103.9		#111.1	89.0	14.1	14.2	#338.6	148.9
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	414	511	849		258	1710	835	74	1474	884
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	0.40	1.66	1.06	0.61		1.34	0.37	0.27	0.22	1.04	0.67

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.66
Intersection Signal Delay: 112.4 Intersection LOS: F
Intersection Capacity Utilization 123.1% 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: 1: Woodroffe Avenue & Fallowfield Road

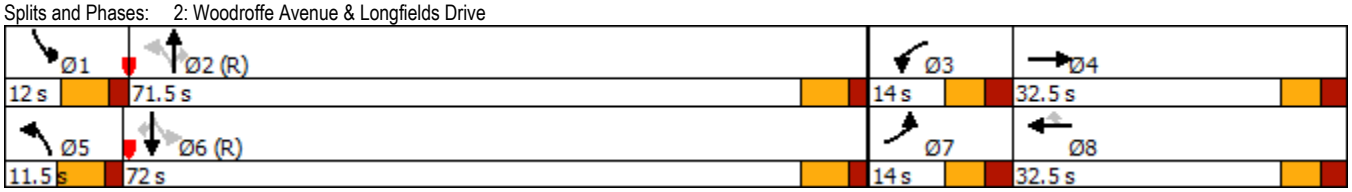


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	55	55	144	89	864	39	103	1907	223
Future Volume (vph)	155	17	70	55	55	144	89	864	39	103	1907	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.054			0.277		
Satd. Flow (perm)	3216	1528	0	1691	1780	1463	93	3316	1513	493	3349	1470
Satd. Flow (RTOR)		70				144			138			223
Lane Group Flow (vph)	155	87	0	55	55	144	89	864	39	103	1907	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	14.0	32.5		14.0	32.5	32.5	11.5	71.5	71.5	12.0	72.0	72.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	7.5	16.2		7.2	13.4	13.4	83.8	76.1	76.1	82.5	75.4	75.4
Actuated g/C Ratio	0.06	0.12		0.06	0.10	0.10	0.64	0.59	0.59	0.63	0.58	0.58
v/c Ratio	0.84	0.35		0.59	0.30	0.52	0.59	0.45	0.04	0.27	0.98	0.24
Control Delay	94.8	19.6		84.8	56.3	14.2	35.8	16.8	0.1	9.9	43.6	2.6
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	94.8	19.6		84.8	56.3	14.2	35.8	16.8	0.1	9.9	43.6	2.6
LOS	F	B		F	E	B	D	B	A	A	D	A
Approach Delay		67.8			38.6			17.9			37.9	
Approach LOS		E			D			B			D	
Queue Length 50th (m)	19.0	3.8		12.9	12.6	0.0	6.0	54.1	0.0	6.6	209.1	0.0
Queue Length 95th (m)	#36.4	16.3		#28.6	21.7	15.9	#37.2	87.2	0.0	17.5	#313.0	11.4
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	185	361		97	356	407	151	1940	942	377	1943	946
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	0.84	0.24		0.57	0.15	0.35	0.59	0.45	0.04	0.27	0.98	0.24

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 34.6 Intersection LOS: C
Intersection Capacity Utilization 88.4% 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: 2: Woodroffe Avenue & Longfields Drive

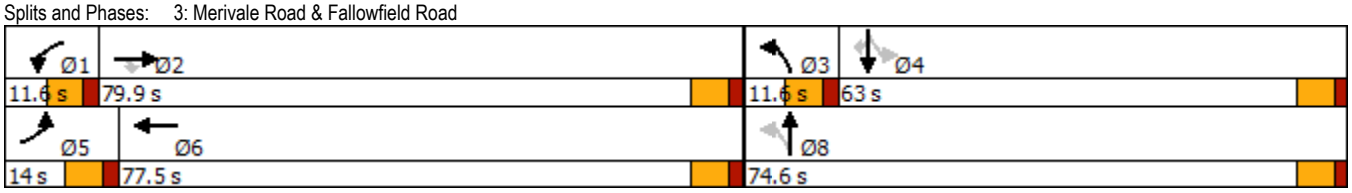


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	301	41	39	713	3	52	224	106	6	599	308
Future Volume (vph)	134	301	41	39	713	3	52	224	106	6	599	308
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1598	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.070			0.516		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	114	1598	0	918	1762	1498
Satd. Flow (RTOR)			108					17				150
Lane Group Flow (vph)	134	301	41	39	716	0	52	330	0	6	599	308
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	14.0	79.9	79.9	11.6	77.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	7.6	71.7	71.7	5.1	66.5		65.0	65.2		56.3	56.3	56.3
Actuated g/C Ratio	0.05	0.45	0.45	0.03	0.42		0.41	0.41		0.35	0.35	0.35
v/c Ratio	0.97	0.38	0.06	0.72	0.96		0.57	0.50		0.02	0.96	0.49
Control Delay	143.5	31.9	0.1	136.0	70.3		54.9	36.4		36.8	78.4	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	143.5	31.9	0.1	136.0	70.3		54.9	36.4		36.8	78.4	23.8
LOS	F	C	A	F	E		D	D		D	E	C
Approach Delay		60.6			73.7			38.9			59.7	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	~22.2	61.4	0.0	12.0	207.9		9.7	70.3		1.2	182.6	37.9
Queue Length 95th (m)	#44.0	85.0	0.0	#32.8	#283.5		#20.3	98.2		4.7	#256.5	65.6
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	138	812	741	54	799		91	701		329	633	634
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	0.97	0.37	0.06	0.72	0.90		0.57	0.47		0.02	0.95	0.49

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 158.9
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 60.9 Intersection LOS: E
Intersection Capacity Utilization 103.2% 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: 3: Merivale Road & Fallowfield Road

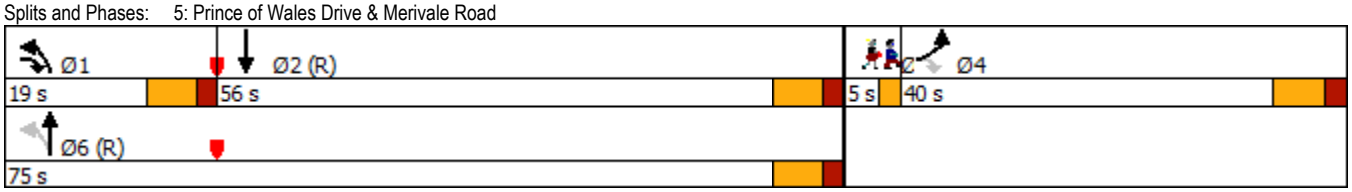


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	34	566	185	374	1015	18	
Future Volume (vph)	34	566	185	374	1015	18	
Satd. Flow (prot)	1642	1483	1566	1745	3338	0	
Flt Permitted	0.950		0.136				
Satd. Flow (perm)	1642	1483	224	1745	3338	0	
Satd. Flow (RTOR)		100			2		
Lane Group Flow (vph)	34	566	185	374	1033	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	1	1	6	2		3
Permitted Phases		4	6				
Total Split (s)	40.0	19.0	19.0	75.0	56.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	32.2	50.6	69.6	69.5	51.5		
Actuated g/C Ratio	0.27	0.42	0.58	0.58	0.43		
v/c Ratio	0.08	0.83	0.72	0.37	0.72		
Control Delay	32.8	36.6	30.8	15.1	32.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	32.8	36.6	30.8	15.1	32.3		
LOS	C	D	C	B	C		
Approach Delay	36.4			20.3	32.3		
Approach LOS	D			C	C		
Queue Length 50th (m)	5.5	88.1	18.5	42.1	98.6		
Queue Length 95th (m)	12.9	134.4	#40.0	60.8	122.0		
Internal Link Dist (m)	226.4			296.0	231.6		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	454	679	270	1010	1435		
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	0.07	0.83	0.69	0.37	0.72		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 30.4 — Intersection LOS: C
Intersection Capacity Utilization 78.0% — 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: 5: Prince of Wales Drive & Merivale Road

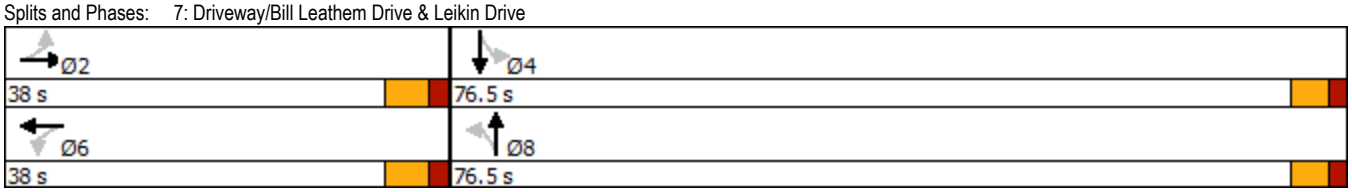


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	57	0	0	364	183	0	1	0	43	0	162
Future Volume (vph)	65	57	0	0	364	183	0	1	0	43	0	162
Satd. Flow (prot)	1691	1534	0	1780	1651	0	0	1780	0	0	1532	0
Flt Permitted	0.412										0.929	
Satd. Flow (perm)	733	1534	0	1780	1651	0	0	1780	0	0	1438	0
Satd. Flow (RTOR)					22						162	
Lane Group Flow (vph)	65	57	0	0	547	0	0	1	0	0	205	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	38.0	38.0		38.0	38.0		76.5	76.5		76.5	76.5	
Total Lost Time (s)	5.6	5.6		5.6	5.6			5.0			5.0	
Act Effct Green (s)	34.1	34.1			34.1			10.3			10.3	
Actuated g/C Ratio	0.62	0.62			0.62			0.19			0.19	
v/c Ratio	0.14	0.06			0.53			0.00			0.51	
Control Delay	5.6	4.6			8.2			17.0			11.0	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	5.6	4.6			8.2			17.0			11.0	
LOS	A	A			A			B			B	
Approach Delay		5.1			8.2			17.0			11.0	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	2.0	1.7			21.9			0.1			3.2	
Queue Length 95th (m)	6.1	4.8			43.3			1.0			16.3	
Internal Link Dist (m)		337.1			182.1			90.9			596.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	454	950			1030			1780			1438	
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	0.14	0.06			0.53			0.00			0.14	

Intersection Summary

Cycle Length: 114.5
Actuated Cycle Length: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 8.4 Intersection LOS: A
Intersection Capacity Utilization 73.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 7: Driveway/Bill Leathem Drive & Leikin Drive

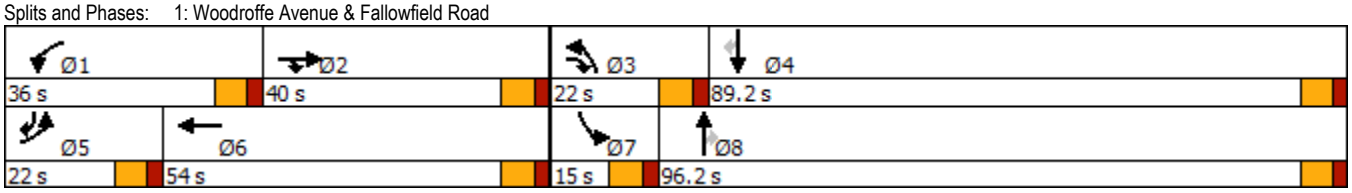


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	233	687	540	511	11	346	693	228	16	1539	588
Future Volume (vph)	192	233	687	540	511	11	346	693	228	16	1539	588
Satd. Flow (prot)	3216	3252	2637	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	2637	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)					1				228			141
Lane Group Flow (vph)	192	233	687	540	522	0	346	693	228	16	1539	588
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	2 3	1	6		3	8		7	4	5
Permitted Phases									8			4
Total Split (s)	22.0	40.0		36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.5	33.2	55.2	29.2	47.9		15.2	95.6	95.6	7.1	82.4	103.7
Actuated g/C Ratio	0.08	0.18	0.29	0.16	0.26		0.08	0.51	0.51	0.04	0.44	0.55
v/c Ratio	0.77	0.40	0.88	1.06	0.61		1.34	0.41	0.27	0.25	1.04	0.67
Control Delay	105.0	70.7	76.9	128.0	65.2		236.2	30.0	3.7	96.6	85.7	25.7
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	105.0	70.7	76.9	128.0	65.2		236.2	30.0	3.7	96.6	85.7	25.7
LOS	F	E	E	F	E		F	C	A	F	F	C
Approach Delay		80.4			97.2			81.6			69.3	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	33.9	38.0	129.3	~104.3	84.7		~79.5	81.2	0.0	5.5	~300.7	107.9
Queue Length 95th (m)	#48.0	51.7	#161.6	#140.0	103.9		#111.1	98.0	14.1	14.2	#338.6	148.9
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	777	511	849		258	1710	835	74	1474	884
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	0.40	0.88	1.06	0.61		1.34	0.41	0.27	0.22	1.04	0.67

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.34
Intersection Signal Delay: 79.6 Intersection LOS: E
Intersection Capacity Utilization 103.5% 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: 1: Woodroffe Avenue & Fallowfield Road

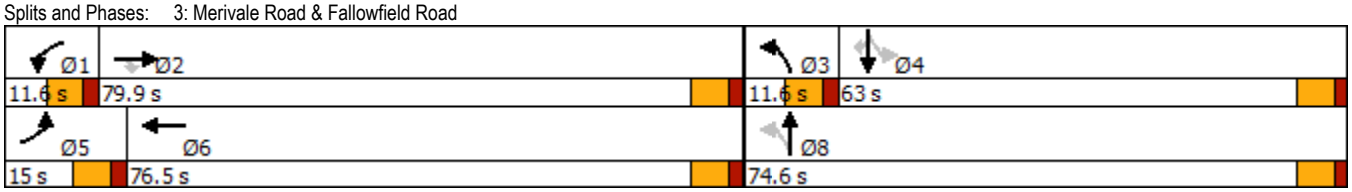


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	301	41	39	713	3	52	224	106	6	599	308
Future Volume (vph)	134	301	41	39	713	3	52	224	106	6	599	308
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1598	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.068			0.515		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	111	1598	0	917	1762	1498
Satd. Flow (RTOR)			108					17				150
Lane Group Flow (vph)	134	301	41	39	716	0	52	330	0	6	599	308
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	15.0	79.9	79.9	11.6	76.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	8.6	72.7	72.7	5.1	66.5		65.2	65.4		56.4	56.4	56.4
Actuated g/C Ratio	0.05	0.45	0.45	0.03	0.42		0.41	0.41		0.35	0.35	0.35
v/c Ratio	0.86	0.38	0.06	0.74	0.97		0.58	0.50		0.02	0.96	0.49
Control Delay	118.8	31.8	0.1	138.0	72.1		56.3	36.8		36.8	79.8	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	118.8	31.8	0.1	138.0	72.1		56.3	36.8		36.8	79.8	23.9
LOS	F	C	A	F	E		E	D		D	E	C
Approach Delay		53.6			75.6			39.4			60.7	
Approach LOS		D			E			D			E	
Queue Length 50th (m)	21.3	61.4	0.0	12.0	210.3		9.7	70.3		1.2	182.6	37.9
Queue Length 95th (m)	#41.1	85.0	0.0	#32.8	#286.8		#19.0	98.2		4.7	#256.5	65.6
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	155	804	734	53	781		90	694		326	626	629
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	0.86	0.37	0.06	0.74	0.92		0.58	0.48		0.02	0.96	0.49

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 160.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 60.6 Intersection LOS: E
Intersection Capacity Utilization 103.2% 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.

Splits and Phases: 3: Merivale Road & Fallowfield Road

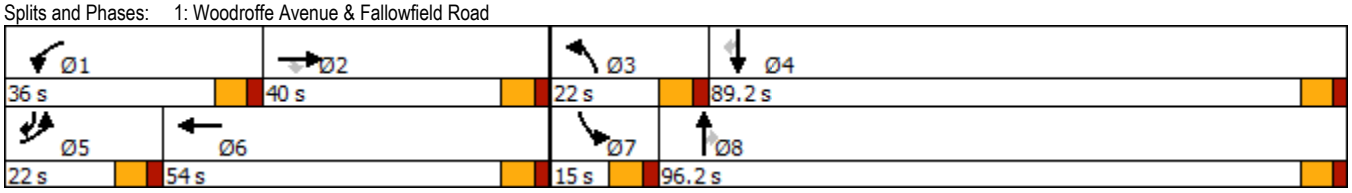


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	233	407	510	511	11	256	693	228	16	1479	588
Future Volume (vph)	192	233	407	510	511	11	256	693	228	16	1479	588
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			181		1				228			141
Lane Group Flow (vph)	192	233	407	510	522	0	256	693	228	16	1479	588
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	22.0	40.0	40.0	36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.5	33.2	33.2	29.2	47.9		15.2	95.6	95.6	7.1	82.4	103.7
Actuated g/C Ratio	0.08	0.18	0.18	0.16	0.26		0.08	0.51	0.51	0.04	0.44	0.55
v/c Ratio	0.77	0.40	0.98	1.00	0.61		0.99	0.41	0.27	0.25	1.00	0.67
Control Delay	105.0	70.7	80.9	116.2	65.2		137.0	30.0	3.7	96.6	75.5	25.7
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	105.0	70.7	80.9	116.2	65.2		137.0	30.0	3.7	96.6	75.5	25.7
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		83.6			90.4			48.2			61.6	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	33.9	38.0	86.5	92.0	84.7		46.3	81.2	0.0	5.5	~269.4	107.9
Queue Length 95th (m)	#48.0	51.7	#153.6	#128.6	103.9		#75.2	98.0	14.1	14.2	#316.1	148.9
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	414	511	849		258	1710	835	74	1474	884
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	0.40	0.98	1.00	0.61		0.99	0.41	0.27	0.22	1.00	0.67

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 67.9 Intersection LOS: E
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: 1: Woodroffe Avenue & Fallowfield Road

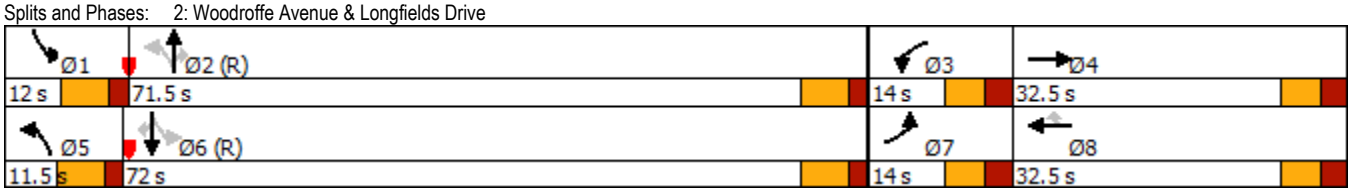


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	55	55	144	89	864	39	103	1757	223
Future Volume (vph)	155	17	70	55	55	144	89	864	39	103	1757	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.054			0.277		
Satd. Flow (perm)	3216	1528	0	1691	1780	1463	93	3316	1513	493	3349	1470
Satd. Flow (RTOR)		70				144			138			223
Lane Group Flow (vph)	155	87	0	55	55	144	89	864	39	103	1757	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	14.0	32.5		14.0	32.5	32.5	11.5	71.5	71.5	12.0	72.0	72.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	7.5	16.2		7.2	13.4	13.4	83.8	76.1	76.1	82.5	75.4	75.4
Actuated g/C Ratio	0.06	0.12		0.06	0.10	0.10	0.64	0.59	0.59	0.63	0.58	0.58
v/c Ratio	0.84	0.35		0.59	0.30	0.52	0.59	0.45	0.04	0.27	0.90	0.24
Control Delay	94.8	19.6		84.8	56.3	14.2	35.8	16.8	0.1	9.9	32.6	2.6
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	94.8	19.6		84.8	56.3	14.2	35.8	16.8	0.1	9.9	32.6	2.6
LOS	F	B		F	E	B	D	B	A	A	C	A
Approach Delay		67.8			38.6			17.9			28.3	
Approach LOS		E			D			B			C	
Queue Length 50th (m)	19.0	3.8		12.9	12.6	0.0	6.0	54.1	0.0	6.6	174.3	0.0
Queue Length 95th (m)	#36.4	16.3		#28.6	21.7	15.9	#37.2	87.2	0.0	17.5	#274.5	11.4
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	185	361		97	356	407	151	1940	942	377	1943	946
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	0.84	0.24		0.57	0.15	0.35	0.59	0.45	0.04	0.27	0.90	0.24

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 28.8 Intersection LOS: C
Intersection Capacity Utilization 84.1% 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: 2: Woodroffe Avenue & Longfields Drive

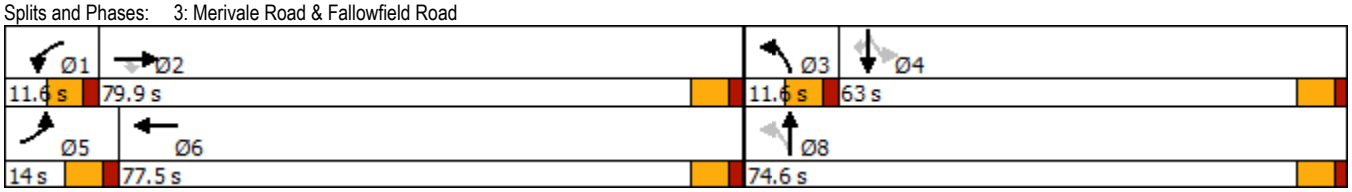


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	301	41	39	623	3	52	224	106	6	549	308
Future Volume (vph)	134	301	41	39	623	3	52	224	106	6	549	308
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1598	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.114			0.534		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	186	1598	0	951	1762	1498
Satd. Flow (RTOR)			108					17				163
Lane Group Flow (vph)	134	301	41	39	626	0	52	330	0	6	549	308
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	14.0	79.9	79.9	11.6	77.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	7.9	61.7	61.7	5.4	55.5		57.7	57.9		49.3	49.3	49.3
Actuated g/C Ratio	0.06	0.44	0.44	0.04	0.39		0.41	0.41		0.35	0.35	0.35
v/c Ratio	0.83	0.40	0.06	0.62	0.90		0.41	0.50		0.02	0.90	0.49
Control Delay	106.5	31.9	0.2	111.1	58.7		38.3	33.3		35.5	64.2	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	106.5	31.9	0.2	111.1	58.7		38.3	33.3		35.5	64.2	20.7
LOS	F	C	A	F	E		D	C		D	E	C
Approach Delay		50.2			61.8			34.0			48.5	
Approach LOS		D			E			C			D	
Queue Length 50th (m)	19.7	61.1	0.0	11.1	167.0		8.4	61.3		1.1	142.4	30.2
Queue Length 95th (m)	#44.0	85.0	0.0	#32.8	217.9		18.3	98.2		4.8	#223.7	61.8
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	161	948	847	63	935		126	817		399	739	723
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	0.83	0.32	0.05	0.62	0.67		0.41	0.40		0.02	0.74	0.43

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 141.8
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 50.2 — Intersection LOS: D
Intersection Capacity Utilization 95.4% — 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: 3: Merivale Road & Fallowfield Road

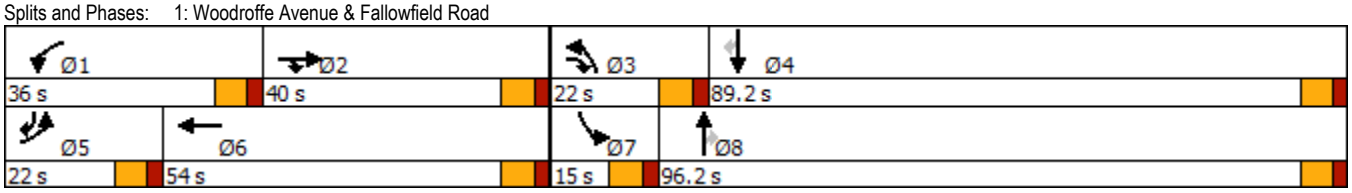


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	233	687	510	511	11	256	693	228	16	1479	588
Future Volume (vph)	192	233	687	510	511	11	256	693	228	16	1479	588
Satd. Flow (prot)	3216	3252	2637	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	2637	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)					1				228			141
Lane Group Flow (vph)	192	233	687	510	522	0	256	693	228	16	1479	588
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	2 3	1	6		3	8		7	4	5
Permitted Phases									8			4
Total Split (s)	22.0	40.0		36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.5	33.2	55.2	29.2	47.9		15.2	95.6	95.6	7.1	82.4	103.7
Actuated g/C Ratio	0.08	0.18	0.29	0.16	0.26		0.08	0.51	0.51	0.04	0.44	0.55
v/c Ratio	0.77	0.40	0.88	1.00	0.61		0.99	0.41	0.27	0.25	1.00	0.67
Control Delay	105.0	70.7	76.9	116.2	65.2		137.0	30.0	3.7	96.6	75.5	25.7
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	105.0	70.7	76.9	116.2	65.2		137.0	30.0	3.7	96.6	75.5	25.7
LOS	F	E	E	F	E		F	C	A	F	E	C
Approach Delay		80.4			90.4			48.2			61.6	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	33.9	38.0	129.3	92.0	84.7		46.3	81.2	0.0	5.5	~269.4	107.9
Queue Length 95th (m)	#48.0	51.7	#161.6	#128.6	103.9		#75.2	98.0	14.1	14.2	#316.1	148.9
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	777	511	849		258	1710	835	74	1474	884
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	0.40	0.88	1.00	0.61		0.99	0.41	0.27	0.22	1.00	0.67

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 68.0 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: 1: Woodroffe Avenue & Fallowfield Road

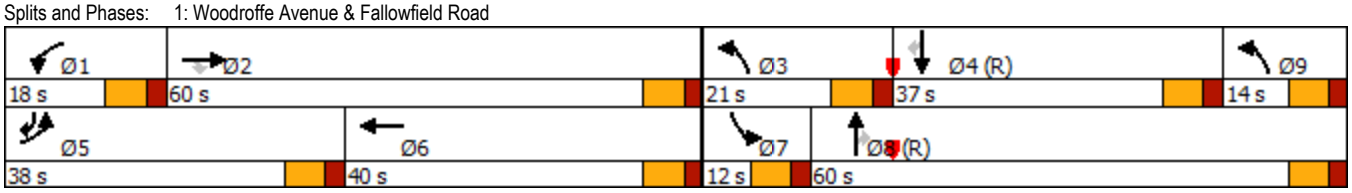


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	687	667	290	136	139	34	646	1710	551	7	419	115
Future Volume (vph)	687	667	290	136	139	34	646	1710	551	7	419	115
Satd. Flow (prot)	3248	3316	1375	2955	3133	0	3216	3349	1513	1445	3221	1363
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3316	1375	2955	3133	0	3212	3349	1513	1445	3221	1345
Satd. Flow (RTOR)			290		18				331			176
Lane Group Flow (vph)	687	667	290	136	173	0	646	1710	551	7	419	115
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3 9	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	38.0	60.0	60.0	18.0	40.0			60.0	60.0	12.0	37.0	38.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8			6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	31.2	37.8	37.8	10.6	17.2		43.0	78.3	78.3	6.4	24.6	55.8
Actuated g/C Ratio	0.21	0.25	0.25	0.07	0.11		0.29	0.52	0.52	0.04	0.16	0.37
v/c Ratio	1.02	0.80	0.52	0.65	0.46		0.70	0.98	0.58	0.11	0.79	0.19
Control Delay	96.8	60.1	7.6	83.0	58.3		34.8	51.7	13.1	72.6	71.5	0.9
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	96.8	60.1	7.6	83.0	58.3		34.8	51.7	13.1	72.6	71.5	0.9
LOS	F	E	A	F	E		C	D	B	E	E	A
Approach Delay		66.2			69.2			40.7			56.5	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	~102.2	91.5	0.0	18.9	21.2		50.6	223.5	36.0	1.9	58.7	0.0
Queue Length 95th (m)	#137.6	104.3	20.4	29.6	30.6		#108.5	#355.2	92.8	6.7	73.1	0.6
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	675	1176	674	220	707		922	1748	948	61	648	614
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	1.02	0.57	0.43	0.62	0.24		0.70	0.98	0.58	0.11	0.65	0.19

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:SBT and 8:NBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 51.6 Intersection LOS: D
Intersection Capacity Utilization 105.7% 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: 1: Woodroffe Avenue & Fallowfield Road



Lane Group	Ø3	Ø9
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	9
Permitted Phases		
Total Split (s)	21.0	14.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
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		

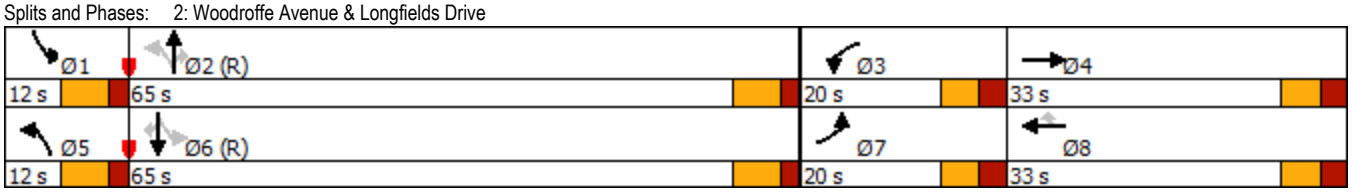
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	15	45	132	36	1637	50	154	483	111
Future Volume (vph)	372	89	82	15	45	132	36	1637	50	154	483	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.476			0.064		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	756	3349	1479	111	3221	1393
Satd. Flow (RTOR)		32				138			138			138
Lane Group Flow (vph)	372	171	0	15	45	132	36	1637	50	154	483	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	20.0	33.0		20.0	33.0	33.0	12.0	65.0	65.0	12.0	65.0	65.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	13.5	28.2		6.9	14.0	14.0	66.2	60.0	60.0	81.7	75.1	75.1
Actuated g/C Ratio	0.10	0.22		0.05	0.11	0.11	0.51	0.46	0.46	0.63	0.58	0.58
v/c Ratio	1.10	0.47		0.18	0.25	0.46	0.09	1.06	0.07	0.59	0.26	0.13
Control Delay	132.6	41.2		63.2	54.0	12.3	11.8	75.0	0.2	35.3	16.0	2.0
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	132.6	41.2		63.2	54.0	12.3	11.8	75.0	0.2	35.3	16.0	2.0
LOS	F	D		E	D	B	B	E	A	D	B	A
Approach Delay		103.8			26.0			71.5			17.9	
Approach LOS		F			C			E			B	
Queue Length 50th (m)	~51.3	28.2		3.5	10.3	0.0	2.7	~206.3	0.0	18.6	29.1	0.0
Queue Length 95th (m)	#79.9	48.2		10.1	18.8	14.0	8.6	#266.8	0.0	#72.6	50.0	5.8
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	337	375		164	339	413	421	1544	756	263	1861	863
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	1.10	0.46		0.09	0.13	0.32	0.09	1.06	0.07	0.59	0.26	0.13

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 86 (66%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 61.7 Intersection LOS: E
Intersection Capacity Utilization 91.0% 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: 2: Woodroffe Avenue & Longfields Drive

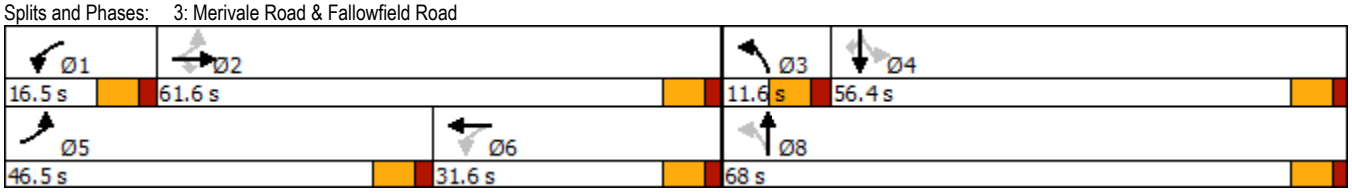


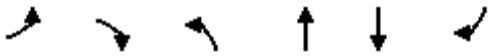
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	747	461	40	178	178	5	22	659	23	0	145	59
Future Volume (vph)	747	461	40	178	178	5	22	659	23	0	145	59
Satd. Flow (prot)	1658	1762	1427	1658	1691	0	1691	1736	0	1780	1618	1327
Flt Permitted	0.366			0.498			0.568					
Satd. Flow (perm)	639	1762	1427	869	1691	0	1011	1736	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			1				173
Lane Group Flow (vph)	747	461	40	178	183	0	22	682	0	0	145	59
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	46.5	61.6	61.6	16.5	31.6		11.6	68.0		56.4	56.4	56.4
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	71.7	55.3	55.3	35.0	25.0		57.9	58.1			51.3	51.3
Actuated g/C Ratio	0.50	0.39	0.39	0.25	0.18		0.41	0.41			0.36	0.36
v/c Ratio	1.23	0.68	0.06	0.67	0.62		0.05	0.96			0.25	0.10
Control Delay	146.0	43.2	0.2	42.3	65.0		25.4	67.5			34.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	146.0	43.2	0.2	42.3	65.0		25.4	67.5			34.7	0.3
LOS	F	D	A	D	E		C	E			C	A
Approach Delay		103.3			53.8			66.2			24.7	
Approach LOS		F			D			E			C	
Queue Length 50th (m)	~211.2	103.3	0.0	26.6	45.7		3.4	171.3			27.9	0.0
Queue Length 95th (m)	#281.8	140.1	0.0	40.7	69.8		8.5	#243.5			44.4	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	607	682	627	269	297		434	750			587	591
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	1.23	0.68	0.06	0.66	0.62		0.05	0.91			0.25	0.10

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 142.7
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 79.5 Intersection LOS: E
Intersection Capacity Utilization 108.2% 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: 3: Merivale Road & Fallowfield Road

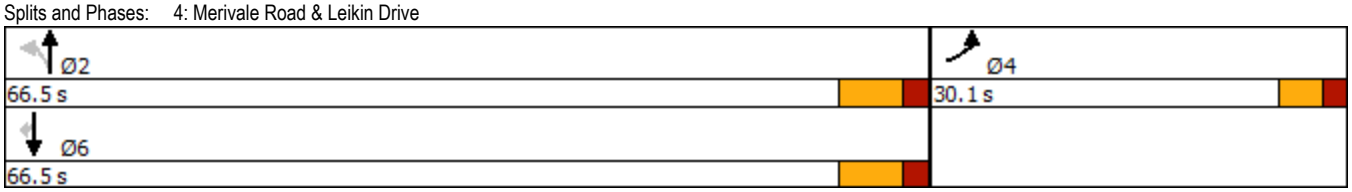




Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	304	4	0	423	75	227
Future Volume (vph)	304	4	0	423	75	227
Satd. Flow (prot)	3252	0	1728	1745	1424	1469
Flt Permitted	0.953					
Satd. Flow (perm)	3252	0	1728	1745	1424	1469
Satd. Flow (RTOR)	1					227
Lane Group Flow (vph)	308	0	0	423	75	227
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Total Split (s)	30.1		66.5	66.5	66.5	66.5
Total Lost Time (s)	5.1		6.5	6.5	6.5	6.5
Act Effct Green (s)	13.3			60.1	60.1	60.1
Actuated g/C Ratio	0.16			0.71	0.71	0.71
v/c Ratio	0.61			0.34	0.07	0.21
Control Delay	38.5			6.1	4.6	1.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	38.5			6.1	4.6	1.2
LOS	D			A	A	A
Approach Delay	38.5			6.1	2.0	
Approach LOS	D			A	A	
Queue Length 50th (m)	22.3			20.4	2.9	0.0
Queue Length 95th (m)	33.6			38.0	7.4	5.8
Internal Link Dist (m)	50.7			445.8	100.5	
Turn Bay Length (m)						85.0
Base Capacity (vph)	958			1233	1006	1104
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	0.32			0.34	0.07	0.21

Intersection Summary	
Cycle Length: 96.6	
Actuated Cycle Length: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 14.6	Intersection LOS: B
Intersection Capacity Utilization 42.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Merivale Road & Leikin Drive

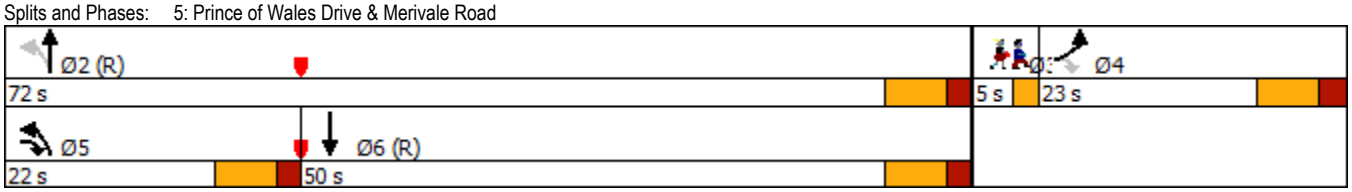


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	12	99	537	1097	310	45	
Future Volume (vph)	12	99	537	1097	310	45	
Satd. Flow (prot)	1691	1261	1642	1745	3118	0	
Flt Permitted	0.950		0.478				
Satd. Flow (perm)	1691	1261	826	1745	3118	0	
Satd. Flow (RTOR)		99			20		
Lane Group Flow (vph)	12	99	537	1097	355	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	23.0	22.0	22.0	72.0	50.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	10.0	31.9	76.2	77.4	52.0		
Actuated g/C Ratio	0.10	0.32	0.76	0.77	0.52		
v/c Ratio	0.07	0.21	0.70	0.81	0.22		
Control Delay	42.0	5.4	10.6	16.4	15.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	42.0	5.4	10.6	16.4	15.2		
LOS	D	A	B	B	B		
Approach Delay	9.3			14.5	15.2		
Approach LOS	A			B	B		
Queue Length 50th (m)	2.0	0.0	34.5	128.3	18.8		
Queue Length 95th (m)	6.9	9.0	51.2	#245.2	28.4		
Internal Link Dist (m)	226.4			296.0	233.3		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	273	481	787	1350	1631		
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	0.04	0.21	0.68	0.81	0.22		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 15 (15%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 14.4 — Intersection LOS: B
Intersection Capacity Utilization 80.4% — 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.

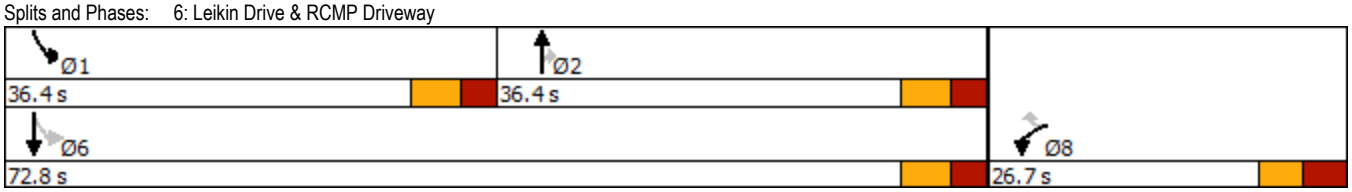
Splits and Phases: 5: Prince of Wales Drive & Merivale Road

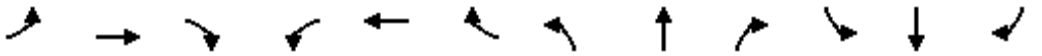


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	17	315	548	253	51
Future Volume (vph)	15	17	315	548	253	51
Satd. Flow (prot)	1691	1427	1728	1513	1691	1508
Flt Permitted	0.950				0.466	
Satd. Flow (perm)	1691	1325	1728	1468	826	1508
Satd. Flow (RTOR)		17		548		
Lane Group Flow (vph)	15	17	315	548	253	51
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Total Split (s)	26.7	26.7	36.4	36.4	36.4	72.8
Total Lost Time (s)	6.7	6.7	6.4	6.4	6.4	6.4
Act Effct Green (s)	11.6	11.6	31.4	31.4	46.9	51.6
Actuated g/C Ratio	0.19	0.19	0.52	0.52	0.78	0.86
v/c Ratio	0.05	0.06	0.35	0.53	0.33	0.04
Control Delay	24.7	13.3	13.8	4.0	5.0	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	13.3	13.8	4.0	5.0	4.0
LOS	C	B	B	A	A	A
Approach Delay	18.6		7.5			4.8
Approach LOS	B		A			A
Queue Length 50th (m)	1.1	0.0	12.2	0.0	0.3	0.0
Queue Length 95th (m)	5.9	4.5	55.5	18.3	24.3	6.1
Internal Link Dist (m)	69.4		182.1			276.7
Turn Bay Length (m)					200.0	
Base Capacity (vph)	588	472	902	1028	1096	1436
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.04	0.35	0.53	0.23	0.04

Intersection Summary		
Cycle Length: 99.5		
Actuated Cycle Length: 60.1		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.53		
Intersection Signal Delay: 7.1	Intersection LOS: A	
Intersection Capacity Utilization 63.3%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 6: Leikin Drive & RCMP Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	558	4	6	20	37	1	2	4	213	3	32
Future Volume (Veh/h)	151	558	4	6	20	37	1	2	4	213	3	32
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	151	558	4	6	20	37	1	2	4	213	3	32
Pedestrians								5				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					206							
pX, platoon unblocked												
vC, conflicting volume	57			567			932	936	565	916	920	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57			567			932	936	565	916	920	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			99			100	99	99	7	99	97
cM capacity (veh/h)	1528			1000			218	238	524	229	243	1039

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	151	562	6	57	7	248
Volume Left	151	0	6	0	1	213
Volume Right	0	4	0	37	4	32
cSH	1528	1700	1000	1700	339	255
Volume to Capacity	0.10	0.33	0.01	0.03	0.02	0.97
Queue Length 95th (m)	2.3	0.0	0.1	0.0	0.4	64.6
Control Delay (s)	7.6	0.0	8.6	0.0	15.8	92.1
Lane LOS	A		A		C	F
Approach Delay (s)	1.6		0.8		15.8	92.1
Approach LOS					C	F

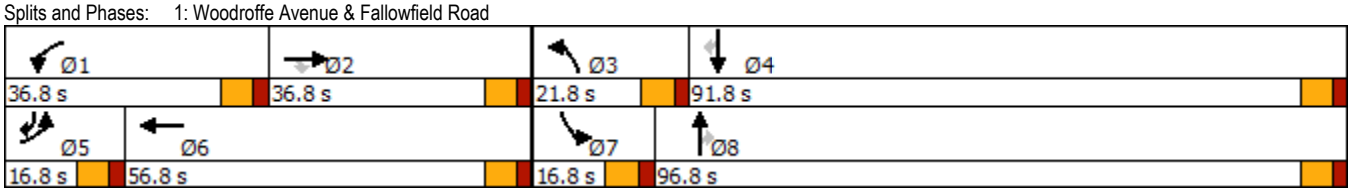
Intersection Summary				
Average Delay	23.4			
Intersection Capacity Utilization	59.3%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	248	732	576	545	12	369	739	243	17	1641	627
Future Volume (vph)	204	248	732	576	545	12	369	739	243	17	1641	627
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			141		1				243			101
Lane Group Flow (vph)	204	248	732	576	557	0	369	739	243	17	1641	627
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	16.8	36.8	36.8	36.8	56.8		21.8	96.8	96.8	16.8	91.8	16.8
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	10.0	30.0	30.0	30.0	50.0		15.0	97.6	97.6	7.4	85.0	101.8
Actuated g/C Ratio	0.05	0.16	0.16	0.16	0.27		0.08	0.52	0.52	0.04	0.45	0.54
v/c Ratio	1.19	0.48	2.04	1.10	0.63		1.45	0.42	0.28	0.26	1.08	0.74
Control Delay	199.4	74.9	506.1	137.7	64.0		275.8	29.4	3.5	95.7	95.4	32.9
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	199.4	74.9	506.1	137.7	64.0		275.8	29.4	3.5	95.7	95.4	32.9
LOS	F	E	F	F	E		F	C	A	F	F	C
Approach Delay		363.0			101.5			92.0			78.3	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	~43.4	41.5	~353.7	~115.0	89.7		~88.6	85.8	0.0	5.8	~330.3	138.7
Queue Length 95th (m)	#69.8	56.0	#427.2	#151.0	109.2		#120.9	104.7	14.4	14.4	#367.4	187.4
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	171	521	358	525	886		255	1746	855	90	1520	852
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	1.19	0.48	2.04	1.10	0.63		1.45	0.42	0.28	0.19	1.08	0.74

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 2.04
Intersection Signal Delay: 142.4 Intersection LOS: F
Intersection Capacity Utilization 130.1% 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: 1: Woodroffe Avenue & Fallowfield Road

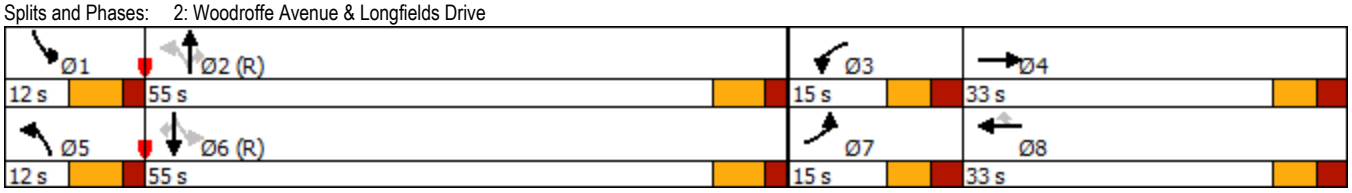


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	55	55	144	89	921	39	103	2033	223
Future Volume (vph)	155	17	70	55	55	144	89	921	39	103	2033	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.068			0.236		
Satd. Flow (perm)	3216	1528	0	1691	1780	1464	118	3316	1513	420	3349	1472
Satd. Flow (RTOR)		70				157			157			223
Lane Group Flow (vph)	155	87	0	55	55	144	89	921	39	103	2033	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	15.0	33.0		15.0	33.0	33.0	12.0	55.0	55.0	12.0	55.0	55.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	8.4	16.3		7.7	13.3	13.3	67.5	60.2	60.2	67.3	60.1	60.1
Actuated g/C Ratio	0.07	0.14		0.07	0.12	0.12	0.59	0.52	0.52	0.59	0.52	0.52
v/c Ratio	0.67	0.32		0.49	0.27	0.47	0.54	0.53	0.05	0.32	1.16	0.25
Control Delay	66.3	16.9		66.1	47.6	10.2	28.5	20.5	0.1	12.2	106.8	3.2
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	66.3	16.9		66.1	47.6	10.2	28.5	20.5	0.1	12.2	106.8	3.2
LOS	E	B		E	D	B	C	C	A	B	F	A
Approach Delay		48.5			30.4			20.4			92.9	
Approach LOS		D			C			C			F	
Queue Length 50th (m)	16.3	3.3		11.1	10.9	0.0	5.9	60.5	0.0	6.8	~255.2	0.0
Queue Length 95th (m)	#27.6	14.7		23.2	19.1	12.2	#28.0	99.2	0.0	18.4	#340.2	12.8
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	237	405		124	410	458	165	1736	866	325	1750	875
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	0.65	0.21		0.44	0.13	0.31	0.54	0.53	0.05	0.32	1.16	0.25

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 115
Offset: 92 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 66.6 Intersection LOS: E
Intersection Capacity Utilization 92.1% 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: 2: Woodroffe Avenue & Longfields Drive

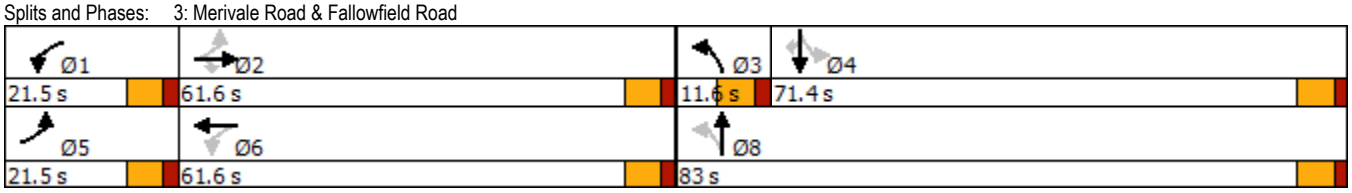


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	321	44	41	760	4	56	238	113	6	639	328
Future Volume (vph)	143	321	44	41	760	4	56	238	113	6	639	328
Satd. Flow (prot)	1496	1745	1469	1691	1778	0	1551	1598	0	1691	1762	1498
Flt Permitted	0.063			0.508			0.066			0.502		
Satd. Flow (perm)	99	1745	1469	904	1778	0	108	1598	0	894	1762	1498
Satd. Flow (RTOR)			108					19				162
Lane Group Flow (vph)	143	321	44	41	764	0	56	351	0	6	639	328
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	21.5	61.6	61.6	21.5	61.6		11.6	83.0		71.4	71.4	71.4
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.5	65.4	65.4	63.2	55.5		68.7	68.9		60.0	60.0	60.0
Actuated g/C Ratio	0.48	0.41	0.41	0.40	0.35		0.43	0.43		0.38	0.38	0.38
v/c Ratio	0.81	0.45	0.07	0.10	1.23		0.61	0.50		0.02	0.96	0.49
Control Delay	73.8	39.7	0.2	25.9	160.6		53.6	32.6		31.3	74.4	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	73.8	39.7	0.2	25.9	160.6		53.6	32.6		31.3	74.4	20.8
LOS	E	D	A	C	F		D	C		C	E	C
Approach Delay		45.9			153.7			35.5			56.0	
Approach LOS		D			F			D			E	
Queue Length 50th (m)	31.5	74.8	0.0	6.8	~296.1		9.5	68.8		1.1	185.4	36.9
Queue Length 95th (m)	#68.5	104.8	0.0	13.8	#368.0		#20.6	95.6		4.4	#255.5	63.7
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	180	718	668	477	621		92	787		368	727	713
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	0.79	0.45	0.07	0.09	1.23		0.61	0.45		0.02	0.88	0.46

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 158.7
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 80.2 Intersection LOS: F
Intersection Capacity Utilization 112.3% 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.

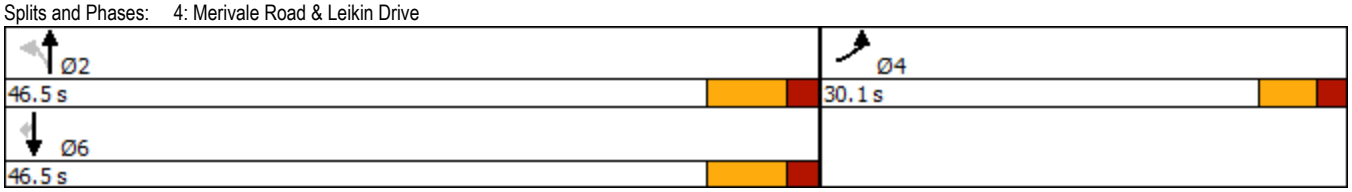
Splits and Phases: 3: Merivale Road & Fallowfield Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	220	2	1	207	522	212
Future Volume (vph)	220	2	1	207	522	212
Satd. Flow (prot)	3183	0	1271	1648	1762	1498
Flt Permitted	0.953		0.440			
Satd. Flow (perm)	3183	0	589	1648	1762	1498
Satd. Flow (RTOR)	1					212
Lane Group Flow (vph)	222	0	1	207	522	212
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Total Split (s)	30.1		46.5	46.5	46.5	46.5
Total Lost Time (s)	5.1		6.5	6.5	6.5	6.5
Act Effct Green (s)	10.6		40.0	40.0	40.0	40.0
Actuated g/C Ratio	0.17		0.64	0.64	0.64	0.64
v/c Ratio	0.41		0.00	0.20	0.46	0.20
Control Delay	25.4		4.0	5.2	7.4	1.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	25.4		4.0	5.2	7.4	1.3
LOS	C		A	A	A	A
Approach Delay	25.4			5.2	5.6	
Approach LOS	C			A	A	
Queue Length 50th (m)	10.8		0.0	7.2	22.5	0.0
Queue Length 95th (m)	18.7		0.4	15.2	42.7	5.4
Internal Link Dist (m)	51.0			445.8	100.5	
Turn Bay Length (m)			100.0			85.0
Base Capacity (vph)	1280		379	1060	1134	1040
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	0.17		0.00	0.20	0.46	0.20

Intersection Summary	
Cycle Length: 76.6	
Actuated Cycle Length: 62.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 47.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Merivale Road & Leikin Drive



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	36	603	197	399	1083	19	
Future Volume (vph)	36	603	197	399	1083	19	
Satd. Flow (prot)	1642	1483	1566	1745	3338	0	
Flt Permitted	0.950		0.175				
Satd. Flow (perm)	1642	1483	288	1745	3338	0	
Satd. Flow (RTOR)		130			2		
Lane Group Flow (vph)	36	603	197	399	1102	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	26.0	14.0	14.0	89.0	75.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	19.2	33.6	82.6	82.5	68.5		
Actuated g/C Ratio	0.16	0.28	0.69	0.69	0.57		
v/c Ratio	0.14	1.19	0.71	0.33	0.58		
Control Delay	44.9	133.4	21.9	8.5	18.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	44.9	133.4	21.9	8.5	18.0		
LOS	D	F	C	A	B		
Approach Delay	128.5			12.9	18.0		
Approach LOS	F			B	B		
Queue Length 50th (m)	6.8	~136.2	13.8	31.7	76.5		
Queue Length 95th (m)	15.7	#200.0	#24.7	45.5	94.3		
Internal Link Dist (m)	226.4			296.0	231.6		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	262	508	279	1199	1906		
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	0.14	1.19	0.71	0.33	0.58		

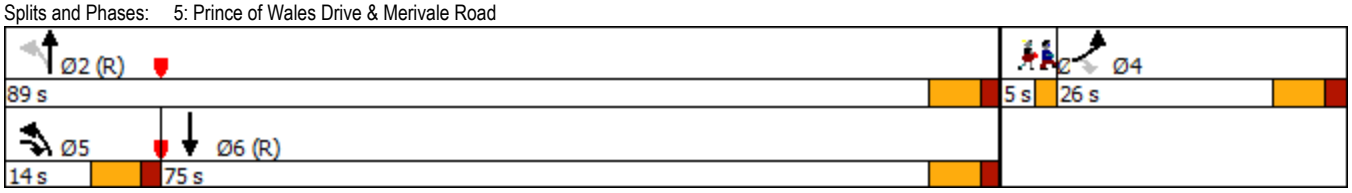
Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 46.9 — Intersection LOS: D
Intersection Capacity Utilization 82.4% — ICU Level of Service E
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: 5: Prince of Wales Drive & Merivale Road

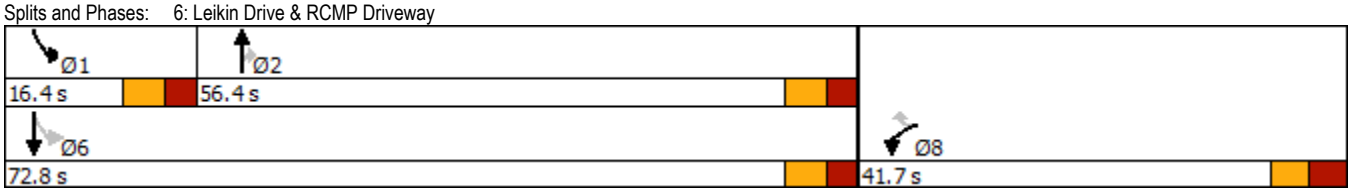


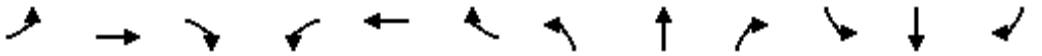
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	409	252	85	5	6	209
Future Volume (vph)	409	252	85	5	6	209
Satd. Flow (prot)	1691	1513	1648	1513	1691	1728
Flt Permitted	0.950				0.623	
Satd. Flow (perm)	1691	1391	1648	1456	1093	1728
Satd. Flow (RTOR)		252		5		
Lane Group Flow (vph)	409	252	85	5	6	209
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Total Split (s)	41.7	41.7	56.4	56.4	16.4	72.8
Total Lost Time (s)	6.7	6.7	6.4	6.4	6.4	6.4
Act Effct Green (s)	26.8	26.8	50.6	50.6	52.7	52.7
Actuated g/C Ratio	0.29	0.29	0.55	0.55	0.57	0.57
v/c Ratio	0.84	0.43	0.09	0.01	0.01	0.21
Control Delay	47.2	6.0	13.2	9.0	10.3	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	6.0	13.2	9.0	10.3	11.4
LOS	D	A	B	A	B	B
Approach Delay	31.5		13.0			11.4
Approach LOS	C		B			B
Queue Length 50th (m)	59.9	0.0	6.0	0.0	0.4	15.9
Queue Length 95th (m)	#108.2	16.0	18.2	1.9	2.2	31.1
Internal Link Dist (m)	69.4		182.1			276.7
Turn Bay Length (m)					200.0	
Base Capacity (vph)	645	686	899	796	685	1251
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.37	0.09	0.01	0.01	0.17

Intersection Summary

Cycle Length: 114.5
Actuated Cycle Length: 92.7
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 25.3 Intersection LOS: C
Intersection Capacity Utilization 55.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Leikin Drive & RCMP Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	57	0	0	364	183	0	1	0	43	0	162
Future Volume (Veh/h)	65	57	0	0	364	183	0	1	0	43	0	162
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	65	57	0	0	364	183	0	1	0	43	0	162
Pedestrians		1						10			1	
Lane Width (m)		3.5						3.5			3.5	
Walking Speed (m/s)		1.0						1.0			1.0	
Percent Blockage		0						1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					206							
pX, platoon unblocked	0.98						0.98	0.98		0.98	0.98	0.98
vC, conflicting volume	548			67			724	745	67	644	654	458
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530			67			709	730	67	627	637	437
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			100	100	100	88	100	73
cM capacity (veh/h)	1027			1532			236	320	992	368	361	608

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	65	57	0	547	1	205
Volume Left	65	0	0	0	0	43
Volume Right	0	0	0	183	0	162
cSH	1027	1700	1700	1700	320	535
Volume to Capacity	0.06	0.03	0.00	0.32	0.00	0.38
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.1	12.5
Control Delay (s)	8.7	0.0	0.0	0.0	16.3	15.8
Lane LOS	A				C	C
Approach Delay (s)	4.7		0.0		16.3	15.8
Approach LOS					C	C

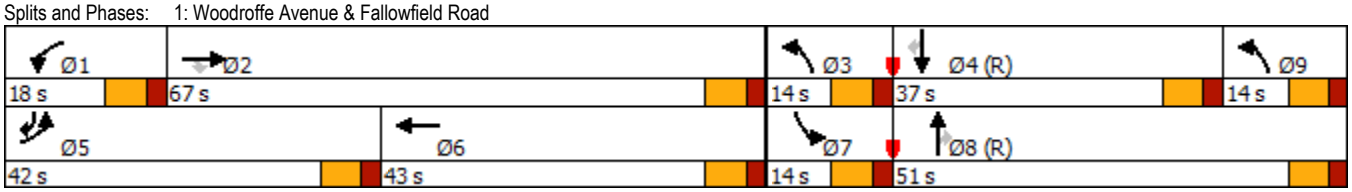
Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	65.6%	ICU Level of Service		C
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	687	667	290	136	139	34	646	1710	551	7	419	115
Future Volume (vph)	687	667	290	136	139	34	646	1710	551	7	419	115
Satd. Flow (prot)	3248	3316	1375	2955	3133	0	3216	3349	1513	1445	3221	1363
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3316	1375	2955	3133	0	3212	3349	1513	1445	3221	1345
Satd. Flow (RTOR)			290		19				351			127
Lane Group Flow (vph)	687	667	290	136	173	0	646	1710	551	7	419	115
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3 9	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	42.0	67.0	67.0	18.0	43.0			51.0	51.0	14.0	37.0	42.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8			6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	34.2	38.1	38.1	10.6	14.5		42.7	78.0	78.0	6.4	24.6	58.8
Actuated g/C Ratio	0.23	0.25	0.25	0.07	0.10		0.28	0.52	0.52	0.04	0.16	0.39
v/c Ratio	0.93	0.79	0.51	0.65	0.54		0.71	0.98	0.58	0.11	0.79	0.19
Control Delay	76.1	59.4	7.5	83.0	62.9		35.1	52.8	12.2	72.6	71.5	2.6
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	76.1	59.4	7.5	83.0	62.9		35.1	52.8	12.2	72.6	71.5	2.6
LOS	E	E	A	F	E		D	D	B	E	E	A
Approach Delay		57.2			71.7			41.2			56.9	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	95.0	91.6	0.0	18.9	21.7		50.5	223.2	31.8	1.9	58.7	0.0
Queue Length 95th (m)	#125.0	103.4	20.1	29.6	31.3		#110.9	#357.8	87.4	6.7	73.1	6.3
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	762	1330	725	220	770		915	1740	955	70	648	617
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	0.90	0.50	0.40	0.62	0.22		0.71	0.98	0.58	0.10	0.65	0.19

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:SBT and 8:NBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 49.4 Intersection LOS: D
Intersection Capacity Utilization 105.7% 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: 1: Woodroffe Avenue & Fallowfield Road



Lane Group	Ø3	Ø9
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	9
Permitted Phases		
Total Split (s)	14.0	14.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
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		

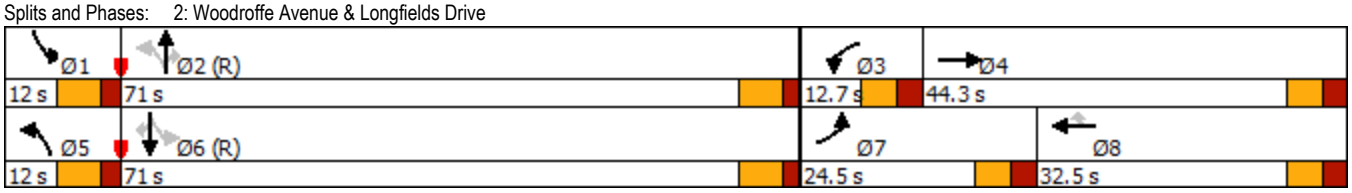
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	15	45	132	44	1637	50	154	483	111
Future Volume (vph)	372	89	82	15	45	132	44	1637	50	154	483	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.476			0.059		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	755	3349	1478	102	3221	1391
Satd. Flow (RTOR)		32				179			179			179
Lane Group Flow (vph)	372	171	0	15	45	132	44	1637	50	154	483	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	24.5	44.3		12.7	32.5	32.5	12.0	71.0	71.0	12.0	71.0	71.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	17.8	32.6		6.0	13.3	13.3	71.6	65.2	65.2	88.0	78.9	78.9
Actuated g/C Ratio	0.13	0.23		0.04	0.10	0.10	0.51	0.47	0.47	0.63	0.56	0.56
v/c Ratio	0.90	0.44		0.22	0.28	0.44	0.10	1.05	0.06	0.60	0.27	0.13
Control Delay	85.4	41.4		72.7	61.3	6.5	12.6	73.5	0.2	39.0	17.6	0.3
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	85.4	41.4		72.7	61.3	6.5	12.6	73.5	0.2	39.0	17.6	0.3
LOS	F	D		E	E	A	B	E	A	D	B	A
Approach Delay		71.5			24.5			69.8			19.4	
Approach LOS		E			C			E			B	
Queue Length 50th (m)	48.8	29.8		3.8	11.2	0.0	3.7	~234.3	0.0	21.9	31.8	0.0
Queue Length 95th (m)	#73.9	48.7		10.7	20.2	5.6	10.6	#280.2	0.0	#81.4	52.3	0.0
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	417	442		69	309	422	420	1560	784	257	1814	861
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	0.89	0.39		0.22	0.15	0.31	0.10	1.05	0.06	0.60	0.27	0.13

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 86 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 55.7 Intersection LOS: E
Intersection Capacity Utilization 91.0% 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: 2: Woodroffe Avenue & Longfields Drive

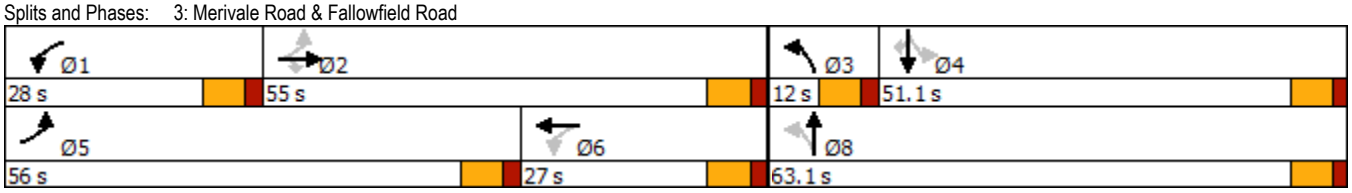


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	747	461	40	178	178	5	22	659	23	0	145	59
Future Volume (vph)	747	461	40	178	178	5	22	659	23	0	145	59
Satd. Flow (prot)	1658	1762	1427	1658	1691	0	1691	1736	0	1780	1618	1327
Flt Permitted	0.298			0.498			0.559					
Satd. Flow (perm)	520	1762	1427	869	1691	0	995	1736	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			1				173
Lane Group Flow (vph)	747	461	40	178	183	0	22	682	0	0	145	59
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	56.0	55.0	55.0	28.0	27.0		12.0	63.1		51.1	51.1	51.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.5	56.0	56.0	34.4	20.4		56.5	56.7			49.5	49.5
Actuated g/C Ratio	0.52	0.38	0.38	0.24	0.14		0.39	0.39			0.34	0.34
v/c Ratio	1.14	0.68	0.06	0.64	0.78		0.05	1.01			0.26	0.10
Control Delay	110.7	44.7	0.2	36.8	82.3		28.3	81.6			38.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	110.7	44.7	0.2	36.8	82.3		28.3	81.6			38.3	0.4
LOS	F	D	A	D	F		C	F			D	A
Approach Delay		82.8			59.9			79.9			27.3	
Approach LOS		F			E			E			C	
Queue Length 50th (m)	~204.5	102.0	0.0	24.7	47.5		3.6	~185.6			29.6	0.0
Queue Length 95th (m)	#275.1	146.2	0.0	37.8	#80.4		9.1	#260.0			47.0	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	657	674	622	365	236		410	674			548	564
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	1.14	0.68	0.06	0.49	0.78		0.05	1.01			0.26	0.10

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 146.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 74.2 Intersection LOS: E
Intersection Capacity Utilization 108.2% 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: 3: Merivale Road & Fallowfield Road

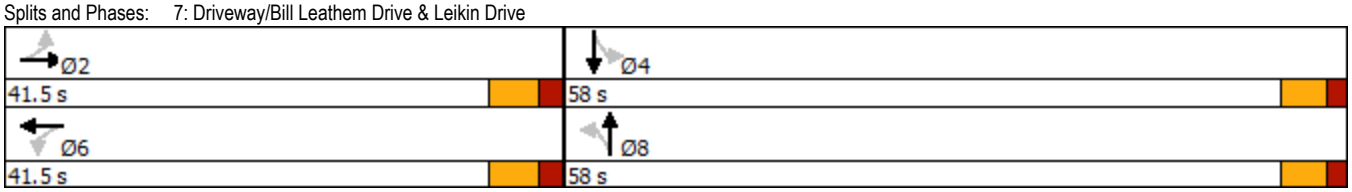


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	558	4	6	20	37	1	2	4	213	3	32
Future Volume (vph)	151	558	4	6	20	37	1	2	4	213	3	32
Satd. Flow (prot)	1610	1726	0	1658	1547	0	0	1611	0	0	1645	0
Flt Permitted	0.720			0.333				0.964			0.751	
Satd. Flow (perm)	1221	1726	0	580	1547	0	0	1564	0	0	1288	0
Satd. Flow (RTOR)					37			4			11	
Lane Group Flow (vph)	151	562	0	6	57	0	0	7	0	0	248	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	41.5	41.5		41.5	41.5		58.0	58.0		58.0	58.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6			5.0			5.0	
Act Effct Green (s)	25.5	25.5		25.5	25.5			16.6			16.6	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.31			0.31	
v/c Ratio	0.26	0.68		0.02	0.07			0.01			0.61	
Control Delay	10.5	16.4		8.7	4.9			11.4			22.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.5	16.4		8.7	4.9			11.4			22.9	
LOS	B	B		A	A			B			C	
Approach Delay		15.1			5.3			11.4			22.9	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	7.1	34.4		0.3	0.8			0.2			16.6	
Queue Length 95th (m)	19.3	76.2		1.9	5.7			2.4			42.5	
Internal Link Dist (m)		337.1			182.1			90.9			596.0	
Turn Bay Length (m)	30.0			30.0								
Base Capacity (vph)	860	1216		409	1101			1454			1198	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.18	0.46		0.01	0.05			0.00			0.21	

Intersection Summary

Cycle Length: 99.5
Actuated Cycle Length: 53.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 16.4 — Intersection LOS: B
Intersection Capacity Utilization 61.4% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: Driveway/Bill Leathem Drive & Leikin Drive

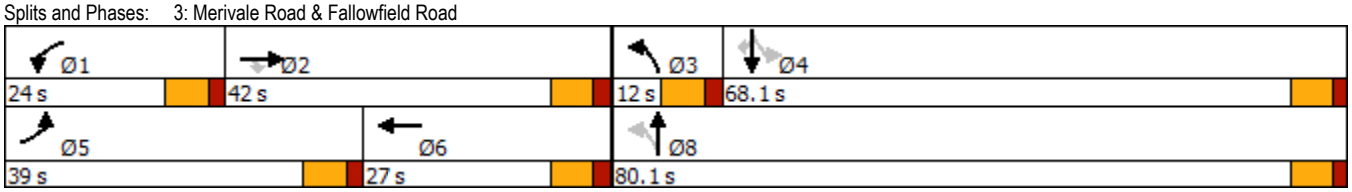


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	747	461	40	178	178	5	22	659	23	0	145	59
Future Volume (vph)	747	461	40	178	178	5	22	659	23	0	145	59
Satd. Flow (prot)	3216	1762	1427	1658	1691	0	1691	1736	0	1780	1618	1327
Flt Permitted	0.950			0.950			0.573					
Satd. Flow (perm)	3216	1762	1427	1658	1691	0	1020	1736	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			2				173
Lane Group Flow (vph)	747	461	40	178	183	0	22	682	0	0	145	59
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	39.0	42.0	42.0	24.0	27.0		12.0	80.1		68.1	68.1	68.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	32.8	36.6	36.6	16.8	20.6		53.9	54.1			47.3	47.3
Actuated g/C Ratio	0.26	0.29	0.29	0.13	0.16		0.42	0.43			0.37	0.37
v/c Ratio	0.90	0.91	0.08	0.81	0.67		0.05	0.92			0.24	0.10
Control Delay	61.7	68.7	0.3	82.8	65.0		19.9	53.0			29.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	61.7	68.7	0.3	82.8	65.0		19.9	53.0			29.1	0.3
LOS	E	E	A	F	E		B	D			C	A
Approach Delay		62.3			73.8			52.0			20.8	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	85.5	103.0	0.0	39.8	39.6		2.9	144.7			24.3	0.0
Queue Length 95th (m)	#146.8	#198.2	0.0	#87.7	#80.4		7.2	193.7			38.6	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	830	506	497	230	274		460	1016			792	738
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	0.90	0.91	0.08	0.77	0.67		0.05	0.67			0.18	0.08

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 127.2
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 57.7 Intersection LOS: E
Intersection Capacity Utilization 90.4% 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: 3: Merivale Road & Fallowfield Road

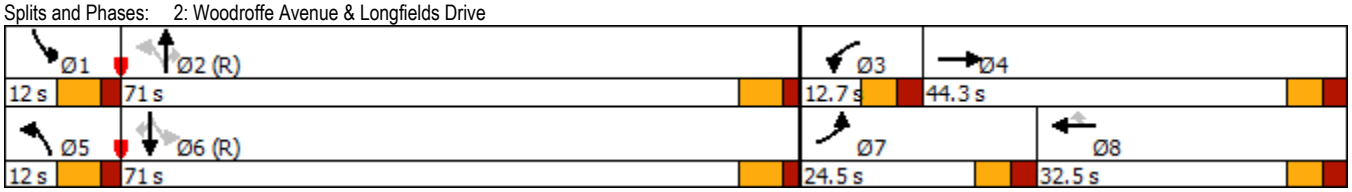


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	15	45	132	44	1407	50	154	483	111
Future Volume (vph)	372	89	82	15	45	132	44	1407	50	154	483	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.476			0.059		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	755	3349	1478	102	3221	1391
Satd. Flow (RTOR)		32				179			179			179
Lane Group Flow (vph)	372	171	0	15	45	132	44	1407	50	154	483	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	24.5	44.3		12.7	32.5	32.5	12.0	71.0	71.0	12.0	71.0	71.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	17.8	32.6		6.0	13.3	13.3	71.6	65.2	65.2	88.0	78.9	78.9
Actuated g/C Ratio	0.13	0.23		0.04	0.10	0.10	0.51	0.47	0.47	0.63	0.56	0.56
v/c Ratio	0.90	0.44		0.22	0.28	0.44	0.10	0.90	0.06	0.60	0.27	0.13
Control Delay	85.4	41.4		72.7	61.3	6.5	12.6	43.6	0.2	39.0	17.6	0.3
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	85.4	41.4		72.7	61.3	6.5	12.6	43.6	0.2	39.0	17.6	0.3
LOS	F	D		E	E	A	B	D	A	D	B	A
Approach Delay		71.5			24.5			41.3			19.4	
Approach LOS		E			C			D			B	
Queue Length 50th (m)	48.8	29.8		3.8	11.2	0.0	3.7	167.6	0.0	21.9	31.8	0.0
Queue Length 95th (m)	#73.9	48.7		10.7	20.2	5.6	10.6	#206.0	0.0	#81.4	52.3	0.0
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	417	442		69	309	422	420	1560	784	257	1814	861
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	0.89	0.39		0.22	0.15	0.31	0.10	0.90	0.06	0.60	0.27	0.13

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 86 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 40.2 Intersection LOS: D
Intersection Capacity Utilization 84.3% 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: 2: Woodroffe Avenue & Longfields Drive

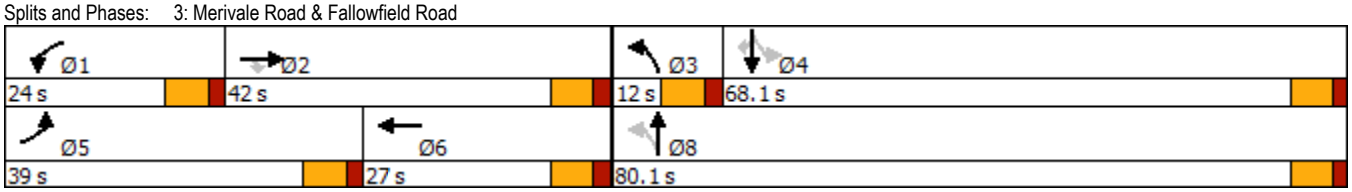


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	747	461	40	178	178	5	22	589	23	0	145	59
Future Volume (vph)	747	461	40	178	178	5	22	589	23	0	145	59
Satd. Flow (prot)	3216	1762	1427	1658	1691	0	1691	1735	0	1780	1618	1327
Flt Permitted	0.950			0.950			0.558					
Satd. Flow (perm)	3216	1762	1427	1658	1691	0	993	1735	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			2				173
Lane Group Flow (vph)	747	461	40	178	183	0	22	612	0	0	145	59
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	39.0	42.0	42.0	24.0	27.0		12.0	80.1		68.1	68.1	68.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	32.8	36.6	36.6	16.8	20.6		46.5	46.7			39.9	39.9
Actuated g/C Ratio	0.27	0.31	0.31	0.14	0.17		0.39	0.39			0.33	0.33
v/c Ratio	0.85	0.86	0.08	0.77	0.63		0.05	0.90			0.27	0.11
Control Delay	52.8	57.7	0.3	73.1	58.9		21.2	51.5			31.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	52.8	57.7	0.3	73.1	58.9		21.2	51.5			31.2	0.4
LOS	D	E	A	E	E		C	D			C	A
Approach Delay		53.0			65.9			50.5			22.3	
Approach LOS		D			E			D			C	
Queue Length 50th (m)	78.0	93.6	0.0	36.8	36.6		2.9	121.8			24.3	0.0
Queue Length 95th (m)	#134.6	#183.7	0.0	#81.6	#74.0		7.4	165.4			39.0	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	880	538	521	244	291		417	1077			840	772
Starvation Cap Reductn	0	0	0	0	0		0	0			0	0
Spillback Cap Reductn	0	0	0	0	0		0	0			0	0
Storage Cap Reductn	0	0	0	0	0		0	0			0	0
Reduced v/c Ratio	0.85	0.86	0.08	0.73	0.63		0.05	0.57			0.17	0.08

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 119.8
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 51.7 Intersection LOS: D
Intersection Capacity Utilization 86.5% 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: 3: Merivale Road & Fallowfield Road

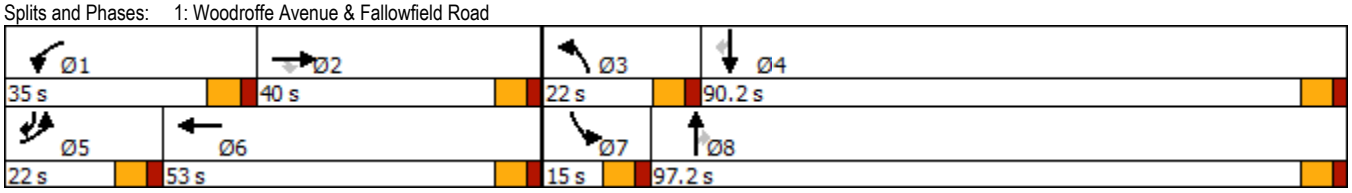


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	248	732	576	545	12	369	739	243	17	1641	627
Future Volume (vph)	204	248	732	576	545	12	369	739	243	17	1641	627
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			181		1				243			141
Lane Group Flow (vph)	204	248	732	576	557	0	369	739	243	17	1641	627
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	22.0	40.0	40.0	35.0	53.0		22.0	97.2	97.2	15.0	90.2	22.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.7	33.2	33.2	28.2	46.7		15.2	96.6	96.6	7.1	83.4	104.9
Actuated g/C Ratio	0.08	0.18	0.18	0.15	0.25		0.08	0.52	0.52	0.04	0.45	0.56
v/c Ratio	0.81	0.43	1.77	1.17	0.67		1.43	0.43	0.29	0.27	1.10	0.70
Control Delay	107.6	71.3	384.0	160.1	68.1		269.2	30.0	3.6	97.4	103.2	27.2
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	107.6	71.3	384.0	160.1	68.1		269.2	30.0	3.6	97.4	103.2	27.2
LOS	F	E	F	F	E		F	C	A	F	F	C
Approach Delay		270.9			114.9			90.6			82.3	
Approach LOS		F			F			F			F	
Queue Length 50th (m)	36.2	40.6	~322.2	~120.8	92.2		~88.0	87.2	0.0	5.8	~335.6	121.4
Queue Length 95th (m)	#53.4	54.8	#395.6	#156.8	112.3		#120.3	104.5	14.4	14.5	#372.8	166.4
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	414	494	827		258	1727	848	74	1492	893
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	0.78	0.43	1.77	1.17	0.67		1.43	0.43	0.29	0.23	1.10	0.70

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.77
Intersection Signal Delay: 127.9 Intersection LOS: F
Intersection Capacity Utilization 130.1% 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: 1: Woodroffe Avenue & Fallowfield Road

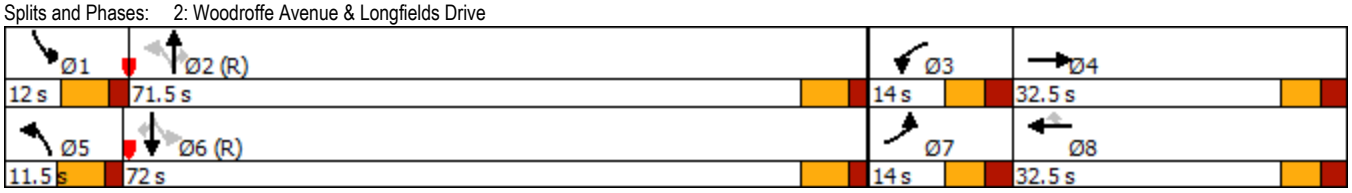


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	55	55	144	89	921	39	103	2033	223
Future Volume (vph)	155	17	70	55	55	144	89	921	39	103	2033	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.054			0.254		
Satd. Flow (perm)	3216	1528	0	1691	1780	1463	93	3316	1513	452	3349	1470
Satd. Flow (RTOR)		70				144			138			223
Lane Group Flow (vph)	155	87	0	55	55	144	89	921	39	103	2033	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	14.0	32.5		14.0	32.5	32.5	11.5	71.5	71.5	12.0	72.0	72.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	7.5	16.2		7.2	13.4	13.4	83.8	76.1	76.1	82.5	75.4	75.4
Actuated g/C Ratio	0.06	0.12		0.06	0.10	0.10	0.64	0.59	0.59	0.63	0.58	0.58
v/c Ratio	0.84	0.35		0.59	0.30	0.52	0.59	0.47	0.04	0.29	1.05	0.24
Control Delay	94.8	19.6		84.8	56.3	14.2	35.8	17.3	0.1	10.2	61.3	2.6
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	94.8	19.6		84.8	56.3	14.2	35.8	17.3	0.1	10.2	61.3	2.6
LOS	F	B		F	E	B	D	B	A	B	E	A
Approach Delay		67.8			38.6			18.2			53.5	
Approach LOS		E			D			B			D	
Queue Length 50th (m)	19.0	3.8		12.9	12.6	0.0	6.0	59.1	0.0	6.6	~252.5	0.0
Queue Length 95th (m)	#36.4	16.3		#28.6	21.7	15.9	#37.2	94.8	0.0	17.5	#345.0	11.4
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	185	361		97	356	407	151	1940	942	354	1943	946
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	0.84	0.24		0.57	0.15	0.35	0.59	0.47	0.04	0.29	1.05	0.24

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 43.9 Intersection LOS: D
Intersection Capacity Utilization 92.1% 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: 2: Woodroffe Avenue & Longfields Drive

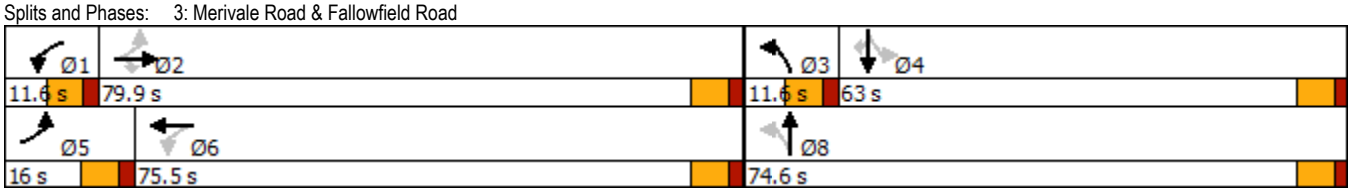


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	321	44	41	760	4	56	238	113	6	639	328
Future Volume (vph)	143	321	44	41	760	4	56	238	113	6	639	328
Satd. Flow (prot)	1496	1745	1469	1691	1778	0	1551	1598	0	1691	1762	1498
Flt Permitted	0.053			0.505			0.063			0.481		
Satd. Flow (perm)	83	1745	1469	899	1778	0	103	1598	0	856	1762	1498
Satd. Flow (RTOR)			108					17				149
Lane Group Flow (vph)	143	321	44	41	764	0	56	351	0	6	639	328
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	16.0	79.9	79.9	11.6	75.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	83.4	75.8	75.8	74.2	69.0		65.6	65.8		56.7	56.7	56.7
Actuated g/C Ratio	0.51	0.46	0.46	0.45	0.42		0.40	0.40		0.35	0.35	0.35
v/c Ratio	1.15	0.40	0.06	0.10	1.02		0.66	0.54		0.02	1.05	0.53
Control Delay	165.0	32.1	0.2	21.3	84.6		66.4	38.9		36.8	100.8	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	165.0	32.1	0.2	21.3	84.6		66.4	38.9		36.8	100.8	26.4
LOS	F	C	A	C	F		E	D		D	F	C
Approach Delay		66.8			81.4			42.7			75.3	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	~40.0	66.5	0.0	6.2	~249.2		10.4	76.2		1.2	~213.6	43.9
Queue Length 95th (m)	#84.0	91.1	0.0	12.4	#321.1		#24.6	105.7		4.8	#283.6	73.4
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	124	808	737	431	748		85	676		295	609	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	1.15	0.40	0.06	0.10	1.02		0.66	0.52		0.02	1.05	0.53

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 163.8
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.15
Intersection Signal Delay: 70.6 Intersection LOS: E
Intersection Capacity Utilization 112.3% 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: 3: Merivale Road & Fallowfield Road

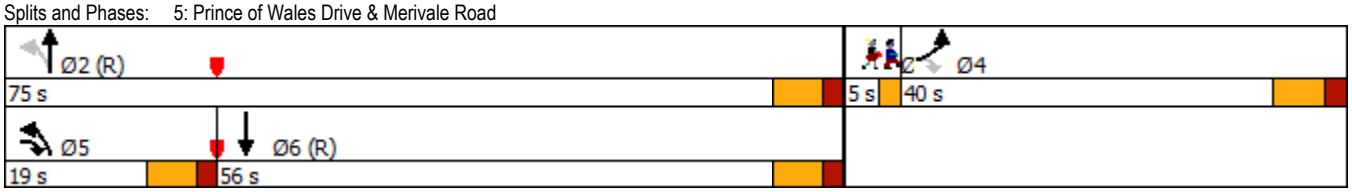


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	36	603	197	399	1083	19	
Future Volume (vph)	36	603	197	399	1083	19	
Satd. Flow (prot)	1642	1483	1566	1745	3338	0	
Flt Permitted	0.950		0.109				
Satd. Flow (perm)	1642	1483	180	1745	3338	0	
Satd. Flow (RTOR)		92			2		
Lane Group Flow (vph)	36	603	197	399	1102	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	40.0	19.0	19.0	75.0	56.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	32.8	51.7	69.0	68.9	50.4		
Actuated g/C Ratio	0.27	0.43	0.58	0.57	0.42		
v/c Ratio	0.08	0.87	0.81	0.40	0.79		
Control Delay	32.9	41.2	45.8	15.7	35.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	32.9	41.2	45.8	15.7	35.3		
LOS	C	D	D	B	D		
Approach Delay	40.7			25.7	35.3		
Approach LOS	D			C	D		
Queue Length 50th (m)	5.8	101.2	22.0	45.8	108.4		
Queue Length 95th (m)	13.4	#164.8	#56.0	65.8	133.6		
Internal Link Dist (m)	226.4			296.0	231.6		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	454	680	249	1001	1403		
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	0.08	0.89	0.79	0.40	0.79		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 34.3 Intersection LOS: C
Intersection Capacity Utilization 82.4% 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: 5: Prince of Wales Drive & Merivale Road

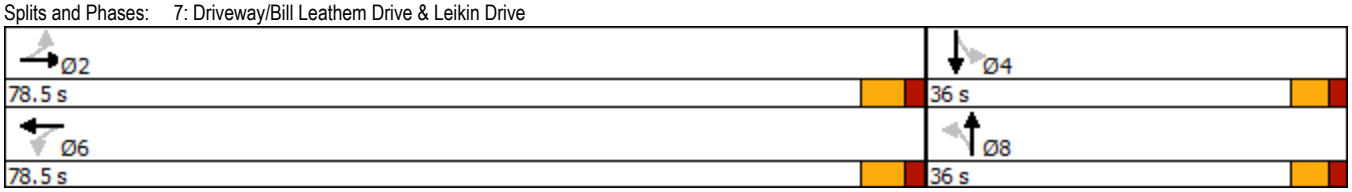


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	57	0	0	364	183	0	1	0	43	0	162
Future Volume (vph)	65	57	0	0	364	183	0	1	0	43	0	162
Satd. Flow (prot)	1691	1534	0	1780	1654	0	0	1780	0	0	1529	0
Flt Permitted	0.372										0.935	
Satd. Flow (perm)	662	1534	0	1780	1654	0	0	1780	0	0	1444	0
Satd. Flow (RTOR)					44						162	
Lane Group Flow (vph)	65	57	0	0	547	0	0	1	0	0	205	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	78.5	78.5		78.5	78.5		36.0	36.0		36.0	36.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6			5.0			5.0	
Act Effct Green (s)	19.0	19.0			19.0			10.5			10.5	
Actuated g/C Ratio	0.47	0.47			0.47			0.26			0.26	
v/c Ratio	0.21	0.08			0.68			0.00			0.41	
Control Delay	8.0	5.9			12.5			13.0			7.7	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	8.0	5.9			12.5			13.0			7.7	
LOS	A	A			B			B			A	
Approach Delay		7.0			12.5			13.0			7.7	
Approach LOS		A			B			B			A	
Queue Length 50th (m)	2.1	1.7			20.6			0.1			1.8	
Queue Length 95th (m)	6.8	5.2			44.9			0.9			14.7	
Internal Link Dist (m)		337.1			182.1			90.9			596.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	662	1534			1654			1391			1164	
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	0.04			0.33			0.00			0.18	

Intersection Summary

Cycle Length: 114.5
Actuated Cycle Length: 40.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 73.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 7: Driveway/Bill Leathem Drive & Leikin Drive

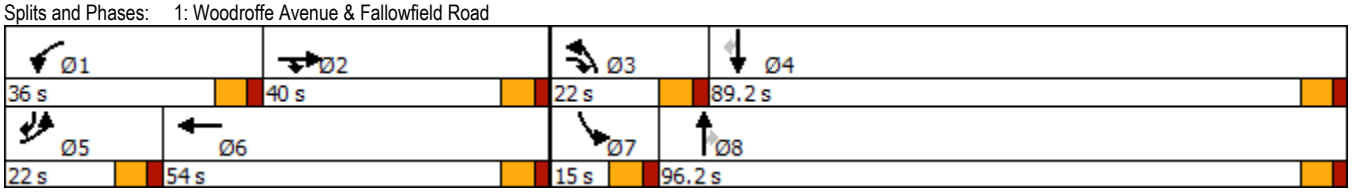


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	248	732	576	545	12	369	739	243	17	1641	627
Future Volume (vph)	204	248	732	576	545	12	369	739	243	17	1641	627
Satd. Flow (prot)	3216	3252	2637	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	2637	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)					1				243			141
Lane Group Flow (vph)	204	248	732	576	557	0	369	739	243	17	1641	627
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	2 3	1	6		3	8		7	4	5
Permitted Phases									8			4
Total Split (s)	22.0	40.0		36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.7	33.2	55.2	29.2	47.7		15.2	95.6	95.6	7.1	82.4	103.9
Actuated g/C Ratio	0.08	0.18	0.29	0.16	0.25		0.08	0.51	0.51	0.04	0.44	0.56
v/c Ratio	0.81	0.43	0.94	1.13	0.66		1.43	0.43	0.29	0.27	1.11	0.71
Control Delay	107.6	71.3	84.7	147.1	66.9		269.2	30.6	3.6	97.4	108.5	28.0
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	107.6	71.3	84.7	147.1	66.9		269.2	30.6	3.6	97.4	108.5	28.0
LOS	F	E	F	F	E		F	C	A	F	F	C
Approach Delay		85.8			107.7			90.9			86.3	
Approach LOS		F			F			F			F	
Queue Length 50th (m)	36.2	40.6	141.0	~117.5	91.5		~88.0	88.2	0.0	5.8	~339.0	123.1
Queue Length 95th (m)	#53.4	54.8	#180.2	#153.6	111.5		#120.3	105.6	14.5	14.5	#376.1	168.5
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	777	511	845		258	1709	842	74	1474	886
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	0.78	0.43	0.94	1.13	0.66		1.43	0.43	0.29	0.23	1.11	0.71

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.43
Intersection Signal Delay: 91.3 Intersection LOS: F
Intersection Capacity Utilization 109.3% 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: 1: Woodroffe Avenue & Fallowfield Road

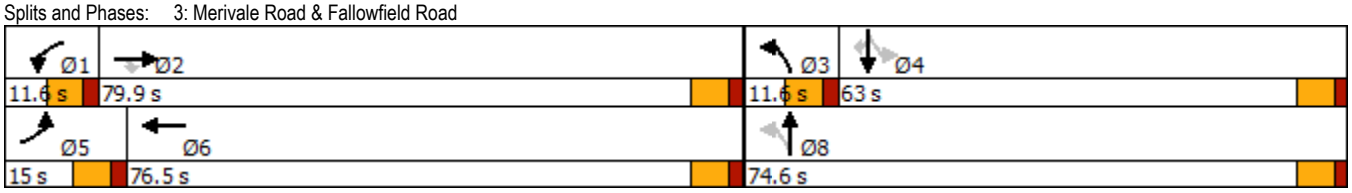


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	321	44	41	760	4	56	238	113	6	639	328
Future Volume (vph)	143	321	44	41	760	4	56	238	113	6	639	328
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1598	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.063			0.481		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	103	1598	0	856	1762	1498
Satd. Flow (RTOR)			108					17				149
Lane Group Flow (vph)	143	321	44	41	764	0	56	351	0	6	639	328
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	15.0	79.9	79.9	11.6	76.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	8.5	75.8	75.8	5.1	70.0		65.6	65.8		56.7	56.7	56.7
Actuated g/C Ratio	0.05	0.46	0.46	0.03	0.43		0.40	0.40		0.35	0.35	0.35
v/c Ratio	0.95	0.40	0.06	0.79	1.01		0.66	0.54		0.02	1.05	0.53
Control Delay	137.1	32.1	0.2	150.6	80.4		66.4	38.9		36.8	100.8	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	137.1	32.1	0.2	150.6	80.4		66.4	38.9		36.8	100.8	26.4
LOS	F	C	A	F	F		E	D		D	F	C
Approach Delay		58.9			84.0			42.7			75.3	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	22.8	66.5	0.0	12.7	~245.9		10.4	76.2		1.2	~213.6	43.9
Queue Length 95th (m)	#44.7	91.1	0.0	#34.7	#317.7		#24.6	105.7		4.8	#283.6	73.4
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	150	808	737	52	759		85	676		295	609	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	0.95	0.40	0.06	0.79	1.01		0.66	0.52		0.02	1.05	0.53

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 163.8
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 69.9 Intersection LOS: E
Intersection Capacity Utilization 108.2% 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: 3: Merivale Road & Fallowfield Road

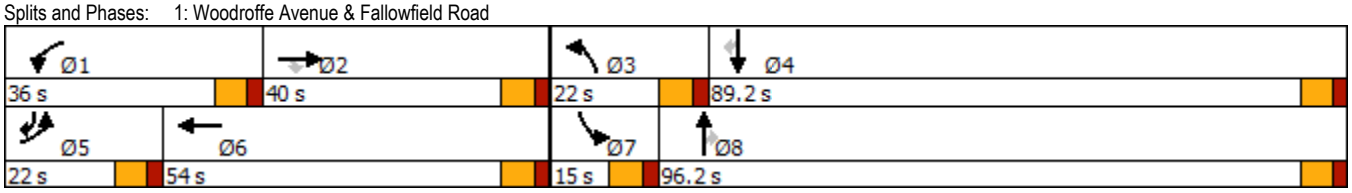


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	248	412	511	545	12	259	739	243	17	1481	627
Future Volume (vph)	204	248	412	511	545	12	259	739	243	17	1481	627
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			181		1				243			141
Lane Group Flow (vph)	204	248	412	511	557	0	259	739	243	17	1481	627
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	22.0	40.0	40.0	36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.7	33.2	33.2	29.2	47.7		15.2	95.6	95.6	7.1	82.4	103.9
Actuated g/C Ratio	0.08	0.18	0.18	0.16	0.25		0.08	0.51	0.51	0.04	0.44	0.56
v/c Ratio	0.81	0.43	1.00	1.00	0.66		1.00	0.43	0.29	0.27	1.00	0.71
Control Delay	107.6	71.3	84.2	116.7	66.9		139.5	30.6	3.6	97.4	75.8	28.0
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	107.6	71.3	84.2	116.7	66.9		139.5	30.6	3.6	97.4	75.8	28.0
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		86.0			90.7			48.1			61.8	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	36.2	40.6	88.9	92.2	91.5		~47.0	88.2	0.0	5.8	~270.7	123.1
Queue Length 95th (m)	#53.4	54.8	#156.5	#128.9	111.5		#76.6	105.6	14.5	14.5	#317.2	168.5
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	414	511	845		258	1709	842	74	1474	886
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	0.78	0.43	1.00	1.00	0.66		1.00	0.43	0.29	0.23	1.00	0.71

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 68.4 Intersection LOS: E
Intersection Capacity Utilization 102.5% 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: 1: Woodroffe Avenue & Fallowfield Road

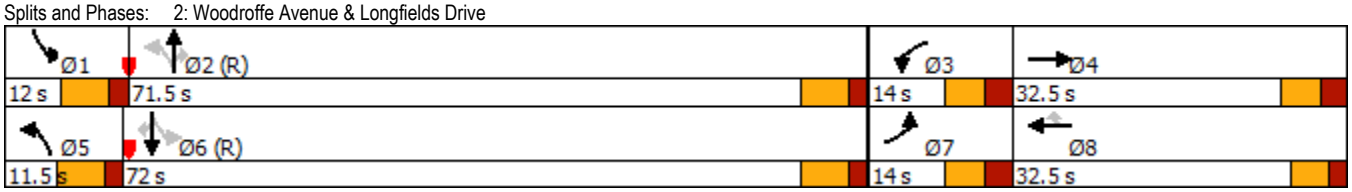


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	55	55	144	89	921	39	103	1763	223
Future Volume (vph)	155	17	70	55	55	144	89	921	39	103	1763	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.053			0.256		
Satd. Flow (perm)	3216	1528	0	1691	1780	1463	92	3316	1513	456	3349	1470
Satd. Flow (RTOR)		70				144			138			223
Lane Group Flow (vph)	155	87	0	55	55	144	89	921	39	103	1763	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	14.0	32.5		14.0	32.5	32.5	11.5	71.5	71.5	12.0	72.0	72.0
Total Lost Time (s)	6.5	6.5		6.5	5.6	5.6	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	7.5	15.6		7.2	13.7	13.7	84.3	76.4	76.4	83.0	75.8	75.8
Actuated g/C Ratio	0.06	0.12		0.06	0.11	0.11	0.65	0.59	0.59	0.64	0.58	0.58
v/c Ratio	0.84	0.36		0.59	0.29	0.51	0.58	0.47	0.04	0.29	0.90	0.23
Control Delay	94.8	20.0		84.8	55.7	14.0	35.5	17.1	0.1	9.8	32.3	2.6
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	94.8	20.0		84.8	55.7	14.0	35.5	17.1	0.1	9.8	32.3	2.6
LOS	F	C		F	E	B	D	B	A	A	C	A
Approach Delay		67.9			38.3			18.0			28.0	
Approach LOS		E			D			B			C	
Queue Length 50th (m)	19.0	3.8		12.9	12.5	0.0	6.1	59.1	0.0	6.6	175.8	0.0
Queue Length 95th (m)	#36.4	16.5		#28.6	21.7	15.9	#34.6	94.8	0.0	17.1	#275.8	11.4
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	185	361		97	368	416	153	1949	946	360	1952	950
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	0.84	0.24		0.57	0.15	0.35	0.58	0.47	0.04	0.29	0.90	0.23

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 28.5 Intersection LOS: C
Intersection Capacity Utilization 84.2% 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: 2: Woodroffe Avenue & Longfields Drive

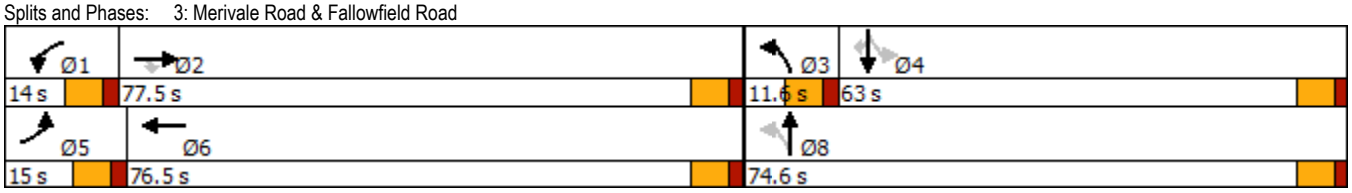


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	321	44	41	630	4	56	238	113	6	539	328
Future Volume (vph)	143	321	44	41	630	4	56	238	113	6	539	328
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1598	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.113			0.501		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	185	1598	0	892	1762	1498
Satd. Flow (RTOR)			108					17				177
Lane Group Flow (vph)	143	321	44	41	634	0	56	351	0	6	539	328
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	15.0	77.5	77.5	14.0	76.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	8.9	62.1	62.1	7.3	56.6		57.1	57.3		48.8	48.8	48.8
Actuated g/C Ratio	0.06	0.43	0.43	0.05	0.39		0.40	0.40		0.34	0.34	0.34
v/c Ratio	0.79	0.43	0.06	0.48	0.90		0.46	0.54		0.02	0.90	0.52
Control Delay	98.9	33.5	0.2	93.1	59.3		41.4	35.6		36.3	66.1	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	98.9	33.5	0.2	93.1	59.3		41.4	35.6		36.3	66.1	21.2
LOS	F	C	A	F	E		D	D		D	E	C
Approach Delay		49.0			61.4			36.4			49.0	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	21.4	67.5	0.0	11.7	170.8		9.5	69.2		1.1	143.6	33.1
Queue Length 95th (m)	#44.7	93.6	0.0	#27.0	224.5		19.6	105.7		4.7	#217.4	65.1
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	180	907	815	92	911		123	807		369	731	725
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	0.79	0.35	0.05	0.45	0.70		0.46	0.43		0.02	0.74	0.45

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 143.4
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 50.3 Intersection LOS: D
Intersection Capacity Utilization 95.4% 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: 3: Merivale Road & Fallowfield Road

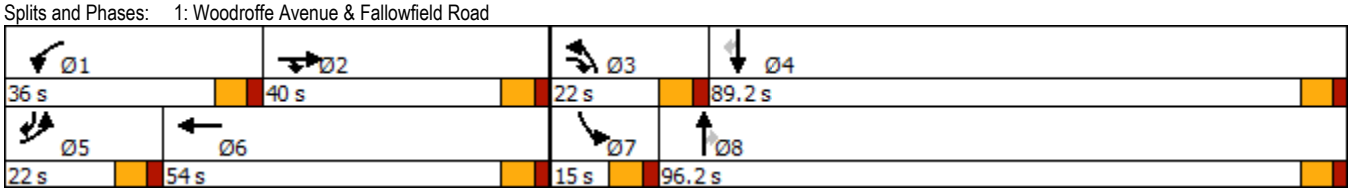


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	248	732	511	545	12	259	739	243	17	1481	627
Future Volume (vph)	204	248	732	511	545	12	259	739	243	17	1481	627
Satd. Flow (prot)	3216	3252	2637	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	2637	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)					1				243			141
Lane Group Flow (vph)	204	248	732	511	557	0	259	739	243	17	1481	627
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	2 3	1	6		3	8		7	4	5
Permitted Phases									8			4
Total Split (s)	22.0	40.0		36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.7	33.2	55.2	29.2	47.7		15.2	95.6	95.6	7.1	82.4	103.9
Actuated g/C Ratio	0.08	0.18	0.29	0.16	0.25		0.08	0.51	0.51	0.04	0.44	0.56
v/c Ratio	0.81	0.43	0.94	1.00	0.66		1.00	0.43	0.29	0.27	1.00	0.71
Control Delay	107.6	71.3	84.7	116.7	66.9		139.5	30.6	3.6	97.4	75.8	28.0
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	107.6	71.3	84.7	116.7	66.9		139.5	30.6	3.6	97.4	75.8	28.0
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		85.8			90.7			48.1			61.8	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	36.2	40.6	141.0	92.2	91.5		~47.0	88.2	0.0	5.8	~270.7	123.1
Queue Length 95th (m)	#53.4	54.8	#180.2	#128.9	111.5		#76.6	105.6	14.5	14.5	#317.2	168.5
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	777	511	845		258	1709	842	74	1474	886
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	0.78	0.43	0.94	1.00	0.66		1.00	0.43	0.29	0.23	1.00	0.71

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 69.3 Intersection LOS: E
Intersection Capacity Utilization 102.6% 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: 1: Woodroffe Avenue & Fallowfield Road

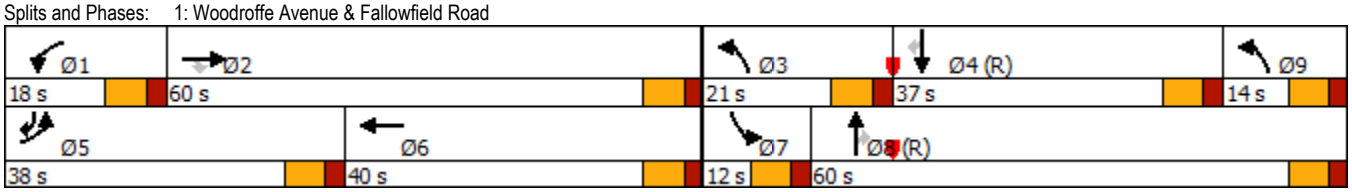


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	645	625	274	127	131	32	634	1629	516	7	393	108
Future Volume (vph)	645	625	274	127	131	32	634	1629	516	7	393	108
Satd. Flow (prot)	3248	3316	1375	2955	3133	0	3216	3349	1513	1445	3221	1363
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3316	1375	2955	3133	0	3212	3349	1513	1445	3221	1345
Satd. Flow (RTOR)			274		18				343			176
Lane Group Flow (vph)	645	625	274	127	163	0	634	1629	516	7	393	108
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3 9	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	38.0	60.0	60.0	18.0	40.0			60.0	60.0	12.0	37.0	38.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8			6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	31.1	36.0	36.0	10.4	15.4		45.9	80.2	80.2	6.4	23.7	54.7
Actuated g/C Ratio	0.21	0.24	0.24	0.07	0.10		0.31	0.53	0.53	0.04	0.16	0.36
v/c Ratio	0.96	0.79	0.51	0.62	0.48		0.64	0.91	0.53	0.11	0.77	0.18
Control Delay	84.5	60.8	8.0	81.3	60.2		31.6	40.6	10.3	72.6	71.1	0.6
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	84.5	60.8	8.0	81.3	60.2		31.6	40.6	10.3	72.6	71.1	0.6
LOS	F	E	A	F	E		C	D	B	E	E	A
Approach Delay		61.3			69.4			32.9			56.1	
Approach LOS		E			E			C			E	
Queue Length 50th (m)	90.9	86.2	0.0	17.6	20.1		47.6	195.4	24.6	1.9	55.2	0.0
Queue Length 95th (m)	#125.1	99.2	20.4	27.9	29.5		#95.4	#322.5	72.4	6.7	68.7	0.0
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	675	1176	664	220	707		984	1790	968	61	648	607
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	0.96	0.53	0.41	0.58	0.23		0.64	0.91	0.53	0.11	0.61	0.18

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:SBT and 8:NBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 45.9 Intersection LOS: D
Intersection Capacity Utilization 102.1% 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: 1: Woodroffe Avenue & Fallowfield Road



Lane Group	Ø3	Ø9
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	9
Permitted Phases		
Total Split (s)	21.0	14.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
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		

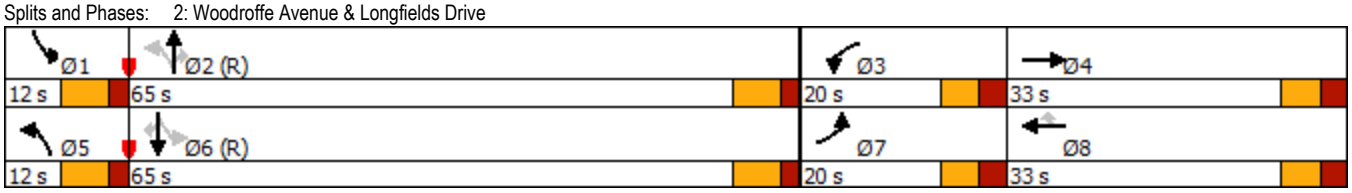
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	39	57	184	36	1536	50	158	453	111
Future Volume (vph)	372	89	82	39	57	184	36	1536	50	158	453	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.491			0.062		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	779	3349	1479	107	3221	1393
Satd. Flow (RTOR)		32				138			138			138
Lane Group Flow (vph)	372	171	0	39	57	184	36	1536	50	158	453	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	20.0	33.0		20.0	33.0	33.0	12.0	65.0	65.0	12.0	65.0	65.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	13.5	22.2		8.7	15.0	15.0	65.5	59.2	59.2	80.7	74.2	74.2
Actuated g/C Ratio	0.10	0.17		0.07	0.12	0.12	0.50	0.46	0.46	0.62	0.57	0.57
v/c Ratio	1.10	0.59		0.37	0.30	0.63	0.08	1.01	0.07	0.61	0.25	0.13
Control Delay	132.6	49.3		67.2	54.3	24.7	12.1	60.1	0.2	38.4	16.3	2.0
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	132.6	49.3		67.2	54.3	24.7	12.1	60.1	0.2	38.4	16.3	2.0
LOS	F	D		E	D	C	B	E	A	D	B	A
Approach Delay		106.4			36.7			57.2			19.0	
Approach LOS		F			D			E			B	
Queue Length 50th (m)	~51.3	32.0		9.0	12.8	10.3	2.8	186.5	0.0	20.7	28.2	0.0
Queue Length 95th (m)	#79.9	49.9		19.3	22.5	29.0	8.6	#241.1	0.0	#76.0	46.7	5.8
Internal Link Dist (m)		414.1			1016.6			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	337	352		164	339	413	427	1525	748	258	1837	853
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	1.10	0.49		0.24	0.17	0.45	0.08	1.01	0.07	0.61	0.25	0.13

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 86 (66%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 55.1 Intersection LOS: E
Intersection Capacity Utilization 96.1% 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: 2: Woodroffe Avenue & Longfields Drive

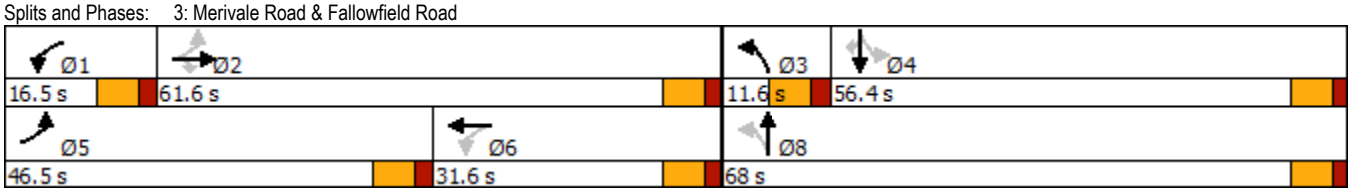


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	700	432	37	167	167	5	20	666	80	0	136	56
Future Volume (vph)	700	432	37	167	167	5	20	666	80	0	136	56
Satd. Flow (prot)	1658	1762	1427	1658	1691	0	1691	1717	0	1780	1618	1327
Flt Permitted	0.382			0.511			0.584					
Satd. Flow (perm)	667	1762	1427	892	1691	0	1040	1717	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			5				173
Lane Group Flow (vph)	700	432	37	167	172	0	20	746	0	0	136	56
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	46.5	61.6	61.6	16.5	31.6		11.6	68.0		56.4	56.4	56.4
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	71.6	55.1	55.1	35.0	25.0		61.4	61.6			54.6	54.6
Actuated g/C Ratio	0.49	0.38	0.38	0.24	0.17		0.42	0.42			0.37	0.37
v/c Ratio	1.17	0.65	0.06	0.63	0.59		0.04	1.03			0.22	0.09
Control Delay	123.3	43.2	0.2	40.2	64.9		25.2	81.6			34.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	123.3	43.2	0.2	40.2	64.9		25.2	81.6			34.0	0.3
LOS	F	D	A	D	E		C	F			C	A
Approach Delay		89.8			52.7			80.2			24.1	
Approach LOS		F			D			F			C	
Queue Length 50th (m)	~181.4	94.7	0.0	24.7	42.6		3.1	~210.8			26.0	0.0
Queue Length 95th (m)	#250.9	129.6	0.0	38.5	65.7		8.1	#281.5			41.8	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	598	664	614	266	290		459	726			605	604
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	1.17	0.65	0.06	0.63	0.59		0.04	1.03			0.22	0.09

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 146.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 76.6 Intersection LOS: E
Intersection Capacity Utilization 108.9% 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.

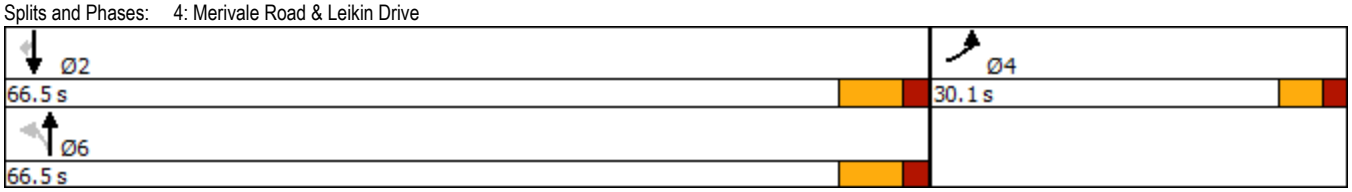
Splits and Phases: 3: Merivale Road & Fallowfield Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	414	4	0	396	71	229
Future Volume (vph)	414	4	0	396	71	229
Satd. Flow (prot)	3255	0	1728	1745	1424	1469
Flt Permitted	0.953					
Satd. Flow (perm)	3255	0	1728	1745	1424	1469
Satd. Flow (RTOR)	1					229
Lane Group Flow (vph)	418	0	0	396	71	229
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			6	2	
Permitted Phases			6			2
Total Split (s)	30.1		66.5	66.5	66.5	66.5
Total Lost Time (s)	5.1		6.5	6.5	6.5	6.5
Act Effct Green (s)	16.4			60.1	60.1	60.1
Actuated g/C Ratio	0.19			0.68	0.68	0.68
v/c Ratio	0.69			0.33	0.07	0.21
Control Delay	39.7			7.2	5.6	1.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	39.7			7.2	5.6	1.4
LOS	D			A	A	A
Approach Delay	39.7			7.2	2.4	
Approach LOS	D			A	A	
Queue Length 50th (m)	31.4			21.8	3.2	0.0
Queue Length 95th (m)	44.7			41.0	8.2	6.7
Internal Link Dist (m)	50.7			445.8	100.5	
Turn Bay Length (m)						85.0
Base Capacity (vph)	925			1190	971	1075
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	0.45			0.33	0.07	0.21

Intersection Summary	
Cycle Length: 96.6	
Actuated Cycle Length: 88.1	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 44.3%	ICU Level of Service A
Analysis Period (min) 15	

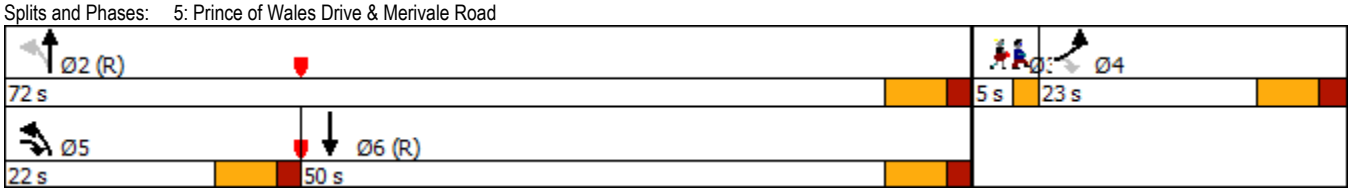
Splits and Phases: 4: Merivale Road & Leikin Drive



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	11	121	508	1028	290	43	
Future Volume (vph)	11	121	508	1028	290	43	
Satd. Flow (prot)	3281	1261	1642	1745	3119	0	
Flt Permitted	0.950		0.485				
Satd. Flow (perm)	3281	1261	838	1745	3119	0	
Satd. Flow (RTOR)		121			21		
Lane Group Flow (vph)	11	121	508	1028	333	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	23.0	22.0	22.0	72.0	50.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	10.1	34.8	71.7	71.6	47.3		
Actuated g/C Ratio	0.10	0.35	0.72	0.72	0.47		
v/c Ratio	0.03	0.23	0.68	0.82	0.22		
Control Delay	40.8	5.1	11.0	17.1	15.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	40.8	5.1	11.0	17.1	15.6		
LOS	D	A	B	B	B		
Approach Delay	8.1			15.1	15.6		
Approach LOS	A			B	B		
Queue Length 50th (m)	0.9	0.0	31.9	108.6	16.6		
Queue Length 95th (m)	3.4	9.9	48.2	174.7	26.6		
Internal Link Dist (m)	226.4			296.0	233.3		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	531	514	749	1250	1487		
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	0.02	0.24	0.68	0.82	0.22		

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 15 (15%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	

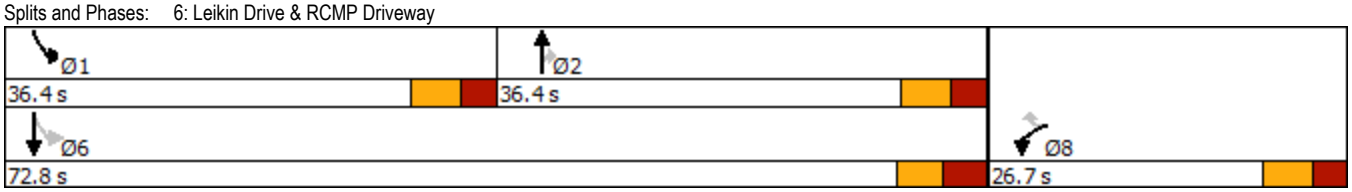
Splits and Phases: 5: Prince of Wales Drive & Merivale Road

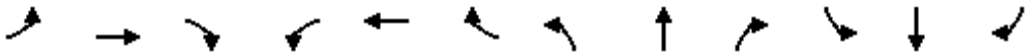


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	17	315	548	253	51
Future Volume (vph)	15	17	315	548	253	51
Satd. Flow (prot)	1691	1427	1728	1513	1691	1508
Flt Permitted	0.950				0.466	
Satd. Flow (perm)	1691	1325	1728	1468	826	1508
Satd. Flow (RTOR)		17		548		
Lane Group Flow (vph)	15	17	315	548	253	51
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Total Split (s)	26.7	26.7	36.4	36.4	36.4	72.8
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.4	6.7
Act Effct Green (s)	11.6	11.6	31.4	31.4	46.9	51.4
Actuated g/C Ratio	0.19	0.19	0.52	0.52	0.78	0.86
v/c Ratio	0.05	0.06	0.35	0.53	0.33	0.04
Control Delay	24.5	13.2	13.7	3.9	4.9	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	13.2	13.7	3.9	4.9	4.0
LOS	C	B	B	A	A	A
Approach Delay	18.5		7.5			4.8
Approach LOS	B		A			A
Queue Length 50th (m)	1.1	0.0	12.2	0.0	0.3	0.0
Queue Length 95th (m)	5.9	4.5	55.2	18.3	24.0	6.1
Internal Link Dist (m)	69.4		182.1			276.7
Turn Bay Length (m)					200.0	
Base Capacity (vph)	598	479	903	1029	1097	1436
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.04	0.35	0.53	0.23	0.04

Intersection Summary			
Cycle Length: 99.5			
Actuated Cycle Length: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 7.1		Intersection LOS: A	
Intersection Capacity Utilization 63.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Leikin Drive & RCMP Driveway

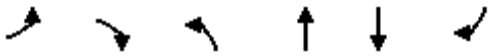




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	558	4	6	20	37	1	2	4	213	3	56
Future Volume (Veh/h)	151	558	4	6	20	37	1	2	4	213	3	56
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	151	558	4	6	20	37	1	2	4	213	3	56
Pedestrians								5				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					206							
pX, platoon unblocked												
vC, conflicting volume	57			567			956	936	565	916	920	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57			567			956	936	565	916	920	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			99			100	99	99	7	99	95
cM capacity (veh/h)	1528			1000			205	238	524	229	243	1039

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	151	562	6	57	7	272
Volume Left	151	0	6	0	1	213
Volume Right	0	4	0	37	4	56
cSH	1528	1700	1000	1700	335	273
Volume to Capacity	0.10	0.33	0.01	0.03	0.02	1.00
Queue Length 95th (m)	2.3	0.0	0.1	0.0	0.4	70.3
Control Delay (s)	7.6	0.0	8.6	0.0	16.0	94.3
Lane LOS	A		A		C	F
Approach Delay (s)	1.6		0.8		16.0	94.3
Approach LOS					C	F

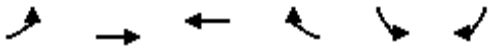
Intersection Summary				
Average Delay	25.6			
Intersection Capacity Utilization	60.8%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	28	3	308	227	0
Future Volume (Veh/h)	105	28	3	308	227	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	105	28	3	308	227	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					294	
pX, platoon unblocked						
vC, conflicting volume	541	227	227			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	541	227	227			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	97	100			
cM capacity (veh/h)	501	812	1341			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	133	311	227
Volume Left	105	3	0
Volume Right	28	0	0
cSH	545	1341	1700
Volume to Capacity	0.24	0.00	0.13
Queue Length 95th (m)	6.7	0.0	0.0
Control Delay (s)	13.7	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	13.7	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	264	252	0	4	4
Future Volume (Veh/h)	0	264	252	0	4	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	264	252	0	4	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	252				516	252
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	252				516	252
tC, single (s)	4.1				7.4	7.2
tC, 2 stage (s)						
tF (s)	2.2				4.4	4.2
p0 queue free %	100				99	99
cM capacity (veh/h)	1313				382	598

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	264	252	4	4
Volume Left	0	0	4	0
Volume Right	0	0	0	4
cSH	1700	1700	382	598
Volume to Capacity	0.16	0.15	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.2	0.1
Control Delay (s)	0.0	0.0	14.5	11.1
Lane LOS			B	B
Approach Delay (s)	0.0	0.0	12.8	
Approach LOS			B	

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

Scheme Summary

Control Data

Control Data and Model Parameters

121137	2026 PHF Flow Profile (veh)
2026 Total Traffic Volumes	7.5 min Time Slice
Rodel-Win1	Queuing Delays (sec)
Right Hand Drive	Daylight conditions
AM Peak Hour	Peak 60/15 min Results
AVERAGE DELAY to Geometry	Output flows: Vehicles
Metric Units (m)	85% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	No
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (m)

Geometry and Design Target

Leg	Leg Names	Approach Geometry (m)				Target	Circulating and Exit Geom		
		Bearing (deg)	Grade Sep G	Half Width V	Lanes n	Average Delay (sec/veh)	Inscribed Diameter D	Half Width Vx	Lanes n
1	SB - Access	0	0	4.20	1	30	40.00	5.50	1
2	EB - Longfields	90	0	3.50	1	30	40.00	4.20	1
3	NB - Bill Leathem	180	0	5.50	1	30	40.00	4.20	1
4	WB - Access	270	0	4.20	1	30	40.00	3.50	1

Capacity Modifiers and Capacity Calibration (veh/hr)

Leg	Leg Names	Entry Capacity		Entry Calibration		Approach Road			Exit Road		
		Capacity + or -	XWalk Factor	Intercept + or -	Slope Factor	V (m)	Default Capacity	Calib Capacity	V (m)	Default Capacity	Calib Capacity
1	SB - Access	0	1.000	0	1.000	6.00	2058	0	5.50	2695	0
2	EB - Longfields	0	1.000	0	1.000	6.00	1715	0	4.20	2058	0
3	NB - Bill Leathem	0	1.000	0	1.000	6.00	2695	0	4.20	2058	0
4	WB - Access	0	1.000	0	1.000	6.00	2058	0	3.50	1715	0

Traffic Flow Data (veh/hr)

2026 AM Peak Peak Hour Flows

Leg	Leg Names	Turning Flows					Flow Modifiers		
		U-Turn	Exit-3	Exit-2	Exit-1	Bypass	Trucks %	Flow Factor	Peak Hour Factor
1	SB - Access	0	0	77	42	0	10.0	1.00	1.000
2	EB - Longfields	0	0	0	268	0	10.0	1.00	1.000
3	NB - Bill Leathem	0	168	0	0	0	10.0	1.00	1.000
4	WB - Access	0	76	42	0	0	10.0	1.00	1.000

Operational Results

Geometry for Target Input

Geometry Options for 2026 AM Peak

Leg 1 - SB - Access					
nv	ne	nc	nx	E (m)	L' (m)
1	1	1	0	4.20	0.00

Geometry Options for 2026 AM Peak

Leg 2 - EB - Longfields					
nv	ne	nc	nx	E (m)	L' (m)
1	1	1	1	3.50	0.00

Geometry Options for 2026 AM Peak

Leg 3 - NB - Bill Leathem					
nv	ne	nc	nx	E (m)	L' (m)
1	1	0	1	5.50	0.00

Geometry Options for 2026 AM Peak

Leg 4 - WB - Access					
nv	ne	nc	nx	E (m)	L' (m)
1	1	1	0	4.20	0.00

2026 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB - Access	None	119		286		0	736		0.1617	
2	EB - Longfields	None	268		153		252	634		0.4228	
3	NB - Bill Leathem	None	168		0		421	1206		0.1393	
4	WB - Access	None	118		168		0	796		0.1483	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB - Access	None	5.20		5.20	0.45		A		A
2	EB - Longfields	None	8.34		8.34	1.62		A		A
3	NB - Bill Leathem	None	3.10		3.10	0.38		A		A
4	WB - Access	None	4.74		4.74	0.41		A		A

2026 AM Peak - 15 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB - Access	None	119		286		0	736		0.1617	
2	EB - Longfields	None	268		153		252	634		0.4228	
3	NB - Bill Leathem	None	168		0		421	1206		0.1393	
4	WB - Access	None	118		168		0	796		0.1483	

Delays, Queues and Level of Service

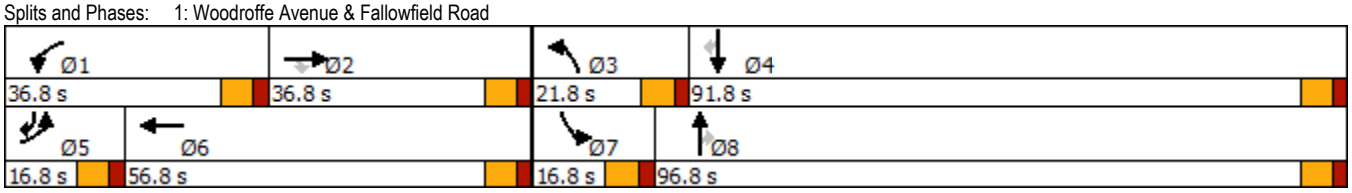
Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB - Access	None	5.21		5.21	0.45		A		A
2	EB - Longfields	None	8.36		8.36	1.62		A		A
3	NB - Bill Leathem	None	3.10		3.10	0.38		A		A
4	WB - Access	None	4.75		4.75	0.41		A		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	233	691	540	511	11	374	717	228	16	1539	588
Future Volume (vph)	192	233	691	540	511	11	374	717	228	16	1539	588
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			141		1				228			101
Lane Group Flow (vph)	192	233	691	540	522	0	374	717	228	16	1539	588
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	16.8	36.8	36.8	36.8	56.8		21.8	96.8	96.8	16.8	91.8	16.8
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	10.0	30.0	30.0	30.0	50.0		15.0	97.7	97.7	7.3	85.0	101.8
Actuated g/C Ratio	0.05	0.16	0.16	0.16	0.27		0.08	0.52	0.52	0.04	0.45	0.54
v/c Ratio	1.12	0.45	1.93	1.03	0.59		1.47	0.41	0.27	0.24	1.01	0.69
Control Delay	179.7	74.2	456.5	121.0	62.8		283.3	29.0	3.6	95.2	75.9	30.2
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	179.7	74.2	456.5	121.0	62.8		283.3	29.0	3.6	95.2	75.9	30.2
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		329.1			92.4			96.7			63.5	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	~38.9	38.8	~324.2	~101.8	83.0		~90.5	82.5	0.0	5.5	~292.0	122.7
Queue Length 95th (m)	#65.0	52.8	#397.6	#137.4	101.7		#123.1	100.7	14.0	14.0	#329.9	166.4
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	171	521	358	525	886		255	1748	848	90	1520	852
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	1.12	0.45	1.93	1.03	0.59		1.47	0.41	0.27	0.18	1.01	0.69

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.93
Intersection Signal Delay: 129.2 Intersection LOS: F
Intersection Capacity Utilization 123.3% 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: 1: Woodroffe Avenue & Fallowfield Road

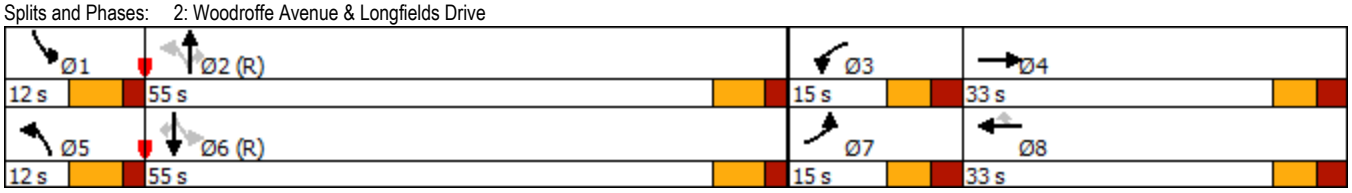


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	79	67	196	89	864	39	107	1907	223
Future Volume (vph)	155	17	70	79	67	196	89	864	39	107	1907	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.068			0.257		
Satd. Flow (perm)	3216	1528	0	1691	1780	1464	118	3316	1513	457	3349	1472
Satd. Flow (RTOR)		70				160			157			223
Lane Group Flow (vph)	155	87	0	79	67	196	89	864	39	107	1907	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	15.0	33.0		15.0	33.0	33.0	12.0	55.0	55.0	12.0	55.0	55.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	8.4	16.5		8.2	13.6	13.6	67.0	59.7	59.7	67.0	59.7	59.7
Actuated g/C Ratio	0.07	0.14		0.07	0.12	0.12	0.58	0.52	0.52	0.58	0.52	0.52
v/c Ratio	0.67	0.31		0.66	0.32	0.62	0.54	0.50	0.05	0.31	1.10	0.26
Control Delay	66.3	16.7		78.2	48.5	20.0	28.6	20.3	0.1	12.1	81.1	3.3
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	66.3	16.7		78.2	48.5	20.0	28.6	20.3	0.1	12.1	81.1	3.3
LOS	E	B		E	D	C	C	C	A	B	F	A
Approach Delay		48.4			39.0			20.2			70.0	
Approach LOS		D			D			C			E	
Queue Length 50th (m)	16.3	3.3		16.2	13.4	7.1	5.9	55.5	0.0	7.1	~226.6	0.0
Queue Length 95th (m)	#27.6	14.7		#35.6	22.2	24.5	#28.0	91.4	0.0	19.1	#311.7	12.8
Internal Link Dist (m)		414.1			1042.9			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	237	405		124	410	460	165	1722	861	344	1739	871
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	0.65	0.21		0.64	0.16	0.43	0.54	0.50	0.05	0.31	1.10	0.26

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 115
Offset: 92 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 52.9 Intersection LOS: D
Intersection Capacity Utilization 88.7% ICU Level of Service E
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: 2: Woodroffe Avenue & Longfields Drive

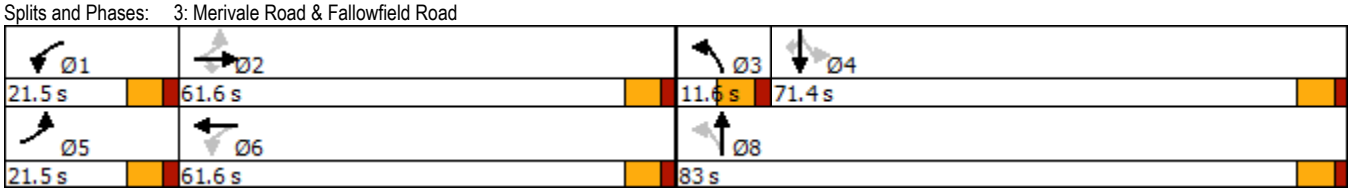


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	301	41	39	713	3	52	272	164	6	599	308
Future Volume (vph)	134	301	41	39	713	3	52	272	164	6	599	308
Satd. Flow (prot)	1496	1745	1469	1691	1778	0	1551	1589	0	1691	1762	1498
Flt Permitted	0.063			0.540			0.082			0.397		
Satd. Flow (perm)	99	1745	1469	961	1778	0	134	1589	0	707	1762	1498
Satd. Flow (RTOR)			108					24				162
Lane Group Flow (vph)	134	301	41	39	716	0	52	436	0	6	599	308
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	21.5	61.6	61.6	21.5	61.6		11.6	83.0		71.4	71.4	71.4
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.5	65.5	65.5	63.3	55.7		64.6	64.8		56.0	56.0	56.0
Actuated g/C Ratio	0.49	0.42	0.42	0.41	0.36		0.42	0.42		0.36	0.36	0.36
v/c Ratio	0.75	0.41	0.06	0.09	1.12		0.51	0.64		0.02	0.94	0.48
Control Delay	64.5	37.4	0.2	25.1	118.2		43.3	37.5		31.7	71.1	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	64.5	37.4	0.2	25.1	118.2		43.3	37.5		31.7	71.1	19.5
LOS	E	D	A	C	F		D	D		C	E	B
Approach Delay		41.8			113.4			38.1			53.5	
Approach LOS		D			F			D			D	
Queue Length 50th (m)	27.6	66.8	0.0	6.2	~257.1		8.8	91.8		1.1	167.8	31.7
Queue Length 95th (m)	#61.4	97.8	0.0	13.3	#337.1		16.7	125.1		4.4	#228.4	56.9
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	186	739	684	513	640		102	809		301	750	730
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	0.41	0.06	0.08	1.12		0.51	0.54		0.02	0.80	0.42

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 154.6
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 65.7 Intersection LOS: E
Intersection Capacity Utilization 106.8% 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.

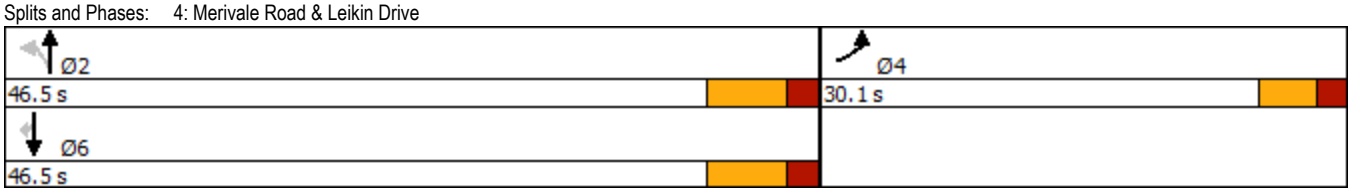
Splits and Phases: 3: Merivale Road & Fallowfield Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	326	2	1	194	489	212
Future Volume (vph)	326	2	1	194	489	212
Satd. Flow (prot)	3186	0	1271	1648	1762	1498
Flt Permitted	0.953		0.457			
Satd. Flow (perm)	3186	0	612	1648	1762	1498
Satd. Flow (RTOR)	1					212
Lane Group Flow (vph)	328	0	1	194	489	212
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Total Split (s)	30.1		46.5	46.5	46.5	46.5
Total Lost Time (s)	5.1		6.5	6.5	6.5	6.5
Act Effct Green (s)	12.0		40.0	40.0	40.0	40.0
Actuated g/C Ratio	0.19		0.63	0.63	0.63	0.63
v/c Ratio	0.55		0.00	0.19	0.44	0.21
Control Delay	26.9		5.0	5.9	8.0	1.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	26.9		5.0	5.9	8.0	1.5
LOS	C		A	A	A	A
Approach Delay	26.9			5.9	6.0	
Approach LOS	C			A	A	
Queue Length 50th (m)	16.6		0.0	7.4	22.7	0.0
Queue Length 95th (m)	26.5		0.5	16.5	44.9	6.1
Internal Link Dist (m)	51.0			445.8	100.5	
Turn Bay Length (m)			100.0			85.0
Base Capacity (vph)	1253		385	1037	1109	1021
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	0.26		0.00	0.19	0.44	0.21

Intersection Summary	
Cycle Length: 76.6	
Actuated Cycle Length: 63.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 46.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Merivale Road & Leikin Drive

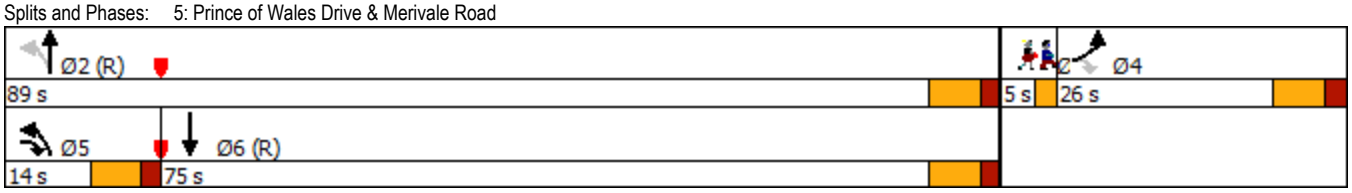


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	34	594	190	374	1015	18	
Future Volume (vph)	34	594	190	374	1015	18	
Satd. Flow (prot)	1642	1483	1566	1745	3338	0	
Flt Permitted	0.950		0.195				
Satd. Flow (perm)	1642	1483	321	1745	3338	0	
Satd. Flow (RTOR)		145			2		
Lane Group Flow (vph)	34	594	190	374	1033	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	26.0	14.0	14.0	89.0	75.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	19.2	33.6	82.6	82.5	68.5		
Actuated g/C Ratio	0.16	0.28	0.69	0.69	0.57		
v/c Ratio	0.13	1.14	0.64	0.31	0.54		
Control Delay	44.8	116.4	16.8	8.3	17.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	44.8	116.4	16.8	8.3	17.3		
LOS	D	F	B	A	B		
Approach Delay	112.5			11.1	17.3		
Approach LOS	F			B	B		
Queue Length 50th (m)	6.4	~127.0	13.2	29.2	69.6		
Queue Length 95th (m)	15.1	#190.8	21.1	42.1	86.1		
Internal Link Dist (m)	226.4			296.0	231.6		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	262	519	299	1199	1906		
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	0.13	1.14	0.64	0.31	0.54		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 42.6 Intersection LOS: D
Intersection Capacity Utilization 79.8% ICU Level of Service D
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: 5: Prince of Wales Drive & Merivale Road

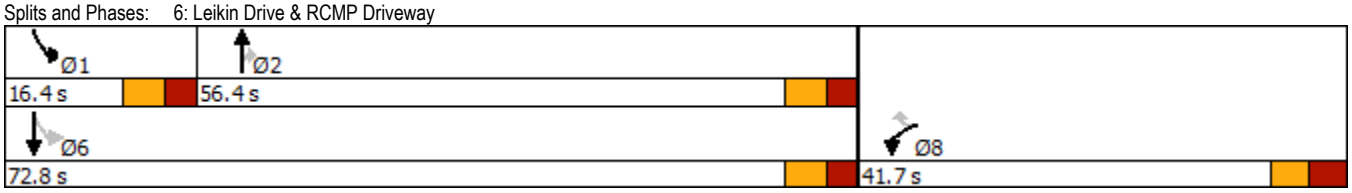


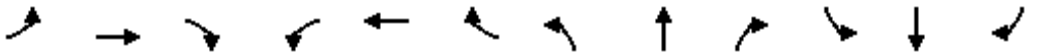
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	409	252	85	5	6	209
Future Volume (vph)	409	252	85	5	6	209
Satd. Flow (prot)	1691	1513	1648	1513	1691	1728
Flt Permitted	0.950				0.623	
Satd. Flow (perm)	1691	1391	1648	1456	1093	1728
Satd. Flow (RTOR)		252		5		
Lane Group Flow (vph)	409	252	85	5	6	209
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Total Split (s)	41.7	41.7	56.4	56.4	16.4	72.8
Total Lost Time (s)	6.7	6.7	6.4	6.4	6.4	6.4
Act Effct Green (s)	26.8	26.8	50.6	50.6	52.7	52.7
Actuated g/C Ratio	0.29	0.29	0.55	0.55	0.57	0.57
v/c Ratio	0.84	0.43	0.09	0.01	0.01	0.21
Control Delay	47.2	6.0	13.2	9.0	10.3	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	6.0	13.2	9.0	10.3	11.4
LOS	D	A	B	A	B	B
Approach Delay	31.5		13.0			11.4
Approach LOS	C		B			B
Queue Length 50th (m)	59.9	0.0	6.0	0.0	0.4	15.9
Queue Length 95th (m)	#108.2	16.0	18.2	1.9	2.2	31.1
Internal Link Dist (m)	69.4		182.1			276.7
Turn Bay Length (m)					200.0	
Base Capacity (vph)	645	686	899	796	685	1251
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.37	0.09	0.01	0.01	0.17

Intersection Summary

Cycle Length: 114.5
Actuated Cycle Length: 92.7
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 25.3 — Intersection LOS: C
Intersection Capacity Utilization 55.7% — ICU Level of Service B
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Leikin Drive & RCMP Driveway

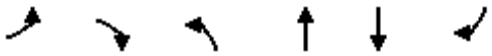




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	57	0	0	364	183	0	1	0	43	0	186
Future Volume (Veh/h)	65	57	0	0	364	183	0	1	0	43	0	186
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	65	57	0	0	364	183	0	1	0	43	0	186
Pedestrians		1						10			1	
Lane Width (m)		3.5						3.5			3.5	
Walking Speed (m/s)		1.0						1.0			1.0	
Percent Blockage		0						1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					206							
pX, platoon unblocked	0.98						0.98	0.98		0.98	0.98	0.98
vC, conflicting volume	548			67			748	745	67	644	654	458
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530			67			733	730	67	627	637	437
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			100	100	100	88	100	69
cM capacity (veh/h)	1027			1532			215	320	992	368	361	608

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	65	57	0	547	1	229
Volume Left	65	0	0	0	0	43
Volume Right	0	0	0	183	0	186
cSH	1027	1700	1700	1700	320	542
Volume to Capacity	0.06	0.03	0.00	0.32	0.00	0.42
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.1	14.6
Control Delay (s)	8.7	0.0	0.0	0.0	16.3	16.4
Lane LOS	A				C	C
Approach Delay (s)	4.7		0.0		16.3	16.4
Approach LOS					C	C

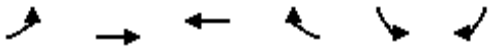
Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	67.2%	ICU Level of Service		C
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	106	28	5	222	213	0
Future Volume (Veh/h)	106	28	5	222	213	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	106	28	5	222	213	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					284	
pX, platoon unblocked						
vC, conflicting volume	445	213	213			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	445	213	213			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	97	100			
cM capacity (veh/h)	569	827	1357			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	134	227	213
Volume Left	106	5	0
Volume Right	28	0	0
cSH	608	1357	1700
Volume to Capacity	0.22	0.00	0.13
Queue Length 95th (m)	5.9	0.1	0.0
Control Delay (s)	12.6	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	12.6	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	149	362	0	4	4
Future Volume (Veh/h)	0	149	362	0	4	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	149	362	0	4	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	362				511	362
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	362				511	362
tC, single (s)	4.1				7.4	7.2
tC, 2 stage (s)						
tF (s)	2.2				4.4	4.2
p0 queue free %	100				99	99
cM capacity (veh/h)	1197				385	509

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	149	362	4	4
Volume Left	0	0	4	0
Volume Right	0	0	0	4
cSH	1700	1700	385	509
Volume to Capacity	0.09	0.21	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.2	0.2
Control Delay (s)	0.0	0.0	14.5	12.1
Lane LOS			B	B
Approach Delay (s)	0.0	0.0	13.3	
Approach LOS			B	

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Scheme Summary

Control Data

Control Data and Model Parameters

121137	2026 PHF Flow Profile (veh)
2026 Total Traffic Volumes	7.5 min Time Slice
Rodel-Win1	Queuing Delays (sec)
Right Hand Drive	Daylight conditions
PM Peak Hour	Peak 60/15 min Results
AVERAGE DELAY to Geometry	Output flows: Vehicles
Metric Units (m)	85% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	No
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (m)

Geometry and Design Target

Leg	Leg Names	Approach Geometry (m)				Target	Circulating and Exit Geom		
		Bearing (deg)	Grade Sep G	Half Width V	Lanes n	Average Delay (sec/veh)	Inscribed Diameter D	Half Width Vx	Lanes n
1	SB - Access	0	0	4.20	1	30	40.00	5.50	1
2	EB - Longfields	90	0	3.50	1	30	40.00	4.20	1
3	NB - Bill Leathem	180	0	5.50	1	30	40.00	4.20	1
4	WB - Access	270	0	4.20	1	30	40.00	3.50	1

Capacity Modifiers and Capacity Calibration (veh/hr)

Leg	Leg Names	Entry Capacity		Entry Calibration		Approach Road			Exit Road		
		Capacity + or -	XWalk Factor	Intercept + or -	Slope Factor	V (m)	Default Capacity	Calib Capacity	V (m)	Default Capacity	Calib Capacity
1	SB - Access	0	1.000	0	1.000	6.00	2058	0	5.50	2695	0
2	EB - Longfields	0	1.000	0	1.000	6.00	1715	0	4.20	2058	0
3	NB - Bill Leathem	0	1.000	0	1.000	6.00	2695	0	4.20	2058	0
4	WB - Access	0	1.000	0	1.000	6.00	2058	0	3.50	1715	0

Traffic Flow Data (veh/hr)

2026 PM Peak Peak Hour Flows

Leg	Leg Names	Turning Flows					Flow Modifiers		
		U-Turn	Exit-3	Exit-2	Exit-1	Bypass	Trucks %	Flow Factor	Peak Hour Factor
1	SB - Access	0	0	77	42	0	10.0	1.00	1.000
2	EB - Longfields	0	0	0	153	0	10.0	1.00	1.000
3	NB - Bill Leathem	0	278	0	0	0	10.0	1.00	1.000
4	WB - Access	0	77	42	0	0	10.0	1.00	1.000

Operational Results

Geometry for Target Input

Geometry Options for 2026 PM Peak

Leg 1 - SB - Access					
nv	ne	nc	nx	E (m)	L' (m)
1	1	1	0	4.20	0.00

Geometry Options for 2026 PM Peak

Leg 2 - EB - Longfields					
nv	ne	nc	nx	E (m)	L' (m)
1	1	1	1	3.50	0.00

Geometry Options for 2026 PM Peak

Leg 3 - NB - Bill Leathem					
nv	ne	nc	nx	E (m)	L' (m)
1	1	0	1	5.50	0.00

Geometry Options for 2026 PM Peak

Leg 4 - WB - Access					
nv	ne	nc	nx	E (m)	L' (m)
1	1	1	0	4.20	0.00

2026 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB - Access	None	119		397		0	680		0.1751	
2	EB - Longfields	None	153		154		362	633		0.2416	
3	NB - Bill Leathem	None	278		0		307	1206		0.2305	
4	WB - Access	None	119		278		0	740		0.1608	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB - Access	None	5.71		5.71	0.50		A		A
2	EB - Longfields	None	6.60		6.60	0.74		A		A
3	NB - Bill Leathem	None	3.43		3.43	0.70		A		A
4	WB - Access	None	5.17		5.17	0.45		A		A

2026 PM Peak - 15 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB - Access	None	119		397		0	680		0.1751	
2	EB - Longfields	None	153		154		362	633		0.2416	
3	NB - Bill Leathem	None	278		0		307	1206		0.2305	
4	WB - Access	None	119		278		0	740		0.1608	

Delays, Queues and Level of Service

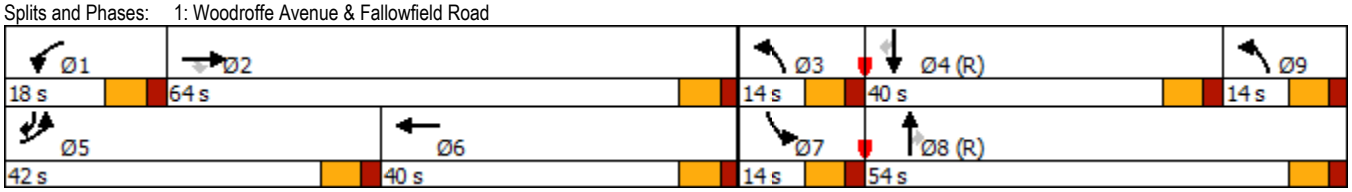
Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB - Access	None	5.72		5.72	0.50		A		A
2	EB - Longfields	None	6.61		6.61	0.74		A		A
3	NB - Bill Leathem	None	3.43		3.43	0.70		A		A
4	WB - Access	None	5.17		5.17	0.45		A		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	645	625	274	127	131	32	634	1628	516	7	393	108
Future Volume (vph)	645	625	274	127	131	32	634	1628	516	7	393	108
Satd. Flow (prot)	3248	3316	1375	2955	3133	0	3216	3349	1513	1445	3221	1363
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3316	1375	2955	3133	0	3212	3349	1513	1445	3221	1345
Satd. Flow (RTOR)			274		18				364			127
Lane Group Flow (vph)	645	625	274	127	163	0	634	1628	516	7	393	108
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3 9	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	42.0	64.0	64.0	18.0	40.0			54.0	54.0	14.0	40.0	42.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8			6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	33.2	35.9	35.9	10.4	13.1		46.0	80.3	80.3	6.4	23.7	56.9
Actuated g/C Ratio	0.22	0.24	0.24	0.07	0.09		0.31	0.54	0.54	0.04	0.16	0.38
v/c Ratio	0.90	0.79	0.51	0.62	0.56		0.64	0.91	0.53	0.11	0.77	0.18
Control Delay	72.8	60.9	8.0	81.3	65.4		30.1	40.5	9.3	72.6	70.9	2.2
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	72.8	60.9	8.0	81.3	65.4		30.1	40.5	9.3	72.6	70.9	2.2
LOS	E	E	A	F	E		C	D	A	E	E	A
Approach Delay		56.5			72.4			32.3			56.3	
Approach LOS		E			E			C			E	
Queue Length 50th (m)	87.7	84.8	0.0	17.6	20.5		48.9	200.8	21.3	1.9	55.1	0.0
Queue Length 95th (m)	#109.6	99.4	20.4	27.9	30.5		#85.4	#321.6	65.9	6.7	68.7	5.1
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	762	1264	693	220	707		985	1793	979	70	712	609
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	0.85	0.49	0.40	0.58	0.23		0.64	0.91	0.53	0.10	0.55	0.18

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:SBT and 8:NBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 44.3 Intersection LOS: D
Intersection Capacity Utilization 102.1% 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: 1: Woodroffe Avenue & Fallowfield Road



Lane Group	Ø3	Ø9
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	9
Permitted Phases		
Total Split (s)	14.0	14.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
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		

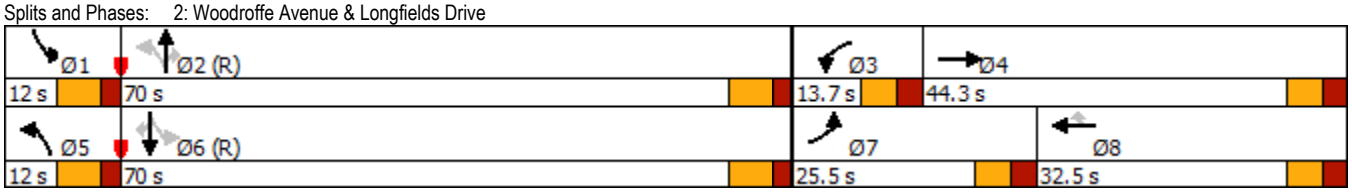
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	39	57	184	36	1536	50	156	453	111
Future Volume (vph)	372	89	82	39	57	184	36	1536	50	156	453	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.491			0.058		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	778	3349	1478	100	3221	1391
Satd. Flow (RTOR)		32				179			179			179
Lane Group Flow (vph)	372	171	0	39	57	184	36	1536	50	156	453	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	25.5	44.3		13.7	32.5	32.5	12.0	70.0	70.0	12.0	70.0	70.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	18.5	27.6		6.9	13.6	13.6	70.0	63.8	63.8	87.1	78.1	78.1
Actuated g/C Ratio	0.13	0.20		0.05	0.10	0.10	0.50	0.46	0.46	0.62	0.56	0.56
v/c Ratio	0.87	0.52		0.51	0.35	0.60	0.09	1.01	0.06	0.60	0.25	0.13
Control Delay	80.0	46.3		87.1	63.2	16.6	13.0	62.3	0.2	39.8	17.9	0.3
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	80.0	46.3		87.1	63.2	16.6	13.0	62.3	0.2	39.8	17.9	0.3
LOS	F	D		F	E	B	B	E	A	D	B	A
Approach Delay		69.4			35.9			59.3			19.9	
Approach LOS		E			D			E			B	
Queue Length 50th (m)	48.4	33.6		9.9	14.2	1.2	3.1	200.2	0.0	22.9	30.0	0.0
Queue Length 95th (m)	#70.8	48.7		#21.6	24.3	20.0	9.2	#255.4	0.0	#83.4	49.7	0.0
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	440	442		81	309	422	421	1527	771	261	1797	855
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	0.85	0.39		0.48	0.18	0.44	0.09	1.01	0.06	0.60	0.25	0.13

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 86 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 50.0 Intersection LOS: D
Intersection Capacity Utilization 96.0% 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: 2: Woodroffe Avenue & Longfields Drive

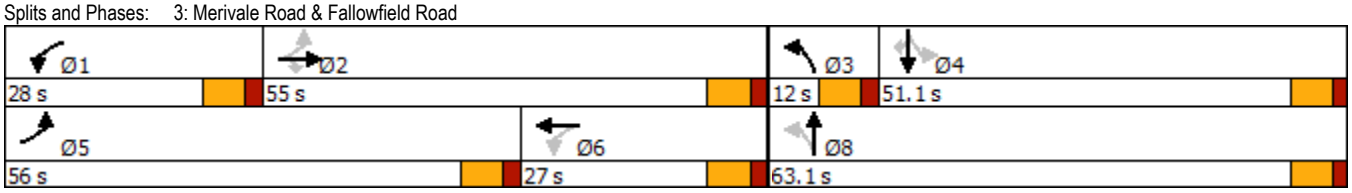


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	700	432	37	167	167	5	20	666	80	0	136	56
Future Volume (vph)	700	432	37	167	167	5	20	666	80	0	136	56
Satd. Flow (prot)	1658	1762	1427	1658	1691	0	1691	1717	0	1780	1618	1327
Flt Permitted	0.324			0.511			0.571					
Satd. Flow (perm)	565	1762	1427	892	1691	0	1016	1717	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			5				173
Lane Group Flow (vph)	700	432	37	167	172	0	20	746	0	0	136	56
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	56.0	55.0	55.0	28.0	27.0		12.0	63.1		51.1	51.1	51.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.5	56.6	56.6	33.8	20.4		56.5	56.7			49.5	49.5
Actuated g/C Ratio	0.52	0.39	0.39	0.23	0.14		0.39	0.39			0.34	0.34
v/c Ratio	1.05	0.63	0.06	0.61	0.73		0.05	1.12			0.25	0.10
Control Delay	80.1	42.2	0.2	35.7	78.2		28.2	111.9			38.0	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	80.1	42.2	0.2	35.7	78.2		28.2	111.9			38.0	0.4
LOS	F	D	A	D	E		C	F			D	A
Approach Delay		63.6			57.2			109.7			27.0	
Approach LOS		E			E			F			C	
Queue Length 50th (m)	~173.4	92.9	0.0	22.9	44.3		3.3	~227.1			27.6	0.0
Queue Length 95th (m)	#242.9	133.9	0.0	35.8	#73.1		8.5	#297.7			44.3	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	666	682	627	369	236		417	669			548	564
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	1.05	0.63	0.06	0.45	0.73		0.05	1.12			0.25	0.10

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 146.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 74.2 Intersection LOS: E
Intersection Capacity Utilization 108.9% 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: 3: Merivale Road & Fallowfield Road

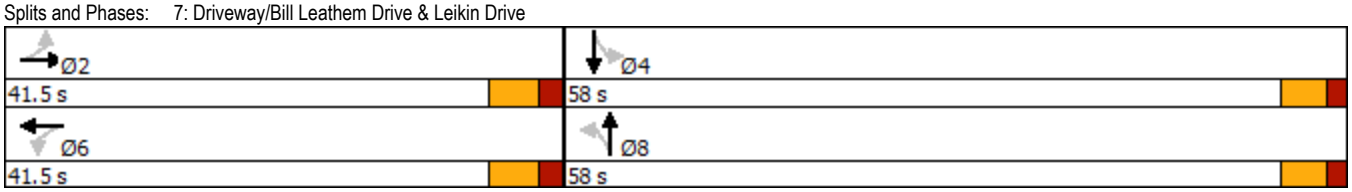


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	558	4	6	20	37	1	2	4	213	3	56
Future Volume (vph)	151	558	4	6	20	37	1	2	4	213	3	56
Satd. Flow (prot)	1610	1726	0	1658	1547	0	0	1611	0	0	1632	0
Flt Permitted	0.720			0.325				0.963			0.768	
Satd. Flow (perm)	1221	1726	0	566	1547	0	0	1562	0	0	1303	0
Satd. Flow (RTOR)					37			4			20	
Lane Group Flow (vph)	151	562	0	6	57	0	0	7	0	0	272	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	41.5	41.5		41.5	41.5		58.0	58.0		58.0	58.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6			5.0			5.0	
Act Effct Green (s)	25.2	25.2		25.2	25.2			17.4			17.4	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.32			0.32	
v/c Ratio	0.26	0.69		0.02	0.08			0.01			0.63	
Control Delay	11.0	17.3		9.2	5.1			11.3			22.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	11.0	17.3		9.2	5.1			11.3			22.6	
LOS	B	B		A	A			B			C	
Approach Delay		16.0			5.5			11.3			22.6	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	7.4	35.7		0.3	0.9			0.2			18.1	
Queue Length 95th (m)	20.1	79.6		2.0	6.0			2.4			45.7	
Internal Link Dist (m)		337.1			182.1			90.9			596.0	
Turn Bay Length (m)	30.0			30.0								
Base Capacity (vph)	859	1215		398	1100			1440			1202	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.18	0.46		0.02	0.05			0.00			0.23	

Intersection Summary

Cycle Length: 99.5
Actuated Cycle Length: 53.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 17.0 — Intersection LOS: B
Intersection Capacity Utilization 63.0% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: Driveway/Bill Leathem Drive & Leikin Drive

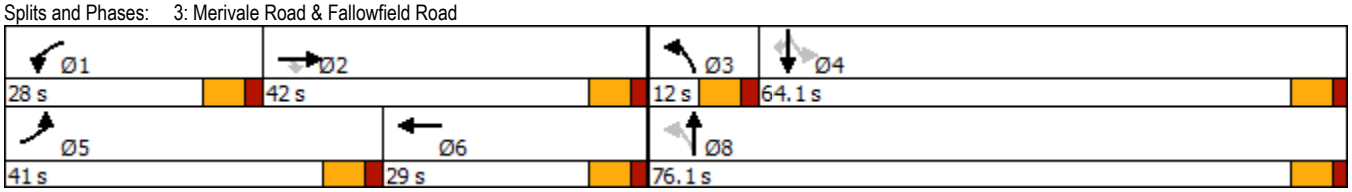


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	700	432	37	167	167	5	20	666	80	0	136	56
Future Volume (vph)	700	432	37	167	167	5	20	666	80	0	136	56
Satd. Flow (prot)	3216	1762	1427	1658	1691	0	1691	1717	0	1780	1618	1327
Flt Permitted	0.950			0.950			0.594					
Satd. Flow (perm)	3216	1762	1427	1658	1691	0	1057	1717	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			6				173
Lane Group Flow (vph)	700	432	37	167	172	0	20	746	0	0	136	56
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	41.0	42.0	42.0	28.0	29.0		12.0	76.1		64.1	64.1	64.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	32.5	37.1	37.1	18.0	22.6		62.6	62.8			56.0	56.0
Actuated g/C Ratio	0.24	0.27	0.27	0.13	0.16		0.45	0.46			0.41	0.41
v/c Ratio	0.92	0.91	0.08	0.77	0.62		0.04	0.95			0.21	0.09
Control Delay	70.3	74.2	0.3	82.6	66.3		20.7	57.5			28.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	70.3	74.2	0.3	82.6	66.3		20.7	57.5			28.8	0.3
LOS	E	E	A	F	E		C	E			C	A
Approach Delay		69.5			74.3			56.6			20.5	
Approach LOS		E			E			E			C	
Queue Length 50th (m)	94.7	114.9	0.0	43.4	43.6		2.8	179.2			23.8	0.0
Queue Length 95th (m)	#126.5	#181.6	0.0	#67.3	67.2		7.2	#254.3			38.2	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	813	475	474	261	278		506	880			691	665
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	0.86	0.91	0.08	0.64	0.62		0.04	0.85			0.20	0.08

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 137.6
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 62.3 — Intersection LOS: E
Intersection Capacity Utilization 92.1% — 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: 3: Merivale Road & Fallowfield Road

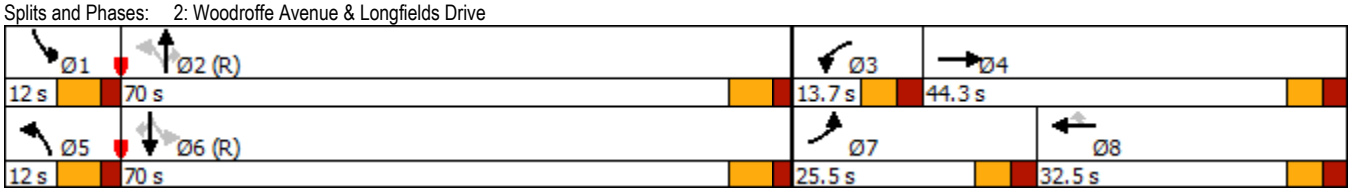


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	39	57	184	36	1376	50	156	453	111
Future Volume (vph)	372	89	82	39	57	184	36	1376	50	156	453	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.491			0.058		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	778	3349	1478	100	3221	1391
Satd. Flow (RTOR)		32				179			179			179
Lane Group Flow (vph)	372	171	0	39	57	184	36	1376	50	156	453	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	25.5	44.3		13.7	32.5	32.5	12.0	70.0	70.0	12.0	70.0	70.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	18.5	27.6		6.9	13.6	13.6	70.0	63.8	63.8	87.1	78.1	78.1
Actuated g/C Ratio	0.13	0.20		0.05	0.10	0.10	0.50	0.46	0.46	0.62	0.56	0.56
v/c Ratio	0.87	0.52		0.51	0.35	0.60	0.09	0.90	0.06	0.60	0.25	0.13
Control Delay	80.0	46.3		87.1	63.2	16.6	13.0	44.5	0.2	39.8	17.9	0.3
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	80.0	46.3		87.1	63.2	16.6	13.0	44.5	0.2	39.8	17.9	0.3
LOS	F	D		F	E	B	B	D	A	D	B	A
Approach Delay		69.4			35.9			42.2			19.9	
Approach LOS		E			D			D			B	
Queue Length 50th (m)	48.4	33.6		9.9	14.2	1.2	3.1	164.8	0.0	22.9	30.0	0.0
Queue Length 95th (m)	#70.8	48.7		#21.6	24.3	20.0	9.2	200.0	0.0	#83.4	49.7	0.0
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	440	442		81	309	422	421	1527	771	261	1797	855
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	0.85	0.39		0.48	0.18	0.44	0.09	0.90	0.06	0.60	0.25	0.13

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 86 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 41.2 Intersection LOS: D
Intersection Capacity Utilization 91.3% 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: 2: Woodroffe Avenue & Longfields Drive

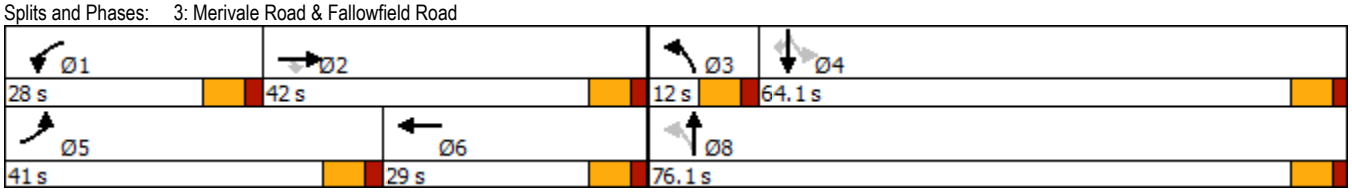


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	700	432	37	167	167	5	20	556	80	0	137	56
Future Volume (vph)	700	432	37	167	167	5	20	556	80	0	137	56
Satd. Flow (prot)	3216	1762	1427	1658	1691	0	1691	1712	0	1780	1618	1327
Flt Permitted	0.950			0.950			0.582					
Satd. Flow (perm)	3216	1762	1427	1658	1691	0	1036	1712	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			7				173
Lane Group Flow (vph)	700	432	37	167	172	0	20	636	0	0	137	56
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	41.0	42.0	42.0	28.0	29.0		12.0	76.1		64.1	64.1	64.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	31.2	37.0	37.0	17.1	22.9		50.9	51.1			46.8	46.8
Actuated g/C Ratio	0.25	0.30	0.30	0.14	0.18		0.41	0.41			0.37	0.37
v/c Ratio	0.87	0.83	0.07	0.74	0.55		0.04	0.90			0.23	0.09
Control Delay	58.8	58.2	0.3	73.6	57.8		21.8	51.8			29.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	58.8	58.2	0.3	73.6	57.8		21.8	51.8			29.0	0.3
LOS	E	E	A	E	E		C	D			C	A
Approach Delay		56.7			65.6			50.9			20.7	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	78.5	92.5	0.0	37.6	36.8		2.8	136.9			20.5	0.0
Queue Length 95th (m)	#126.5	#181.6	0.0	#67.3	67.2		7.2	184.5			38.7	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	903	521	509	289	310		450	974			760	715
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	0.78	0.83	0.07	0.58	0.55		0.04	0.65			0.18	0.08

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 125.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 53.4 Intersection LOS: D
Intersection Capacity Utilization 86.0% 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.

Splits and Phases: 3: Merivale Road & Fallowfield Road

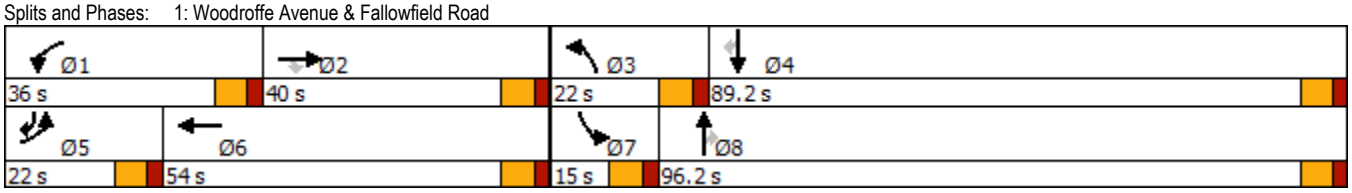


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	233	691	540	511	11	374	717	228	16	1539	588
Future Volume (vph)	192	233	691	540	511	11	374	717	228	16	1539	588
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			181		1				228			141
Lane Group Flow (vph)	192	233	691	540	522	0	374	717	228	16	1539	588
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	22.0	40.0	40.0	36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.5	33.2	33.2	29.2	47.9		15.2	95.6	95.6	7.1	82.4	103.7
Actuated g/C Ratio	0.08	0.18	0.18	0.16	0.26		0.08	0.51	0.51	0.04	0.44	0.55
v/c Ratio	0.77	0.40	1.67	1.06	0.61		1.45	0.42	0.27	0.25	1.04	0.67
Control Delay	105.0	70.7	341.5	128.0	65.2		276.5	30.3	3.7	96.6	85.7	25.7
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	105.0	70.7	341.5	128.0	65.2		276.5	30.3	3.7	96.6	85.7	25.7
LOS	F	E	F	F	E		F	C	A	F	F	C
Approach Delay		244.3			97.2			95.5			69.3	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	33.9	38.0	~292.7	~104.3	84.7		~89.8	84.7	0.0	5.5	~300.7	107.9
Queue Length 95th (m)	#48.0	51.7	#366.1	#140.0	103.9		#122.5	101.8	14.1	14.2	#338.6	148.9
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	414	511	849		258	1710	835	74	1474	884
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	0.40	1.67	1.06	0.61		1.45	0.42	0.27	0.22	1.04	0.67

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.67
Intersection Signal Delay: 115.3 Intersection LOS: F
Intersection Capacity Utilization 123.3% 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: 1: Woodroffe Avenue & Fallowfield Road

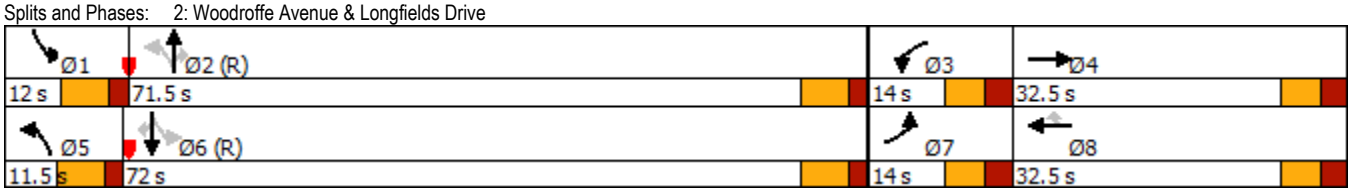


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	79	67	196	89	864	39	107	1907	223
Future Volume (vph)	155	17	70	79	67	196	89	864	39	107	1907	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.053			0.278		
Satd. Flow (perm)	3216	1528	0	1691	1780	1463	92	3316	1513	495	3349	1470
Satd. Flow (RTOR)		70				166			138			223
Lane Group Flow (vph)	155	87	0	79	67	196	89	864	39	107	1907	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	14.0	32.5		14.0	32.5	32.5	11.5	71.5	71.5	12.0	72.0	72.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	7.5	13.7		7.5	13.7	13.7	83.3	75.6	75.6	82.3	75.1	75.1
Actuated g/C Ratio	0.06	0.11		0.06	0.11	0.11	0.64	0.58	0.58	0.63	0.58	0.58
v/c Ratio	0.84	0.39		0.81	0.36	0.65	0.59	0.45	0.04	0.28	0.99	0.24
Control Delay	94.8	20.8		111.3	57.5	21.9	36.4	17.1	0.1	10.2	44.9	2.6
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	94.8	20.8		111.3	57.5	21.9	36.4	17.1	0.1	10.2	44.9	2.6
LOS	F	C		F	E	C	D	B	A	B	D	A
Approach Delay		68.2			49.5			18.2			39.0	
Approach LOS		E			D			B			D	
Queue Length 50th (m)	19.0	3.8		18.8	15.4	6.8	6.2	54.6	0.0	7.0	209.8	0.0
Queue Length 95th (m)	#36.4	16.3		#44.7	25.4	25.8	#37.5	87.2	0.0	18.1	#313.0	11.4
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	185	361		97	356	425	151	1928	937	378	1934	943
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	0.84	0.24		0.81	0.19	0.46	0.59	0.45	0.04	0.28	0.99	0.24

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization 88.7% 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: 2: Woodroffe Avenue & Longfields Drive

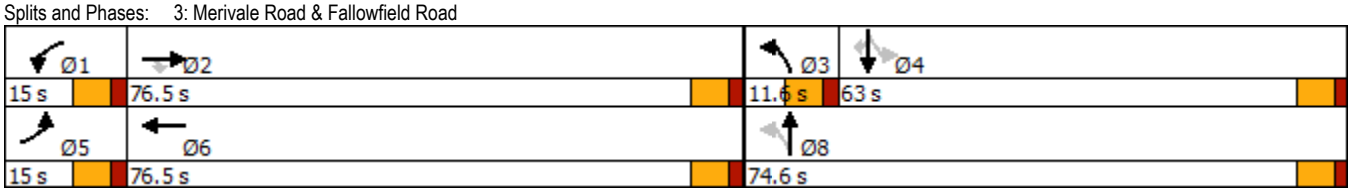


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	301	41	39	713	3	52	272	164	6	599	308
Future Volume (vph)	134	301	41	39	713	3	52	272	164	6	599	308
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1589	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.068			0.385		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	111	1589	0	685	1762	1498
Satd. Flow (RTOR)			108					22				150
Lane Group Flow (vph)	134	301	41	39	716	0	52	436	0	6	599	308
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	15.0	76.5	76.5	15.0	76.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	8.6	70.2	70.2	7.7	66.5		65.2	65.4		56.4	56.4	56.4
Actuated g/C Ratio	0.05	0.44	0.44	0.05	0.42		0.41	0.41		0.35	0.35	0.35
v/c Ratio	0.86	0.39	0.06	0.48	0.97		0.58	0.66		0.02	0.96	0.49
Control Delay	118.8	34.0	0.1	96.3	72.1		56.3	42.4		37.2	79.8	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	118.8	34.0	0.1	96.3	72.1		56.3	42.4		37.2	79.8	23.9
LOS	F	C	A	F	E		E	D		D	E	C
Approach Delay		54.9			73.4			43.9			60.7	
Approach LOS		D			E			D			E	
Queue Length 50th (m)	21.3	63.8	0.0	11.8	210.3		9.7	101.7		1.2	182.6	37.9
Queue Length 95th (m)	#41.1	88.4	0.0	24.1	#286.8		#19.0	138.2		4.8	#256.5	65.6
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	155	767	706	90	781		90	693		243	626	629
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	0.86	0.39	0.06	0.43	0.92		0.58	0.63		0.02	0.96	0.49

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 160.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 60.2 Intersection LOS: E
Intersection Capacity Utilization 103.2% 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.

Splits and Phases: 3: Merivale Road & Fallowfield Road

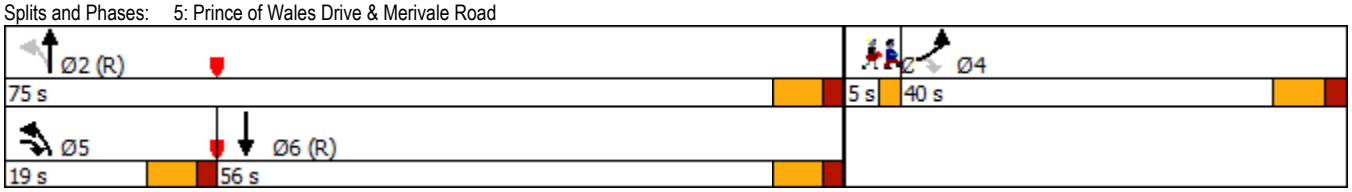


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	34	594	190	374	1015	18	
Future Volume (vph)	34	594	190	374	1015	18	
Satd. Flow (prot)	1642	1483	1566	1745	3338	0	
Flt Permitted	0.950		0.133				
Satd. Flow (perm)	1642	1483	219	1745	3338	0	
Satd. Flow (RTOR)		100			2		
Lane Group Flow (vph)	34	594	190	374	1033	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	40.0	19.0	19.0	75.0	56.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	32.7	51.1	69.1	69.0	51.0		
Actuated g/C Ratio	0.27	0.43	0.58	0.58	0.42		
v/c Ratio	0.08	0.86	0.74	0.37	0.73		
Control Delay	32.8	39.7	33.6	15.3	32.8		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	32.8	39.7	33.6	15.3	32.8		
LOS	C	D	C	B	C		
Approach Delay	39.3			21.4	32.8		
Approach LOS	D			C	C		
Queue Length 50th (m)	5.5	96.4	19.1	42.1	98.6		
Queue Length 95th (m)	12.9	#158.6	#43.8	60.8	122.0		
Internal Link Dist (m)	226.4			296.0	231.6		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	454	680	267	1004	1419		
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	0.07	0.87	0.71	0.37	0.73		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 31.7 Intersection LOS: C
Intersection Capacity Utilization 79.8% 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: 5: Prince of Wales Drive & Merivale Road

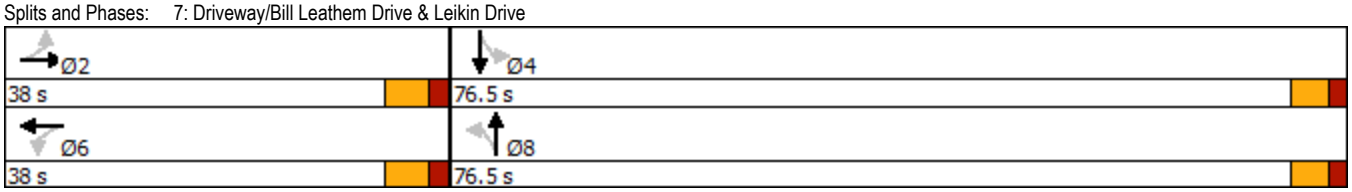


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	57	0	0	364	183	0	1	0	43	0	186
Future Volume (vph)	65	57	0	0	364	183	0	1	0	43	0	186
Satd. Flow (prot)	1691	1534	0	1780	1651	0	0	1780	0	0	1527	0
Flt Permitted	0.411										0.936	
Satd. Flow (perm)	732	1534	0	1780	1651	0	0	1780	0	0	1443	0
Satd. Flow (RTOR)					22						186	
Lane Group Flow (vph)	65	57	0	0	547	0	0	1	0	0	229	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	38.0	38.0		38.0	38.0		76.5	76.5		76.5	76.5	
Total Lost Time (s)	5.6	5.6		5.6	5.6			5.0			5.0	
Act Effct Green (s)	33.4	33.4			33.4			10.3			10.3	
Actuated g/C Ratio	0.62	0.62			0.62			0.19			0.19	
v/c Ratio	0.14	0.06			0.54			0.00			0.54	
Control Delay	5.7	4.6			8.3			17.0			10.8	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	5.7	4.6			8.3			17.0			10.8	
LOS	A	A			A			B			B	
Approach Delay		5.2			8.3			17.0			10.8	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	2.0	1.7			21.9			0.1			3.2	
Queue Length 95th (m)	6.3	4.9			44.1			1.0			16.9	
Internal Link Dist (m)		337.1			182.1			90.9			596.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	449	942			1022			1780			1443	
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	0.14	0.06			0.54			0.00			0.16	

Intersection Summary

Cycle Length: 114.5
Actuated Cycle Length: 54.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 8.5 Intersection LOS: A
Intersection Capacity Utilization 75.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 7: Driveway/Bill Leathem Drive & Leikin Drive

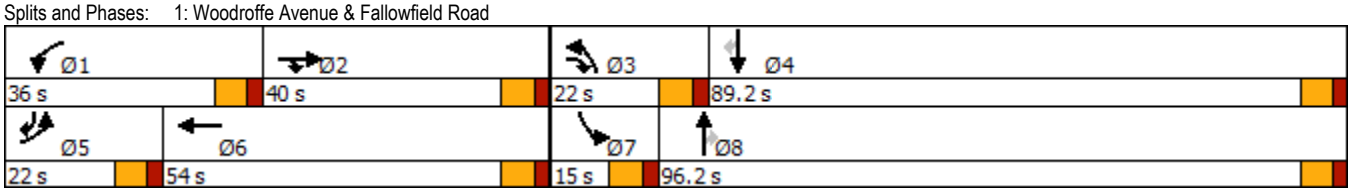


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	233	691	540	511	11	374	717	228	16	1539	588
Future Volume (vph)	192	233	691	540	511	11	374	717	228	16	1539	588
Satd. Flow (prot)	3216	3252	2637	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	2637	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)					1				228			141
Lane Group Flow (vph)	192	233	691	540	522	0	374	717	228	16	1539	588
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	2 3	1	6		3	8		7	4	5
Permitted Phases									8			4
Total Split (s)	22.0	40.0		36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.5	33.2	55.2	29.2	47.9		15.2	95.6	95.6	7.1	82.4	103.7
Actuated g/C Ratio	0.08	0.18	0.29	0.16	0.26		0.08	0.51	0.51	0.04	0.44	0.55
v/c Ratio	0.77	0.40	0.89	1.06	0.61		1.45	0.42	0.27	0.25	1.04	0.67
Control Delay	105.0	70.7	77.5	128.0	65.2		276.5	30.3	3.7	96.6	85.7	25.7
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	105.0	70.7	77.5	128.0	65.2		276.5	30.3	3.7	96.6	85.7	25.7
LOS	F	E	E	F	E		F	C	A	F	F	C
Approach Delay		80.8			97.2			95.5			69.3	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	33.9	38.0	130.3	~104.3	84.7		~89.8	84.7	0.0	5.5	~300.7	107.9
Queue Length 95th (m)	#48.0	51.7	#163.6	#140.0	103.9		#122.5	101.8	14.1	14.2	#338.6	148.9
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	777	511	849		258	1710	835	74	1474	884
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	0.40	0.89	1.06	0.61		1.45	0.42	0.27	0.22	1.04	0.67

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.45
Intersection Signal Delay: 83.0 Intersection LOS: F
Intersection Capacity Utilization 103.7% 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: 1: Woodroffe Avenue & Fallowfield Road

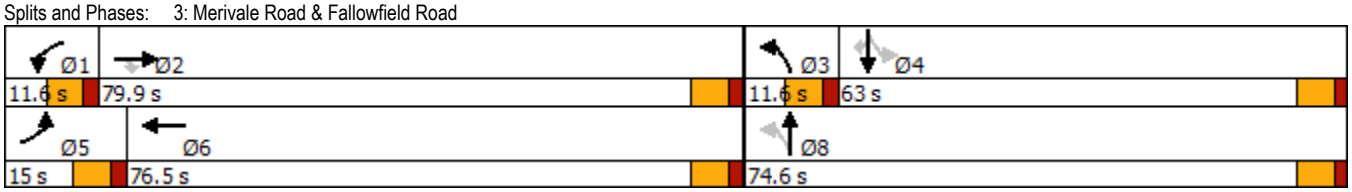


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	301	41	39	713	3	52	272	164	6	599	308
Future Volume (vph)	134	301	41	39	713	3	52	272	164	6	599	308
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1589	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.068			0.385		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	111	1589	0	685	1762	1498
Satd. Flow (RTOR)			108					22				150
Lane Group Flow (vph)	134	301	41	39	716	0	52	436	0	6	599	308
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	15.0	79.9	79.9	11.6	76.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	8.6	72.7	72.7	5.1	66.5		65.2	65.4		56.4	56.4	56.4
Actuated g/C Ratio	0.05	0.45	0.45	0.03	0.42		0.41	0.41		0.35	0.35	0.35
v/c Ratio	0.86	0.38	0.06	0.74	0.97		0.58	0.66		0.02	0.96	0.49
Control Delay	118.8	31.8	0.1	138.0	72.1		56.3	42.4		37.2	79.8	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	118.8	31.8	0.1	138.0	72.1		56.3	42.4		37.2	79.8	23.9
LOS	F	C	A	F	E		E	D		D	E	C
Approach Delay		53.6			75.6			43.9			60.7	
Approach LOS		D			E			D			E	
Queue Length 50th (m)	21.3	61.4	0.0	12.0	210.3		9.7	101.7		1.2	182.6	37.9
Queue Length 95th (m)	#41.1	85.0	0.0	#32.8	#286.8		#19.0	138.2		4.8	#256.5	65.6
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	155	804	734	53	781		90	693		243	626	629
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	0.86	0.37	0.06	0.74	0.92		0.58	0.63		0.02	0.96	0.49

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 160.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 60.5 Intersection LOS: E
Intersection Capacity Utilization 103.2% 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.

Splits and Phases: 3: Merivale Road & Fallowfield Road

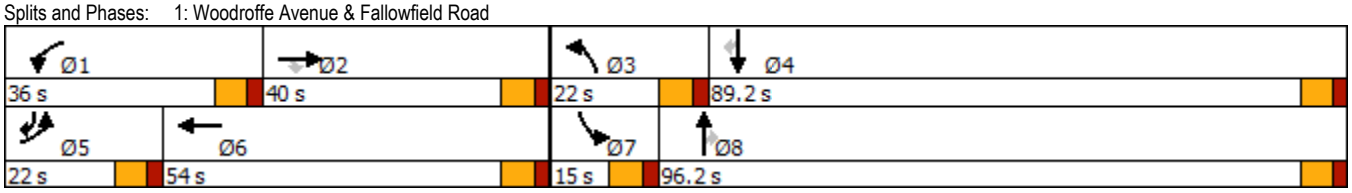


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	233	411	510	511	11	259	717	228	16	1479	588
Future Volume (vph)	192	233	411	510	511	11	259	717	228	16	1479	588
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			181		1				228			141
Lane Group Flow (vph)	192	233	411	510	522	0	259	717	228	16	1479	588
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	22.0	40.0	40.0	36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.5	33.2	33.2	29.2	47.9		15.2	95.6	95.6	7.1	82.4	103.7
Actuated g/C Ratio	0.08	0.18	0.18	0.16	0.26		0.08	0.51	0.51	0.04	0.44	0.55
v/c Ratio	0.77	0.40	0.99	1.00	0.61		1.00	0.42	0.27	0.25	1.00	0.67
Control Delay	105.0	70.7	83.5	116.2	65.2		139.5	30.3	3.7	96.6	75.5	25.7
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	105.0	70.7	83.5	116.2	65.2		139.5	30.3	3.7	96.6	75.5	25.7
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		84.9			90.4			48.8			61.6	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	33.9	38.0	88.3	92.0	84.7		~47.0	84.7	0.0	5.5	~269.4	107.9
Queue Length 95th (m)	#48.0	51.7	#155.8	#128.6	103.9		#76.6	101.8	14.1	14.2	#316.1	148.9
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	414	511	849		258	1710	835	74	1474	884
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	0.40	0.99	1.00	0.61		1.00	0.42	0.27	0.22	1.00	0.67

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 68.1 Intersection LOS: E
Intersection Capacity Utilization 102.4% 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: 1: Woodroffe Avenue & Fallowfield Road

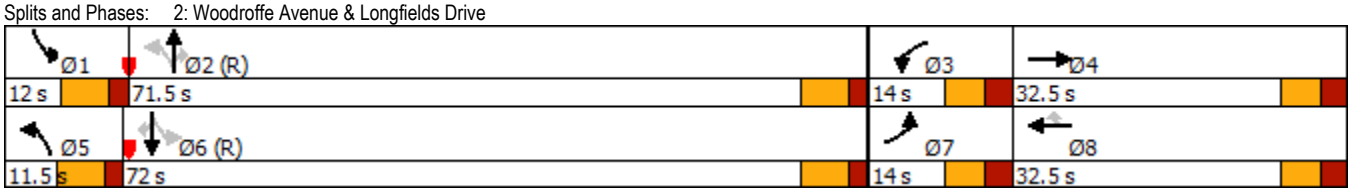


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	79	67	196	89	864	39	107	1747	223
Future Volume (vph)	155	17	70	79	67	196	89	864	39	107	1747	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.053			0.278		
Satd. Flow (perm)	3216	1528	0	1691	1780	1463	92	3316	1513	495	3349	1470
Satd. Flow (RTOR)		70				166			138			223
Lane Group Flow (vph)	155	87	0	79	67	196	89	864	39	107	1747	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	14.0	32.5		14.0	32.5	32.5	11.5	71.5	71.5	12.0	72.0	72.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	7.5	13.7		7.5	13.7	13.7	83.3	75.6	75.6	82.3	75.1	75.1
Actuated g/C Ratio	0.06	0.11		0.06	0.11	0.11	0.64	0.58	0.58	0.63	0.58	0.58
v/c Ratio	0.84	0.39		0.81	0.36	0.65	0.59	0.45	0.04	0.28	0.90	0.24
Control Delay	94.8	20.8		111.3	57.5	21.9	36.4	17.1	0.1	10.2	32.8	2.6
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	94.8	20.8		111.3	57.5	21.9	36.4	17.1	0.1	10.2	32.8	2.6
LOS	F	C		F	E	C	D	B	A	B	C	A
Approach Delay		68.2			49.5			18.2			28.4	
Approach LOS		E			D			B			C	
Queue Length 50th (m)	19.0	3.8		18.8	15.4	6.8	6.2	54.6	0.0	7.0	173.3	0.0
Queue Length 95th (m)	#36.4	16.3		#44.7	25.4	25.8	#37.5	87.2	0.0	18.1	#272.0	11.4
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	185	361		97	356	425	151	1928	937	378	1934	943
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	0.84	0.24		0.81	0.19	0.46	0.59	0.45	0.04	0.28	0.90	0.24

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 30.2 Intersection LOS: C
Intersection Capacity Utilization 84.1% 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: 2: Woodroffe Avenue & Longfields Drive

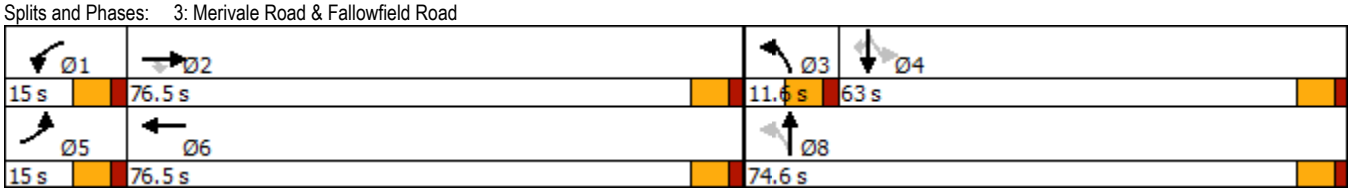


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	301	41	39	623	3	52	272	164	6	549	308
Future Volume (vph)	134	301	41	39	623	3	52	272	164	6	549	308
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1589	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.110			0.397		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	180	1589	0	707	1762	1498
Satd. Flow (RTOR)			108					22				163
Lane Group Flow (vph)	134	301	41	39	626	0	52	436	0	6	549	308
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	15.0	76.5	76.5	15.0	76.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	8.9	60.9	60.9	7.8	56.0		58.0	58.2		49.6	49.6	49.6
Actuated g/C Ratio	0.06	0.42	0.42	0.05	0.39		0.40	0.41		0.35	0.35	0.35
v/c Ratio	0.74	0.41	0.06	0.43	0.90		0.43	0.66		0.02	0.90	0.49
Control Delay	94.6	33.9	0.2	88.5	59.8		39.5	39.4		36.2	65.7	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	94.6	33.9	0.2	88.5	59.8		39.5	39.4		36.2	65.7	21.0
LOS	F	C	A	F	E		D	D		D	E	C
Approach Delay		48.1			61.4			39.4			49.5	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	19.9	63.8	0.0	11.0	169.5		8.6	90.8		1.1	145.4	30.9
Queue Length 95th (m)	#41.1	88.4	0.0	24.1	220.3		18.3	138.2		4.8	#223.7	61.8
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	180	891	802	105	908		122	802		292	728	714
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.74	0.34	0.05	0.37	0.69		0.43	0.54		0.02	0.75	0.43

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 143.6
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 50.5 Intersection LOS: D
Intersection Capacity Utilization 95.4% 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: 3: Merivale Road & Fallowfield Road

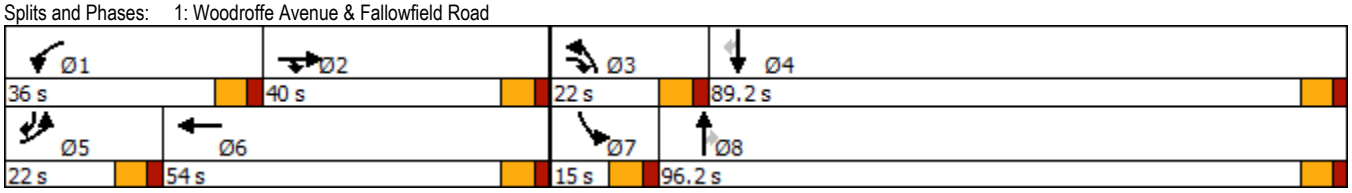


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	233	691	510	511	11	259	717	228	16	1479	588
Future Volume (vph)	192	233	691	510	511	11	259	717	228	16	1479	588
Satd. Flow (prot)	3216	3252	2637	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	2637	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)					1				228			141
Lane Group Flow (vph)	192	233	691	510	522	0	259	717	228	16	1479	588
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	2 3	1	6		3	8		7	4	5
Permitted Phases									8			4
Total Split (s)	22.0	40.0		36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.5	33.2	55.2	29.2	47.9		15.2	95.6	95.6	7.1	82.4	103.7
Actuated g/C Ratio	0.08	0.18	0.29	0.16	0.26		0.08	0.51	0.51	0.04	0.44	0.55
v/c Ratio	0.77	0.40	0.89	1.00	0.61		1.00	0.42	0.27	0.25	1.00	0.67
Control Delay	105.0	70.7	77.5	116.2	65.2		139.5	30.3	3.7	96.6	75.5	25.7
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	105.0	70.7	77.5	116.2	65.2		139.5	30.3	3.7	96.6	75.5	25.7
LOS	F	E	E	F	E		F	C	A	F	E	C
Approach Delay		80.8			90.4			48.8			61.6	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	33.9	38.0	130.3	92.0	84.7		~47.0	84.7	0.0	5.5	~269.4	107.9
Queue Length 95th (m)	#48.0	51.7	#163.6	#128.6	103.9		#76.6	101.8	14.1	14.2	#316.1	148.9
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	777	511	849		258	1710	835	74	1474	884
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	0.40	0.89	1.00	0.61		1.00	0.42	0.27	0.22	1.00	0.67

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 68.2 Intersection LOS: E
Intersection Capacity Utilization 101.0% 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: 1: Woodroffe Avenue & Fallowfield Road

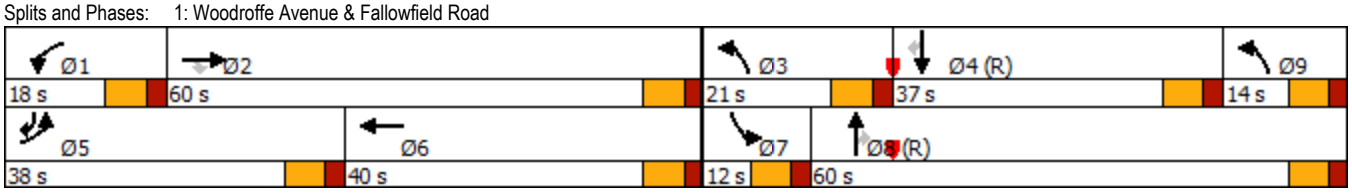


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	687	667	292	136	139	34	674	1734	551	7	419	115
Future Volume (vph)	687	667	292	136	139	34	674	1734	551	7	419	115
Satd. Flow (prot)	3248	3316	1375	2955	3133	0	3216	3349	1513	1445	3221	1363
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3316	1375	2955	3133	0	3212	3349	1513	1445	3221	1345
Satd. Flow (RTOR)			292		18				331			176
Lane Group Flow (vph)	687	667	292	136	173	0	674	1734	551	7	419	115
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3 9	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	38.0	60.0	60.0	18.0	40.0			60.0	60.0	12.0	37.0	38.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8			6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	31.2	37.8	37.8	10.6	17.2		43.0	78.3	78.3	6.4	24.6	55.8
Actuated g/C Ratio	0.21	0.25	0.25	0.07	0.11		0.29	0.52	0.52	0.04	0.16	0.37
v/c Ratio	1.02	0.80	0.52	0.65	0.46		0.73	0.99	0.58	0.11	0.79	0.19
Control Delay	96.8	60.1	7.6	83.0	58.3		36.1	54.8	13.1	72.6	71.5	0.9
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	96.8	60.1	7.6	83.0	58.3		36.1	54.8	13.1	72.6	71.5	0.9
LOS	F	E	A	F	E		D	D	B	E	E	A
Approach Delay		66.1			69.2			42.8			56.5	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	~102.2	91.5	0.0	18.9	21.2		53.4	230.0	36.0	1.9	58.7	0.0
Queue Length 95th (m)	#137.6	104.3	20.6	29.6	30.6		#116.8	#362.3	92.8	6.7	73.1	0.6
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	675	1176	676	220	707		922	1748	948	61	648	614
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	1.02	0.57	0.43	0.62	0.24		0.73	0.99	0.58	0.11	0.65	0.19

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:SBT and 8:NBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 52.7 Intersection LOS: D
Intersection Capacity Utilization 106.4% 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: 1: Woodroffe Avenue & Fallowfield Road



Lane Group	Ø3	Ø9
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	9
Permitted Phases		
Total Split (s)	21.0	14.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
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		

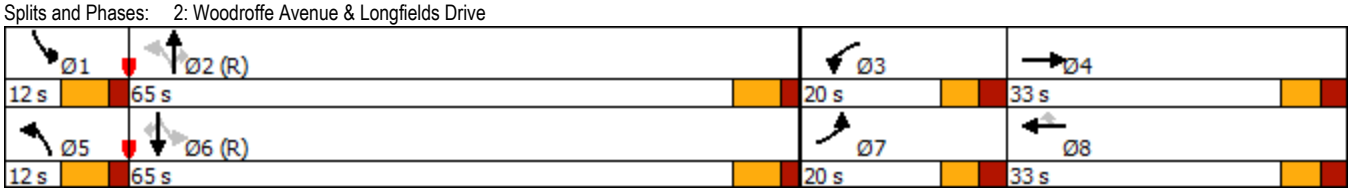
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	39	57	184	36	1637	50	156	483	111
Future Volume (vph)	372	89	82	39	57	184	36	1637	50	156	483	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.476			0.062		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	756	3349	1479	107	3221	1393
Satd. Flow (RTOR)		32				138			138			138
Lane Group Flow (vph)	372	171	0	39	57	184	36	1637	50	156	483	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	20.0	33.0		20.0	33.0	33.0	12.0	65.0	65.0	12.0	65.0	65.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	13.5	22.2		8.7	15.0	15.0	65.6	59.4	59.4	80.7	74.2	74.2
Actuated g/C Ratio	0.10	0.17		0.07	0.12	0.12	0.50	0.46	0.46	0.62	0.57	0.57
v/c Ratio	1.10	0.59		0.37	0.30	0.63	0.09	1.07	0.07	0.61	0.26	0.13
Control Delay	132.6	49.3		67.2	54.3	24.7	12.1	79.0	0.2	38.0	16.5	2.0
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	132.6	49.3		67.2	54.3	24.7	12.1	79.0	0.2	38.0	16.5	2.0
LOS	F	D		E	D	C	B	E	A	D	B	A
Approach Delay		106.4			36.7			75.3			18.8	
Approach LOS		F			D			E			B	
Queue Length 50th (m)	~51.3	32.0		9.0	12.8	10.3	2.8	~222.6	0.0	20.2	30.4	0.0
Queue Length 95th (m)	#79.9	49.9		19.3	22.5	29.0	8.6	#266.8	0.0	#75.0	50.0	5.8
Internal Link Dist (m)		414.1			1016.6			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	337	352		164	339	413	418	1529	750	256	1837	853
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	1.10	0.49		0.24	0.17	0.45	0.09	1.07	0.07	0.61	0.26	0.13

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 86 (66%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 64.3 Intersection LOS: E
Intersection Capacity Utilization 98.9% 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: 2: Woodroffe Avenue & Longfields Drive

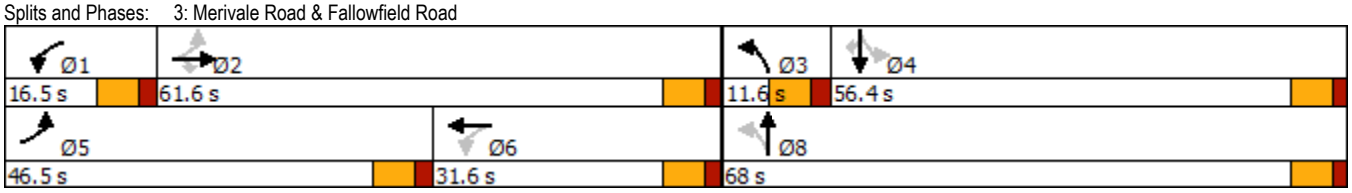


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	747	461	40	178	178	5	22	706	81	0	145	59
Future Volume (vph)	747	461	40	178	178	5	22	706	81	0	145	59
Satd. Flow (prot)	1658	1762	1427	1658	1691	0	1691	1719	0	1780	1618	1327
Flt Permitted	0.359			0.498			0.573					
Satd. Flow (perm)	626	1762	1427	869	1691	0	1020	1719	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			5				173
Lane Group Flow (vph)	747	461	40	178	183	0	22	787	0	0	145	59
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	46.5	61.6	61.6	16.5	31.6		11.6	68.0		56.4	56.4	56.4
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	71.6	55.0	55.0	35.1	25.0		61.4	61.6			54.6	54.6
Actuated g/C Ratio	0.49	0.38	0.38	0.24	0.17		0.42	0.42			0.37	0.37
v/c Ratio	1.27	0.70	0.07	0.68	0.63		0.05	1.08			0.24	0.10
Control Delay	162.2	45.1	0.2	43.8	66.7		25.3	97.8			34.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	162.2	45.1	0.2	43.8	66.7		25.3	97.8			34.2	0.3
LOS	F	D	A	D	E		C	F			C	A
Approach Delay		113.8			55.4			95.8			24.4	
Approach LOS		F			E			F			C	
Queue Length 50th (m)	~212.8	103.3	0.0	26.6	45.7		3.4	~233.6			27.9	0.0
Queue Length 95th (m)	#283.4	140.1	0.0	40.7	69.8		8.5	#304.7			44.4	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	589	663	613	262	290		451	727			605	604
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	1.27	0.70	0.07	0.68	0.63		0.05	1.08			0.24	0.10

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 146.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.27
Intersection Signal Delay: 93.2 Intersection LOS: F
Intersection Capacity Utilization 114.6% 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.

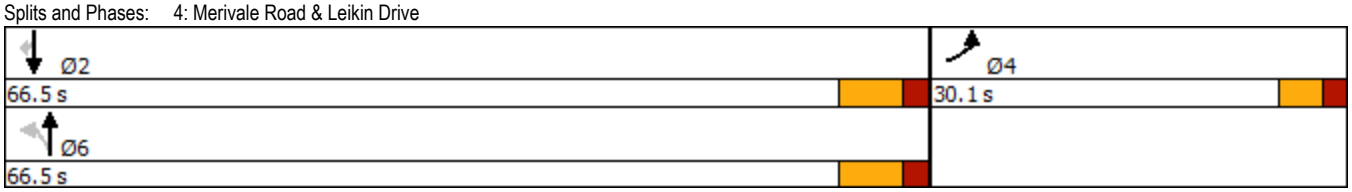
Splits and Phases: 3: Merivale Road & Fallowfield Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	409	4	0	423	75	227
Future Volume (vph)	409	4	0	423	75	227
Satd. Flow (prot)	3255	0	1728	1745	1424	1469
Flt Permitted	0.953					
Satd. Flow (perm)	3255	0	1728	1745	1424	1469
Satd. Flow (RTOR)	1					227
Lane Group Flow (vph)	413	0	0	423	75	227
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			6	2	
Permitted Phases			6			2
Total Split (s)	30.1		66.5	66.5	66.5	66.5
Total Lost Time (s)	5.1		6.5	6.5	6.5	6.5
Act Effct Green (s)	16.2			60.1	60.1	60.1
Actuated g/C Ratio	0.18			0.68	0.68	0.68
v/c Ratio	0.69			0.35	0.08	0.21
Control Delay	39.6			7.3	5.6	1.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	39.6			7.3	5.6	1.4
LOS	D			A	A	A
Approach Delay	39.6			7.3	2.4	
Approach LOS	D			A	A	
Queue Length 50th (m)	30.9			23.6	3.4	0.0
Queue Length 95th (m)	44.3			44.2	8.6	6.6
Internal Link Dist (m)	50.7			445.8	100.5	
Turn Bay Length (m)						85.0
Base Capacity (vph)	927			1192	973	1075
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	0.45			0.35	0.08	0.21

Intersection Summary	
Cycle Length: 96.6	
Actuated Cycle Length: 87.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 17.7	Intersection LOS: B
Intersection Capacity Utilization 45.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Merivale Road & Leikin Drive

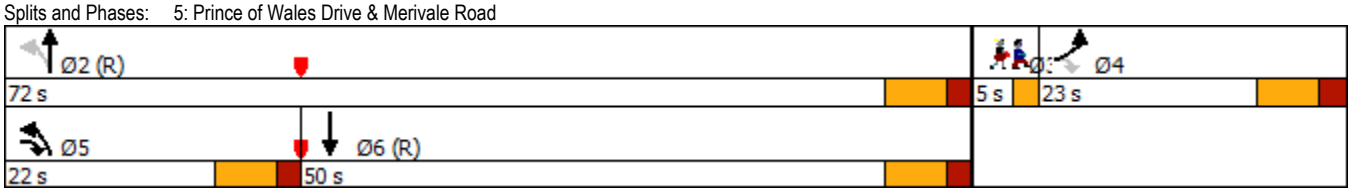


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	12	127	540	1097	310	45	
Future Volume (vph)	12	127	540	1097	310	45	
Satd. Flow (prot)	3281	1261	1642	1745	3118	0	
Flt Permitted	0.950		0.473				
Satd. Flow (perm)	3281	1261	817	1745	3118	0	
Satd. Flow (RTOR)		127			20		
Lane Group Flow (vph)	12	127	540	1097	355	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	23.0	22.0	22.0	72.0	50.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	10.1	36.1	71.7	71.6	46.0		
Actuated g/C Ratio	0.10	0.36	0.72	0.72	0.46		
v/c Ratio	0.04	0.24	0.73	0.88	0.25		
Control Delay	40.8	4.9	12.4	21.3	16.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	40.8	4.9	12.4	21.3	16.5		
LOS	D	A	B	C	B		
Approach Delay	8.0			18.3	16.5		
Approach LOS	A			B	B		
Queue Length 50th (m)	1.0	0.0	34.8	128.3	18.9		
Queue Length 95th (m)	3.4	10.1	53.1	#247.2	28.4		
Internal Link Dist (m)	226.4			296.0	233.3		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	531	532	745	1249	1444		
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	0.02	0.24	0.72	0.88	0.25		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 15 (15%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 17.4 — Intersection LOS: B
Intersection Capacity Utilization 80.4% — 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.

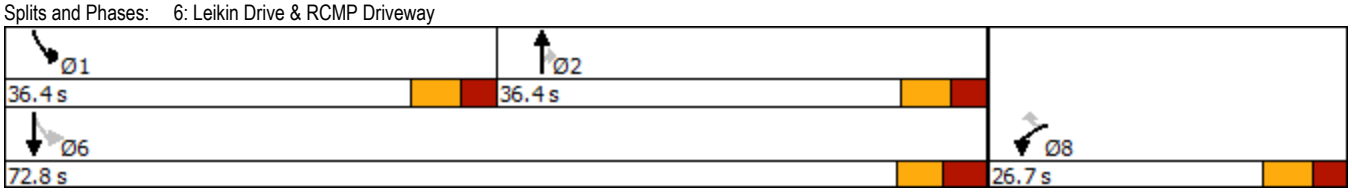
Splits and Phases: 5: Prince of Wales Drive & Merivale Road

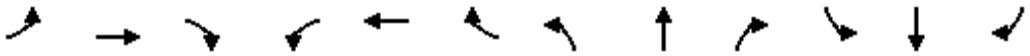


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	17	315	548	253	51
Future Volume (vph)	15	17	315	548	253	51
Satd. Flow (prot)	1691	1427	1728	1513	1691	1508
Flt Permitted	0.950				0.466	
Satd. Flow (perm)	1691	1325	1728	1468	826	1508
Satd. Flow (RTOR)		17		548		
Lane Group Flow (vph)	15	17	315	548	253	51
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Total Split (s)	26.7	26.7	36.4	36.4	36.4	72.8
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.4	6.7
Act Effct Green (s)	11.6	11.6	31.4	31.4	46.9	51.4
Actuated g/C Ratio	0.19	0.19	0.52	0.52	0.78	0.86
v/c Ratio	0.05	0.06	0.35	0.53	0.33	0.04
Control Delay	24.5	13.2	13.7	3.9	4.9	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	13.2	13.7	3.9	4.9	4.0
LOS	C	B	B	A	A	A
Approach Delay	18.5		7.5			4.8
Approach LOS	B		A			A
Queue Length 50th (m)	1.1	0.0	12.2	0.0	0.3	0.0
Queue Length 95th (m)	5.9	4.5	55.2	18.3	24.0	6.1
Internal Link Dist (m)	69.4		182.1			276.7
Turn Bay Length (m)					200.0	
Base Capacity (vph)	598	479	903	1029	1097	1436
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.04	0.35	0.53	0.23	0.04

Intersection Summary	
Cycle Length: 99.5	
Actuated Cycle Length: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Leikin Drive & RCMP Driveway

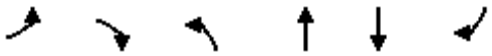




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	558	4	6	20	37	1	2	4	213	3	56
Future Volume (Veh/h)	151	558	4	6	20	37	1	2	4	213	3	56
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	151	558	4	6	20	37	1	2	4	213	3	56
Pedestrians								5				
Lane Width (m)								3.5				
Walking Speed (m/s)								1.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					206							
pX, platoon unblocked												
vC, conflicting volume	57			567			956	936	565	916	920	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57			567			956	936	565	916	920	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			99			100	99	99	7	99	95
cM capacity (veh/h)	1528			1000			205	238	524	229	243	1039

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	151	562	6	57	7	272
Volume Left	151	0	6	0	1	213
Volume Right	0	4	0	37	4	56
cSH	1528	1700	1000	1700	335	273
Volume to Capacity	0.10	0.33	0.01	0.03	0.02	1.00
Queue Length 95th (m)	2.3	0.0	0.1	0.0	0.4	70.3
Control Delay (s)	7.6	0.0	8.6	0.0	16.0	94.3
Lane LOS	A		A		C	F
Approach Delay (s)	1.6		0.8		16.0	94.3
Approach LOS					C	F

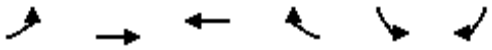
Intersection Summary				
Average Delay	25.6			
Intersection Capacity Utilization	60.8%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	28	3	308	227	0
Future Volume (Veh/h)	105	28	3	308	227	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	105	28	3	308	227	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					294	
pX, platoon unblocked						
vC, conflicting volume	541	227	227			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	541	227	227			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	97	100			
cM capacity (veh/h)	501	812	1341			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	133	311	227
Volume Left	105	3	0
Volume Right	28	0	0
cSH	545	1341	1700
Volume to Capacity	0.24	0.00	0.13
Queue Length 95th (m)	6.7	0.0	0.0
Control Delay (s)	13.7	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	13.7	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	264	252	0	4	4
Future Volume (Veh/h)	0	264	252	0	4	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	264	252	0	4	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	252				516	252
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	252				516	252
tC, single (s)	4.1				7.4	7.2
tC, 2 stage (s)						
tF (s)	2.2				4.4	4.2
p0 queue free %	100				99	99
cM capacity (veh/h)	1313				382	598

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	264	252	4	4
Volume Left	0	0	4	0
Volume Right	0	0	0	4
cSH	1700	1700	382	598
Volume to Capacity	0.16	0.15	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.2	0.1
Control Delay (s)	0.0	0.0	14.5	11.1
Lane LOS			B	B
Approach Delay (s)	0.0	0.0	12.8	
Approach LOS			B	

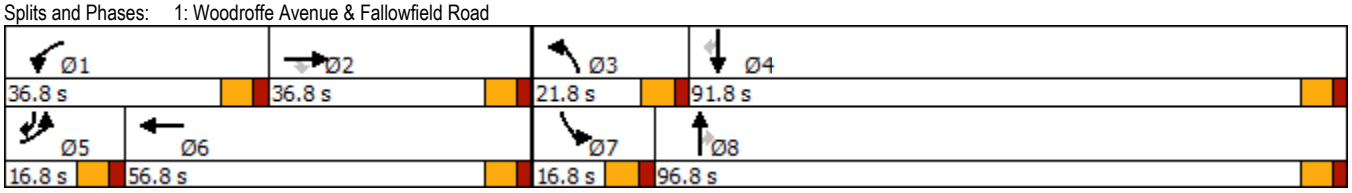
Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	248	736	576	545	12	397	763	243	17	1641	627
Future Volume (vph)	204	248	736	576	545	12	397	763	243	17	1641	627
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			141		1				243			101
Lane Group Flow (vph)	204	248	736	576	557	0	397	763	243	17	1641	627
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	16.8	36.8	36.8	36.8	56.8		21.8	96.8	96.8	16.8	91.8	16.8
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	10.0	30.0	30.0	30.0	50.0		15.0	97.6	97.6	7.4	85.0	101.8
Actuated g/C Ratio	0.05	0.16	0.16	0.16	0.27		0.08	0.52	0.52	0.04	0.45	0.54
v/c Ratio	1.19	0.48	2.06	1.10	0.63		1.56	0.44	0.28	0.26	1.08	0.74
Control Delay	199.4	74.9	511.0	137.7	64.0		318.3	29.7	3.5	95.7	95.4	32.9
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	199.4	74.9	511.0	137.7	64.0		318.3	29.7	3.5	95.7	95.4	32.9
LOS	F	E	F	F	E		F	C	A	F	F	C
Approach Delay		366.4			101.5			106.8			78.3	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	~43.4	41.5	~356.6	~115.0	89.7		~98.9	89.5	0.0	5.8	~330.3	138.7
Queue Length 95th (m)	#69.8	56.0	#430.8	#151.0	109.2		#132.0	108.7	14.4	14.4	#367.4	187.4
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	171	521	358	525	886		255	1746	855	90	1520	852
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	1.19	0.48	2.06	1.10	0.63		1.56	0.44	0.28	0.19	1.08	0.74

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 2.06
Intersection Signal Delay: 146.3 Intersection LOS: F
Intersection Capacity Utilization 130.3% 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: 1: Woodroffe Avenue & Fallowfield Road

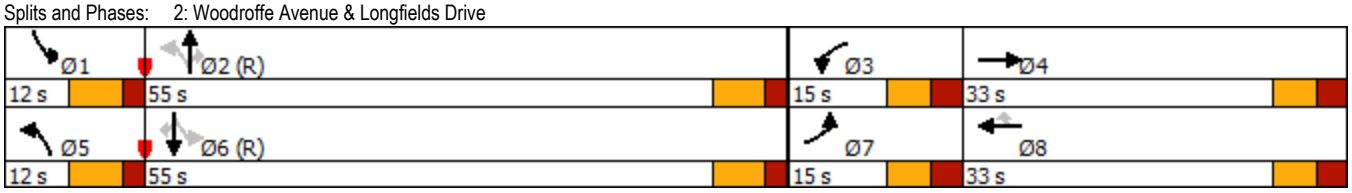


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	79	67	196	89	921	39	107	2033	223
Future Volume (vph)	155	17	70	79	67	196	89	921	39	107	2033	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.068			0.234		
Satd. Flow (perm)	3216	1528	0	1691	1780	1464	118	3316	1513	417	3349	1472
Satd. Flow (RTOR)		70				157			157			223
Lane Group Flow (vph)	155	87	0	79	67	196	89	921	39	107	2033	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	15.0	33.0		15.0	33.0	33.0	12.0	55.0	55.0	12.0	55.0	55.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	8.4	16.5		8.2	13.7	13.7	67.0	59.7	59.7	67.0	59.7	59.7
Actuated g/C Ratio	0.07	0.14		0.07	0.12	0.12	0.58	0.52	0.52	0.58	0.52	0.52
v/c Ratio	0.67	0.31		0.66	0.32	0.63	0.54	0.54	0.05	0.33	1.17	0.26
Control Delay	66.3	16.6		78.2	48.4	20.7	28.7	20.9	0.1	12.6	110.8	3.3
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	66.3	16.6		78.2	48.4	20.7	28.7	20.9	0.1	12.6	110.8	3.3
LOS	E	B		E	D	C	C	C	A	B	F	A
Approach Delay		48.4			39.4			20.8			96.2	
Approach LOS		D			D			C			F	
Queue Length 50th (m)	16.3	3.3		16.2	13.4	7.7	5.9	60.6	0.0	7.1	~255.2	0.0
Queue Length 95th (m)	#27.6	14.7		#35.6	22.2	25.2	#28.0	99.2	0.0	19.1	#340.2	12.8
Internal Link Dist (m)		414.1			1042.9			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	237	405		124	410	458	165	1720	860	323	1737	870
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	0.65	0.21		0.64	0.16	0.43	0.54	0.54	0.05	0.33	1.17	0.26

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 115
Offset: 92 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 68.6 Intersection LOS: E
Intersection Capacity Utilization 92.4% 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: 2: Woodroffe Avenue & Longfields Drive

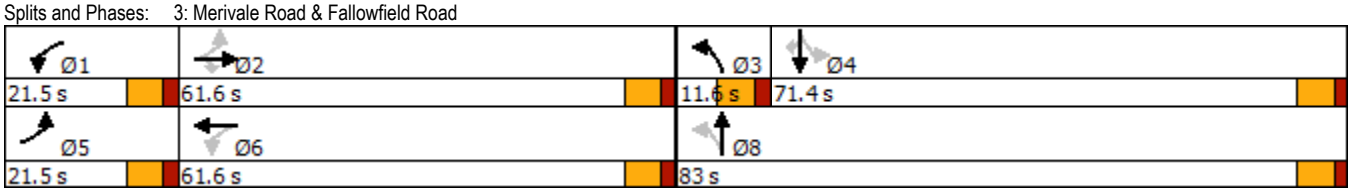


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	321	44	41	760	4	56	286	171	6	639	328
Future Volume (vph)	143	321	44	41	760	4	56	286	171	6	639	328
Satd. Flow (prot)	1496	1745	1469	1691	1778	0	1551	1589	0	1691	1762	1498
Flt Permitted	0.063			0.508			0.066			0.381		
Satd. Flow (perm)	99	1745	1469	904	1778	0	108	1589	0	678	1762	1498
Satd. Flow (RTOR)			108					24				162
Lane Group Flow (vph)	143	321	44	41	764	0	56	457	0	6	639	328
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	21.5	61.6	61.6	21.5	61.6		11.6	83.0		71.4	71.4	71.4
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.5	65.4	65.4	63.2	55.5		68.7	68.9		60.0	60.0	60.0
Actuated g/C Ratio	0.48	0.41	0.41	0.40	0.35		0.43	0.43		0.38	0.38	0.38
v/c Ratio	0.81	0.45	0.07	0.10	1.23		0.61	0.65		0.02	0.96	0.49
Control Delay	73.8	39.7	0.2	25.9	160.6		53.6	37.7		31.7	74.4	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	73.8	39.7	0.2	25.9	160.6		53.6	37.7		31.7	74.4	20.8
LOS	E	D	A	C	F		D	D		C	E	C
Approach Delay		45.9			153.7			39.5			56.0	
Approach LOS		D			F			D			E	
Queue Length 50th (m)	31.5	74.8	0.0	6.8	~296.1		9.5	98.3		1.1	185.4	36.9
Queue Length 95th (m)	#68.5	104.8	0.0	13.8	#368.0		#20.6	133.6		4.4	#255.5	63.7
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	180	718	668	477	621		92	785		280	727	713
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	0.79	0.45	0.07	0.09	1.23		0.61	0.58		0.02	0.88	0.46

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 158.7
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 79.3 Intersection LOS: E
Intersection Capacity Utilization 112.3% 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.

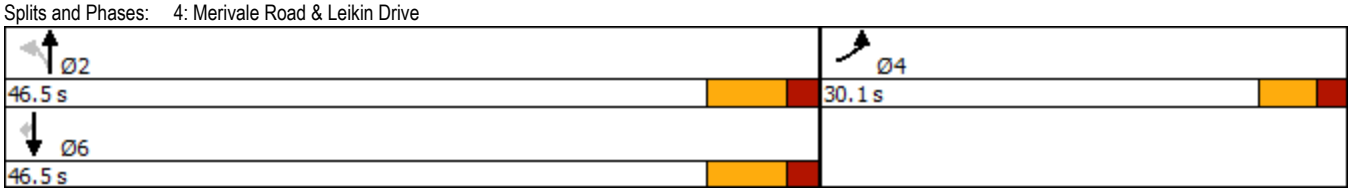
Splits and Phases: 3: Merivale Road & Fallowfield Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	326	2	1	207	522	212
Future Volume (vph)	326	2	1	207	522	212
Satd. Flow (prot)	3186	0	1271	1648	1762	1498
Flt Permitted	0.953		0.434			
Satd. Flow (perm)	3186	0	581	1648	1762	1498
Satd. Flow (RTOR)	1					212
Lane Group Flow (vph)	328	0	1	207	522	212
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Total Split (s)	30.1		46.5	46.5	46.5	46.5
Total Lost Time (s)	5.1		6.5	6.5	6.5	6.5
Act Effct Green (s)	12.0		40.0	40.0	40.0	40.0
Actuated g/C Ratio	0.19		0.63	0.63	0.63	0.63
v/c Ratio	0.55		0.00	0.20	0.47	0.21
Control Delay	26.9		5.0	6.0	8.3	1.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	26.9		5.0	6.0	8.3	1.5
LOS	C		A	A	A	A
Approach Delay	26.9			6.0	6.3	
Approach LOS	C			A	A	
Queue Length 50th (m)	16.6		0.0	8.0	24.8	0.0
Queue Length 95th (m)	26.5		0.5	17.6	49.1	6.1
Internal Link Dist (m)	51.0			445.8	100.5	
Turn Bay Length (m)			100.0			85.0
Base Capacity (vph)	1253		365	1037	1109	1021
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	0.26		0.00	0.20	0.47	0.21

Intersection Summary	
Cycle Length: 76.6	
Actuated Cycle Length: 63.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 48.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Merivale Road & Leikin Drive

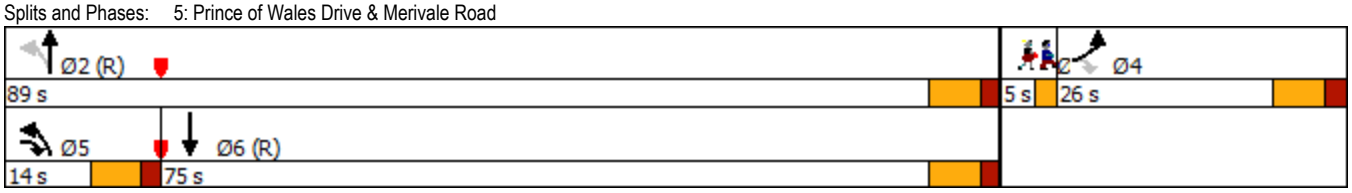


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	36	631	202	399	1083	19	
Future Volume (vph)	36	631	202	399	1083	19	
Satd. Flow (prot)	1642	1483	1566	1745	3338	0	
Flt Permitted	0.950		0.175				
Satd. Flow (perm)	1642	1483	288	1745	3338	0	
Satd. Flow (RTOR)		130			2		
Lane Group Flow (vph)	36	631	202	399	1102	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	26.0	14.0	14.0	89.0	75.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	19.2	33.6	82.6	82.5	68.5		
Actuated g/C Ratio	0.16	0.28	0.69	0.69	0.57		
v/c Ratio	0.14	1.24	0.72	0.33	0.58		
Control Delay	44.9	155.1	23.3	8.5	18.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	44.9	155.1	23.3	8.5	18.0		
LOS	D	F	C	A	B		
Approach Delay	149.1			13.5	18.0		
Approach LOS	F			B	B		
Queue Length 50th (m)	6.8	~149.1	14.2	31.7	76.5		
Queue Length 95th (m)	15.7	#213.3	#26.8	45.5	94.3		
Internal Link Dist (m)	226.4			296.0	231.6		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	262	508	279	1199	1906		
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	0.14	1.24	0.72	0.33	0.58		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.24
Intersection Signal Delay: 53.8 — Intersection LOS: D
Intersection Capacity Utilization 84.2% — ICU Level of Service E
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: 5: Prince of Wales Drive & Merivale Road

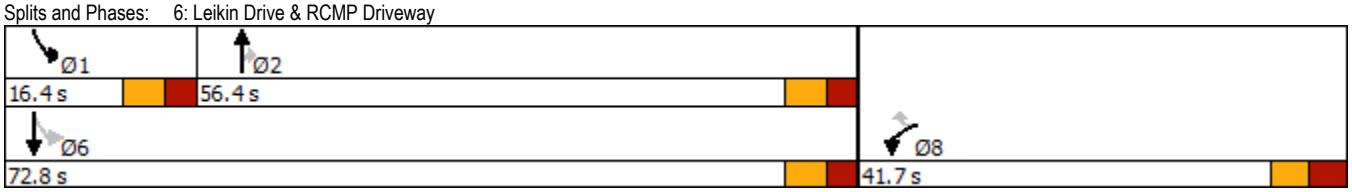


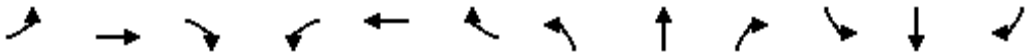
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	409	252	85	5	6	209
Future Volume (vph)	409	252	85	5	6	209
Satd. Flow (prot)	1691	1513	1648	1513	1691	1728
Flt Permitted	0.950				0.623	
Satd. Flow (perm)	1691	1391	1648	1456	1093	1728
Satd. Flow (RTOR)		252		5		
Lane Group Flow (vph)	409	252	85	5	6	209
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Total Split (s)	41.7	41.7	56.4	56.4	16.4	72.8
Total Lost Time (s)	6.7	6.7	6.4	6.4	6.4	6.4
Act Effct Green (s)	26.8	26.8	50.6	50.6	52.7	52.7
Actuated g/C Ratio	0.29	0.29	0.55	0.55	0.57	0.57
v/c Ratio	0.84	0.43	0.09	0.01	0.01	0.21
Control Delay	47.2	6.0	13.2	9.0	10.3	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	6.0	13.2	9.0	10.3	11.4
LOS	D	A	B	A	B	B
Approach Delay	31.5		13.0			11.4
Approach LOS	C		B			B
Queue Length 50th (m)	59.9	0.0	6.0	0.0	0.4	15.9
Queue Length 95th (m)	#108.2	16.0	18.2	1.9	2.2	31.1
Internal Link Dist (m)	69.4		182.1			276.7
Turn Bay Length (m)					200.0	
Base Capacity (vph)	645	686	899	796	685	1251
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.37	0.09	0.01	0.01	0.17

Intersection Summary

Cycle Length: 114.5
Actuated Cycle Length: 92.7
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 25.3 — Intersection LOS: C
Intersection Capacity Utilization 55.7% — ICU Level of Service B
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Leikin Drive & RCMP Driveway

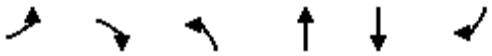




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	57	0	0	364	183	0	1	0	43	0	186
Future Volume (Veh/h)	65	57	0	0	364	183	0	1	0	43	0	186
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	65	57	0	0	364	183	0	1	0	43	0	186
Pedestrians		1						10			1	
Lane Width (m)		3.5						3.5			3.5	
Walking Speed (m/s)		1.0						1.0			1.0	
Percent Blockage		0						1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					206							
pX, platoon unblocked	0.98						0.98	0.98		0.98	0.98	0.98
vC, conflicting volume	548			67			748	745	67	644	654	458
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530			67			733	730	67	627	637	437
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			100	100	100	88	100	69
cM capacity (veh/h)	1027			1532			215	320	992	368	361	608

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	65	57	0	547	1	229
Volume Left	65	0	0	0	0	43
Volume Right	0	0	0	183	0	186
cSH	1027	1700	1700	1700	320	542
Volume to Capacity	0.06	0.03	0.00	0.32	0.00	0.42
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.1	14.6
Control Delay (s)	8.7	0.0	0.0	0.0	16.3	16.4
Lane LOS	A				C	C
Approach Delay (s)	4.7		0.0		16.3	16.4
Approach LOS					C	C

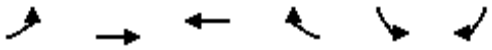
Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	67.2%	ICU Level of Service		C
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	106	28	5	222	213	0
Future Volume (Veh/h)	106	28	5	222	213	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	106	28	5	222	213	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					284	
pX, platoon unblocked						
vC, conflicting volume	445	213	213			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	445	213	213			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	97	100			
cM capacity (veh/h)	569	827	1357			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	134	227	213
Volume Left	106	5	0
Volume Right	28	0	0
cSH	608	1357	1700
Volume to Capacity	0.22	0.00	0.13
Queue Length 95th (m)	5.9	0.1	0.0
Control Delay (s)	12.6	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	12.6	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	149	362	0	4	4
Future Volume (Veh/h)	0	149	362	0	4	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	149	362	0	4	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	362				511	362
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	362				511	362
tC, single (s)	4.1				7.4	7.2
tC, 2 stage (s)						
tF (s)	2.2				4.4	4.2
p0 queue free %	100				99	99
cM capacity (veh/h)	1197				385	509

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	149	362	4	4
Volume Left	0	0	4	0
Volume Right	0	0	0	4
cSH	1700	1700	385	509
Volume to Capacity	0.09	0.21	0.01	0.01
Queue Length 95th (m)	0.0	0.0	0.2	0.2
Control Delay (s)	0.0	0.0	14.5	12.1
Lane LOS			B	B
Approach Delay (s)	0.0	0.0	13.3	
Approach LOS			B	

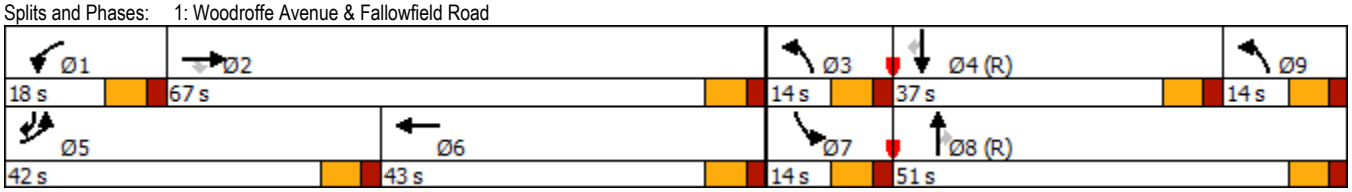
Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	687	667	292	136	139	34	674	1734	551	7	419	115
Future Volume (vph)	687	667	292	136	139	34	674	1734	551	7	419	115
Satd. Flow (prot)	3248	3316	1375	2955	3133	0	3216	3349	1513	1445	3221	1363
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3316	1375	2955	3133	0	3212	3349	1513	1445	3221	1345
Satd. Flow (RTOR)			292		19				351			127
Lane Group Flow (vph)	687	667	292	136	173	0	674	1734	551	7	419	115
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3 9	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	42.0	67.0	67.0	18.0	43.0			51.0	51.0	14.0	37.0	42.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8			6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	34.2	38.1	38.1	10.6	14.5		42.7	78.0	78.0	6.4	24.6	58.8
Actuated g/C Ratio	0.23	0.25	0.25	0.07	0.10		0.28	0.52	0.52	0.04	0.16	0.39
v/c Ratio	0.93	0.79	0.52	0.65	0.54		0.74	1.00	0.58	0.11	0.79	0.19
Control Delay	76.1	59.4	7.5	83.0	62.9		36.4	56.0	12.2	72.6	71.5	2.6
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	76.1	59.4	7.5	83.0	62.9		36.4	56.0	12.2	72.6	71.5	2.6
LOS	E	E	A	F	E		D	E	B	E	E	A
Approach Delay		57.2			71.7			43.4			56.9	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	95.0	91.6	0.0	18.9	21.7		53.3	229.7	31.8	1.9	58.7	0.0
Queue Length 95th (m)	#125.0	103.4	20.4	29.6	31.3		#119.3	#365.0	87.4	6.7	73.1	6.3
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	762	1330	726	220	770		915	1740	955	70	648	617
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	0.90	0.50	0.40	0.62	0.22		0.74	1.00	0.58	0.10	0.65	0.19

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:SBT and 8:NBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 50.5 Intersection LOS: D
Intersection Capacity Utilization 106.4% 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: 1: Woodroffe Avenue & Fallowfield Road



Lane Group	Ø3	Ø9
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	9
Permitted Phases		
Total Split (s)	14.0	14.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
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		

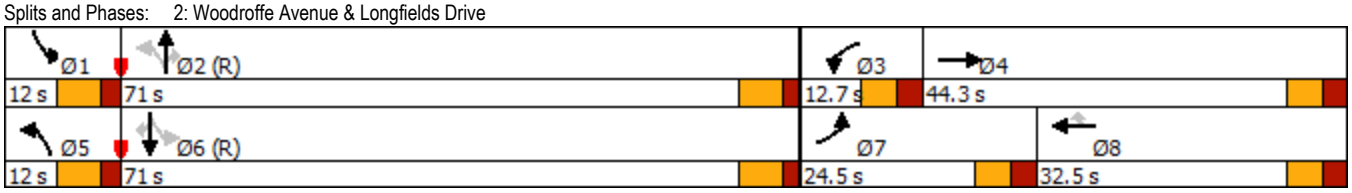
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	39	57	184	36	1637	50	156	483	111
Future Volume (vph)	372	89	82	39	57	184	36	1637	50	156	483	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.476			0.057		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	755	3349	1478	99	3221	1391
Satd. Flow (RTOR)		32				179			179			179
Lane Group Flow (vph)	372	171	0	39	57	184	36	1637	50	156	483	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	24.5	44.3		12.7	32.5	32.5	12.0	71.0	71.0	12.0	71.0	71.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	17.8	27.7		6.1	13.6	13.6	71.0	64.8	64.8	87.8	78.8	78.8
Actuated g/C Ratio	0.13	0.20		0.04	0.10	0.10	0.51	0.46	0.46	0.63	0.56	0.56
v/c Ratio	0.90	0.51		0.57	0.35	0.60	0.09	1.06	0.06	0.61	0.27	0.13
Control Delay	85.4	46.2		96.5	63.2	16.6	12.6	75.8	0.2	40.2	17.7	0.3
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	85.4	46.2		96.5	63.2	16.6	12.6	75.8	0.2	40.2	17.7	0.3
LOS	F	D		F	E	B	B	E	A	D	B	A
Approach Delay		73.0			37.2			72.3			19.8	
Approach LOS		E			D			E			B	
Queue Length 50th (m)	48.8	33.6		9.9	14.2	1.2	3.0	~235.6	0.0	22.8	31.7	0.0
Queue Length 95th (m)	#73.9	48.7		#24.9	24.3	20.0	9.1	#280.2	0.0	#83.2	52.3	0.0
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	417	442		69	309	422	416	1550	780	257	1813	861
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	0.89	0.39		0.57	0.18	0.44	0.09	1.06	0.06	0.61	0.27	0.13

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 86 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 57.5 Intersection LOS: E
Intersection Capacity Utilization 98.9% 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: 2: Woodroffe Avenue & Longfields Drive

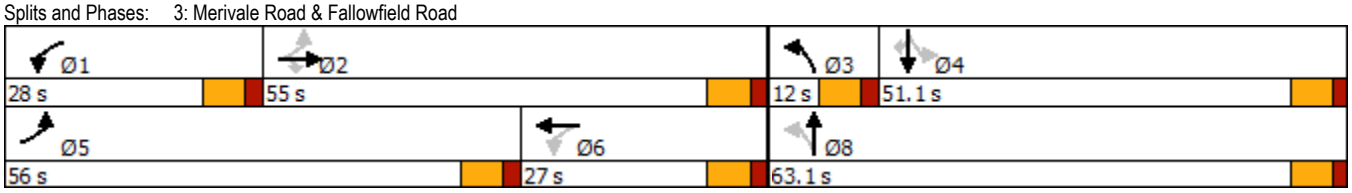


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	747	461	40	178	178	5	22	706	81	0	145	59
Future Volume (vph)	747	461	40	178	178	5	22	706	81	0	145	59
Satd. Flow (prot)	1658	1762	1427	1658	1691	0	1691	1719	0	1780	1618	1327
Flt Permitted	0.298			0.498			0.559					
Satd. Flow (perm)	520	1762	1427	869	1691	0	995	1719	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			5				173
Lane Group Flow (vph)	747	461	40	178	183	0	22	787	0	0	145	59
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	56.0	55.0	55.0	28.0	27.0		12.0	63.1		51.1	51.1	51.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	76.5	56.0	56.0	34.4	20.4		56.5	56.7			49.5	49.5
Actuated g/C Ratio	0.52	0.38	0.38	0.24	0.14		0.39	0.39			0.34	0.34
v/c Ratio	1.14	0.68	0.06	0.64	0.78		0.05	1.17			0.26	0.10
Control Delay	110.7	44.7	0.2	36.8	82.3		28.3	133.3			38.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	110.7	44.7	0.2	36.8	82.3		28.3	133.3			38.3	0.4
LOS	F	D	A	D	F		C	F			D	A
Approach Delay		82.8			59.9			130.5			27.3	
Approach LOS		F			E			F			C	
Queue Length 50th (m)	~204.5	102.0	0.0	24.7	47.5		3.6	~249.9			29.6	0.0
Queue Length 95th (m)	#275.1	146.2	0.0	37.8	#80.4		9.1	#321.0			47.0	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	657	674	622	365	236		410	670			548	564
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	1.14	0.68	0.06	0.49	0.78		0.05	1.17			0.26	0.10

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 146.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 90.0 Intersection LOS: F
Intersection Capacity Utilization 114.6% 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: 3: Merivale Road & Fallowfield Road

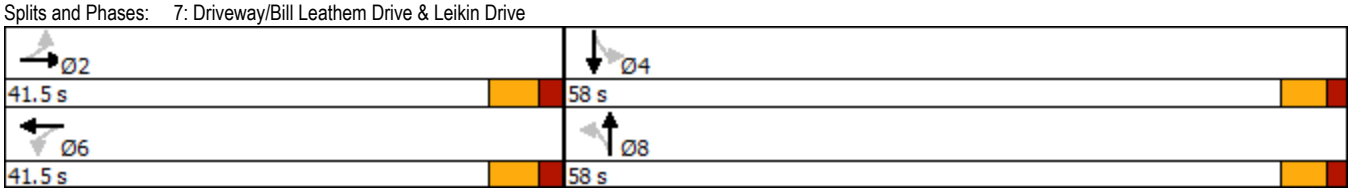


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	558	4	6	20	37	1	2	4	213	3	56
Future Volume (vph)	151	558	4	6	20	37	1	2	4	213	3	56
Satd. Flow (prot)	1610	1726	0	1658	1547	0	0	1611	0	0	1632	0
Flt Permitted	0.720			0.325				0.963			0.768	
Satd. Flow (perm)	1221	1726	0	566	1547	0	0	1562	0	0	1303	0
Satd. Flow (RTOR)					37			4			20	
Lane Group Flow (vph)	151	562	0	6	57	0	0	7	0	0	272	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	41.5	41.5		41.5	41.5		58.0	58.0		58.0	58.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6			5.0			5.0	
Act Effct Green (s)	25.2	25.2		25.2	25.2			17.4			17.4	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.32			0.32	
v/c Ratio	0.26	0.69		0.02	0.08			0.01			0.63	
Control Delay	11.0	17.3		9.2	5.1			11.3			22.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	11.0	17.3		9.2	5.1			11.3			22.6	
LOS	B	B		A	A			B			C	
Approach Delay		16.0			5.5			11.3			22.6	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	7.4	35.7		0.3	0.9			0.2			18.1	
Queue Length 95th (m)	20.1	79.6		2.0	6.0			2.4			45.7	
Internal Link Dist (m)		337.1			182.1			90.9			596.0	
Turn Bay Length (m)	30.0			30.0								
Base Capacity (vph)	859	1215		398	1100			1440			1202	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.18	0.46		0.02	0.05			0.00			0.23	

Intersection Summary

Cycle Length: 99.5
Actuated Cycle Length: 53.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 17.0 Intersection LOS: B
Intersection Capacity Utilization 63.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: Driveway/Bill Leathem Drive & Leikin Drive

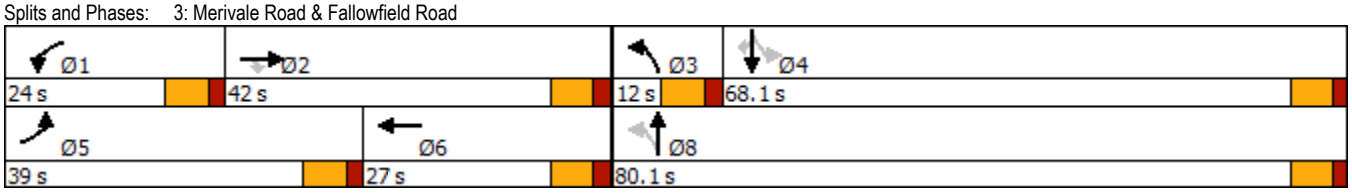


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	747	461	40	178	178	5	22	706	81	0	145	59
Future Volume (vph)	747	461	40	178	178	5	22	706	81	0	145	59
Satd. Flow (prot)	3216	1762	1427	1658	1691	0	1691	1719	0	1780	1618	1327
Flt Permitted	0.950			0.950			0.590					
Satd. Flow (perm)	3216	1762	1427	1658	1691	0	1050	1719	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			6				173
Lane Group Flow (vph)	747	461	40	178	183	0	22	787	0	0	145	59
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	39.0	42.0	42.0	24.0	27.0		12.0	80.1		68.1	68.1	68.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	32.7	36.2	36.2	17.0	20.5		66.3	66.5			59.7	59.7
Actuated g/C Ratio	0.23	0.26	0.26	0.12	0.15		0.48	0.48			0.43	0.43
v/c Ratio	0.99	1.01	0.09	0.89	0.73		0.04	0.96			0.21	0.09
Control Delay	83.9	95.5	0.4	100.2	76.0		18.7	56.8			26.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	83.9	95.5	0.4	100.2	76.0		18.7	56.8			26.7	0.3
LOS	F	F	A	F	E		B	E			C	A
Approach Delay		85.5			87.9			55.8			19.1	
Approach LOS		F			F			E			B	
Queue Length 50th (m)	~110.9	~136.8	0.0	47.5	47.5		2.9	185.9			24.3	0.0
Queue Length 95th (m)	#146.8	#198.2	0.0	#87.7	#80.4		7.2	#264.2			38.6	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	754	457	461	209	249		524	917			724	689
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	0.99	1.01	0.09	0.85	0.73		0.04	0.86			0.20	0.09

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 139.3
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 71.5 Intersection LOS: E
Intersection Capacity Utilization 96.7% 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: 3: Merivale Road & Fallowfield Road

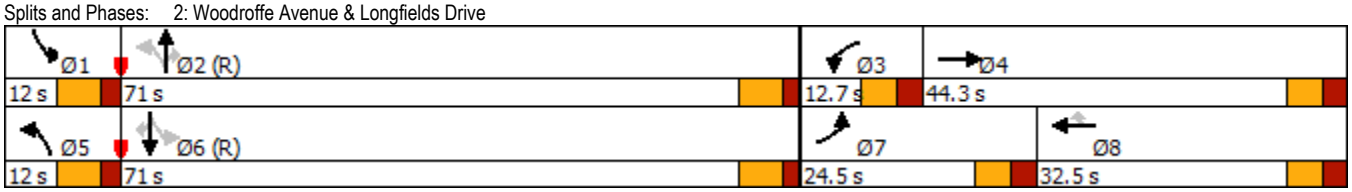


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	89	82	39	57	184	36	1397	50	156	483	111
Future Volume (vph)	372	89	82	39	57	184	36	1397	50	156	483	111
Satd. Flow (prot)	3248	1551	0	1580	1664	1513	1523	3349	1513	1642	3221	1455
Flt Permitted	0.950			0.950			0.476			0.057		
Satd. Flow (perm)	3248	1551	0	1580	1664	1490	755	3349	1478	99	3221	1391
Satd. Flow (RTOR)		32				179			179			179
Lane Group Flow (vph)	372	171	0	39	57	184	36	1397	50	156	483	111
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	24.5	44.3		12.7	32.5	32.5	12.0	71.0	71.0	12.0	71.0	71.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	17.8	27.7		6.1	13.6	13.6	71.0	64.8	64.8	87.8	78.8	78.8
Actuated g/C Ratio	0.13	0.20		0.04	0.10	0.10	0.51	0.46	0.46	0.63	0.56	0.56
v/c Ratio	0.90	0.51		0.57	0.35	0.60	0.09	0.90	0.06	0.61	0.27	0.13
Control Delay	85.4	46.2		96.5	63.2	16.6	12.6	43.8	0.2	40.2	17.7	0.3
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	85.4	46.2		96.5	63.2	16.6	12.6	43.8	0.2	40.2	17.7	0.3
LOS	F	D		F	E	B	B	D	A	D	B	A
Approach Delay		73.0			37.2			41.6			19.8	
Approach LOS		E			D			D			B	
Queue Length 50th (m)	48.8	33.6		9.9	14.2	1.2	3.0	166.6	0.0	22.8	31.7	0.0
Queue Length 95th (m)	#73.9	48.7		#24.9	24.3	20.0	9.1	202.4	0.0	#83.2	52.3	0.0
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	417	442		69	309	422	416	1550	780	257	1813	861
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	0.89	0.39		0.57	0.18	0.44	0.09	0.90	0.06	0.61	0.27	0.13

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 86 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 41.4 Intersection LOS: D
Intersection Capacity Utilization 91.9% 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: 2: Woodroffe Avenue & Longfields Drive

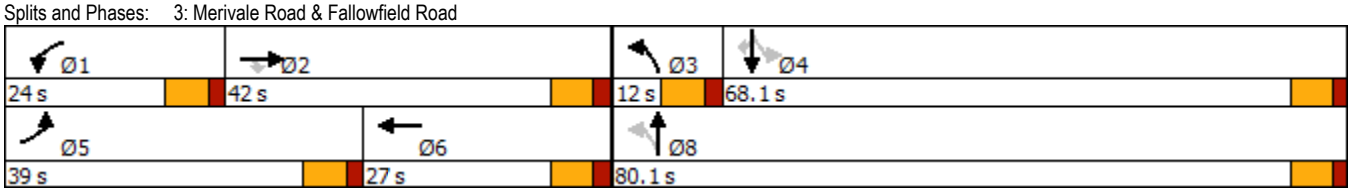


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	747	461	40	178	178	5	22	526	83	0	146	59
Future Volume (vph)	747	461	40	178	178	5	22	526	83	0	146	59
Satd. Flow (prot)	3216	1762	1427	1658	1691	0	1691	1710	0	1780	1618	1327
Flt Permitted	0.950			0.950			0.558					
Satd. Flow (perm)	3216	1762	1427	1658	1691	0	993	1710	0	1780	1618	1327
Satd. Flow (RTOR)			123		1			8				173
Lane Group Flow (vph)	747	461	40	178	183	0	22	609	0	0	146	59
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	39.0	42.0	42.0	24.0	27.0		12.0	80.1		68.1	68.1	68.1
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	32.8	36.7	36.7	16.8	20.6		46.8	47.0			40.2	40.2
Actuated g/C Ratio	0.27	0.31	0.31	0.14	0.17		0.39	0.39			0.33	0.33
v/c Ratio	0.85	0.86	0.08	0.77	0.63		0.05	0.90			0.27	0.11
Control Delay	53.1	58.0	0.3	73.5	59.1		21.1	51.4			31.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	53.1	58.0	0.3	73.5	59.1		21.1	51.4			31.1	0.4
LOS	D	E	A	E	E		C	D			C	A
Approach Delay		53.2			66.2			50.4			22.3	
Approach LOS		D			E			D			C	
Queue Length 50th (m)	78.1	93.9	0.0	36.9	36.6		2.9	120.4			24.5	0.0
Queue Length 95th (m)	#135.9	#185.2	0.0	#82.3	#74.2		7.4	164.2			39.3	0.0
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0					55.0
Base Capacity (vph)	878	537	520	244	290		418	1062			839	771
Starvation Cap Reductn	0	0	0	0	0		0	0			0	0
Spillback Cap Reductn	0	0	0	0	0		0	0			0	0
Storage Cap Reductn	0	0	0	0	0		0	0			0	0
Reduced v/c Ratio	0.85	0.86	0.08	0.73	0.63		0.05	0.57			0.17	0.08

Intersection Summary

Cycle Length: 146.1
Actuated Cycle Length: 120.1
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 51.8 Intersection LOS: D
Intersection Capacity Utilization 86.8% 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: 3: Merivale Road & Fallowfield Road

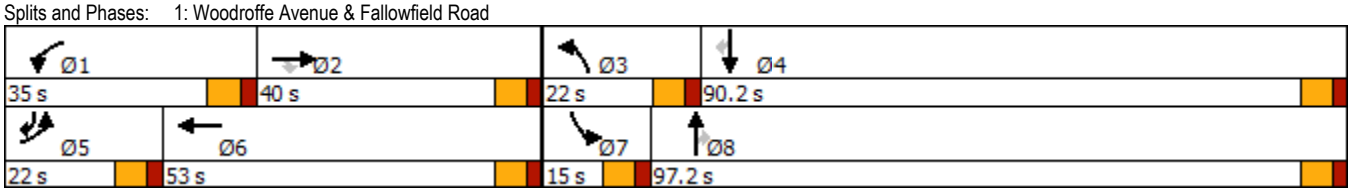


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	248	736	576	545	12	397	763	243	17	1641	627
Future Volume (vph)	204	248	736	576	545	12	397	763	243	17	1641	627
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			181		1				243			141
Lane Group Flow (vph)	204	248	736	576	557	0	397	763	243	17	1641	627
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	22.0	40.0	40.0	35.0	53.0		22.0	97.2	97.2	15.0	90.2	22.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.7	33.2	33.2	28.2	46.7		15.2	96.6	96.6	7.1	83.4	104.9
Actuated g/C Ratio	0.08	0.18	0.18	0.15	0.25		0.08	0.52	0.52	0.04	0.45	0.56
v/c Ratio	0.81	0.43	1.78	1.17	0.67		1.54	0.44	0.29	0.27	1.10	0.70
Control Delay	107.6	71.3	388.1	160.1	68.1		310.9	30.3	3.6	97.4	103.2	27.2
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	107.6	71.3	388.1	160.1	68.1		310.9	30.3	3.6	97.4	103.2	27.2
LOS	F	E	F	F	E		F	C	A	F	F	C
Approach Delay		273.8			114.9			105.1			82.3	
Approach LOS		F			F			F			F	
Queue Length 50th (m)	36.2	40.6	~325.1	~120.8	92.2		~98.3	90.9	0.0	5.8	~335.6	121.4
Queue Length 95th (m)	#53.4	54.8	#399.3	#156.8	112.3		#131.3	108.5	14.4	14.5	#372.8	166.4
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	414	494	827		258	1727	848	74	1492	893
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	0.78	0.43	1.78	1.17	0.67		1.54	0.44	0.29	0.23	1.10	0.70

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.78
Intersection Signal Delay: 131.6 Intersection LOS: F
Intersection Capacity Utilization 130.3% 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: 1: Woodroffe Avenue & Fallowfield Road

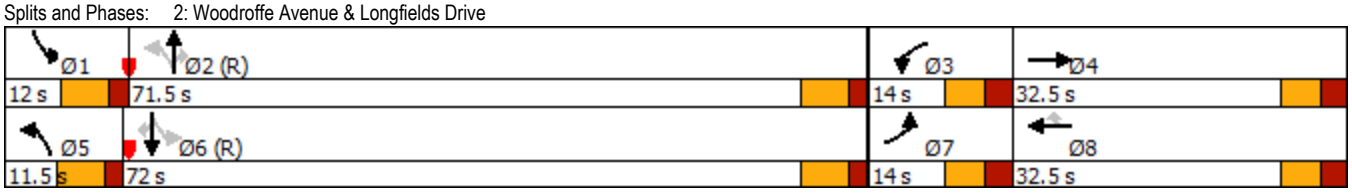


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	79	67	196	89	921	39	107	2033	223
Future Volume (vph)	155	17	70	79	67	196	89	921	39	107	2033	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.053			0.256		
Satd. Flow (perm)	3216	1528	0	1691	1780	1463	92	3316	1513	456	3349	1470
Satd. Flow (RTOR)		70				153			138			223
Lane Group Flow (vph)	155	87	0	79	67	196	89	921	39	107	2033	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	14.0	32.5		14.0	32.5	32.5	11.5	71.5	71.5	12.0	72.0	72.0
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	7.5	13.9		7.5	13.9	13.9	83.1	75.4	75.4	82.0	74.8	74.8
Actuated g/C Ratio	0.06	0.11		0.06	0.11	0.11	0.64	0.58	0.58	0.63	0.58	0.58
v/c Ratio	0.84	0.38		0.81	0.35	0.67	0.59	0.48	0.04	0.30	1.06	0.24
Control Delay	94.8	20.5		111.3	57.0	25.4	36.4	17.8	0.1	10.6	64.6	2.6
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	94.8	20.5		111.3	57.0	25.4	36.4	17.8	0.1	10.6	64.6	2.6
LOS	F	C		F	E	C	D	B	A	B	E	A
Approach Delay		68.1			51.4			18.7			56.3	
Approach LOS		E			D			B			E	
Queue Length 50th (m)	19.0	3.8		18.8	15.4	9.8	6.2	59.6	0.0	7.0	~255.3	0.0
Queue Length 95th (m)	#36.4	16.3		#44.7	25.4	29.1	#37.5	94.8	0.0	18.1	#345.0	11.4
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	185	361		97	356	415	151	1922	935	356	1927	940
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	0.84	0.24		0.81	0.19	0.47	0.59	0.48	0.04	0.30	1.06	0.24

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 46.7 Intersection LOS: D
Intersection Capacity Utilization 92.4% 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: 2: Woodroffe Avenue & Longfields Drive

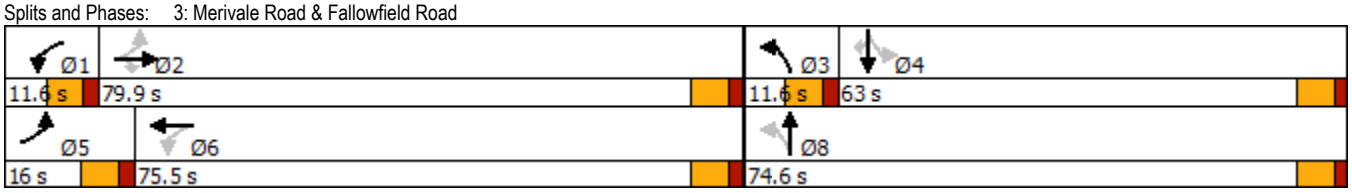


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	321	44	41	760	4	56	286	171	6	639	328
Future Volume (vph)	143	321	44	41	760	4	56	286	171	6	639	328
Satd. Flow (prot)	1496	1745	1469	1691	1778	0	1551	1589	0	1691	1762	1498
Flt Permitted	0.053			0.505			0.063			0.351		
Satd. Flow (perm)	83	1745	1469	899	1778	0	103	1589	0	625	1762	1498
Satd. Flow (RTOR)			108					22				149
Lane Group Flow (vph)	143	321	44	41	764	0	56	457	0	6	639	328
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		4
Total Split (s)	16.0	79.9	79.9	11.6	75.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	83.4	75.8	75.8	74.2	69.0		65.6	65.8		56.7	56.7	56.7
Actuated g/C Ratio	0.51	0.46	0.46	0.45	0.42		0.40	0.40		0.35	0.35	0.35
v/c Ratio	1.15	0.40	0.06	0.10	1.02		0.66	0.70		0.03	1.05	0.53
Control Delay	165.0	32.1	0.2	21.3	84.6		66.4	45.4		37.3	100.8	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	165.0	32.1	0.2	21.3	84.6		66.4	45.4		37.3	100.8	26.4
LOS	F	C	A	C	F		E	D		D	F	C
Approach Delay		66.8			81.4			47.7			75.3	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	~40.0	66.5	0.0	6.2	~249.2		10.4	108.8		1.2	~213.6	43.9
Queue Length 95th (m)	#84.0	91.1	0.0	12.4	#321.1		#24.6	147.7		4.8	#283.6	73.4
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	124	808	737	431	748		85	675		215	609	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	1.15	0.40	0.06	0.10	1.02		0.66	0.68		0.03	1.05	0.53

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 163.8
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.15
Intersection Signal Delay: 70.4 Intersection LOS: E
Intersection Capacity Utilization 112.3% 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: 3: Merivale Road & Fallowfield Road

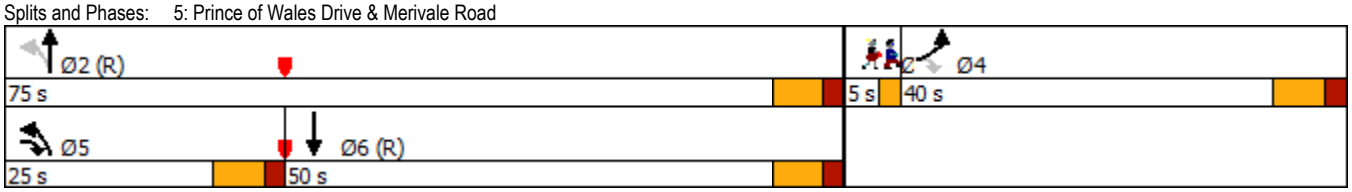


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	36	631	202	399	1083	19	
Future Volume (vph)	36	631	202	399	1083	19	
Satd. Flow (prot)	1642	1483	1566	1745	3338	0	
Flt Permitted	0.950		0.092				
Satd. Flow (perm)	1642	1483	152	1745	3338	0	
Satd. Flow (RTOR)		88			2		
Lane Group Flow (vph)	36	631	202	399	1102	0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA		
Protected Phases	4	5	5	2	6		3
Permitted Phases		4	2				
Total Split (s)	40.0	25.0	25.0	75.0	50.0		5.0
Total Lost Time (s)	6.8	6.4	6.4	6.5	6.5		
Act Effct Green (s)	33.2	55.0	68.6	68.5	47.1		
Actuated g/C Ratio	0.28	0.46	0.57	0.57	0.39		
v/c Ratio	0.08	0.87	0.77	0.40	0.84		
Control Delay	32.8	38.5	43.1	15.8	40.8		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	32.8	38.5	43.1	15.8	40.8		
LOS	C	D	D	B	D		
Approach Delay	38.2			25.0	40.8		
Approach LOS	D			C	D		
Queue Length 50th (m)	5.8	104.8	26.3	45.8	114.1		
Queue Length 95th (m)	13.4	#152.2	49.8	65.8	#155.6		
Internal Link Dist (m)	226.4			296.0	231.6		
Turn Bay Length (m)	80.0		90.0				
Base Capacity (vph)	454	727	306	996	1311		
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	0.08	0.87	0.66	0.40	0.84		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 36.0 — Intersection LOS: D
Intersection Capacity Utilization 84.2% — 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: 5: Prince of Wales Drive & Merivale Road

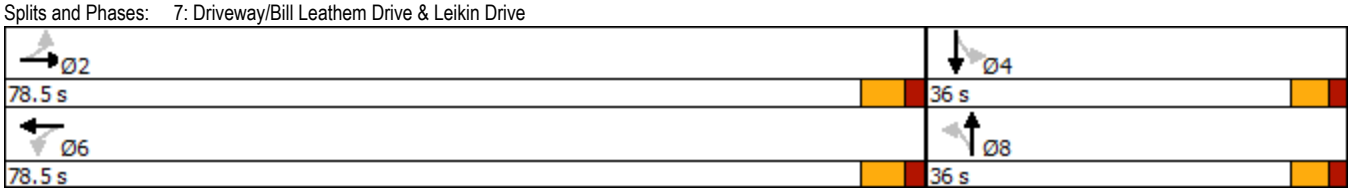


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	57	0	0	364	183	0	1	0	43	0	186
Future Volume (vph)	65	57	0	0	364	183	0	1	0	43	0	186
Satd. Flow (prot)	1691	1534	0	1780	1654	0	0	1780	0	0	1524	0
Flt Permitted	0.369										0.941	
Satd. Flow (perm)	656	1534	0	1780	1654	0	0	1780	0	0	1447	0
Satd. Flow (RTOR)					44						186	
Lane Group Flow (vph)	65	57	0	0	547	0	0	1	0	0	229	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	78.5	78.5		78.5	78.5		36.0	36.0		36.0	36.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6			5.0			5.0	
Act Effct Green (s)	18.4	18.4			18.4			10.6			10.6	
Actuated g/C Ratio	0.46	0.46			0.46			0.27			0.27	
v/c Ratio	0.21	0.08			0.69			0.00			0.44	
Control Delay	8.1	6.0			12.9			13.0			7.6	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	8.1	6.0			12.9			13.0			7.6	
LOS	A	A			B			B			A	
Approach Delay		7.1			12.9			13.0			7.6	
Approach LOS		A			B			B			A	
Queue Length 50th (m)	2.1	1.7			20.6			0.1			1.8	
Queue Length 95th (m)	6.9	5.3			45.6			0.9			15.5	
Internal Link Dist (m)		337.1			182.1			90.9			596.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	656	1534			1654			1411			1186	
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	0.04			0.33			0.00			0.19	

Intersection Summary

Cycle Length: 114.5
Actuated Cycle Length: 39.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 10.8 Intersection LOS: B
Intersection Capacity Utilization 75.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 7: Driveway/Bill Leathem Drive & Leikin Drive

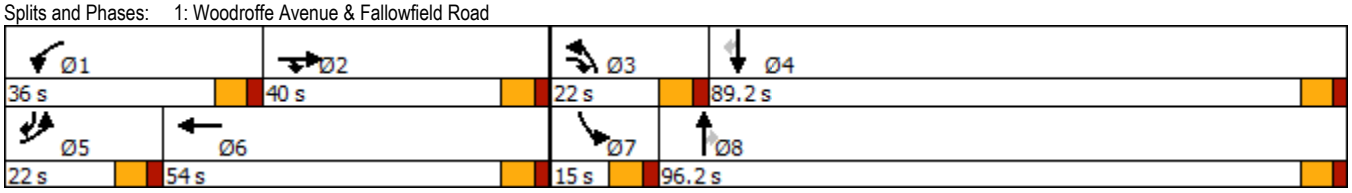


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	248	736	576	545	12	397	763	243	17	1641	627
Future Volume (vph)	204	248	736	576	545	12	397	763	243	17	1641	627
Satd. Flow (prot)	3216	3252	2637	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	2637	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)					1				243			141
Lane Group Flow (vph)	204	248	736	576	557	0	397	763	243	17	1641	627
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	2 3	1	6		3	8		7	4	5
Permitted Phases									8			4
Total Split (s)	22.0	40.0		36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.7	33.2	55.2	29.2	47.7		15.2	95.6	95.6	7.1	82.4	103.9
Actuated g/C Ratio	0.08	0.18	0.29	0.16	0.25		0.08	0.51	0.51	0.04	0.44	0.56
v/c Ratio	0.81	0.43	0.95	1.13	0.66		1.54	0.45	0.29	0.27	1.11	0.71
Control Delay	107.6	71.3	85.6	147.1	66.9		310.9	31.0	3.6	97.4	108.5	28.0
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	107.6	71.3	85.6	147.1	66.9		310.9	31.0	3.6	97.4	108.5	28.0
LOS	F	E	F	F	E		F	C	A	F	F	C
Approach Delay		86.4			107.7			105.4			86.3	
Approach LOS		F			F			F			F	
Queue Length 50th (m)	36.2	40.6	142.1	~117.5	91.5		~98.3	91.9	0.0	5.8	~339.0	123.1
Queue Length 95th (m)	#53.4	54.8	#182.2	#153.6	111.5		#131.3	109.7	14.5	14.5	#376.1	168.5
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	777	511	845		258	1709	842	74	1474	886
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	0.78	0.43	0.95	1.13	0.66		1.54	0.45	0.29	0.23	1.11	0.71

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.54
Intersection Signal Delay: 94.8 Intersection LOS: F
Intersection Capacity Utilization 109.4% 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: 1: Woodroffe Avenue & Fallowfield Road

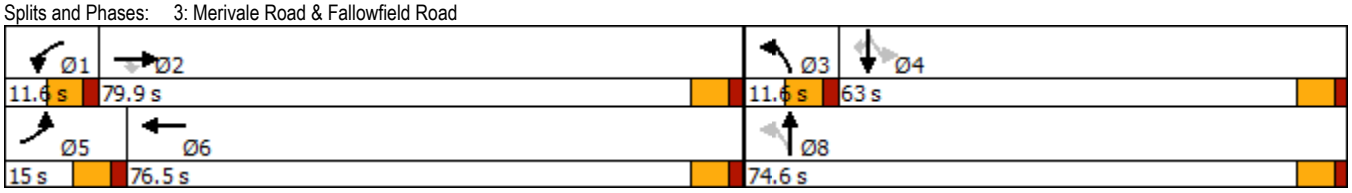


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	321	44	41	760	4	56	286	171	6	639	328
Future Volume (vph)	143	321	44	41	760	4	56	286	171	6	639	328
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1589	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.063			0.351		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	103	1589	0	625	1762	1498
Satd. Flow (RTOR)			108					22				149
Lane Group Flow (vph)	143	321	44	41	764	0	56	457	0	6	639	328
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	15.0	79.9	79.9	11.6	76.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	8.5	75.8	75.8	5.1	70.0		65.6	65.8		56.7	56.7	56.7
Actuated g/C Ratio	0.05	0.46	0.46	0.03	0.43		0.40	0.40		0.35	0.35	0.35
v/c Ratio	0.95	0.40	0.06	0.79	1.01		0.66	0.70		0.03	1.05	0.53
Control Delay	137.1	32.1	0.2	150.6	80.4		66.4	45.4		37.3	100.8	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	137.1	32.1	0.2	150.6	80.4		66.4	45.4		37.3	100.8	26.4
LOS	F	C	A	F	F		E	D		D	F	C
Approach Delay		58.9			84.0			47.7			75.3	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	22.8	66.5	0.0	12.7	~245.9		10.4	108.8		1.2	~213.6	43.9
Queue Length 95th (m)	#44.7	91.1	0.0	#34.7	#317.7		#24.6	147.7		4.8	#283.6	73.4
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	150	808	737	52	759		85	675		215	609	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	0.95	0.40	0.06	0.79	1.01		0.66	0.68		0.03	1.05	0.53

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 163.8
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 69.8 Intersection LOS: E
Intersection Capacity Utilization 108.2% 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: 3: Merivale Road & Fallowfield Road

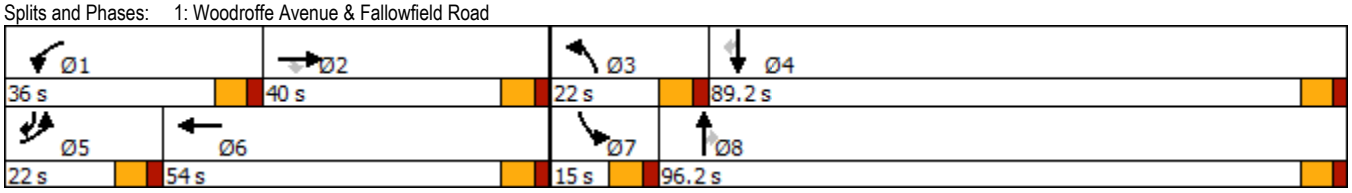


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	248	416	511	545	12	257	763	243	17	1481	627
Future Volume (vph)	204	248	416	511	545	12	257	763	243	17	1481	627
Satd. Flow (prot)	3216	3252	1498	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	1498	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)			181		1				243			141
Lane Group Flow (vph)	204	248	416	511	557	0	257	763	243	17	1481	627
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2						8			4
Total Split (s)	22.0	40.0	40.0	36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.7	33.2	33.2	29.2	47.7		15.2	95.6	95.6	7.1	82.4	103.9
Actuated g/C Ratio	0.08	0.18	0.18	0.16	0.25		0.08	0.51	0.51	0.04	0.44	0.56
v/c Ratio	0.81	0.43	1.00	1.00	0.66		1.00	0.45	0.29	0.27	1.00	0.71
Control Delay	107.6	71.3	86.6	116.7	66.9		138.0	31.0	3.6	97.4	75.8	28.0
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	107.6	71.3	86.6	116.7	66.9		138.0	31.0	3.6	97.4	75.8	28.0
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		87.2			90.7			47.5			61.8	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	36.2	40.6	~91.5	92.2	91.5		46.4	91.9	0.0	5.8	~270.7	123.1
Queue Length 95th (m)	#53.4	54.8	#160.1	#128.9	111.5		#75.9	109.7	14.5	14.5	#317.2	168.5
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	414	511	845		258	1709	842	74	1474	886
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	0.78	0.43	1.00	1.00	0.66		1.00	0.45	0.29	0.23	1.00	0.71

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 68.3 Intersection LOS: E
Intersection Capacity Utilization 102.8% 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: 1: Woodroffe Avenue & Fallowfield Road

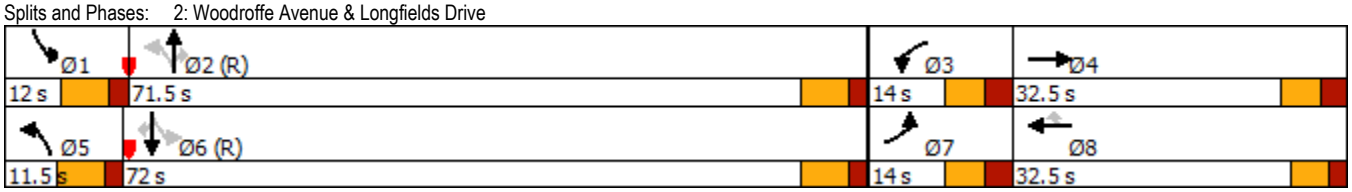


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	17	70	79	67	196	89	921	39	107	1743	223
Future Volume (vph)	155	17	70	79	67	196	89	921	39	107	1743	223
Satd. Flow (prot)	3216	1528	0	1691	1780	1483	1642	3316	1513	1691	3349	1513
Flt Permitted	0.950			0.950			0.053			0.257		
Satd. Flow (perm)	3216	1528	0	1691	1780	1463	92	3316	1513	457	3349	1470
Satd. Flow (RTOR)		70				153			138			223
Lane Group Flow (vph)	155	87	0	79	67	196	89	921	39	107	1743	223
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		6
Total Split (s)	14.0	32.5		14.0	32.5	32.5	11.5	71.5	71.5	12.0	72.0	72.0
Total Lost Time (s)	6.5	6.5		6.5	5.6	5.6	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	7.5	13.5		7.5	14.4	14.4	83.5	75.6	75.6	82.4	75.1	75.1
Actuated g/C Ratio	0.06	0.10		0.06	0.11	0.11	0.64	0.58	0.58	0.63	0.58	0.58
v/c Ratio	0.84	0.39		0.81	0.34	0.66	0.58	0.48	0.04	0.30	0.90	0.24
Control Delay	94.8	21.0		111.3	56.3	24.7	35.7	17.6	0.1	10.2	32.7	2.6
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	94.8	21.0		111.3	56.3	24.7	35.7	17.6	0.1	10.2	32.7	2.6
LOS	F	C		F	E	C	D	B	A	B	C	A
Approach Delay		68.3			50.9			18.5			28.3	
Approach LOS		E			D			B			C	
Queue Length 50th (m)	19.0	3.8		18.8	15.3	9.8	6.2	59.2	0.0	6.9	171.6	0.0
Queue Length 95th (m)	#36.4	16.5		#44.7	25.4	29.1	#34.6	94.8	0.0	17.7	#271.0	11.4
Internal Link Dist (m)		414.1			608.0			438.8			832.6	
Turn Bay Length (m)	80.0			100.0		115.0	70.0		70.0	75.0		190.0
Base Capacity (vph)	185	361		97	368	424	153	1928	937	359	1933	942
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	0.84	0.24		0.81	0.18	0.46	0.58	0.48	0.04	0.30	0.90	0.24

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 30.2 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.

Splits and Phases: 2: Woodroffe Avenue & Longfields Drive

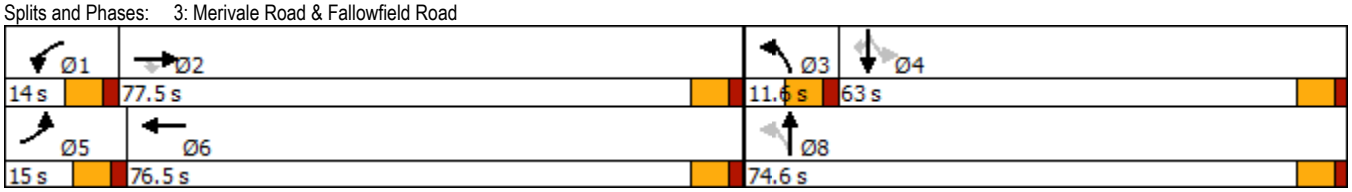


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	321	44	41	630	4	56	286	171	6	539	328
Future Volume (vph)	143	321	44	41	630	4	56	286	171	6	539	328
Satd. Flow (prot)	2903	1745	1469	1691	1778	0	1551	1589	0	1691	1762	1498
Flt Permitted	0.950			0.950			0.113			0.367		
Satd. Flow (perm)	2903	1745	1469	1691	1778	0	185	1589	0	653	1762	1498
Satd. Flow (RTOR)			108					22				177
Lane Group Flow (vph)	143	321	44	41	634	0	56	457	0	6	539	328
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		4
Total Split (s)	15.0	77.5	77.5	14.0	76.5		11.6	74.6		63.0	63.0	63.0
Total Lost Time (s)	6.5	6.6	6.6	6.5	6.6		6.6	6.4		6.4	6.4	6.4
Act Effct Green (s)	8.9	62.1	62.1	7.3	56.6		57.1	57.3		48.8	48.8	48.8
Actuated g/C Ratio	0.06	0.43	0.43	0.05	0.39		0.40	0.40		0.34	0.34	0.34
v/c Ratio	0.79	0.43	0.06	0.48	0.90		0.46	0.71		0.03	0.90	0.52
Control Delay	98.9	33.5	0.2	93.1	59.3		41.4	41.7		36.7	66.1	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	98.9	33.5	0.2	93.1	59.3		41.4	41.7		36.7	66.1	21.2
LOS	F	C	A	F	E		D	D		D	E	C
Approach Delay		49.0			61.4			41.7			49.0	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	21.4	67.5	0.0	11.7	170.8		9.5	98.8		1.1	143.6	33.1
Queue Length 95th (m)	#44.7	93.6	0.0	#27.0	224.5		19.6	147.7		4.8	#217.4	65.1
Internal Link Dist (m)		1803.9			258.6			431.1			330.0	
Turn Bay Length (m)	75.0		100.0	25.0			50.0			30.0		55.0
Base Capacity (vph)	180	907	815	92	911		123	805		271	731	725
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	0.79	0.35	0.05	0.45	0.70		0.46	0.57		0.02	0.74	0.45

Intersection Summary

Cycle Length: 166.1
Actuated Cycle Length: 143.4
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 50.8 Intersection LOS: D
Intersection Capacity Utilization 96.4% 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: 3: Merivale Road & Fallowfield Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	248	733	511	545	12	256	759	243	17	1477	627
Future Volume (vph)	204	248	733	511	545	12	256	759	243	17	1477	627
Satd. Flow (prot)	3216	3252	2637	3281	3318	0	3185	3349	1455	1691	3349	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3216	3252	2637	3281	3318	0	3185	3349	1417	1691	3349	1483
Satd. Flow (RTOR)					1				243			141
Lane Group Flow (vph)	204	248	733	511	557	0	256	759	243	17	1477	627
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2	2 3	1	6		3	8		7	4	5
Permitted Phases									8			4
Total Split (s)	22.0	40.0		36.0	54.0		22.0	96.2	96.2	15.0	89.2	22.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		6.8	6.8	6.8	6.8	6.8	6.8
Act Effct Green (s)	14.7	33.2	55.2	29.2	47.7		15.2	95.6	95.6	7.1	82.4	103.9
Actuated g/C Ratio	0.08	0.18	0.29	0.16	0.25		0.08	0.51	0.51	0.04	0.44	0.56
v/c Ratio	0.81	0.43	0.94	1.00	0.66		0.99	0.44	0.29	0.27	1.00	0.71
Control Delay	107.6	71.3	84.9	116.7	66.9		137.0	30.9	3.6	97.4	75.2	28.0
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	107.6	71.3	84.9	116.7	66.9		137.0	30.9	3.6	97.4	75.2	28.0
LOS	F	E	F	F	E		F	C	A	F	E	C
Approach Delay		86.0			90.7			47.2			61.4	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	36.2	40.6	141.3	92.2	91.5		46.3	91.3	0.0	5.8	~268.1	123.1
Queue Length 95th (m)	#53.4	54.8	#180.6	#128.9	111.5		#75.2	109.0	14.5	14.5	#315.7	168.5
Internal Link Dist (m)		428.1			118.6			832.6			662.7	
Turn Bay Length (m)	80.0		115.0	85.0			45.0		230.0	70.0		300.0
Base Capacity (vph)	261	576	777	511	845		258	1709	842	74	1474	886
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	0.78	0.43	0.94	1.00	0.66		0.99	0.44	0.29	0.23	1.00	0.71

Intersection Summary

Cycle Length: 187.2
Actuated Cycle Length: 187.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 69.0 Intersection LOS: E
Intersection Capacity Utilization 102.6% 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: 1: Woodroffe Avenue & Fallowfield Road