TRAFFIC IMPACT ASSESSMENT (DRAFT)
STEP 4 – ANALYSIS REPORT

Project No.: 0CP-21-2432-06

Prepared for:

Mac's Convenience Stores Inc.
(Circle K) - Central Canada Division
305 Milner Ave., Suite 400
Toronto, ON. M1B 3V4

Prepared by:

McIntosh Perry Consulting Engineers Ltd.
115 Walgreen Road
Carp, ON
K0A 1L0

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McINTOSH PERRY

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1.0 SCREENING FORM

The following section describes the initial assessment of the proposed development 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 Trip Generation Triggers

The proposed development's land use types are gas station with convenience market and fast-food restaurant with drive-through window. The fast-food portion of the development has a total Gross Floor Area (GFA) of 111.4 m^2, where the gas and convenience market has a GFA of 333.6 m^2. The development size is larger than the minimum of 100 m^2 for fast food restaurant. As such, the criteria for the trip generation trigger is met.

1.2 Location Trigger

The proposed development is neither located within a Design Priority Area (DPA) or a Transit-oriented Development (TOD) zone. The site will have a new driveway access onto Woodroffe Avenue which is designated as part of the City's Rapid Transit Network, and Spine Bicycle Network. As such, the criteria for a location trigger has not been met.

1.3 Safety Trigger

The proposed development has two driveways within 150 m of a Signalized intersection (Woodroffe Avenue and Medhurst Drive). As there is a significant number of collisions located within a 500 m radius of the proposed development and it includes a drive-thru, the criteria for a safety trigger has been met.

2.0 DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed development will be located at 1545 Woodroffe Avenue in Nepean. The proposed development has a lot area of 7818.8 m^2 and is located within the northeast quadrant of the signalized intersection of Woodroffe Avenue and Medhurst Drive. The proposed development is expected to include a gas station with a convenience market (333.6 m^2), a retail area (55.8 m^2), a fast food restaurant with drive thru (111.4 m^2), a fueling area with 12 fueling pumps, and, a car wash with a single automated bay (122.6 m^2). The build-out date is expected to be 2022. *Figure 2.1* shows the location of the proposed development, subject lands, and surrounding area. The site plan can be found in Appendix B.

Figure 2.1 Proposed Development Location

The development is in a General Mixed-Use zone with a subcode of GM15 under The City of Ottawa Zoning By-Law. The zone permits the development of automobile service stations, car washes and gas bars.

Table 2.1 Illustrates the land use, associated trip generation based on the average rate from ITE Trip Generation Manual, 10th Edition methods and data for Lan Use Code (LUC) 937 (coffee/donut shop with drive through), 960 (super convenience market/gas station), 882 (marijuana dispensary), and, 948 (automated car was).

Table 2.1 ITE Trip Generation

Description	Development Area	ITE Land Use Code Description	ITE LUC	Trip Generation Rate		Trip Generation			
						AM Peak		PM Peak	
				AM Peak	PM Peak	Entering	Exiting	Entering	Exiting
Fast-food restaurant with drive through	1200 ft^2 (111.4 m^2)	coffee/donut shop with drive through	937	88.99	43.38	54	53	26	26
Gas Station with Convenience Market	12 fueling spots / (333.6 m^2)	Super convenience Market/Gas Station	960	28.08	22.96	168	169	138	138
Marijuana Dispensary	600 ft^2 (55.8 m^2)	Marijuana Dispensary	882	10.44	21.83	3	3	6	7
Car Wash	1320 ft^2 (122.6 m^2)	Automated Car Was	948	N/a	14.2	N/a	N/a	9	10
Total						225	225	179	181

From the table above, it is shown that the proposed development is expected to generate 450 trips during the AM peak hour, 225 entering and 225 exiting the proposed site. During the PM peak, the proposed development is expected to generate 360 total trips, 179 entering and 181 exiting the proposed site. All trip generation is based on vehicle trips, as per the City of Ottawa TIA Guidelines all trip generation must be person trips. As such all generated trips are multiplied by 1.28 resulting in; 576 trips during the AM peak hour, 288 entering and 288 exiting the proposed site, 461 total trips, 229 entering and 232 exiting the proposed site.

3.0 EXISTING CONDITIONS

The following outlines the existing site characteristics and a summary of the expected development transportation conditions.

3.1 Roadways

The following section outlines the existing roadways in the study area obtained from the City of Ottawa Official Plan, Annex 1 – Road Classification and Right-of-Way. MP performed a field review on March 29, 2021, to confirm geometries, lane configurations and existing conditions carried forward in the TIA.

Within the vicinity of the proposed development, is Woodroffe Avenue, a four-lane divided urban arterial roadway with a 44.5 m right-of-way. Woodroffe Avenue runs north-south, with a posted speed limit of 60 km/h, concrete sidewalks, a designated bike and a designated transit priority lane within the vicinity of the proposed development.

Within the vicinity of the proposed development, Medhurst Avenue is a two-lane undivided urban collector roadway, with a 24 m right-of-way. Medhurst Avenue runs east-west, with a posted speed limit of 40 km/h, concrete sidewalks on both sides of the roadway

Within the vicinity of the proposed development, West Hunt Club Road is a four-lane divided urban arterial roadway, with a 30 m right-of-way. West Hunt Club road runs east-west, with a posted speed limit of 80 km/h, a multi-use pathway running parallel with the westbound lane.

Within the vicinity of the proposed development, Knoxdale Road is a two-lane undivided urban collector, with a 24 m right-of-way. Knoxdale Road runs east-west, with a posted speed limit of 40 km/h and has concrete sidewalks on both sides of the roadway.

Within the vicinity of the proposed development, Meadowlands Drive is a two-lane undivided urban major collector, with a 26 m right-of-way. Meadowlands Drive runs east-west, with a posted speed limit of 40 km/h and has concrete sidewalks on both sides of the roadway.

Within the vicinity of the proposed development, Tallwood Drive is a four-lane divided urban collector, with a 28 m right-of-way. Tallwood Drive runs east-west, with a posted speed limit of 40 km/h and has concrete sidewalks on both sides of the roadway.

3.2 Intersections

The following section documents the existing intersection within the study area, their control type, lane configurations, turning restrictions, and, any other relevant data. The following three intersections were identified within the study area:

- Woodroffe Avenue at West Hunt Club Road;
- Woodroffe Avenue at Medhurts Drive/Knoxdale Road, and
- Woodroffe Avenue at Meadowlands Drive/Tallwood Drive.

3.2.1 Woodroffe Avenue at West Hunt Club Road

Woodroffe Avenue at West Hunt Club Road is a four leg, signalized intersection, located to the south of the proposed development.

Figure 3.1 Woodroffe Avenue at West Hunt Club Road

- Woodroffe Avenue – Northbound: 5 lane cross section, one left-turn lane, two through lanes, one channelized right-turn lane, one designated transit priority lane, and a designated bike lane with posted signage.
- Woodroffe Avenue – Southbound: 6 lane cross section, two left-turn lane, two through lanes, one channelized right-turn lane, one designated transit priority lane, and a designated bike lane with posted signage.
- West Hunt Club Road – Eastbound: 4 lane cross section, one left-turn lane, two through lanes, one channelized right-turn lane and a designated bike lane with posted signage.
- West Hunt Club Road – Westbound: 4 lane cross section, one left-turn lane, two through lanes, one channelized right-turn lane and a designated bike lane with posted signage.

3.2.2 Woodroffe Avenue at Medhurts Drive/Knoxdale Road

Woodroffe Avenue at Medhurst Drive/Knoxdale Road is a four leg, signalized intersection, located adjacent to the proposed development.

Figure 3.2 Woodroffe Avenue at Medhurst Drive/Knoxdale Road

- Woodroffe Avenue – Northbound: 4 lane cross section, one left-turn lane, two through lanes, one shared right-turn lane/designated transit priority lane, and a designated bike lane with posted signage.
- Woodroffe Avenue – Southbound: 5 lane cross section, one left-turn lane, two through lanes, one channelized right-turn lane, one designated transit priority lane, and a designated bike lane with posted signage.
- Knoxdale Road – Eastbound: 4 lane cross section, two left-turn lanes, one through lane, one channelized right-turn lane.
- Medhurst Drive – Westbound: 2 lane cross section, one left-turn lane and one shared right-through lane.

3.2.3 Woodroffe Avenue at Meadowlands Drive/Tallwood Drive

Woodroffe Avenue at Meadowlands Drive/Tallwood Drive is a four leg, signalized intersection, located adjacent to the proposed development.

Figure 3.3 Woodroffe Avenue at Meadowlands Drive/Tallwood Drive

- Woodroffe Avenue – Northbound: 6 lane cross section, two left-turn lanes, two through lanes, one channelized right-turn lane, and one designated transit priority lane,
- Woodroffe Avenue – Southbound: 5 lane cross section, one left-turn lane, two through lanes, one channelized right-turn lane, one designated transit priority lane, and a designated bike lane with posted signage.
- Tallwood Drive – Eastbound: 3 lane cross section, one left turn lane, one through lane, and one channelized right turn lane.
- Meadowlands Drive – Westbound: 4 lane cross section, two left turn lanes, one through lane, and one channelized right turn lane.

3.3 Existing Driveways

The following section documents the existing driveway entrance within a 200m of the proposed site access. *Figure 3.4* illustrates the driveways within the vicinity of the proposed site.

Figure 3.4 Existing Driveways

As shown in the *Figure 3.4* there are numerous private driveways within 200m of the proposed site. On Medhusrt Drive there are 12 private driveways, on Brockington Crescent there are 37 private driveways, and on Abitibi Crescent there are 8 private driveways, all within 200m of the proposed development.

3.4 Existing Multi-Use Pathways

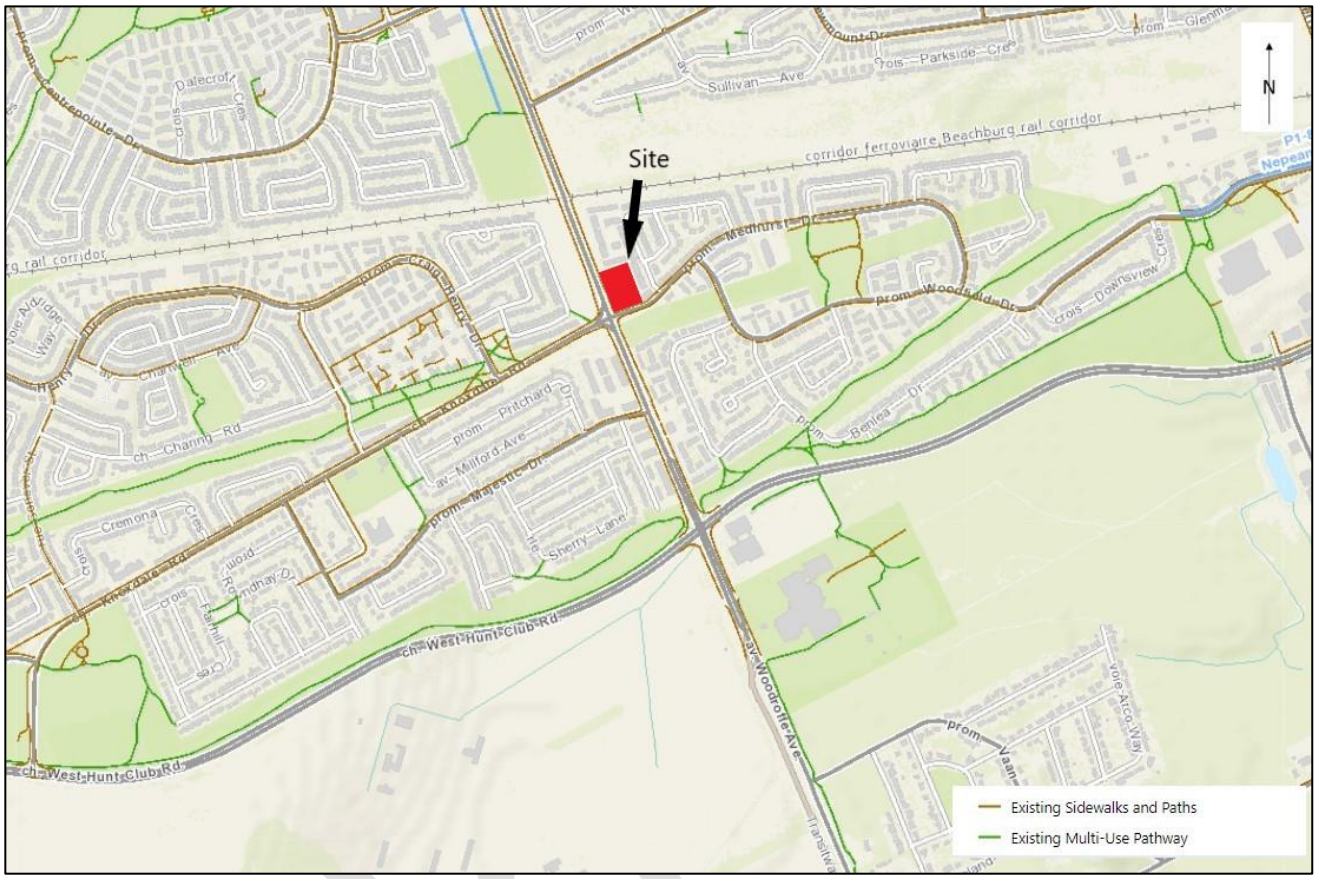


Figure 3.5 Existing Multi-use Pathways

As shown in the *Figure 3.5*, there are multiple multi-use pathways within the vicinity of the proposed development. There is a network of multi-use pathways that run parallel to West Hunt Club Road, a network of multi-use pathways that run parallel to Knoxdale Road, and multiple multi-use pathways connecting all neighbourhoods within the vicinity of the proposed development.

3.5 Existing Transit Network

The following section documents the existing transit networks within the surrounding area. *Figure 3.6* illustrates the existing bus routes within the study area of the proposed site.

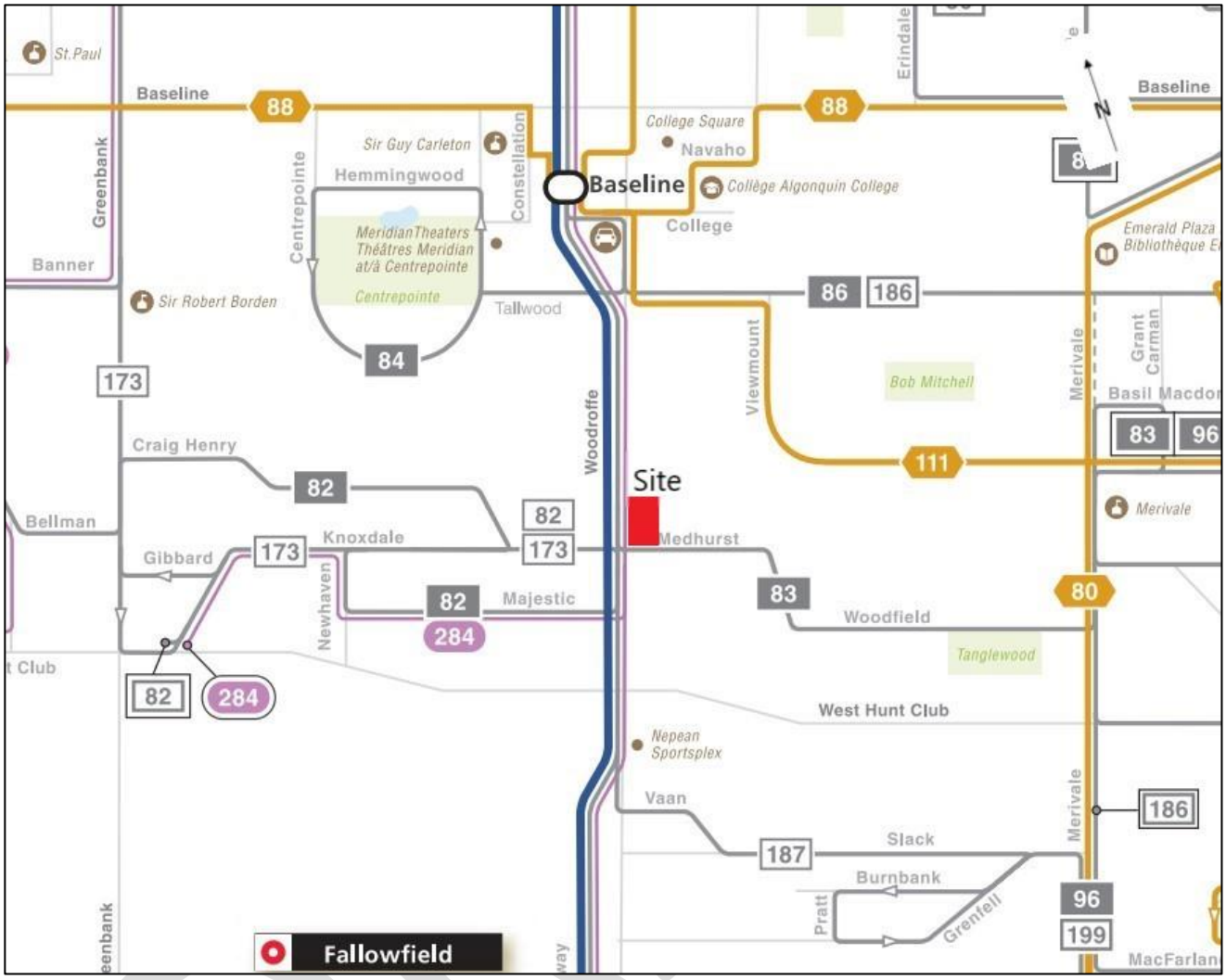


Figure 3.6 Existing Transit Routes

Currently there are eight (8) transit routes that service the proposed development having stops at the intersection of Woodroffe Avenue and Medhurst Drive/Knoxdale Road, including:

- Route 73: Provides service from Leikin Street to Tunney's Pasture Station running approximately every 30 minutes;
- Route 74: Provides service from Riverview Station to Tunney's Pasture Station running approximately every 15 minutes;
- Route 75: Provides service from the Minto Recreational Center in Barrhaven to Tunney's Pasture during the hours of 5am to midnight. Between the hours of Midnight and 5am this route services from Barrhaven Station to the Rideau Centre Station running approximately every 15 minutes;
- Route 82: Provides service from the Barrhaven Station to Tunneys Pasture Station running approximately every 30 minutes;
- Route 83: Provides Service from Viewmount Drive and Grant Carman Drive to Tunneys Pasture Station running approximately every 30 minutes;

- Route 173: Provides service from Barrhaven Station to Bayshore Shopping Centre Station running approximately every 30 minutes;
- Route 187: Provides service from MacFarlane Road and Briggs Avenue to Baseline Station running approximately every 30 minutes from 6:30-8:00 and 14:40-17:50;
- Route 284: provides service from Knoxdale Road and Conover to Tunneys Pasture Station running approximately every 15 minutes from 6:30-9:00 and 15:00-18:30.

Figure 3.7 Illustrates the location of the transit stops within the vicinity of the proposed development.

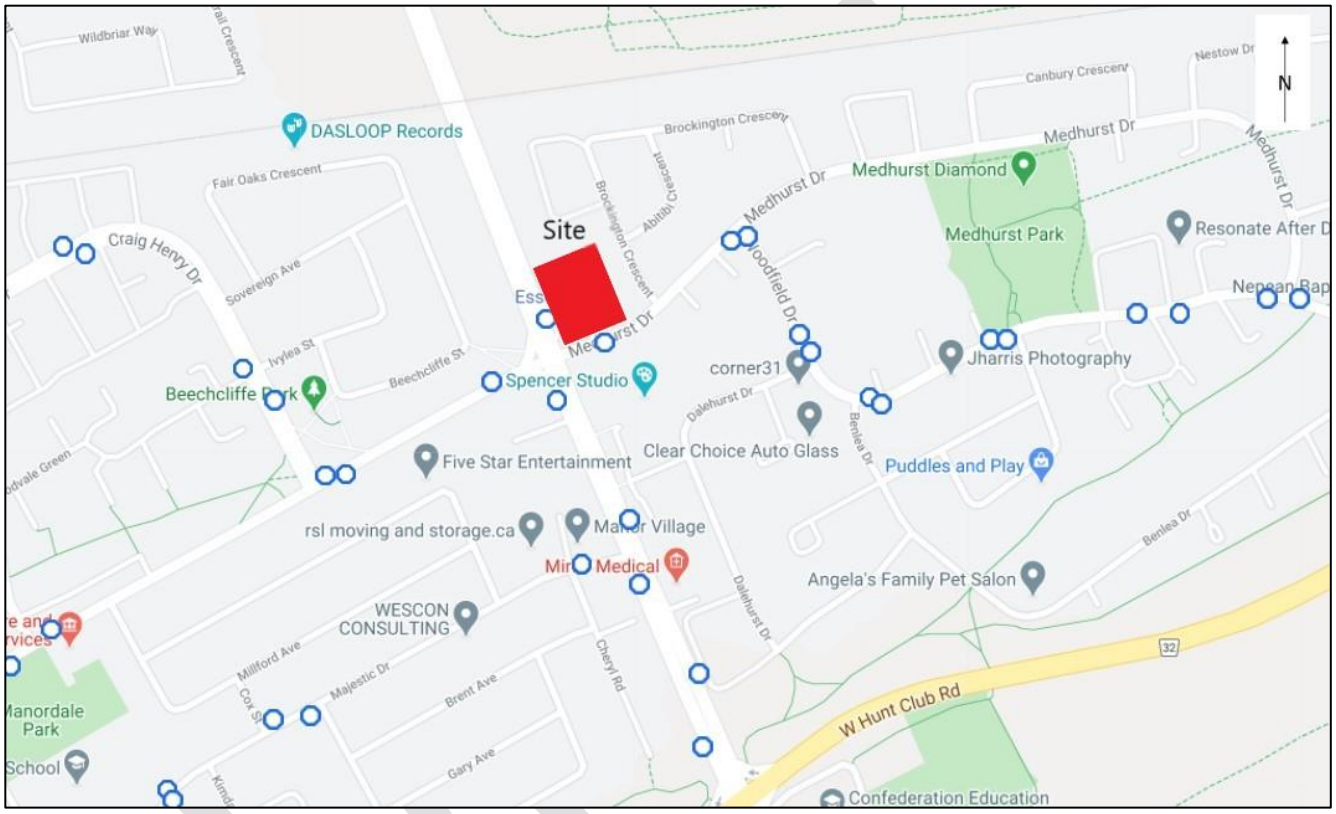


Figure 3.7 Transit Stop Locations

3.6 Existing Area Traffic Management Measures

Within a vicinity of 250 m of each study intersection no area traffic management measures were identified. No traffic calming measure was identified along Woodroffe Avenue corridor within the study area.

3.7 Existing Peak Hour Travel Demand by Mode

The proposed site is located in Ottawa's inner suburbs area. Transit mode shares leaving the area to other areas of Ottawa account for 24% of morning peak period trips as of 2011, where the 2031 target for transit mode shares leaving is 28%. The 2011 transit mode shares of the morning peak trips arriving to the area is 16% where the target 2031 rate is 21%.

Based on the most recent Capital Region Origin-Destination Survey which was conducted in Winter 2012, for the Merivale area can be found in *Appendix C.* Based on this survey the Merivale area was shown to have the following mode shares; 15 % of auto passenger, 18% transit, 2 % bicycle, 2 % walking and 2 % other. It should be noted that the other category accounts for trips such as taxis, school buses, motorcycle and scooters. As such for the purposes of modelling the traffic conditions and projections of future conditions, the percentages of other trips will be distributed to auto driver, resulting in 63% auto driver trips.

3.8 Existing Collision History

Collision data was provided by the city for the years 2015-2019. The data was reviewed for boundary roads within the study area, as identified in *section 3.0***.** The data was divided into 7 sections, **Table 3.1** illustrates the data.

- West Hunt Club Road Between Knoxdale Road and 354m East of Woodrofffe Avenue;
- Knoxdale Road Between Woodroffe Avenue and Bertona Street;
- Medhurst Drive Between Woodroffe Avenue and Woodfield Drive;
- Tallwood Drive Between Woodroffe Avenue and Centerpoint Drive;
- Meadowlands Drive Between Woodroffe Avenue and Thatcher Street;
- Woodroffe Avenue Between Meadowlands Drive and Medhurst Drive; and,
- Woodroffe Avenue Between Medhurst Drive and West Hunt Club Road.

Table 3.1 Collision data

Location	Collisions							
	2015	2016	2017	2018	2019	total	Cyclist	Pedestrian
West Hunt Club Road Between Knoxdale Road and 354 m East of Woodrofffe Avenue	29	38	50	33	30	180	1	0
Knoxdale Road Between Woodroffe Avenue and Bertona Street	1	1	1	1	1	5	0	0
Medhurst Drive Between Woodroffe Avenue and Woodfield Drive	1	2	2	0	0	5	0	0
Tallwood Drive Between Woodroffe Avenue and Centerpoint Drive	5	1	1	3	4	14	0	0
Meadowlands Drive Between Woodroffe Avenue and Thatcher Street	22	18	19	15	18	92	0	0

Location	Collisions							
	2015	2016	2017	2018	2019	total	Cyclist	Pedestrian
Woodroffe Avenue Between Meadowlands Drive and Medhurst Drive	34	23	28	35	26	146	2	0
Woodroffe Avenue Between Medhurst Drive and West Hunt Club Road	2	5	3	3	3	16	0	2

As seen from the table above there was a total of 180 vehicle and 1 cyclist collisions on West Hunt Club Road between Knoxdale Road and 354m East of Woodroffe Avenue, 5 collisions on Knoxdale Road between Woodroffe Avenue and Bertona Street, 5 collisions on Medhurst Drive between Woodroffe Avenue and Woodfield Drive, 14 collisions on Tallwood Drive between Woodroffe Avenue and Centerpoint Drive, 92 collisions on Meadowlands Drive between Woodroffe Avenue and Thatcher Street, 146 vehicular and 2 cyclists collisions on Woodroffe Avenue between Meadowlands Drive and Medhurst Drive, and, 16 vehicular and 2 pedestrian collisions on Woodroffe Avenue between Medhurst Drive and West Hunt Club Road. When reviewing the TMC data and collision data in conjunction of one another we can see that, there is a relatively low number of cyclist using the roadway network within the study area. This causes some concern with number of collisions involving cyclist. However, the number of pedestrians that use the network within the study area is a significantly larger number than that of the cyclist it is to be expected that there would collisions noted with pedestrians.

3.9 Existing Traffic Volumes

MP obtained TMC data rom the City of Ottawa for the following Intersections:

- Woodroffe Avenue at West Hunt Club Road (2019-10-22);
- Woodroffe Avenue at Medhurts Drive/Knoxdale Road (2018-01-16); and,
- Woodroffe Avenue at Meadowlands Drive/Tallwood Drive (2016-03-23).

In order to use these counts, MP utilized a growth factor of 1.5% to adjust values to 2021. This factor was decided based on the City of Ottawa Transportation Master Plan, which states that the City of Ottawa is expected to increase its population from 922,00 to 1.14 Million residents from 2011 to 2031. This results in an annual growth rate of 1.1%. Since traffic growth is a function of both population and employment growth, a growth rate of 1.5% was used to ensure that both background growths are taken into account. The TMC data received and the 2021 baseline Traffic Volume scenario for the AM and PM Peak periods can be found in Appendix C.

3.10 Existing Traffic Operations

Level of Service (LOS) is a qualitative measure of the operating conditions, based on lane configuration, signal operation/phasing. LOS criteria for signalized and unsignalized intersection based on the Multi Modal Level Of Service (MMLOS) Guidelines, are illustrated in **Table 3.2.**

Table 3.2 Definition of LOS for Intersections

Level of Service	v/c Ratio
A	0 to 0.60
B	0.61 to 0.70
C	0.71 to 0.80
D	0.81 to 0.90
E	0.91 to 1.00
F	> 1.00

Existing traffic operations analysis was performed using Synchro 10 software. Signal timing information was provided by the city. **Table 3.3** summarizes the existing conditions.

Table 3.3 Existing Conditions

	Intersection LOS		AM Peak Hour			PM Peak Hour		
	AM	PM	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)
Woodroffe Avenue and West Hunt Club Road								
EBL	F	E	C	0.72	82.6	F	1.03	144.1
EBT			F	1.14	112.0	A	0.60	39.9
EBR			A	0.30	10.1	C	0.75	28.8
WBL			A	0.59	75.1	A	0.57	68.7
WBT			C	0.74	44.1	F	1.06	84.6
WBR			A	0.31	9.7	A	0.46	18.9
NBL			F	1.01	137.7	F	1.23	188.1
NBT			F	1.37	211.7	D	0.81	52.5
NBR			A	0.48	14.8	A	0.20	2.8
SBL			F	1.32	201.6	A	0.60	31.3
SBT			B	0.67	60.7	F	1.13	111.4
SBR			A	0.27	20.3	A	0.36	21.9
Woodroffe Avenue and Medhurst Drive/Knoxdale Road								
EBL	C	D	C	0.77	57.8	C	0.75	77.2
EBT			B	0.68	55.5	A	0.15	40.4
EBR			A	0.27	5.3	A	0.16	0.8
WBL			A	0.46	59.8	A	0.52	63.7
WBTR			C	0.79	46.5	D	0.82	59.8

	Intersection LOS		AM Peak Hour			PM Peak Hour		
	AM	PM	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)
NBL			A	0.45	91.1	C	0.78	106.9
NBT			E	0.98	18.3	C	0.78	23.4
NBR			A	0.12	0.0	A	0.15	0.6
SBL			C	0.75	115.1	D	0.83	85.2
SBT			A	0.58	31.9	E	0.99	58.0
SBR			A	0.21	4.6	C	0.71	18.6
Woodroffe Avenue and Meadowlands Drive/Tallwood Drive								
EBL			F	1.00	158.7	B	0.69	77.1
EBT			C	0.71	57.1	A	0.57	47.7
EBR			A	0.47	16.6	D	0.81	38.9
WBL			A	0.59	72.2	E	0.95	93.3
WBT			A	0.53	49.6	A	0.59	47.7
WBR	F	E	A	0.55	18.0	B	0.63	21.7
NBL			C	0.75	66.3	C	0.71	70.5
NBT			F	1.23	144.4	D	0.84	45.0
NBR			A	0.57	16.3	A	0.30	7.6
SBL			D	0.90	98.3	F	1.21	181.0
SBT			A	0.57	31.0	F	1.06	80.8
SBR			A	0.13	0.4	A	0.22	4.8
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T = Through, R = Right-turn								

The intersection of Woodroffe Avenue and West Hunt Club is operating at an overall LOS of F during the AM peak hour. All movements operate at a LOS of C or better, and a v/c or 0.74 or less with the exceptions of the eastbound through, northbound left, northbound through and the southbound left movement all operating above capacity. During the PM peak hour the intersection is operating at an LOS of E. All movements operate at a LOS of D or better with a v/c of 0.81 or less with the exceptions of the eastbound left, westbound through, northbound left and the southbound through movements, all operating above capacity.

The intersection of Woodroffe Avenue and Medhurst Drive/Knoxdale Road is operating at an LOS of C during the AM peak hour. All movements operate at a LOS of C or better with a v/c of 0.79 or less with the exception of the northbound through lane that operates at an LOS of E with a v/c of 0.98. During the PM peak hour, the intersection operates at an LOS of D. All movements operate at an LOS of D or better with a v/c of 0.83 or less, with the exception of the Southbound through lane that operates at an LOS of E and a v/c of 0.99.

The intersection of Woodroffe Avenue and Meadowlands Drive/Tallwood Drive operates at an LOS of F during the AM peak hour. All movements operate at and LOS of D or better with a v/c of 0.90 or less, with the exceptions of the eastbound left lane and the northbound through lane that operate above capacity. During the PM peak hour the intersection operates at an LOS of E. All movements operate at an LOS of E or better with a v/c of 0.95 or less with the exception of the southbound left and the southbound through lanes that operate above capacity.

The large volumes during the AM Peak hour heading northbound and eastbound through the study limits, and contrary, the high volumes during the PM Peak hour heading southbound and westbound show that the study area has a heavy commuter traffic pattern.

These patterns are consistent with what was seen during the field review done by MP. During the field review MP noted that the buses came infrequently, and based on the OC Transpo schedule it was confirmed that it is very likely that a bus will not trigger the transit priority phase at the intersection of Woodroffe and Meadowlands. As such the transit-priority phase was not coded into the synchro analysis, and 6 seconds were taking off the cycle length, instead of including a hold phase that would be present on each cycle. Synchro 10 reports can be found in Appendix D.

4.0 PLANNED CONDITIONS

4.1 Roadway Network Modifications

According to the City of Ottawa Transportation Master Plan, there are no roadway network modifications planned within the study area.

4.2 Other Study Area Developments

There are no other Development Applications within 500m of the proposed development.

5.0 STUDY AREA AND TIME PERIODS

5.1 Study Area

The proposed study area is limited to the following intersection:

- Woodroffe Avenue at West Hunt Club Road;
- Woodroffe Avenue at Medhurts Drive/Knoxdale Road; and,
- Woodroffe Avenue at Meadowlands Drive/Tallwood Drive.

5.2 Time Periods

The proposed time periods for the analysis are:

- AM Peak (8:00-9:00) hour of adjacent roadways, and;
- PM Peak (16:15-17:15) hour of adjacent roadways.

5.3 Horizon Years

The proposed horizon years for analysis are:

- Existing Conditions (2021);
- Future Background (2022) and Total Future Traffic (2022) Conditions; and,
- Horizon Background (2027) and Total Horizon Traffic (2027) Conditions.

6.0 EXEMPTION REVIEW

Table 6.1 summarizes the exemptions review in accordance with the City of Ottawa TIA Guidelines

Table 6.1 Exemptions Review

Module	Element	Exempted	Reasoning
Design Review Component			
4.1 Development Design	4.1.2 Circulation and Access	No	Not exempted due to being a Site Plan
	4.1.3 New Street Networks	Yes	The development is not a subdivision
4.2 Parking	4.2.1 Parking Supply	No	Not exempted due to being a Site Plan
	4.2.2 Spillover Parking	Yes	The development has more parking spots than needed 24 spaces required, 40 spaces will be provided
Network Impact Component			
4.5 Transportation Demand Management	All elements	Yes	The development is expected to have fewer than 60 employees
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbours	NO	The development uses collector and arterial streets for access
4.8 Network Concept		Yes	It is assumed that the gas station will not generate more than 200 new person trips during peak hour

7.0 DEVELOPMENT GENERATED TRAFFIC

As stated in Section 2.1, the development generated person traffic trips are expected to be: 576 trips during the AM peak hour (288 entering and 288 exiting the proposed site) and 461 total trips during the PM peak hour (229 entering and 232 exiting the proposed site), before reductions.

7.1 Trip Generation Reductions

As the site is currently in use by another gas station, the number of generated trips from the current gas station, with a convenience market, ITE Land Use Code 945, is to be reduced from the network. The reduction is summarized in **Table 7.1.**

Table 7.1 Existing Site Generated Trips

Description	Development Area	ITE Land Use Code Description	ITE LUC	Trip Generation			
				AM Peak		PM Peak	
				Entering	Exiting	Entering	Exiting
Gast station with convenience market	10	Gasoline/service station with convenience mart	945	65	61	71	69

As such, 126 trips, 65 entering and61 exiting will be reduced from the AM Peak hour generation and a total of 140 trips,714 entering and 69 exiting will be reduced form the PM Peak hour. **Table 7.2** states the development generated traffic with the reduction from the existing site traffic.

Table 7.2 Development Generate Vehicle Trips with Existing Trip Reductions

Description	Development Area	ITE Land Use Code Description	ITE LUC	Trip Generation			
				AM Peak		PM Peak	
				Entering	Exiting	Entering	Exiting
Fast-food restaurant with drive through	1200 ft^2 (111.4 m^2)	coffee/donut shop with drive through	937	54	53	26	26
Gas Station with Convenience Market	12 fueling spots / (333.6 m^2)	Super convenience Market/Gas Station	960	103	108	67	69
Marijuana Dispensary	600 ft^2 (55.8 m^2)	Marijuana Dispensary	882	3	3	6	7
Car Wash	1320 ft^2 (122.6 m^2)	Automated Car Was	948	N/a	N/a	9	10
Total				160	164	108	112

Based on ITE Trip Generation Handbook 3rd edition a fast-food restaurant and the gas station will both have pass by trips related to their use as well as newly generated trips. Pass-by trips act as vehicles already on the network that while driving by use the site. As such, these pass by trips will be reduced from the new trip generation. As the restaurant is expected to be a Tim Hortons, MP utilised ITE Land Use Code 938 Coffee/Donut Shop with Drive-Through Window and No Indoor Seating, as no data is available for ITE Land use code 937, for a reduction rate of 89% of all trips are pass bye trips, for the use of Gas statin MP utilised the ITE Land Use Code

for 945 Gasoline / Service Station with Convenience Market, as there is no data available for 960, with a rate of 56%of all trips are pass bye trips. As there is no data available for ITE Land Use Code 960. **Table 7.3** summarises the Pass Bye reductions.

Table 7.3 Pass-bye Trip Reductions.

Description	Development Area	ITE Land Use Code Description	ITE LUC	Rates	Trip Generation			
					AM Peak		PM Peak	
					Entering	Exiting	Entering	Exiting
Fast-food restaurant with drive through	1200 ft	coffee/donut shop with drive through	938	0.89	48	47	23	23
Gas Station with Convenience Market	12 fueling spots /	Super convenience Market/Gas Station	945	0.56	64	67	42	43
Total					112	114	65	66

Based on the pass by rates the newly generated traffic can be reduced by 226 trips during the Am Peak hour with 112 entering and 114 exiting, and 131 trips during the PM Peak hour with 65 entering and 66 entering. **Table 7.4** illustrates the resulting newly generated trips.

Table 7.4 Development Generated New Vehicle Trips

Description	Development Area	ITE Land Use Code Description	Trip Generation			
			AM Peak		PM Peak	
			Entering	Exiting	Entering	Exiting
Fast-food restaurant with drive through	1200 ft^2 (111.4 m^2)	coffee/donut shop with drive through	6	6	3	3
Gas Station with Convenience Market	12 fueling spots / (333.6 m^2)	Super convenience Market/Gas Station	39	41	25	26
Marijuana Dispensary	600 ft^2 (55.8 m^2)	Marijuana Dispensary	3	3	6	7
Car Wash	1320 ft^2 (122.6 m^2)	Automated Car Was	N/a	N/a	9	10
Total			48	50	43	46

After all the reductions the proposed development is expected to generate 98 new vehicle trips during the AM Peak hour and 89 During the PM Peak hour. However, all these volumes must be multiplied by a factor of 1.28 based from the City of Ottawa Transportation Impact Assessment Guidelines 2017 in order to represent the

vehicle trips as Person Trips. **Table 7.5** Illustrates the number of person trips generated by the proposed development.

Table 7.5 Development Generated Person Trips

Trip Type	Trip Generation			
	AM Peak		PM Peak	
	Entering	Exiting	Entering	Exiting
Pass Bye Trips	143	146	83	84
New Trips	61	64	55	59
total	204	210	138	143

As shown in **Table 7.5** the proposed development is expected to generate 405 person trips during the Am Peak hour with 289 trips being pass-bye and 129 being newly generated trips. During the PM peak hour the proposed development is expected to generate 281 trips with 167 of the trips being pass-bye and 114 being newly generated person trips. Since the proposed development is expected to included land uses that rely heavily on vehicle traffic (gas station and restaurant with drive-through), for the purpose of this analysis all generated trips will be assumed to be auto driver trips.

8.0 BACKGROUND NETWORK TRAFFIC

As previously stated in **Section 3.9**, MP received turning movements counts from the city taken at:

- Woodroffe Avenue at West Hunt Club Road (2019-10-22);
- Woodroffe Avenue at Medhurst Drive/Knoxdale Road (2018-01-16); and,
- Woodroffe Avenue at Meadowlands Drive/Tallwood Drive (2016-03-23).

The traffic volumes were projected to 2021, applied to the network and balanced accordingly.

8.1 Transit Network Plans

As stated previously in this report, the expected build out and occupancy year is 2022. Additionally, the proposed development and surrounding study area is serviced by public transit, has adequate pedestrian and cycling facilities, and a number of multi-use pathways. The City of Ottawa Long Range Financial Plan (2011) estimates a transit ridership increase of 3.8% from 2016 to 2020 and 2.0% increase from 2021-2025. The City of Ottawa Transportation Master Plan has also identified mode share targets for the year 2031**. Table 8.1** shows the mode share targets expected for the background traffic within the study area.

Table 8.1 Future Background Mode Share Targets

Travel Mode	Mode Share Target	Rationale
Auto Drive	50%	Currently average of 63 % of person trips. This is expected to decrease in the future as more transit and cycling options become available.
Auto Passenger	9%	% of auto passenger person trips is not change in proportion to Auto Drivers.
Transit	26%	Transit person trips are expected to increase over time, as predicted by City of Ottawa Long Range Financial Plan.
Bicycle	5%	% of cycling is expected to increase as cycling networks become more accessible and increase
Walk	10%	% of walking person trips is expected to increase.

8.2 General background Growth

To project the traffic volume to the current and future years, a growth rate of 1.5% was applied to the existing vehicle traffic volumes to project them to the year 2022 and 2027. The growth rate is considered appropriate as it is to include both the population and employment growth within the City of Ottawa. *Figure 8.1 and 8.2* shows the expected future background traffic volume during the 2022 buildout year and the 2027 horizon year

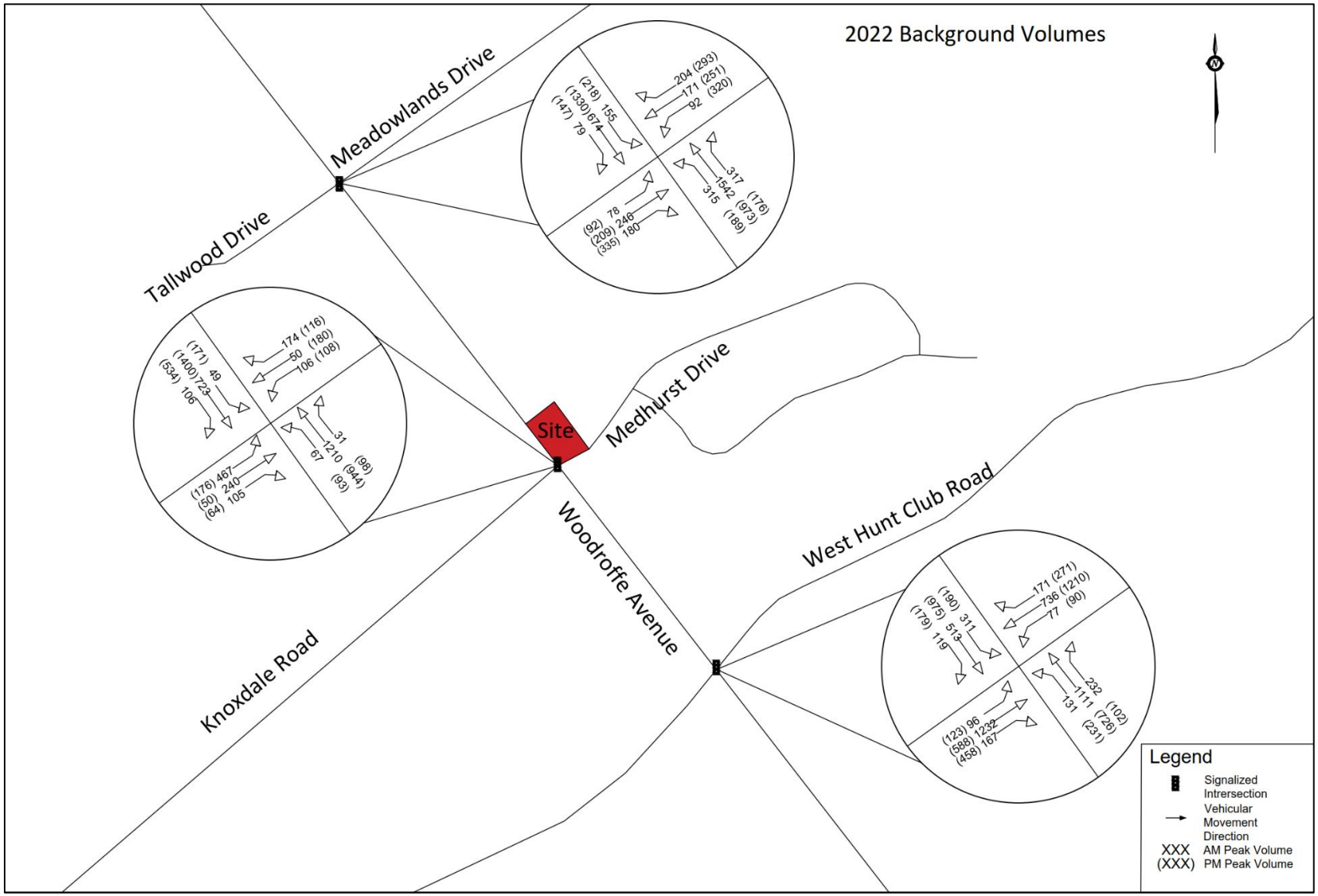


Figure 8.1 2022 Background Traffic Volumes

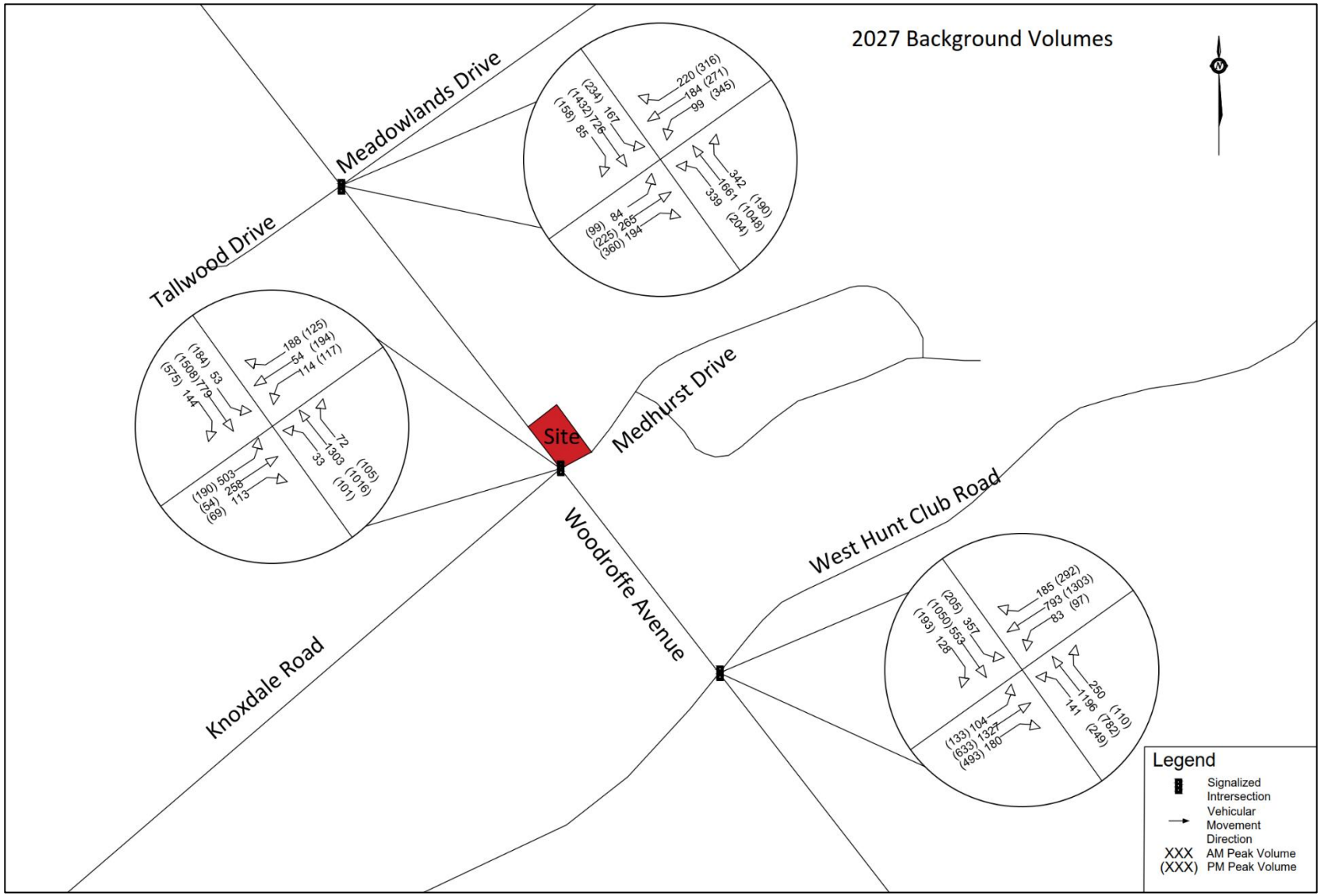


Figure 8.2 2027 Background Traffic Volumes

8.3 Other Area Development

As stated previously there are no other developments within the study area of the proposed development.

9.0 DEMAND RATIONALIZATION

As illustrated in *Section 3.10,* currently during the AM peak and PM peak hour there are movements that are at currently operating over capacity at the intersections of Woodroffe Avenue and West Hunt Club Road, and the intersection of Woodroffe Avenue and Tallwood Drive/Meadowlands Drive. When the growth rate is applied for future conditions it is expected that at the intersection of Woodroffe Avenue and Meadowlands Drive/Tallwood Drive the movements states in *section 3.10*, as well as the movements of the southbound left turn during the AM peak hour and the westbound left turn during the PM peak hour are all expected to exceed capacity of the roadways. At the intersection of Woodroffe Avenue and Medhurst Drive/Knoxdale Road, during the AM Peak hour the northbound through movement, and during the PM peak hour the southbound through movement are expected to exceed capacity. At the intersection of Woodroffe Avenue and West Hunt Club Road during the PM peak hour the northbound through movement is expected to exceed capacity.

As currently there is a 18% transit mode share within the area of Nepean, where the site is located, as stated in **Section 3.7**, whereby the year 2031 the city expects a transit mode share of 26%. A reduction can be applied to the background traffic volumes in order to achieve this designated transit mode share percentage. This would reduce the volume of auto drivers on the network and in turn aid in reducing the potential for movements to operate exceeding their respective capacity limits. Increasing the transit mode share from 18% to 26% is a reasonable increase within the network as there are multiple bus routes that travel through this corridor connecting Baseline Station to the north and Fallowfield Station to the south of the proposed development. As well as, there are designated bus lanes along the Woodroffe Avenue corridor allowing for unimpeded bus movements, which make using transit a more attractive option.

Through the other mode shares such as cycling and walking is expected to increase from 2% to 5% and 10% respectively, that the auto driver mode share will be reduced to 50% by the year 2031 when taking into account theses increasing and that of the transit mode share. As such reduction can be made to the future background traffic to show the projected mode shares.

Figure 9.1 and *Figure 9.2* show the background traffic for the 2022 buildout year and 2027 horizon year scenarios with the reduction in traffic.

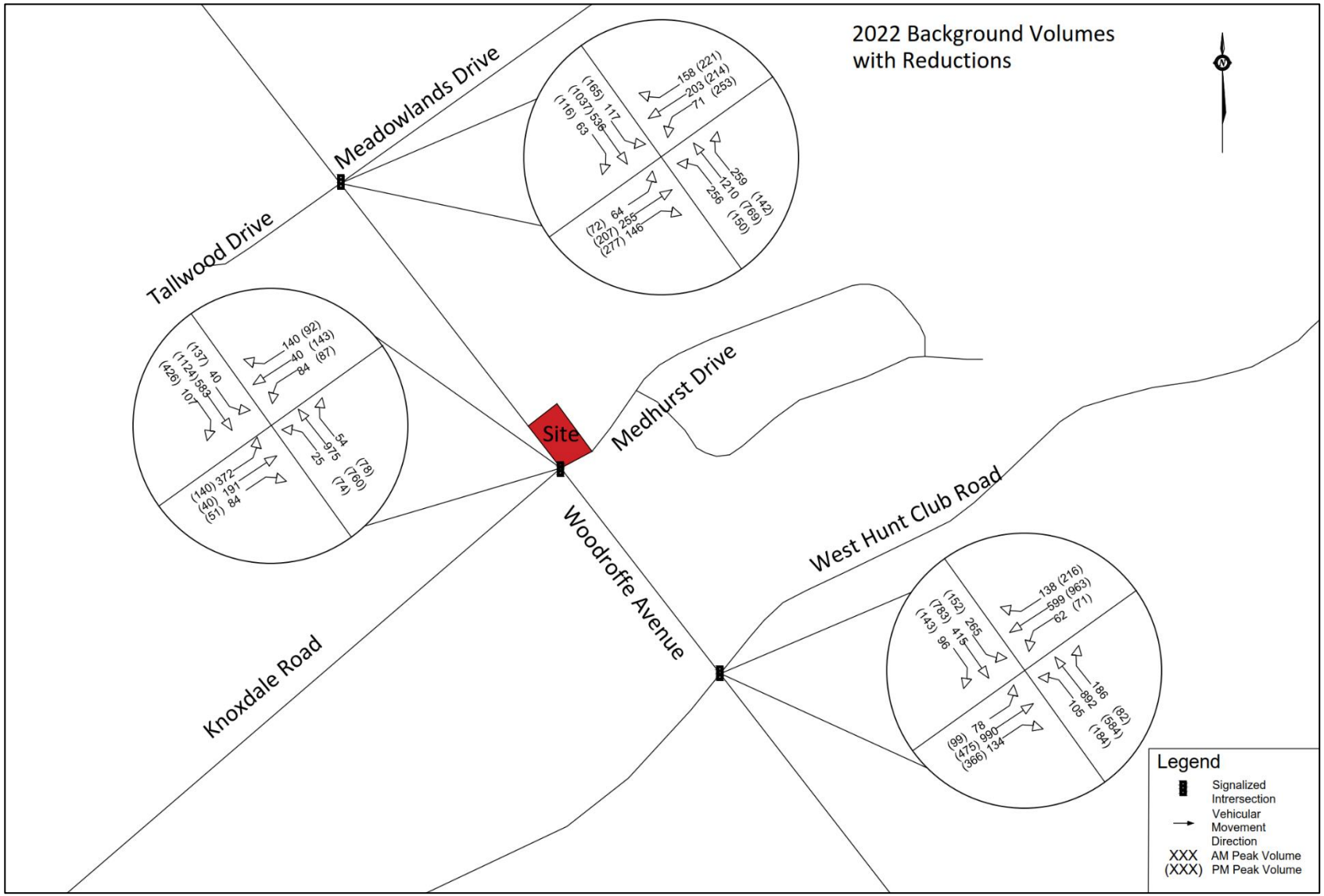


Figure 9.1 2022 Background Traffic Volumes with Mode Share Reductions

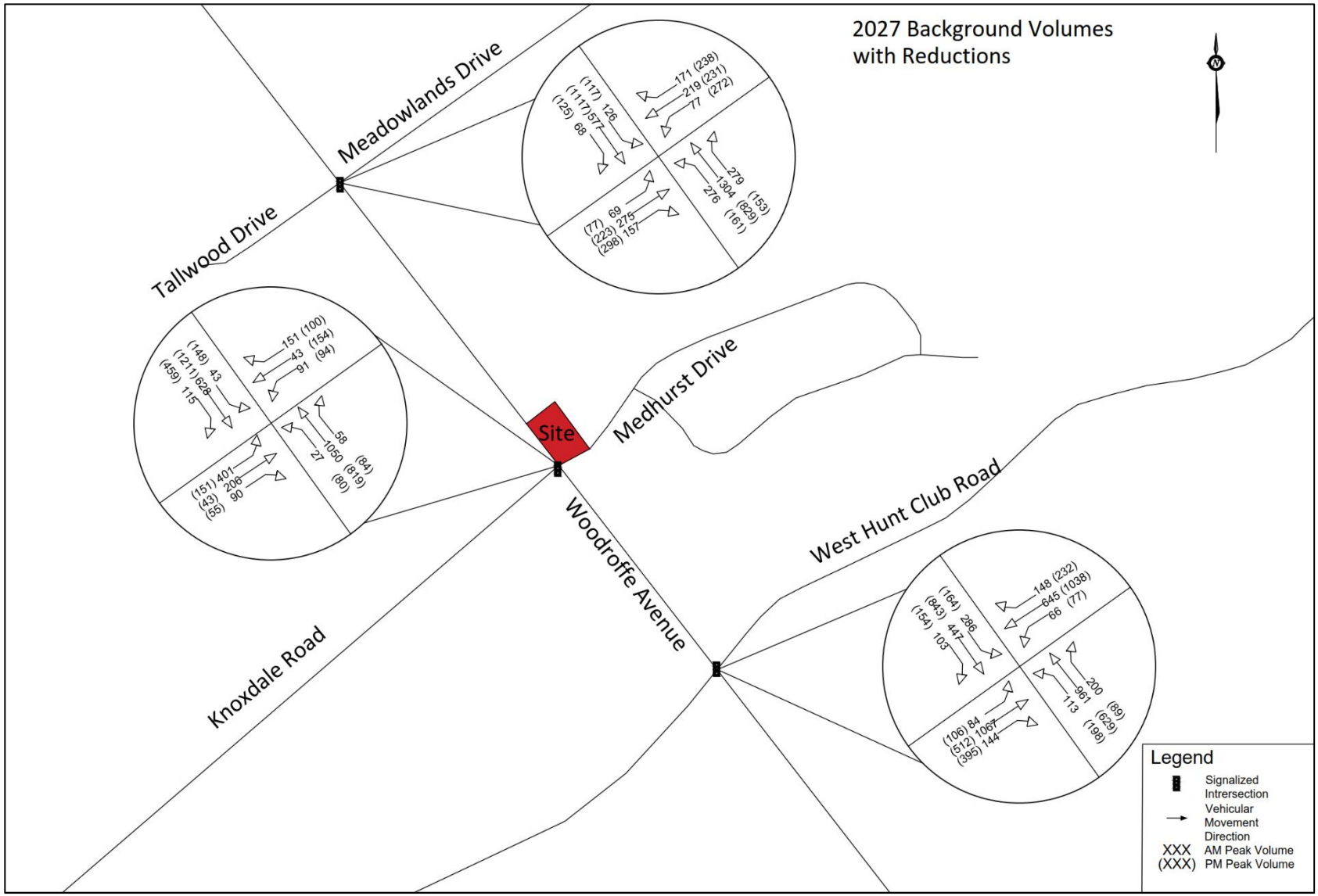


Figure 9.2 2027 Background Traffic Volumes with Mode Share Reductions

10.0 DEVELOPMENT DESIGN

This section will review the proposed development and its transportation network elements in order to ensure that a safe and efficient design has been proposed, to encourage walking, cycling, and transit use. The City of Ottawa's TDM-supportive Development Design and Infrastructure checklist has been completed and attached in *Appendix F* for reference. The TDM-supportive Development Design and Infrastructure checklist outlines the TDM elements to be included in the proposed development. The proposed development is expected to satisfy the required and basic measures for walking & cycling routes with the exception of 1.2.5, 1.2.8 as road speeds are above 30km/h, 1.3.2 as there are no wayfinding singnage. The proposed development is expected to satisfy the required and basic measures for walking & cycling end-of-trip facilities with the exception of 2.2.1 as this is not an office building, and 2.3.1 as there is no shower. The proposed development is expected to have shelter, lightin and benches at the existing bus stop on Woodroffe Road. The proposed development is expected to satisfy the required TDM for parking as there is no limit on the number of parking spaces.

10.1 Design for Suitable Modes

The proposed development is expected to provide a total of 40 parking spaces, one (1) barrier free parking space, one (1) loading space, a carwash queue lane able to accommodate up to 14 vehicles, and a drive-through queue lane able to accommodate 13 vehicles. It is anticipated that the proposed development will include two (2) bicycle parking spaces.

As described in Section 3.5, the closest transit stops to the proposed development are located at the Intersection of Woodroffe Avenue and Medhurst Drive, adjacent to the proposed accesses to the development.

10.2 Circulation and Access

The proposed development is anticipated to use the existing access onto Medhurst Drive and a new access onto Woodroffe Avenue. The existing accesses onto Woodroffe are expected to be closed. The new proposed access will be a right-in-right-out access along Woodroffe Avenue, offset 130 m from the intersection of Woodroffe Avenue and Medhurst Drive. While the existing access will be a right turn, left turn access onto Medhurst Drive, offset 65 m from the intersection of Woodroffe Avenue and Medhurst Drive.

The car wash is expected to be able to accomodate a queue of 14 vehicles. Based on the city of Ottawa By-Law 2008-250, the automated car wash must have 10 queuing spaces before the car wash and 1 space after the car wash. Based on the proposed site plan this minimum is met.

The drive through for the expected Tim Hortons is expected to have 13 queuing spaces. Based on the City of Ottawa By-Law 2008-250, as it will include an order board, the drive-through is required to accommodate 7 vehicles in advance of the board and a minimum of 11 total queuing spaces. Based on the proposed site plan this need is met. MP anticipates that 13 queuing spaces will be sufficient not to cause any spill over queuing onto the site, blocking any parking spaces or pumping stations. Based off of the Traffic Impact Study for the Imperial Oil Esso Station located the proposed site done by Read, Voorhees & Associates done in 2015 where they analyzed multiple Esso gas stations with Tim Horton restaurants, they found that the maximum drive through queue length to be 13 vehicles. MP conducted a Traffic Impact Study done for a Tim Hortons in the

Loyallist Plaza, in Amherstview in 2016, in which MP conducted proxy counts of other Tim Horton Restaurants drive-through queues and found that the maximum queue was also 13 vehicles. MP expects that based on this, and that the 13 queueing spaces provided will be sufficient on the proposed site.

Figure 10.1 illustrates the queuing as shown on the site plan.

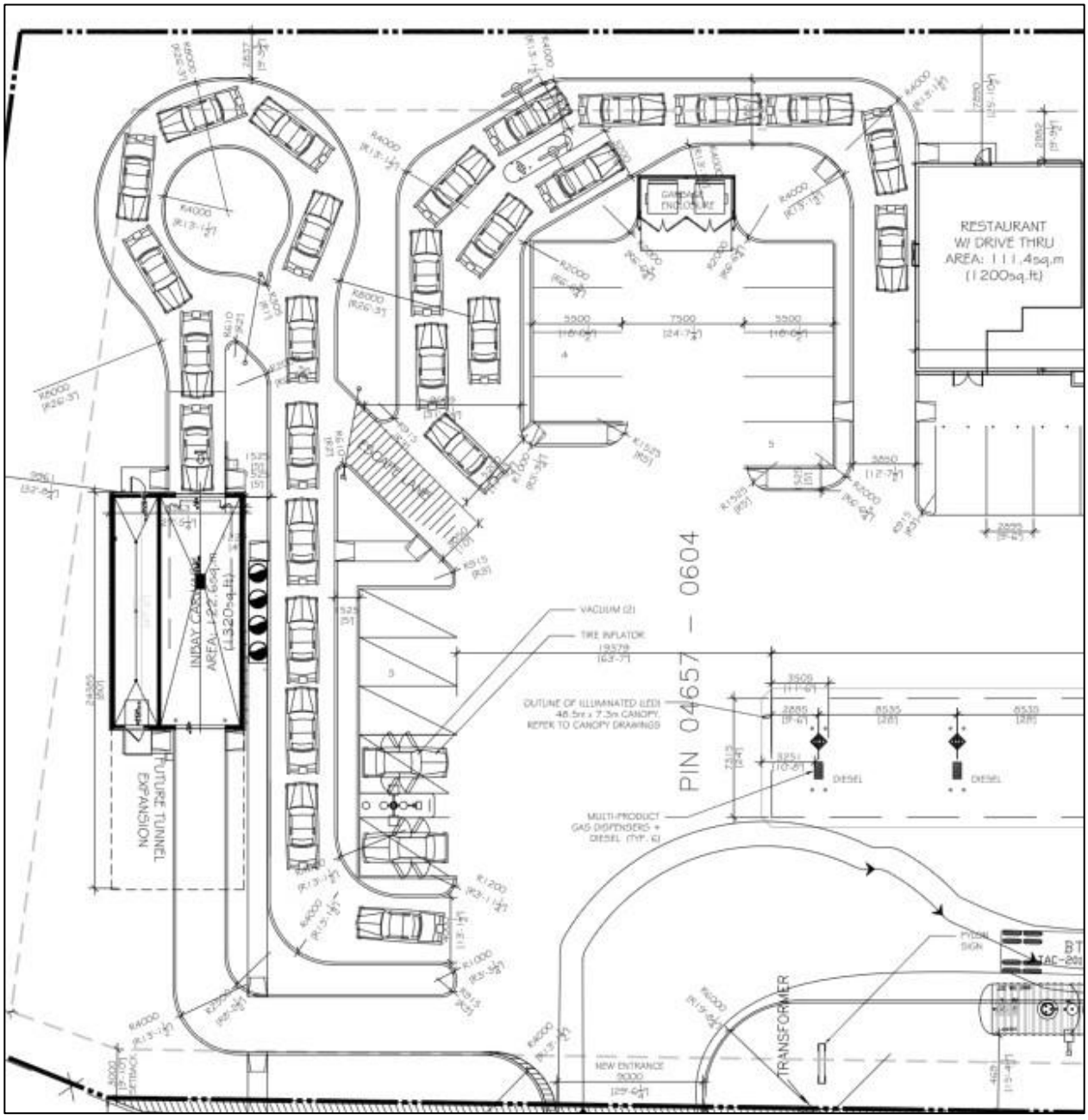


Figure 10.1 Drive through and Car Wash Queueing Diagram.

11.0 PARKING

The site shows a total of 42 parking spaces which includes one (1) barrier free parking sapce. The City of Ottawa Zoning By-Law 2008-250, Section 101, Schedule 1A lists the proposed development as being in Area C (Suburban). Table 101 within the City of Ottawa By-law gives the minimum rates for varying land uses. The proposed development is located further than 600 m from rapid transit and given there is no limit on the number of parking spaces imposed on the development. **Table 11.1** illustrates the City of Ottawa By-Law minimum number of parking spaces for the proposed development.

Table 11.1 City of Ottawa By-Law Parking Requirements.

Land Use	Minimum Parking Spaces Rate	Gross Floor Area (m)	Minimum Parking Spaces
Restaurant	10 per 100m	111.4	11.1
Convince Store	3.4 per 100 m	333.6	11.3
Retail	3.4 per 100 m	55.8	1.9
Total			24

The proposed development exceeds the minimum number of parking spacers required (24) and is expected to be able to accommodate any potential additional parking demand from the proposed development.

Bicycle parking spaces must be provided in accordance with the City of Ottawa Zoning By-Law 2008-250, Section 101. Table 11.2 illustrates the bicycle parking spaces required as per the City of Ottawa's By-Law.

Table 11.2 City of Ottawa By-Law Parking Requirement

Land Use	Minimum Parking Spaces Rate	Gross Floor Area (m)	Minimum Parking Spaces
Restaurant	1 per 250m	111.4	0.4
Convince Store	1 per 250m	333.6	1.3
Retail	1 per 250m	55.8	0.2
Total			2

As stated previously the proposed site plan does not show bicycle parking, however, two (2) bicycle parking spaces are expected to be provided.

12.0 BOUNDARY STREET

This section will examine the design elements of the noted boundary street and their ability to accommodate the proposed development as well as being consistent with the City of Ottawa's Complete Street design philosophy as well as its urban design objectives.

12.1 Segment Mobility

This section will examine the design elements of the noted boundary streets and their ability to accommodate the proposed development as well as being consistent with the City of Ottawa's Complete Streets design philosophy as well as its urban design objectives.

12.1.1 Pedestrian Level of Service (PLOS)

Table 12.1 Illustrates the PLOS of the boundary streets

Table 12.1 Pedestrian Level of Service

Side of Roadway	Sidewalk Width (m)	Boulevard Width (m)	Motor Vehicle Traffic Volume (AADT)	Presence of On-Street Parking	Operating Speed	LOS
Woodroffe Avenue						
Northbound	2	1.25	10863	No	60	D
Southbound	2	1.25	9853	No	60	D
Medhurst Drive						
Eastbound	1.85	1.3	2035	No	40	B
Westbound	2	1.3	2072	No	40	A

The northbound lane and southbound lane of Woodroffe Avenue both have a sidewalk with a width of 2m, a boulevard width of 1.25m, AADT above 3000, no on-street parking with an operating speed of 60km/h, resulting in a PLOS of D. The eastbound and westbound lanes of Medhurst Drive have a 1.85m and a 2m sidewalk respectively, a boulevard width of 1.3m, an AADT below 3000, no on-street parking and an operating speed of 40km/h resulting in an PLOS of B and A respectively. However, based on Exhibit 4 of the City of Ottawa's Multi-Modal Level of Service (MMLOS) Guidelines, the lowest quality facilities dictates the overall score, the PLOS of Medhurst Drive is B.

12.1.2 Bicycle Level of Service (BLOS)

Table 12.2 Illustrates the BLOS of the boundary streets

Table 12.2 Bicycle Level of Service

Bike Lane Facility	Parking Facilities	Bike Lane Width (m)	Number of Travel Lanes	Operating Speed	BLOS
Woodroffe Avenue					
Bike Lanes	None	1.6	more than 2 in each direction	60	D
Medhurst Drive					
Mixed Traffic	N/A	N/A	2 travel lanes	40	B

Woodroffe Avenue has designated bike lanes with a width of 1.6m, no curbside parking, more than two lanes of traffic in each direction and an operating speed of 60km/h. In accordance with Exhibit 11 of the City of Ottawa's MMLOS Guidelines, Woodroffe Avenue has a BLOS of D. Medhurst Drive is considered mixed traffic, 2 total travel lanes and an operating speed of 40km/h. In accordance with Exhibit 11 of the City of Ottawa's MMLOS Guidelines, Medhurst Drive has a BLOS of B.

12.1.3 Transit Level of Service (TLOS)

Table 12.3 Illustrates the TLOS of the boundary streets

Table 12.3 Transit Level of Service

Side of Roadway	Facility Type	LOS
Woodroffe Avenue		
Northbound	Bus Lane with Limited Driveway Friction	B
Southbound	Bus Lane with Limited Driveway Friction	B
Medhurst Drive		
Eastbound	Mixed with Frequent Driveway Friction	E
Westbound	Mixed with Frequent Driveway Friction	E

Woodroffe Avenue has a designated bus lane with limited driveway friction along both the northbound and southbound segments. In accordance with Exhibit 15 of the City of Ottawa's MMLOS Guidelines, Woodroffe Avenue has a TLOS of B. Medhurst Drive is designated as mixed traffic with frequent driveway friction both in the eastbound and westbound segments. In accordance with Exhibit 15 of the City of Ottawa's MMLOS Guidelines, Medhurst Drive has a BLOS of E.

12.1.4 Truck Level of Service (tkLOS)

Table 12.24 Illustrates the tkLOS of the boundary streets

Table 12.4 Truck Level of Service

Side of Roadway	Curb Lane Width	Number of Travel Lanes per Direction	tkLOS
Woodroffe Avenue			
Northbound	3.5	3	A
Southbound	3.5	3	A
Medhurst Drive			
Eastbound	3.8	1	B
Westbound	5	1	B

Woodroffe Avenue has both the northbound and southbound segments having a curb lane width of 3.5m, 3 travel lanes per direction resulting in a tkLOS of A based upon Exhibit 20 of the City of Ottawa's MMLOS Guidelines. Medhurst Drive has the eastbound and westbound segments having a curb lane radius of larger than 3.7m, and 1 lane in each direction resulting in a tkLOS of B based upon Exhibit 20 of the City of Ottawa's MMLOS Guidelines

12.2 Road Safety

Available collision data within the study area was reviewed and is presented in Section 3.7. No road safety concerns were identified on boundary streets or within the study area. As City of Ottawa collision records do not indicate direction of travel for vehicles involved, collision diagrams are not feasible.

13.0 ACCESS INTERSECTION DESIGN

This section will examine design elements of the proposed development's access points and assess their alignment with the City of Ottawa's Complete Street philosophy, MMLOS Guidelines and urban design objectives.

13.1 Location and Design of Access

The proposed development is anticipated to use the existing access onto Medhurst Drive and a new access onto Woodroffe Avenue. The new proposed access will be a right-in right-out access along Woodroffe Avenue, offset 130 m from the intersection of Woodroffe Avenue and Medhurst Drive. While the existing access will be a full-moves access onto Medhurst Drive, offset 65 m from the intersection of Woodroffe Avenue and Medhurst Drive.

13.1.1 Access sightlines

MP performed a field visit to review the sightlines in the field April 19, 2021 for the proposed development site access.

TAC Geometric Design Guide for Canadian Roads, June 2017, was used to determine the required sight distance. Section 9.9.2 Departure Sight Triangles (Stop Controlled) Table 9.9.1 Length of Sight Triangle Leg – Case A was used in the review of the sight lines for the access of the proposed development

Table 13.1 shows the minimum required Length of Sight Triangle Leg. Woodroffe Avenue has a design speed of 80 km/h, as such 80 km/h will be the design speed analysed. Medhurst Drive has a design speed of 60 km/h, as such 60 km/h will be the design speed analysed.

Table 13.1 Length of Sight Triangle Leg – Case A, No Traffic Control

Design Speed (km/h)	Length of Leg (m)
60	55
80	75

As stated previously the development is expected to have one new right-in-right-out access onto Woodroffe Avenue approximately 65m from the intersection of Woodroffe Avenue and Medhurst Drive. Based on the site review done and desktop review, it is anticipated that the sight lines from the existing access will be adequate. The sightlines from the access go well past the intersection to the south of the proposed access. It is anticipated that any vehicles performing a turning movement onto Woodroffe Avenue from Medhurst Drive/Knoxdale Road will be traveling at reduced speeds, as such, the sightlines are expected to be sufficient.

As stated previously, the proposed development will use the existing access onto Medhurst Drive approximately 35m from the intersection of Woodroffe Avenue and Medhurst Drive. Based on the site review done and desktop review, it is anticipated that the sight lines from the existing access will be adequate. The sightlines from the proposed access onto Medhurst goes past the intersection, onto Knoxdale Road, well above the 55m required to the west and approximately 100m to the east. It is anticipated that any vehicles performing a turning movement from Woodroffe Avenue onto Medhurst Drive will be traveling at reduced speeds, as such, the sightlines are expected to be sufficient.

Figure 13.1 illustrates the sightlines the site accesses.

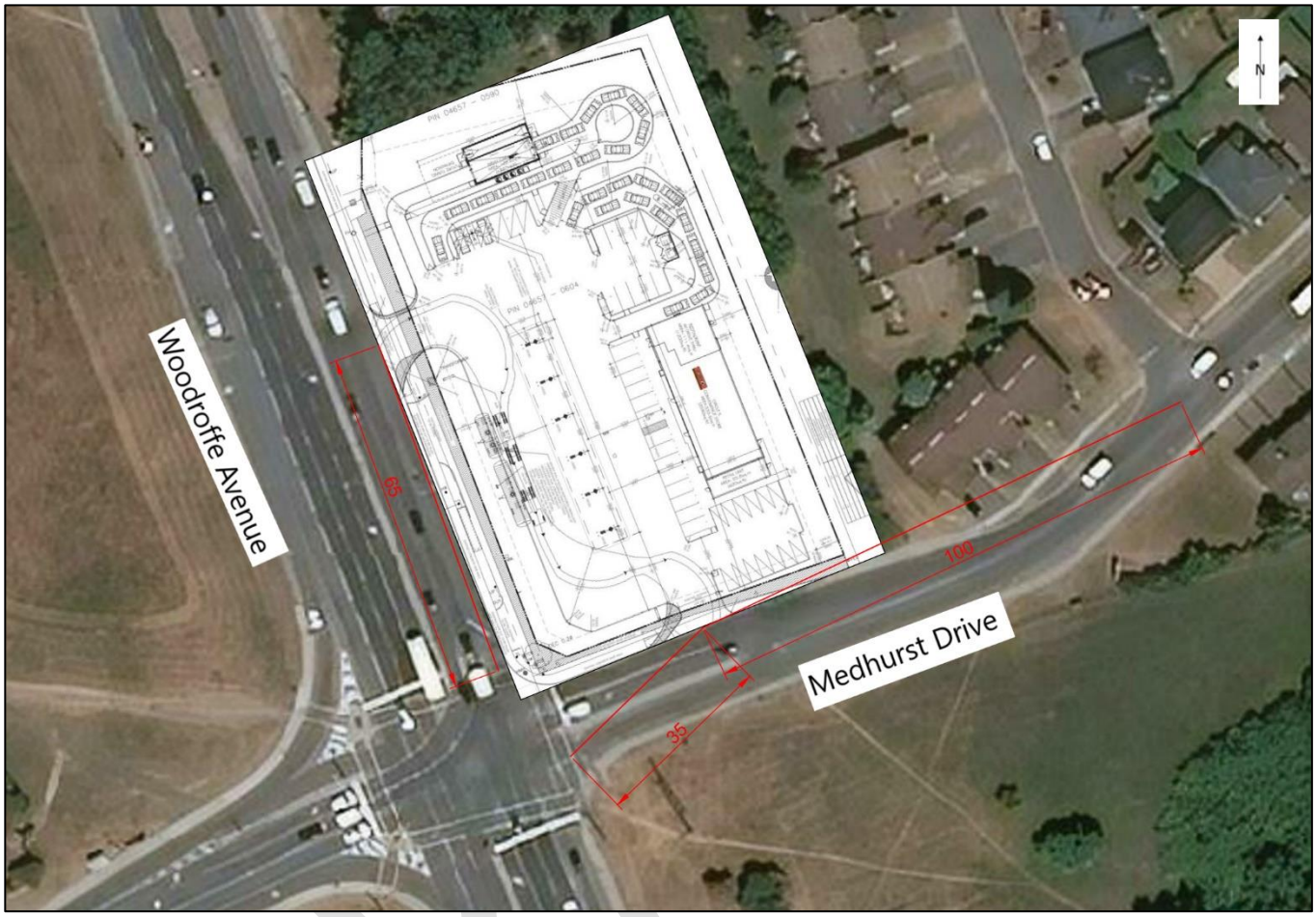


Figure 13.1 Accesses Sightlines.

13.2 Access Intersection Control

In consideration of existing and projected volumes of traffic anticipated to utilize the site access, yield-stop control at the minor approach (site driveways) is recommended. No other traffic control measures are warranted at the proposed site access.

13.3 Access Intersection Design

No concerns are anticipated due to the existing sightlines of the existing site accesses and expected low speed that the vehicles will be traveling as the access intersections are close to the signalized intersection go Woodroffe Avenue and Medhurst Drive. As the site access will not be signalized, the MMLOS for all modes at the intersection of Woodroffe Avenue and Medhurst Drive, and the site access will be the same as that for the boundary road segments presented in *Section 12.0.*

14.0 TRANSPORTATION DEMAND MANAGEMENT

The proposed development is expected to generate fewer than 60 employees and/or students on location at a given time. As such, this section is exempted from this TIA report.

15.0 NEIGHBOURHOOD TRAFFIC MANAGEMENT

This module reviews significant access routes to the development and identifies any required neighbourhood traffic management (NTM) measures to mitigate impacts on collector and local roads.

15.1 Adjacent Neighbourhoods

The proposed development has an access onto Medhurst Drive, a collector roadway. Based on the background traffic and the development generated traffic the road classification is not expected to change.

16.0 TRANSIT

This section will review the potential impacts of the proposed development on existing and planned transit networks and services in order to ensure TLOS is not negatively impacted.

16.1 Route Capacity

It is anticipated that the proposed development will generate relatively low transit trips during the AM and PM peak hours, respectively. The relatively low number of development-generated transit trips are expected to be adequately accommodated by the existing transit routes and is not anticipated to result in any requirements for additional transit capacity. Further, it is not anticipated that the existing transit routes will require modification as a result of the proposed development.

16.2 Transit Priority

As noted in *Section 3.5*, there are eight (8) routes in the area, namely Route 73, 74, 75, 82, 83, 173, 187, and 284 which travelers may use to travel to and from the development. It is anticipated that the relatively low number of development-generated transit trips can be accommodated, and it is not anticipated that any additional transit trips will result in impacts to travel time.

As the proposed development is removing the two existing access which currently has a transit stop right between the two existing accesses, and adding one new access onto Woodroffe Road approximately 65m to the north of the transit stop, it is expected that the proposed development will reduce the existing impacts the accesses have on the transit network.

17.0 REVIEW OF NETWORK CONCEPT

Since the proposed development is not expected to generate more than 200 peak hour person trips, this section has been omitted from this TIA report.

18.0 INTERSECTION DESIGN

This section will determine the design elements of the study area intersections required to accommodate the proposed development, ensuring they are consistent with the City of Ottawa Complete Streets philosophy and MMLOS practices.

18.1 Intersection Control

All study intersections within the study area of the proposed development are signalized, with the two access intersections being yield-stop controlled. No signal warrants are needed due to the low volumes of vehicles at the yield-stop controlled access intersection.

18.2 Intersection Design

18.2.1 Intersection Vehicular Level of Service (LOS)

Analysis of vehicular LOS was performed in accordance with the City of Ottawa's TIA Guidelines (2017) and MMLOS Guidelines. LOS descriptions for the analysis are provided in Table 18.1. All existing and projected traffic operations were modelled in Synchro 10.

Table 18.1 Definition of LOS for Intersections

Level of Service	v/c Ratio
A	0 to 0.60
B	0.61 to 0.70
C	0.71 to 0.80
D	0.81 to 0.90
E	0.91 to 1.00
F	> 1.00

Existing signal timing information such as phasing, pedestrian minimums and clearance intervals were provided by the City of Ottawa and used in the analysis of existing conditions for all critical intersections within the study area. The traffic signal timing forms can be found in *Appendix C*. Signal timings were optimized for future conditions with all Synchro 10 parameters taken in accordance with Appendix C: Synchro Analysis Parameters of the City of Ottawa TIA Guidelines (2017). Additionally, all pedestrian clearance timings as well as amber and all red times that were provided by the City of Ottawa were used in the analysis of future operating conditions.

MP reviewed the existing 2021 which can be found in *Section 3.3*, the future 2022 Buildout year: background, and total traffic, and the 2027 background and total traffic operating conditions at all study area intersections.

Figure 18.1 Illustrates the Trip Generation Assignment throughout the network for the total traffic scenarios.

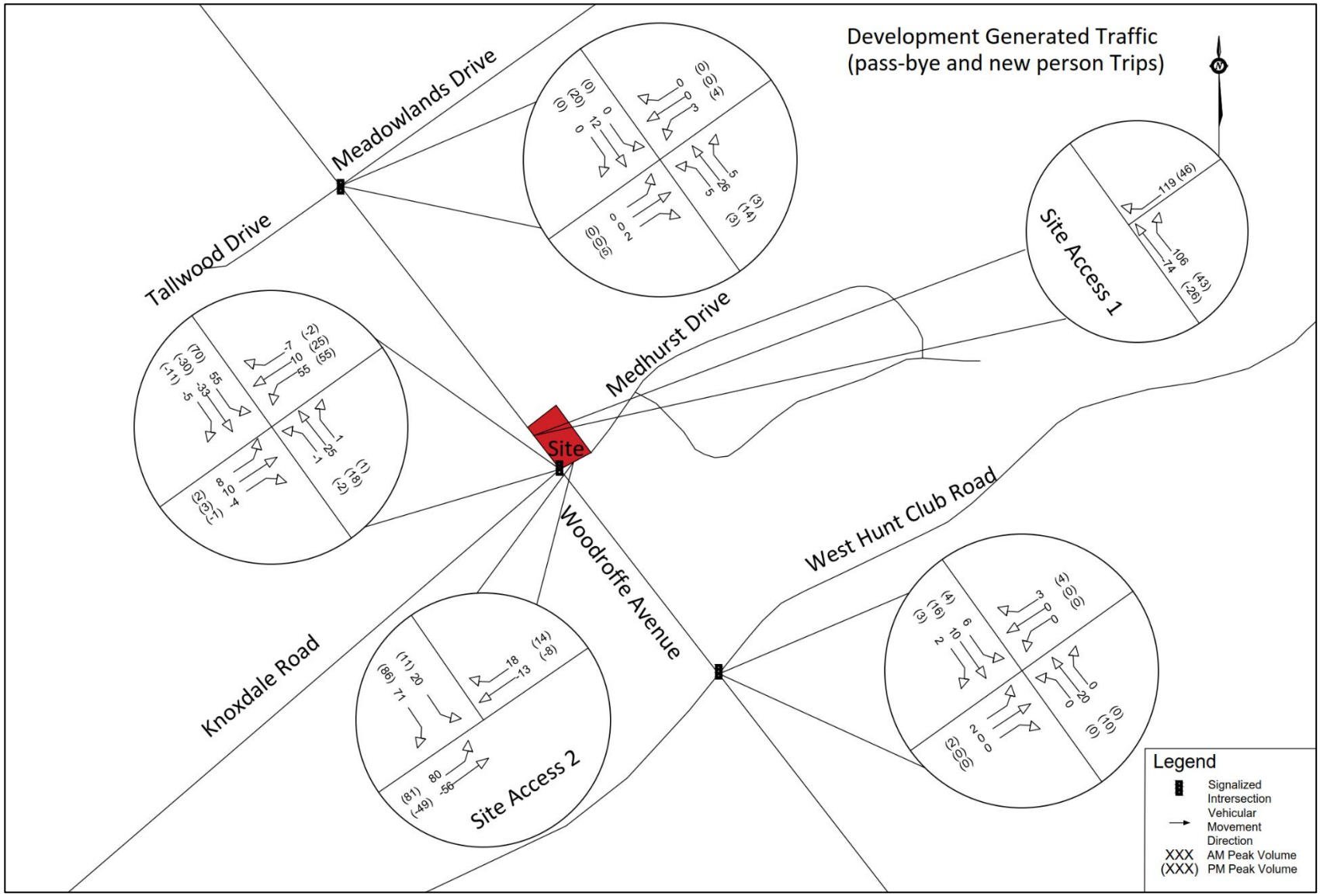


Figure 18.1 Development Generated Traffic

Synchro 10 reports for all analysis periods can be found in *Appendix D*. **Table 18.2** summarizes the 2022 Background traffic V/C and LOS according to the City of Ottawa TIA methodology.

Table 18.2 2022 Background Traffic Operating Conditions

	Intersection LOS		AM Peak Hour			PM Peak Hour		
	AM	PM	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)
Woodroffe Avenue and West Hunt Club Road								
EBL	D	D	B	0.70	90.3	C	0.74	90.4
EBT			D	0.86	47.3	A	0.41	34.8
EBR			A	0.22	4.6	A	0.52	15.2
WBL			E	0.97	165.6	A	0.54	72.9
WBT			B	0.61	40.3	D	0.82	47.3
WBR			A	0.25	5.6	A	0.33	7.1
NBL			B	0.64	73.5	D	0.82	82.9
NBT			E	0.94	62.2	A	0.57	40.1
NBR			A	0.35	10.9	A	0.15	0.5
SBL			D	0.87	77.9	A	0.59	39.6
SBT			A	0.46	48.8	E	0.91	68.7
SBR			A	0.19	17.9	A	0.26	15.9
Woodroffe Avenue and Medhurst Drive/Knoxdale Road								
EBL	C	C	B	0.63	53.9	A	0.57	67.7
EBT			A	0.54	50.4	A	0.11	39.4
EBR			A	0.21	1.8	A	0.13	0.7
WBL			A	0.45	61.8	A	0.45	64.7
WBTR			B	0.62	26.5	B	0.63	48.2
NBL			A	0.30	88.0	B	0.63	109.7
NBT			C	0.70	12.9	A	0.55	17.3
NBR			A	0.08	0.2	A	0.11	1.1
SBL			A	0.44	74.7	C	0.76	81.9
SBT			A	0.40	27.2	B	0.70	33.0
SBR			A	0.14	2.0	A	0.53	11.2
Woodroffe Avenue and Meadowlands Drive/Tallwood Drive								
EBL	D	D	D	0.81	116.4	A	0.54	68.7
EBT			A	0.51	48.6	A	0.40	42.9
EBR			A	0.34	9.5	A	0.55	18.0
WBL			A	0.45	66.0	C	0.75	68.6
WBT			A	0.41	47.1	A	0.40	41.1
WBR			A	0.42	9.8	A	0.46	12.0
NBL			A	0.60	58.1	A	0.59	65.6
NBT			E	0.96	54.4	B	0.67	37.9
NBR			A	0.44	10.4	A	0.24	4.3
SBL			B	0.65	67.9	E	0.95	108.6

	Intersection LOS		AM Peak Hour			PM Peak Hour		
	AM	PM	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)
SBT			A	0.42	27.3	D	0.83	42.5
SBR			A	0.10	0.3	A	0.17	2.2
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T = Through, R = Right-turn								

It is expected that, at the intersection of Woodroffe Avenue and West Hunt Club Road, all approaches will operate under capacity with a LOS of D or better with the exception of the westbound left and northbound through movement during the AM peak and the southbound through movement during the PM peak hour which are expected to operate at an LOS of E.

It is expected that, at the intersection of Woodroffe Avenue and Medhurst Drive/Knoxdale Road, all approaches will operate under capacity with a LOS of C or better.

It is expected that, at the intersection of Woodroffe Avenue and Meadowlands Drive/Tallwoodr Drive, all approaches will operate under capacity with a LOS of D or better with the exception of the northbound through movement during the AM peak and the southbound left movement during the PM peak hour which are expected to operate at an LOS of E.

Table 18.3 summarizes the 2027 Background traffic V/C and LOS according to the City of Ottawa TIA methodology.

Table 18.3 2027 Background Traffic Operating Conditions

	Intersection LOS		AM Peak Hour			PM Peak Hour		
	AM	PM	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)
Woodroffe Avenue and West Hunt Club Road								
EBL	E	D	C	0.75	95.6	D	0.86	109.9
EBT			E	0.98	64.2	A	0.45	35
EBR			A	0.25	5.7	A	0.56	15.4
WBL			D	0.86	129.4	C	0.71	92.6
WBT			B	0.68	43.4	D	0.88	50.9
WBR			A	0.27	6.9	A	0.38	14.5
NBL			B	0.66	74.0	D	0.90	96.2
NBT			E	0.98	68.8	B	0.61	41.7
NBR			A	0.37	12.3	A	0.16	0.9
SBL			E	0.93	83.9	A	0.60	35.5
SBT			A	0.49	50.1	E	0.95	73.2
SBR			A	0.20	18.5	A	0.30	23.2
Woodroffe Avenue and Medhurst Drive/Knoxdale Road								
EBL	C	D	B	0.69	56.2	A	0.60	68.9
EBT			A	0.57	51.4	A	0.12	39.5
EBR			A	0.22	2.5	A	0.13	0.6

	Intersection LOS		AM Peak Hour			PM Peak Hour		
	AM	PM	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)
WBL			A	0.47	62.2	A	0.46	64.5
WBTR			B	0.68	35.8	B	0.67	50.1
NBL			A	0.32	87.9	B	0.70	109.7
NBT			C	0.76	13.6	B	0.61	20.5
NBR			A	0.09	0.2	A	0.12	0.5
SBL			A	0.49	77.5	C	0.80	85.5
SBT			A	0.43	28.2	C	0.79	36.9
SBR			A	0.16	2.5	A	0.59	13.1
Woodroffe Avenue and Meadowlands Drive/Tallwood Drive								
EBL	D	D	D	0.86	126.3	A	0.58	70.4
EBT			A	0.55	49.7	A	0.43	43.6
EBR			A	0.37	11.2	A	0.60	20.9
WBL			A	0.48	67.0	C	0.79	71.8
WBT			A	0.44	47.7	A	0.43	41.8
WBR			A	0.47	15.9	A	0.49	14.3
NBL			B	0.65	59.9	B	0.63	67.1
NBT			E	0.98	55.4	C	0.74	40.9
NBR			A	0.46	10.5	A	0.26	5.3
SBL			D	0.87	97.9	E	0.96	109.3
SBT			A	0.45	27.9	D	0.90	47.9
SBR			A	0.11	0.3	A	0.19	2.8
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T = Through, R = Right-turn								

It is expected that, at the intersection of Woodroffe Avenue and West Hunt Club Road, all approaches will operate under capacity with a LOS of D or better with the exception of the eastbound through, northbound through, and southbound left movement during the AM peak, and the southbound through movement during the PM peak hour which are expected to operate at an LOS of E.

It is expected that, at the intersection of Woodroffe Avenue and Medhurst Drive/Knoxdale Road, all approaches will operate under capacity with a LOS of C or better.

It is expected that, at the intersection of Woodroffe Avenue and Meadowlands Drive/Tallwoodr Drive, all approaches will operate under capacity with a LOS of D or better with the exception of the northbound through movement during the AM peak and the southbound left movement during the PM peak hour which are expected to operate at an LOS of E.

Table 18.4 summarizes the 2022 future total traffic V/C and LOS according to the City of Ottawa TIA methodology.

Table 18.4 2022 Total Traffic Operating Conditions

	Intersection LOS		AM Peak Hour			PM Peak Hour		
	AM	PM	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)
Woodroffe Avenue and West Hunt Club Road								
EBL	D	D	C	0.72	91.8	C	0.76	91.5
EBT			D	0.86	47.3	A	0.41	35.0
EBR			A	0.22	4.6	A	0.52	15.3
WBL			E	0.97	165.6	A	0.54	72.9
WBT			B	0.61	40.3	D	0.82	47.8
WBR			A	0.25	5.9	A	0.34	7.5
NBL			B	0.64	73.5	D	0.82	82.9
NBT			E	0.96	65.8	A	0.57	40.2
NBR			A	0.35	10.9	A	0.14	0.5
SBL			D	0.89	82.1	A	0.60	41.3
SBT			A	0.47	47.7	E	0.92	70.0
SBR			A	0.19	16.1	A	0.26	15.3
Woodroffe Avenue and Medhurst Drive/Knoxdale Road								
EBL	C	D	A	0.60	51.9	A	0.55	66.7
EBT			A	0.56	51.1	A	0.12	39.5
EBR			A	0.19	1.2	A	0.13	0.7
WBL			B	0.64	68.0	B	0.68	73.5
WBTR			B	0.65	33.8	B	0.67	51.0
NBL			A	0.31	90.0	B	0.62	108.9
NBT			D	0.85	17.1	B	0.63	20.4
NBR			A	0.10	0.2	A	0.12	1.2
SBL			B	0.68	82.1	D	0.85	84.4
SBT			A	0.39	28.3	B	0.69	33.2
SBR			A	0.14	1.7	A	0.52	10.8
Woodroffe Avenue and Meadowlands Drive/Tallwood Drive								
EBL	D	D	D	0.81	116.4	A	0.54	68.7
EBT			A	0.51	48.6	A	0.40	42.9
EBR			A	0.35	9.8	A	0.55	18.2
WBL			A	0.47	66.6	C	0.76	69.2
WBT			A	0.41	47.1	A	0.40	41.1
WBR			A	0.42	10.0	A	0.46	12.0
NBL			B	0.61	58.4	A	0.60	65.9
NBT			E	0.98	58.6	B	0.68	38.3
NBR			A	0.45	10.8	A	0.24	4.5
SBL			B	0.65	67.9	E	0.95	109.1
SBT			A	0.43	27.5	D	0.85	43.5
SBR			A	0.10	0.3	A	0.17	2.2
Woodroffe Avenue and Access 1								

	Intersection LOS		AM Peak Hour			PM Peak Hour		
	AM	PM	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)
NBTR	C	B	-	-	-	-	-	-
WBR			A	0.34	20.6	A	0.09	12.7
Medhurst Drive and Access 2								
EBTL	B	B	A	0.06	8	A	0.07	8.1
WBTR			-	-	-	-	-	-
SBLR			A	0.14	11.5	A	0.15	11.5
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T = Through, R = Right-turn								

It is expected that, at the intersection of Woodroffe Avenue and West Hunt Club Road, all approaches will operate under capacity with a LOS of D or better with the exception of the westbound left and northbound through movement during the AM peak and the southbound through movement during the PM peak hour which are expected to operate at an LOS of E.

It is expected that, at the intersection of Woodroffe Avenue and Medhurst Drive/Knoxdale Road, all approaches will operate under capacity with a LOS of D or better.

It is expected that, at the intersection of Woodroffe Avenue and Meadowlands Drive/Tallwoodr Drive, all approaches will operate under capacity with a LOS of D or better with the exception of the northbound through movement during the AM peak and the southbound left movement during the PM peak hour which are expected to operate at an LOS of E.

Both accesses are expected to operate at an LOS of A with a v/c of 0.34 or better.

Table 18.5 summarizes the 2027 future total traffic V/C and LOS according to the City of Ottawa TIA methodology.

Table 18.5 2027 Total Traffic Operating Conditions

	Intersection LOS		AM Peak Hour			PM Peak Hour		
	AM	PM	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)
Woodroffe Avenue and West Hunt Club Road								
EBL	E	D	C	0.76	97.3	D	0.87	11.2
EBT			E	0.98	64.2	A	0.46	35.1
EBR			A	0.25	5.7	A	0.57	15.5
WBL			D	0.86	129.4	C	0.71	92.6
WBT			B	0.68	43.5	D	0.89	51.8
WBR			A	0.28	7.2	A	0.39	14.8
NBL			B	0.66	74.0	D	0.90	96.2
NBT			E	1.00	73.6	B	0.62	41.7
NBR			A	0.37	12.3	A	0.16	0.9
SBL			E	0.94	88.9	B	0.61	37.5

	Intersection LOS		AM Peak Hour			PM Peak Hour		
	AM	PM	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)
SBT			A	0.50	49.3	E	0.96	74.8
SBR			A	0.20	16.8	A	0.30	22.4
Woodroffe Avenue and Medhurst Drive/Knoxdale Road								
EBL	C	D	B	0.64	53.1	A	0.59	68.2
EBT			A	0.59	52.1	A	0.13	39.7
EBR			A	0.21	2.0	A	0.12	0.6
WBL			B	0.67	69.4	B	0.69	73.1
WBTR			B	0.69	36.5	C	0.71	53.1
NBL			A	0.33	90.1	B	0.70	109.5
NBT			E	0.94	21.7	C	0.71	24.8
NBR			A	0.11	0.2	A	0.13	0.5
SBL			B	0.68	80.9	D	0.84	80.4
SBT			A	0.42	29.1	C	0.78	36.9
SBR			A	0.15	2.2	A	0.58	12.6
Woodroffe Avenue and Meadowlands Drive/Tallwood Drive								
EBL	D	D	D	0.86	126.4	A	0.58	70.4
EBT			A	0.55	49.7	A	0.43	43.6
EBR			A	0.37	11.5	B	0.61	21.7
WBL			A	0.49	67.7	C	0.80	72.6
WBT			A	0.44	47.7	A	0.43	41.8
WBR			A	0.47	15.9	A	0.49	14.3
NBL			B	0.66	60.3	B	0.64	67.5
NBT			E	1.00	59.9	C	0.75	41.4
NBR			A	0.47	10.8	A	0.27	5.5
SBL			D	0.87	97.9	E	0.96	109.6
SBT			A	0.46	28.0	E	0.92	49.8
SBR			A	0.11	0.3	A	0.19	2.8
Woodroffe Avenue and Access 1								
NBTR	C	B	-	-	-	-	-	-
WBR			A	0.37	22.8	A	0.10	13.2
Medhurst Drive and Access 2								
EBTL	B	B	A	0.06	8	A	0.07	8.2
WBTR			-	-	-	-	-	-
SBLR			A	0.15	11.8	A	0.15	11.8
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T = Through, R = Right-turn								

It is expected that, at the intersection of Woodroffe Avenue and West Hunt Club Road, all approaches will operate under capacity with a LOS of D or better with the exception of the eastbound through, northbound through, and southbound left movement during the AM peak, and the southbound through movement during the PM peak hour which are expected to operate at an LOS of E.

It is expected that, at the intersection of Woodroffe Avenue and Medhurst Drive/Knoxdale Road, all approaches Will operate under capacity with a LOS of D or better, with the exception of the northbound through lane during the AM peak hour that operates at an LOS of E.

It is expected that, at the intersection of Woodroffe Avenue and Meadowlands Drive/Tallwoodr Drive, all approaches will operate under capacity with a LOS of D or better with the exception of the northbound through movement during the AM peak and, the southbound through and the southbound left movement during the PM peak hour which are expected to operate at an LOS of E.

Both accesses are expected to operate at an LOS of A with a v/c of 0.37 or better.

It is expected that with the additional development generated traffic generated by the proposed development, and the background growth to the existing volumes, that the proposed development will have a minimal impact to the road network from the existing 2021 to the 2027 horizon year. All approaches are expected to continue to operate well and under capacity with the exception of the movements which are currently found to be above capacity. As expected, these movements are shown to be to operating with slightly higher V/C ratios in the projected 2027 horizon year.

18.2.2 Intersection Pedestrian Level of Service (PLOS)

The PLOS for the study intersection was determined in accordance with The City of Ottawa's MMLOS Guidelines. The Pedestrian Exposure at Signalized Intersection (PETSI), average delay to pedestrians, and corresponding levels of service at the signalized intersection are summarized in **Table 18.6.**

Table 18.6 Signalized Intersection Pedestrian Level of Service

Approach	PETSI Evaluation		Pedestrian Delay Evaluation		Critical PLOS
	Total Points	LOS	Delay (sec)	LOS	
Woodroffe Avenue and Meadowlands Drive/Tallwood Dr					
Northbound (E-W)	6	F	46	E	F
Southbound (E-W)	21	F	46	E	F
Eastbound (N-S)	66	C	37	D	D
Westbound (N-S)	66	C	37	D	D
Woodroffe Avenue and Medhurst Drive/Knoxdale Road					
Northbound (E-W)	18	F	43	E	F
Southbound (E-W)	21	F	43	E	F
Eastbound (N-S)	66	C	35	D	D
Westbound (N-S)	64	C	35	D	D
Woodroffe Avenue and West Hunt Club					
Northbound (E-W)	25	F	41	E	F
Southbound (E-W)	40	E	41	E	E
Eastbound (N-S)	25	F	35	D	F
Westbound (N-S)	10	F	35	D	F

Upon review of Exhibit 5 to 7 pf the City of Ottawa's MMLOS Guidelines, the intersection of Woodroffe Avenue and Meadowlands Drive/Tallwodd Drive has a PLOS of F for thew Woodroffe Avenue approaches and a PLOS of D for Meadowlands Drive and Tallwood Drive. The intersection of Woodroffe Avenue and Medhurst Rive/Knoxdale Road has a PLOS of F for the Woodroffe Avenue approaches and a PLOS of D for Medhurst Rive and Knoxdale Road. The intersection of Woodroffe Avenue and west Hunt Club Road has a PLOS of F for the northbound pedestrian facilities, a PLOS of E for the southbound pedestrian facilities on Woodroffe Avenue, and a PLOS of F for the West Hunt Club Road Corridor.

18.2.3 Intersection Bicycle Level of Service (BLOS)

The Bicycle Level of Service (BLOS) for the study area intersections was determined in accordance with the City of Ottawa's Multi-Modal level of Service (MMLOS) Guidelines. **Table 18.7** Illustrates the BLOS.

Table 18.7 Signalized Intersection Bicycle Level of Service

Approach	Bike Lane Facility	Right-Turn Lane Distance (m)	Lanes Crossed to Turn Left	Speed (km/h)	LOS
Woodroffe Avenue and Meadowlands Drive/Tallwood Dr					
Northbound (E-W)	Bike Lane	N/a	4	60	F
Southbound (E-W)	Bike Lane	N/a	4	60	F
Eastbound (N-S)	Mixed Traffic	35	1	40	D
Westbound (N-S)	Mixed Traffic	80	1	40	F
Woodroffe Avenue and Medhurst Drive/Knoxdale Road					
Northbound (E-W)	Bike Lane	N/a	4	60	F
Southbound (E-W)	Bike Lane	N/a	4	60	F
Eastbound (N-S)	Mixed Traffic	75	1	40	F
Westbound (N-S)	Mixed Traffic	N/a	1	40	B
Woodroffe Avenue and West Hunt Club					
Northbound (E-W)	Bike Lane	N/a	3	60	F
Southbound (E-W)	Bike Lane	N/a	3	60	F
Eastbound (N-S)	Bike Lane	N/a	4	80	F
Westbound (N-S)	Bike Lane	N/a	5	80	F

All approaches result in a BLOS of F with the exceptions of the westbound approach at the intersection of Woodroffe Avenue and Medhurst Drive/Knoxdale Road which has a BLOS of B, and the eastbound approach at the intersection of Woodroffe Avenue and Meadowlands Drive/Tallwood Drive which has a BLOS of D.

18.2.4 Intersection Transit Level of Service (TLOS)

In order to evaluate Transit Level of Service at the intersection within the study area, average delays at approaches were determined based on the intersection analysis completed as part of this investigation. Detailed analysis reports are presented in *Appendix D*.

Upon Review of Exhibit 16 of the City of Ottawa's MMLOS Guidelines, all signalized intersections operate with a TLOS F, due to high cycle timings and delays.

18.2.5 Intersection Truck Level of Service (tkLOS)

The Truck level of Service (tkLOS) for the study are intersections was determined in accordance with the City of Ottawa's MMLOS Guidelines. The effective radii, receiving lane parameters and corresponding levels of service at the signalized intersection of the study area are summarized in **Table 18.8.**

Table 18.8 Signalized Intersection Truck Level of Service

Approach	Effective corner Radius (m)	Number of Receiving Lanes	LOS
Woodroffe Avenue and Meadowlands Drive/Tallwood Dr			
Northbound (E-W)	20	2	A
Southbound (E-W)	20	2	A
Eastbound (N-S)	20	3	A
Westbound (N-S)	12	3	B
Woodroffe Avenue and Medhurst Drive/Knoxdale Road			
Northbound (E-W)	14	1	E
Southbound (E-W)	25	1	C
Eastbound (N-S)	18	3	A
Westbound (N-S)	10	3	B
Woodroffe Avenue and West Hunt Club			
Northbound (E-W)	27	2	A
Southbound (E-W)	35	2	A
Eastbound (N-S)	25	3	A
Westbound (N-S)	25	3	A

Upon review of Exhibit 21 of the City of Ottawa's MMLOS Guidelines the intersection of Woodroffe Avenue and Meadowlands Drive/Tallwood Drive has a tkLOS of A, the intersection of Woodroffe Avenue and Medhurst Drive/Knoxdale Road has a tkLOS of E and the intersection of Woodroffe Avenue and West Hunt Club has a tkLOS of A.

19.0 SUMMARY AND RECOMMENDATIONS

This TIA Strategy Report evaluated the proposed development and its expected impact on the surrounding transportation network. The proposed Development is located at 1545 Woodroffe Drive, involving a gas station with 12 pumps, a convenience store, retail area, a single bay automated car wash, and a restaurant with a drive through. The proposed development will be making use of the existing driveway onto Medhurst Drive, closing the two existing driveways, while adding a new driveway onto Woodroffe Avenue. The buildout year is expected to be 2022.

The proposed development is expected to generate 405 person trips during the AM Peak hour with 289 trips being pass-by and 129 being newly generated trips. During the PM peak hour the proposed development is

expected to generate 281 trips with 167 of the trips being pass-by and 114 being newly generated person trips. As such, this TIA report is exempted from Modules 4.5 and 4.8 of the City of Ottawa TIA Guidelines.

It is expected the proposed development will provide adequate facilities to meet the City of Ottawa's Complete Streets design philosophy, meeting the majority of the basic and required TDM measures in bicycle, walking, transit, and parking. The proposed development is expected to exceed the by-law requirements and no spillover parking is expected. Along the corridor Transit level of service is relatively low, however as the development is not expected to generate large volumes of transit mode share trips, the impact on transit due to the development is expected to be minimal.

Overall, all the roadways within the project study area are operating at acceptable levels of service; however, consideration should be given to monitoring operations of the northbound through movements at the intersections of Woodroffe Avenue and West Hunt Club Road as well as Woodroffe Avenue and Meadowlands Drive/Tallwood Drive as they are shown to operate at a LOS of E with a v/c of 1.00 during the 2027 total traffic scenario. It is expected that the proposed development will have little impact on the surrounding transportation network.

Prepared by,

William Sherwin,
Transportation and Traffic Engineering Intern
w.sherwin@mcintoshperry.com
613.714.5929

Reviewed by,

Mitchell Patenaude,
Transportation and Traffic Engineering Intern
m.patenaude@mcintoshperry.com
613.903.5784

Reviewed and Submitted by,

Thomas Gryz, M.A.Sc., P.Eng
Transportation and Traffic Engineer
t.gryz@mcintoshperry.com
613.903.5772

APPENDIX A – TIA STEP 1 SCREENING FORM

McINTOSH PERRY

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	1545 Woodroffe Avenue
Description of Location	**Gas Station with Convenience Store and Fast** Food Restaurant (drive-through)
Land Use Classification	**Gas Station with Convenience Market (945) and Fast** Food Restaurant with Drive-through window (934)
Development Size (units)	N/a
Development Size (m^2)	Convenience Market (333.6m^2) Fast Food Restaurant (111.4m^2)
Number of Accesses and Locations	2 accesses total; 1 onto Woodroffe Avenue, 1 onto Medhurst Drive
Phase of Development	Planning
Buildout Year	TBD

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?	X	
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*		X

**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?		X
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	X	
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)?	X	
Is the proposed driveway within auxiliary lanes of an intersection?		X
Does the proposed driveway make use of an existing median break that serves an existing site?		X
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	X	
Does the development include a drive-thru facility?	X	

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

5. Summary

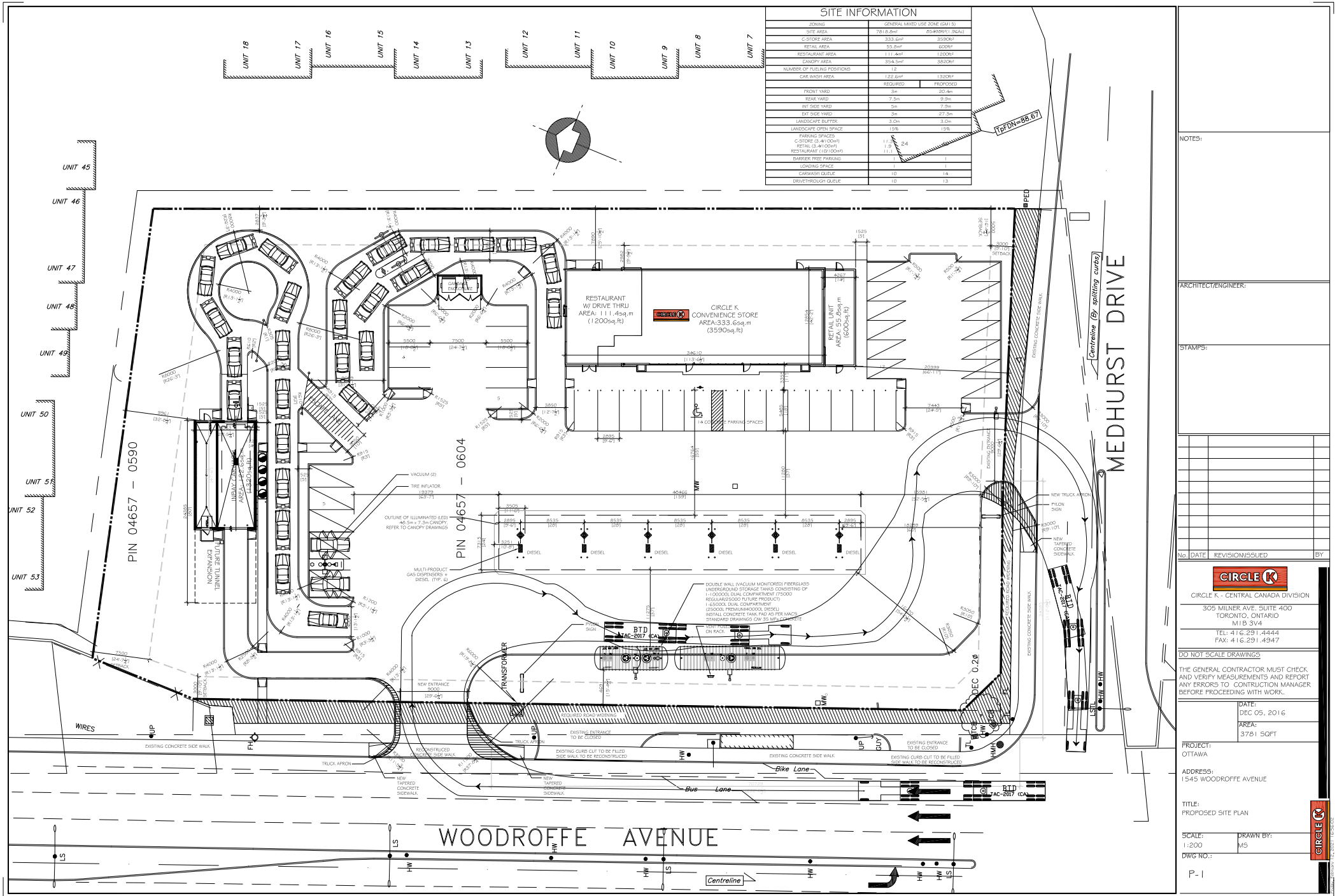
	Yes	No
Does the development satisfy the Trip Generation Trigger?	X	
Does the development satisfy the Location Trigger?	X	

Does the development satisfy the Safety Trigger?	X	

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 B – SITE PLAN

McINTOSH PERRY


SITE INFORMATION
ZONING
GENERAL MIXED USE ZONE (GM15)
SITE AREA
781.8m²
8549SM²(1.9Ac)
C-STORE AREA
333.6m²
3590ft²
RETAIL AREA
55.8m²
600ft²
RESTAURANT AREA
111.4m²
1200ft²
CANOPY AREA
354.5m²
3820ft²
NUMBER OF FUELING POSITIONS
12
CAR WASH AREA
122.6m²
1320ft²
REQUIRED
PROPOSED
FRONT YARD
3m
20.4m
REAR YARD
7.5m
9.9m
INT SIDE YARD
5m
7.9m
EXT SIDE YARD
3m
27.3m
LANDSCAPE BUFFER
3.0m
3.0m
LANDSCAPE OPEN SPACE
15%
15%
PARKING SPACES
C-STORE (3.4*100m²)
RETAIL (3.4*100m²)
RESTAURANT (10/100m²)
24
BARRIER FREE PARKING
1
1
LOADING SPACE
1
1
CARWASH QUEUE
10
14
DRIVETHROUGH QUEUE
10
13
UNIT 18
UNIT 17
UNIT 16
UNIT 15
UNIT 14
UNIT 13
UNIT 12
UNIT 11
UNIT 10
UNIT 9
UNIT 8
UNIT 7
UNIT 45
UNIT 46
UNIT 47
UNIT 48
UNIT 49
UNIT 50
UNIT 51
UNIT 52
UNIT 53
TOFDN=88.67
PED
MEDHURST DRIVE
Centreline (By splitting curbs)
RESTAURANT
W/ DRIVE THRU
AREA: 111.4sq.m
(1200sq.ft)
CIRCLE K
CONVENIENCE STORE
AREA:333.6sq.m
(3590sq.ft)
RETAIL UNIT
AREA: 55.8sq.m
(600sq.ft)
14 COMMON PARKING SPACES
PIN 04657 - 0590
PIN 04657 - 0604
UNDERGROUND STORAGE TANK
AREA: 122.2SM
(1320sq.ft)
FUTURE TUNNEL EXPANSION
VACUUM (2)
TIRE INFLATOR
OUTLINE OF ILLUMINATED (LED) 45.5m x 7.3m CANOPY. REFER TO CANOPY DRAWINGS
MULTI-PRODUCT GAS DISPENSERS + DIESEL (TYP. 6)
DOUBLE WALL (VACUUM MONITORED) FIBERGLASS UNDERGROUND STORAGE TANKS CONSISTING OF 1-100000L DUAL COMPARTMENT (75000 REGULAR/25000 FUTURE PRODUCT) 1-65000L DUAL COMPARTMENT (25000L PREMIUM/40000L DIESEL) INSTALL CONCRETE TANK PAD AS PER MACS STANDARD DRAWINGS GW 35 MPa CONCRETE
PYLON SIGN
VENT POLE ON ROOF
TRANSFORMER
NEW ENTRANCE
EXISTING ENTRANCE TO BE CLOSED
EXISTING CURB CUT TO BE FILLED SIDE WALK TO BE RECONSTRUCTED
RECONSTRUCTED CONCRETE SIDE WALK
NEW TAPERED CONCRETE SIDEWALK
EXISTING CONCRETE SIDE WALK
EXISTING CONCRETE SIDE WALK
NEW TRUCK APRON
PYLON SIGN
NEW TAPERED CONCRETE SIDEWALK
EXISTING CONCRETE SIDE WALK
RECONSTRUCTED ROAD WIDENING
TRUCK APRON
Bike Lane
Bus Lane
WOODROFFE AVENUE
Centreline
WIRES
BTD TAC-2017 (CA)
DEC 0.2%
NOTES:
ARCHITECT/ENGINEER:
STAMPS:
No. DATE REVISION/ISSUED BY
CIRCLE K
CIRCLE K - CENTRAL CANADA DIVISION
305 MILNER AVE. SUITE 400
TORONTO, ONTARIO
M1B 3V4
TEL: 416.291.4444
FAX: 416.291.4947
DO NOT SCALE DRAWINGS
THE GENERAL CONTRACTOR MUST CHECK AND VERIFY MEASUREMENTS AND REPORT ANY ERRORS TO CONTRUCTION MANAGER BEFORE PROCEEDING WITH WORK.
DATE:
DEC 05, 2016
AREA:
3781 SQFT
PROJECT:
OTTAWA
ADDRESS:
1545 WOODROFFE AVENUE
TITLE:
PROPOSED SITE PLAN
SCALE:
1:200
DRAWN BY:
MS
DWG NO.:
P-1

APPENDIX C – TRAFFIC DATA

McINTOSH PERRY

Merivale

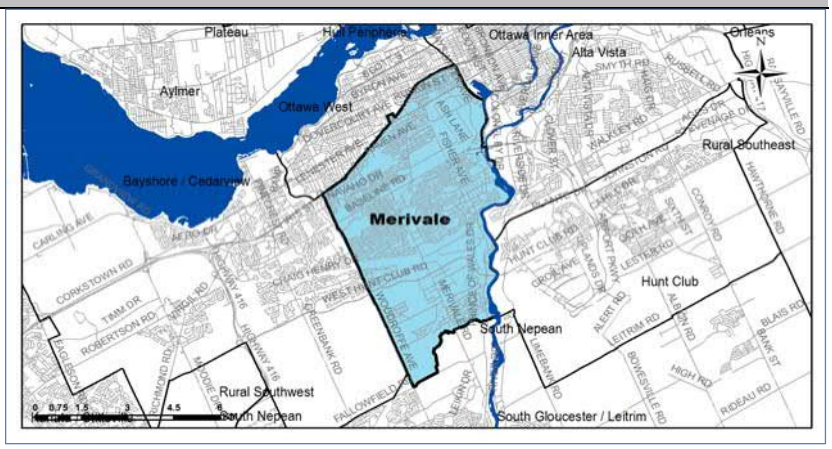
Demographic Characteristics

Population	77,720	Actively Travelled	61,960
Employed Population	34,650	Number of Vehicles	41,580
Households	32,990	Area (km^2)	38.8

Occupation Status (age 5+)	Male	Female	Total
Full Time Employed	15,970	14,080	30,050
Part Time Employed	1,660	2,940	4,600
Student	9,510	8,160	17,680
Retiree	6,960	9,020	15,980
Unemployed	1,340	1,130	2,470
Homemaker	50	1,980	2,030
Other	470	810	1,280
Total:	35,960	38,120	74,080

Traveller Characteristics	Male	Female	Total
Transit Pass Holders	7,770	8,770	16,540
Licensed Drivers	27,680	27,260	54,940
Telecommuters	140	150	290
Trips made by residents	98,530	103,670	202,200

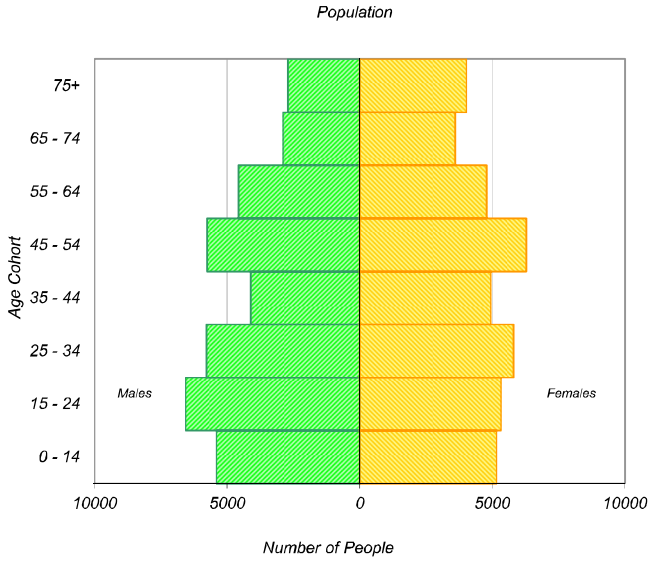
Selected Indicators	
Daily Trips per Person (age 5+)	2.73
Vehicles per Person	0.53
Number of Persons per Household	2.36
Daily Trips per Household	6.13
Vehicles per Household	1.26
Workers per Household	1.05
Population Density (Pop/km2)	2000

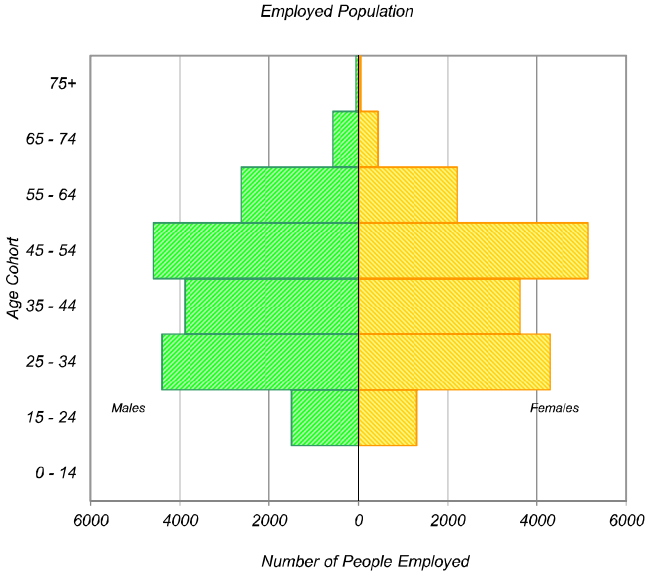


Household Size		
1 person	10,050	30%
2 persons	11,680	35%
3 persons	5,060	15%
4 persons	3,890	12%
5+ persons	2,310	7%
Total:	32,990	100%

Households by Vehicle Availability		
0 vehicles	5,150	16%
1 vehicle	17,220	52%
2 vehicles	8,490	26%
3 vehicles	1,580	5%
4+ vehicles	560	2%
Total:	32,990	100%

Households by Dwelling Type		
Single-detached	13,910	42%
Semi-detached	3,270	10%
Townhouse	4,320	13%
Apartment/Condo	11,490	35%
Total:	32,990	100%



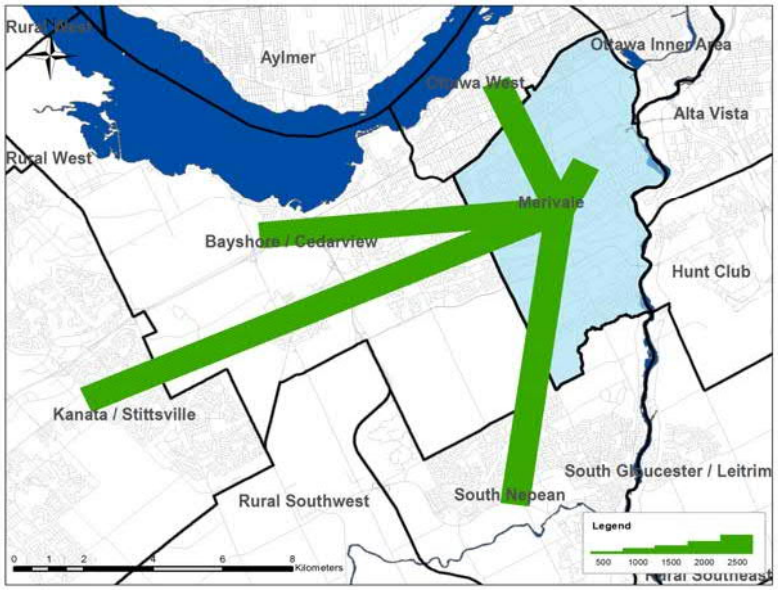


* In 2005 data was only collected for household members aged 11+ therefore these results cannot be compared to the 2011 data.

Travel Patterns

Top Five Origins of Trips to Merivale

AM Peak Period



Summary of Trips to and from Merivale

AM Peak Period (6:30 - 8:59) Districts	Destinations of Trips From District	% Total	Origins of Trips To District	% Total
Ottawa Centre	4,710	11%	600	1%
Ottawa Inner Area	4,710	11%	3,260	7%
Ottawa East	780	2%	1,610	3%
Beacon Hill	580	1%	540	1%
Alta Vista	3,690	9%	3,010	6%
Hunt Club	960	2%	3,130	6%
Merivale	13,980	34%	13,980	28%
Ottawa West	4,960	12%	3,340	7%
Bayshore / Cedarview	2,850	7%	4,710	9%
Orléans	460	1%	1,940	4%
Rural East	10	0%	340	1%
Rural Southeast	10	0%	960	2%
South Gloucester / Leitrim	340	1%	770	2%
South Nepean	790	2%	4,310	9%
Rural Southwest	200	0%	840	2%
Kanata / Stittsvile	1,200	3%	3,410	7%
Rural West	70	0%	720	1%
Île de Hull	400	1%	130	0%
Hull Périphérie	180	0%	260	1%
Plateau	0	0%	190	0%
Aylmer	70	0%	520	1%
Rural Northwest	10	0%	250	1%
Pointe Gatineau	40	0%	320	1%
Gatineau Est	30	0%	310	1%
Rural Northeast	30	0%	30	0%
Buckingham / Masson-Angers	0	0%	100	0%
Ontario Sub-Total:	40,300	98%	47,470	96%
Québec Sub-Total:	760	2%	2,110	4%
Total:	41,060	100%	49,580	100%

Trips by Trip Purpose

24 Hours	From District		To District		Within District	
Work or related	26,740	17%	34,050	22%	8,200	9%
School	8,520	6%	15,360	10%	6,130	7%
Shopping	12,310	8%	18,860	12%	19,990	23%
Leisure	13,070	9%	13,870	9%	9,290	11%
Medical	3,690	2%	6,540	4%	2,460	3%
Pick-up / drive passenger	9,730	6%	9,810	6%	5,080	6%
Return Home	73,660	48%	48,810	32%	32,900	37%
Other	5,540	4%	6,050	4%	3,690	4%
Total:	153,260	100%	153,350	100%	87,740	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Work or related	16,720	62%	20,310	57%	4,120	29%
School	5,210	19%	8,320	23%	4,760	34%
Shopping	360	1%	520	1%	610	4%
Leisure	470	2%	880	2%	700	5%
Medical	620	2%	1,290	4%	300	2%
Pick-up / drive passenger	1,790	7%	2,450	7%	1,700	12%
Return Home	980	4%	1,110	3%	950	7%
Other	930	3%	740	2%	830	6%
Total:	27,080	100%	35,620	100%	13,970	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Work or related	1,110	3%	1,110	4%	310	2%
School	290	1%	750	2%	220	1%
Shopping	3,540	9%	3,240	10%	3,250	18%
Leisure	3,200	8%	2,840	9%	2,140	12%
Medical	160	0%	530	2%	310	2%
Pick-up / drive passenger	3,430	9%	2,690	9%	1,060	6%
Return Home	27,480	68%	18,570	59%	9,960	56%
Other	940	2%	1,530	5%	610	3%
Total:	40,150	100%	31,260	100%	17,860	100%

Peak Period (%)	Total:	% of 24 Hours	Within District (%)
24 Hours	394,350		22%
AM Peak Period	76,670	19%	18%
PM Peak Period	89,270	23%	20%

Trips by Primary Travel Mode

24 Hours	From District		To District		Within District	
Auto Driver	94,090	61%	94,010	61%	47,940	55%
Auto Passenger	22,640	15%	22,750	15%	13,260	15%
Transit	28,190	18%	27,930	18%	6,370	7%
Bicycle	2,400	2%	2,440	2%	1,340	2%
Walk	2,800	2%	2,790	2%	15,100	17%
Other	3,150	2%	3,420	2%	3,720	4%
Total:	153,270	100%	153,340	100%	87,730	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Auto Driver	14,480	53%	21,440	60%	6,050	43%
Auto Passenger	2,940	11%	4,180	12%	2,030	15%
Transit	6,960	26%	7,770	22%	1,500	11%
Bicycle	840	3%	660	2%	430	3%
Walk	600	2%	500	1%	2,380	17%
Other	1,270	5%	1,060	3%	1,580	11%
Total:	27,090	100%	35,610	100%	13,970	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Auto Driver	25,650	64%	18,310	59%	9,270	52%
Auto Passenger	5,440	14%	4,410	14%	2,650	15%
Transit	6,940	17%	6,070	19%	1,520	9%
Bicycle	590	1%	790	3%	310	2%
Walk	800	2%	890	3%	3,190	18%
Other	710	2%	790	3%	930	5%
Total:	40,130	100%	31,260	100%	17,870	100%

Avg Vehicle Occupancy	From District	To District	Within District
24 Hours	1.24	1.24	1.28
AM Peak Period	1.20	1.19	1.34
PM Peak Period	1.21	1.24	1.29

Transit Modal Split	From District	To District	Within District
24 Hours	19%	19%	9%
AM Peak Period	29%	23%	16%
PM Peak Period	18%	21%	11%

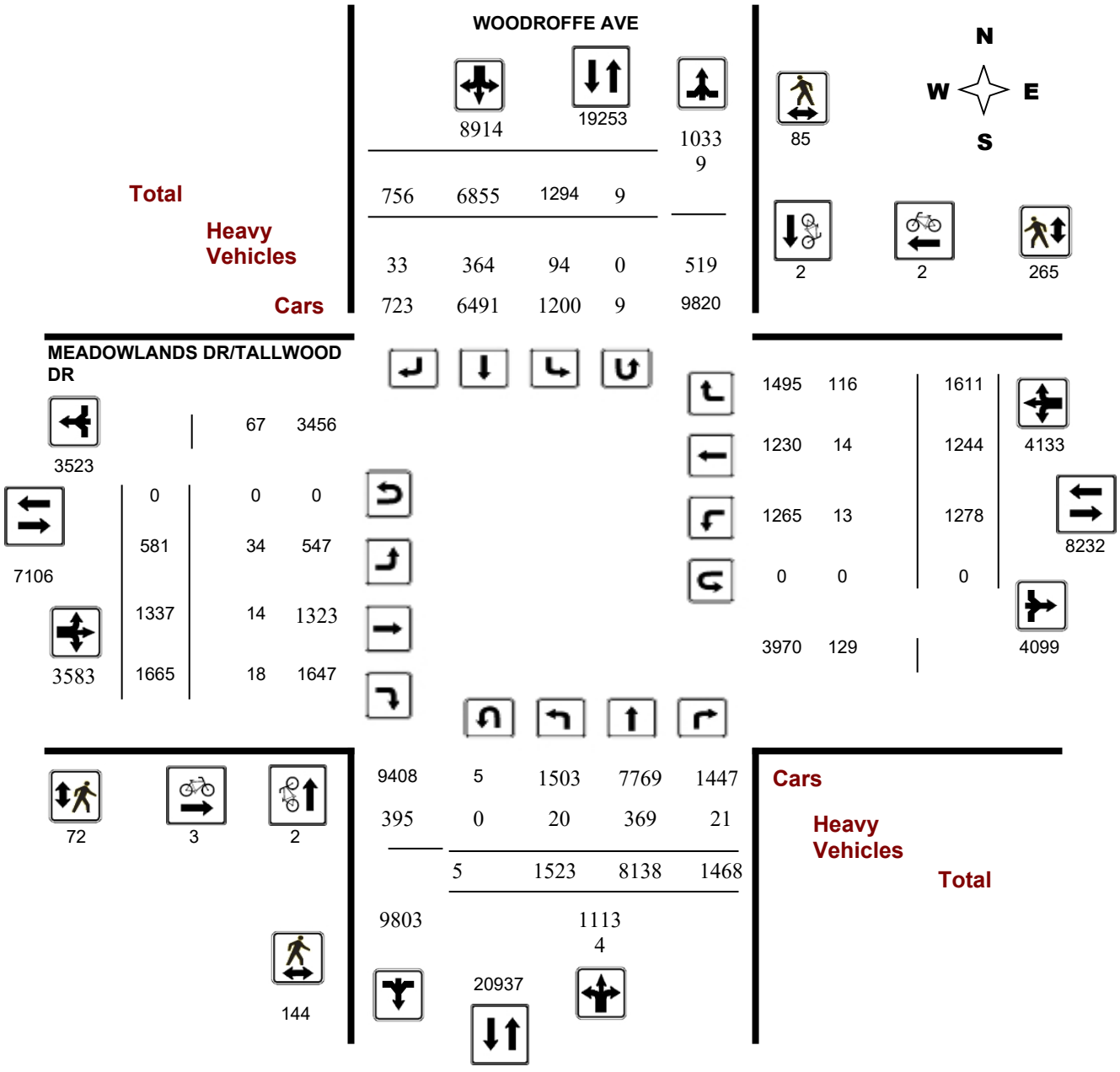
Transportation Services - Traffic Services

Turning Movement Count - Study Results

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016
Start Time: 07:00
WO No: 35820
Device: Miovision

Full Study Diagram



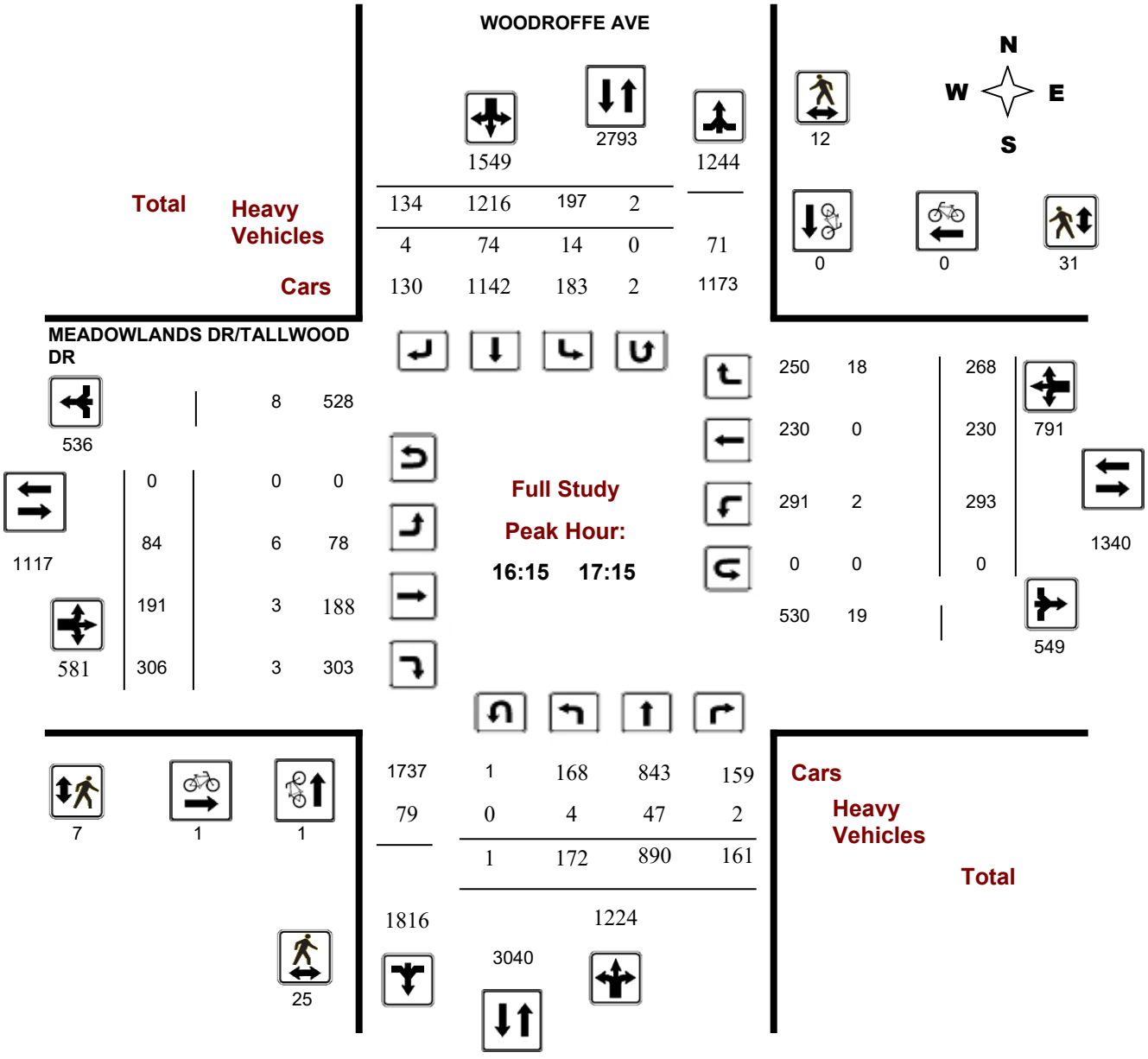
Transportation Services - Traffic Services

Turning Movement Count - Study Results

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016
Start Time: 07:00
WO No: 35820
Device: Miovision

Full Study Peak Hour Diagram



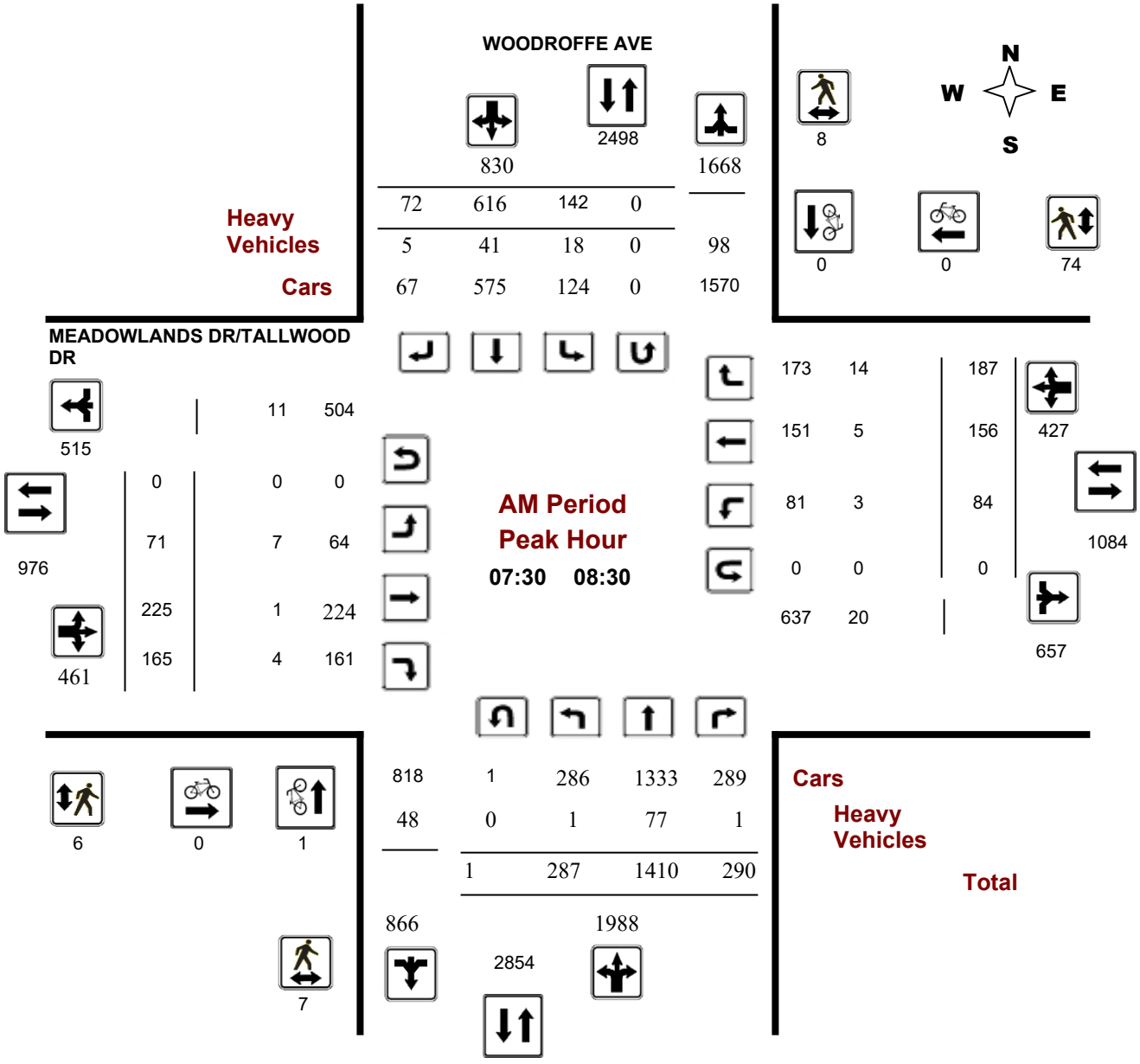
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016 **WO No:** 35820

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



Comments

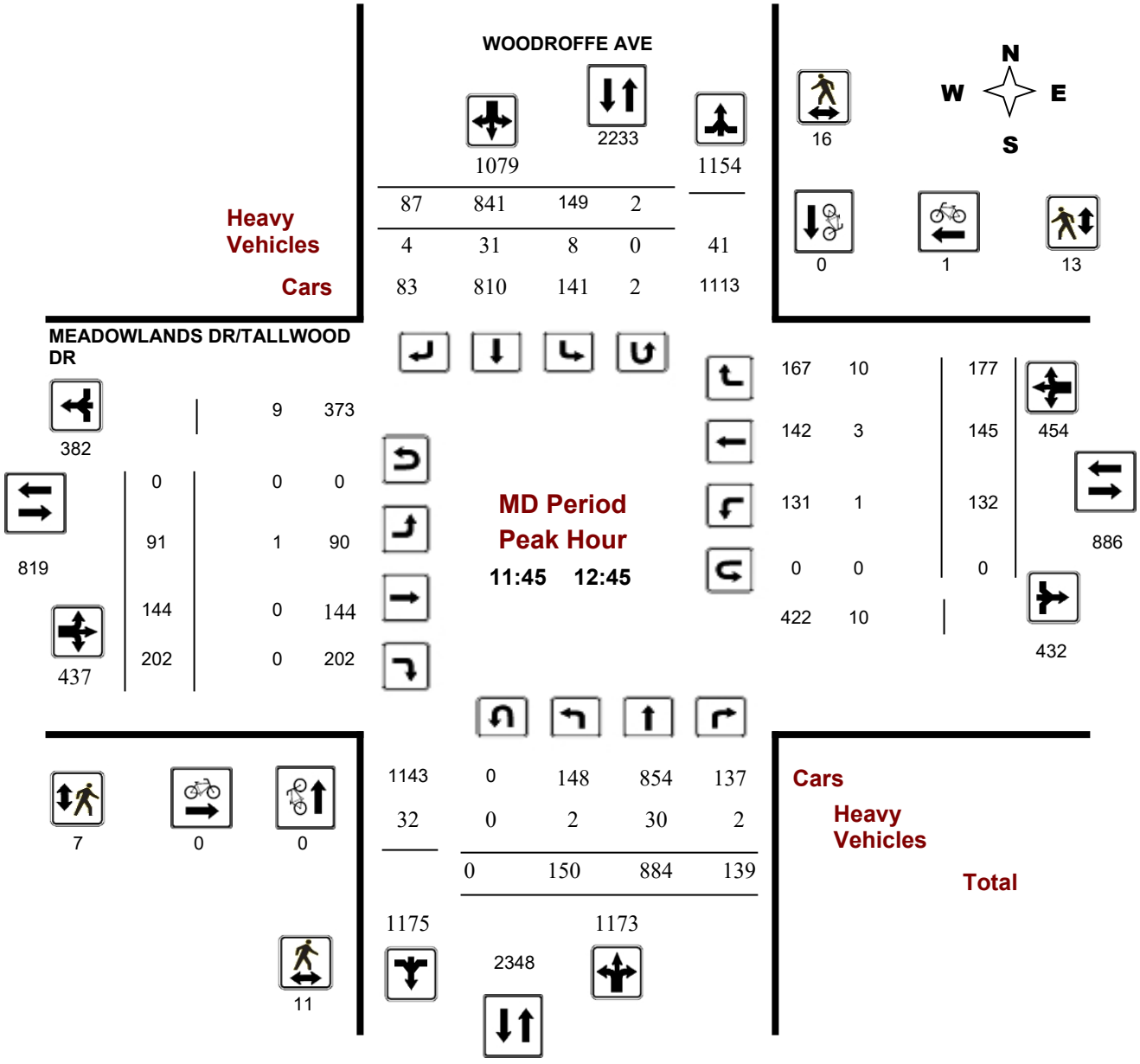
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016 **WO No:** 35820

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



Comments

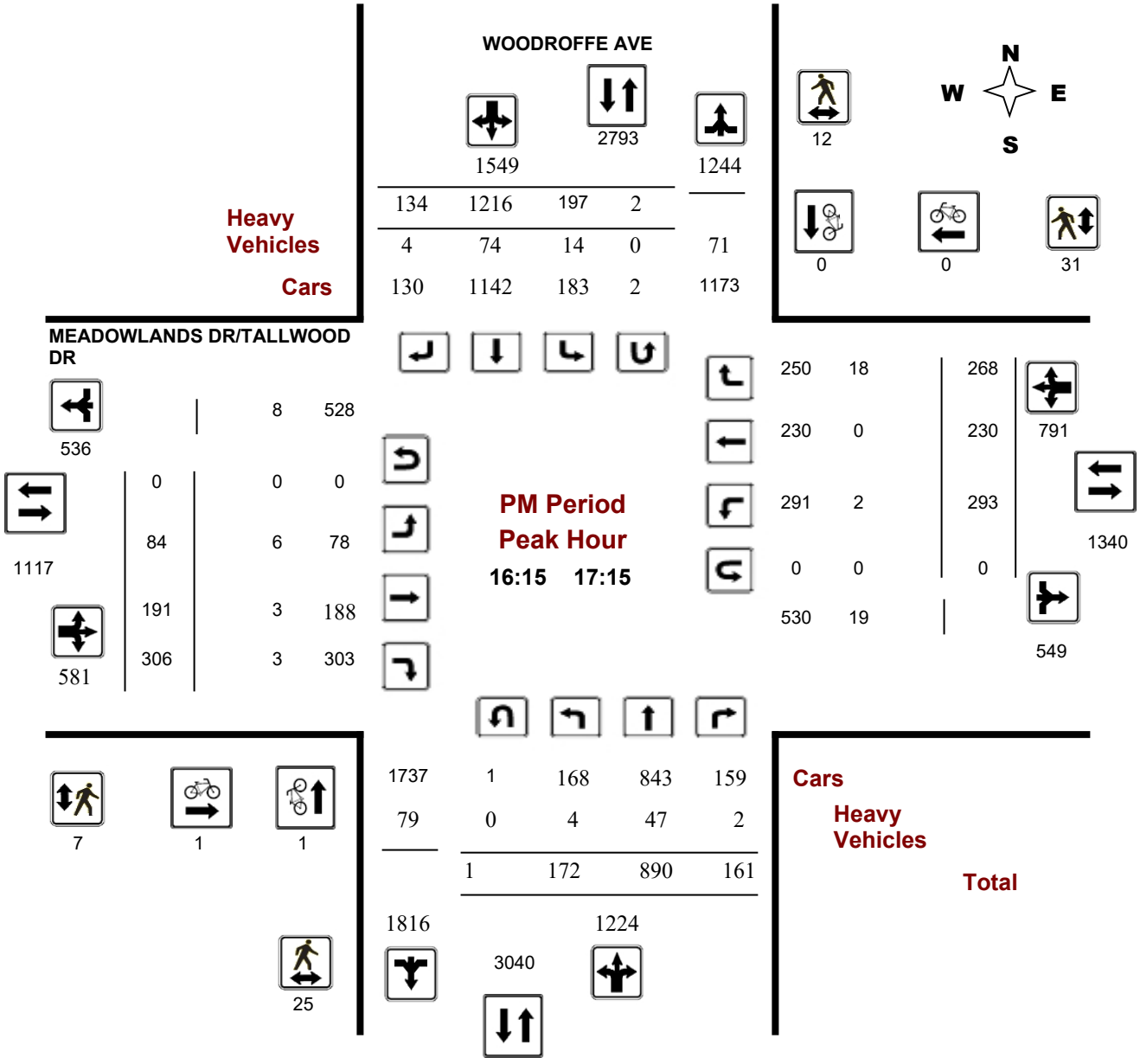
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016 **WO No:** 35820

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016 **WO No:** 35820

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, March 23, 2016

Total Observed U-Turns

Northbound: 5 Southbound: 9

Eastbound: 0 Westbound: 0

AADT Factor

1.00

	WOODROFFE AVE									MEADOWLANDS DR/TALLWOOD DR									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	236	1451	237	**1924**	125	484	67	**676**	**2600**	64	163	126	**353**	61	105	149	**315**	**668**	**3268**
08:00 09:00	281	1247	271	**1799**	142	645	74	**861**	**2660**	59	223	195	**477**	105	153	178	**436**	**913**	**3573**
09:00 10:00	184	1035	180	**1399**	143	603	63	**809**	**2208**	69	131	140	**340**	76	105	155	**336**	**676**	**2884**
11:30 12:30	136	907	135	**1178**	154	789	78	**1021**	**2199**	84	155	200	**439**	122	145	180	**447**	**886**	**3085**
12:30 13:30	190	815	152	**1157**	165	776	90	**1031**	**2188**	74	118	171	**363**	119	144	211	**474**	**837**	**3025**
15:00 16:00	152	872	158	**1182**	195	1213	125	**1533**	**2715**	82	182	302	**566**	234	170	250	**654**	**1220**	**3935**
16:00 17:00	184	881	175	**1240**	166	1284	126	**1576**	**2816**	80	197	295	**572**	279	230	236	**745**	**1317**	**4133**
17:00 18:00	160	930	160	**1250**	204	1061	133	**1398**	**2648**	69	168	236	**473**	282	192	252	**726**	**1199**	**3847**
Sub Total	1523	8138	1468	**11129**	1294	6855	756	**8905**	**20034**	581	1337	1665	**3583**	1278	1244	1611	**4133**	**7716**	**27750**
U Turns	5			**5**	9			**9**	**14**	**0**			**0**	0			**0**	**0**	**14**
Total	1528	8138	1468	**11134**	1303	6855	756	**8914**	**20048**	581	1337	1665	**3583**	1278	1244	1611	**4133**	**7716**	**27764**
EQ 12Hr	2124	11312	2041	**15477**	1811	9528	1051	**12390**	**27867**	808	1858	2314	**4980**	1776	1729	2239	**5744**	**10724**	**38591**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	2124	11312	2041	**15477**	1811	9528	1051	**12390**	**27867**	808	1858	2314	**4980**	1776	1729	2239	**5744**	**10724**	**38591**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	2782	14819	2674	**20275**	2372	12482	1377	**16231**	**36506**	1058	2434	3031	**6523**	2327	2265	2933	**7525**	**14048**	**50554**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016 **WO No:** 35820

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

Full Study 15 Minute Increments

		WOODROFFE AVE									MEADOWLANDS DR/TALLWOOD D									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	51	341	37	429	29	96	13	138	**567**	8	25	26	59	14	12	27	53	**112**	**679**
07:15	07:30	52	370	57	479	33	107	14	154	**633**	16	28	29	73	12	20	29	61	**134**	**767**
07:30	07:45	58	396	67	521	23	134	14	171	**692**	20	44	42	106	17	38	45	100	**206**	**898**
07:45	08:00	75	344	76	495	40	147	26	213	**708**	20	66	29	115	18	35	48	101	**216**	**924**
08:00	08:15	80	330	87	497	44	174	12	230	**727**	16	60	46	122	30	42	47	119	**241**	**968**
08:15	08:30	75	340	60	475	35	161	20	216	**691**	15	55	48	118	19	41	47	107	**225**	**916**
08:30	08:45	65	321	73	459	25	157	16	198	**657**	10	61	49	120	22	35	41	98	**218**	**875**
08:45	09:00	63	256	51	370	38	153	26	217	**587**	18	47	52	117	34	35	43	112	**229**	**816**
09:00	09:15	59	288	53	400	42	143	17	202	**602**	20	31	49	100	20	26	40	86	**186**	**788**
09:15	09:30	39	266	41	346	44	155	15	214	**560**	14	39	31	84	20	24	42	86	**170**	**730**
09:30	09:45	38	231	37	306	27	155	16	198	**504**	20	27	35	82	16	39	33	88	**170**	**674**
09:45	10:00	48	250	49	347	30	150	15	195	**542**	15	34	25	74	20	16	40	76	**150**	**692**
11:30	11:45	29	263	32	324	44	157	22	223	**547**	13	44	50	107	24	31	47	102	**209**	**756**
11:45	12:00	40	220	36	296	35	206	14	255	**551**	22	40	57	119	25	40	43	108	**227**	**778**
12:00	12:15	32	204	31	267	45	227	17	289	**556**	27	31	53	111	31	46	43	120	**231**	**787**
12:15	12:30	35	220	36	291	33	199	25	257	**548**	22	40	40	102	42	28	47	117	**219**	**767**
12:30	12:45	43	240	36	319	38	209	31	278	**597**	20	33	52	105	34	31	44	109	**214**	**811**
12:45	13:00	54	194	39	287	45	199	24	268	**555**	15	35	39	89	32	41	56	129	**218**	**773**
13:00	13:15	54	198	37	289	42	200	19	261	**550**	19	28	42	89	30	32	52	114	**203**	**753**
13:15	13:30	39	183	40	262	42	168	16	226	**488**	20	22	38	80	23	40	59	122	**202**	**690**
15:00	15:15	41	242	42	325	53	311	28	392	**717**	20	45	90	155	67	41	52	160	**315**	**1032**
15:15	15:30	38	203	46	287	46	293	31	370	**657**	21	43	83	147	51	34	71	156	**303**	**960**
15:30	15:45	37	222	46	305	46	303	32	381	**686**	23	58	67	148	62	39	52	153	**301**	**987**
15:45	16:00	36	205	24	265	52	306	34	392	**657**	18	36	62	116	54	56	75	185	**301**	**958**
16:00	16:15	49	218	46	313	29	321	27	377	**690**	21	46	65	132	57	60	47	164	**296**	**986**
16:15	16:30	43	214	49	306	43	327	34	404	**710**	24	54	91	169	70	61	52	183	**352**	**1062**
16:30	16:45	44	237	34	315	41	324	34	399	**714**	18	57	84	159	83	59	68	210	**369**	**1083**
16:45	17:00	49	212	46	307	54	312	31	397	**704**	17	40	55	112	69	50	69	188	**300**	**1004**
17:00	17:15	37	227	32	296	61	253	35	349	**645**	25	40	76	141	71	60	79	210	**351**	**996**
17:15	17:30	40	229	51	320	46	274	27	347	**667**	10	41	62	113	66	42	54	162	**275**	**942**
17:30	17:45	48	247	40	335	45	269	31	345	**680**	17	49	55	121	85	53	67	205	**326**	**1006**
17:45	18:00	37	227	37	301	53	265	40	358	**659**	17	38	43	98	60	37	52	149	**247**	**906**
Total:		1528	8138	1468	1113	1303	6855	756	8914	**20048**	581	1337	1665	3583	1278	1244	1611	4133	**20048**	**27,764**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016 **WO No:** 35820

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

Full Study Cyclist Volume

Time Period		WOODROFFE AVE			MEADOWLANDS DR/TALLWOOD DR			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	0	0	**0**	**0**
07:15	07:30	0	0	**0**	1	0	**1**	**1**
07:30	07:45	0	0	**0**	0	0	**0**	**0**
07:45	08:00	1	0	**1**	0	0	**0**	**1**
08:00	08:15	0	0	**0**	0	0	**0**	**0**
08:15	08:30	0	0	**0**	0	0	**0**	**0**
08:30	08:45	0	0	**0**	1	0	**1**	**1**
08:45	09:00	0	0	**0**	0	0	**0**	**0**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	0	0	**0**	0	0	**0**	**0**
09:30	09:45	0	0	**0**	0	0	**0**	**0**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	1	**1**	**1**
12:45	13:00	0	0	**0**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	1	**1**	0	0	**0**	**1**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	1	**1**	**1**
16:15	16:30	0	0	**0**	1	0	**1**	**1**
16:30	16:45	0	0	**0**	0	0	**0**	**0**
16:45	17:00	1	0	**1**	0	0	**0**	**1**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	0	1	**1**	0	0	**0**	**1**
17:30	17:45	0	0	**0**	0	0	**0**	**0**
17:45	18:00	0	0	**0**	0	0	**0**	**0**
Total		2	2	**4**	3	2	**5**	**9**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016 **WO No:** 35820

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

Full Study Pedestrian Volume

	WOODROFFE AVE			MEADOWLANDS DR/TALLWOOD D			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	2	1	**3**	1	2	**3**	**6**
07:15 07:30	1	3	**4**	2	10	**12**	**16**
07:30 07:45	2	1	**3**	1	27	**28**	**31**
07:45 08:00	1	2	**3**	3	20	**23**	**26**
08:00 08:15	2	1	**3**	0	11	**11**	**14**
08:15 08:30	2	4	**6**	2	16	**18**	**24**
08:30 08:45	5	6	**11**	4	12	**16**	**27**
08:45 09:00	4	1	**5**	2	4	**6**	**11**
09:00 09:15	3	0	**3**	0	4	**4**	**7**
09:15 09:30	1	0	**1**	0	2	**2**	**3**
09:30 09:45	1	0	**1**	0	3	**3**	**4**
09:45 10:00	4	3	**7**	2	4	**6**	**13**
11:30 11:45	5	0	**5**	0	5	**5**	**10**
11:45 12:00	1	3	**4**	1	1	**2**	**6**
12:00 12:15	3	7	**10**	0	9	**9**	**19**
12:15 12:30	4	2	**6**	2	0	**2**	**8**
12:30 12:45	3	4	**7**	4	3	**7**	**14**
12:45 13:00	1	2	**3**	2	1	**3**	**6**
13:00 13:15	4	1	**5**	2	7	**9**	**14**
13:15 13:30	2	4	**6**	0	4	**4**	**10**
15:00 15:15	13	5	**18**	6	14	**20**	**38**
15:15 15:30	13	2	**15**	14	8	**22**	**37**
15:30 15:45	5	3	**8**	2	4	**6**	**14**
15:45 16:00	14	4	**18**	4	6	**10**	**28**
16:00 16:15	11	5	**16**	8	23	**31**	**47**
16:15 16:30	5	6	**11**	2	8	**10**	**21**
16:30 16:45	6	2	**8**	2	14	**16**	**24**
16:45 17:00	9	2	**11**	1	6	**7**	**18**
17:00 17:15	5	2	**7**	2	3	**5**	**12**
17:15 17:30	4	2	**6**	1	11	**12**	**18**
17:30 17:45	7	5	**12**	2	17	**19**	**31**
17:45 18:00	1	2	**3**	0	6	**6**	**9**
Total	144	85	**229**	72	265	**337**	**566**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016 **WO No:** 35820

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

Full Study Heavy Vehicles

		WOODROFFE AVE									MEADOWLANDS DR/TALLWOOD D									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	2	19	0	**21**	3	9	3	**15**	**36**	1	0	0	**1**	0	0	4	**4**	**5**	**41**
07:15	07:30	0	23	3	**26**	6	8	1	**15**	**41**	2	1	1	**4**	0	0	5	**5**	**9**	**50**
07:30	07:45	0	17	1	**18**	6	12	1	**19**	**37**	3	1	1	**5**	1	3	5	**9**	**14**	**51**
07:45	08:00	0	26	0	**26**	5	12	1	**18**	**44**	1	0	0	**1**	1	0	3	**4**	**5**	**49**
08:00	08:15	0	18	0	**18**	5	11	1	**17**	**35**	2	0	2	**4**	1	1	2	**4**	**8**	**43**
08:15	08:30	1	16	0	**17**	2	6	2	**10**	**27**	1	0	1	**2**	0	1	4	**5**	**7**	**34**
08:30	08:45	3	16	2	**21**	3	5	1	**9**	**30**	1	4	1	**6**	0	0	3	**3**	**9**	**39**
08:45	09:00	1	14	2	**17**	3	9	2	**14**	**31**	2	0	0	**2**	0	1	3	**4**	**6**	**37**
09:00	09:15	0	11	1	**12**	3	9	0	**12**	**24**	1	0	2	**3**	0	0	2	**2**	**5**	**29**
09:15	09:30	0	13	0	**13**	2	8	0	**10**	**23**	1	0	0	**1**	1	0	3	**4**	**5**	**28**
09:30	09:45	0	3	1	**4**	3	12	0	**15**	**19**	1	0	1	**2**	1	1	3	**5**	**7**	**26**
09:45	10:00	1	10	1	**12**	1	5	2	**8**	**20**	0	0	1	**1**	1	0	3	**4**	**5**	**25**
11:30	11:45	0	12	0	**12**	3	5	0	**8**	**20**	0	0	0	**0**	0	0	2	**2**	**2**	**22**
11:45	12:00	0	10	2	**12**	2	11	0	**13**	**25**	0	0	0	**0**	0	0	3	**3**	**3**	**28**
12:00	12:15	1	6	0	**7**	2	8	1	**11**	**18**	1	0	0	**1**	0	2	1	**3**	**4**	**22**
12:15	12:30	1	7	0	**8**	2	6	2	**10**	**18**	0	0	0	**0**	0	1	4	**5**	**5**	**23**
12:30	12:45	0	7	0	**7**	2	6	1	**9**	**16**	0	0	0	**0**	1	0	2	**3**	**3**	**19**
12:45	13:00	0	5	0	**5**	2	7	0	**9**	**14**	2	0	0	**2**	0	0	3	**3**	**5**	**19**
13:00	13:15	3	7	1	**11**	2	9	0	**11**	**22**	1	0	1	**2**	0	0	3	**3**	**5**	**27**
13:15	13:30	0	11	0	**11**	3	11	1	**15**	**26**	0	0	0	**0**	0	0	3	**3**	**3**	**29**
15:00	15:15	1	7	1	**9**	4	11	1	**16**	**25**	1	1	2	**4**	0	0	8	**8**	**12**	**37**
15:15	15:30	1	9	0	**10**	3	12	2	**17**	**27**	1	0	0	**1**	1	2	10	**13**	**14**	**41**
15:30	15:45	0	7	3	**10**	3	19	2	**24**	**34**	2	2	0	**4**	1	0	1	**2**	**6**	**40**
15:45	16:00	0	8	0	**8**	3	17	1	**21**	**29**	1	2	1	**4**	0	1	6	**7**	**11**	**40**
16:00	16:15	0	16	0	**16**	0	18	1	**19**	**35**	1	0	1	**2**	0	1	2	**3**	**5**	**40**
16:15	16:30	2	16	0	**18**	3	19	1	**23**	**41**	1	0	2	**3**	1	0	5	**6**	**9**	**50**
16:30	16:45	0	13	0	**13**	5	24	1	**30**	**43**	1	0	0	**1**	1	0	3	**4**	**5**	**48**
16:45	17:00	2	12	2	**16**	3	11	1	**15**	**31**	2	0	0	**2**	0	0	6	**6**	**8**	**39**
17:00	17:15	0	6	0	**6**	3	20	1	**24**	**30**	2	3	1	**6**	0	0	4	**4**	**10**	**40**
17:15	17:30	0	12	0	**12**	5	16	1	**22**	**34**	0	0	0	**0**	1	0	2	**3**	**3**	**37**
17:30	17:45	1	6	1	**8**	1	12	1	**14**	**22**	1	0	0	**1**	0	0	6	**6**	**7**	**29**
17:45	18:00	0	6	0	**6**	1	16	1	**18**	**24**	1	0	0	**1**	1	0	2	**3**	**4**	**28**
Total:	None	20	369	21	**410**	94	364	33	**491**	**901**	34	14	18	**66**	13	14	116	**143**	**209**	**1,110**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MEADOWLANDS DR/TALLWOOD DR @ WOODROFFE AVE

Survey Date: Wednesday, March 23, 2016 **WO No:** 35820

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

Full Study 15 Minute U-Turn Total

Time Period		WOODROFFE AVE		MEADOWLANDS DR/TALLWOOD D		
		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	**0**
07:15	07:30	0	0	0	0	**0**
07:30	07:45	0	0	0	0	**0**
07:45	08:00	0	0	0	0	**0**
08:00	08:15	0	0	0	0	**0**
08:15	08:30	1	0	0	0	**1**
08:30	08:45	1	0	0	0	**1**
08:45	09:00	0	0	0	0	**0**
09:00	09:15	0	0	0	0	**0**
09:15	09:30	0	0	0	0	**0**
09:30	09:45	0	0	0	0	**0**
09:45	10:00	0	0	0	0	**0**
11:30	11:45	0	1	0	0	**1**
11:45	12:00	0	1	0	0	**1**
12:00	12:15	0	0	0	0	**0**
12:15	12:30	0	1	0	0	**1**
12:30	12:45	0	0	0	0	**0**
12:45	13:00	0	2	0	0	**2**
13:00	13:15	0	0	0	0	**0**
13:15	13:30	0	0	0	0	**0**
15:00	15:15	0	0	0	0	**0**
15:15	15:30	0	1	0	0	**1**
15:30	15:45	0	0	0	0	**0**
15:45	16:00	0	1	0	0	**1**
16:00	16:15	1	0	0	0	**1**
16:15	16:30	0	1	0	0	**1**
16:30	16:45	0	0	0	0	**0**
16:45	17:00	0	0	0	0	**0**
17:00	17:15	1	1	0	0	**2**
17:15	17:30	0	0	0	0	**0**
17:30	17:45	1	0	0	0	**1**
17:45	18:00	0	0	0	0	**0**
Total		5	9	0	0	**14**

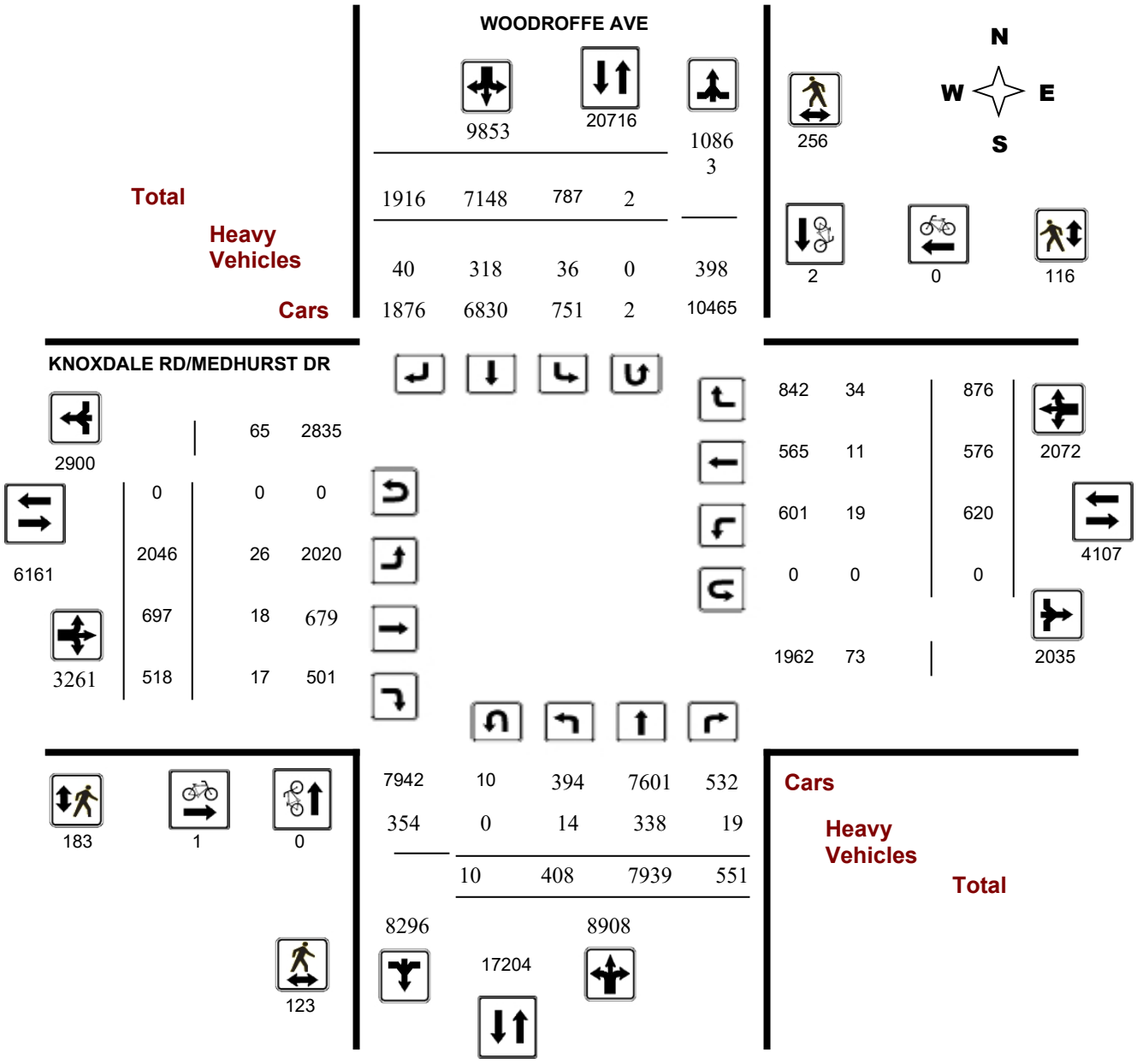
Transportation Services - Traffic Services

Turning Movement Count - Study Results

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018
Start Time: 07:00
WO No: 37418
Device: Miovision

Full Study Diagram



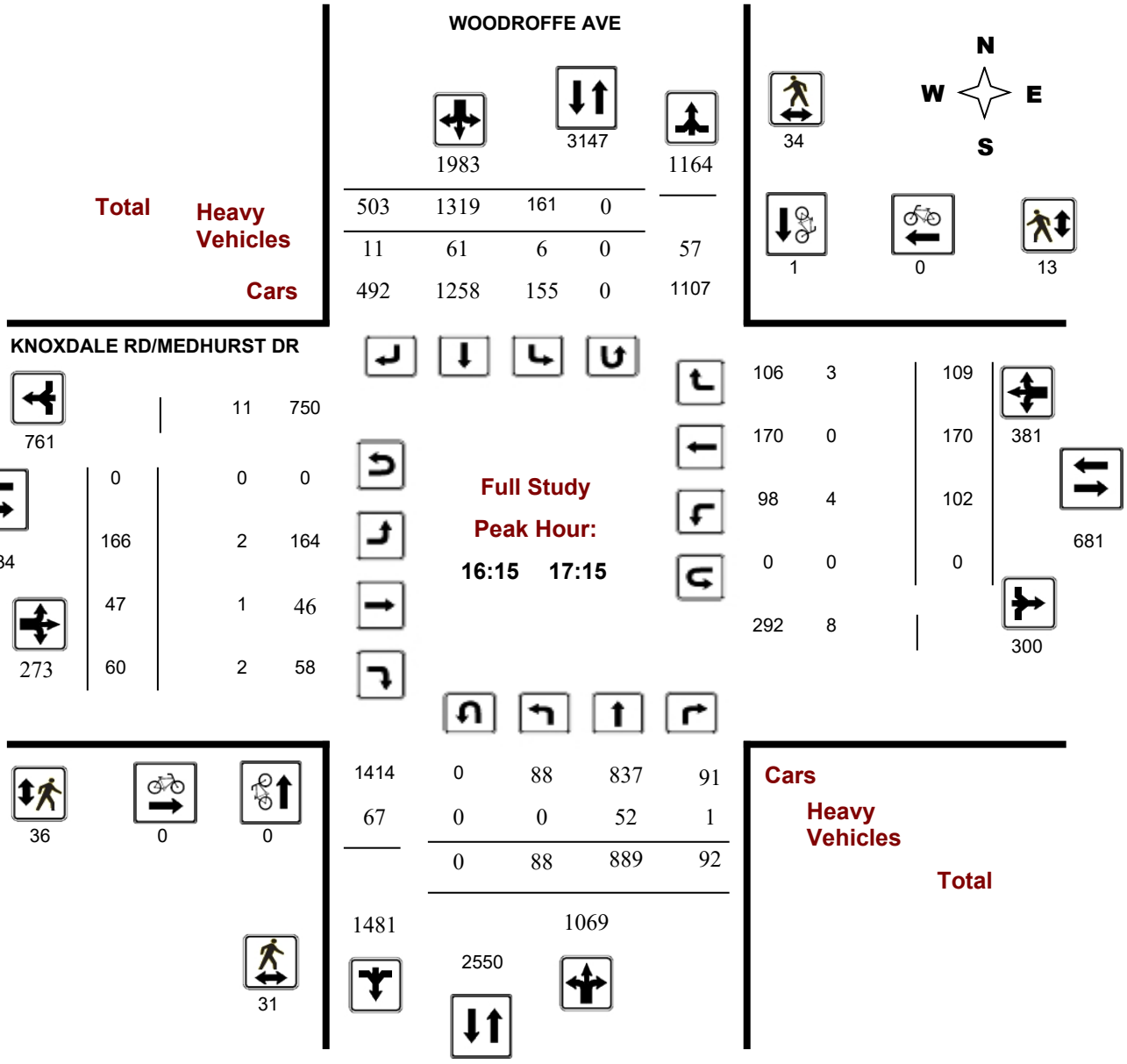
Transportation Services - Traffic Services

Turning Movement Count - Study Results

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018
Start Time: 07:00
WO No: 37418
Device: Miovision

Full Study Peak Hour Diagram



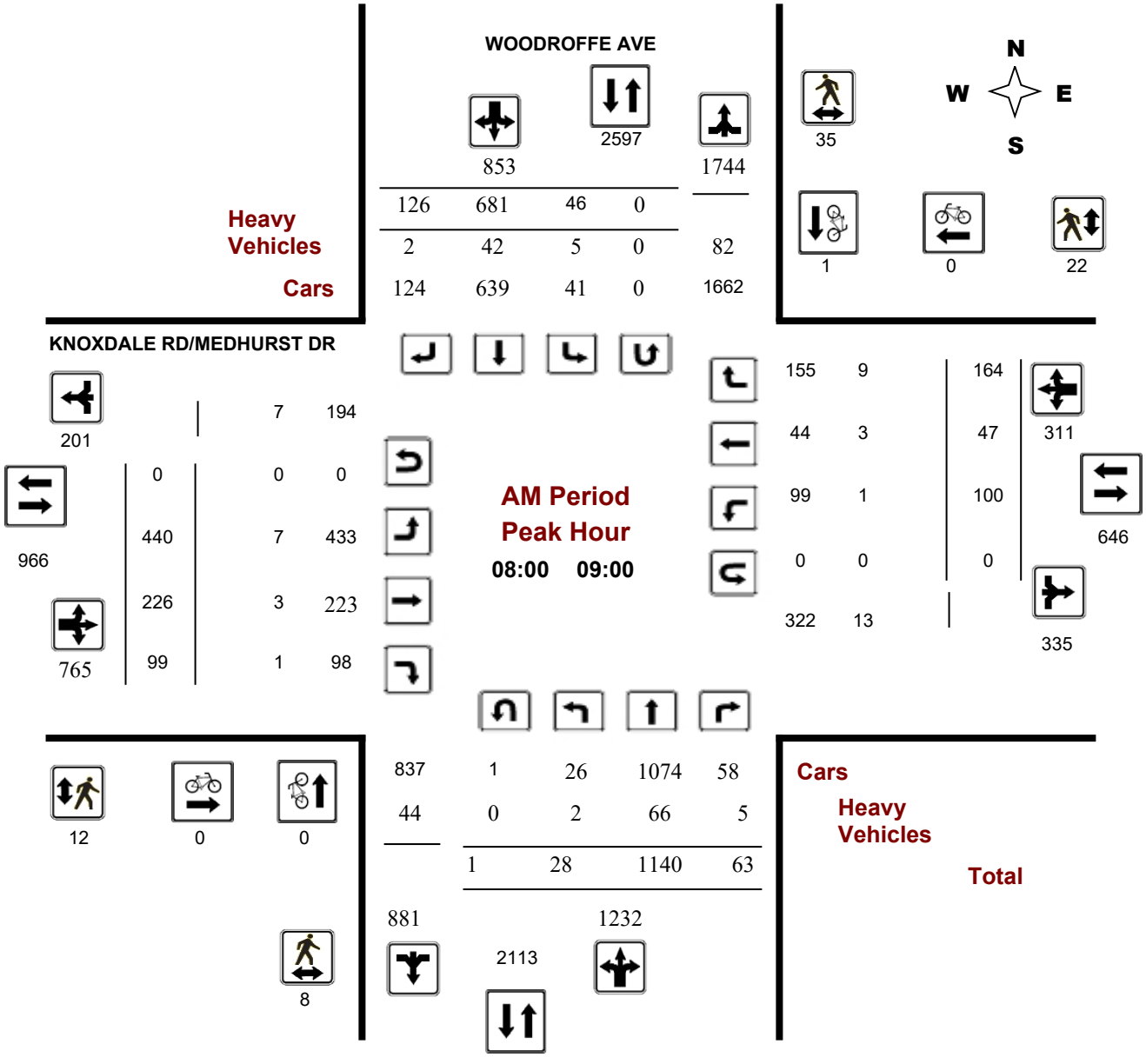
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018 **WO No:** 37418

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



Comments

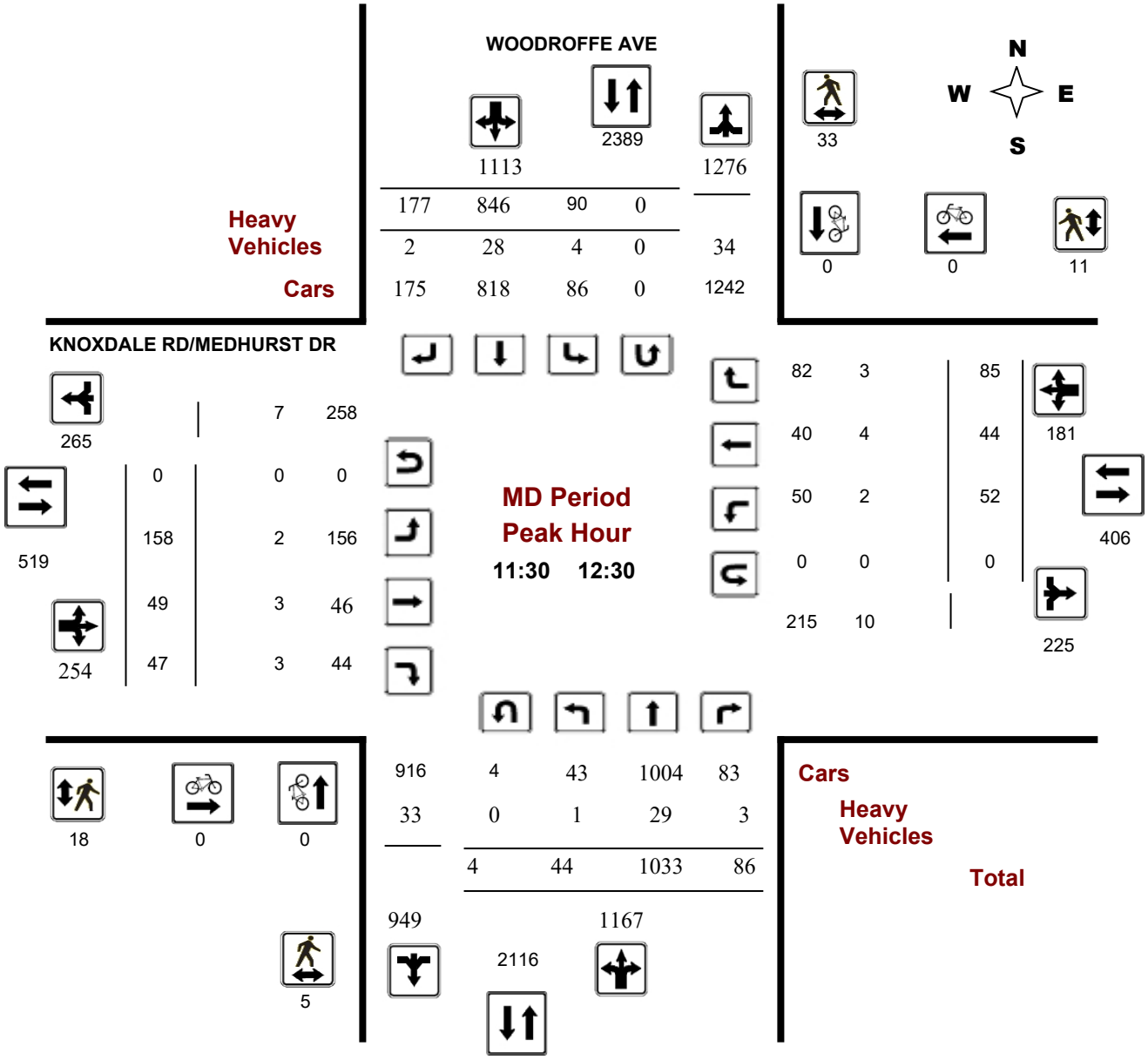
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018
Start Time: 07:00

WO No: 37418
Device: Miovision



Comments

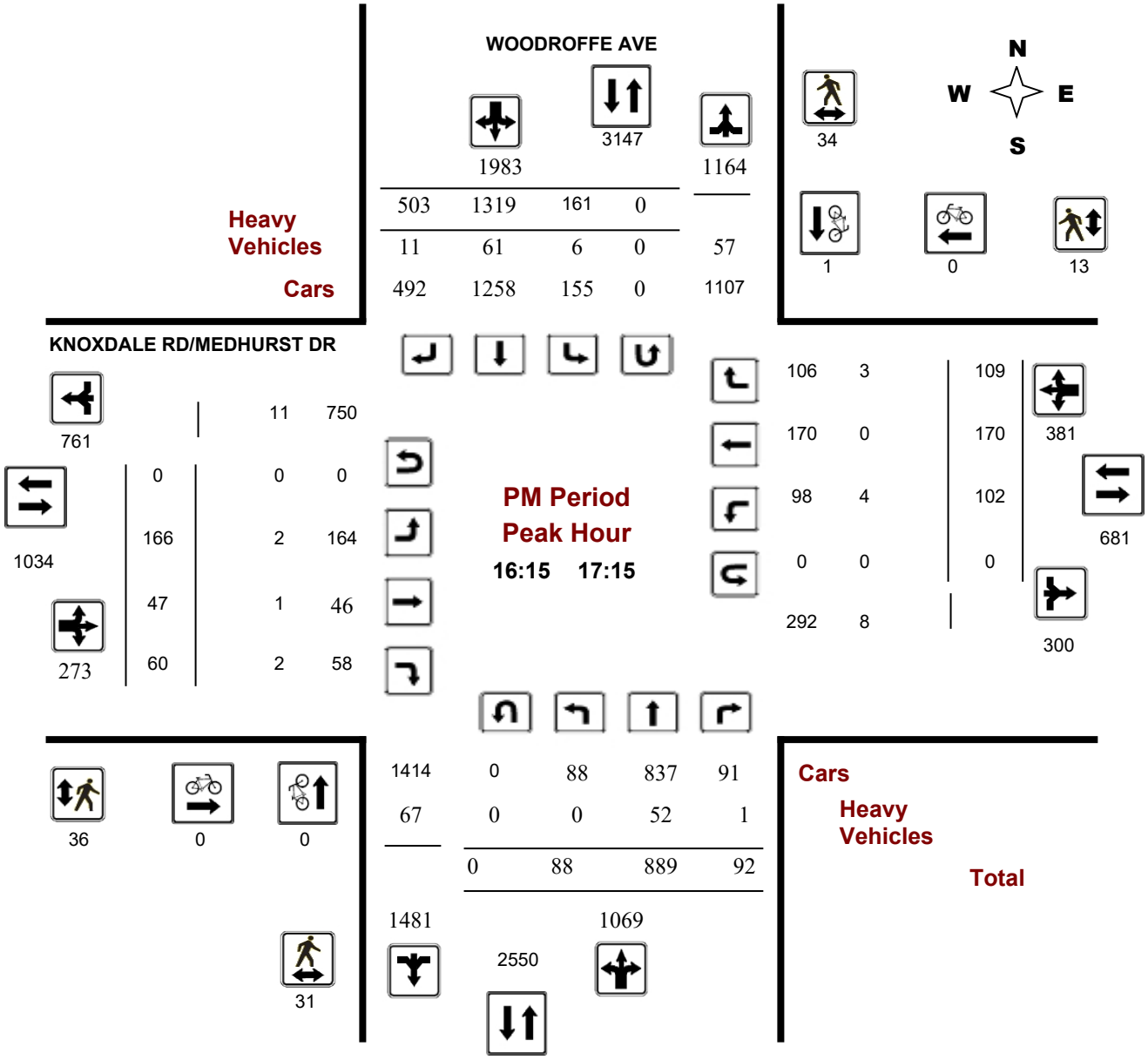
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018 **WO No:** 37418

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018 **WO No:** 37418

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, January 16, 2018

Total Observed U-Turns

Northbound: 10 Southbound: 2

Eastbound: 0 Westbound: 0

AADT Factor

1.10

	WOODROFFE AVE								KNOXDALE RD/MEDHURST DR									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	23	1138	39	**1200**	49	526	63	**638**	**1838**	339	135	88	**562**	73	35	128	**236**	**798**	**2636**
08:00 09:00	28	1140	63	**1231**	46	681	126	**853**	**2084**	440	226	99	**765**	100	47	164	**311**	**1076**	**3160**
09:00 10:00	30	1200	50	**1280**	64	580	98	**742**	**2022**	376	81	57	**514**	69	28	102	**199**	**713**	**2735**
11:30 12:30	44	1033	86	**1163**	90	846	177	**1113**	**2276**	158	49	47	**254**	52	44	85	**181**	**435**	**2711**
12:30 13:30	49	788	54	**891**	95	735	155	**985**	**1876**	158	41	43	**242**	65	38	98	**201**	**443**	**2319**
15:00 16:00	68	899	77	**1044**	135	1294	317	**1746**	**2790**	191	50	68	**309**	76	76	90	**242**	**551**	**3341**
16:00 17:00	85	858	84	**1027**	147	1302	489	**1938**	**2965**	174	50	56	**280**	96	168	100	**364**	**644**	**3609**
17:00 18:00	81	883	98	**1062**	161	1184	491	**1836**	**2898**	210	65	60	**335**	89	140	109	**338**	**673**	**3571**
Sub Total	408	7939	551	**8898**	787	7148	1916	**9851**	**18749**	2046	697	518	**3261**	620	576	876	**2072**	**5333**	**24082**
U Turns	10			**10**	2			**2**	**12**	**0**			**0**	0			**0**	**0**	**12**
Total	418	7939	551	**8908**	789	7148	1916	**9853**	**18761**	2046	697	518	**3261**	620	576	876	**2072**	**5333**	**24094**
EQ 12Hr	581	11035	766	**12382**	1097	9936	2663	**13696**	**26078**	2844	969	720	**4533**	862	801	1218	**2881**	**7414**	**33492**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	639	12139	843	**13621**	1207	10930	2929	**15066**	**28687**	3128	1066	792	**4986**	948	881	1340	**3169**	**8155**	**36842**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.10**					
AVG 24Hr	837	15902	1104	**17843**	1581	14318	3837	**19736**	**37579**	4098	1396	1038	**6532**	1242	1154	1755	**4151**	**10683**	**48262**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018 **WO No:** 37418

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

Full Study 15 Minute Increments

		WOODROFFE AVE									KNOXDALE RD/MEDHURST DR									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	4	275	6	285	4	107	15	126	**411**	60	9	11	80	12	10	31	53	**133**	**544**
07:15	07:30	6	302	14	322	15	118	19	152	**474**	96	19	24	139	14	8	35	57	**196**	**670**
07:30	07:45	5	318	12	335	14	135	15	164	**499**	83	42	17	142	23	7	29	59	**201**	**700**
07:45	08:00	8	243	7	258	16	166	14	196	**454**	100	65	36	201	24	10	33	67	**268**	**722**
08:00	08:15	6	284	14	304	9	153	25	187	**491**	107	59	27	193	24	13	37	74	**267**	**758**
08:15	08:30	4	267	13	284	12	186	33	231	**515**	95	58	25	178	23	16	49	88	**266**	**781**
08:30	08:45	5	292	18	315	14	178	30	222	**537**	131	57	25	213	24	10	41	75	**288**	**825**
08:45	09:00	14	297	18	329	11	164	38	213	**542**	107	52	22	181	29	8	37	74	**255**	**797**
09:00	09:15	8	284	12	304	15	143	27	185	**489**	132	36	17	185	20	7	25	52	**237**	**726**
09:15	09:30	9	261	14	284	13	142	21	176	**460**	100	17	18	135	22	11	33	66	**201**	**661**
09:30	09:45	7	333	10	350	22	150	29	201	**551**	71	10	11	92	16	6	24	46	**138**	**689**
09:45	10:00	7	322	14	343	14	145	21	180	**523**	73	18	11	102	11	4	20	35	**137**	**660**
11:30	11:45	6	271	11	288	16	174	30	220	**508**	37	16	11	64	13	11	30	54	**118**	**626**
11:45	12:00	13	247	33	293	23	203	51	277	**570**	33	8	8	49	8	10	11	29	**78**	**648**
12:00	12:15	15	272	24	311	23	236	41	300	**611**	40	9	17	66	9	13	18	40	**106**	**717**
12:15	12:30	14	243	18	275	28	233	55	316	**591**	48	16	11	75	22	10	26	58	**133**	**724**
12:30	12:45	16	205	14	235	26	188	41	255	**490**	33	11	12	56	14	10	23	47	**103**	**593**
12:45	13:00	9	203	14	226	24	173	35	232	**458**	43	10	14	67	23	11	25	59	**126**	**584**
13:00	13:15	10	187	15	212	18	194	41	253	**465**	47	7	4	58	15	4	28	47	**105**	**570**
13:15	13:30	14	193	11	218	28	180	38	246	**464**	35	13	13	61	13	13	22	48	**109**	**573**
15:00	15:15	21	208	23	252	34	277	58	369	**621**	49	15	16	80	12	19	22	53	**133**	**754**
15:15	15:30	25	229	16	270	32	322	74	428	**698**	44	15	18	77	20	11	20	51	**128**	**826**
15:30	15:45	13	214	23	250	35	304	97	436	**686**	53	10	17	80	31	25	24	80	**160**	**846**
15:45	16:00	12	248	15	275	34	391	88	513	**788**	45	10	17	72	13	21	24	58	**130**	**918**
16:00	16:15	19	203	19	241	36	314	122	472	**713**	58	13	12	83	17	41	24	82	**165**	**878**
16:15	16:30	13	229	20	262	31	356	111	498	**760**	32	6	13	51	31	50	28	109	**160**	**920**
16:30	16:45	32	211	20	263	41	314	127	482	**745**	46	16	12	74	26	43	23	92	**166**	**911**
16:45	17:00	21	215	25	261	40	318	129	487	**748**	38	15	19	72	22	34	25	81	**153**	**901**
17:00	17:15	22	234	27	283	49	331	136	516	**799**	50	10	16	76	23	43	33	99	**175**	**974**
17:15	17:30	24	210	29	263	39	295	141	475	**738**	59	15	13	87	27	40	19	86	**173**	**911**
17:30	17:45	15	221	20	256	32	307	109	448	**704**	50	18	15	83	21	29	24	74	**157**	**861**
17:45	18:00	21	218	22	261	41	251	105	397	**658**	51	22	16	89	18	28	33	79	**168**	**826**
Total:		418	7939	551	8908	789	7148	1916	9853	**18761**	2046	697	518	3261	620	576	876	2072	**18761**	**24,094**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018 **WO No:** 37418

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

Full Study Cyclist Volume

Time Period		WOODROFFE AVE			KNOXDALE RD/MEDHURST DR			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	0	0	**0**	**0**
07:15	07:30	0	0	**0**	0	0	**0**	**0**
07:30	07:45	0	0	**0**	0	0	**0**	**0**
07:45	08:00	0	0	**0**	0	0	**0**	**0**
08:00	08:15	0	0	**0**	0	0	**0**	**0**
08:15	08:30	0	0	**0**	0	0	**0**	**0**
08:30	08:45	0	1	**1**	0	0	**0**	**1**
08:45	09:00	0	0	**0**	0	0	**0**	**0**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	0	0	**0**	1	0	**1**	**1**
09:30	09:45	0	0	**0**	0	0	**0**	**0**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	0	0	**0**	**0**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	1	**1**	0	0	**0**	**1**
16:30	16:45	0	0	**0**	0	0	**0**	**0**
16:45	17:00	0	0	**0**	0	0	**0**	**0**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	0	0	**0**	0	0	**0**	**0**
17:30	17:45	0	0	**0**	0	0	**0**	**0**
17:45	18:00	0	0	**0**	0	0	**0**	**0**
Total		0	2	**2**	1	0	**1**	**3**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018 **WO No:** 37418

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

Full Study Pedestrian Volume

	WOODROFFE AVE			KNOXDALE RD/MEDHURST DR			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	1	3	**4**	0	4	**4**	**8**
07:15 07:30	3	5	**8**	2	3	**5**	**13**
07:30 07:45	4	6	**10**	4	7	**11**	**21**
07:45 08:00	1	3	**4**	6	2	**8**	**12**
08:00 08:15	2	11	**13**	3	8	**11**	**24**
08:15 08:30	0	14	**14**	1	3	**4**	**18**
08:30 08:45	4	3	**7**	3	6	**9**	**16**
08:45 09:00	2	7	**9**	5	5	**10**	**19**
09:00 09:15	3	5	**8**	5	1	**6**	**14**
09:15 09:30	2	7	**9**	3	4	**7**	**16**
09:30 09:45	0	8	**8**	0	2	**2**	**10**
09:45 10:00	0	3	**3**	2	3	**5**	**8**
11:30 11:45	0	7	**7**	3	0	**3**	**10**
11:45 12:00	0	4	**4**	8	1	**9**	**13**
12:00 12:15	1	12	**13**	2	5	**7**	**20**
12:15 12:30	4	10	**14**	5	5	**10**	**24**
12:30 12:45	7	9	**16**	3	5	**8**	**24**
12:45 13:00	1	4	**5**	6	3	**9**	**14**
13:00 13:15	2	3	**5**	2	3	**5**	**10**
13:15 13:30	3	8	**11**	6	1	**7**	**18**
15:00 15:15	5	13	**18**	7	1	**8**	**26**
15:15 15:30	6	10	**16**	7	5	**12**	**28**
15:30 15:45	7	16	**23**	19	4	**23**	**46**
15:45 16:00	10	17	**27**	16	7	**23**	**50**
16:00 16:15	9	10	**19**	8	7	**15**	**34**
16:15 16:30	11	10	**21**	8	6	**14**	**35**
16:30 16:45	5	9	**14**	3	3	**6**	**20**
16:45 17:00	13	10	**23**	12	2	**14**	**37**
17:00 17:15	2	5	**7**	13	2	**15**	**22**
17:15 17:30	3	13	**16**	6	1	**7**	**23**
17:30 17:45	7	4	**11**	7	5	**12**	**23**
17:45 18:00	5	7	**12**	8	2	**10**	**22**
Total	123	256	**379**	183	116	**299**	**678**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018 **WO No:** 37418

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

Full Study Heavy Vehicles

		WOODROFFE AVE									KNOXDALE RD/MEDHURST DR									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	15	1	**17**	0	8	0	**8**	**25**	1	0	0	**1**	0	0	1	**1**	**2**	**27**
07:15	07:30	2	15	1	**18**	3	9	0	**12**	**30**	3	0	1	**4**	1	0	1	**2**	**6**	**36**
07:30	07:45	0	17	1	**18**	1	4	0	**5**	**23**	2	0	0	**2**	1	0	2	**3**	**5**	**28**
07:45	08:00	1	11	0	**12**	1	15	0	**16**	**28**	1	0	0	**1**	0	0	0	**0**	**1**	**29**
08:00	08:15	0	23	0	**23**	1	12	2	**15**	**38**	3	0	1	**4**	0	1	2	**3**	**7**	**45**
08:15	08:30	1	17	1	**19**	2	13	0	**15**	**34**	1	2	0	**3**	0	1	2	**3**	**6**	**40**
08:30	08:45	0	10	1	**11**	1	11	0	**12**	**23**	2	1	0	**3**	0	1	3	**4**	**7**	**30**
08:45	09:00	1	16	3	**20**	1	6	0	**7**	**27**	1	0	0	**1**	1	0	2	**3**	**4**	**31**
09:00	09:15	0	14	2	**16**	2	13	0	**15**	**31**	1	1	0	**2**	2	0	0	**2**	**4**	**35**
09:15	09:30	1	8	1	**10**	1	7	1	**9**	**19**	3	0	0	**3**	0	2	3	**5**	**8**	**27**
09:30	09:45	0	9	1	**10**	1	5	2	**8**	**18**	0	0	0	**0**	0	0	0	**0**	**0**	**18**
09:45	10:00	2	8	0	**10**	0	10	0	**10**	**20**	0	1	0	**1**	0	1	2	**3**	**4**	**24**
11:30	11:45	0	3	0	**3**	1	6	0	**7**	**10**	0	1	0	**1**	1	1	1	**3**	**4**	**14**
11:45	12:00	0	5	2	**7**	1	9	1	**11**	**18**	0	0	1	**1**	0	3	1	**4**	**5**	**23**
12:00	12:15	0	14	0	**14**	0	8	0	**8**	**22**	1	2	0	**3**	0	0	0	**0**	**3**	**25**
12:15	12:30	1	7	1	**9**	2	5	1	**8**	**17**	1	0	2	**3**	1	0	1	**2**	**5**	**22**
12:30	12:45	0	5	0	**5**	0	8	0	**8**	**13**	0	0	0	**0**	1	0	0	**1**	**1**	**14**
12:45	13:00	1	8	0	**9**	0	6	1	**7**	**16**	0	3	0	**3**	1	0	2	**3**	**6**	**22**
13:00	13:15	0	8	0	**8**	1	6	1	**8**	**16**	1	1	1	**3**	1	0	0	**1**	**4**	**20**
13:15	13:30	1	8	1	**10**	1	6	2	**9**	**19**	1	0	2	**3**	1	0	1	**2**	**5**	**24**
15:00	15:15	1	8	0	**9**	1	8	1	**10**	**19**	0	0	2	**2**	0	0	1	**1**	**3**	**22**
15:15	15:30	1	7	0	**8**	3	6	1	**10**	**18**	0	1	2	**3**	2	0	1	**3**	**6**	**24**
15:30	15:45	0	6	0	**6**	1	11	1	**13**	**19**	1	0	0	**1**	0	0	1	**1**	**2**	**21**
15:45	16:00	0	16	1	**17**	1	17	3	**21**	**38**	1	0	1	**2**	0	1	2	**3**	**5**	**43**
16:00	16:15	0	6	1	**7**	1	12	5	**18**	**25**	0	1	0	**1**	1	0	1	**2**	**3**	**28**
16:15	16:30	0	21	1	**22**	3	16	2	**21**	**43**	1	1	1	**3**	4	0	1	**5**	**8**	**51**
16:30	16:45	0	6	0	**6**	1	12	4	**17**	**23**	0	0	0	**0**	0	0	1	**1**	**1**	**24**
16:45	17:00	0	13	0	**13**	0	21	2	**23**	**36**	1	0	1	**2**	0	0	1	**1**	**3**	**39**
17:00	17:15	0	12	0	**12**	2	12	3	**17**	**29**	0	0	0	**0**	0	0	0	**0**	**0**	**29**
17:15	17:30	0	6	0	**6**	0	8	4	**12**	**18**	0	2	1	**3**	0	0	0	**0**	**3**	**21**
17:30	17:45	0	9	0	**9**	2	17	2	**21**	**30**	0	1	0	**1**	0	0	1	**1**	**2**	**32**
17:45	18:00	0	7	0	**7**	1	11	1	**13**	**20**	0	0	1	**1**	1	0	0	**1**	**2**	**22**
Total:	None	14	338	19	**371**	36	318	40	**394**	**765**	26	18	17	**61**	19	11	34	**64**	**125**	**890**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WOODROFFE AVE @ KNOXDALE RD/MEDHURST DR

Survey Date: Tuesday, January 16, 2018 **WO No:** 37418

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

Full Study 15 Minute U-Turn Total

		WOODROFFE AVE		KNOXDALE RD/MEDHURST DR		
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	**0**
07:15	07:30	0	0	0	0	**0**
07:30	07:45	0	0	0	0	**0**
07:45	08:00	0	0	0	0	**0**
08:00	08:15	1	0	0	0	**1**
08:15	08:30	0	0	0	0	**0**
08:30	08:45	0	0	0	0	**0**
08:45	09:00	0	0	0	0	**0**
09:00	09:15	0	0	0	0	**0**
09:15	09:30	1	0	0	0	**1**
09:30	09:45	0	0	0	0	**0**
09:45	10:00	0	0	0	0	**0**
11:30	11:45	0	0	0	0	**0**
11:45	12:00	1	0	0	0	**1**
12:00	12:15	1	0	0	0	**1**
12:15	12:30	2	0	0	0	**2**
12:30	12:45	0	0	0	0	**0**
12:45	13:00	0	0	0	0	**0**
13:00	13:15	0	1	0	0	**1**
13:15	13:30	0	0	0	0	**0**
15:00	15:15	0	0	0	0	**0**
15:15	15:30	1	0	0	0	**1**
15:30	15:45	1	0	0	0	**1**
15:45	16:00	1	0	0	0	**1**
16:00	16:15	0	1	0	0	**1**
16:15	16:30	0	0	0	0	**0**
16:30	16:45	0	0	0	0	**0**
16:45	17:00	0	0	0	0	**0**
17:00	17:15	0	0	0	0	**0**
17:15	17:30	0	0	0	0	**0**
17:30	17:45	0	0	0	0	**0**
17:45	18:00	1	0	0	0	**1**
Total		10	2	0	0	**12**

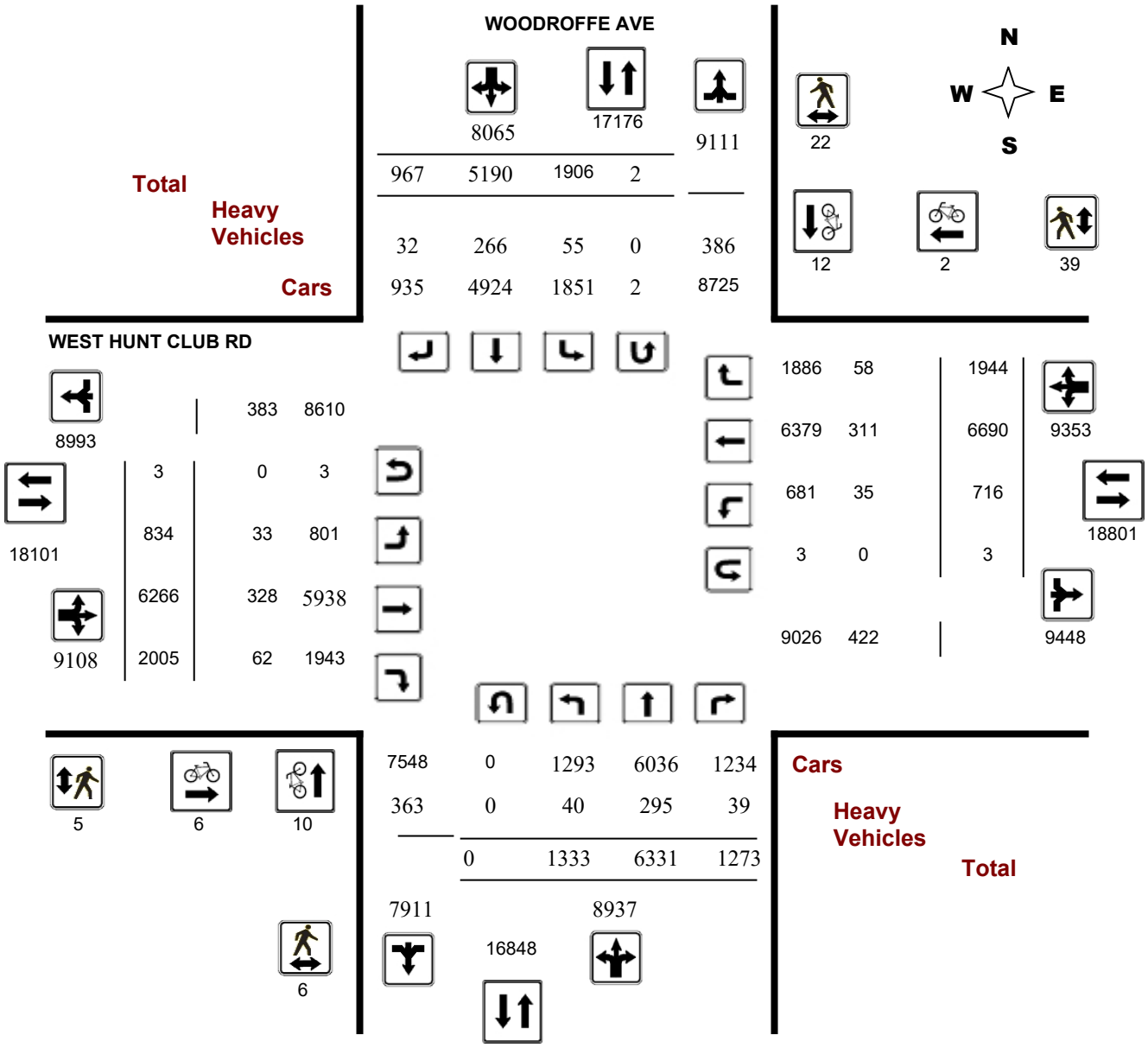
Transportation Services - Traffic Services

Turning Movement Count - Study Results

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019
Start Time: 07:00
WO No: 38916
Device: Miovision

Full Study Diagram



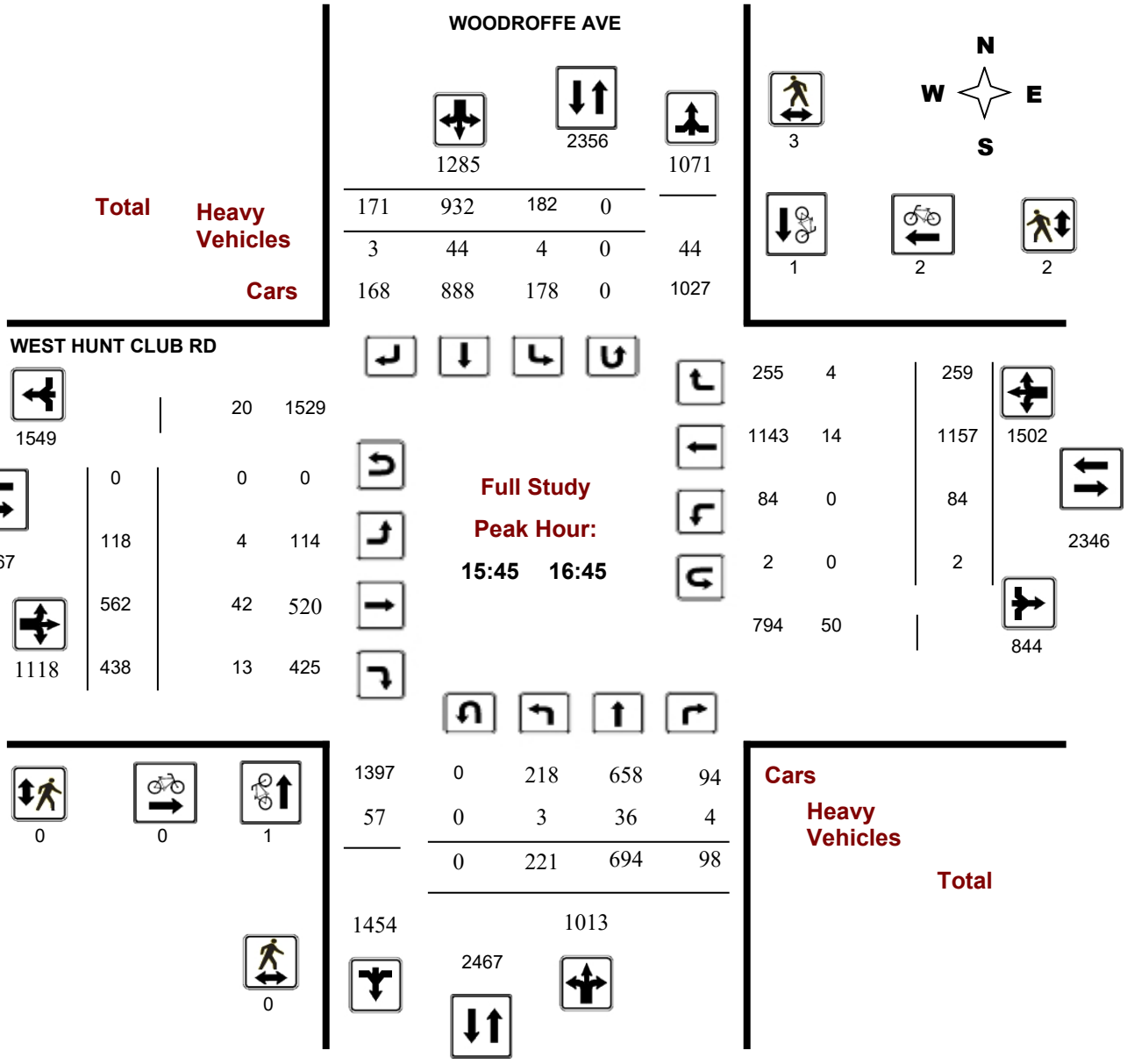
Transportation Services - Traffic Services

Turning Movement Count - Study Results

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019
Start Time: 07:00
WO No: 38916
Device: Miovision

Full Study Peak Hour Diagram



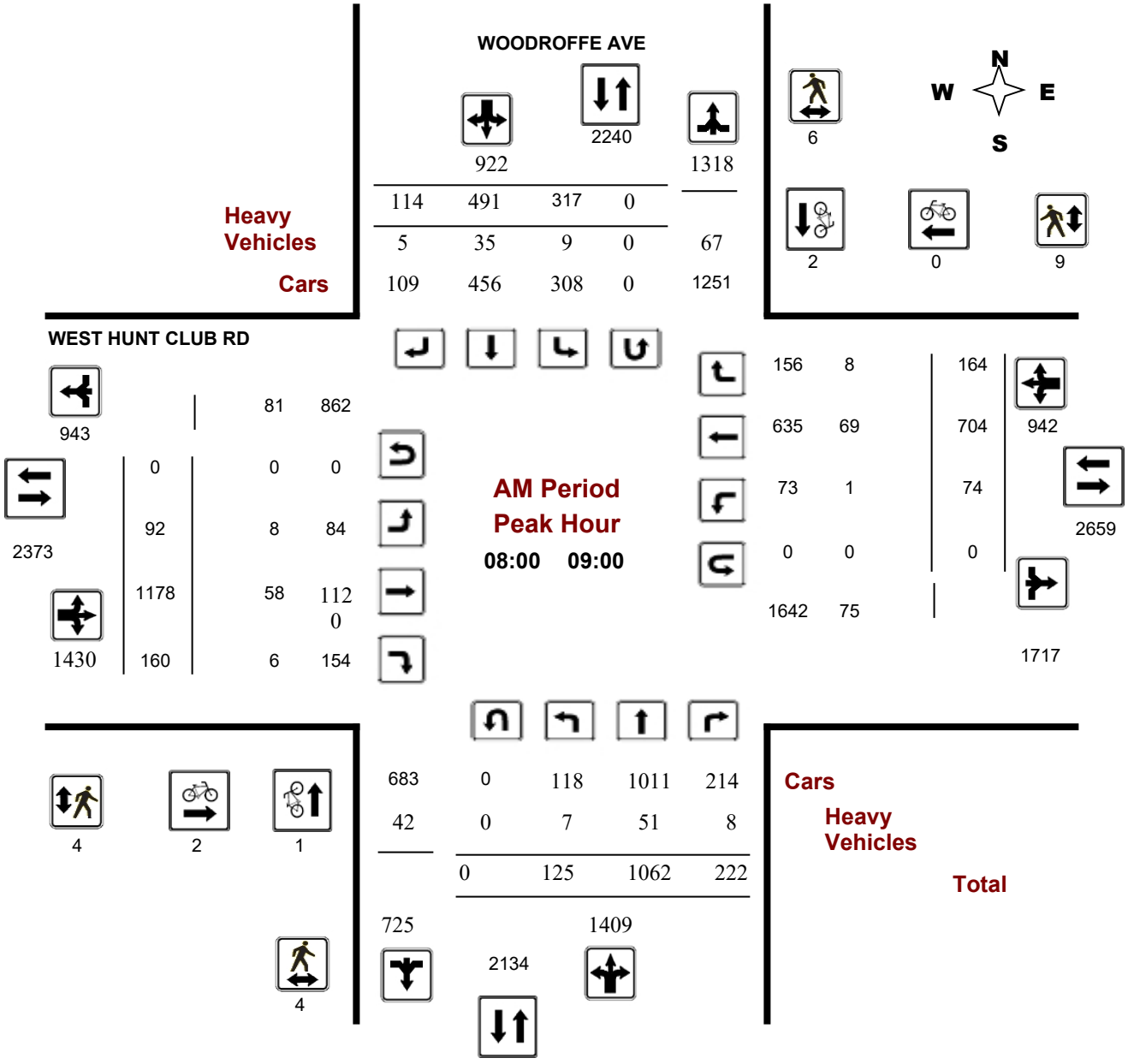
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019 **WO No:** 38916

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



Comments

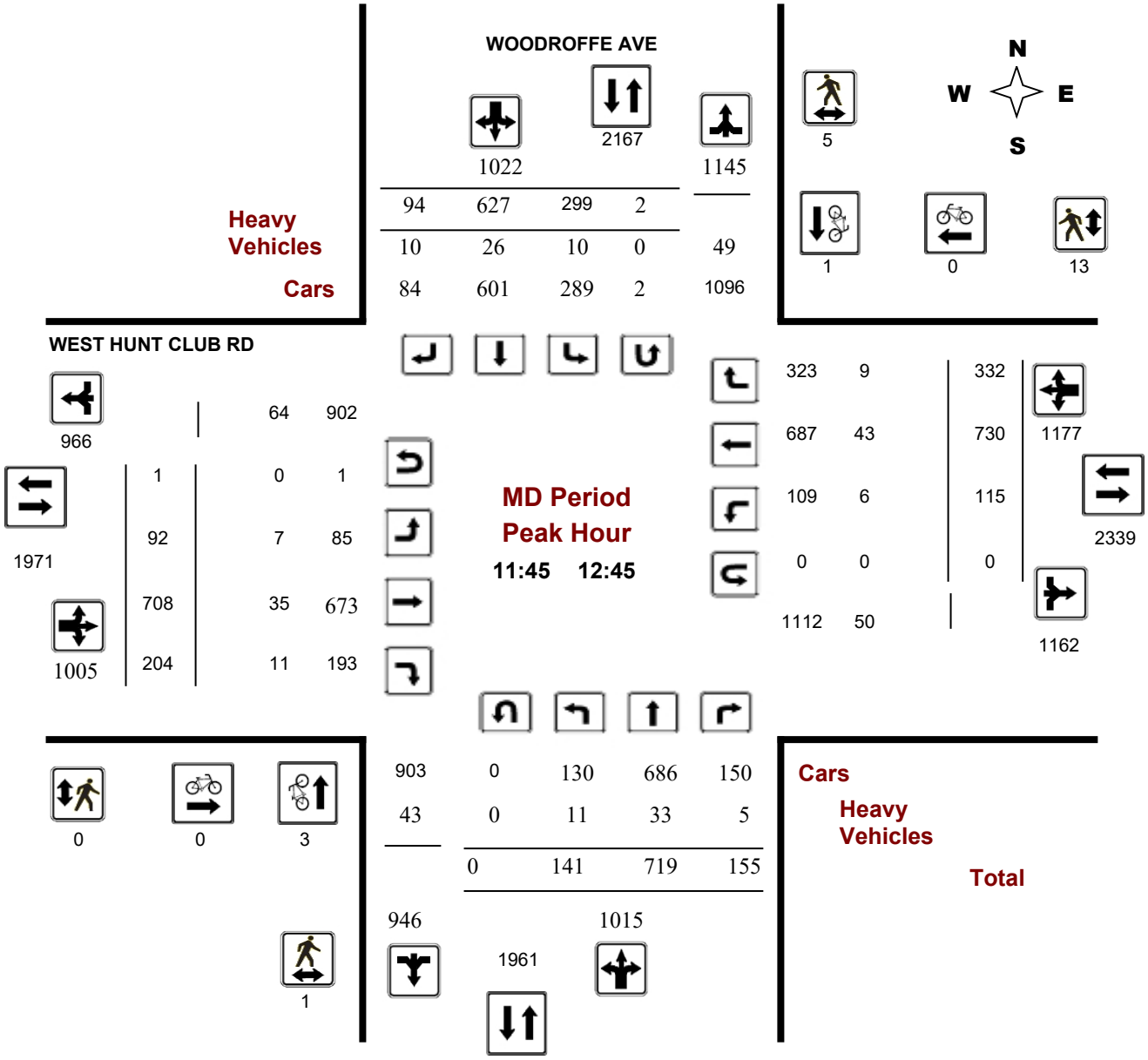
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019 **WO No:** 38916

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



Comments

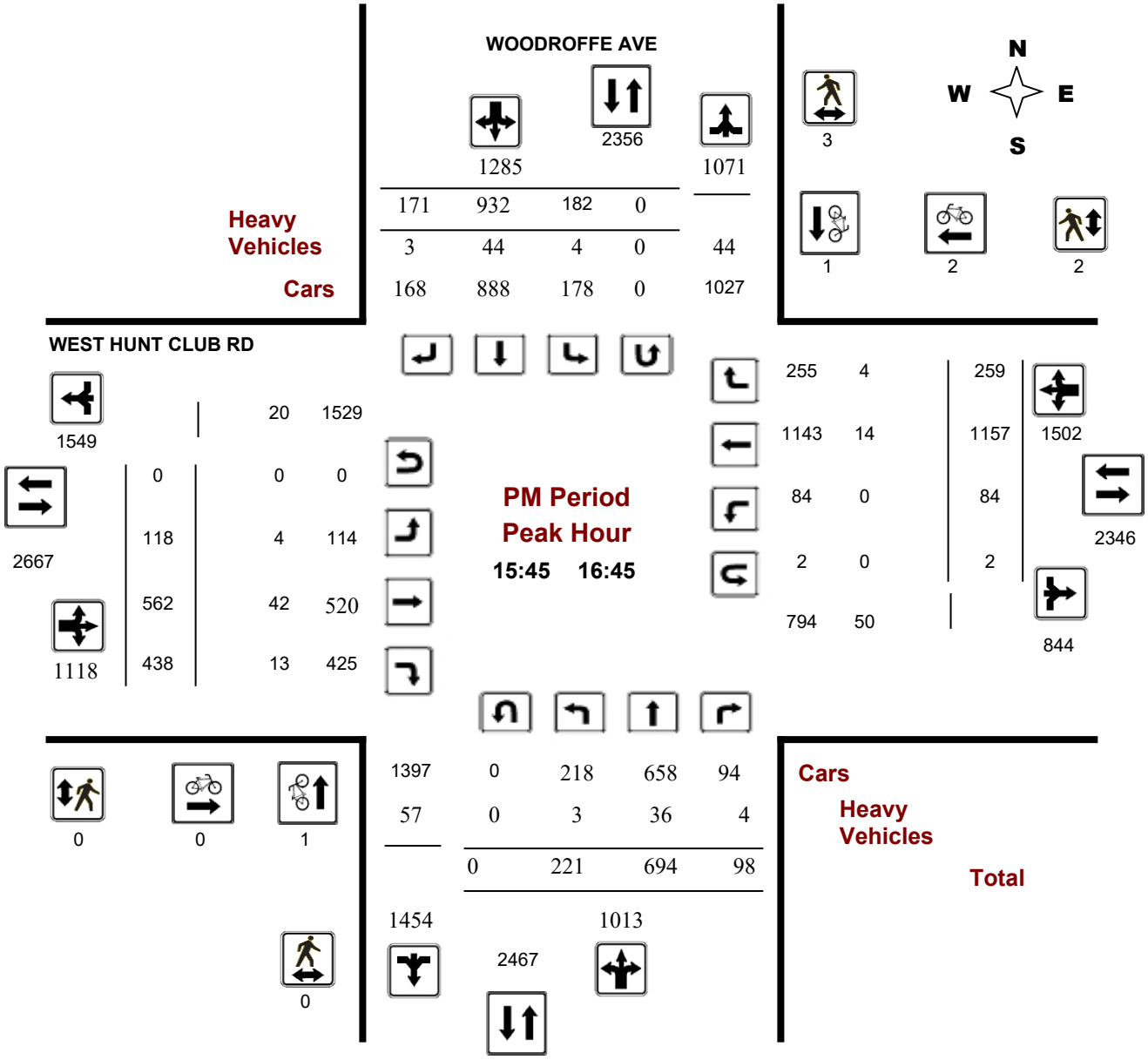
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019 **WO No:** 38916

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019 **WO No:** 38916

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, October 22, 2019

Total Observed U-Turns

Northbound: 0 Southbound: 2

Eastbound: 3 Westbound: 3

AADT Factor

1.25

	WOODROFFE AVE								WEST HUNT CLUB RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	124	1037	251	**1412**	210	336	82	**628**	**2040**	69	1136	121	**1326**	53	569	160	**782**	**2108**	**4148**
08:00 09:00	125	1062	222	**1409**	317	491	114	**922**	**2331**	92	1178	160	**1430**	74	704	164	**942**	**2372**	**4703**
09:00 10:00	128	808	130	**1066**	251	419	97	**767**	**1833**	131	959	179	**1269**	77	630	196	**903**	**2172**	**4005**
11:30 12:30	153	712	155	**1020**	297	640	93	**1030**	**2050**	89	660	205	**954**	128	715	343	**1186**	**2140**	**4190**
12:30 13:30	153	617	143	**913**	316	541	110	**967**	**1880**	98	718	150	**966**	104	754	280	**1138**	**2104**	**3984**
15:00 16:00	212	701	128	**1041**	203	872	175	**1250**	**2291**	97	590	302	**989**	83	1179	275	**1537**	**2526**	**4817**
16:00 17:00	222	730	103	**1055**	165	977	167	**1309**	**2364**	121	540	443	**1104**	72	1097	264	**1433**	**2537**	**4901**
17:00 18:00	216	664	141	**1021**	147	914	129	**1190**	**2211**	137	485	445	**1067**	125	1042	262	**1429**	**2496**	**4707**
Sub Total	1333	6331	1273	**8937**	1906	5190	967	**8063**	**17000**	834	6266	2005	**9105**	716	6690	1944	**9350**	**18455**	**35455**
U Turns				**0**				**2**	**2**				**3**				**3**	**6**	**8**
Total	1333	6331	1273	**8937**	1906	5190	967	**8065**	**17002**	834	6266	2005	**9108**	716	6690	1944	**9353**	**18461**	**35463**
EQ 12Hr	1853	8800	1769	**12422**	2649	7214	1344	**11210**	**23633**	1159	8710	2787	**12660**	995	9299	2702	**13001**	**25661**	**49294**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1668	7920	1593	**11180**	2384	6493	1210	**10089**	**21270**	1043	7839	2508	**11394**	896	8369	2432	**11701**	**23095**	**44365**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	2185	10375	2086	**14646**	3124	8505	1585	**13217**	**27863**	1367	10269	3286	**14926**	1173	10964	3186	**15328**	**30254**	**58117**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019 **WO No:** 38916

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

Full Study 15 Minute Increments

		WOODROFFE AVE									WEST HUNT CLUB RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	33	239	35	307	57	78	17	152	865	17	310	31	358	11	103	30	144	865	961
07:15	07:30	26	293	45	364	44	79	18	141	983	22	270	30	322	11	136	43	190	983	1017
07:30	07:45	28	255	86	369	51	87	26	164	981	20	297	24	341	12	165	50	227	981	1101
07:45	08:00	37	250	85	372	58	92	21	171	987	10	259	36	305	19	165	37	221	987	1069
08:00	08:15	21	294	64	379	66	121	24	211	1103	15	286	24	325	18	165	41	224	1103	1139
08:15	08:30	33	290	69	392	81	122	29	232	1146	19	270	28	317	23	176	40	239	1146	1180
08:30	08:45	37	241	47	325	87	114	31	232	1059	33	318	55	406	17	190	42	249	1059	1212
08:45	09:00	34	237	42	313	83	134	30	247	1066	25	304	53	382	16	173	41	230	1066	1172
09:00	09:15	34	210	34	278	57	107	24	188	928	31	267	48	346	25	176	41	242	928	1054
09:15	09:30	23	231	29	283	62	91	33	186	935	30	274	42	346	18	171	54	243	935	1058
09:30	09:45	43	197	37	277	72	121	21	214	951	32	211	49	292	15	132	46	194	951	977
09:45	10:00	28	170	30	228	60	100	19	179	829	38	207	40	287	19	151	55	225	829	919
11:30	11:45	41	162	35	238	77	139	31	247	964	28	159	41	228	33	170	76	279	964	992
11:45	12:00	43	169	39	251	78	161	20	261	1053	11	169	53	233	33	194	112	339	1053	1084
12:00	12:15	40	214	49	303	80	177	16	273	1162	20	171	62	253	31	166	82	279	1162	1108
12:15	12:30	29	167	32	228	62	163	26	251	992	30	161	49	241	31	185	73	289	992	1009
12:30	12:45	29	169	35	233	79	126	32	237	921	31	207	40	278	20	185	65	270	921	1018
12:45	13:00	38	152	28	218	70	120	28	218	883	24	178	46	248	31	197	74	302	883	986
13:00	13:15	44	129	36	209	81	151	27	259	909	23	179	34	236	28	191	76	295	909	999
13:15	13:30	42	167	44	253	86	144	23	253	957	20	154	30	204	25	181	65	271	957	981
15:00	15:15	53	173	42	268	57	198	51	306	1120	22	162	59	243	23	278	71	372	1120	1189
15:15	15:30	50	183	37	270	61	226	44	331	1198	21	155	79	255	20	293	68	381	1198	1237
15:30	15:45	55	174	27	256	37	223	37	297	1137	30	131	80	241	15	295	62	372	1137	1166
15:45	16:00	54	171	22	247	48	225	43	316	1166	24	142	84	250	25	313	74	414	1166	1227
16:00	16:15	58	172	21	251	49	215	43	307	1177	32	128	102	262	26	300	72	398	1177	1218
16:15	16:30	57	183	29	269	38	252	38	328	1257	30	153	131	314	21	260	43	324	1257	1235
16:30	16:45	52	168	26	246	47	240	47	334	1223	32	139	121	292	12	284	70	366	1223	1238
16:45	17:00	55	207	27	289	31	270	39	340	1314	27	120	89	236	13	253	79	345	1314	1210
17:00	17:15	46	165	22	233	36	254	43	333	1195	35	127	107	269	19	261	49	329	1195	1164
17:15	17:30	55	185	32	272	37	222	30	289	1224	38	119	115	272	30	274	73	377	1224	1210
17:30	17:45	56	150	36	242	36	220	27	283	1152	26	118	112	256	42	254	77	373	1152	1154
17:45	18:00	59	164	51	274	38	218	29	285	1187	38	121	111	270	34	253	63	350	1187	1179
Total:		1333	6331	1273	8937	1906	5190	967	8065	34024	834	6266	2005	9108	716	6690	1944	9353	34024	35,463

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019 **WO No:** 38916

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

Full Study Cyclist Volume

Time Period		WOODROFFE AVE			WEST HUNT CLUB RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	0	0	0	0
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	1	0	1	0	0	0	1
07:45	08:00	1	0	1	1	0	1	2
08:00	08:15	0	0	0	0	0	0	0
08:15	08:30	1	0	1	0	0	0	1
08:30	08:45	0	1	1	2	0	2	3
08:45	09:00	0	1	1	0	0	0	1
09:00	09:15	0	0	0	1	0	1	1
09:15	09:30	2	2	4	1	0	1	5
09:30	09:45	0	0	0	0	0	0	0
09:45	10:00	0	0	0	1	0	1	1
11:30	11:45	0	1	1	0	0	0	1
11:45	12:00	1	1	2	0	0	0	2
12:00	12:15	1	0	1	0	0	0	1
12:15	12:30	1	0	1	0	0	0	1
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	0	1	1	0	0	0	1
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	0	0	0	0
15:00	15:15	1	0	1	0	0	0	1
15:15	15:30	0	2	2	0	0	0	2
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	1	1	1
16:15	16:30	0	1	1	0	1	1	2
16:30	16:45	1	0	1	0	0	0	1
16:45	17:00	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	0	1	1	0	0	0	1
17:30	17:45	0	0	0	0	0	0	0
17:45	18:00	0	1	1	0	0	0	1
Total		10	12	**22**	6	2	8	30

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019 **WO No:** 38916

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

Full Study Pedestrian Volume

	WOODROFFE AVE			WEST HUNT CLUB RD			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	0	0	**0**	0	0	**0**	**0**
07:15 07:30	0	0	**0**	0	0	**0**	**0**
07:30 07:45	0	0	**0**	0	0	**0**	**0**
07:45 08:00	0	3	**3**	0	0	**0**	**3**
08:00 08:15	1	0	**1**	1	1	**2**	**3**
08:15 08:30	0	0	**0**	0	1	**1**	**1**
08:30 08:45	0	2	**2**	0	3	**3**	**5**
08:45 09:00	3	4	**7**	3	4	**7**	**14**
09:00 09:15	0	0	**0**	0	2	**2**	**2**
09:15 09:30	0	0	**0**	0	0	**0**	**0**
09:30 09:45	0	0	**0**	0	0	**0**	**0**
09:45 10:00	1	0	**1**	1	0	**1**	**2**
11:30 11:45	0	2	**2**	0	0	**0**	**2**
11:45 12:00	0	1	**1**	0	7	**7**	**8**
12:00 12:15	0	1	**1**	0	5	**5**	**6**
12:15 12:30	1	2	**3**	0	1	**1**	**4**
12:30 12:45	0	1	**1**	0	0	**0**	**1**
12:45 13:00	0	0	**0**	0	1	**1**	**1**
13:00 13:15	0	0	**0**	0	2	**2**	**2**
13:15 13:30	0	0	**0**	0	0	**0**	**0**
15:00 15:15	0	1	**1**	0	1	**1**	**2**
15:15 15:30	0	0	**0**	0	7	**7**	**7**
15:30 15:45	0	2	**2**	0	1	**1**	**3**
15:45 16:00	0	1	**1**	0	0	**0**	**1**
16:00 16:15	0	1	**1**	0	1	**1**	**2**
16:15 16:30	0	0	**0**	0	0	**0**	**0**
16:30 16:45	0	1	**1**	0	1	**1**	**2**
16:45 17:00	0	0	**0**	0	1	**1**	**1**
17:00 17:15	0	0	**0**	0	0	**0**	**0**
17:15 17:30	0	0	**0**	0	0	**0**	**0**
17:30 17:45	0	0	**0**	0	0	**0**	**0**
17:45 18:00	0	0	**0**	0	0	**0**	**0**
Total	6	22	**28**	5	39	**44**	**72**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019 **WO No:** 38916

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

Full Study Heavy Vehicles

		WOODROFFE AVE									WEST HUNT CLUB RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	3	12	0	**26**	1	7	0	**25**	**51**	4	11	1	**29**	3	10	1	**26**	**55**	**53**
07:15	07:30	1	23	0	**42**	0	10	0	**39**	**81**	1	7	1	**19**	7	9	5	**28**	**47**	**64**
07:30	07:45	1	16	0	**27**	0	7	1	**28**	**55**	0	6	0	**26**	3	18	4	**31**	**57**	**56**
07:45	08:00	1	15	0	**27**	0	7	0	**27**	**54**	1	15	1	**27**	3	9	4	**31**	**58**	**56**
08:00	08:15	1	13	1	**27**	3	12	2	**32**	**59**	1	14	0	**34**	0	16	1	**35**	**69**	**64**
08:15	08:30	0	13	1	**24**	2	7	0	**28**	**52**	2	9	2	**31**	1	18	4	**35**	**66**	**59**
08:30	08:45	4	9	1	**25**	3	9	1	**26**	**51**	3	18	2	**48**	0	20	1	**43**	**91**	**71**
08:45	09:00	2	16	5	**32**	1	7	2	**30**	**62**	2	17	2	**40**	0	15	2	**40**	**80**	**71**
09:00	09:15	1	11	3	**25**	5	5	0	**23**	**48**	0	15	3	**31**	2	12	2	**39**	**70**	**59**
09:15	09:30	0	8	0	**20**	3	8	3	**25**	**45**	1	16	4	**42**	0	18	2	**39**	**81**	**63**
09:30	09:45	1	8	0	**15**	3	3	0	**23**	**38**	2	13	2	**27**	1	9	7	**33**	**60**	**49**
09:45	10:00	2	6	0	**18**	0	6	0	**13**	**31**	0	11	3	**26**	1	10	1	**23**	**49**	**40**
11:30	11:45	1	5	2	**19**	3	6	1	**17**	**36**	0	9	4	**23**	1	8	2	**25**	**48**	**42**
11:45	12:00	4	9	1	**24**	0	8	3	**24**	**48**	1	8	1	**28**	1	11	3	**24**	**52**	**50**
12:00	12:15	1	13	1	**28**	2	8	1	**27**	**55**	1	9	3	**28**	2	13	2	**29**	**57**	**56**
12:15	12:30	5	5	2	**24**	3	6	2	**23**	**47**	4	5	5	**31**	1	10	3	**24**	**55**	**51**
12:30	12:45	1	6	1	**16**	5	4	4	**21**	**37**	1	13	2	**30**	2	9	1	**31**	**61**	**49**
12:45	13:00	1	6	0	**15**	6	5	2	**21**	**36**	1	9	2	**27**	1	12	1	**29**	**56**	**46**
13:00	13:15	1	7	3	**18**	2	5	1	**20**	**38**	1	14	1	**29**	1	11	4	**35**	**64**	**51**
13:15	13:30	2	5	0	**12**	3	3	2	**15**	**27**	1	12	0	**29**	2	12	1	**30**	**59**	**43**
15:00	15:15	2	6	0	**16**	0	6	1	**14**	**30**	0	8	0	**24**	2	13	1	**24**	**48**	**39**
15:15	15:30	1	7	1	**19**	3	6	0	**16**	**35**	0	3	3	**14**	1	7	0	**15**	**29**	**32**
15:30	15:45	0	4	3	**25**	1	16	0	**21**	**46**	0	11	2	**20**	0	7	0	**22**	**42**	**44**
15:45	16:00	1	8	0	**16**	1	7	0	**18**	**34**	1	9	0	**14**	0	3	1	**14**	**28**	**31**
16:00	16:15	1	7	0	**24**	0	13	1	**22**	**46**	0	10	3	**19**	0	4	1	**15**	**34**	**40**
16:15	16:30	1	11	4	**34**	1	12	0	**26**	**60**	1	11	6	**20**	0	1	1	**18**	**38**	**49**
16:30	16:45	0	10	0	**26**	2	12	2	**29**	**55**	2	12	4	**26**	0	6	1	**21**	**47**	**51**
16:45	17:00	0	12	0	**27**	1	14	0	**27**	**54**	0	3	1	**9**	0	5	0	**9**	**18**	**36**
17:00	17:15	0	5	0	**11**	0	5	0	**12**	**23**	2	9	1	**18**	0	6	0	**15**	**33**	**28**
17:15	17:30	0	10	5	**37**	0	21	0	**32**	**69**	0	6	1	**9**	0	2	1	**14**	**23**	**46**
17:30	17:45	1	4	1	**16**	1	8	2	**15**	**31**	0	10	2	**16**	0	1	0	**13**	**29**	**30**
17:45	18:00	0	5	4	**22**	0	13	1	**20**	**42**	0	5	0	**12**	0	6	1	**16**	**28**	**35**
Total:	None	40	295	39	**737**	55	266	32	**739**	**1476**	33	328	62	**806**	35	311	58	**826**	**1632**	**1,554**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

WEST HUNT CLUB RD @ WOODROFFE AVE

Survey Date: Tuesday, October 22, 2019 **WO No:** 38916

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

Full Study 15 Minute U-Turn Total

Time Period		WOODROFFE AVE		WEST HUNT CLUB RD		
		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	1	1
09:45	10:00	0	0	2	0	2
11:30	11:45	0	0	0	0	0
11:45	12:00	0	2	0	0	2
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	1	0	1
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	2	2
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	2	3	3	8

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

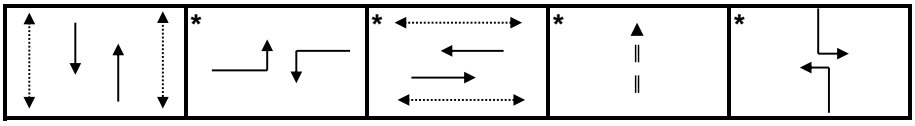
Intersection:	***Main:*** Woodroffe	***Side:***	Meadowlands / Tallwood
Controller:	**ATC 3**	**TSD:**	**5407**
Author:	Dylan Fewer	**Date:**	26-Mar-2021

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	130	125	130	110	125			
Offset	101	62	12	X	53			
NB Thru	56	47	49	33	47	7	14	3.7+2.3
SB Thru	56	47	49	33	47	7	14	3.7+2.3
EB Left (fp)	14	18	20	19	18	-	-	3.0+4.4
WB Left (fp)	14	18	20	19	18	-	-	3.0+4.4
EB Thru	40	40	40	40	40	7	25	3.0+4.4
WB Thru	40	40	40	40	40	7	25	3.0+4.4
NB Bus	6	6	6	6	6	-	-	0.0+2.0
NB Left (fp)	14	14	15	12	14	-	-	3.7+2.3
SB Left (fp)	14	14	15	12	14	-	-	3.7+2.3

Phasing Sequence‡

Plan: All



Notes: 1) In plan 3, the SB Left Turn has a min recall of 5s green
2) For plans 1,2,3 & 5, if the EW pedestrian phase is not actuated, the EW thru phases will force off after 22s
3) For plans 1,3 & 5, all unused time will be allocated to the NS Left Turn phases (no fixed force off)

Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	3
18:30	2
23:30	4

Saturday

Time	Plan
0:15	4
8:00	2
10:00	5
22:00	2
23:00	4

Sunday

Time	Plan
0:15	4
8:00	2
22:00	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

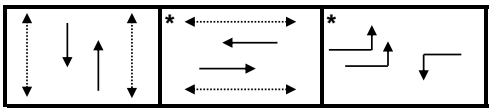
Intersection:	***Main:*** Woodroffe	***Side:***	Knoxdale / Medhurst
Controller:	**ATC 3**	**TSD:**	**5068**
Author:	Dylan Fewer	**Date:**	26-Mar-2021

Existing Timing Plans†

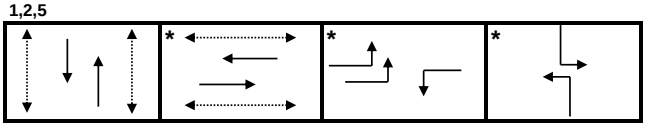
	Plan					**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	***Walk***	***DW***	***A+R***
Cycle	130	125	130	95	125			
Offset	63	120	44	X	120			
NB Thru	56	50	50	38	50	7	17	3.7+2.4
SB Thru	56	50	60	38	50	7	17	3.7+2.4
EB Thru	44	44	42	42	44	7	27	3.0+4.2
WB Thru	44	44	42	42	44	7	27	3.0+4.2
EB Left (fp)	18	17	15	15	17	-	-	3.0+4.2
WB Left (fp)	18	17	15	15	17	-	-	3.0+4.2
NB Left	12	14	13	-	14	-	-	3.7+2.4
SB Left	12	14	23	-	14	-	-	3.7+2.4

Phasing Sequence‡

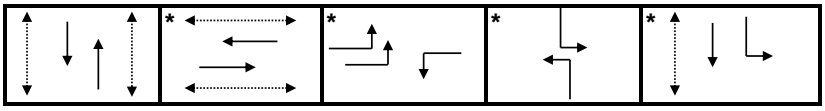
Plan: 4



Plan: 1,2,5



Plan: 3



Notes: 1) For plans 3 & 4, if the EW pedestrian phase is not actuated, the EW Thru phases will be forced off 7s early
2) For plans 1,2 &5, if the EW pedestrian phase is not actuated, the EW Thru phases will be forced off 12s early

Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	3
18:30	2
23:30	4

Weekend

Time	Plan
0:15	4
7:00	2
8:30	5
18:30	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

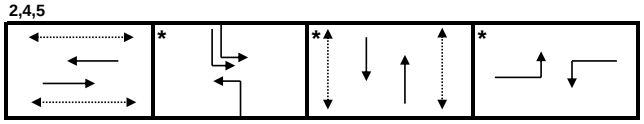
Intersection:	***Main:*** West Hunt Club	***Side:***	Woodroffe
Controller:	**ATC 3**	**TSD:**	**6139**
Author:	Dylan Fewer	**Date:**	25-Mar-2021

Existing Timing Plans†

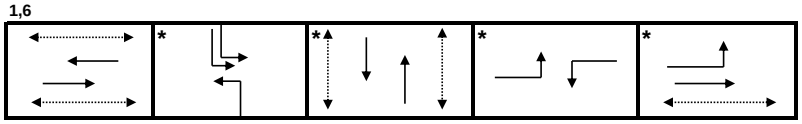
	Plan						Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Weekend 5	AM Heavy 6	*Walk*	*DW*	*A+R*
Cycle	130	125	130	110	125	130			
Offset	96	14	63	0	14	96			
EB Thru	51	43	45	42	42	45	7	28	4.6+2.5
WB Thru	49	43	52	42	42	43	7	28	4.6+2.5
NB Left (fp)	18	23	21	18	23	17	-	-	3.7+2.9
SB Left (fp)	18	23	21	18	23	17	-	-	3.7+2.9
NB Thru	42	36	40	35	37	50	7	20	3.7+2.9
SB Thru	42	36	40	35	37	50	7	20	3.7+2.9
EB Left (fp)	21	23	17	15	23	20	-	-	4.6+2.4
WB Left (fp)	19	23	24	15	23	18	-	-	4.6+2.4

Phasing Sequence‡

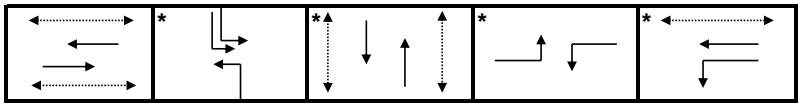
Plan: 2,4,5



Plan: 1,6



Plan: 3



Notes: 1) In plan 4, if the NS pedestrian phase is not actuated, the NS Thru phases will force off 8 seconds early
2) In all plans, the NS phases have a min recall of 10 seconds green
3) In plans, 1,3,4,6, all unused time will be allocated to the coordinated phases (no fixed force off)

Schedule

Weekday

Time	Plan
0:15	4
6:30	1
7:15	6
8:30	1
9:30	2
15:00	3
18:30	2
22:30	4

Weekend

Time	Plan
0:15	4
7:00	2
8:30	5
18:30	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)

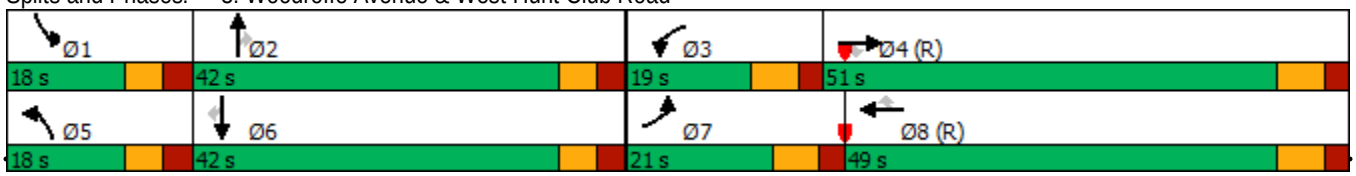
APPENDIX D – SYNCHRO 10 OUTPUT REPORTS

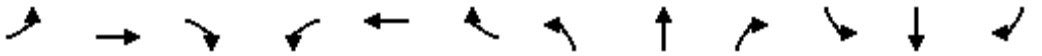
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	1214	165	76	725	169	129	1094	229	327	506	117
Future Volume (vph)	95	1214	165	76	725	169	129	1094	229	327	506	117
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		25.0	70.0		30.0	60.0		90.0	80.0		40.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	30.0			50.0			40.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1555	3257	1471	1693	3081	1457	1613	3257	1471	3221	3167	1457
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1551	3257	1446	1692	3081	1430	1609	3257	1434	3208	3167	1429
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144			144			185			149
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		1105.6			937.9			1033.7			620.6	
Travel Time (s)		49.8			42.2			62.0			37.2	
Confl. Peds. (#/hr)	6		4	4		6	4		9	9		4
Confl. Bikes (#/hr)			1						1			2
Peak Hour Factor	0.88	0.88	0.88	0.95	0.95	0.95	0.90	0.90	0.90	0.88	0.88	0.88
Heavy Vehicles (%)	10%	5%	4%	1%	11%	5%	6%	5%	4%	3%	8%	5%
Adj. Flow (vph)	108	1380	188	80	763	178	143	1216	254	372	575	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	1380	188	80	763	178	143	1216	254	372	575	133
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	42.1	42.1	12.0	42.1	42.1	11.6	33.6	33.6	11.6	33.6	33.6
Total Split (s)	21.0	51.0	51.0	19.0	49.0	49.0	18.0	42.0	42.0	18.0	42.0	42.0
Total Split (%)	16.2%	39.2%	39.2%	14.6%	37.7%	37.7%	13.8%	32.3%	32.3%	13.8%	32.3%	32.3%
Maximum Green (s)	14.0	43.9	43.9	12.0	41.9	41.9	11.4	35.4	35.4	11.4	35.4	35.4
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.4	2.5	2.5	2.4	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.1	7.1	7.0	7.1	7.1	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		4	4		6	6		4	4		9	9
Act Effct Green (s)	12.6	48.3	48.3	10.4	43.3	43.3	11.4	35.4	35.4	11.4	35.4	35.4
Actuated g/C Ratio	0.10	0.37	0.37	0.08	0.33	0.33	0.09	0.27	0.27	0.09	0.27	0.27
v/c Ratio	0.72	1.14	0.30	0.59	0.74	0.31	1.01	1.37	0.48	1.32	0.67	0.27
Control Delay	82.6	112.0	10.1	75.1	44.1	9.7	137.7	211.7	14.8	201.6	60.7	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.6	112.0	10.1	75.1	44.1	9.7	137.7	211.7	14.8	201.6	60.7	20.3
LOS	F	F	B	E	D	A	F	F	B	F	E	C
Approach Delay		98.6			40.5			174.2			104.3	
Approach LOS		F			D			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 96 (74%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.37			
Intersection Signal Delay: 111.4		Intersection LOS: F	
Intersection Capacity Utilization 104.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Woodroffe Avenue & West Hunt Club Road



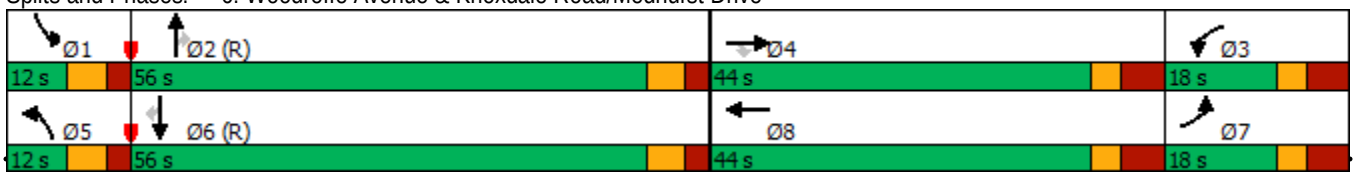


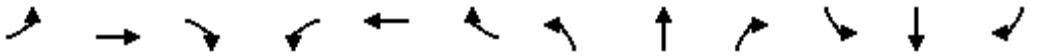
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	460	236	104	105	49	171	30	1192	66	48	712	132
Future Volume (vph)	460	236	104	105	49	171	30	1192	66	48	712	132
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	30.0		0.0	60.0		20.0	65.0		65.0
Storage Lanes	2		1	1		0	1		1	1		1
Taper Length (m)	30.0			45.0			50.0			50.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.95		0.98	0.99	0.96		0.99		0.92	0.99		0.94
Frt			0.850		0.884				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	1782	1515	1693	1436	0	1598	3226	1404	1527	3196	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3090	1782	1483	1682	1436	0	1579	3226	1290	1510	3196	1417
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138		104				147			147
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		1079.0			625.4			620.6			978.5	
Travel Time (s)		97.1			56.3			37.2			58.7	
Confl. Peds. (#/hr)	37		8	8		37	13		23	23		13
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.88	0.88	0.88	0.94	0.94	0.94	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	1%	7%	6%	7%	6%	9%	12%	7%	2%
Adj. Flow (vph)	511	262	116	119	56	194	32	1268	70	52	774	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	511	262	116	119	250	0	32	1268	70	52	774	143
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.2	41.2	41.2	12.2	41.2		11.1	30.1	30.1	11.1	30.1	30.1
Total Split (s)	18.0	44.0	44.0	18.0	44.0		12.0	56.0	56.0	12.0	56.0	56.0
Total Split (%)	13.8%	33.8%	33.8%	13.8%	33.8%		9.2%	43.1%	43.1%	9.2%	43.1%	43.1%
Maximum Green (s)	10.8	36.8	36.8	10.8	36.8		5.9	49.9	49.9	5.9	49.9	49.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2	7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0			17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)		30	30		8			13	13		20	20
Act Effct Green (s)	26.6	27.9	27.9	19.7	21.0		5.8	52.3	52.3	5.9	54.7	54.7
Actuated g/C Ratio	0.20	0.21	0.21	0.15	0.16		0.04	0.40	0.40	0.05	0.42	0.42
v/c Ratio	0.77	0.68	0.27	0.46	0.79		0.45	0.98	0.12	0.75	0.58	0.21
Control Delay	57.8	55.5	5.3	59.8	46.5		91.1	18.3	0.0	115.1	31.9	4.6
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	57.8	55.5	5.3	59.8	46.5		91.1	18.3	0.0	115.1	31.9	4.6
LOS	E	E	A	E	D		F	B	A	F	C	A
Approach Delay		50.3			50.8			19.1			32.3	
Approach LOS		D			D			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 33.6		Intersection LOS: C	
Intersection Capacity Utilization 97.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Woodroffe Avenue & Knoxdale Road/Medhurst Drive



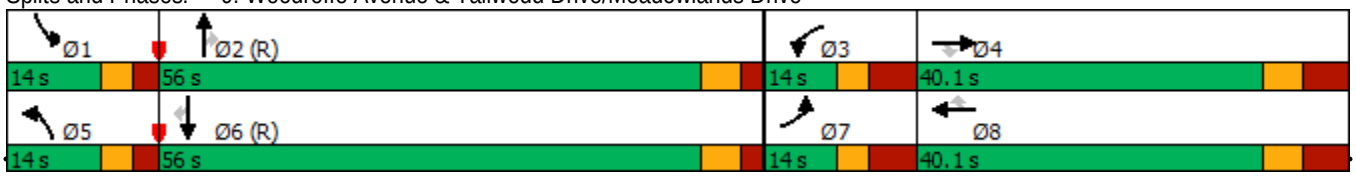


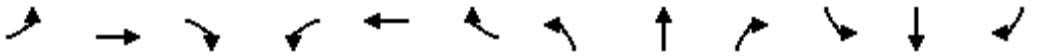
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	242	178	90	168	201	310	1519	312	153	664	78
Future Volume (vph)	76	242	178	90	168	201	310	1519	312	153	664	78
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		25.0	50.0		25.0	80.0		70.0	65.0		60.0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (m)	7.5			30.0			60.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	0.99		0.98	0.99		0.75	0.97		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1541	1800	1500	3190	1748	1417	3317	3226	1530	1487	3196	1430
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1528	1800	1468	3155	1748	1385	3296	3226	1144	1449	3196	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			162			185			156
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		451.4			534.0			978.5			485.6	
Travel Time (s)		40.6			48.1			58.7			29.1	
Confl. Peds. (#/hr)	9		8	8		9	6		80	80		6
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90
Heavy Vehicles (%)	11%	0%	2%	4%	3%	8%	0%	6%	0%	15%	7%	7%
Adj. Flow (vph)	81	257	189	100	187	223	326	1599	328	170	738	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	81	257	189	100	187	223	326	1599	328	170	738	87
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	22.0	22.0	5.0	22.0	22.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	10.3	56.0	56.0	10.3	56.0	56.0
Total Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	14.0	56.0	56.0	14.0	56.0	56.0
Total Split (%)	11.3%	32.3%	32.3%	11.3%	32.3%	32.3%	11.3%	45.1%	45.1%	11.3%	45.1%	45.1%
Maximum Green (s)	6.6	32.0	32.0	6.6	32.0	32.0	8.7	50.0	50.0	8.7	50.0	50.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	8.1	8.1	7.4	8.1	8.1	5.3	6.0	6.0	5.3	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		8	8		9	9		6	6		60	60
Act Effct Green (s)	6.6	25.0	25.0	6.6	25.0	25.0	15.7	50.0	50.0	15.7	50.0	50.0
Actuated g/C Ratio	0.05	0.20	0.20	0.05	0.20	0.20	0.13	0.40	0.40	0.13	0.40	0.40
v/c Ratio	1.00	0.71	0.47	0.59	0.53	0.55	0.78	1.23	0.57	0.90	0.57	0.13
Control Delay	158.7	57.1	16.6	72.2	49.6	18.0	66.3	144.4	16.3	98.3	31.0	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	158.7	57.1	16.6	72.2	49.6	18.0	66.3	144.4	16.3	98.3	31.0	0.4
LOS	F	E	B	E	D	B	E	F	B	F	C	A
Approach Delay		58.2			40.2			114.5			39.8	
Approach LOS		E			D			F			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.1			
Actuated Cycle Length: 124.1			
Offset: 101 (81%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay: 81.4		Intersection LOS: F	
Intersection Capacity Utilization 100.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 9: Woodroffe Avenue & Tallwodd Drive/Meadowlands Drive



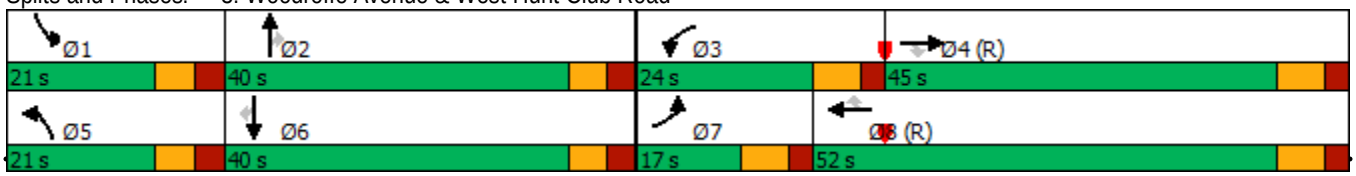


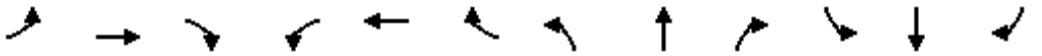
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	579	451	89	1192	267	228	715	101	188	960	176
Future Volume (vph)	122	579	451	89	1192	267	228	715	101	188	960	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		25.0	70.0		30.0	60.0		90.0	80.0		40.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	30.0			50.0			40.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00					0.98			0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3343	1568	1805	3574	1583	1787	3438	1553	3433	3438	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1735	3343	1568	1805	3574	1557	1787	3438	1529	3427	3438	1563
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			238			144			149			149
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		1105.6			937.9			1033.7			620.6	
Travel Time (s)		49.8			42.2			62.0			37.2	
Confl. Peds. (#/hr)	3					3			2	2		
Confl. Bikes (#/hr)						2			1			1
Peak Hour Factor	0.89	0.89	0.89	0.91	0.91	0.91	0.94	0.94	0.94	0.96	0.96	0.96
Heavy Vehicles (%)	4%	8%	3%	0%	1%	2%	1%	5%	4%	2%	5%	2%
Adj. Flow (vph)	137	651	507	98	1310	293	243	761	107	196	1000	183
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	651	507	98	1310	293	243	761	107	196	1000	183
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	42.1	42.1	12.0	42.1	42.1	11.6	33.6	33.6	11.6	33.6	33.6
Total Split (s)	17.0	45.0	45.0	24.0	52.0	52.0	21.0	40.0	40.0	21.0	40.0	40.0
Total Split (%)	13.1%	34.6%	34.6%	18.5%	40.0%	40.0%	16.2%	30.8%	30.8%	16.2%	30.8%	30.8%
Maximum Green (s)	10.0	37.9	37.9	17.0	44.9	44.9	14.4	33.4	33.4	14.4	33.4	33.4
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.4	2.5	2.5	2.4	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.1	7.1	7.0	7.1	7.1	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		3	3		0	0		2	2
Act Effct Green (s)	10.0	42.5	42.5	12.4	44.9	44.9	14.4	35.4	35.4	12.4	33.4	33.4
Actuated g/C Ratio	0.08	0.33	0.33	0.10	0.35	0.35	0.11	0.27	0.27	0.10	0.26	0.26
v/c Ratio	1.03	0.60	0.75	0.57	1.06	0.46	1.23	0.81	0.20	0.60	1.13	0.36
Control Delay	144.1	39.9	28.8	68.7	84.6	18.9	188.1	52.5	2.8	31.3	111.4	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	144.1	39.9	28.8	68.7	84.6	18.9	188.1	52.5	2.8	31.3	111.4	21.9
LOS	F	D	C	E	F	B	F	D	A	C	F	C
Approach Delay		46.6			72.4			77.4			88.1	
Approach LOS		D			E			E			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay: 71.3		Intersection LOS: E	
Intersection Capacity Utilization 101.6%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Woodroffe Avenue & West Hunt Club Road



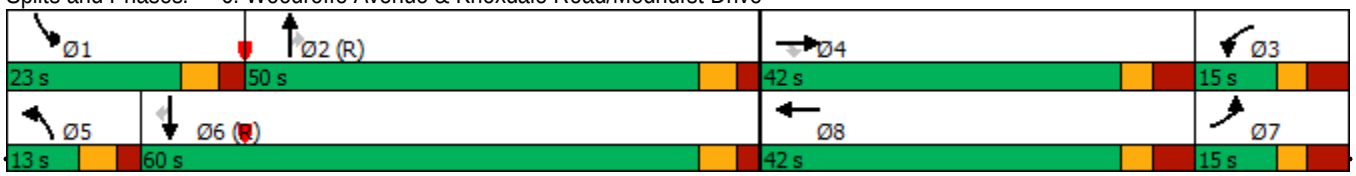


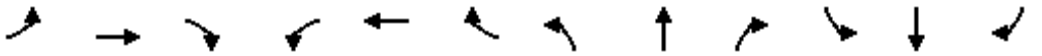
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	49	63	107	178	114	92	930	96	168	1379	526
Future Volume (vph)	174	49	63	107	178	114	92	930	96	168	1379	526
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		30.0	30.0		0.0	60.0		20.0	65.0		65.0
Storage Lanes	2		1	1		0	1		1	1		1
Taper Length (m)	30.0			45.0			50.0			50.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.96		0.95	0.97	0.98		0.99		0.94	0.99		0.88
Frt			0.850		0.942				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	1863	1568	1736	1733	0	1805	3406	1599	1736	3438	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3317	1863	1493	1676	1733	0	1780	3406	1508	1719	3438	1391
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			189		24				198			313
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		1079.0			625.4			620.6			978.5	
Travel Time (s)		97.1			56.3			37.2			58.7	
Confl. Peds. (#/hr)	36		32	32		36	38		14	14		38
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.87	0.87	0.87	0.94	0.94	0.94	0.96	0.96	0.96
Heavy Vehicles (%)	1%	2%	3%	4%	0%	3%	0%	6%	1%	4%	5%	2%
Adj. Flow (vph)	193	54	70	123	205	131	98	989	102	175	1436	548
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	54	70	123	336	0	98	989	102	175	1436	548
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.2	41.2	41.2	12.2	41.2		11.1	30.1	30.1	11.1	30.1	30.1
Total Split (s)	15.0	42.0	42.0	15.0	42.0		13.0	50.0	50.0	23.0	60.0	60.0
Total Split (%)	11.5%	32.3%	32.3%	11.5%	32.3%		10.0%	38.5%	38.5%	17.7%	46.2%	46.2%
Maximum Green (s)	7.8	34.8	34.8	7.8	34.8		6.9	43.9	43.9	16.9	53.9	53.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2	7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0			17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)		30	30		25			35	35		14	14
Act Effct Green (s)	9.7	25.2	25.2	17.9	29.5		9.1	48.3	48.3	15.9	55.1	55.1
Actuated g/C Ratio	0.07	0.19	0.19	0.14	0.23		0.07	0.37	0.37	0.12	0.42	0.42
v/c Ratio	0.75	0.15	0.16	0.52	0.82		0.78	0.78	0.15	0.83	0.99	0.71
Control Delay	77.2	40.4	0.8	63.7	59.8		106.9	23.4	0.6	85.2	58.0	18.6
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	77.2	40.4	0.8	63.7	59.8		106.9	23.4	0.6	85.2	58.0	18.6
LOS	E	D	A	E	E		F	C	A	F	E	B
Approach Delay		54.1			60.8			28.3			50.2	
Approach LOS		D			E			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 45.4		Intersection LOS: D	
Intersection Capacity Utilization 95.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Woodroffe Avenue & Knoxdale Road/Medhurst Drive



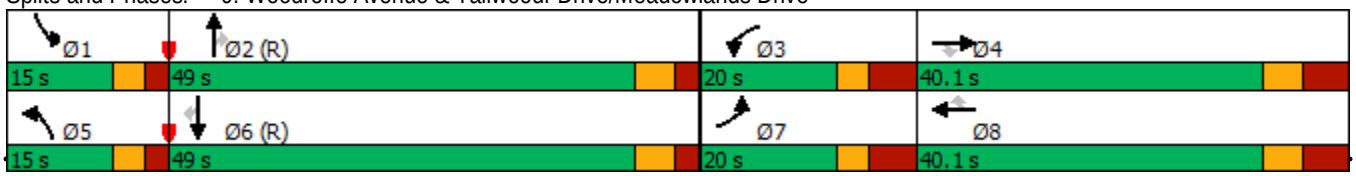


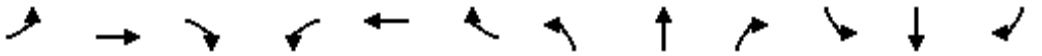
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	206	330	316	248	289	186	959	173	214	1310	144
Future Volume (vph)	90	206	330	316	248	289	186	959	173	214	1310	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		25.0	50.0		25.0	80.0		70.0	65.0		60.0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (m)	7.5			30.0			60.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.96	0.96		0.97	1.00		0.88	0.98		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1863	1599	3467	1900	1509	3433	3406	1599	1671	3406	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1654	1863	1529	3337	1900	1469	3424	3406	1413	1630	3406	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			167			188			156			156
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		451.4			534.0			978.5			485.6	
Travel Time (s)		40.6			48.1			58.7			29.1	
Confl. Peds. (#/hr)	13		27	27		13	6		33	33		6
Confl. Bikes (#/hr)			1						1			
Peak Hour Factor	0.86	0.86	0.86	0.94	0.94	0.94	0.97	0.97	0.97	0.96	0.96	0.96
Heavy Vehicles (%)	8%	2%	1%	1%	0%	7%	2%	6%	1%	8%	6%	3%
Adj. Flow (vph)	105	240	384	336	264	307	192	989	178	223	1365	150
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	240	384	336	264	307	192	989	178	223	1365	150
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	22.0	22.0	5.0	22.0	22.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	10.3	49.0	49.0	10.3	49.0	49.0
Total Split (s)	20.0	40.1	40.1	20.0	40.1	40.1	15.0	49.0	49.0	15.0	49.0	49.0
Total Split (%)	16.1%	32.3%	32.3%	16.1%	32.3%	32.3%	12.1%	39.5%	39.5%	12.1%	39.5%	39.5%
Maximum Green (s)	12.6	32.0	32.0	12.6	32.0	32.0	9.7	43.0	43.0	9.7	43.0	43.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	8.1	8.1	7.4	8.1	8.1	5.3	6.0	6.0	5.3	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		25	25		30	30		8	8		13	13
Act Effct Green (s)	11.4	28.0	28.0	12.6	29.2	29.2	9.8	43.0	43.0	13.7	46.9	46.9
Actuated g/C Ratio	0.09	0.23	0.23	0.10	0.24	0.24	0.08	0.35	0.35	0.11	0.38	0.38
v/c Ratio	0.69	0.57	0.81	0.95	0.59	0.63	0.71	0.84	0.30	1.21	1.06	0.22
Control Delay	77.1	47.7	38.9	93.3	47.7	21.7	70.5	45.0	7.6	181.0	80.8	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.1	47.7	38.9	93.3	47.7	21.7	70.5	45.0	7.6	181.0	80.8	4.8
LOS	E	D	D	F	D	C	E	D	A	F	F	A
Approach Delay		47.3			55.8			43.7			87.1	
Approach LOS		D			E			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.1			
Actuated Cycle Length: 124.1			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.21			
Intersection Signal Delay: 62.5		Intersection LOS: E	
Intersection Capacity Utilization 96.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: Woodroffe Avenue & Tallwoodr Drive/Meadowlands Drive



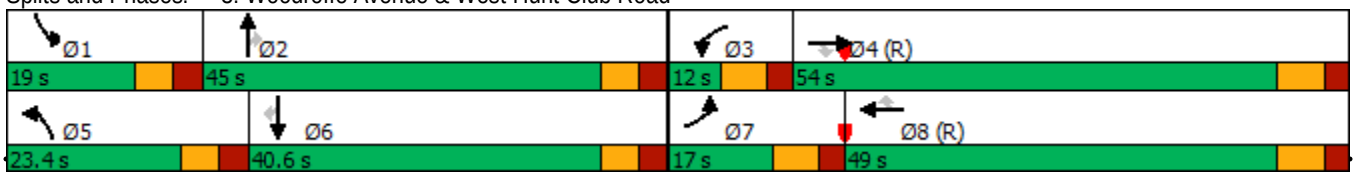


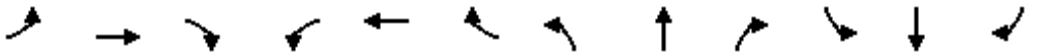
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	990	134	62	599	138	105	892	186	265	415	96
Future Volume (vph)	78	990	134	62	599	138	105	892	186	265	415	96
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		25.0	70.0		30.0	60.0		90.0	80.0		40.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	30.0			50.0			40.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	3196	1457	1676	3000	1443	1598	3226	1457	3190	3109	1443
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1522	3196	1432	1675	3000	1417	1593	3226	1420	3170	3109	1415
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144			144			149			149
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		1105.6			937.9			1033.7			620.6	
Travel Time (s)		49.8			42.2			62.0			37.2	
Confl. Peds. (#/hr)	6		4	4		6	4		9	9		4
Confl. Bikes (#/hr)			1						1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	12%	7%	5%	2%	14%	6%	7%	6%	5%	4%	10%	6%
Adj. Flow (vph)	78	990	134	62	599	138	105	892	186	265	415	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	990	134	62	599	138	105	892	186	265	415	96
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	42.1	42.1	12.0	42.1	42.1	11.6	33.6	33.6	11.6	33.6	33.6
Total Split (s)	17.0	54.0	54.0	12.0	49.0	49.0	23.4	45.0	45.0	19.0	40.6	40.6
Total Split (%)	13.1%	41.5%	41.5%	9.2%	37.7%	37.7%	18.0%	34.6%	34.6%	14.6%	31.2%	31.2%
Maximum Green (s)	10.0	46.9	46.9	5.0	41.9	41.9	16.8	38.4	38.4	12.4	34.0	34.0
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.4	2.5	2.5	2.4	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.1	7.1	7.0	7.1	7.1	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		4	4		6	6		4	4		9	9
Act Effct Green (s)	9.5	46.9	46.9	5.0	42.4	42.4	13.3	38.4	38.4	12.4	37.5	37.5
Actuated g/C Ratio	0.07	0.36	0.36	0.04	0.33	0.33	0.10	0.30	0.30	0.10	0.29	0.29
v/c Ratio	0.70	0.86	0.22	0.97	0.61	0.25	0.64	0.94	0.35	0.87	0.46	0.19
Control Delay	90.3	47.3	4.6	165.6	40.3	5.6	73.5	62.2	10.9	77.9	48.8	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.3	47.3	4.6	165.6	40.3	5.6	73.5	62.2	10.9	77.9	48.8	17.9
LOS	F	D	A	F	D	A	E	E	B	E	D	B
Approach Delay		45.3			44.0			55.2			54.9	
Approach LOS		D			D			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 96 (74%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 49.9		Intersection LOS: D	
Intersection Capacity Utilization 90.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Woodroffe Avenue & West Hunt Club Road



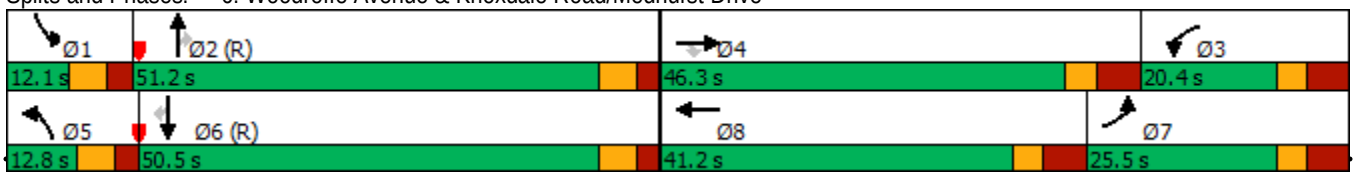


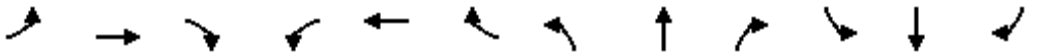
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	191	84	84	40	140	25	975	54	40	583	107
Future Volume (vph)	372	191	84	84	40	140	25	975	54	40	583	107
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	30.0		0.0	60.0		20.0	65.0		65.0
Storage Lanes	2		1	1		0	1		1	1		1
Taper Length (m)	30.0			45.0			50.0			50.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.94		0.98	0.99	0.96		0.98		0.92	0.98		0.94
Frt			0.850		0.883				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	1765	1515	1693	1418	0	1569	3167	1378	1487	3167	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3073	1765	1483	1681	1418	0	1544	3167	1267	1463	3167	1417
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138		123				147			147
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		1079.0			625.4			620.6			978.5	
Travel Time (s)		97.1			56.3			37.2			58.7	
Confl. Peds. (#/hr)	37		8	8		37	13		23	23		13
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	9%	7%	9%	8%	11%	15%	8%	2%
Adj. Flow (vph)	372	191	84	84	40	140	25	975	54	40	583	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	372	191	84	84	180	0	25	975	54	40	583	107
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.2	41.2	41.2	12.2	41.2		11.1	30.1	30.1	11.1	30.1	30.1
Total Split (s)	25.5	46.3	46.3	20.4	41.2		12.8	51.2	51.2	12.1	50.5	50.5
Total Split (%)	19.6%	35.6%	35.6%	15.7%	31.7%		9.8%	39.4%	39.4%	9.3%	38.8%	38.8%
Maximum Green (s)	18.3	39.1	39.1	13.2	34.0		6.7	45.1	45.1	6.0	44.4	44.4
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2	7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0			17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)		30	30		8			13	13		20	20
Act Effct Green (s)	23.7	26.2	26.2	14.5	17.0		6.9	57.2	57.2	7.9	60.6	60.6
Actuated g/C Ratio	0.18	0.20	0.20	0.11	0.13		0.05	0.44	0.44	0.06	0.47	0.47
v/c Ratio	0.63	0.54	0.21	0.45	0.62		0.30	0.70	0.08	0.44	0.40	0.14
Control Delay	53.9	50.4	1.8	61.8	26.5		88.0	12.9	0.2	74.4	27.2	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	53.9	50.4	1.8	61.8	26.5		88.0	12.9	0.2	74.4	27.2	2.0
LOS	D	D	A	E	C		F	B	A	E	C	A
Approach Delay		46.1			37.8			14.1			26.1	
Approach LOS		D			D			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 27.3		Intersection LOS: C	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Woodroffe Avenue & Knoxdale Road/Medhurst Drive



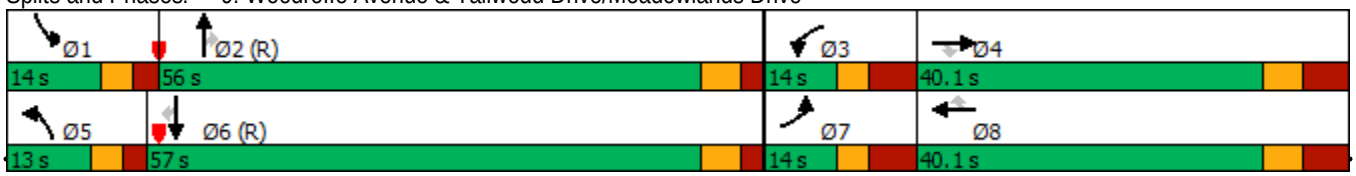


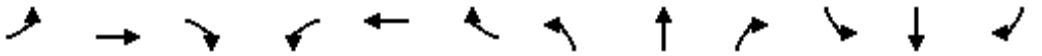
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	194	144	74	137	165	250	1241	252	127	544	64
Future Volume (vph)	64	194	144	74	137	165	250	1241	252	127	544	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		25.0	50.0		25.0	80.0		70.0	65.0		60.0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (m)	7.5			30.0			60.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	0.99		0.98	0.99		0.74	0.96		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1500	1782	1485	3159	1731	1391	3317	3196	1530	1449	3138	1404
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1487	1782	1454	3122	1731	1360	3290	3196	1139	1387	3138	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			161			183			156
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		451.4			534.0			978.5			485.6	
Travel Time (s)		40.6			48.1			58.7			29.1	
Confl. Peds. (#/hr)	9		8	8		9	6		81	81		6
Confl. Bikes (#/hr)									1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	14%	1%	3%	5%	4%	10%	0%	7%	0%	18%	9%	9%
Adj. Flow (vph)	64	194	144	74	137	165	250	1241	252	127	544	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	194	144	74	137	165	250	1241	252	127	544	64
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	22.0	22.0	5.0	22.0	22.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	10.3	56.0	56.0	10.3	56.0	56.0
Total Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	13.0	56.0	56.0	14.0	57.0	57.0
Total Split (%)	11.3%	32.3%	32.3%	11.3%	32.3%	32.3%	10.5%	45.1%	45.1%	11.3%	45.9%	45.9%
Maximum Green (s)	6.6	32.0	32.0	6.6	32.0	32.0	7.7	50.0	50.0	8.7	51.0	51.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	8.1	8.1	7.4	8.1	8.1	5.3	6.0	6.0	5.3	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		8	8		9	9		6	6		60	60
Act Effct Green (s)	6.6	26.8	26.8	6.5	24.0	24.0	15.7	50.0	50.0	16.7	51.0	51.0
Actuated g/C Ratio	0.05	0.22	0.22	0.05	0.19	0.19	0.13	0.40	0.40	0.13	0.41	0.41
v/c Ratio	0.81	0.51	0.34	0.45	0.41	0.42	0.60	0.96	0.44	0.65	0.42	0.10
Control Delay	116.4	48.6	9.5	66.0	47.1	9.8	58.1	54.4	10.4	67.9	27.3	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	0.0
Total Delay	116.4	48.6	9.5	66.0	47.1	9.8	58.1	54.4	10.4	67.9	27.3	0.3
LOS	F	D	A	E	D	A	E	D	B	E	C	A
Approach Delay		45.4			34.4			48.6			32.0	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.1			
Actuated Cycle Length: 124.1			
Offset: 101 (81%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 42.8		Intersection LOS: D	
Intersection Capacity Utilization 90.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Woodroffe Avenue & Tallwodd Drive/Meadowlands Drive



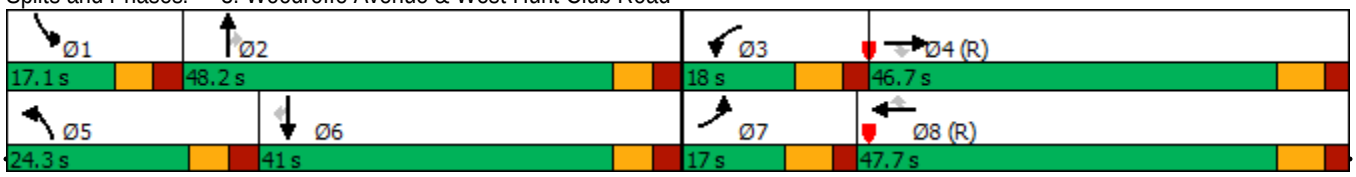


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	475	366	71	963	216	184	584	82	152	783	143
Future Volume (vph)	99	475	366	71	963	216	184	584	82	152	783	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		25.0	70.0		30.0	60.0		90.0	80.0		40.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	30.0			50.0			40.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00					0.98			0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3282	1553	1805	3539	1583	1770	3374	1538	3400	3406	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1734	3282	1553	1805	3539	1557	1770	3374	1514	3392	3406	1563
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			240			200			149			204
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		1105.6			937.9			1033.7			620.6	
Travel Time (s)		49.8			42.2			62.0			37.2	
Confl. Peds. (#/hr)	3					3			2	2		
Confl. Bikes (#/hr)						2			1			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	10%	4%	0%	2%	2%	2%	7%	5%	3%	6%	2%
Adj. Flow (vph)	99	475	366	71	963	216	184	584	82	152	783	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	475	366	71	963	216	184	584	82	152	783	143
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	42.1	42.1	12.0	42.1	42.1	11.6	33.6	33.6	11.6	33.6	33.6
Total Split (s)	17.0	46.7	46.7	18.0	47.7	47.7	24.3	48.2	48.2	17.1	41.0	41.0
Total Split (%)	13.1%	35.9%	35.9%	13.8%	36.7%	36.7%	18.7%	37.1%	37.1%	13.2%	31.5%	31.5%
Maximum Green (s)	10.0	39.6	39.6	11.0	40.6	40.6	17.7	41.6	41.6	10.5	34.4	34.4
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.4	2.5	2.5	2.4	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.1	7.1	7.0	7.1	7.1	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		3	3		0	0		2	2
Act Effct Green (s)	10.0	46.3	46.3	9.5	43.2	43.2	16.5	39.6	39.6	9.9	33.0	33.0
Actuated g/C Ratio	0.08	0.36	0.36	0.07	0.33	0.33	0.13	0.30	0.30	0.08	0.25	0.25
v/c Ratio	0.74	0.41	0.52	0.54	0.82	0.33	0.82	0.57	0.15	0.59	0.91	0.26
Control Delay	90.4	34.8	15.2	72.9	47.3	7.1	82.9	40.1	0.5	39.6	68.7	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.4	34.8	15.2	72.9	47.3	7.1	82.9	40.1	0.5	39.6	68.7	15.9
LOS	F	C	B	E	D	A	F	D	A	D	E	B
Approach Delay		33.1			41.8			45.6			57.6	
Approach LOS		C			D			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 44.7		Intersection LOS: D	
Intersection Capacity Utilization 89.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Woodroffe Avenue & West Hunt Club Road

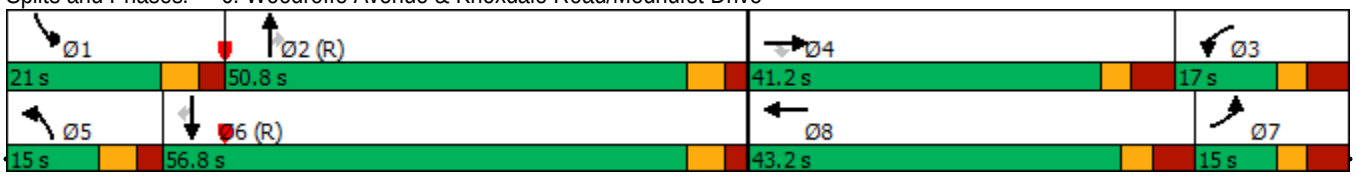


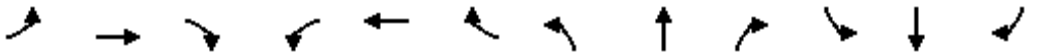
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	40	51	87	143	92	74	760	78	137	1124	426
Future Volume (vph)	140	40	51	87	143	92	74	760	78	137	1124	426
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		30.0	30.0		0.0	60.0		20.0	65.0		65.0
Storage Lanes	2		1	1		0	1		1	1		1
Taper Length (m)	30.0			45.0			50.0			50.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.95		0.95	0.96	0.98		0.98		0.94	0.99		0.88
Frt			0.850		0.941				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1845	1553	1719	1724	0	1805	3343	1599	1719	3406	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3263	1845	1477	1657	1724	0	1766	3343	1508	1696	3406	1377
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138		25				147			298
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		1079.0			625.4			620.6			978.5	
Travel Time (s)		97.1			56.3			37.2			58.7	
Confl. Peds. (#/hr)	36		33	33		36	38		14	14		38
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	4%	5%	0%	4%	0%	8%	1%	5%	6%	3%
Adj. Flow (vph)	140	40	51	87	143	92	74	760	78	137	1124	426
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	40	51	87	235	0	74	760	78	137	1124	426
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.2	41.2	41.2	12.2	41.2		11.1	30.1	30.1	11.1	30.1	30.1
Total Split (s)	15.0	41.2	41.2	17.0	43.2		15.0	50.8	50.8	21.0	56.8	56.8
Total Split (%)	11.5%	31.7%	31.7%	13.1%	33.2%		11.5%	39.1%	39.1%	16.2%	43.7%	43.7%
Maximum Green (s)	7.8	34.0	34.0	9.8	36.0		8.9	44.7	44.7	14.9	50.7	50.7
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2	7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0			17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)		30	30		25			35	35		14	14
Act Effct Green (s)	9.4	25.2	25.2	14.7	26.7		8.5	53.6	53.6	13.7	61.4	61.4
Actuated g/C Ratio	0.07	0.19	0.19	0.11	0.21		0.07	0.41	0.41	0.11	0.47	0.47
v/c Ratio	0.57	0.11	0.13	0.45	0.63		0.63	0.55	0.11	0.76	0.70	0.53
Control Delay	67.7	39.4	0.7	64.7	48.2		109.7	17.3	1.1	81.9	33.0	11.2
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	67.7	39.4	0.7	64.7	48.2		109.7	17.3	1.1	81.9	33.0	11.2
LOS	E	D	A	E	D		F	B	A	F	C	B
Approach Delay		48.0			52.6			23.4			31.5	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 32.5		Intersection LOS: C	
Intersection Capacity Utilization 85.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Woodroffe Avenue & Knoxdale Road/Medhurst Drive



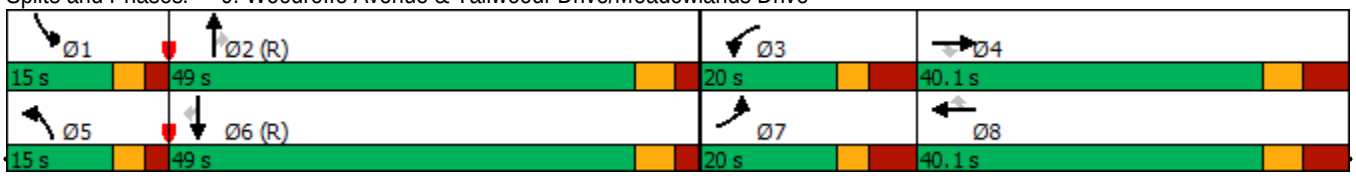


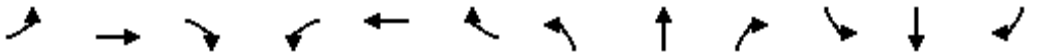
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	166	266	255	200	237	151	783	140	176	1072	117
Future Volume (vph)	74	166	266	255	200	237	151	783	140	176	1072	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		25.0	50.0		25.0	80.0		70.0	65.0		60.0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (m)	7.5			30.0			60.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.96	0.96		0.97	0.99		0.88	0.97		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	1863	1599	3467	1900	1482	3400	3374	1583	1641	3343	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1622	1863	1529	3323	1900	1442	3382	3374	1394	1585	3343	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			179			191			156			156
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		451.4			534.0			978.5			485.6	
Travel Time (s)		40.6			48.1			58.7			29.1	
Confl. Peds. (#/hr)	13		27	27		13	8		34	34		8
Confl. Bikes (#/hr)			1						1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	1%	1%	0%	9%	3%	7%	2%	10%	8%	4%
Adj. Flow (vph)	74	166	266	255	200	237	151	783	140	176	1072	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	166	266	255	200	237	151	783	140	176	1072	117
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	22.0	22.0	5.0	22.0	22.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	10.3	49.0	49.0	10.3	49.0	49.0
Total Split (s)	20.0	40.1	40.1	20.0	40.1	40.1	15.0	49.0	49.0	15.0	49.0	49.0
Total Split (%)	16.1%	32.3%	32.3%	16.1%	32.3%	32.3%	12.1%	39.5%	39.5%	12.1%	39.5%	39.5%
Maximum Green (s)	12.6	32.0	32.0	12.6	32.0	32.0	9.7	43.0	43.0	9.7	43.0	43.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	8.1	8.1	7.4	8.1	8.1	5.3	6.0	6.0	5.3	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		25	25		30	30		8	8		13	13
Act Effct Green (s)	10.4	28.0	28.0	12.2	32.6	32.6	9.3	43.0	43.0	14.1	47.8	47.8
Actuated g/C Ratio	0.08	0.23	0.23	0.10	0.26	0.26	0.07	0.35	0.35	0.11	0.39	0.39
v/c Ratio	0.54	0.40	0.55	0.75	0.40	0.46	0.59	0.67	0.24	0.95	0.83	0.17
Control Delay	68.7	42.9	18.0	68.6	41.1	12.0	65.6	37.9	4.3	108.6	42.5	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	0.0
Total Delay	68.7	42.9	18.0	68.6	41.1	12.0	65.6	37.9	4.3	108.6	42.5	2.2
LOS	E	D	B	E	D	B	E	D	A	F	D	A
Approach Delay		33.6			41.3			37.4			47.5	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.1			
Actuated Cycle Length: 124.1			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 41.4		Intersection LOS: D	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Woodroffe Avenue & Tallwoodr Drive/Meadowlands Drive



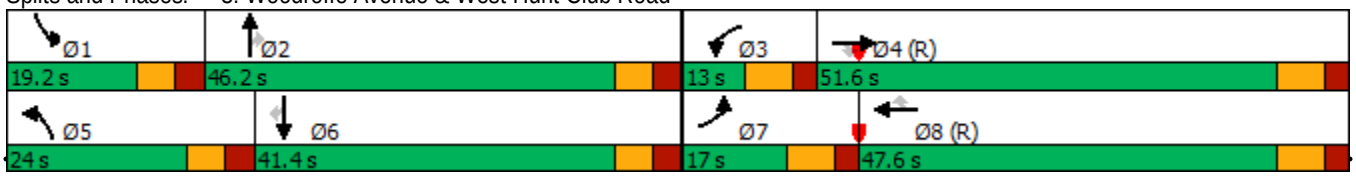


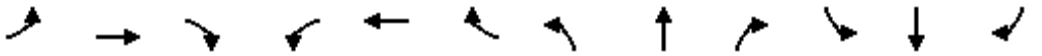
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	1067	144	66	645	148	113	961	200	286	447	103
Future Volume (vph)	84	1067	144	66	645	148	113	961	200	286	447	103
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		25.0	70.0		30.0	60.0		90.0	80.0		40.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	30.0			50.0			40.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	3196	1457	1676	3000	1443	1598	3226	1457	3190	3109	1443
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1522	3196	1431	1674	3000	1415	1592	3226	1418	3170	3109	1413
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144			144			149			149
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		1105.6			937.9			1033.7			620.6	
Travel Time (s)		49.8			42.2			62.0			37.2	
Confl. Peds. (#/hr)	7		5	5		7	5		10	10		5
Confl. Bikes (#/hr)			1						1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	12%	7%	5%	2%	14%	6%	7%	6%	5%	4%	10%	6%
Adj. Flow (vph)	84	1067	144	66	645	148	113	961	200	286	447	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	1067	144	66	645	148	113	961	200	286	447	103
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	42.1	42.1	12.0	42.1	42.1	11.6	33.6	33.6	11.6	33.6	33.6
Total Split (s)	17.0	51.6	51.6	13.0	47.6	47.6	24.0	46.2	46.2	19.2	41.4	41.4
Total Split (%)	13.1%	39.7%	39.7%	10.0%	36.6%	36.6%	18.5%	35.5%	35.5%	14.8%	31.8%	31.8%
Maximum Green (s)	10.0	44.5	44.5	6.0	40.5	40.5	17.4	39.6	39.6	12.6	34.8	34.8
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.4	2.5	2.5	2.4	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.1	7.1	7.0	7.1	7.1	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		4	4		6	6		4	4		9	9
Act Effct Green (s)	9.6	44.5	44.5	6.0	40.9	40.9	13.9	39.6	39.6	12.6	38.3	38.3
Actuated g/C Ratio	0.07	0.34	0.34	0.05	0.31	0.31	0.11	0.30	0.30	0.10	0.29	0.29
v/c Ratio	0.75	0.98	0.25	0.86	0.68	0.27	0.66	0.98	0.37	0.93	0.49	0.20
Control Delay	95.6	64.2	5.7	129.4	43.4	6.9	74.0	68.8	12.3	83.9	50.1	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.6	64.2	5.7	129.4	43.4	6.9	74.0	68.8	12.3	83.9	50.1	18.5
LOS	F	E	A	F	D	A	E	E	B	F	D	B
Approach Delay		59.7			43.7			60.4			57.8	
Approach LOS		E			D			E			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 96 (74%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 56.3		Intersection LOS: E	
Intersection Capacity Utilization 94.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Woodroffe Avenue & West Hunt Club Road



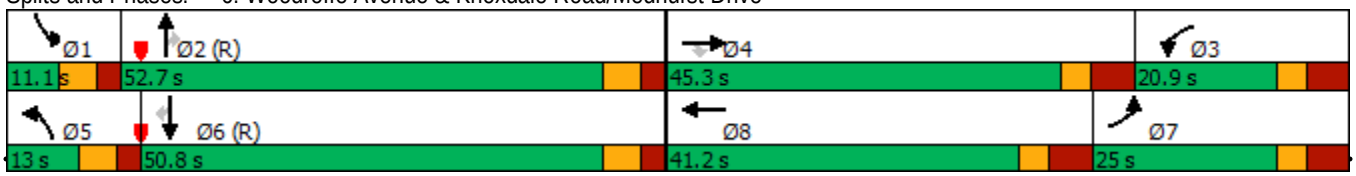


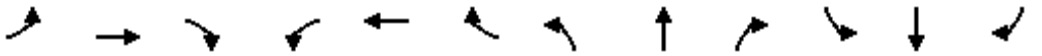
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	401	206	90	91	43	151	27	1050	58	43	628	115
Future Volume (vph)	401	206	90	91	43	151	27	1050	58	43	628	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	30.0		0.0	60.0		20.0	65.0		65.0
Storage Lanes	2		1	1		0	1		1	1		1
Taper Length (m)	30.0			45.0			50.0			50.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.94		0.98	0.99	0.96		0.98		0.91	0.98		0.94
Frt			0.850		0.883				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	1765	1515	1693	1414	0	1569	3167	1378	1487	3167	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3062	1765	1481	1680	1414	0	1544	3167	1259	1464	3167	1413
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138		102				147			147
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		1079.0			625.4			620.6			978.5	
Travel Time (s)		97.1			56.3			37.2			58.7	
Confl. Peds. (#/hr)	40		9	9		40	14		25	25		14
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	9%	7%	9%	8%	11%	15%	8%	2%
Adj. Flow (vph)	401	206	90	91	43	151	27	1050	58	43	628	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	401	206	90	91	194	0	27	1050	58	43	628	115
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.2	41.2	41.2	12.2	41.2		11.1	30.1	30.1	11.1	30.1	30.1
Total Split (s)	25.0	45.3	45.3	20.9	41.2		13.0	52.7	52.7	11.1	50.8	50.8
Total Split (%)	19.2%	34.8%	34.8%	16.1%	31.7%		10.0%	40.5%	40.5%	8.5%	39.1%	39.1%
Maximum Green (s)	17.8	38.1	38.1	13.7	34.0		6.9	46.6	46.6	5.0	44.7	44.7
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2	7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0			17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)		30	30		8			13	13		20	20
Act Effct Green (s)	23.4	26.6	26.6	15.0	18.1		7.1	56.6	56.6	7.7	59.6	59.6
Actuated g/C Ratio	0.18	0.20	0.20	0.12	0.14		0.05	0.44	0.44	0.06	0.46	0.46
v/c Ratio	0.69	0.57	0.22	0.47	0.68		0.32	0.76	0.09	0.49	0.43	0.16
Control Delay	56.2	51.4	2.5	62.2	35.8		87.9	13.6	0.2	77.5	28.2	2.5
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	56.2	51.4	2.5	62.2	35.8		87.9	13.6	0.2	77.5	28.2	2.5
LOS	E	D	A	E	D		F	B	A	E	C	A
Approach Delay		47.8			44.2			14.7			27.2	
Approach LOS		D			D			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 28.9		Intersection LOS: C	
Intersection Capacity Utilization 91.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Woodroffe Avenue & Knoxdale Road/Medhurst Drive



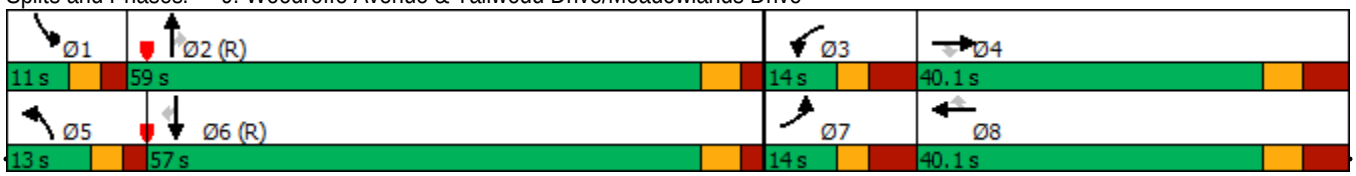


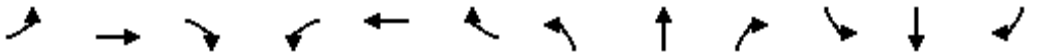
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	211	155	79	147	178	269	1337	271	137	586	69
Future Volume (vph)	68	211	155	79	147	178	269	1337	271	137	586	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		25.0	50.0		25.0	80.0		70.0	65.0		60.0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (m)	7.5			30.0			60.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	0.99		0.98	0.99		0.73	0.96		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1500	1782	1485	3159	1731	1391	3317	3196	1530	1449	3138	1404
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1487	1782	1454	3123	1731	1360	3291	3196	1113	1395	3138	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			138			190			156
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		451.4			534.0			978.5			485.6	
Travel Time (s)		40.6			48.1			58.7			29.1	
Confl. Peds. (#/hr)	9		8	8		9	6		87	81		6
Confl. Bikes (#/hr)									1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	14%	1%	3%	5%	4%	10%	0%	7%	0%	18%	9%	9%
Adj. Flow (vph)	68	211	155	79	147	178	269	1337	271	137	586	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	211	155	79	147	178	269	1337	271	137	586	69
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	22.0	22.0	5.0	22.0	22.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	10.3	56.0	56.0	10.3	56.0	56.0
Total Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	13.0	59.0	59.0	11.0	57.0	57.0
Total Split (%)	11.3%	32.3%	32.3%	11.3%	32.3%	32.3%	10.5%	47.5%	47.5%	8.9%	45.9%	45.9%
Maximum Green (s)	6.6	32.0	32.0	6.6	32.0	32.0	7.7	53.0	53.0	5.7	51.0	51.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	8.1	8.1	7.4	8.1	8.1	5.3	6.0	6.0	5.3	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		8	8		9	9		6	6		60	60
Act Effct Green (s)	6.6	26.9	26.9	6.5	24.1	24.1	15.6	53.0	53.0	13.6	51.0	51.0
Actuated g/C Ratio	0.05	0.22	0.22	0.05	0.19	0.19	0.13	0.43	0.43	0.11	0.41	0.41
v/c Ratio	0.86	0.55	0.37	0.48	0.44	0.47	0.65	0.98	0.46	0.87	0.45	0.11
Control Delay	126.3	49.7	11.2	67.0	47.7	15.9	59.9	55.4	10.5	97.9	27.9	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	0.0
Total Delay	126.3	49.7	11.2	67.0	47.7	15.9	59.9	55.4	10.5	97.9	27.9	0.3
LOS	F	D	B	E	D	B	E	E	B	F	C	A
Approach Delay		47.9			37.4			49.6			37.6	
Approach LOS		D			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.1			
Actuated Cycle Length: 124.1			
Offset: 101 (81%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 45.3		Intersection LOS: D	
Intersection Capacity Utilization 94.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: Woodroffe Avenue & Tallwodd Drive/Meadowlands Drive



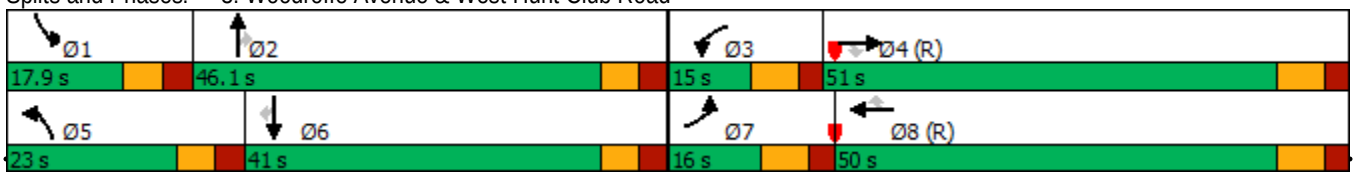


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	512	395	77	1038	232	198	629	89	164	843	154
Future Volume (vph)	106	512	395	77	1038	232	198	629	89	164	843	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		25.0	70.0		30.0	60.0		90.0	80.0		40.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	30.0			50.0			40.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00					0.98			0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3282	1553	1805	3539	1583	1770	3374	1538	3400	3406	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1734	3282	1553	1805	3539	1557	1770	3374	1514	3393	3406	1563
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			253			144			149			149
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		1105.6			937.9			1033.7			620.6	
Travel Time (s)		49.8			42.2			62.0			37.2	
Confl. Peds. (#/hr)	3					3			2	2		
Confl. Bikes (#/hr)						2			1			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	10%	4%	0%	2%	2%	2%	7%	5%	3%	6%	2%
Adj. Flow (vph)	106	512	395	77	1038	232	198	629	89	164	843	154
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	512	395	77	1038	232	198	629	89	164	843	154
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	42.1	42.1	12.0	42.1	42.1	11.6	33.6	33.6	11.6	33.6	33.6
Total Split (s)	16.0	51.0	51.0	15.0	50.0	50.0	23.0	46.1	46.1	17.9	41.0	41.0
Total Split (%)	12.3%	39.2%	39.2%	11.5%	38.5%	38.5%	17.7%	35.5%	35.5%	13.8%	31.5%	31.5%
Maximum Green (s)	9.0	43.9	43.9	8.0	42.9	42.9	16.4	39.5	39.5	11.3	34.4	34.4
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.4	2.5	2.5	2.4	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.1	7.1	7.0	7.1	7.1	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		3	3		0	0		2	2
Act Effct Green (s)	9.2	44.7	44.7	7.8	43.3	43.3	16.1	39.6	39.6	10.5	34.0	34.0
Actuated g/C Ratio	0.07	0.34	0.34	0.06	0.33	0.33	0.12	0.30	0.30	0.08	0.26	0.26
v/c Ratio	0.86	0.45	0.56	0.71	0.88	0.38	0.90	0.61	0.16	0.60	0.95	0.30
Control Delay	109.9	35.0	15.4	92.6	50.9	14.5	96.2	41.7	0.9	35.5	73.2	23.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	109.9	35.0	15.4	92.6	50.9	14.5	96.2	41.7	0.9	35.5	73.2	23.2
LOS	F	C	B	F	D	B	F	D	A	D	E	C
Approach Delay		35.2			47.0			49.5			61.3	
Approach LOS		D			D			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 48.6		Intersection LOS: D	
Intersection Capacity Utilization 92.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Woodroffe Avenue & West Hunt Club Road

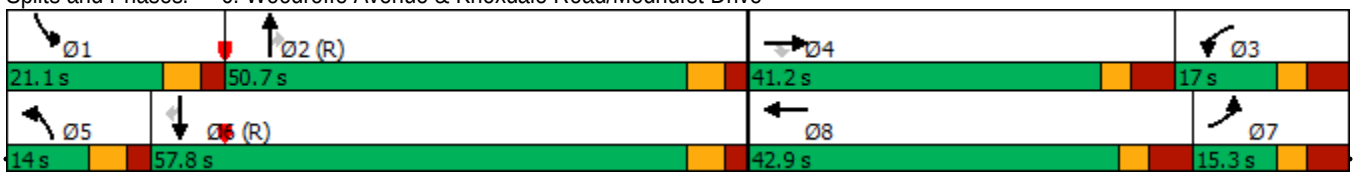


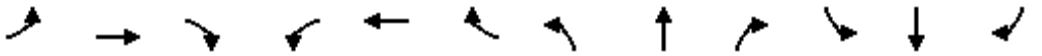
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	43	55	94	154	100	80	819	84	148	1211	459
Future Volume (vph)	151	43	55	94	154	100	80	819	84	148	1211	459
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		30.0	30.0		0.0	60.0		20.0	65.0		65.0
Storage Lanes	2		1	1		0	1		1	1		1
Taper Length (m)	30.0			45.0			50.0			50.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.95		0.95	0.96	0.98		0.98		0.94	0.99		0.87
Frt			0.850		0.941				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1845	1553	1719	1721	0	1805	3343	1599	1719	3406	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3253	1845	1473	1654	1721	0	1768	3343	1503	1697	3406	1365
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			189		25				198			302
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		1079.0			625.4			620.6			978.5	
Travel Time (s)		97.1			56.3			37.2			58.7	
Confl. Peds. (#/hr)	39		35	35		39	41		15	15		41
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	4%	5%	0%	4%	0%	8%	1%	5%	6%	3%
Adj. Flow (vph)	151	43	55	94	154	100	80	819	84	148	1211	459
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	43	55	94	254	0	80	819	84	148	1211	459
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.2	41.2	41.2	12.2	41.2		11.1	30.1	30.1	11.1	30.1	30.1
Total Split (s)	15.3	41.2	41.2	17.0	42.9		14.0	50.7	50.7	21.1	57.8	57.8
Total Split (%)	11.8%	31.7%	31.7%	13.1%	33.0%		10.8%	39.0%	39.0%	16.2%	44.5%	44.5%
Maximum Green (s)	8.1	34.0	34.0	9.8	35.7		7.9	44.6	44.6	15.0	51.7	51.7
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2	7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0			17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)		30	30		25			35	35		14	14
Act Effct Green (s)	9.5	25.2	25.2	15.4	27.2		8.2	52.6	52.6	14.1	58.4	58.4
Actuated g/C Ratio	0.07	0.19	0.19	0.12	0.21		0.06	0.40	0.40	0.11	0.45	0.45
v/c Ratio	0.60	0.12	0.13	0.46	0.67		0.70	0.61	0.12	0.80	0.79	0.59
Control Delay	68.9	39.5	0.6	64.5	50.1		109.7	20.5	0.5	85.5	36.9	13.1
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	68.9	39.5	0.6	64.5	50.1		109.7	20.5	0.5	85.5	36.9	13.1
LOS	E	D	A	E	D		F	C	A	F	D	B
Approach Delay		48.7			54.0			26.0			34.9	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 35.3		Intersection LOS: D	
Intersection Capacity Utilization 89.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Woodroffe Avenue & Knoxdale Road/Medhurst Drive



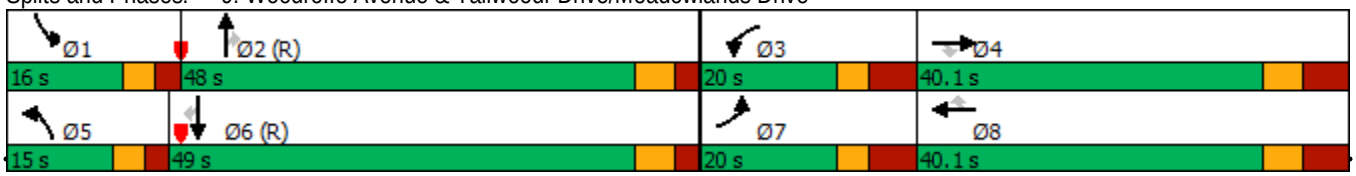


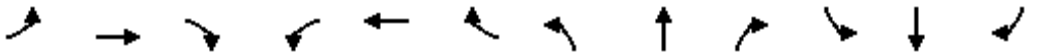
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	179	287	274	215	255	163	843	151	189	1155	126
Future Volume (vph)	80	179	287	274	215	255	163	843	151	189	1155	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		25.0	50.0		25.0	80.0		70.0	65.0		60.0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (m)	7.5			30.0			60.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.95	0.96		0.97	1.00		0.87	0.97		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	1863	1599	3467	1900	1482	3400	3374	1583	1641	3343	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1621	1863	1526	3315	1900	1440	3384	3374	1380	1585	3343	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177			191			156			156
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		451.4			534.0			978.5			485.6	
Travel Time (s)		40.6			48.1			58.7			29.1	
Confl. Peds. (#/hr)	14		29	29		14	8		37	37		8
Confl. Bikes (#/hr)			1						1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	1%	1%	0%	9%	3%	7%	2%	10%	8%	4%
Adj. Flow (vph)	80	179	287	274	215	255	163	843	151	189	1155	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	179	287	274	215	255	163	843	151	189	1155	126
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	22.0	22.0	5.0	22.0	22.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	10.3	48.0	48.0	10.3	49.0	49.0
Total Split (s)	20.0	40.1	40.1	20.0	40.1	40.1	15.0	48.0	48.0	16.0	49.0	49.0
Total Split (%)	16.1%	32.3%	32.3%	16.1%	32.3%	32.3%	12.1%	38.7%	38.7%	12.9%	39.5%	39.5%
Maximum Green (s)	12.6	32.0	32.0	12.6	32.0	32.0	9.7	42.0	42.0	10.7	43.0	43.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	8.1	8.1	7.4	8.1	8.1	5.3	6.0	6.0	5.3	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		25	25		30	30		8	8		13	13
Act Effct Green (s)	10.6	28.0	28.0	12.4	32.6	32.6	9.4	42.0	42.0	14.9	47.5	47.5
Actuated g/C Ratio	0.09	0.23	0.23	0.10	0.26	0.26	0.08	0.34	0.34	0.12	0.38	0.38
v/c Ratio	0.58	0.43	0.60	0.79	0.43	0.49	0.63	0.74	0.26	0.96	0.90	0.19
Control Delay	70.4	43.6	20.9	71.8	41.8	14.3	67.1	40.9	5.3	109.3	47.9	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	0.0
Total Delay	70.4	43.6	20.9	71.8	41.8	14.3	67.1	40.9	5.3	109.3	47.9	2.8
LOS	E	D	C	E	D	B	E	D	A	F	D	A
Approach Delay		35.6			43.4			40.0			51.9	
Approach LOS		D			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.1			
Actuated Cycle Length: 124.1			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 44.5		Intersection LOS: D	
Intersection Capacity Utilization 90.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Woodroffe Avenue & Tallwoodr Drive/Meadowlands Drive



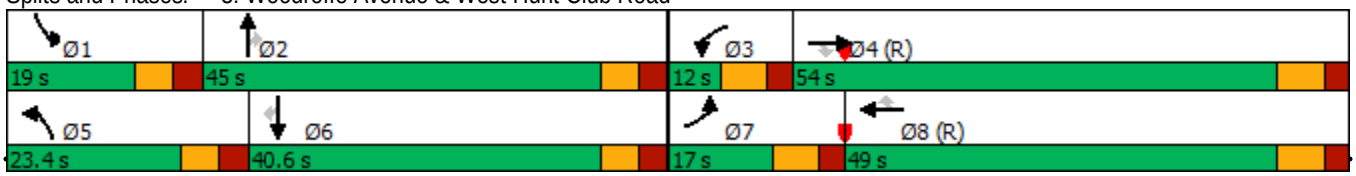


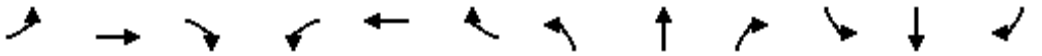
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	990	134	62	599	141	105	912	186	271	425	98
Future Volume (vph)	80	990	134	62	599	141	105	912	186	271	425	98
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		25.0	70.0		30.0	60.0		90.0	80.0		40.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	30.0			50.0			40.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	3196	1457	1676	3000	1443	1598	3226	1457	3190	3109	1443
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1522	3196	1432	1675	3000	1417	1593	3226	1420	3170	3109	1415
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144			144			149			149
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		1105.6			937.9			1033.7			620.6	
Travel Time (s)		49.8			42.2			62.0			37.2	
Confl. Peds. (#/hr)	6		4	4		6	4		9	9		4
Confl. Bikes (#/hr)			1						1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	12%	7%	5%	2%	14%	6%	7%	6%	5%	4%	10%	6%
Adj. Flow (vph)	80	990	134	62	599	141	105	912	186	271	425	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	990	134	62	599	141	105	912	186	271	425	98
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	42.1	42.1	12.0	42.1	42.1	11.6	33.6	33.6	11.6	33.6	33.6
Total Split (s)	17.0	54.0	54.0	12.0	49.0	49.0	23.4	45.0	45.0	19.0	40.6	40.6
Total Split (%)	13.1%	41.5%	41.5%	9.2%	37.7%	37.7%	18.0%	34.6%	34.6%	14.6%	31.2%	31.2%
Maximum Green (s)	10.0	46.9	46.9	5.0	41.9	41.9	16.8	38.4	38.4	12.4	34.0	34.0
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.4	2.5	2.5	2.4	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.1	7.1	7.0	7.1	7.1	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		4	4		6	6		4	4		9	9
Act Effct Green (s)	9.5	46.9	46.9	5.0	42.4	42.4	13.3	38.4	38.4	12.4	37.5	37.5
Actuated g/C Ratio	0.07	0.36	0.36	0.04	0.33	0.33	0.10	0.30	0.30	0.10	0.29	0.29
v/c Ratio	0.72	0.86	0.22	0.97	0.61	0.25	0.64	0.96	0.35	0.89	0.47	0.19
Control Delay	91.8	47.3	4.6	165.6	40.3	5.9	73.5	65.8	10.9	82.1	47.7	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.8	47.3	4.6	165.6	40.3	5.9	73.5	65.8	10.9	82.1	47.7	16.1
LOS	F	D	A	F	D	A	E	E	B	F	D	B
Approach Delay		45.5			43.9			58.0			55.5	
Approach LOS		D			D			E			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 96 (74%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 50.9		Intersection LOS: D	
Intersection Capacity Utilization 91.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Woodroffe Avenue & West Hunt Club Road



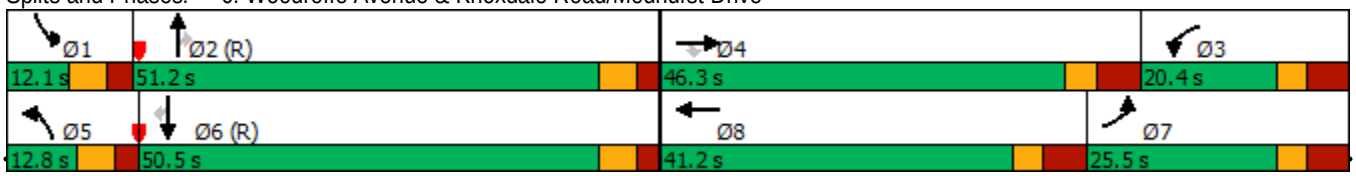


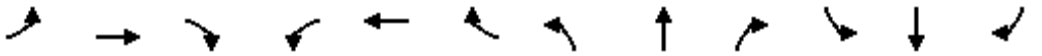
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	201	80	139	50	133	24	1000	55	95	550	102
Future Volume (vph)	380	201	80	139	50	133	24	1000	55	95	550	102
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	30.0		0.0	60.0		20.0	65.0		65.0
Storage Lanes	2		1	1		0	1		1	1		1
Taper Length (m)	30.0			45.0			50.0			50.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.95		0.98	0.99	0.96		0.98		0.92	0.98		0.94
Frt			0.850		0.891				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	1765	1515	1693	1433	0	1569	3167	1378	1487	3167	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3074	1765	1483	1681	1433	0	1543	3167	1267	1464	3167	1417
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138		100				147			147
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		1079.0			94.9			620.6			65.6	
Travel Time (s)		97.1			8.5			37.2			3.9	
Confl. Peds. (#/hr)	37		8	8		37	13		23	23		13
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	9%	7%	9%	8%	11%	15%	8%	2%
Adj. Flow (vph)	380	201	80	139	50	133	24	1000	55	95	550	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	380	201	80	139	183	0	24	1000	55	95	550	102
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.2	41.2	41.2	12.2	41.2		11.1	30.1	30.1	11.1	30.1	30.1
Total Split (s)	25.5	46.3	46.3	20.4	41.2		12.8	51.2	51.2	12.1	50.5	50.5
Total Split (%)	19.6%	35.6%	35.6%	15.7%	31.7%		9.8%	39.4%	39.4%	9.3%	38.8%	38.8%
Maximum Green (s)	18.3	39.1	39.1	13.2	34.0		6.7	45.1	45.1	6.0	44.4	44.4
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2	7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0			17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)		30	30		8			13	13		20	20
Act Effct Green (s)	25.3	26.5	26.5	16.6	17.7		6.5	48.1	48.1	12.2	58.6	58.6
Actuated g/C Ratio	0.19	0.20	0.20	0.13	0.14		0.05	0.37	0.37	0.09	0.45	0.45
v/c Ratio	0.60	0.56	0.19	0.64	0.65		0.31	0.85	0.10	0.68	0.39	0.14
Control Delay	51.9	51.1	1.2	68.0	33.8		90.0	17.1	0.2	82.1	28.3	1.7
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	51.9	51.1	1.2	68.0	33.8		90.0	17.1	0.2	82.1	28.3	1.7
LOS	D	D	A	E	C		F	B	A	F	C	A
Approach Delay		45.5			48.5			17.8			31.5	
Approach LOS		D			D			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 31.5		Intersection LOS: C	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Woodroffe Avenue & Knoxdale Road/Medhurst Drive



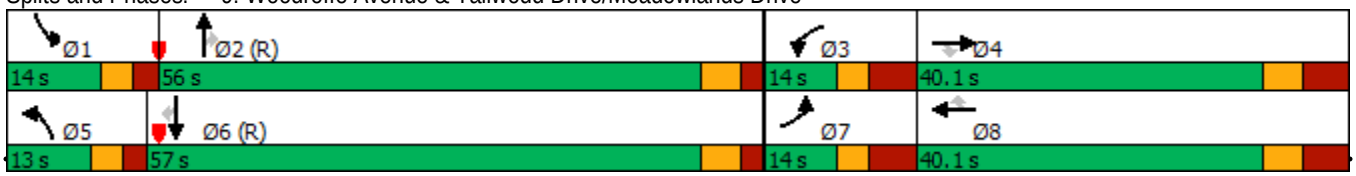


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	194	146	77	137	165	255	1267	257	127	556	64
Future Volume (vph)	64	194	146	77	137	165	255	1267	257	127	556	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		25.0	50.0		25.0	80.0		70.0	65.0		60.0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (m)	7.5			30.0			60.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	0.99		0.98	0.99		0.74	0.96		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1500	1782	1485	3159	1731	1391	3317	3196	1530	1449	3138	1404
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1487	1782	1454	3122	1731	1360	3290	3196	1139	1389	3138	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			160			183			156
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		451.4			534.0			913.2			485.6	
Travel Time (s)		40.6			48.1			54.8			29.1	
Confl. Peds. (#/hr)	9		8	8		9	6		81	81		6
Confl. Bikes (#/hr)									1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	14%	1%	3%	5%	4%	10%	0%	7%	0%	18%	9%	9%
Adj. Flow (vph)	64	194	146	77	137	165	255	1267	257	127	556	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	194	146	77	137	165	255	1267	257	127	556	64
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	22.0	22.0	5.0	22.0	22.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	10.3	56.0	56.0	10.3	56.0	56.0
Total Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	13.0	56.0	56.0	14.0	57.0	57.0
Total Split (%)	11.3%	32.3%	32.3%	11.3%	32.3%	32.3%	10.5%	45.1%	45.1%	11.3%	45.9%	45.9%
Maximum Green (s)	6.6	32.0	32.0	6.6	32.0	32.0	7.7	50.0	50.0	8.7	51.0	51.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	8.1	8.1	7.4	8.1	8.1	5.3	6.0	6.0	5.3	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		8	8		9	9		6	6		60	60
Act Effct Green (s)	6.6	26.8	26.8	6.5	24.0	24.0	15.7	50.0	50.0	16.7	51.0	51.0
Actuated g/C Ratio	0.05	0.22	0.22	0.05	0.19	0.19	0.13	0.40	0.40	0.13	0.41	0.41
v/c Ratio	0.81	0.51	0.35	0.47	0.41	0.42	0.61	0.98	0.45	0.65	0.43	0.10
Control Delay	116.4	48.6	9.8	66.6	47.1	10.0	58.4	58.6	10.8	67.9	27.5	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	0.0
Total Delay	116.4	48.6	9.8	66.6	47.1	10.0	58.4	58.6	10.8	67.9	27.5	0.3
LOS	F	D	A	E	D	A	E	E	B	E	C	A
Approach Delay		45.3			34.9			51.6			32.0	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.1			
Actuated Cycle Length: 124.1			
Offset: 101 (81%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 44.5		Intersection LOS: D	
Intersection Capacity Utilization 91.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: Woodroffe Avenue & Tallwodd Drive/Meadowlands Drive



Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	119	1413	106	0	747
Future Vol, veh/h	0	119	1413	106	0	747
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	119	1413	106	0	747

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	760	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	349	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	349	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	349	-
HCM Lane V/C Ratio	-	-	0.341	-
HCM Control Delay (s)	-	-	20.6	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	1.5	-

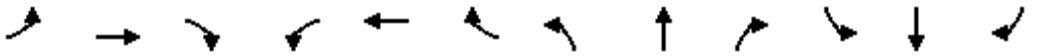
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	229	251	18	20	71
Future Vol, veh/h	80	229	251	18	20	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	229	251	18	20	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	269	0	-	0	649	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	389	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1295	-	-	-	434	779
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	685	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1295	-	-	-	403	779
Mov Cap-2 Maneuver	-	-	-	-	403	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1295	-	-	-	646
HCM Lane V/C Ratio	0.062	-	-	-	0.141
HCM Control Delay (s)	8	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

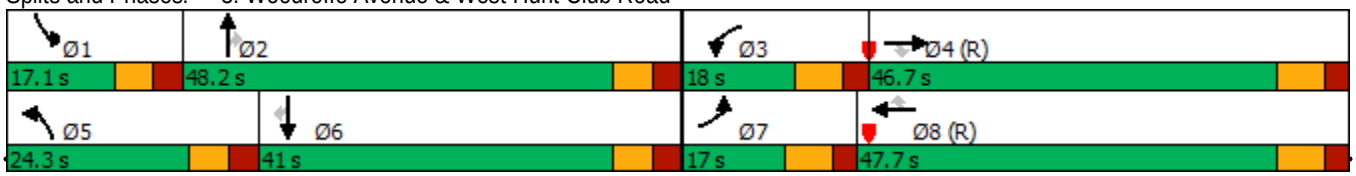


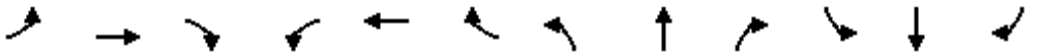
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	475	366	71	963	220	184	594	82	156	799	146
Future Volume (vph)	101	475	366	71	963	220	184	594	82	156	799	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		25.0	70.0		30.0	60.0		90.0	80.0		40.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	30.0			50.0			40.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00					0.98			0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3282	1553	1805	3539	1583	1770	3374	1538	3400	3406	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1734	3282	1553	1805	3539	1557	1770	3374	1514	3393	3406	1563
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			240			200			149			204
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		1105.6			937.9			1033.7			620.6	
Travel Time (s)		49.8			42.2			62.0			37.2	
Confl. Peds. (#/hr)	3					3			2	2		
Confl. Bikes (#/hr)						2			1			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	10%	4%	0%	2%	2%	2%	7%	5%	3%	6%	2%
Adj. Flow (vph)	101	475	366	71	963	220	184	594	82	156	799	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	475	366	71	963	220	184	594	82	156	799	146
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	42.1	42.1	12.0	42.1	42.1	11.6	33.6	33.6	11.6	33.6	33.6
Total Split (s)	17.0	46.7	46.7	18.0	47.7	47.7	24.3	48.2	48.2	17.1	41.0	41.0
Total Split (%)	13.1%	35.9%	35.9%	13.8%	36.7%	36.7%	18.7%	37.1%	37.1%	13.2%	31.5%	31.5%
Maximum Green (s)	10.0	39.6	39.6	11.0	40.6	40.6	17.7	41.6	41.6	10.5	34.4	34.4
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.4	2.5	2.5	2.4	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.1	7.1	7.0	7.1	7.1	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		3	3		0	0		2	2
Act Effct Green (s)	10.0	46.1	46.1	9.5	42.9	42.9	16.5	39.9	39.9	9.9	33.3	33.3
Actuated g/C Ratio	0.08	0.35	0.35	0.07	0.33	0.33	0.13	0.31	0.31	0.08	0.26	0.26
v/c Ratio	0.76	0.41	0.52	0.54	0.82	0.34	0.82	0.57	0.14	0.60	0.92	0.26
Control Delay	91.5	35.0	15.3	72.9	47.8	7.5	82.9	40.2	0.5	41.3	70.0	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.5	35.0	15.3	72.9	47.8	7.5	82.9	40.2	0.5	41.3	70.0	15.3
LOS	F	C	B	E	D	A	F	D	A	D	E	B
Approach Delay		33.4			42.2			45.5			58.7	
Approach LOS		C			D			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 45.3		Intersection LOS: D	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Woodroffe Avenue & West Hunt Club Road



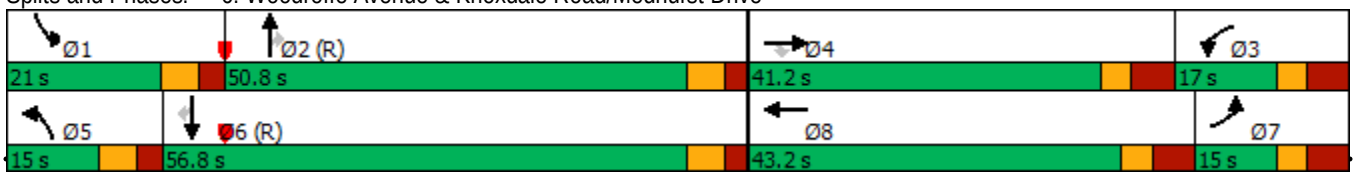


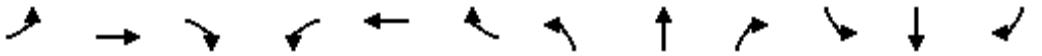
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	43	50	142	168	90	72	778	79	205	1094	415
Future Volume (vph)	142	43	50	142	168	90	72	778	79	205	1094	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		30.0	30.0		0.0	60.0		20.0	65.0		65.0
Storage Lanes	2		1	1		0	1		1	1		1
Taper Length (m)	30.0			45.0			50.0			50.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.95		0.95	0.96	0.98		0.98		0.94	0.99		0.88
Frt			0.850		0.948				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1845	1553	1719	1744	0	1805	3343	1599	1719	3406	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3268	1845	1477	1658	1744	0	1764	3343	1508	1697	3406	1377
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138		21				147			298
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		1079.0			75.2			620.6			62.9	
Travel Time (s)		97.1			6.8			37.2			3.8	
Confl. Peds. (#/hr)	36		33	33		36	38		14	14		38
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	4%	5%	0%	4%	0%	8%	1%	5%	6%	3%
Adj. Flow (vph)	142	43	50	142	168	90	72	778	79	205	1094	415
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	43	50	142	258	0	72	778	79	205	1094	415
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.2	41.2	41.2	12.2	41.2		11.1	30.1	30.1	11.1	30.1	30.1
Total Split (s)	15.0	41.2	41.2	17.0	43.2		15.0	50.8	50.8	21.0	56.8	56.8
Total Split (%)	11.5%	31.7%	31.7%	13.1%	33.2%		11.5%	39.1%	39.1%	16.2%	43.7%	43.7%
Maximum Green (s)	7.8	34.0	34.0	9.8	36.0		8.9	44.7	44.7	14.9	50.7	50.7
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2	7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0			17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)		30	30		25			35	35		14	14
Act Effct Green (s)	9.7	25.2	25.2	15.8	27.4		8.5	48.0	48.0	18.3	60.4	60.4
Actuated g/C Ratio	0.07	0.19	0.19	0.12	0.21		0.07	0.37	0.37	0.14	0.46	0.46
v/c Ratio	0.55	0.12	0.13	0.68	0.67		0.62	0.63	0.12	0.85	0.69	0.52
Control Delay	66.7	39.5	0.7	73.5	51.0		108.9	20.4	1.2	84.4	33.2	10.8
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	66.7	39.5	0.7	73.5	51.0		108.9	20.4	1.2	84.4	33.2	10.8
LOS	E	D	A	E	D		F	C	A	F	C	B
Approach Delay		47.7			59.0			25.6			33.9	
Approach LOS		D			E			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 35.6		Intersection LOS: D	
Intersection Capacity Utilization 86.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Woodroffe Avenue & Knoxdale Road/Medhurst Drive



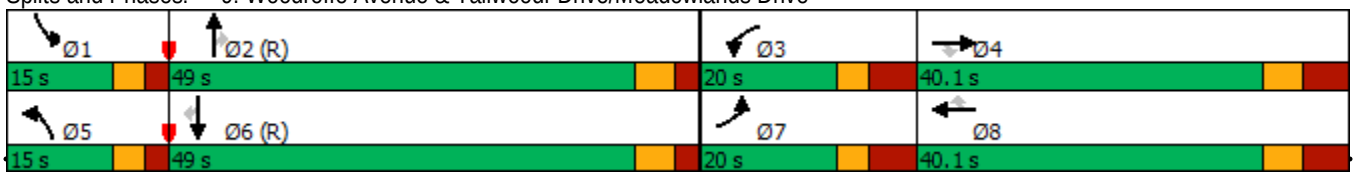


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	166	266	259	200	237	154	797	143	176	1092	117
Future Volume (vph)	74	166	266	259	200	237	154	797	143	176	1092	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		25.0	50.0		25.0	80.0		70.0	65.0		60.0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (m)	7.5			30.0			60.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.96	0.96		0.97	0.99		0.88	0.97		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	1863	1599	3467	1900	1482	3400	3374	1583	1641	3343	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1622	1863	1529	3323	1900	1442	3382	3374	1394	1586	3343	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			178			191			156			156
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		451.4			534.0			915.6			485.6	
Travel Time (s)		40.6			48.1			54.9			29.1	
Confl. Peds. (#/hr)	13		27	27		13	8		34	34		8
Confl. Bikes (#/hr)			1						1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	1%	1%	0%	9%	3%	7%	2%	10%	8%	4%
Adj. Flow (vph)	74	166	266	259	200	237	154	797	143	176	1092	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	166	266	259	200	237	154	797	143	176	1092	117
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	22.0	22.0	5.0	22.0	22.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	10.3	49.0	49.0	10.3	49.0	49.0
Total Split (s)	20.0	40.1	40.1	20.0	40.1	40.1	15.0	49.0	49.0	15.0	49.0	49.0
Total Split (%)	16.1%	32.3%	32.3%	16.1%	32.3%	32.3%	12.1%	39.5%	39.5%	12.1%	39.5%	39.5%
Maximum Green (s)	12.6	32.0	32.0	12.6	32.0	32.0	9.7	43.0	43.0	9.7	43.0	43.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	8.1	8.1	7.4	8.1	8.1	5.3	6.0	6.0	5.3	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		25	25		30	30		8	8		13	13
Act Effct Green (s)	10.4	28.0	28.0	12.2	32.7	32.7	9.3	43.0	43.0	14.1	47.7	47.7
Actuated g/C Ratio	0.08	0.23	0.23	0.10	0.26	0.26	0.07	0.35	0.35	0.11	0.38	0.38
v/c Ratio	0.54	0.40	0.55	0.76	0.40	0.46	0.60	0.68	0.24	0.95	0.85	0.17
Control Delay	68.7	42.9	18.2	69.2	41.1	12.0	65.9	38.3	4.5	109.1	43.5	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	0.0
Total Delay	68.7	42.9	18.2	69.2	41.1	12.0	65.9	38.3	4.5	109.1	43.5	2.2
LOS	E	D	B	E	D	B	E	D	A	F	D	A
Approach Delay		33.7			41.7			37.8			48.4	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.1			
Actuated Cycle Length: 124.1			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 41.9		Intersection LOS: D	
Intersection Capacity Utilization 87.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Woodroffe Avenue & Tallwoodr Drive/Meadowlands Drive



Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	81	204	314	14	11	86
Future Vol, veh/h	81	204	314	14	11	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	81	204	314	14	11	86

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	328	0	-	0	687	321
Stage 1	-	-	-	-	321	-
Stage 2	-	-	-	-	366	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1232	-	-	-	413	720
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1232	-	-	-	382	720
Mov Cap-2 Maneuver	-	-	-	-	382	-
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	702	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1232	-	-	-	654
HCM Lane V/C Ratio	0.066	-	-	-	0.148
HCM Control Delay (s)	8.1	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

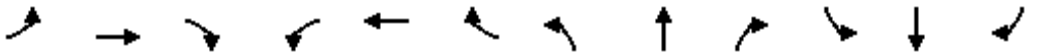
Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	46	967	43	0	1714
Future Vol, veh/h	0	46	967	43	0	1714
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	46	967	43	0	1714

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	505	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	512	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	512	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	512	-
HCM Lane V/C Ratio	-	-	0.09	-
HCM Control Delay (s)	-	-	12.7	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.3	-

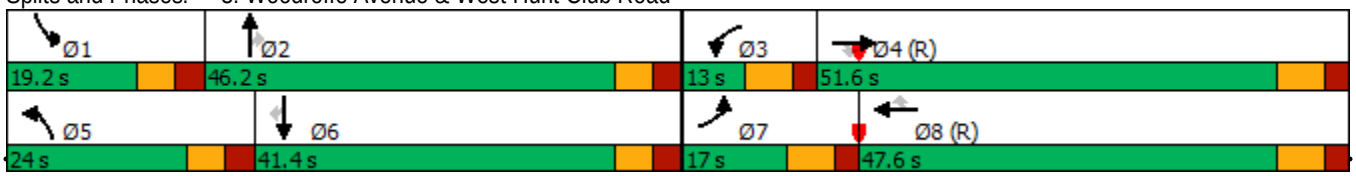


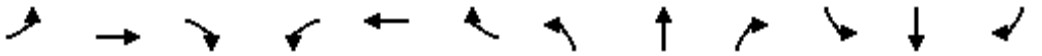
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	1067	144	66	645	151	113	981	200	292	457	105
Future Volume (vph)	86	1067	144	66	645	151	113	981	200	292	457	105
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		25.0	70.0		30.0	60.0		90.0	80.0		40.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	30.0			50.0			40.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1527	3196	1457	1676	3000	1443	1598	3226	1457	3190	3109	1443
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1522	3196	1431	1674	3000	1415	1592	3226	1418	3170	3109	1413
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144			144			149			149
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		1105.6			937.9			1033.7			620.6	
Travel Time (s)		49.8			42.2			62.0			37.2	
Confl. Peds. (#/hr)	7		5	5		7	5		10	10		5
Confl. Bikes (#/hr)			1						1			2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	12%	7%	5%	2%	14%	6%	7%	6%	5%	4%	10%	6%
Adj. Flow (vph)	86	1067	144	66	645	151	113	981	200	292	457	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	1067	144	66	645	151	113	981	200	292	457	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	42.1	42.1	12.0	42.1	42.1	11.6	33.6	33.6	11.6	33.6	33.6
Total Split (s)	17.0	51.6	51.6	13.0	47.6	47.6	24.0	46.2	46.2	19.2	41.4	41.4
Total Split (%)	13.1%	39.7%	39.7%	10.0%	36.6%	36.6%	18.5%	35.5%	35.5%	14.8%	31.8%	31.8%
Maximum Green (s)	10.0	44.5	44.5	6.0	40.5	40.5	17.4	39.6	39.6	12.6	34.8	34.8
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.4	2.5	2.5	2.4	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.1	7.1	7.0	7.1	7.1	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		4	4		6	6		4	4		9	9
Act Effct Green (s)	9.6	44.5	44.5	6.0	40.9	40.9	13.9	39.6	39.6	12.6	38.3	38.3
Actuated g/C Ratio	0.07	0.34	0.34	0.05	0.31	0.31	0.11	0.30	0.30	0.10	0.29	0.29
v/c Ratio	0.76	0.98	0.25	0.86	0.68	0.28	0.66	1.00	0.37	0.94	0.50	0.20
Control Delay	97.3	64.2	5.7	129.4	43.5	7.2	74.0	73.6	12.3	88.9	49.3	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.3	64.2	5.7	129.4	43.5	7.2	74.0	73.6	12.3	88.9	49.3	16.8
LOS	F	E	A	F	D	A	E	E	B	F	D	B
Approach Delay		59.9			43.7			64.2			58.9	
Approach LOS		E			D			E			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 96 (74%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 57.7		Intersection LOS: E	
Intersection Capacity Utilization 95.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Woodroffe Avenue & West Hunt Club Road



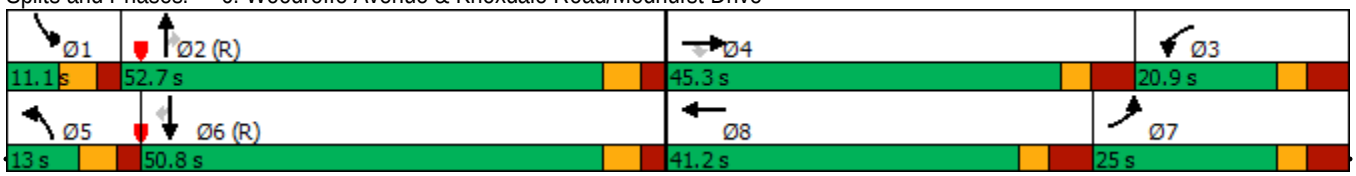


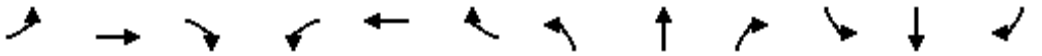
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	409	216	86	146	53	144	26	1075	59	98	595	110
Future Volume (vph)	409	216	86	146	53	144	26	1075	59	98	595	110
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	30.0		0.0	60.0		20.0	65.0		65.0
Storage Lanes	2		1	1		0	1		1	1		1
Taper Length (m)	30.0			45.0			50.0			50.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.94		0.98	0.99	0.96		0.98		0.91	0.98		0.94
Frt			0.850		0.890				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	1765	1515	1693	1428	0	1569	3167	1378	1487	3167	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3063	1765	1481	1680	1428	0	1543	3167	1259	1464	3167	1413
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138		101				147			147
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		1079.0			77.4			620.6			69.2	
Travel Time (s)		97.1			7.0			37.2			4.2	
Confl. Peds. (#/hr)	40		9	9		40	14		25	25		14
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	9%	7%	9%	8%	11%	15%	8%	2%
Adj. Flow (vph)	409	216	86	146	53	144	26	1075	59	98	595	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	409	216	86	146	197	0	26	1075	59	98	595	110
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.2	41.2	41.2	12.2	41.2		11.1	30.1	30.1	11.1	30.1	30.1
Total Split (s)	25.0	45.3	45.3	20.9	41.2		13.0	52.7	52.7	11.1	50.8	50.8
Total Split (%)	19.2%	34.8%	34.8%	16.1%	31.7%		10.0%	40.5%	40.5%	8.5%	39.1%	39.1%
Maximum Green (s)	17.8	38.1	38.1	13.7	34.0		6.9	46.6	46.6	5.0	44.7	44.7
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2	7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0			17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)		30	30		8			13	13		20	20
Act Effct Green (s)	25.4	26.9	26.9	16.8	18.3		6.5	47.1	47.1	12.6	58.0	58.0
Actuated g/C Ratio	0.20	0.21	0.21	0.13	0.14		0.05	0.36	0.36	0.10	0.45	0.45
v/c Ratio	0.64	0.59	0.21	0.67	0.69		0.33	0.94	0.11	0.68	0.42	0.15
Control Delay	53.1	52.1	2.0	69.4	36.5		90.1	21.7	0.2	80.9	29.1	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	53.1	52.1	2.0	69.4	36.5		90.1	21.7	0.2	80.9	29.1	2.2
LOS	D	D	A	E	D		F	C	A	F	C	A
Approach Delay		46.6			50.5			22.1			31.7	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 33.7		Intersection LOS: C	
Intersection Capacity Utilization 96.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Woodroffe Avenue & Knoxdale Road/Medhurst Drive



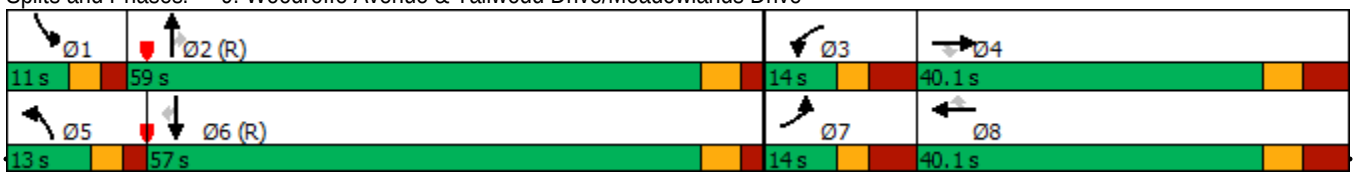


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	211	157	82	147	178	274	1363	276	137	598	69
Future Volume (vph)	68	211	157	82	147	178	274	1363	276	137	598	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		25.0	50.0		25.0	80.0		70.0	65.0		60.0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (m)	7.5			30.0			60.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	0.99		0.98	0.99		0.73	0.96		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1500	1782	1485	3159	1731	1391	3317	3196	1530	1449	3138	1404
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1487	1782	1454	3123	1731	1360	3292	3196	1113	1397	3138	1372
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			138			190			156
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		451.4			534.0			909.3			485.6	
Travel Time (s)		40.6			48.1			54.6			29.1	
Confl. Peds. (#/hr)	9		8	8		9	6		87	81		6
Confl. Bikes (#/hr)									1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	14%	1%	3%	5%	4%	10%	0%	7%	0%	18%	9%	9%
Adj. Flow (vph)	68	211	157	82	147	178	274	1363	276	137	598	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	211	157	82	147	178	274	1363	276	137	598	69
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	22.0	22.0	5.0	22.0	22.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	10.3	56.0	56.0	10.3	56.0	56.0
Total Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	13.0	59.0	59.0	11.0	57.0	57.0
Total Split (%)	11.3%	32.3%	32.3%	11.3%	32.3%	32.3%	10.5%	47.5%	47.5%	8.9%	45.9%	45.9%
Maximum Green (s)	6.6	32.0	32.0	6.6	32.0	32.0	7.7	53.0	53.0	5.7	51.0	51.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	8.1	8.1	7.4	8.1	8.1	5.3	6.0	6.0	5.3	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		8	8		9	9		6	6		60	60
Act Effct Green (s)	6.6	26.9	26.9	6.5	24.1	24.1	15.6	53.0	53.0	13.6	51.0	51.0
Actuated g/C Ratio	0.05	0.22	0.22	0.05	0.19	0.19	0.13	0.43	0.43	0.11	0.41	0.41
v/c Ratio	0.86	0.55	0.37	0.49	0.44	0.47	0.66	1.00	0.47	0.87	0.46	0.11
Control Delay	126.3	49.7	11.5	67.7	47.7	15.9	60.3	59.9	10.8	97.9	28.1	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	0.0
Total Delay	126.3	49.7	11.5	67.7	47.7	15.9	60.3	59.9	10.8	97.9	28.1	0.3
LOS	F	D	B	E	D	B	E	E	B	F	C	A
Approach Delay		47.9			37.8			52.9			37.6	
Approach LOS		D			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.1			
Actuated Cycle Length: 124.1			
Offset: 101 (81%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 47.1		Intersection LOS: D	
Intersection Capacity Utilization 94.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: Woodroffe Avenue & Tallwodd Drive/Meadowlands Drive



Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	251	272	18	20	71
Future Vol, veh/h	80	251	272	18	20	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	251	272	18	20	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	290	0	-	0	692	281
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	411	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1272	-	-	-	410	758
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	669	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1272	-	-	-	380	758
Mov Cap-2 Maneuver	-	-	-	-	380	-
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1272	-	-	-	622
HCM Lane V/C Ratio	0.063	-	-	-	0.146
HCM Control Delay (s)	8	0	-	-	11.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	119	1528	106	0	803
Future Vol, veh/h	0	119	1528	106	0	803
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	119	1528	106	0	803

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	817	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	320	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	320	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.8	0	0
HCM LOS	C		

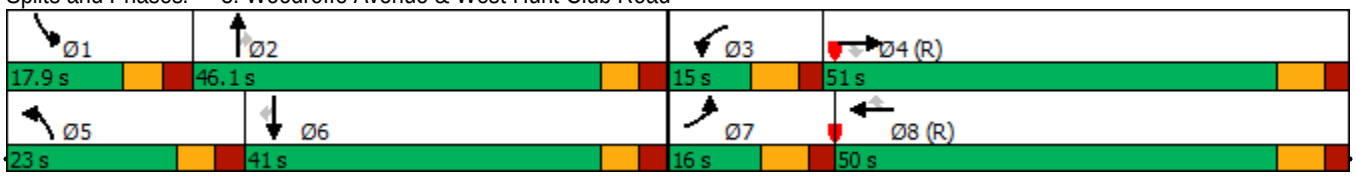
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	320	-
HCM Lane V/C Ratio	-	-	0.372	-
HCM Control Delay (s)	-	-	22.8	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	1.7	-

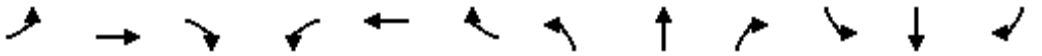
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	512	395	77	1038	236	198	639	89	168	859	157
Future Volume (vph)	108	512	395	77	1038	236	198	639	89	168	859	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		25.0	70.0		30.0	60.0		90.0	80.0		40.0
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (m)	30.0			50.0			40.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00					0.98			0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3282	1553	1805	3539	1583	1770	3374	1538	3400	3406	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1734	3282	1553	1805	3539	1557	1770	3374	1514	3393	3406	1563
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			253			144			149			149
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		1105.6			937.9			1033.7			620.6	
Travel Time (s)		49.8			42.2			62.0			37.2	
Confl. Peds. (#/hr)	3					3			2	2		
Confl. Bikes (#/hr)						2			1			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	10%	4%	0%	2%	2%	2%	7%	5%	3%	6%	2%
Adj. Flow (vph)	108	512	395	77	1038	236	198	639	89	168	859	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	512	395	77	1038	236	198	639	89	168	859	157
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	42.1	42.1	12.0	42.1	42.1	11.6	33.6	33.6	11.6	33.6	33.6
Total Split (s)	16.0	51.0	51.0	15.0	50.0	50.0	23.0	46.1	46.1	17.9	41.0	41.0
Total Split (%)	12.3%	39.2%	39.2%	11.5%	38.5%	38.5%	17.7%	35.5%	35.5%	13.8%	31.5%	31.5%
Maximum Green (s)	9.0	43.9	43.9	8.0	42.9	42.9	16.4	39.5	39.5	11.3	34.4	34.4
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.4	2.5	2.5	2.4	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.1	7.1	7.0	7.1	7.1	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		3	3		0	0		2	2
Act Effct Green (s)	9.3	44.4	44.4	7.8	43.0	43.0	16.1	39.9	39.9	10.6	34.3	34.3
Actuated g/C Ratio	0.07	0.34	0.34	0.06	0.33	0.33	0.12	0.31	0.31	0.08	0.26	0.26
v/c Ratio	0.87	0.46	0.57	0.71	0.89	0.39	0.90	0.62	0.16	0.61	0.96	0.30
Control Delay	111.2	35.1	15.5	92.6	51.8	14.8	96.2	41.7	0.9	37.5	74.8	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.2	35.1	15.5	92.6	51.8	14.8	96.2	41.7	0.9	37.5	74.8	22.4
LOS	F	D	B	F	D	B	F	D	A	D	E	C
Approach Delay		35.6			47.6			49.5			62.6	
Approach LOS		D			D			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 63 (48%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 49.2		Intersection LOS: D	
Intersection Capacity Utilization 92.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Woodroffe Avenue & West Hunt Club Road



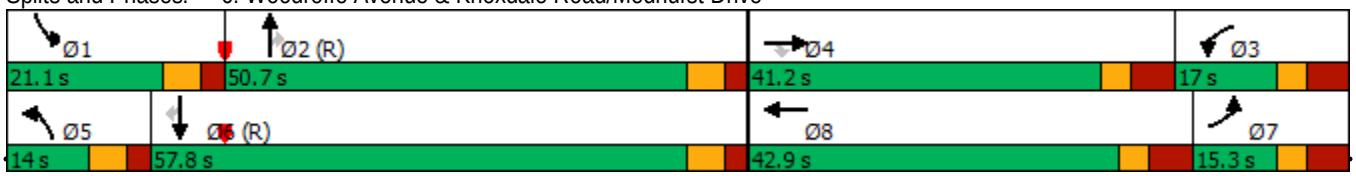


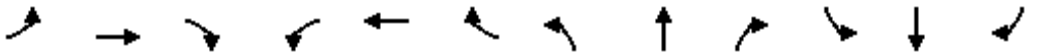
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	46	54	149	179	98	78	837	85	218	1181	448
Future Volume (vph)	153	46	54	149	179	98	78	837	85	218	1181	448
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		30.0	30.0		0.0	60.0		20.0	65.0		65.0
Storage Lanes	2		1	1		0	1		1	1		1
Taper Length (m)	30.0			45.0			50.0			50.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.95		0.95	0.96	0.98		0.98		0.94	0.99		0.87
Frt			0.850		0.947				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1845	1553	1719	1739	0	1805	3343	1599	1719	3406	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3259	1845	1473	1654	1739	0	1766	3343	1503	1697	3406	1365
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			189		21				198			302
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		1079.0			65.2			620.6			69.6	
Travel Time (s)		97.1			5.9			37.2			4.2	
Confl. Peds. (#/hr)	39		35	35		39	41		15	15		41
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	4%	5%	0%	4%	0%	8%	1%	5%	6%	3%
Adj. Flow (vph)	153	46	54	149	179	98	78	837	85	218	1181	448
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	46	54	149	277	0	78	837	85	218	1181	448
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.2	41.2	41.2	12.2	41.2		11.1	30.1	30.1	11.1	30.1	30.1
Total Split (s)	15.3	41.2	41.2	17.0	42.9		14.0	50.7	50.7	21.1	57.8	57.8
Total Split (%)	11.8%	31.7%	31.7%	13.1%	33.0%		10.8%	39.0%	39.0%	16.2%	44.5%	44.5%
Maximum Green (s)	8.1	34.0	34.0	9.8	35.7		7.9	44.6	44.6	15.0	51.7	51.7
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2	7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0			17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)		30	30		25			35	35		14	14
Act Effct Green (s)	9.8	25.2	25.2	16.3	27.9		8.1	45.9	45.9	19.8	57.6	57.6
Actuated g/C Ratio	0.08	0.19	0.19	0.13	0.21		0.06	0.35	0.35	0.15	0.44	0.44
v/c Ratio	0.59	0.13	0.12	0.69	0.71		0.70	0.71	0.13	0.84	0.78	0.58
Control Delay	68.2	39.7	0.6	73.1	53.1		109.5	24.8	0.5	80.4	36.9	12.6
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	68.2	39.7	0.6	73.1	53.1		109.5	24.8	0.5	80.4	36.9	12.6
LOS	E	D	A	E	D		F	C	A	F	D	B
Approach Delay		48.6			60.1			29.4			36.1	
Approach LOS		D			E			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 38.0		Intersection LOS: D	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Woodroffe Avenue & Knoxdale Road/Medhurst Drive



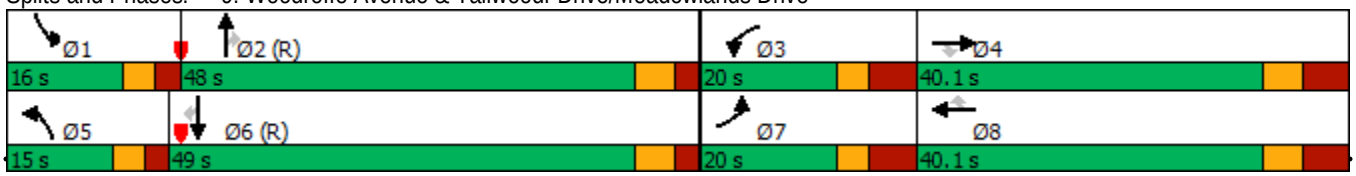


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	179	292	278	215	255	166	858	154	189	1175	126
Future Volume (vph)	80	179	292	278	215	255	166	858	154	189	1175	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		25.0	50.0		25.0	80.0		70.0	65.0		60.0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (m)	7.5			30.0			60.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.95	0.96		0.97	1.00		0.87	0.97		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	1863	1599	3467	1900	1482	3400	3374	1583	1641	3343	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1621	1863	1526	3315	1900	1440	3384	3374	1380	1586	3343	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			191			156			156
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		451.4			534.0			909.0			485.6	
Travel Time (s)		40.6			48.1			54.5			29.1	
Confl. Peds. (#/hr)	14		29	29		14	8		37	37		8
Confl. Bikes (#/hr)			1						1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	1%	1%	0%	9%	3%	7%	2%	10%	8%	4%
Adj. Flow (vph)	80	179	292	278	215	255	166	858	154	189	1175	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	179	292	278	215	255	166	858	154	189	1175	126
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	22.0	22.0	5.0	22.0	22.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	14.0	40.1	40.1	14.0	40.1	40.1	10.3	48.0	48.0	10.3	49.0	49.0
Total Split (s)	20.0	40.1	40.1	20.0	40.1	40.1	15.0	48.0	48.0	16.0	49.0	49.0
Total Split (%)	16.1%	32.3%	32.3%	16.1%	32.3%	32.3%	12.1%	38.7%	38.7%	12.9%	39.5%	39.5%
Maximum Green (s)	12.6	32.0	32.0	12.6	32.0	32.0	9.7	42.0	42.0	10.7	43.0	43.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	8.1	8.1	7.4	8.1	8.1	5.3	6.0	6.0	5.3	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		14.0	14.0		14.0	14.0
Pedestrian Calls (#/hr)		25	25		30	30		8	8		13	13
Act Effct Green (s)	10.6	28.0	28.0	12.4	32.6	32.6	9.5	42.0	42.0	14.9	47.4	47.4
Actuated g/C Ratio	0.09	0.23	0.23	0.10	0.26	0.26	0.08	0.34	0.34	0.12	0.38	0.38
v/c Ratio	0.58	0.43	0.61	0.80	0.43	0.49	0.64	0.75	0.27	0.96	0.92	0.19
Control Delay	70.4	43.6	21.7	72.6	41.8	14.3	67.5	41.4	5.5	109.6	49.8	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	0.0
Total Delay	70.4	43.6	21.7	72.6	41.8	14.3	67.5	41.4	5.5	109.6	49.8	2.8
LOS	E	D	C	E	D	B	E	D	A	F	D	A
Approach Delay		35.9			43.9			40.4			53.4	
Approach LOS		D			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 124.1			
Actuated Cycle Length: 124.1			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 45.3		Intersection LOS: D	
Intersection Capacity Utilization 91.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Woodroffe Avenue & Tallwoodr Drive/Meadowlands Drive



Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	46	1045	43	0	1847
Future Vol, veh/h	0	46	1045	43	0	1847
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	46	1045	43	0	1847

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	544	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	483	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	483	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	483	-
HCM Lane V/C Ratio	-	-	0.095	-
HCM Control Delay (s)	-	-	13.2	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.3	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	81	226	340	14	11	86
Future Vol, veh/h	81	226	340	14	11	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	81	226	340	14	11	86

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	354	0	-	0	735	347
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	388	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1205	-	-	-	387	696
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	686	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1205	-	-	-	357	696
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	686	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1205	-	-	-	628
HCM Lane V/C Ratio	0.067	-	-	-	0.154
HCM Control Delay (s)	8.2	0	-	-	11.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

APPENDIX E –TDM CHECKLIST

McINTOSH PERRY

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	☑ Building entrance located perpendicular to Medhurst Drive
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑ Proposed development located close to the street and sidewalk
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑ Doors and windows expected to provide visibility to sidewalks and parking area`
	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)*	☑ Major route sheltered bus stops on sidewalks at the proposed site.
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)*	☑ Side walks connect directly to entrance of the building

	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)*	☑ Concrete sidewalks to be provided
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)*	☑ Depressed curbs provided. Accessible parking spaces provided close to building entrances.
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☐
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑ Sidewalks lead to transit stops on Woodroffe Avenue and Medhurst Drive
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☑ Area is to be lit with street lights.
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	☑ Lighting to be provided and landscaping to be done around sidewalks
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)*	☑ Bicycle parking to be provided at the front of the building by the entrance
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)*	☑ Bicycle parking not required under Zoning By-Law Section 111. Two (2) Post and Ring to be provided.
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	☑ Approximately 0 commuter cyclist is expected during the AM and PM Peak hours
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☐
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐

	TDM-supportive design & infrastructure measures: *Non-residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☑ Existing transit stop is already equip with the mentioned
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	☑ No limit on parking supply as proposed development not located within 600m of rapid transit
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	☐