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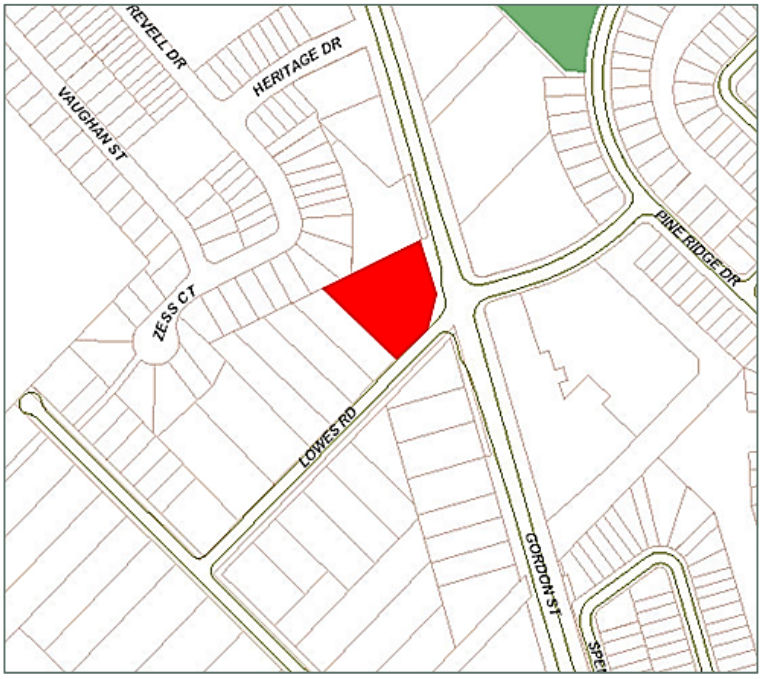
Gordon/Lowes Office & Commercial Property Guelph, Ontario

Traffic Impact Study



Prepared for:
Mar-Cot Developments Inc.

August 2014

Paradigm Transportation Solutions Limited
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Cambridge ON N1S 3B4

Project Summary

Project Name: ..... **Gordon/Lowes Office & Commercial Property**
Guelph, Ontario
Traffic Impact Study

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Report Date: ..... August 2014

Project Number: 141040

Executive Summary

Content

This report summarizes the Traffic Impact Study for a proposed office and commercial development located at the northwest corner of Gordon Street and Lowes Road West in the City of Guelph, Ontario. The report documents the additional traffic that is estimated to occur as a result of the development and estimates the potential impacts of the additional traffic on the surrounding road network. The findings and conclusions of this study are summarized below and outlined in more detail in the body of the report.

Conclusions

The main conclusions of this study are as follows:

- **Proposed Development**: The subject site is located on the northwest corner of Gordon Street and Lowes Road West in the City of Guelph. The lands are planned to be developed as an office and commercial building with a maximum Gross Floor Area (GFA) of 1,770 m^2. The build-out of the subject site is anticipated to occur by Year 2016.

- **Existing Traffic Conditions**: The roadways of Gordon Street, Heritage Drive, and Clairfields Drive generally define the study area. Under existing conditions, the signalized intersections of Heritage Drive and Clairfields Drive intersecting with Gordon Street are operating at excellent levels of service without any critical movements or capacity issues.

- **Background Traffic**: The forecast background traffic volumes in the vicinity of the subject site have been assessed for a five-year horizon following the full build-out and occupancy of the subject site, assumed to be the Year 2021. The forecast traffic volumes are estimated to consist of generalized traffic growth and traffic related to the potential future developments along Gordon Street which consist of a 71 townhouse units located at 39-47 Arkell Road and 1408 Gordon; and a supermarket located on the northeast corner of Clair Street East and Gordon Road.

- **Background Traffic Conditions**: Without the development of the subject site, the intersections along the Gordon Street corridor are expected to operate at satisfactory levels of service without any critical movements or capacity issues. The signal timing plans were not optimized to ensure a fair comparison with the existing conditions.

- **Development Generated Traffic**: The planned development will consist of an office and commercial building will have a maximum GFA 1,770 m^2 and it is estimated to generate approximately 33 new vehicle trips during the AM peak hour and approximately 28 new vehicle trips during the PM peak hour. The additional traffic estimated to be generated by the subject site will not have a significant impact on the operations of the study area intersections and will result in volumes well within the guidelines for the respective roadway classifications.

- **Total Traffic Conditions**: With the build-out of the subject site, the level of service at the study area intersections is anticipated to be similar to the background traffic conditions. There will be no mitigation required due to this additional traffic generated from the proposed development. The signal timing plans were not optimized to ensure a fair comparison with the existing conditions.

- **Access Driveway Location**: The proposed site access driveway is located on Lowes Road W. at a distance of approximately 34 metres from the signalized intersection of Gordon Street. The driveway

distance is compliant with the City's guidelines that require a minimum of 30 metres from a signalized intersection for a small volume commercial building located along a local road.

- **Parking Supply**: Based on the permitted use of the development, a parking supply was undertaken to ensure that patrons/clients and employees have enough parking spaces and will not be parking off-site. Based on the analysis and approach undertaken, the site can accommodate the offices and commercial establishments that will operate at the site.

Contents

Appendices

Figures

Tables

1.0 Introduction

1.1 Overview

Paradigm Transportation Solutions Limited was retained by Mar-Cot Developments Inc. to undertake a traffic impact study for the proposed office and commercial development located at the northwest corner of Gordon Street and Lowes Road West (subject site) in the City of Guelph.

The purpose of the study is to determine the impact of the development on the surrounding road network. The scope of the study includes documenting the current traffic and site conditions in the vicinity of the development, assessing additional traffic that will be generated by the development, analyse the impact of the traffic up to full occupancy and recommendations on the remedial measures necessary (if any) to accommodate the site generated traffic in a satisfactory manner.

1.2 Study Area

The approximate location of the subject site is illustrated in **Figure 1.1**. The community surrounding the subject site is comprised mostly of low density residential homes with a small mix of commercial shops located along the Gordon Street corridor.

The following existing intersections have been analyzed in this report to examine the impact of the subject site:

- Gordon Street & Heritage Drive (signalized);
- Gordon Street & Lowes Road (signalized);
- Gordon Street & Clairfields Drive (signalized); and
- Site driveway on Lowes Road (unsignalized)

North

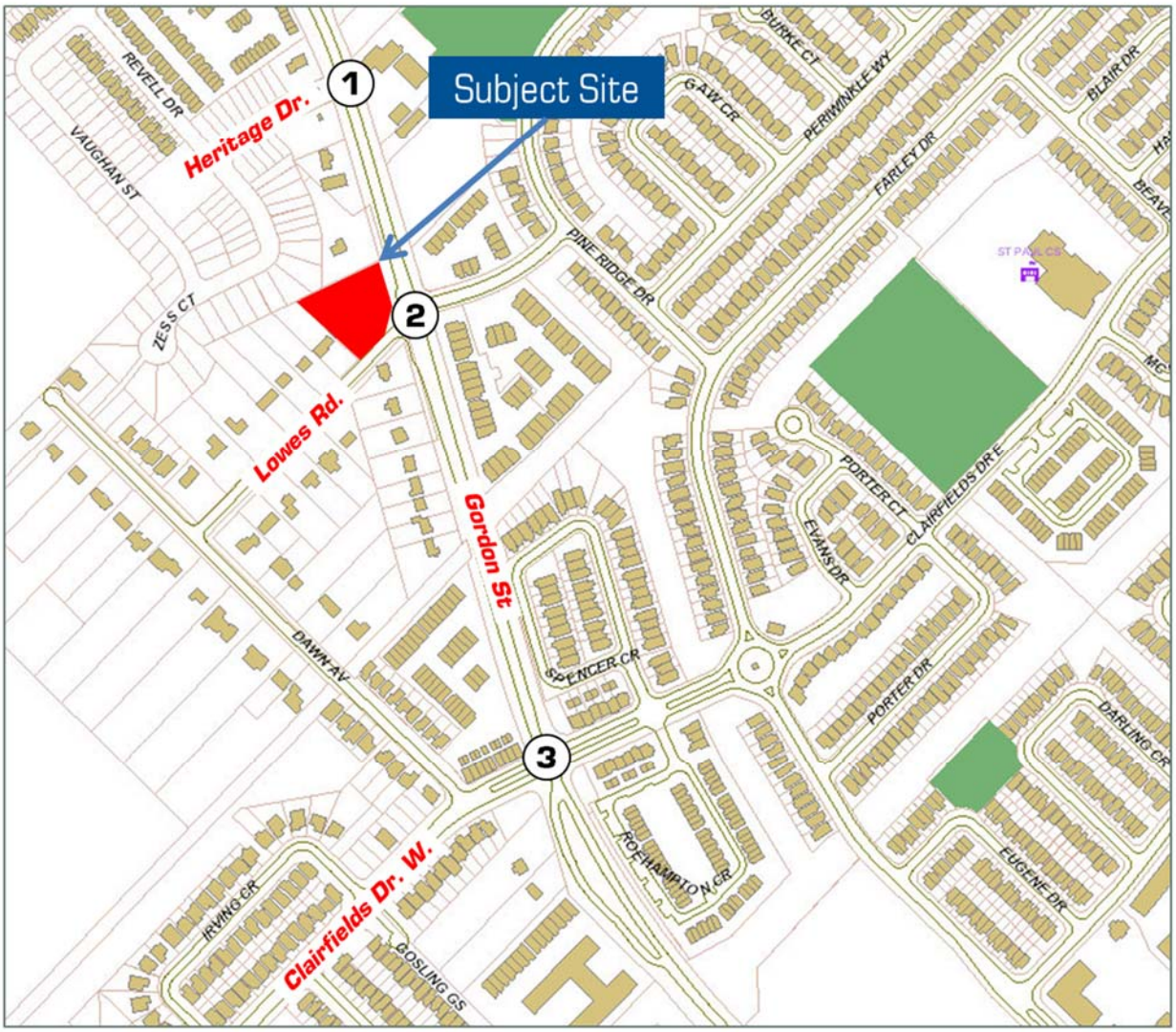

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Image Source: maps.guelph.ca

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Figure 1.1
Location of Subject Site

2.0 Existing Conditions

This section provides an overview of the existing conditions on the roadways in the study area. The roadways of interest, as defined by City staff, include Gordon Street, Heritage Drive, Lowes Road, Clairfields Drive, and Site driveway. **Figure 2.1** illustrates the existing lane configurations at the intersections within the study area as well as the traffic control provisions.

2.1 Transit Service

Two Guelph Transit routes currently service the immediate area surrounding the subject site. **Figure 2.2** illustrates the current Guelph Transit routes and bus stops in the vicinity of the subject site and the following is noted:

1. Route 5 Gordon, operates 7 days a week with weekday peak service headways in the order of 20 minutes. Weekend headways are in the order of 30 minutes.

2. Route 16 Southgate, operates 7 days a week with weekday peak service headways in the order of 20 minutes. Weekend headways are in the order of 30 minutes.

Currently there are bus stops at the corner of Gordon Street and Lowes Road West on both sides of Gordon Street.

2.2 Active Transportation

In addition to transit, there are currently dedicated bike lanes and sidewalks on each side of the corridor.

2.3 Traffic Volumes

The traffic volumes at the study area intersections are from turning movement counts provided by the City of Guelph where Gordon Street/Lowes Road traffic counts were collected in April 2013, Gordon Street /Clairfields Drive were collected in October 2012 and Gordon Street /Heritage Drive were collected in May 2012. The existing count data can be found attached in **Appendix A**. Based on the recent turning movement counts, volume-balancing was completed to ensure a more consistent flow of traffic between adjacent intersections in the study area.

For the purposes of this report it is assumed that Gordon Street runs in a north-south orientation and that Lowes Road operates in an east-west orientation. The existing traffic volumes are illustrated in **Figure 2.3A** and **Figure 2.3B**.

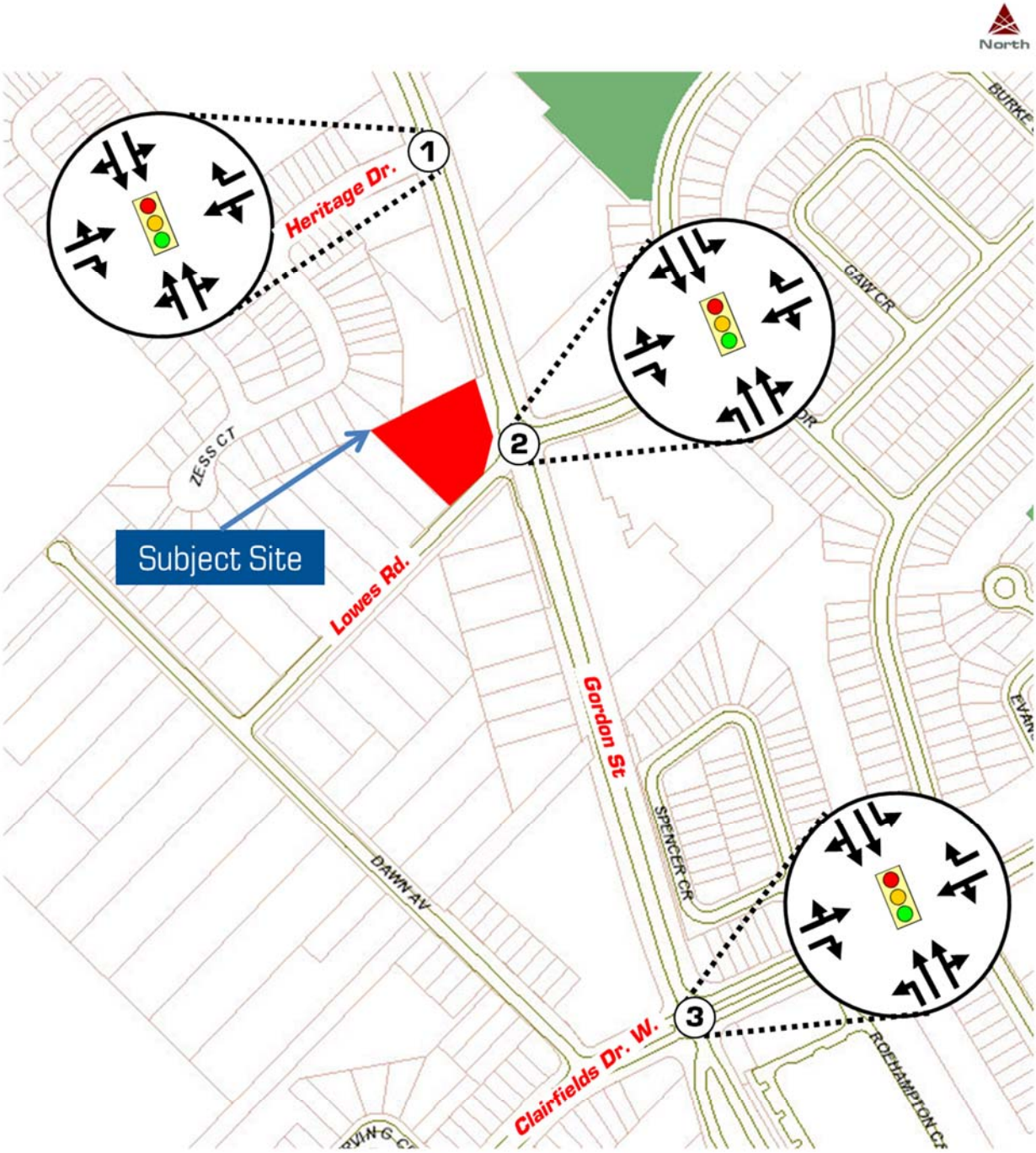

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Image Source: maps.guelph.ca

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Figure 2.1
Existing Lane Configuration & Traffic Control

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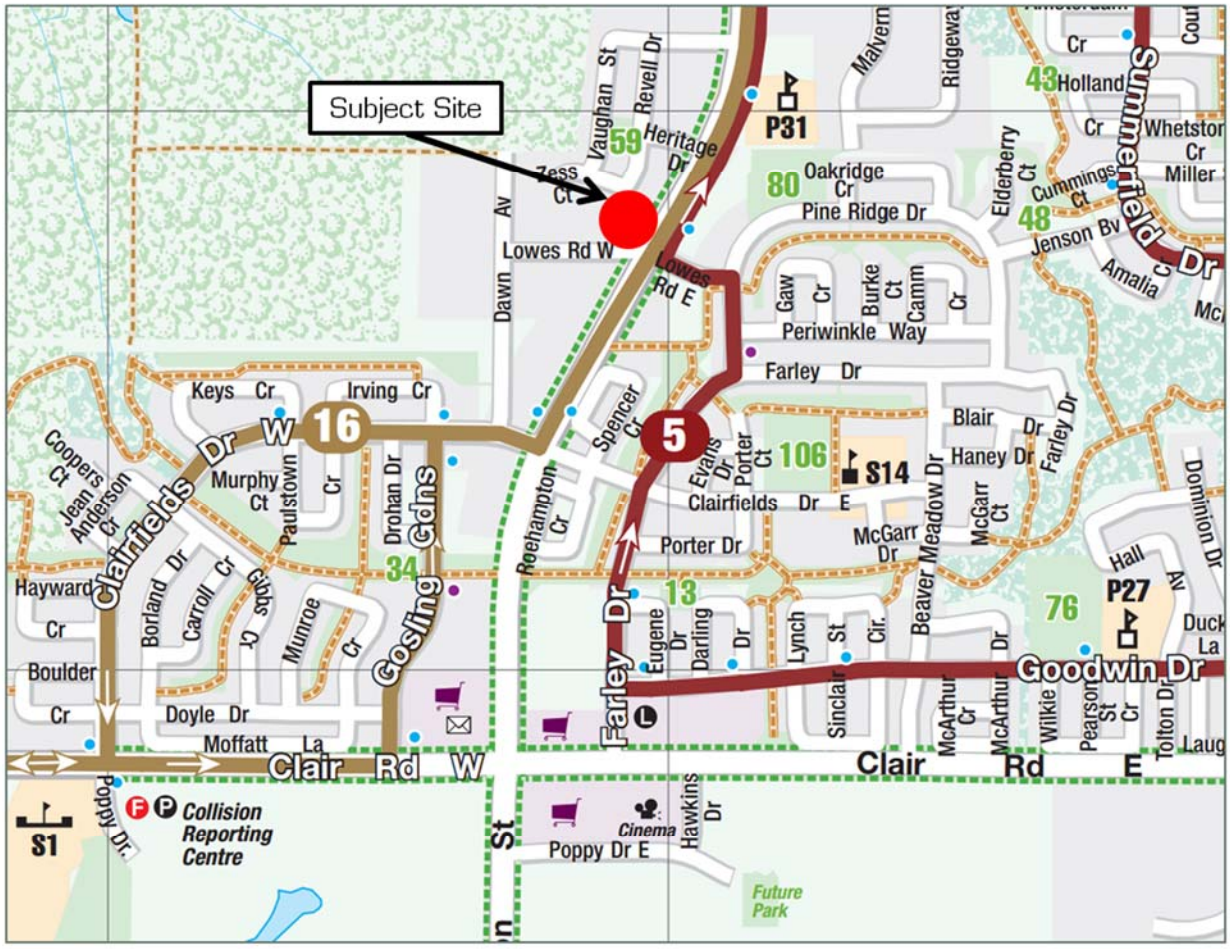

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Image Source: guelph.ca/wp-content/uploads/Guelph_Transit_full_system_map.pdf

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Figure 2.2

Existing Guelph Transit Routes

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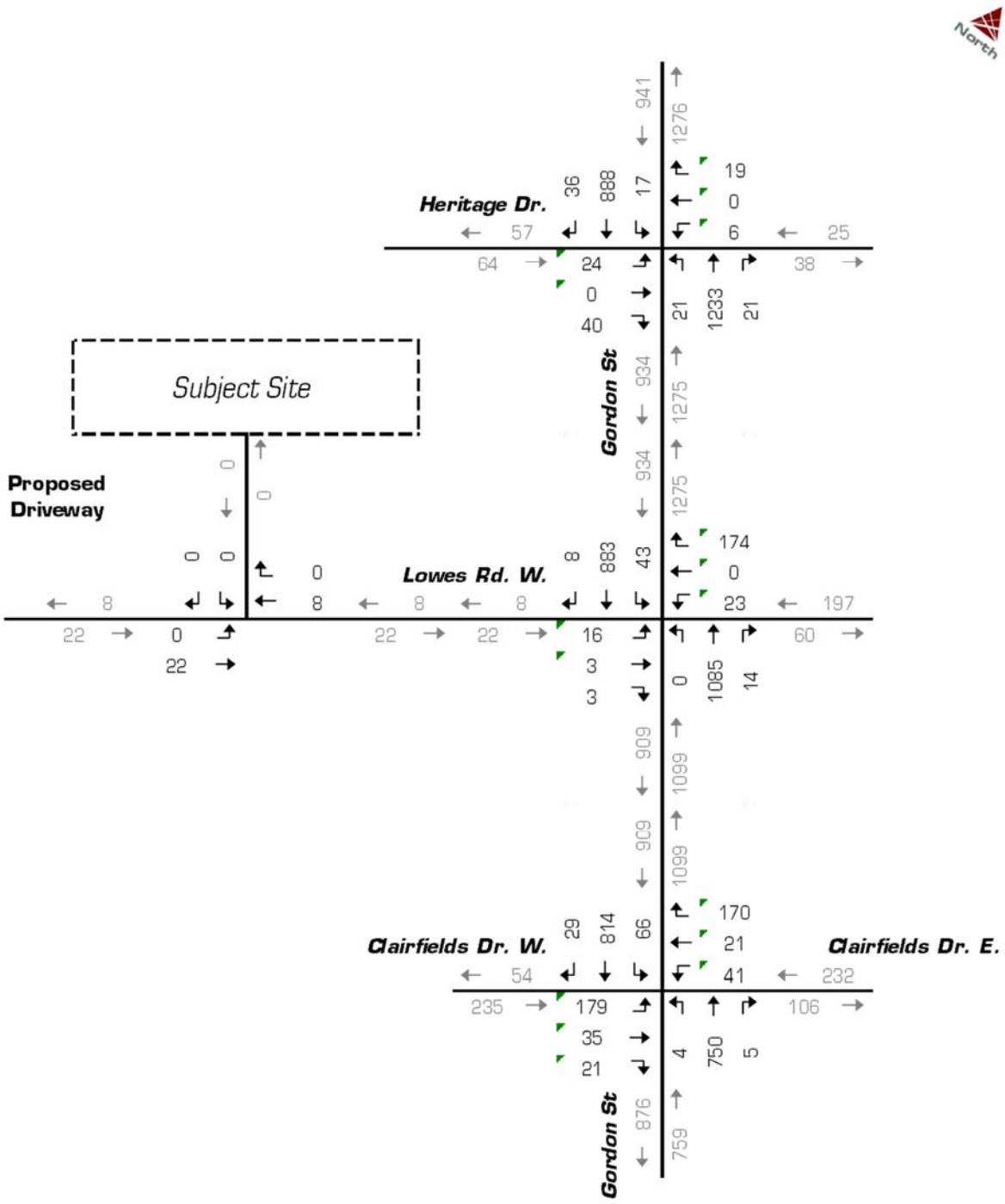

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Figure 2.3A

Existing Traffic – AM Peak Hour

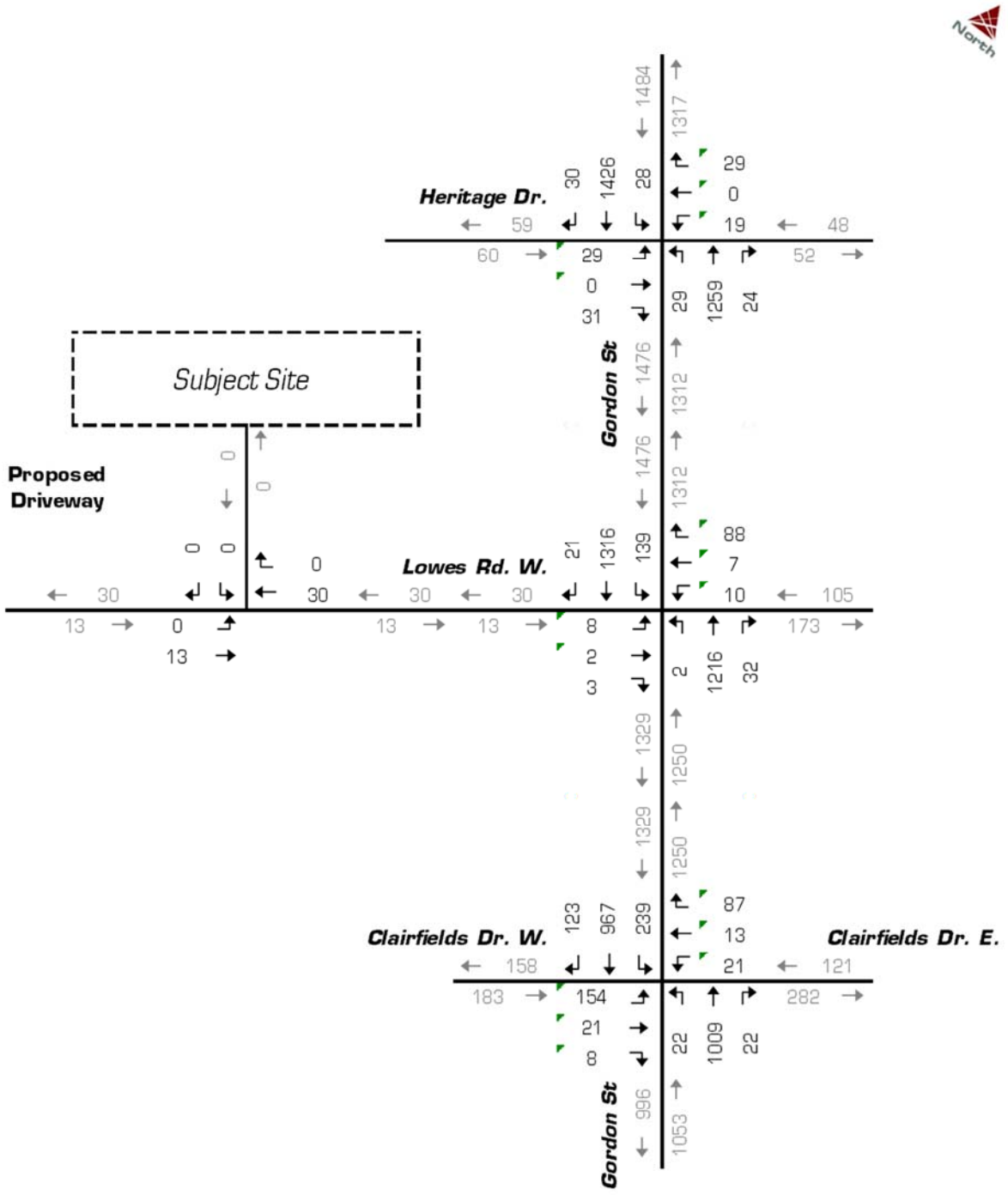

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Figure 2.3B

Existing Traffic – PM Peak Hour

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2.3 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the efficiency of traffic flow at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles desiring to make a particular movement, compared to the estimated capacity for that movement. The capacity is based on a number of criteria related to the opposing traffic flows.

The highest possible rating is LOS A, under which the average total delay is equal or less than 10 seconds per vehicle. When the average delay exceeds 80 seconds at signalized intersections, the movement is classified as LOS F and remedial measures are usually implemented, if they are feasible.

The operations of the intersections in the study area were evaluated using the existing lane geometry and signal timing data. The intersection analysis considered three separate measures of performance:

- The level of service (LOS) for each turning movement,
- The volume to capacity (v/c) ratio for each turning movement, and
- The 95th percentile queue lengths estimated using Synchro.

The level of service conditions on the existing road network have been assessed using Synchro 8.0 with HCM 2000 procedures. Movements are considered critical under the following conditions:

- Level of service on individual movements exceeds LOS "E";
- Volume to capacity ratios for overall intersection operations, through movements or shared/turning movements increased to 0.85 or greater;
- Volume to capacity ratios for exclusive movements increased to 0.90 or above; or
- Queue lengths for individual movements that are estimated to exceed the available storage.

Level of service analysis was conducted on the existing traffic volumes for the study area. The existing intersection operations are summarized in **Table 2.1A** and **Table 2.1B**. The following observations are noted:

AM Peak Hour

The three analyzed signalized intersections along Gordon Street are operating with excellent levels of service. Overall, delays are estimated to be in the levels of service A and B with a v/c ratio well below 0.85 with no critical movements.

PM Peak Hour

Similar traffic conditions are observed during the PM peak as in AM peak, all three analyzed intersections along Gordon Street are operating with excellent levels of service that is estimated to range between LOS A and LOS B. Overall, the volumes over capacity ratios are well below 0.85 with no critical movements.

Detailed Synchro 8.0 output is provided in **Appendix B**.

TABLE 2.1A: EXISTING TRAFFIC OPERATIONAL CONDITIONS – AM PEAK HOUR

Analysis Period	Peak Hour	Control Type	Intersection	MOE	Direction / Movement / Approach																OVERALL
					Eastbound				Westbound				Northbound				Southbound				
					LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	
2014 Existing Conditions	AM	Signalized	Gordon Street & Heritage Drive	LOS	D		B	C	D		A	B	A			A	A			A	A
				Delay (s)	43		16	26	38		8	15.8	3			3	3			3	4
				V/C	0.23		0.26	-	0.06		0.13	-	0.51			-	0.39			-	0.51
				Queue, 95th (m)	12		10	-	5		4	-	24			-	36			-	-
		Signalized	Gordon Street & Lowes Road	LOS	D	C		D	D		B	B	B			B	A	A		A	B
				Delay (s)	39	29		36	41		15	18	17			17	2	4		3	12
				V/C	0.14	0.04		-	0.20		0.61	-	0.65			-	0.09	0.35		-	0.65
				Queue, 95th (m)	9	4		-	12		19	-	116			-	4	36		-	-
		Signalized	Gordon Street & Clairfields Drive	LOS	D		A	D	C		A	B	A	B		B	A	A		A	B
				Delay (s)	51		0.3	47	30		6	13	6	14		14	6	9		9	15
				V/C	0.79		0.06	-	0.27		0.37	-	0.01	0.42		-	0.16	0.42		-	0.79
				Queue, 95th (m)	63		0	-	21		15	-	2	67		-	9	89		-	-

TABLE 2.1B: EXISTING TRAFFIC OPERATIONAL CONDITIONS – PM PEAK HOUR

Analysis Period	Peak Hour	Control Type	Intersection	MOE	Direction / Movement / Approach																OVERALL
					Eastbound				Westbound				Northbound				Southbound				
					LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	
2014 Existing Conditions	PM	Signalized	Gordon Street & Heritage Drive	LOS	D		B	C	D		B	C	A			A	A			A	A
				Delay (s)	43		15	29	41		15	24.9	4			4	5			5	5.4
				V/C	0.27		0.20	-	0.18		0.19	-	0.54			-	0.59			-	0.59
				Queue, 95th (m)	14		9	-	11		8	-	27			-	83			-	-
		Signalized	Gordon Street & Lowes Road	LOS	D	C		D	D		B	B	A	B		B	B	A		A	B
				Delay (s)	39	29		35	41		16	20	5	17		17	13	4		5	11
				V/C	0.08	0.04		-	0.16		0.45	-	0.01	0.74		-	0.29	0.52		-	0.74
				Queue, 95th (m)	6	4		-	10		14	-	0.2	147		-	29	51		-	-
		Signalized	Gordon Street & Clairfields Drive	LOS	D		A	D	C		A	B	A	B		B	C	B		B	B
				Delay (s)	48		0.1	46	28		7	13	6	18		18	23	11		13	17
				V/C	0.71		0.02	-	0.13		0.24	-	0.07	0.61		-	0.68	0.54		-	0.71
				Queue, 95th (m)	51		0	-	13		11	-	4	101		-	43	114		-	-

3.0 Development Concept

3.1 Development Description

The proposed plan of subdivision is located at the northwest corner of Gordon Street and Lowes Road West in the City of Guelph. The site plan of subdivision is anticipated to consist of a two-storey single building that will comprise new office and commercial units with a maximum GFA of 1,770 m^2 with the following permitted breakdown:

Permitted Use	Estimated Building Area (GFA)
Dry Cleaning Outlet	140 m^2
Medical Clinic/Medical Office/ Veterinary Service	375 m^2
Office	885 m^2
Restaurant (take-out) to a maximum Gross Floor Area of 140 m^2	100 m^2
Retail Establishment	270 m^2
Florist, Pharmacy, Bake Shop	
Convenience Store Personal Service Establishment	
Financial Establishment	
TOTAL	**1,770 m^2**

Vehicular access to the subdivision is proposed to be provided at Lowes Road West. The driveway will have full movement access leading directly to the site's parking lot. The Driveway is assessed in greater detail in **Section 5.0**.

The site full build-out is anticipated to be completed by Year 2016, including full occupancy.

The site concept plan is illustrated in **Figure 3.1**.

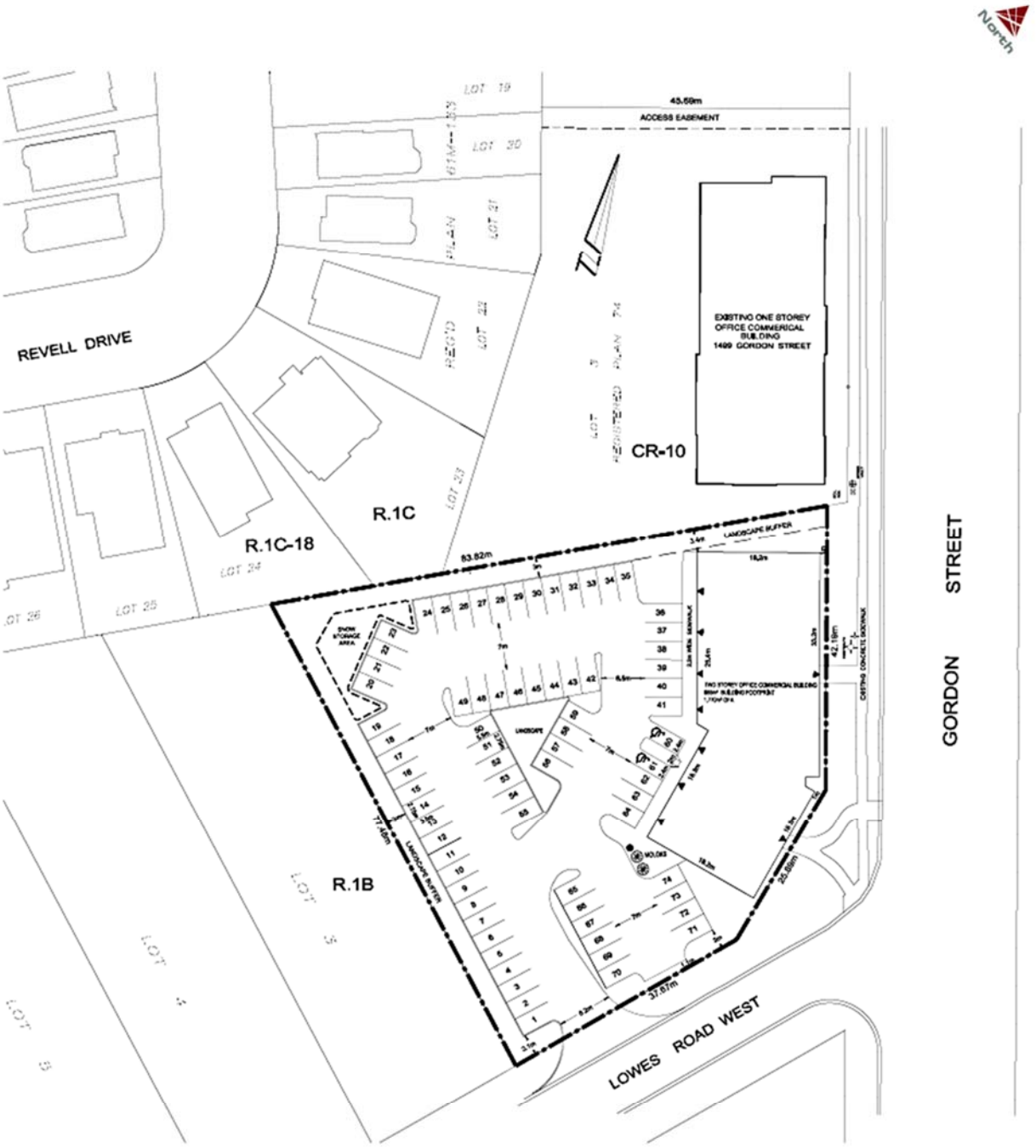

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Figure 3.1
Preliminary Site Concept Plan

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3.2 Trip Generation Estimates

The trips estimated to be generated by the subject site for the AM peak hour and PM peak hour were developed using the Institute of Transportation Engineers (ITE) Trip Generation[1]. The average trip rates for the proposed residential subdivision were derived from land use code (LUC) 750 (Office Park).

The total trip generation is expected to be comprised of two components; new vehicle trips (net generation) and non-auto trips. Non-auto trips are based on mode choice, particularly trips made by local/regional transit and walking/cycling. A breakdown of the trip making patterns for the 2011 Transportation Tomorrow Survey[2] for the City of Guelph reflects a fairly high non-automotive modal split at approximately 22 percent. To remain conservative, a modal split rate of zero percent has been applied to the subject site. The estimated trip generation for the subject site is summarized in **Table 3.1** and indicates that the site's net generation is approximately 33 vehicle trips during the AM peak hour and approximately 28 vehicle trips during the PM peak hour.

TABLE 3.1: ESTIMATED TRIP GENERATION

Land Use Code	Description	Unit of Measure	Total Surface Area	AM Peak Hour				PM Peak			
				Rate	In	Out	Total	Rate	In	Out	Total
750	Office Park	Sq.ft.	19,051	1.71	89%	11%		1.48	14%	86%	
					29	4	33		4	24	28

The trip distribution for the subject site was derived from 2011 Transportation Tomorrow Survey and it is summarized in **Table 3.2**.

TABLE 3.2: ESTIMATED TRIP DISTRIBUTION

Origin/Destination	Percentage
North via Gordon Street	50%
South via Gordon Street	30%
East via Lowes Road E.	20%
Total	100%

The estimated site generated trips were distributed and assigned to the adjacent road network based on the above trip distribution and illustrated in **Figure 3.2A** and **Figure 3.2B**.

[1] Trip Generation Ninth Edition, Institute of Transportation Engineers, Washington D.C., 2012
[2] http://www.dmg.utoronto.ca/pdf/tts/2011/regional_travel_summaries/Guelph.pdf

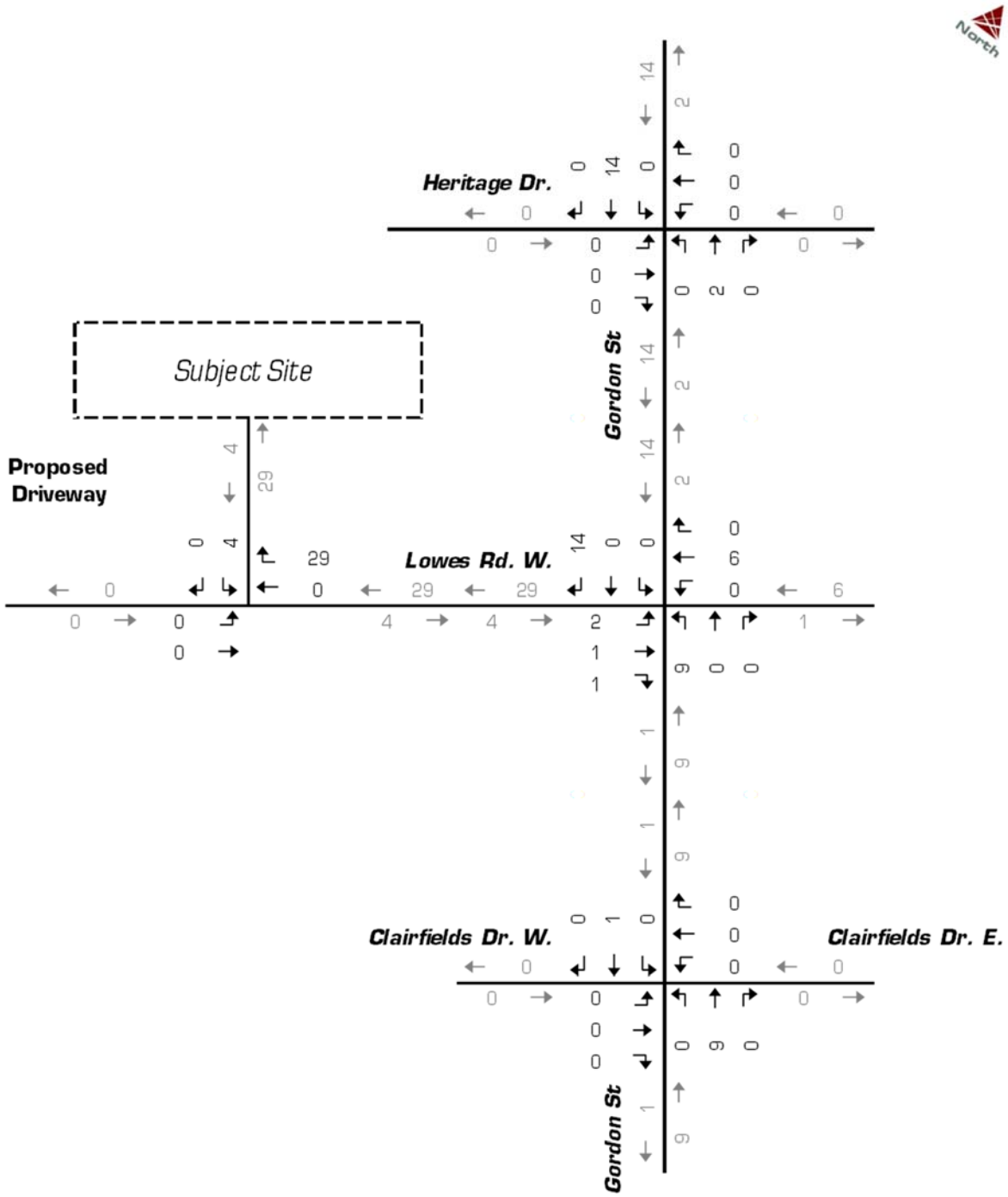

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Figure 3.2A

Site Generated Traffic – AM Peak Hour

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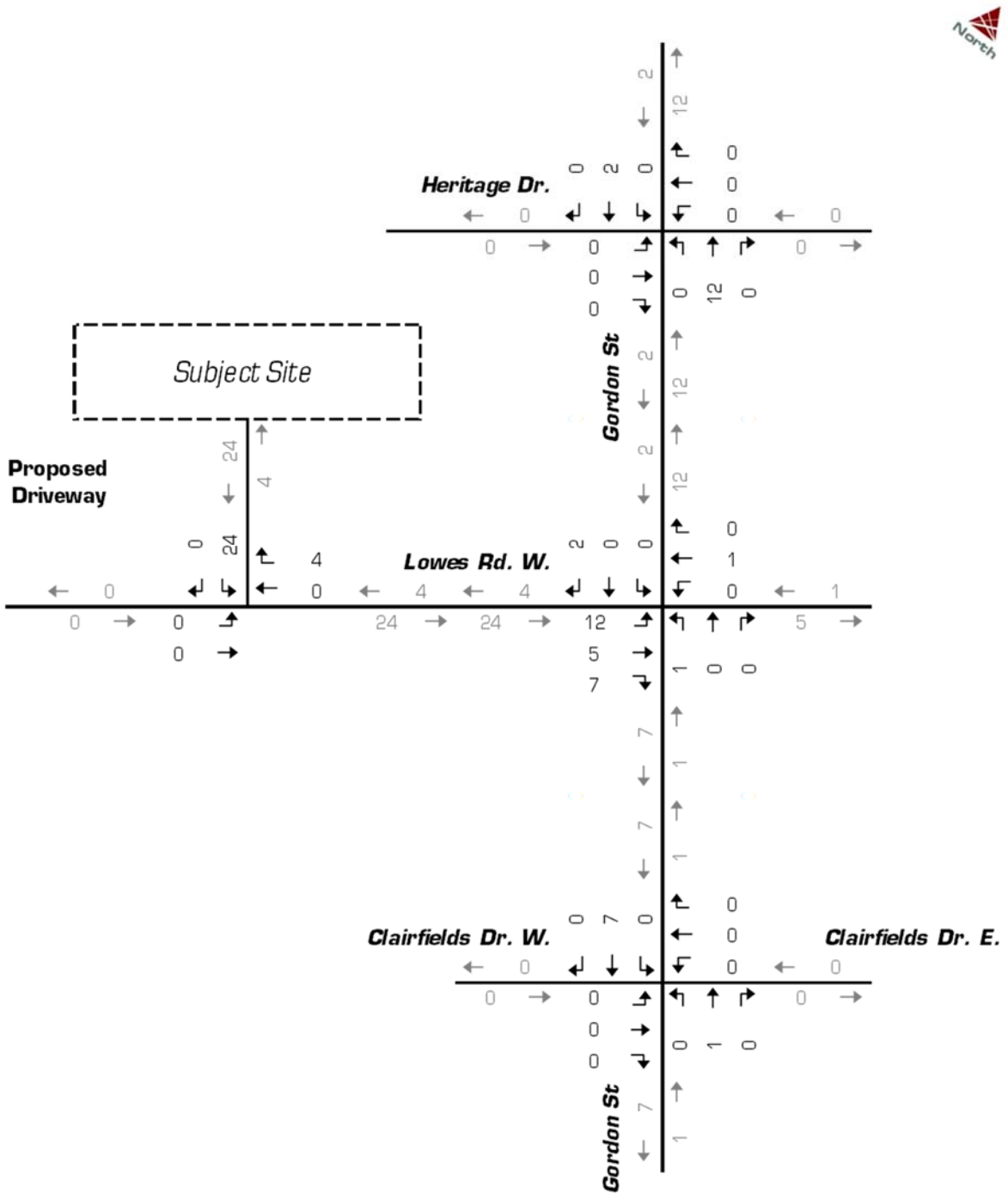

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Figure 3.2B
Site Generated Traffic – PM Peak Hour

4.0 Future Conditions

The assessment of the future traffic conditions contained in this section includes future background traffic and site traffic estimates. Level of service analysis for background traffic (pre-development) and background traffic with the build-out of the subject site (post-development) is undertaken in order to assess the traffic implications on the adjacent road network.

4.1 Background Traffic Forecast

For analysis purposes, a five-year horizon following the anticipated build-out of the subject site has been assessed in order to determine the impact of the subject site, Year 2021. The likely future background traffic volumes in the vicinity of the subject site will consist of:

- Generalized background traffic growth;
- Traffic generated by the development of the proposed residential development of 71 townhouse units located at 39-47 Arkell Road and 1408 Gordon; and
- Traffic generated by the development of the proposed supermarket located on the northeast corner on the vacant land of Clair Street East and Gordon Road.

During the pre-consultation meeting with City staff, an approved generalized growth rate of 1.8 percent per annum has been applied to the existing traffic volumes along Gordon Street. This growth rate was calculated using historical TMC data for the intersection of Gordon Street and Edinburgh Road. 8-hour entering volumes have increased from approximately 34,655 vehicles in the Year 2009 to approximately 37,560 vehicles in the Year 2013.

The traffic forecasts for the surrounding sites that are planned to be developed are contained in **Appendix J**. The forecast Five-year background traffic volumes are illustrated in **Figure 4.1A** and **Figure 4.1B**. It should be noted that only the through movements have been forecasted because the areas located along Gordon Street are fully development and do not justify any increase in traffic.

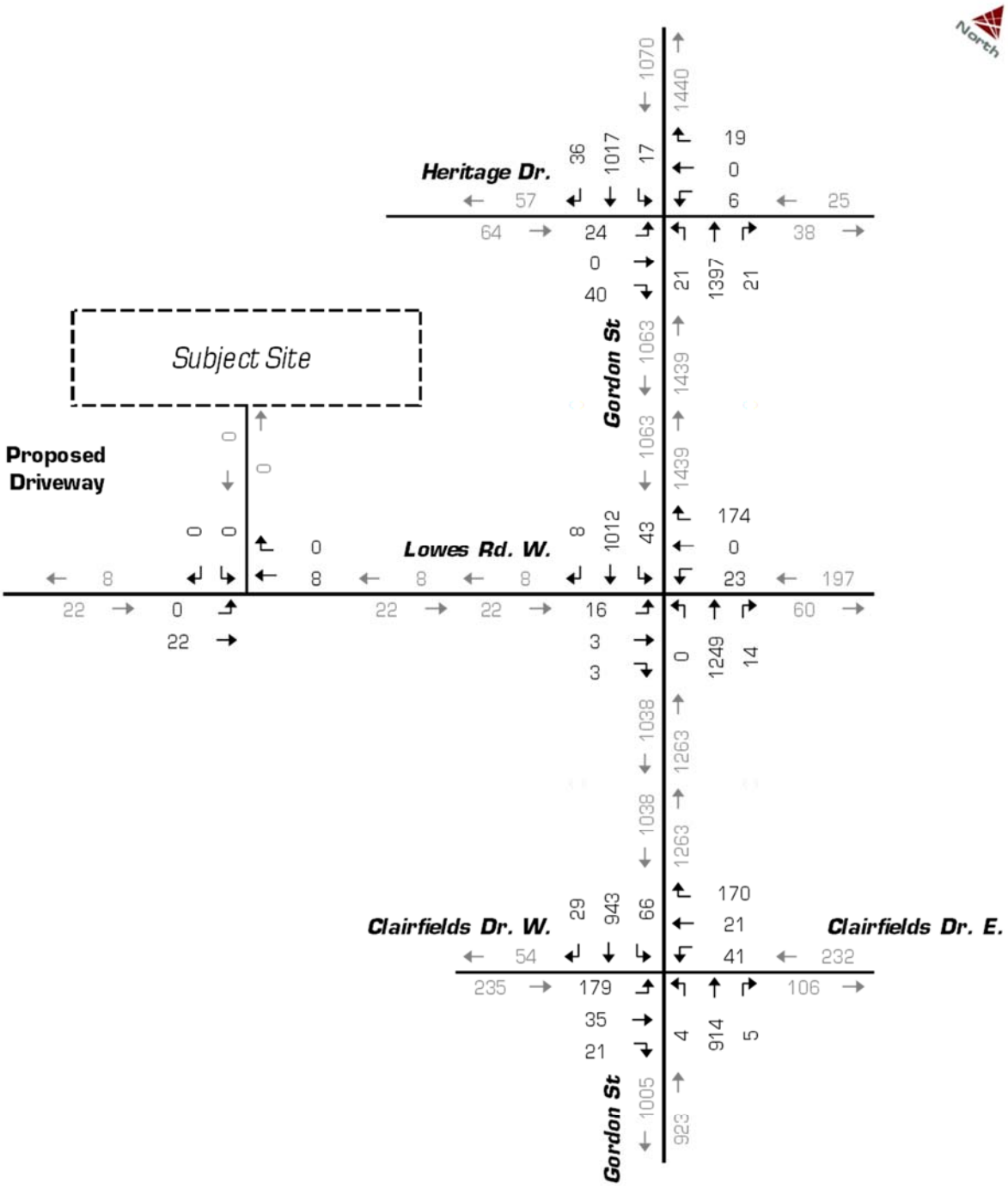

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Figure 4.1A
Five-Year Background Traffic – AM Peak Hour

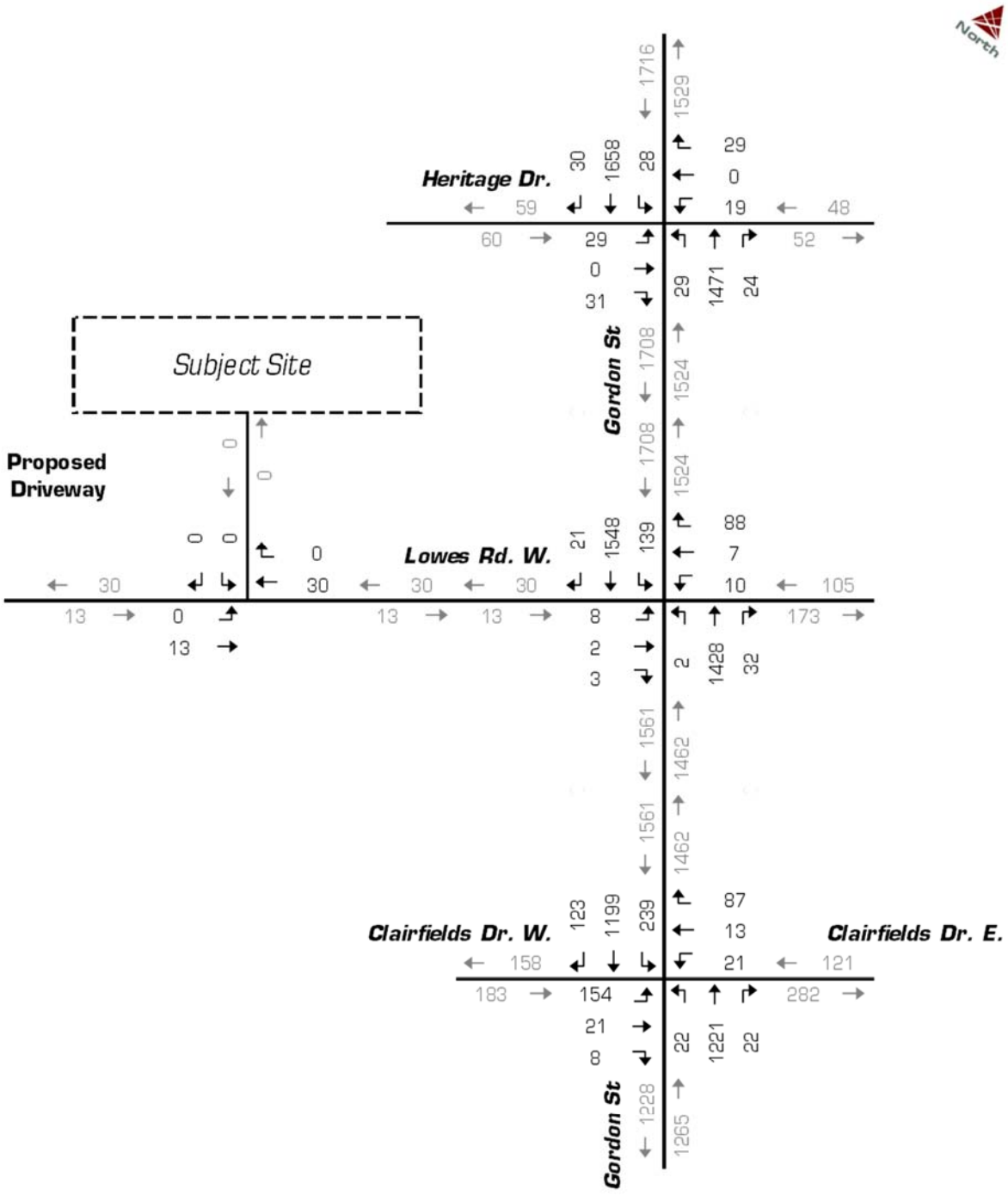

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Figure 4.1B
Five-Year Background Traffic – PM Peak Hour

4.2 Background Traffic Operations

The operations of the intersections were evaluated using the same analytical approach that was used for the existing traffic operations along with the forecasted future background traffic volumes (**Figure 4.1A** and **Figure 4.1B**). No geometric roadway improvements are assumed to be in place. Signal timings have not been optimized for consistency with existing conditions and to determine whether any improvements are needed/required to maintain a reasonable level of service within the study area. The resulting level of service conditions for the Five-Year background traffic horizon are summarized in **Table 4.2A** and **Table 4.2B**. The following critical movements are noted:

AM Peak Hour

The traffic analyses for the 5-year forecast demonstrate that traffic conditions at all three intersections are still operating at excellent overall levels of service ranging between LOS A and B. The volume over capacity ratios are well below 0.85 and there are no movements that are considered critical within the study area.

PM Peak Hour

The three signalized intersections along Gordon Street are anticipated to operate with satisfactory levels of service. Overall, the intersections are estimated to operate between LOS A and C. Overall, most v/c ratios are below 0.90 to the exception of northbound through/right movement that is anticipated to operate at v/c 0.86. No movements are considered critical within the study area.

Detailed Synchro 8.0 output is provided in **Appendix C**.

In summary, the slight increase on delays and reductions in capacity along Gordon Street corridor, as shown on the tables, are due to traffic growth and future developments along the corridor. This growth, however, will not substantially impact the three studied intersections as they will still operate at satisfactory levels of service without any critical movement.

TABLE 4.2A: BACKGROUND OPERATIONAL CONDITIONS – AM PEAK HOUR

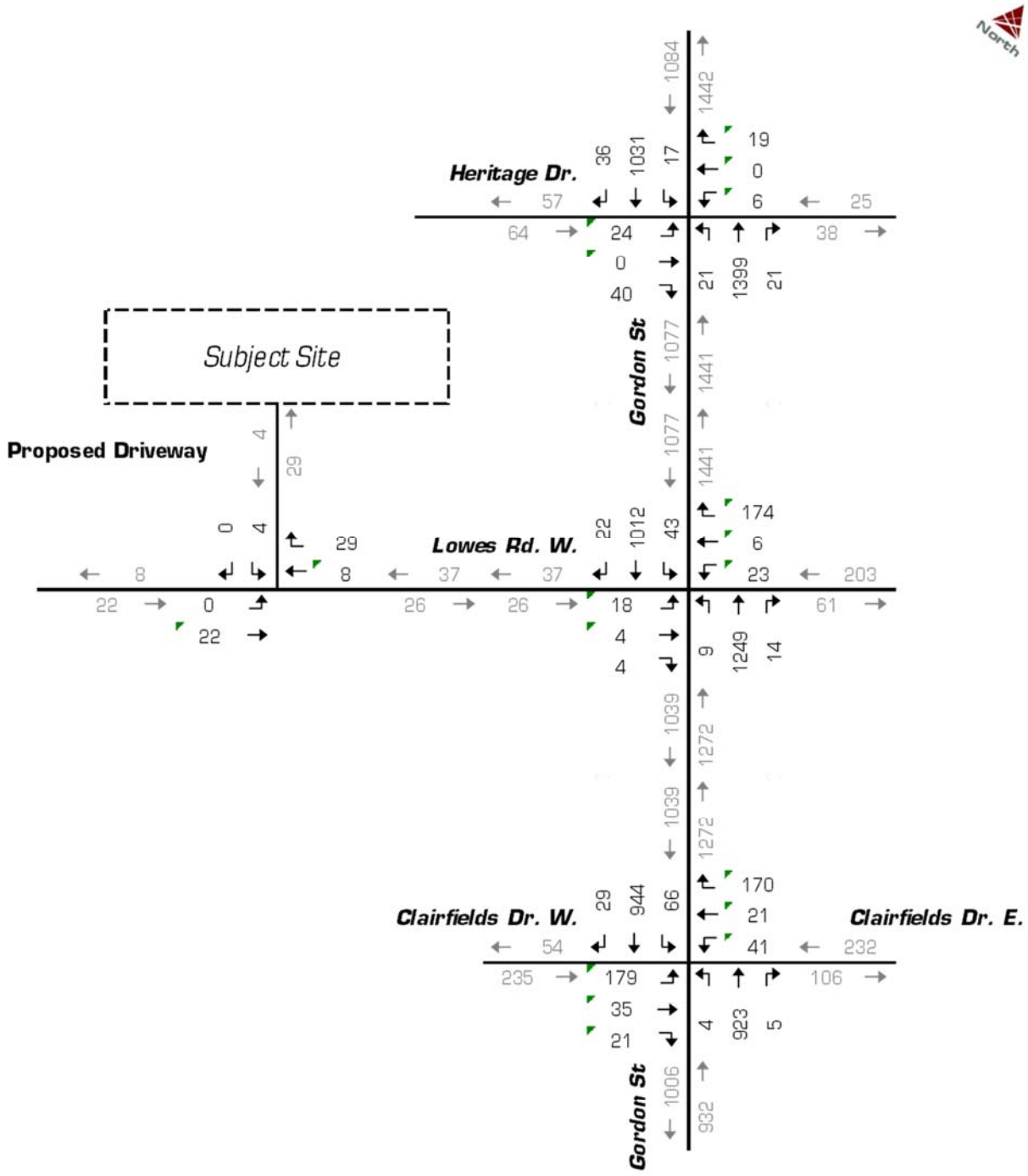
Analysis Period	Peak Hour	Control Type	Intersection	MOE	Direction / Movement / Approach																OVERALL
					Eastbound				Westbound				Northbound				Southbound				
					LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	
2021 Future Background	AM	Signalized	Gordon Street & Heritage Drive	LOS	D		B	C	D		A	B	A			A	A			A	A
				Delay (s)	43		16	26	38		8	16	4			4	4			4	4
				V/C	0.23		0.26	-	0.06		0.13	-	0.58			-	0.44			-	0.58
				Queue, 95th (m)	12		10	-	5		4	-	20			-	43			-	-
		Signalized	Gordon Street & Lowes Road	LOS	D	C		D	D		B	C	C			C	A	A		A	B
				Delay (s)	38	28		35	40		18	21	21			21	3	4		4	14
				V/C	0.13	0.04		-	0.19		0.63	-	0.74			-	0.10	0.40		-	0.74
				Queue, 95th (m)	9	4		-	11		22	-	139			-	4	37		-	-
		Signalized	Gordon Street & Clairfields Drive	LOS	D		A	D	C		A	B	A	B		B	A	B		B	B
				Delay (s)	51		0.3	47	30		6	13	6	15		15	8	13.3		13	17
				V/C	0.79		0.06	-	0.27		0.37	-	0.01	0.51		-	0.20	0.48		-	0.79
				Queue, 95th (m)	63		0	-	21		15	-	2	86		-	8	117		-	-

TABLE 4.2B: BACKGROUND OPERATIONAL CONDITIONS – PM PEAK HOUR

Analysis Period	Peak Hour	Control Type	Intersection	MOE	Direction / Movement / Approach																OVERALL
					Eastbound				Westbound				Northbound				Southbound				
					LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	
2021 Future Background	PM	Signalized	Gordon Street & Heritage Drive	LOS	D		B	C	D		B	C	A			A	A			A	A
				Delay (s)	43		15	29	41		15	24.9	7			7	6			6	7.2
				V/C	0.27		0.20	-	0.18		0.19	-	0.64			-	0.69			-	0.69
				Queue, 95th (m)	14		9	-	11		8	-	44			-	120			-	-
		Signalized	Gordon Street & Lowes Road	LOS	D	C		D	D		B	B	A	C		C	B	A		A	B
				Delay (s)	39	29		35	41		16	20	6	21		21	16	5		6	13
				V/C	0.08	0.04		-	0.16		0.45	-	0.01	0.86		-	0.30	0.61		-	0.86
				Queue, 95th (m)	6	4		-	10		14	-	0.2	179		-	27	66		-	-
		Signalized	Gordon Street & Clairfields Drive	LOS	D		A	D	C		A	B	A	C		C	C	B		B	C
				Delay (s)	48		0.1	46	28		7	13	7	24		24	32	17		19	23
				V/C	0.71		0.02	-	0.13		0.24	-	0.09	0.80		-	0.71	0.65		-	0.80
				Queue, 95th (m)	51		0	-	13		11	-	4	134		-	88	172		-	-

4.4 Total Traffic Forecast

The future total traffic is the combination of the future background traffic (**Figure 4.1A** and **Figure 4.1B**) and the site generated traffic (**Figure 3.2A** and **Figure 3.2B**) and represents the traffic volumes anticipated to occur following the build-out of the subject site. The total traffic forecast volumes are illustrated in **Figure 4.3A** and **Figure 4.3B**.



NTS

Gordon/Lowes Office & Commercial Property Guelph
Traffic Impact Study

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Figure 4.2A
Five-Year Total Traffic – AM Peak Hour

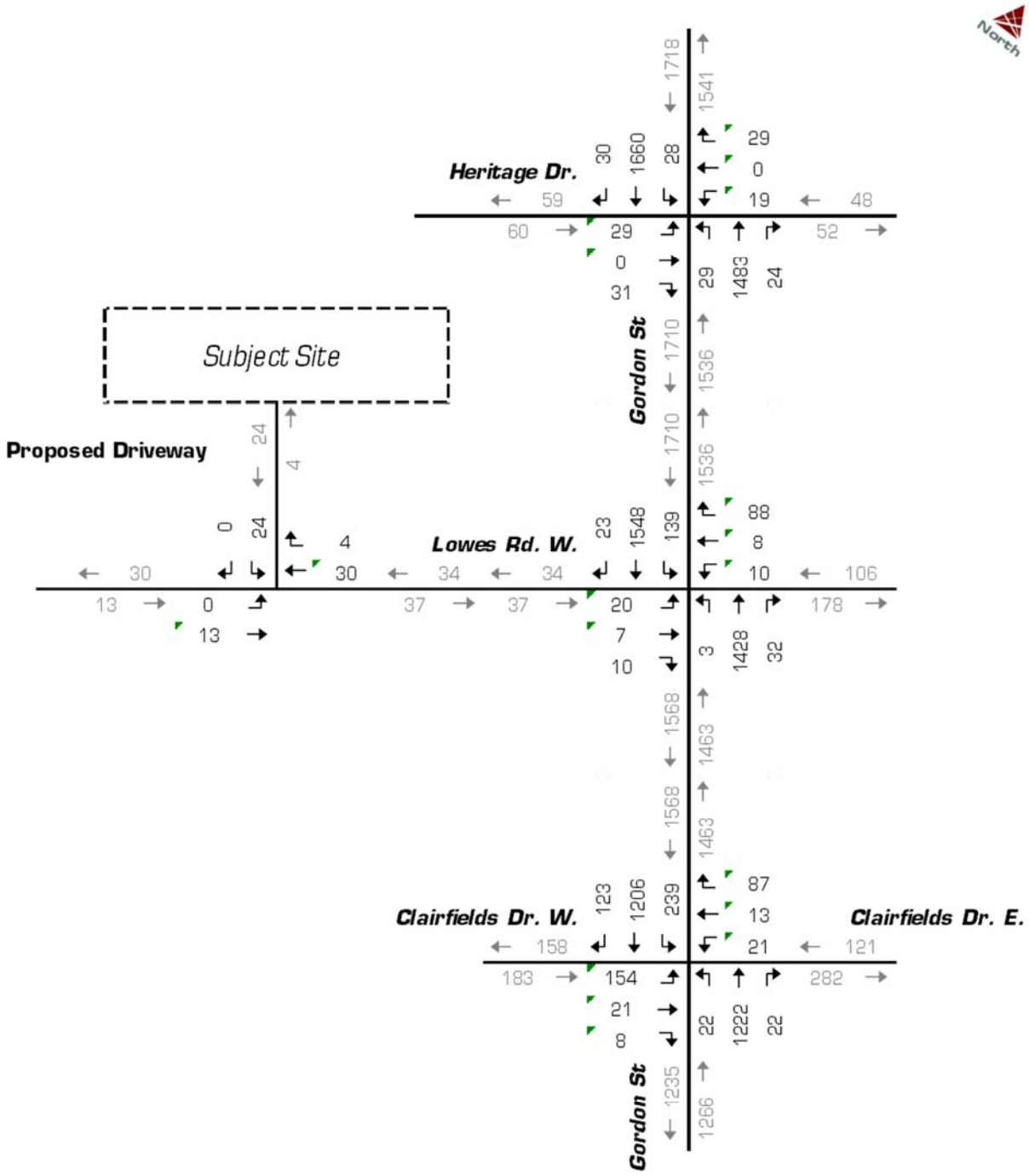

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Figure 4.2B
Five-Year Total Traffic – PM Peak Hour

4.5 Future Total Traffic Operations

The operations of the intersections were evaluated using the same analytical approach that was used for the Five-Year background traffic operations along with the forecasted future total traffic volumes (**Figure 4.2A** and **Figure 4.2B**). No geometric roadway improvements are assumed to be in place. Signal timings have not been optimized for consistency with existing conditions and to determine whether any improvements are needed/required to maintain a reasonable level of service within the study area. The resulting level of service conditions for the Five-Year total traffic horizon are summarized in **Table 4.4A** and **Table 4.4**. The following critical movements are noted:

AM Peak Hour

The future total traffic scenario demonstrate that overall operations are still operating with satisfactory levels of service. Overall, the three intersections are operating at excellent levels of service ranging between LOS A and B. The volume over capacity ratios are well below 0.85 and there are no movements that are considered critical within the study area.

Access driveway to the site will operate at an excellent level of service, LOS A, and will not impact the traffic operation along Lowes Road West.

PM Peak Hour

Results show that the intersections within the study area will operate under future total scenario at satisfactory levels of service ranging from LOS A to LOS C. Overall, the volumes over capacity ratios for each intersection will not exceed 0.85. There are no movements that are considered critical within the study area.

Access driveway to the site will operate at an excellent level of service, LOS A, and will not impact the traffic operation along Lowes Road West.

Detailed Synchro 8.0 output is provided in **Appendix D**.

TABLE 4.4A: FIVE-YEAR TOTAL OPERATIONAL CONDITIONS – AM PEAK HOUR

Analysis Period	Peak Hour	Control Type	Intersection	MOE	Direction / Movement / Approach																OVERALL
					Eastbound				Westbound				Northbound				Southbound				
					LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	
2021 Future Total	AM	Signalized	Gordon Street & Heritage Drive	LOS	D		B	C	D		A	B	A			A	A			A	A
				Delay (s)	43		16	26	38		8	15.8	4			4	4			4	4
				V/C	0.23		0.26	-	0.06		0.13	-	0.58			-	0.45			-	0.58
				Queue, 95th (m)	12		10	-	5		4	-	20			-	44			-	-
		Signalized	Gordon Street & Lowes Road	LOS	D	C		D	D		B	C	A	C		C	A	A		A	B
				Delay (s)	38	28		35	41		18	21	8	21		21	3	4		4	14
				V/C	0.16	0.05		-	0.24		0.63	-	0.04	0.74		-	0.10	0.41		-	0.74
				Queue, 95th (m)	10	5		-	14		22	-	2	140		-	4	37		-	-
		Signalized	Gordon Street & Clairfields Drive	LOS	D		A	D	C		A	B	A	B		B	A	B		B	B
				Delay (s)	51		0.3	47	30		6	13	6	15		15	8	13.2		12.8	17
				V/C	0.79		0.06	-	0.27		0.37	-	0.01	0.51		-	0.20	0.48		-	0.79
				Queue, 95th (m)	63		0	-	21		15	-	2	87		-	8	116		-	-
		Unsignalized	Access Driveway & Lowes Road	LOS	A			A	-	A	A	A	-	-		-	A		A	A	A
				Delay (s)	0			0	-	0	0	0	-	-		-	8.8		8.8	8.8	0.6
				V/C	0.01			-	-	0.02	0.02	-	-	-		-	0.00		0.00	-	0.02
				Queue, 95th (m)	0			-	-	0	0	-	-	-		-	0.1		0.1	-	-

TABLE 4.4B: FIVE-YEAR TOTAL OPERATIONAL CONDITIONS – PM PEAK HOUR

Analysis Period	Peak Hour	Control Type	Intersection	MOE	Direction / Movement / Approach																OVERALL
					Eastbound				Westbound				Northbound				Southbound				
					LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	LEFT	THROUGH	RIGHT	APPROACH	
2021 Future Total	PM	Signalized	Gordon Street & Heritage Drive	LOS	D		B	C	D		B	C	A			A	A			A	A
				Delay (s)	43		15	29	41		15	24.9	7			7	6			6	7.2
				V/C	0.27		0.20	-	0.18		0.19	-	0.64			-	0.69			-	0.69
				Queue, 95th (m)	14		9	-	11		8	-	46			-	120			-	-
		Signalized	Gordon Street & Lowes Road	LOS	D	C		C	D		B	B	A	C		C	B	A		A	B
				Delay (s)	42	26		35	41		15	20	6	21		21	16	5		6	13
				V/C	0.20	0.13		-	0.16		0.45	-	0.02	0.86		-	0.30	0.61		-	0.86
				Queue, 95th (m)	11	8		-	10		14	-	0.3	179		-	27	66		-	-
		Signalized	Gordon Street & Clairfields Drive	LOS	D		A	D	C		A	B	A	C		C	C	B		B	C
				Delay (s)	48		0.1	46	28		7	13	7	24		24	32	17		19	23
				V/C	0.71		0.02	-	0.13		0.24	-	0.09	0.80		-	0.71	0.66		-	0.80
				Queue, 95th (m)	51		0	-	13		11	-	4	134		-	88	173		-	-
		Unsignalized	Access Driveway & Lowes Road	LOS	A			A	-	A	A	A	-	-		-	A		A	A	A
				Delay (s)	0			0	-	0	0	0	-	-		-	8.9		8.9	8.9	3.0
				V/C	0.00			-	-	0.02	0.02	-	-	-		-	0.03		0.03	-	0.03
				Queue, 95th (m)	0			-	-	0	0	-	-	-		-	0.7		0.7	-	-

Based on the future total traffic conditions within the study area of the proposed office and commercial development, there are no improvements to be considered and overall traffic will be satisfactory. It should be noted that traffic signals were not optimized and kept as their existing signal timing to ensure consistent comparison.

The access driveway will generally operate at an excellent level of service during AM and PM peak hours and will not have any impacts on traffic operations along Lowes Road West.

5.0 Access Driveway Location

The proposed access driveway to the site is proposed to be at approximately 34 metres from the signalized intersection of Lowes Road W. and Gordon Street. The driveway distance exceeds the City of Guelph's guideline which requires a minimum of 30 metres from a signalized intersection for a small volume commercial development located along a local road.

Additionally, Lowes Road West is a local residential road with no significant traffic volumes, and the proposed access driveway will have a clear visibility for a safe egress / ingress movements. It should be noted that currently there are residential access driveways along Lowes Road W. just close to the intersection of Lowes Road W. and Gordon Street. City of Guelph guideline is provided in **Appendix E**.

6.0 Site Parking

6.1 Parking Supply

A parking supply study is undertaken to ensure that the site can accommodate the expected demand from businesses and offices, and to ensure that there will not be on-street parking along Lowes Road W. due to the proposed development.

Based on the permitted site land use, **Table 6.1** provides a summary of the parking supply estimations for each potential permitted use.

Table 6.1: Parking Supply Summary

Permitted Use	Required Parking Ratio	Estimated Building Area (GFA)	Required Parking	Provided Parking
Dry Cleaning Outlet	1 per 33 m^2 GFA	140 m^2	4.2	
Medical Clinic/Medical Office/ Veterinary Service	1 per 25 m^2 GFA	375 m^2	15	
Office	1 per 33 m^2 GFA	885 m^2	26.81	
Restaurant (take-out) to a maximum Gross Floor Area of 140 m^2	1 per 9 m^2 GFA	100 m^2	11.11	
Retail Establishment	1 per 16.5 m^2 GFA	270 m^2	16.36	
(Florist, Pharmacy, Bake Shop)				
Convenience Store Personal Service Establishment				
Financial Establishment				
TOTAL	**1 per 24 m^2 GFA**	**1,770 m^2**	**74**	**74**

It should be noted that the proposed commercial establishment may have different tenants overtime and occupy different surface areas in the building. Based on these variables, the above table is providing the typical possible occupancy of the building resulting to a blended parking ratio of 1 parking space per 24m^2.

Based on discussion with a City staff from the Planning Services, she indicated that there is no typical parking ratio to be used for these types of commercial buildings.

It should be noted that the site is well accessible via transit, walking and biking that may contribute to reducing parking demand as patrons/clients may use one of these modes to reach the site, where the modal split is equal to 22 percent, as indicated in section 3.2. In addition, the site parking area is a shared parking where parking spaces can be utilized by any tenant/patron/clients at any given time.

In summary, the on-site parking supply of 74 parking spaces is in our opinion reasonably sufficient to accommodate parking demand.

7.0 Conclusions

7.1 Conclusions

The main conclusions of this study are as follows:

- **Proposed Development**: The subject site is located on the northwest corner of Gordon Street and Lowes Road West in the City of Guelph. The lands are planned to be developed as an office and commercial building with a maximum Gross Floor Area (GFA) of 1,770 m^2. The build-out of the subject site is anticipated to occur by Year 2016.

- **Existing Traffic Conditions**: The roadways of Gordon Street, Heritage Drive, and Clairfields Drive generally define the study area. Under existing conditions, the signalized intersections of Heritage Drive and Clairfields Drive intersecting with Gordon Street are operating at excellent levels of service without any critical movements or capacity issues.

- **Background Traffic**: The forecast background traffic volumes in the vicinity of the subject site have been assessed for a five-year horizon following the full build-out and occupancy of the subject site, assumed to be the Year 2021. The forecast traffic volumes are estimated to consist of generalized traffic growth and traffic related to the potential future developments along Gordon Street which consist of a 71 townhouse units located at 39-47 Arkell Road and 1408 Gordon; and a supermarket located on the northeast corner of Clair Street East and Gordon Road.

- **Background Traffic Conditions**: Without the development of the subject site, the intersections along the Gordon Street corridor are expected to operate at satisfactory levels of service without any critical movements or capacity issues. The signal timing plans were not optimized to ensure a fair comparison with the existing conditions.

- **Development Generated Traffic**: The planned development that will consist of office and commercial building with a maximum GFA 1,770 m^2 is estimated to generate approximately 33 new vehicle trips during the AM peak hour and approximately 28 new vehicle trips during the PM peak hour. The additional traffic estimated to be generated by the subject site will not have a significant impact on the operations of the study area intersections and will result in volumes well within the guidelines for the respective roadway classifications.

- **Total Traffic Conditions**: With the build-out of the subject site, the level of service at the study area intersections is anticipated to be similar to the background traffic conditions. There will be no mitigation required due to additional traffic generated from the proposed development. The signal timing plans were not optimized to ensure a fair comparison with the existing conditions.

- **Access Driveway Location**: The proposed site access driveway is located on Lowes Road W. at a distance of approximately 34 metres from the signalized intersection of Gordon Street. The driveway distance is compliant with the City's guidelines that require a minimum of 30 metres from a signalized intersection for a small volume commercial building located along a local road.

- **Parking Supply**: Based on the permitted use of the development, a parking supply was undertaken to ensure that patrons/clients and employees have enough parking spaces and will not be parking off-site. Based on the analysis and approach undertaken, the site can accommodate the offices and commercial establishments that will operate at the site.

Appendix A

Existing Count Data

Gordon Street & Clairfields Drive

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

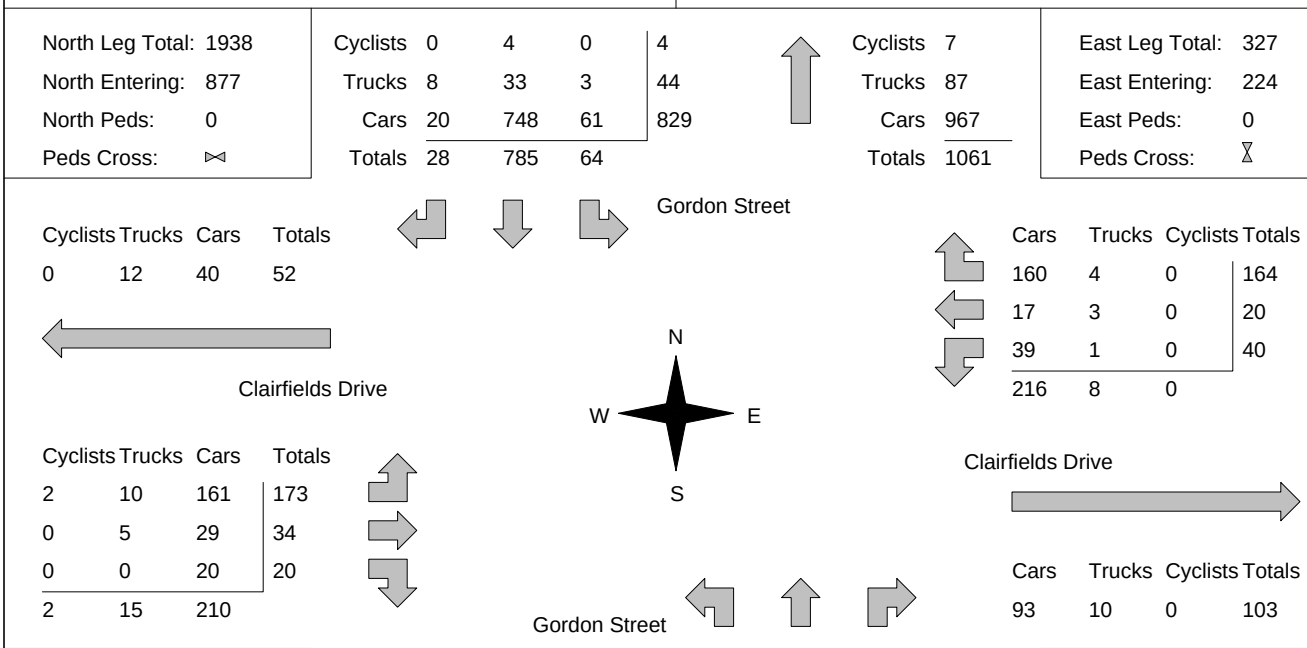
Municipality: Guelph
Site #: 0000009026
Intersection: Gordon Street & Clairfields Drive
TFR File #: 5
Count date: 9-Oct-2012

Weather conditions:
Cloudy

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Clairfields Drive

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

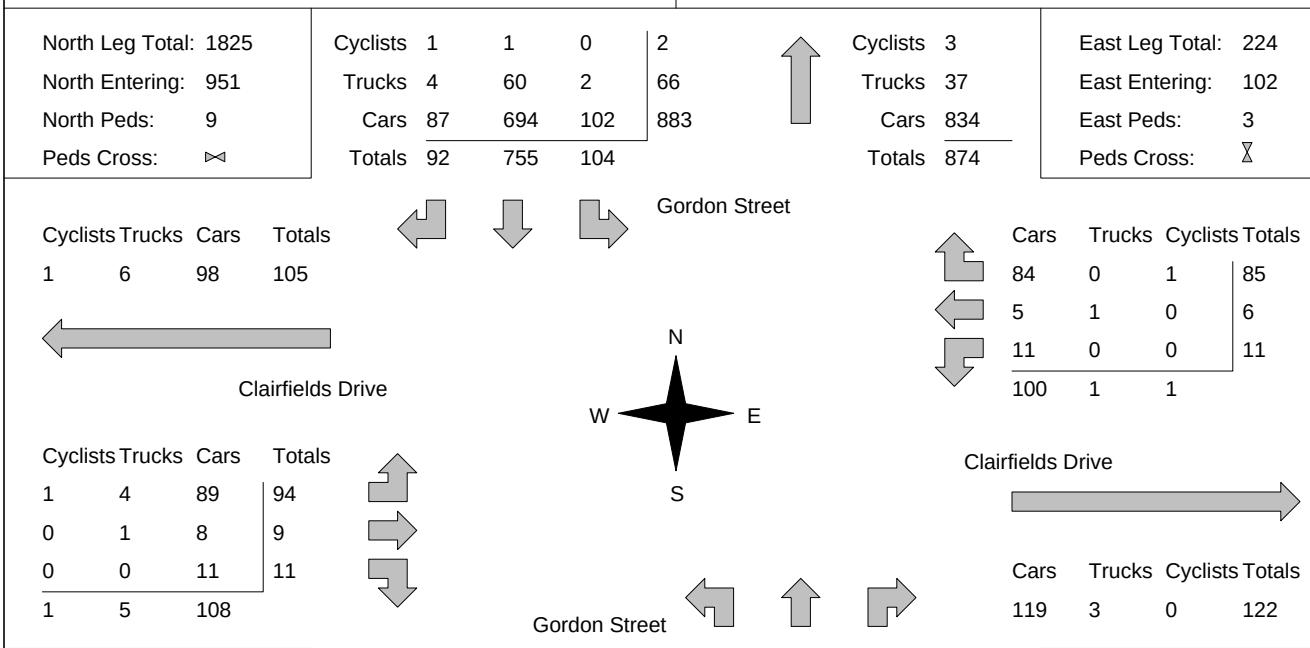
One Hour Peak
From: 12:00:00
To: 13:00:00

Municipality: Guelph
Site #: 0000009026
Intersection: Gordon Street & Clairfields Drive
TFR File #: 5
Count date: 9-Oct-2012

Weather conditions:
Cloudy
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Clairfields Drive

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

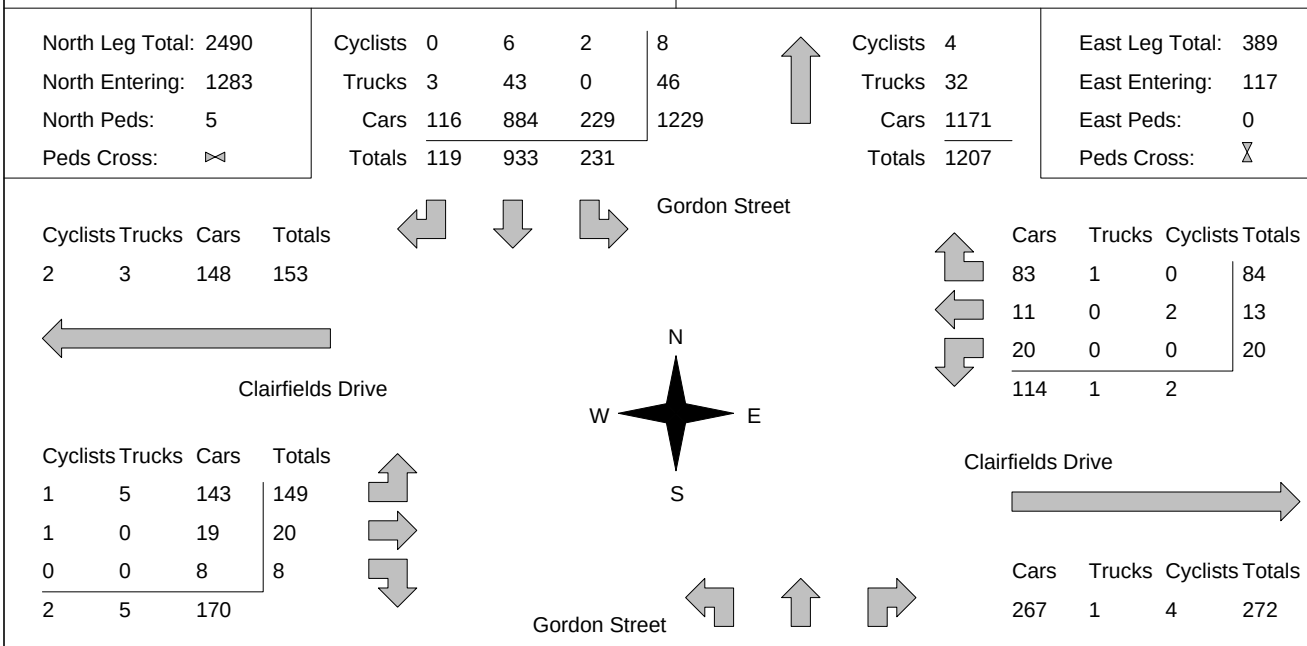
Municipality: Guelph
Site #: 0000009026
Intersection: Gordon Street & Clairfields Drive
TFR File #: 5
Count date: 9-Oct-2012

Weather conditions:
Cloudy

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Clairfields Drive

Total Count Diagram

Municipality: Guelph
Site #: 0000009026
Intersection: Gordon Street & Clairfields Drive
TFR File #: 5
Count date: 9-Oct-2012

Weather conditions: Cloudy
Person(s) who counted:

**** Signalized Intersection ****

Major Road: Gordon Street runs N/S

North Leg Total:	15617			
North Entering:	7914			
North Peds:	36			
Peds Cross:	⋈			
Cyclists	3	25	2	30
Trucks	46	348	10	404
Cars	543	5979	958	7480
Totals	592	6352	970	
Cyclists	29			
Trucks	371			
Cars	7303			
Totals	7703			
East Leg Total:	2251			
East Entering:	1034			
East Peds:	12			
Peds Cross:	⧖			

Gordon Street

Cyclists	Trucks	Cars	Totals
7	59	711	777

Cars	Trucks	Cyclists	Totals
753	13	2	768
75	11	4	90
169	7	0	176
997	31	6	

Clairfields Drive

N
W E
S

Cyclists	Trucks	Cars	Totals
9	56	902	967
13	14	129	156
0	5	99	104
22	75	1130	

Clairfields Drive

Cars	Trucks	Cyclists	Totals
1171	30	16	1217

Gordon Street

Peds Cross:	⧖			
West Peds:	28			
West Entering:	1227			
West Leg Total:	2004			
Cars	6247			
Trucks	360			
Cyclists	25			
Totals	6632			
Cars	93	5648	84	5825
Trucks	2	302	6	310
Cyclists	0	18	1	19
Totals	95	5968	91	
Peds Cross:	⋈			
South Peds:	57			
South Entering:	6154			
South Leg Total:	12786			

Comments

Gordon Street & Clairfields Drive
Traffic Count Summary

Intersection: Gordon Street & Clairfields Drive | **Count Date:** 9-Oct-2012 | **Municipality:** Guelph

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
7:00:00	0	0	0	0	0	0
8:00:00	40	729	27	796	0	1325
9:00:00	68	743	28	839	0	1559
11:00:00	0	2	0	2	0	2
12:00:00	100	631	74	805	2	1517
13:00:00	104	755	92	951	9	1662
14:00:00	65	814	72	951	6	1625
15:00:00	0	0	0	0	0	0
16:00:00	156	877	85	1118	5	1983
17:00:00	190	929	87	1206	7	2222
18:00:00	247	872	127	1246	7	2173
Totals:	970	6352	592	7914	36	14068

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	8	509	12	529	0
9:00:00	7	707	6	720	3
11:00:00	0	0	0	0	0
12:00:00	3	699	10	712	7
13:00:00	7	695	9	711	8
14:00:00	13	655	6	674	12
15:00:00	0	0	0	0	0
16:00:00	14	839	12	865	0
17:00:00	29	966	21	1016	16
18:00:00	14	898	15	927	11
Totals:	95	5968	91	6154	57

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
7:00:00	0	0	0	0	0	0
8:00:00	41	7	85	133	0	272
9:00:00	38	23	177	238	0	473
11:00:00	0	0	0	0	0	0
12:00:00	20	6	86	112	0	213
13:00:00	11	6	85	102	3	216
14:00:00	16	4	82	102	5	203
15:00:00	0	0	0	0	0	0
16:00:00	19	17	76	112	3	301
17:00:00	17	14	85	116	0	285
18:00:00	14	13	92	119	1	298
Totals:	176	90	768	1034	12	2261

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	110	8	21	139	0
9:00:00	184	34	17	235	7
11:00:00	0	0	0	0	0
12:00:00	76	10	15	101	0
13:00:00	94	9	11	114	3
14:00:00	82	10	9	101	3
15:00:00	0	0	0	0	0
16:00:00	144	34	11	189	5
17:00:00	137	24	8	169	4
18:00:00	140	27	12	179	6
Totals:	967	156	104	1227	28

Calculated Values for Traffic Crossing Major Street

Hours Ending:	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00
Crossing Values:	159	259	115	131	126	202	201	199

Gordon Street & Clairfields Drive

Count Date: 9-Oct-2012
Intersection: Gordon Street & Clairfields Drive **Municipality:** Guelph
Major Road: Gordon Street **Major Road Runs:** N/S two lanes each way
Operating Speed of Major Road: 60 km/hr **Operating under restricted flow conditions**

Warrant #1: Minimum Vehicular Volumes.

A. All Approaches. **100% Satisfied**

No. of Lanes	Minimum Requirements					Hours Ending								Percentage Warrant
	1 Lane Each Way		2 Lanes Each Way		3 Lanes									
Flow Condition	1 Lane F. Flow (Code 1)	1 Lane R. Flow (Code 2)	2 Lane F. Flow (Code 3)	2 Lane R. Flow (Code 4)	or More R. Flow (Code 5)	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00	
100%	480	720	600	900	1125	1597	2032	1730	1878	1828	2284	2507	2471	100%
80%	385	575	480	720	900									Yes: X / No:
All Approaches	100% Fulfilled					100	100	100	100	100	100	100	100	800
	80% Fulfilled													0
	Actual % if Below 80%													0

Total:	800
Actual Average (Total/8):	100%

B. Minor Street Both Approaches.

100%	120	170	120	170	170	272	473	213	216	203	301	285	298	100%
80%	95	135	95	135	135									Yes: X / No:
Minor Street Both Approaches	100% Fulfilled					100	100	100	100	100	100	100	100	800
	80% Fulfilled													0
	Actual % if Below 80%													0

Total:	800
Actual Average (Total/8):	100%

Gordon Street & Clairfields Drive

Count Date: 9-Oct-2012
Intersection: Gordon Street & Clairfields Drive **Municipality:** Guelph
Major Road: Gordon Street **Major Road Runs:** N/S two lanes each way
Operating Speed of Major Road: 60 km/hr **Operating under restricted flow conditions**

Warrant #2: Delay to Cross Traffic.

A. Major Street Both Approaches. **100% Satisfied**

No. of Lanes	Minimum Requirements					Hours Ending								
	1 Lane Each Way		2 Lanes Each Way		3 Lanes									
Flow Condition	1 Lane F. Flow (Code 1)	1 Lane R. Flow (Code 2)	2 Lane F. Flow (Code 3)	2 Lane R. Flow (Code 4)	or More R. Flow (Code 5)	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00	Percentage Warrant
100%	480	720	600	900	1125	1325	1559	1517	1662	1625	1983	2222	2173	100%
80%	385	575	480	720	900									Yes: X / No:
All Approaches	100% Fulfilled					100	100	100	100	100	100	100	100	800
	80% Fulfilled													0
	Actual % if Below 80%													0

Total:	800
Actual Average (Total/8):	100%

B. Traffic Crossing Major Street.

100%	50	75	50	75	75	159	259	115	131	126	202	201	199	100%
80%	40	60	40	60	60									Yes: X / No:
All Approaches	100% Fulfilled					100	100	100	100	100	100	100	100	800
	80% Fulfilled													0
	Actual % if Below 80%													0

Total:	800
Actual Average (Total/8):	100%

Gordon Street & Clairfields Drive

Count Date: 9-Oct-2012
Intersection: Gordon Street & Clairfields Drive **Municipality:** Guelph
Major Road: Gordon Street **Major Road Runs:** N/S two lanes each way
Operating Speed of Major Road: 60 km/hr **Operating under restricted flow conditions**

Warrant #3: Accident Experience.

Not Satisfied

A. Reportable accidents within a twelve month period averaged over 36 consequtive months susceptible to correction by a traffic signal.

Minimum Requirements	Actual Number of Accidents	Average Number of Accidents	Fulfilled
5	0 in 0 years	Invalid	0%

B. Adequate trial of less restrictive remedies has failed to reduce accident frequency.	No
C. Either Warrant 1 (Minimum Vehicular Volume) or Warrant 2 (Delay to Cross Traffic) satisfied 80% or more.	Yes

Warrant #4: Combination Warrant.
(Used if no warrant satisfied 100%)

Satisfied

Minimum Requirements	Warrant Satisfied 80% or More	Fulfilled
Two Warrants Satisfied 80%	Warrant 1 (Minimum Vehicular Volume) Warrant 2 (Delay to Cross Traffic) Warrant 3 (Accident Experience)	Yes Yes No

Conclusion: Traffic signal warranted.

Gordon Street & Heritage Drive

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

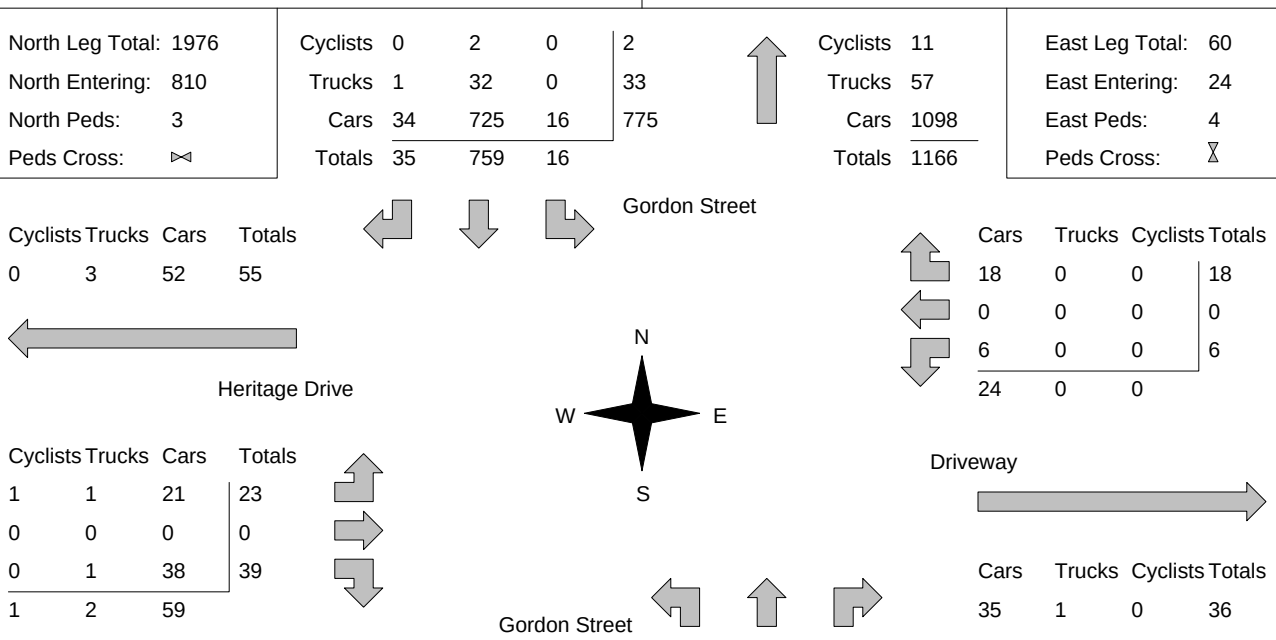
Municipality: Guelph
Site #: 0000004107
Intersection: Gordon Street & Heritage Drive
TFR File #: 1
Count date: 8-May-2012

Weather conditions:
Cloudy / Rain

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Heritage Drive

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:00:00
To: 13:00:00

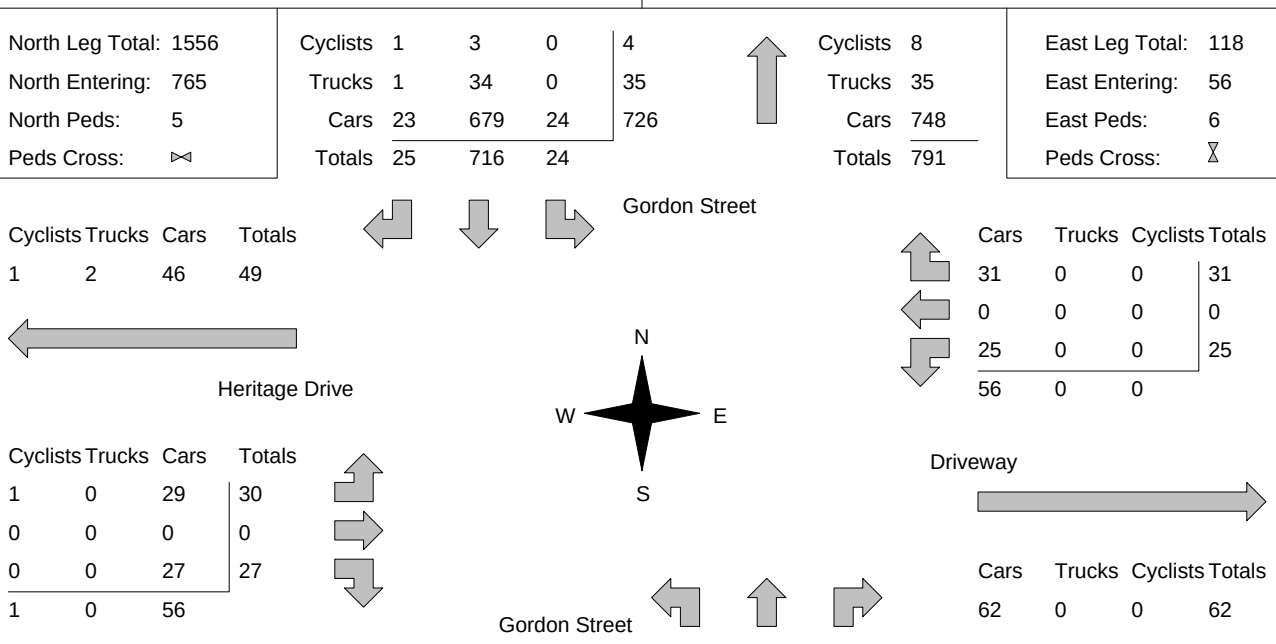
Municipality: Guelph
Site #: 0000004107
Intersection: Gordon Street & Heritage Drive
TFR File #: 1
Count date: 8-May-2012

Weather conditions:
Cloudy / Rain

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Heritage Drive

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:00:00
To: 17:00:00

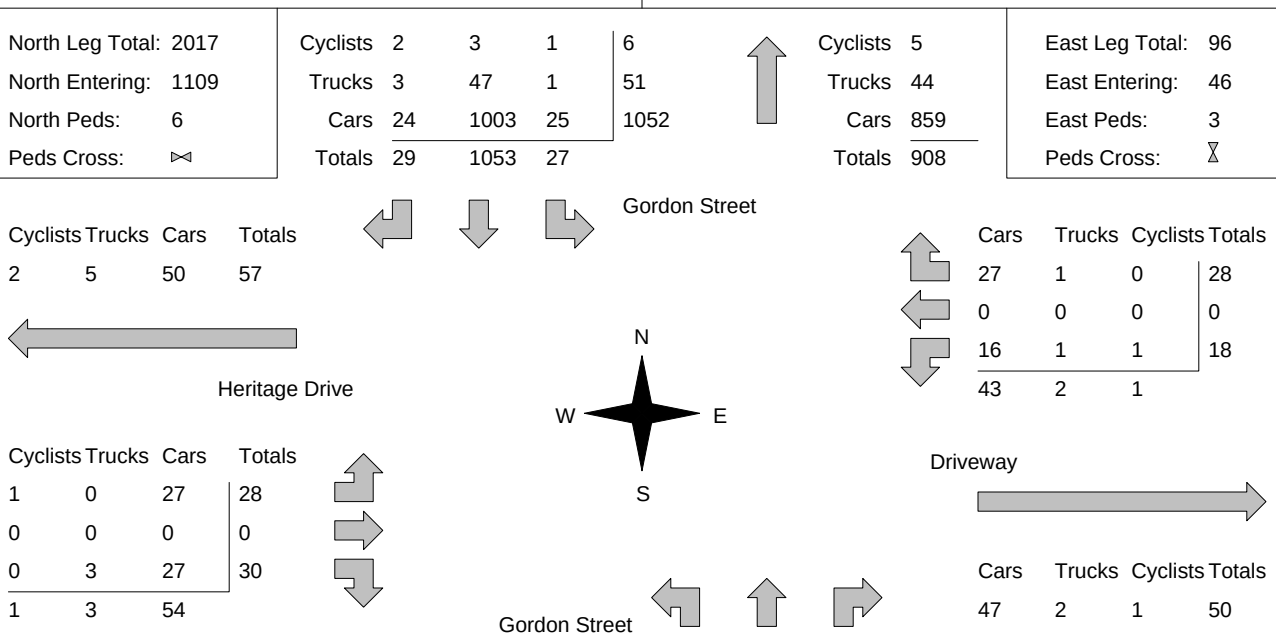
Municipality: Guelph
Site #: 0000004107
Intersection: Gordon Street & Heritage Drive
TFR File #: 1
Count date: 8-May-2012

Weather conditions:
Cloudy / Rain

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Heritage Drive

Total Count Diagram

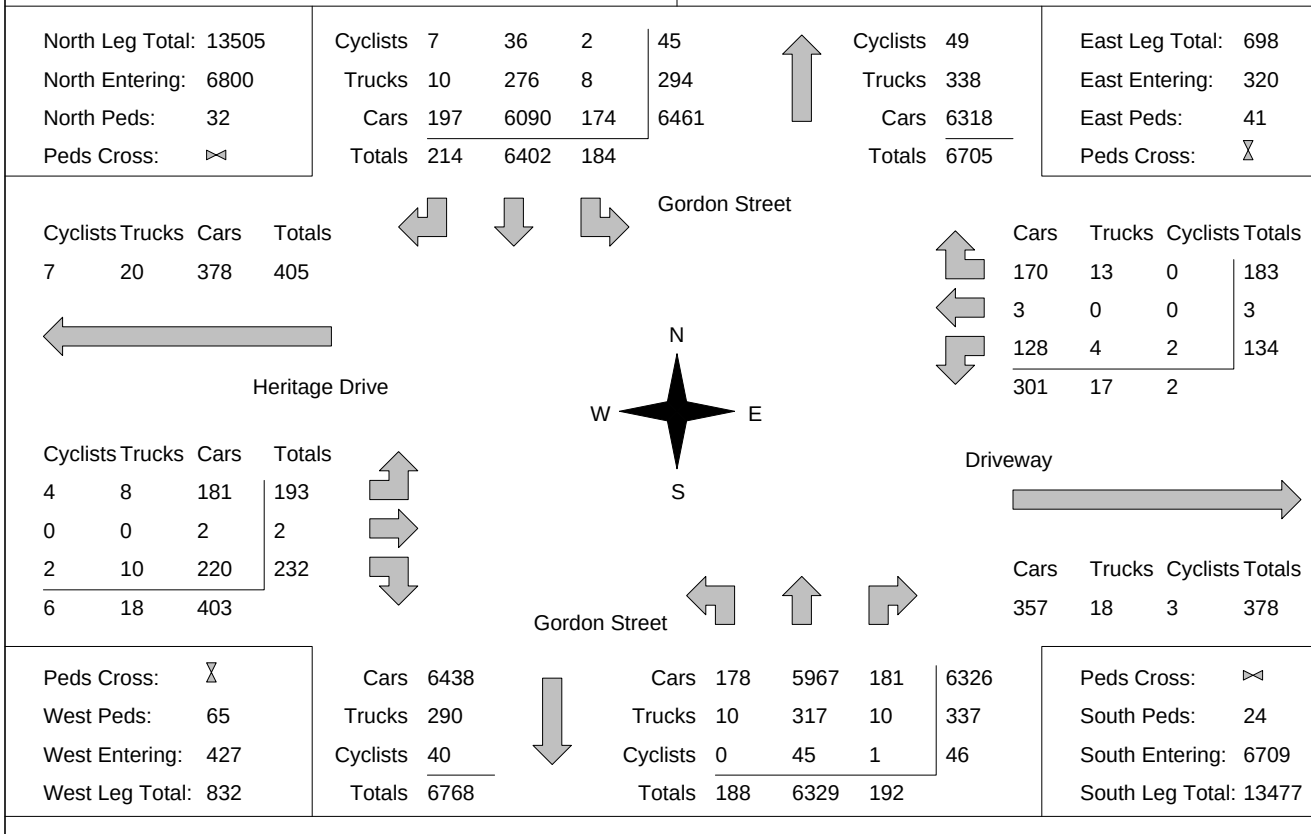
Municipality: Guelph
Site #: 0000004107
Intersection: Gordon Street & Heritage Drive
TFR File #: 1
Count date: 8-May-2012

Weather conditions:
Cloudy / Rain

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Heritage Drive
Traffic Count Summary

Intersection: Gordon Street & Heritage Drive | **Count Date:** 8-May-2012 | **Municipality:** Guelph

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
7:00:00	0	0	0	0	0	0
8:00:00	12	584	17	613	2	1360
9:00:00	16	759	35	810	3	1975
11:00:00	0	0	0	0	0	2
12:00:00	25	669	30	724	7	1443
13:00:00	24	716	25	765	5	1557
14:00:00	29	741	32	802	2	1548
15:00:00	0	0	0	0	0	0
16:00:00	30	930	23	983	2	1853
17:00:00	27	1053	29	1109	6	2012
18:00:00	21	950	23	994	5	1758
Totals:	184	6402	214	6800	32	13508

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	11	725	11	747	1
9:00:00	20	1125	20	1165	0
11:00:00	0	2	0	2	0
12:00:00	29	664	26	719	5
13:00:00	24	730	38	792	3
14:00:00	23	693	30	746	5
15:00:00	0	0	0	0	0
16:00:00	25	818	27	870	4
17:00:00	28	852	23	903	3
18:00:00	28	719	17	764	3
Totals:	188	6328	192	6708	24

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
7:00:00	0	0	0	0	0	0
8:00:00	7	0	5	12	0	48
9:00:00	6	0	18	24	4	86
11:00:00	0	0	0	0	0	0
12:00:00	21	0	28	49	7	107
13:00:00	25	0	31	56	6	113
14:00:00	26	1	29	56	2	112
15:00:00	0	0	0	0	0	1
16:00:00	17	1	27	45	14	101
17:00:00	18	0	28	46	3	104
18:00:00	14	1	17	32	5	75
Totals:	134	3	183	320	41	747

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	11	0	25	36	3
9:00:00	23	0	39	62	3
11:00:00	0	0	0	0	0
12:00:00	26	0	32	58	8
13:00:00	30	0	27	57	10
14:00:00	31	1	24	56	10
15:00:00	0	0	1	1	0
16:00:00	24	1	31	56	12
17:00:00	28	0	30	58	12
18:00:00	20	0	23	43	7
Totals:	193	2	232	427	65

Calculated Values for Traffic Crossing Major Street

Hours Ending:	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00
Crossing Values:	21	32	59	63	65	48	55	43

Gordon Street & Heritage Drive

Count Date: 8-May-2012
Intersection: Gordon Street & Heritage Drive **Municipality:** Guelph
Major Road: Gordon Street **Major Road Runs:** N/S two lanes each way
Operating Speed of Major Road: 60 km/hr **Operating under free flow conditions**

Warrant #1: Minimum Vehicular Volumes.

A. All Approaches. **Not Satisfied**

No. of Lanes	Minimum Requirements					Hours Ending								Percentage Warrant
	1 Lane Each Way		2 Lanes Each Way		3 Lanes									
Flow Condition	1 Lane F. Flow (Code 1)	1 Lane R. Flow (Code 2)	2 Lane F. Flow (Code 3)	2 Lane R. Flow (Code 4)	or More R. Flow (Code 5)	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00	
100%	480	720	600	900	1125	1408	2061	1550	1670	1660	1954	2116	1833	100%
80%	385	575	480	720	900									Yes: X / No:
All Approaches	100% Fulfilled					100	100	100	100	100	100	100	100	800
	80% Fulfilled													0
	Actual % if Below 80%													0
													Total:	800
													Actual Average (Total/8):	100%

B. Minor Street Both Approaches.

100%	120	170	120	170	170	48	86	107	113	112	101	104	75	100%
80%	95	135	95	135	135									Yes: / No: X
Minor Street Both Approaches	100% Fulfilled													0
	80% Fulfilled							80	80	80	80	80		400
	Actual % if Below 80%					40	72						63	174
													Total:	574
													Actual Average (Total/8):	72%

Gordon Street & Heritage Drive

Count Date: 8-May-2012
Intersection: Gordon Street & Heritage Drive **Municipality:** Guelph
Major Road: Gordon Street **Major Road Runs:** N/S two lanes each way
Operating Speed of Major Road: 60 km/hr **Operating under free flow conditions**

Warrant #2: Delay to Cross Traffic.

A. Major Street Both Approaches. **80% Satisfied**

No. of Lanes	Minimum Requirements					Hours Ending								Percentage Warrant
	1 Lane Each Way		2 Lanes Each Way		3 Lanes									
Flow Condition	1 Lane F. Flow (Code 1)	1 Lane R. Flow (Code 2)	2 Lane F. Flow (Code 3)	2 Lane R. Flow (Code 4)	or More R. Flow (Code 5)	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00	
100%	480	720	600	900	1125	1360	1975	1443	1557	1548	1853	2012	1758	100%
80%	385	575	480	720	900									Yes: X / No:
All Approaches	100% Fulfilled					100	100	100	100	100	100	100	100	800
	80% Fulfilled													0
	Actual % if Below 80%													0

Total:	800
Actual Average (Total/8):	100%

B. Traffic Crossing Major Street.

100%	50	75	50	75	75	21	32	59	63	65	48	55	43	100%
80%	40	60	40	60	60									Yes: / No: X
All Approaches	100% Fulfilled							100	100	100		100		400
	80% Fulfilled										80		80	160
	Actual % if Below 80%					42	64							106

Total:	666
Actual Average (Total/8):	83%

Gordon Street & Heritage Drive

Count Date: 8-May-2012
Intersection: Gordon Street & Heritage Drive **Municipality:** Guelph
Major Road: Gordon Street **Major Road Runs:** N/S two lanes each way
Operating Speed of Major Road: 60 km/hr **Operating under free flow conditions**

Warrant #3: Accident Experience.

Not Satisfied

A. Reportable accidents within a twelve month period averaged over 36 consequtive months susceptible to correction by a traffic signal.

Minimum Requirements	Actual Number of Accidents	Average Number of Accidents	Fulfilled
5	0 in 0 years	Invalid	0%

B. Adequate trial of less restrictive remedies has failed to reduce accident frequency.	No
C. Either Warrant 1 (Minimum Vehicular Volume) or Warrant 2 (Delay to Cross Traffic) satisfied 80% or more.	Yes

Warrant #4: Combination Warrant.
(Used if no warrant satisfied 100%)

Not Satisfied

Minimum Requirements	Warrant Satisfied 80% or More	Fulfilled
Two Warrants Satisfied 80%	Warrant 1 (Minimum Vehicular Volume) Warrant 2 (Delay to Cross Traffic) Warrant 3 (Accident Experience)	No Yes No

Conclusion: Traffic signal not warranted.

Gordon Street & Lowes Road

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

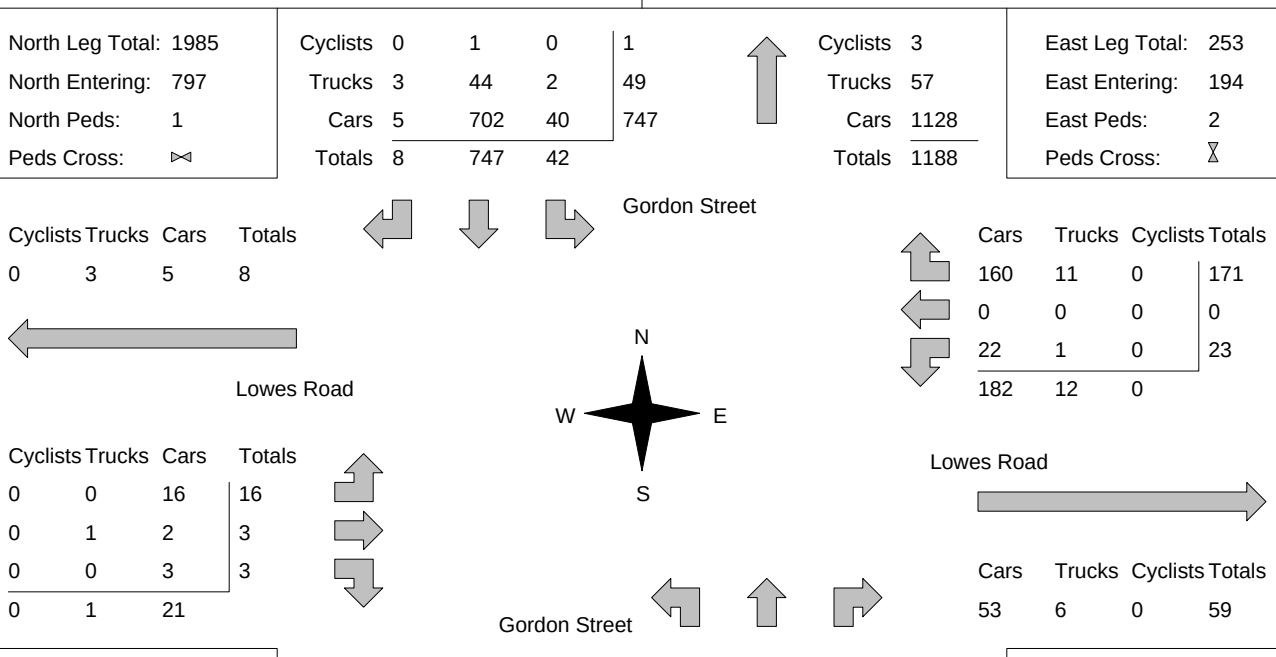
Municipality: Guelph
Site #: 0000001330
Intersection: Gordon Street & Lowes Road
TFR File #: 1
Count date: 17-Apr-2013

Weather conditions:
Clear

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Lowes Road

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:15:00
To: 12:15:00

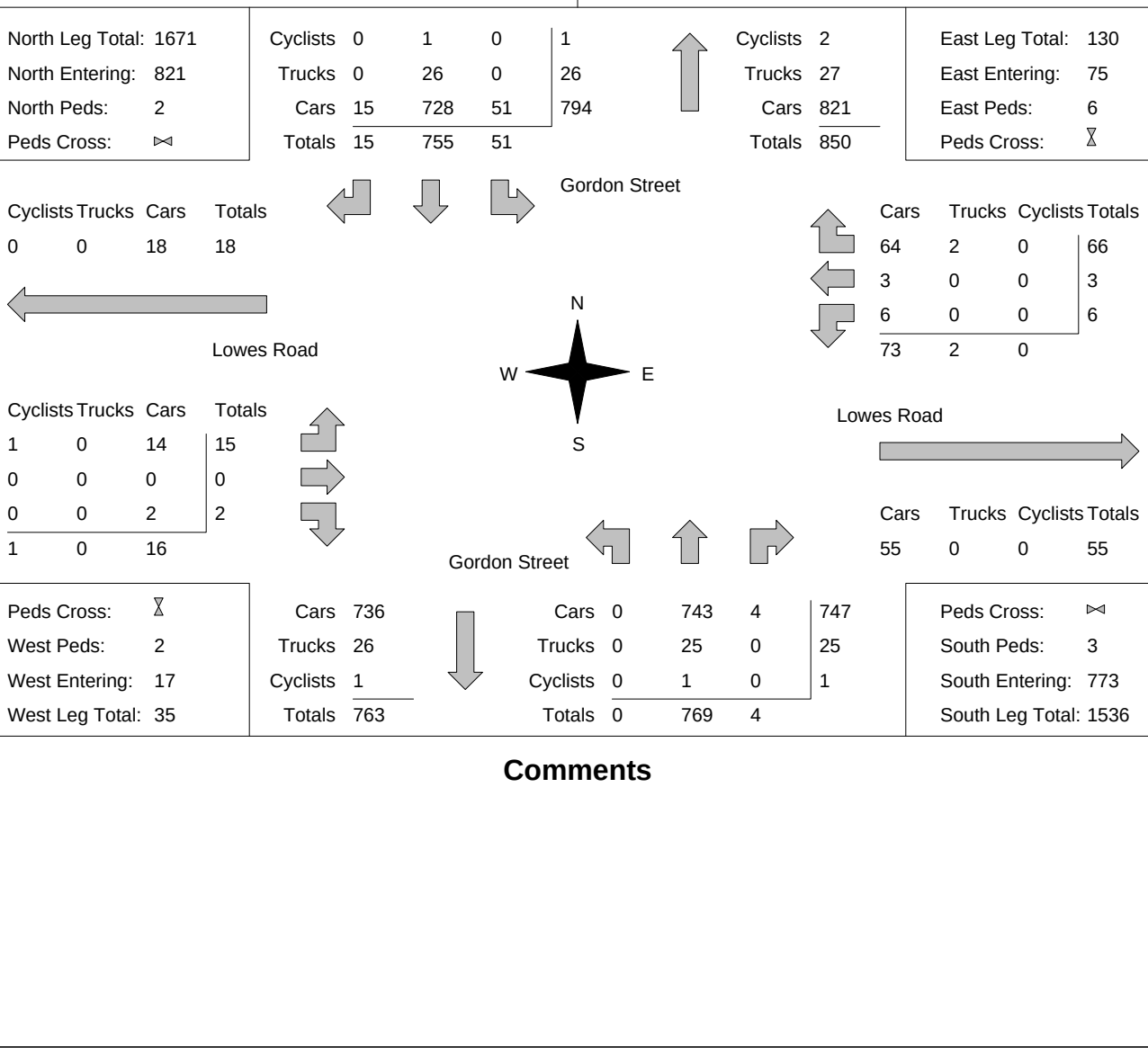
Municipality: Guelph
Site #: 0000001330
Intersection: Gordon Street & Lowes Road
TFR File #: 1
Count date: 17-Apr-2013

Weather conditions:
Clear

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Lowes Road

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

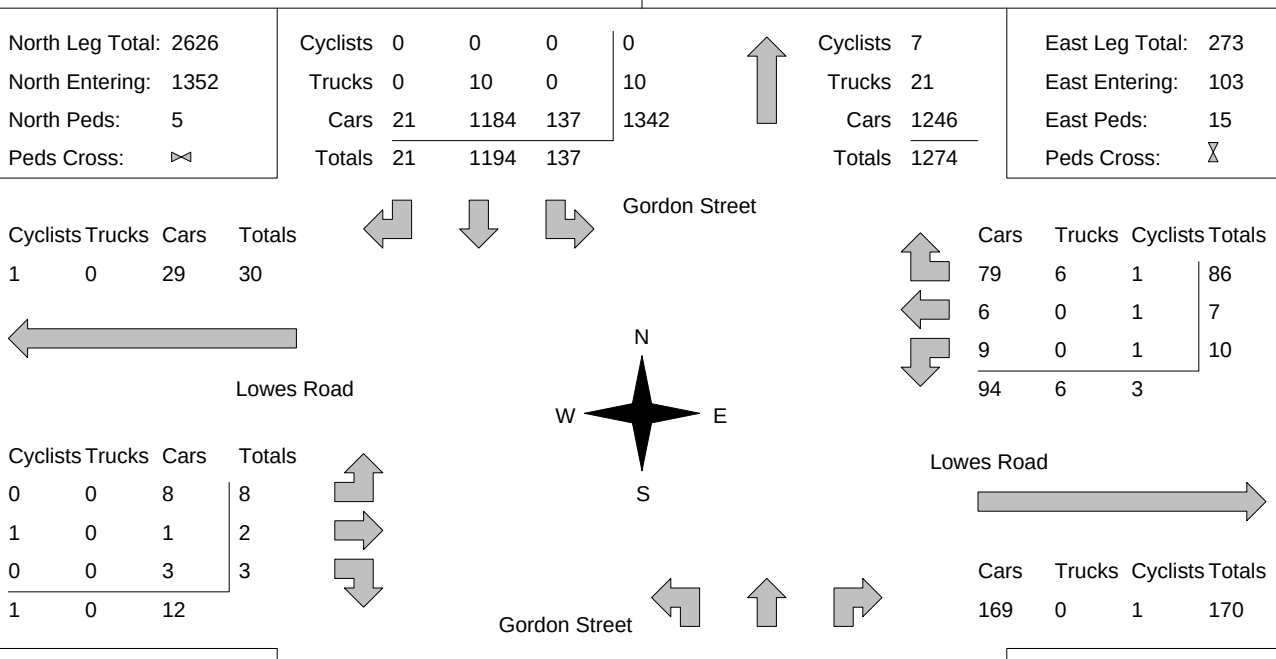
Municipality: Guelph
Site #: 0000001330
Intersection: Gordon Street & Lowes Road
TFR File #: 1
Count date: 17-Apr-2013

Weather conditions:
Clear

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Lowes Road

Total Count Diagram

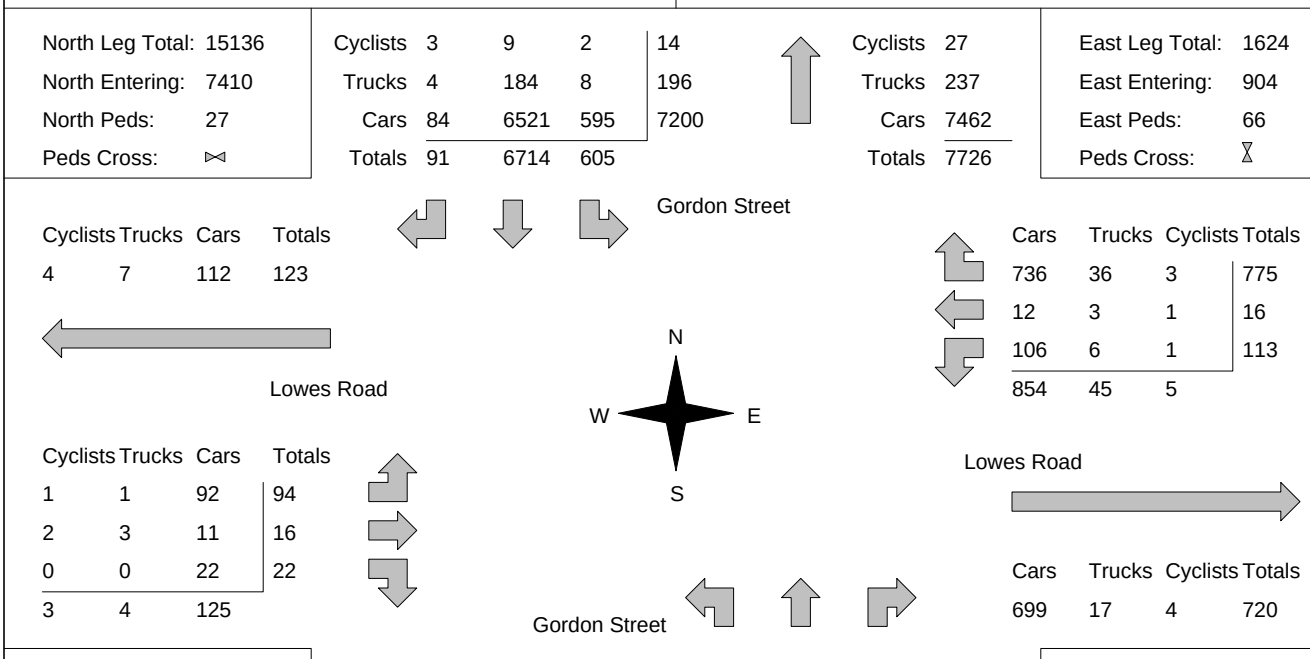
Municipality: Guelph
Site #: 0000001330
Intersection: Gordon Street & Lowes Road
TFR File #: 1
Count date: 17-Apr-2013

Weather conditions:
Clear

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Gordon Street runs N/S



Comments

Gordon Street & Lowes Road
Traffic Count Summary

Intersection: Gordon Street & Lowes Road | **Count Date:** 17-Apr-2013 | **Municipality:** Guelph

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
7:00:00	0	3	0	3	0	3
8:00:00	20	665	4	689	1	1312
9:00:00	56	714	8	778	0	1784
11:00:00	0	0	0	0	0	0
12:00:00	47	713	16	776	1	1534
13:00:00	80	766	13	859	4	1574
14:00:00	45	806	14	865	3	1549
15:00:00	0	0	0	0	0	0
16:00:00	100	892	8	1000	4	1907
17:00:00	116	1086	10	1212	9	2309
18:00:00	141	1069	18	1228	5	2410
Totals:	605	6714	91	7410	27	14382

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	0	615	8	623	2
9:00:00	1	994	11	1006	0
11:00:00	0	0	0	0	0
12:00:00	1	754	3	758	3
13:00:00	1	708	6	715	0
14:00:00	2	678	4	684	1
15:00:00	0	0	0	0	0
16:00:00	3	884	20	907	2
17:00:00	6	1071	20	1097	1
18:00:00	2	1153	27	1182	1
Totals:	16	6857	99	6972	10

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
7:00:00	0	0	0	0	0	0
8:00:00	25	1	109	135	6	153
9:00:00	25	0	174	199	1	220
11:00:00	0	0	0	0	0	0
12:00:00	5	3	69	77	7	100
13:00:00	11	0	86	97	5	106
14:00:00	9	1	64	74	5	92
15:00:00	0	0	0	0	0	0
16:00:00	16	3	86	105	11	121
17:00:00	12	4	92	108	14	122
18:00:00	10	4	95	109	17	122
Totals:	113	16	775	904	66	1036

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Cyclists: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	17	1	0	18	0
9:00:00	14	4	3	21	1
11:00:00	0	0	0	0	0
12:00:00	18	1	4	23	2
13:00:00	4	3	2	9	0
14:00:00	12	0	6	18	2
15:00:00	0	0	0	0	0
16:00:00	9	3	4	16	3
17:00:00	12	2	0	14	1
18:00:00	8	2	3	13	3
Totals:	94	16	22	132	12

Calculated Values for Traffic Crossing Major Street

Hours Ending:	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00
Crossing Values:	46	43	30	22	26	34	38	28

Gordon Street & Lowes Road

Count Date: 17-Apr-2013
Intersection: Gordon Street & Lowes Road **Municipality:** Guelph
Major Road: Gordon Street **Major Road Runs:** N/S two lanes each way
Operating Speed of Major Road: 60 km/hr **Operating under restricted flow conditions**

Warrant #1: Minimum Vehicular Volumes.

A. All Approaches. **Not Satisfied**

No. of Lanes	Minimum Requirements					Hours Ending								Percentage Warrant
	1 Lane Each Way		2 Lanes Each Way		3 Lanes									
Flow Condition	1 Lane F. Flow (Code 1)	1 Lane R. Flow (Code 2)	2 Lane F. Flow (Code 3)	2 Lane R. Flow (Code 4)	or More R. Flow (Code 5)	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00	
100%	480	720	600	900	1125	1465	2004	1634	1680	1641	2028	2431	2532	100%
80%	385	575	480	720	900									Yes: X No:
All Approaches	100% Fulfilled					100	100	100	100	100	100	100	100	800
	80% Fulfilled													0
	Actual % if Below 80%													0
													Total:	800
													Actual Average (Total/8):	100%

B. Minor Street Both Approaches.

100%	120	170	120	170	170	153	220	100	106	92	121	122	122	100%
80%	95	135	95	135	135									Yes: No: X
Minor Street Both Approaches	100% Fulfilled						100							100
	80% Fulfilled					80								80
	Actual % if Below 80%							59	62	54	71	72	72	390
													Total:	570
													Actual Average (Total/8):	71%

Gordon Street & Lowes Road

Count Date: 17-Apr-2013
Intersection: Gordon Street & Lowes Road **Municipality:** Guelph
Major Road: Gordon Street **Major Road Runs:** N/S two lanes each way
Operating Speed of Major Road: 60 km/hr **Operating under restricted flow conditions**

Warrant #2: Delay to Cross Traffic.

A. Major Street Both Approaches. **Not Satisfied**

No. of Lanes	Minimum Requirements					Hours Ending								
	1 Lane Each Way		2 Lanes Each Way		3 Lanes									
Flow Condition	1 Lane F. Flow (Code 1)	1 Lane R. Flow (Code 2)	2 Lane F. Flow (Code 3)	2 Lane R. Flow (Code 4)	or More R. Flow (Code 5)	8:00	9:00	12:00	13:00	14:00	16:00	17:00	18:00	Percentage Warrant
100%	480	720	600	900	1125	1312	1784	1534	1574	1549	1907	2309	2410	100%
80%	385	575	480	720	900									Yes: X / No:
All Approaches	100% Fulfilled					100	100	100	100	100	100	100	100	800
	80% Fulfilled													0
	Actual % if Below 80%													0

Total:	800
Actual Average (Total/8):	100%

B. Traffic Crossing Major Street.

100%	50	75	50	75	75	46	43	30	22	26	34	38	28	100%
80%	40	60	40	60	60									Yes: / No: X
All Approaches	100% Fulfilled													0
	80% Fulfilled													0
	Actual % if Below 80%					61	57	40	29	35	45	51	37	356

Total:	356
Actual Average (Total/8):	45%

Gordon Street & Lowes Road

Count Date: 17-Apr-2013
Intersection: Gordon Street & Lowes Road **Municipality:** Guelph
Major Road: Gordon Street **Major Road Runs:** N/S two lanes each way
Operating Speed of Major Road: 60 km/hr **Operating under restricted flow conditions**

Warrant #3: Accident Experience.

Not Satisfied

A. Reportable accidents within a twelve month period averaged over 36 consequtive months susceptible to correction by a traffic signal.

Minimum Requirements	Actual Number of Accidents	Average Number of Accidents	Fulfilled
5	0 in 0 years	Invalid	0%

B. Adequate trial of less restrictive remedies has failed to reduce accident frequency.	No
C. Either Warrant 1 (Minimum Vehicular Volume) or Warrant 2 (Delay to Cross Traffic) satisfied 80% or more.	No

Warrant #4: Combination Warrant.
(Used if no warrant satisfied 100%)

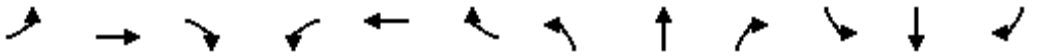
Not Satisfied

Minimum Requirements	Warrant Satisfied 80% or More	Fulfilled
Two Warrants Satisfied 80%	Warrant 1 (Minimum Vehicular Volume) Warrant 2 (Delay to Cross Traffic) Warrant 3 (Accident Experience)	No No No

Conclusion: Traffic signal not warranted.

Appendix B

Existing Level of Service Conditions

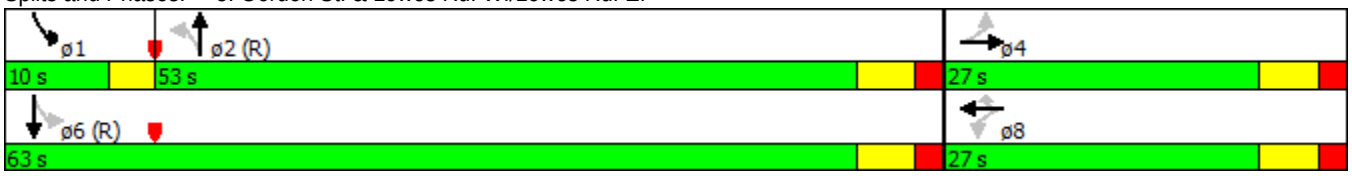


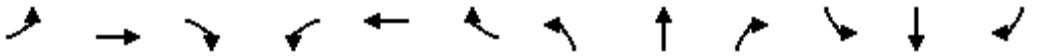
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	3	3	23	0	174	0	1085	14	43	883	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	30.0		0.0	35.0		0.0	70.0		0.0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (m)	20.0			15.0			50.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.925				0.850		0.998			0.999	
Flt Protected	0.950				0.950					0.950		
Satd. Flow (prot)	1770	1723	0	0	1770	1583	1863	3532	0	1770	3536	0
Flt Permitted	0.741				0.754					0.141		
Satd. Flow (perm)	1380	1723	0	0	1405	1583	1863	3532	0	263	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				187		2			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		247.1			165.8			452.3			237.8	
Travel Time (s)		22.2			14.9			27.1			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	3	3	25	0	189	0	1179	15	47	960	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	6	0	0	25	189	0	1194	0	47	969	0
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			3.6			3.6	
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	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	53.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	58.9%	58.9%		11.1%	70.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0	21.0	47.0	47.0		7.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	35.0	35.0			35.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0	14.0	12.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	7.9	7.9			7.9	7.9		47.0		73.1	70.1	
Actuated g/C Ratio	0.09	0.09			0.09	0.09		0.52		0.81	0.78	
v/c Ratio	0.14	0.04			0.20	0.61		0.65		0.09	0.35	
Control Delay	38.8	28.7			40.5	15.1		18.8		2.3	3.4	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	38.8	28.7			40.5	15.1		18.8		2.3	3.4	
LOS	D	C			D	B		B		A	A	
Approach Delay		36.1			18.1			18.8			3.4	
Approach LOS		D			B			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 12.5		Intersection LOS: B	
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Gordon St. & Lowes Rd. W./Lowes Rd. E.



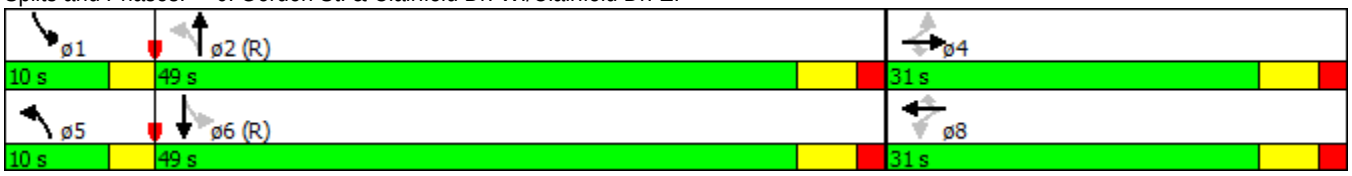


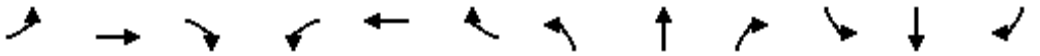
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	179	35	21	41	21	170	4	750	5	66	814	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		60.0	0.0		0.0	30.0		0.0	75.0		0.0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (m)	7.5			7.5			45.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.999			0.995	
Flt Protected		0.960			0.968		0.950			0.950		
Satd. Flow (prot)	0	1788	1583	0	1803	1583	1770	3536	0	1770	3522	0
Flt Permitted		0.714			0.615		0.292			0.279		
Satd. Flow (perm)	0	1330	1583	0	1146	1583	544	3536	0	520	3522	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			185		1			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		217.9			202.5			284.9			452.3	
Travel Time (s)		19.6			18.2			17.1			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	195	38	23	45	23	185	4	815	5	72	885	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	233	23	0	68	185	4	820	0	72	917	0
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)		5.0			5.0			6.0			7.0	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (%)	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	11.1%	54.4%		11.1%	54.4%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	7.0	43.0		7.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0	3.0	6.0		3.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		27.0			27.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		16.0			16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)		20.0	20.0		20.0	20.0	57.6	50.1		60.6	56.2	
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.64	0.56		0.67	0.62	
v/c Ratio		0.79	0.06		0.27	0.37	0.01	0.42		0.16	0.42	
Control Delay		51.3	0.3		29.8	6.4	6.2	13.8		7.7	12.6	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		51.3	0.3		29.8	6.4	6.2	13.8		7.7	12.6	
LOS		D	A		C	A	A	B		A	B	
Approach Delay		46.7			12.7			13.7			12.2	
Approach LOS		D			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 44 (49%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 16.6		Intersection LOS: B	
Intersection Capacity Utilization 58.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Gordon St. & Clairfield Dr. W./Clairfield Dr. E.



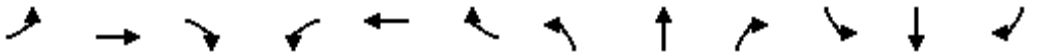


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	0	40	6	0	19	21	1233	21	17	888	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		35.0	0.0		15.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	20.0			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850			0.850		0.998			0.994	
Flt Protected		0.950			0.950			0.999			0.999	
Satd. Flow (prot)	0	1770	1583	0	1770	1583	0	3529	0	0	3514	0
Flt Permitted		0.753			0.740			0.925			0.914	
Satd. Flow (perm)	0	1403	1583	0	1378	1583	0	3267	0	0	3215	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43			36		4			9	
Link Speed (k/h)		40			30			60			60	
Link Distance (m)		140.1			134.6			237.8			173.0	
Travel Time (s)		12.6			16.2			14.3			10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	0	43	7	0	21	23	1340	23	18	965	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	43	0	7	21	0	1386	0	0	1022	0
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)		0.0			0.0			3.6			3.6	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0	21.0	57.0	57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	45.0	45.0		45.0	45.0	
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0	14.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)		7.3	7.3		7.3	7.3		74.2			74.2	
Actuated g/C Ratio		0.08	0.08		0.08	0.08		0.82			0.82	
v/c Ratio		0.23	0.26		0.06	0.13		0.51			0.39	
Control Delay		43.0	16.1		38.3	8.3		2.7			3.3	
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.0	
Total Delay		43.0	16.1		38.3	8.3		2.7			3.3	
LOS		D	B		D	A		A			A	
Approach Delay		26.3			15.8			2.7			3.3	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 3.7		Intersection LOS: A	
Intersection Capacity Utilization 67.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 9: Gordon St. & Heritage Dr.

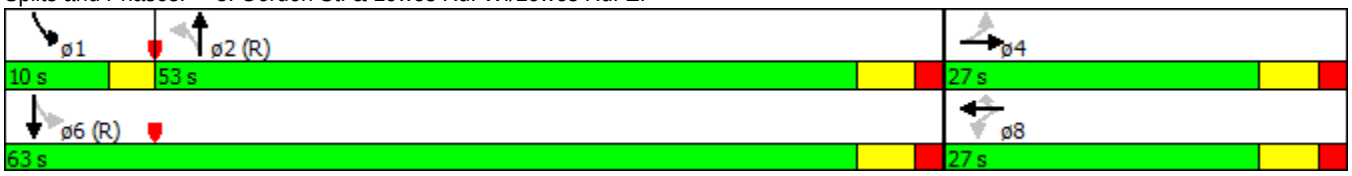


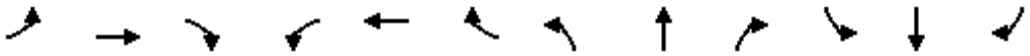
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	2	3	10	7	88	2	1216	32	139	1316	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	30.0		0.0	35.0		0.0	70.0		0.0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (m)	20.0			15.0			50.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.910				0.850		0.996			0.998	
Flt Protected	0.950				0.972		0.950			0.950		
Satd. Flow (prot)	1770	1695	0	0	1811	1583	1770	3525	0	1770	3532	0
Flt Permitted	0.745				0.819		0.182			0.099		
Satd. Flow (perm)	1388	1695	0	0	1526	1583	339	3525	0	184	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				96		4			3	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		247.1			165.8			452.3			237.8	
Travel Time (s)		22.2			14.9			27.1			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	2	3	11	8	96	2	1322	35	151	1430	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	5	0	0	19	96	2	1357	0	151	1453	0
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			3.6			3.6	
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	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	53.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	58.9%	58.9%		11.1%	70.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0	21.0	47.0	47.0		7.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	35.0	35.0			35.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0	14.0	12.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	7.0	7.0			7.0	7.0	47.0	47.0		74.0	71.0	
Actuated g/C Ratio	0.08	0.08			0.08	0.08	0.52	0.52		0.82	0.79	
v/c Ratio	0.08	0.04			0.16	0.45	0.01	0.74		0.29	0.52	
Control Delay	38.9	29.0			40.8	15.7	6.5	19.7		13.6	3.8	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	38.9	29.0			40.8	15.7	6.5	19.7		13.6	3.8	
LOS	D	C			D	B	A	B		B	A	
Approach Delay		35.3			19.9			19.6			4.7	
Approach LOS		D			B			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 12.0		Intersection LOS: B	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Gordon St. & Lowes Rd. W./Lowes Rd. E.



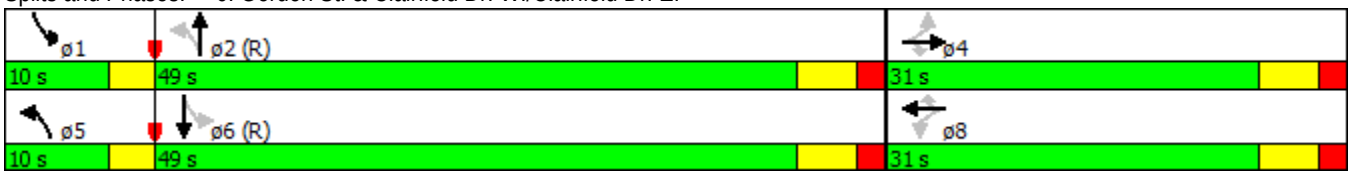


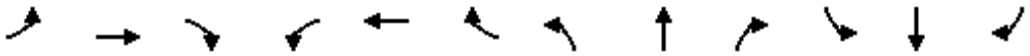
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	21	8	21	13	87	22	1009	22	239	967	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		60.0	0.0		0.0	30.0		0.0	75.0		0.0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (m)	7.5			7.5			45.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.997			0.983	
Flt Protected		0.958			0.970		0.950			0.950		
Satd. Flow (prot)	0	1785	1583	0	1807	1583	1770	3529	0	1770	3479	0
Flt Permitted		0.725			0.764		0.214			0.161		
Satd. Flow (perm)	0	1350	1583	0	1423	1583	399	3529	0	300	3479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			95		3			21	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		217.9			202.5			284.9			452.3	
Travel Time (s)		19.6			18.2			17.1			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	23	9	23	14	95	24	1097	24	260	1051	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	190	9	0	37	95	24	1121	0	260	1185	0
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)		5.0			5.0			6.0			7.0	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (%)	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	11.1%	54.4%		11.1%	54.4%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	7.0	43.0		7.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0	3.0	6.0		3.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		27.0			27.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		16.0			16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)		17.8	17.8		17.8	17.8	55.5	46.6		62.7	56.4	
Actuated g/C Ratio		0.20	0.20		0.20	0.20	0.62	0.52		0.70	0.63	
v/c Ratio		0.71	0.02		0.13	0.24	0.07	0.61		0.68	0.54	
Control Delay		47.7	0.1		28.2	7.4	6.2	17.9		21.5	14.7	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		47.7	0.1		28.2	7.4	6.2	17.9		21.5	14.7	
LOS		D	A		C	A	A	B		C	B	
Approach Delay		45.5			13.3			17.7			15.9	
Approach LOS		D			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 44 (49%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Gordon St. & Clairfield Dr. W./Clairfield Dr. E.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	0	31	19	0	29	29	1259	24	28	1426	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		35.0	0.0		15.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	20.0			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850			0.850		0.997			0.997	
Flt Protected		0.950			0.950			0.999			0.999	
Satd. Flow (prot)	0	1770	1583	0	1770	1583	0	3525	0	0	3525	0
Flt Permitted		0.755			0.755			0.867			0.894	
Satd. Flow (perm)	0	1406	1583	0	1406	1583	0	3059	0	0	3155	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			36		4			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		140.1			134.6			237.8			173.0	
Travel Time (s)		12.6			12.1			14.3			10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	0	34	21	0	32	32	1368	26	30	1550	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	34	0	21	32	0	1426	0	0	1613	0
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)		0.0			0.0			3.6			3.6	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0	21.0	57.0	57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	45.0	45.0		45.0	45.0	
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0	14.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)		7.7	7.7		7.6	7.6		77.5			77.5	
Actuated g/C Ratio		0.09	0.09		0.08	0.08		0.86			0.86	
v/c Ratio		0.27	0.20		0.18	0.19		0.54			0.59	
Control Delay		43.3	15.1		40.7	14.5		3.7			4.7	
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.0	
Total Delay		43.3	15.1		40.7	14.5		3.7			4.7	
LOS		D	B		D	B		A			A	
Approach Delay		28.8			24.9			3.7			4.7	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 78.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 9: Gordon St. & Heritage Dr.

Appendix C

Background Traffic Forecasts

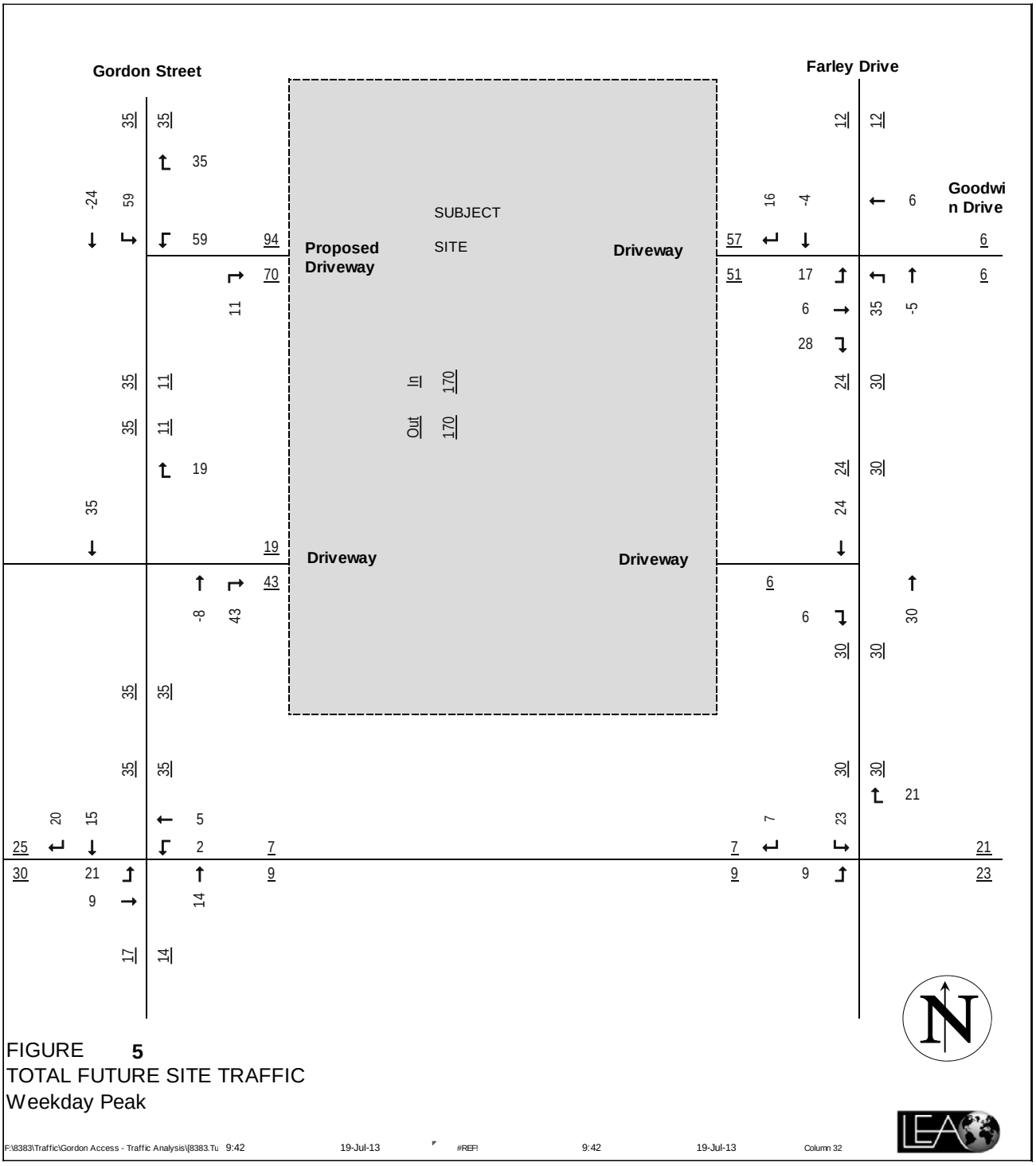
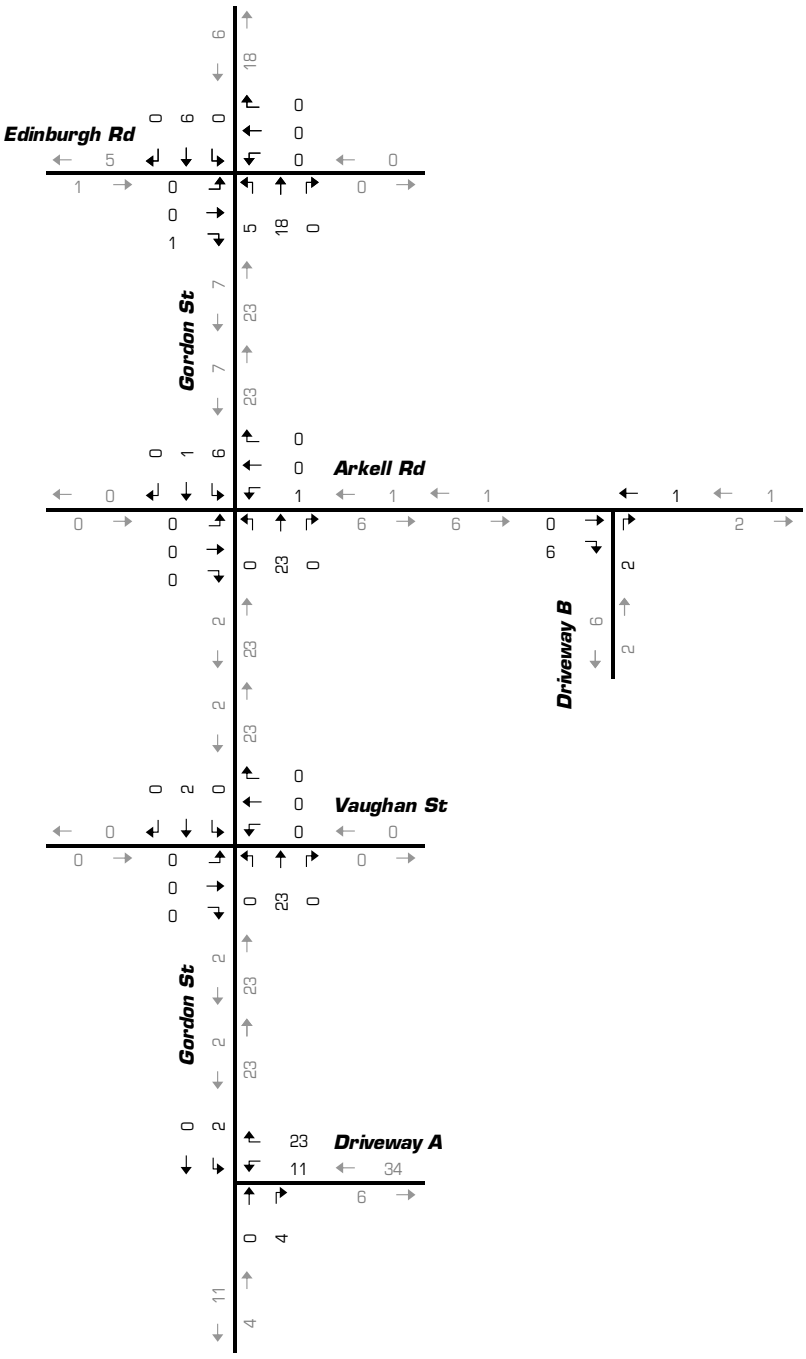


FIGURE **5**
TOTAL FUTURE SITE TRAFFIC
Weekday Peak

F:\8383\Traffic\Gordon Access - Traffic Analysis\[8383.Tu 9:42 19-Jul-13 #REF! 9:42 19-Jul-13 Column 32

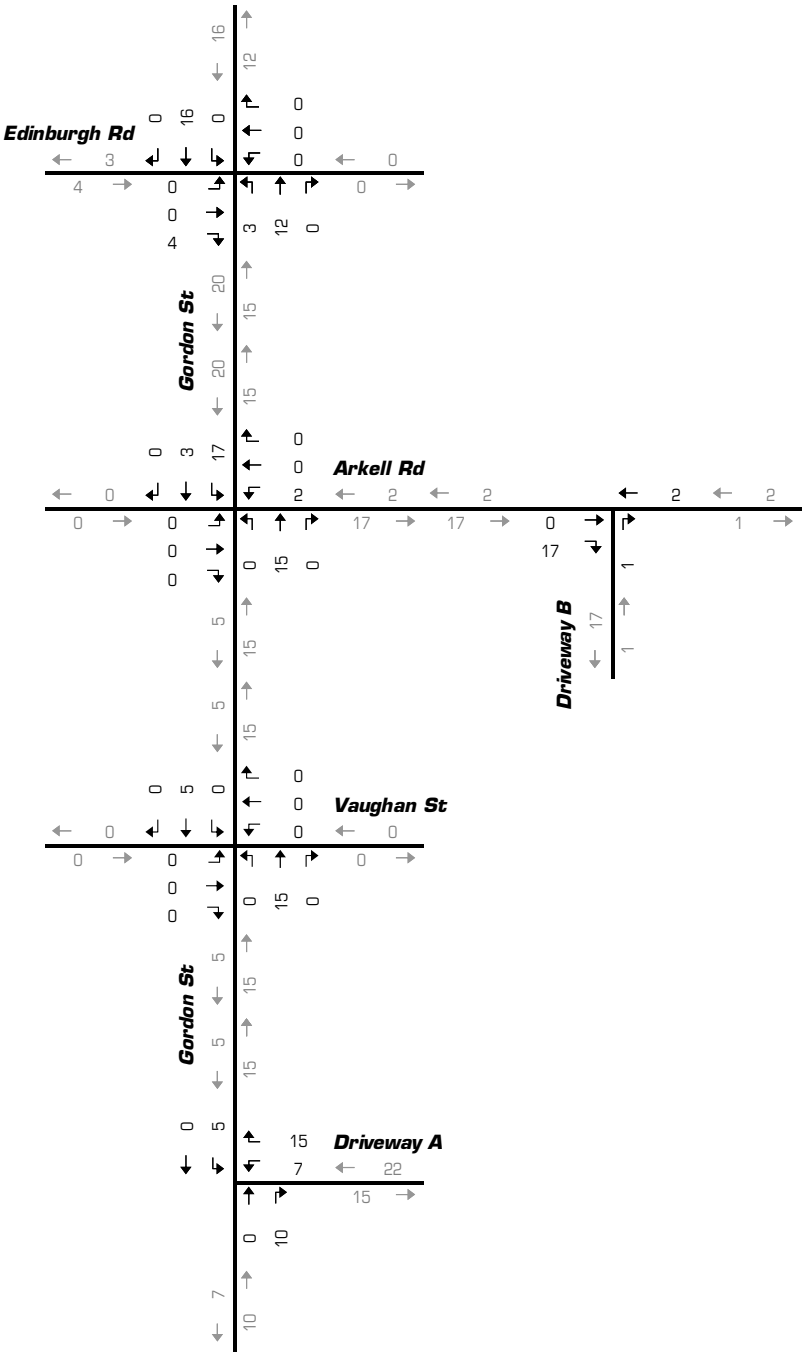


Arkell South
Traffic Impact Study

Paradigm
www.ptsl.com

Figure 4.3A

Site Generated Traffic – AM Peak Hour



Arkell South
Traffic Impact Study

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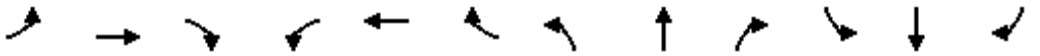
Figure 4.3B

Site Generated Traffic – PM Peak Hour

Appendix D

Background Traffic Level of Service Conditions

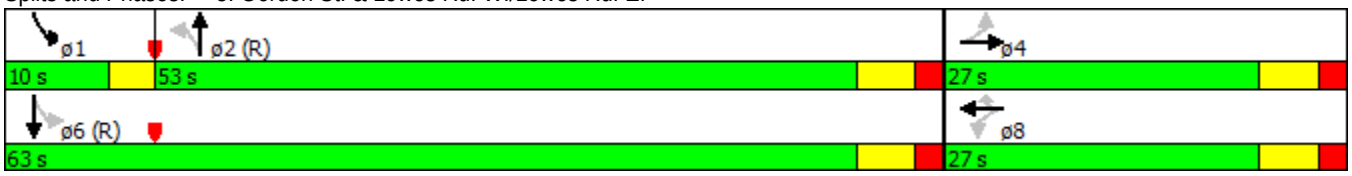


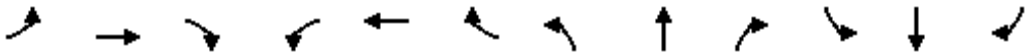
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	3	3	23	0	174	0	1249	14	43	1012	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	30.0		0.0	35.0		0.0	70.0		0.0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (m)	20.0			15.0			50.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.925				0.850		0.998			0.999	
Flt Protected	0.950				0.950					0.950		
Satd. Flow (prot)	1770	1723	0	0	1770	1583	1863	3532	0	1770	3536	0
Flt Permitted	0.741				0.754					0.095		
Satd. Flow (perm)	1380	1723	0	0	1405	1583	1863	3532	0	177	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				170		2			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		247.1			165.8			452.3			237.8	
Travel Time (s)		22.2			14.9			27.1			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	3	3	25	0	189	0	1358	15	47	1100	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	6	0	0	25	189	0	1373	0	47	1109	0
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			3.6			3.6	
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	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	53.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	58.9%	58.9%		11.1%	70.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0	21.0	47.0	47.0		7.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	35.0	35.0			35.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0	14.0	12.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	8.3	8.3			8.3	8.3		47.0		72.7	69.7	
Actuated g/C Ratio	0.09	0.09			0.09	0.09		0.52		0.81	0.77	
v/c Ratio	0.13	0.04			0.19	0.63		0.74		0.10	0.40	
Control Delay	37.9	28.0			39.5	18.0		21.3		3.1	3.8	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	37.9	28.0			39.5	18.0		21.3		3.1	3.8	
LOS	D	C			D	B		C		A	A	
Approach Delay		35.3			20.5			21.3			3.7	
Approach LOS		D			C			C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 14.0		Intersection LOS: B	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Gordon St. & Lowes Rd. W./Lowes Rd. E.



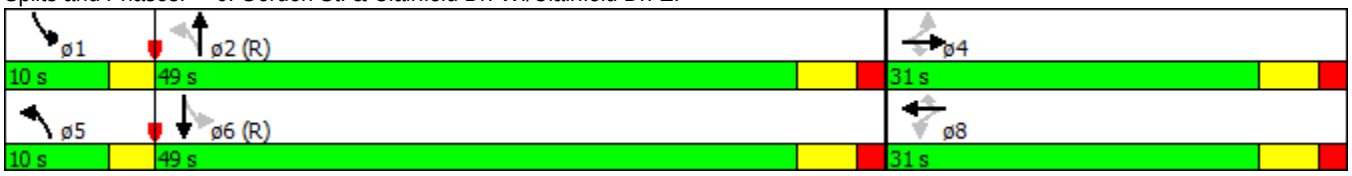


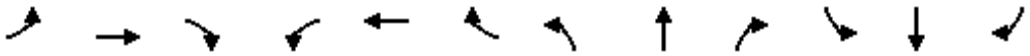
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	179	35	21	41	21	170	4	914	5	66	943	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		60.0	0.0		0.0	30.0		0.0	75.0		0.0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (m)	7.5			7.5			45.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.999			0.995	
Flt Protected		0.960			0.968		0.950			0.950		
Satd. Flow (prot)	0	1788	1583	0	1803	1583	1770	3536	0	1770	3522	0
Flt Permitted		0.714			0.615		0.238			0.213		
Satd. Flow (perm)	0	1330	1583	0	1146	1583	443	3536	0	397	3522	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			185		1			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		217.9			202.5			284.9			452.3	
Travel Time (s)		19.6			18.2			17.1			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	195	38	23	45	23	185	4	993	5	72	1025	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	233	23	0	68	185	4	998	0	72	1057	0
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)		5.0			5.0			6.0			7.0	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (%)	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	11.1%	54.4%		11.1%	54.4%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	7.0	43.0		7.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0	3.0	6.0		3.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		27.0			27.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		16.0			16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)		20.0	20.0		20.0	20.0	57.6	50.1		60.6	56.2	
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.64	0.56		0.67	0.62	
v/c Ratio		0.79	0.06		0.27	0.37	0.01	0.51		0.20	0.48	
Control Delay		51.3	0.3		29.8	6.4	6.2	15.0		7.7	13.3	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		51.3	0.3		29.8	6.4	6.2	15.0		7.7	13.3	
LOS		D	A		C	A	A	B		A	B	
Approach Delay		46.7			12.7			14.9			12.9	
Approach LOS		D			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 44 (49%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 16.9		Intersection LOS: B	
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Gordon St. & Clairfield Dr. W./Clairfield Dr. E.



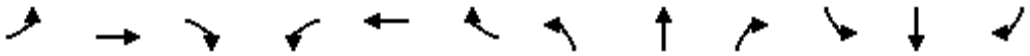


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	0	40	6	0	19	21	1397	21	17	1017	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		35.0	0.0		15.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	20.0			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850			0.850		0.998			0.995	
Flt Protected		0.950			0.950			0.999			0.999	
Satd. Flow (prot)	0	1770	1583	0	1770	1583	0	3529	0	0	3518	0
Flt Permitted		0.753			0.740			0.923			0.910	
Satd. Flow (perm)	0	1403	1583	0	1378	1583	0	3260	0	0	3205	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43			36		3			7	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		140.1			134.6			237.8			173.0	
Travel Time (s)		12.6			12.1			14.3			10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	0	43	7	0	21	23	1518	23	18	1105	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	43	0	7	21	0	1564	0	0	1162	0
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)		0.0			0.0			3.6			3.6	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0	21.0	57.0	57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	45.0	45.0		45.0	45.0	
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0	14.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)		7.3	7.3		7.3	7.3		74.2			74.2	
Actuated g/C Ratio		0.08	0.08		0.08	0.08		0.82			0.82	
v/c Ratio		0.23	0.26		0.06	0.13		0.58			0.44	
Control Delay		43.0	16.1		38.3	8.3		3.5			3.6	
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.0	
Total Delay		43.0	16.1		38.3	8.3		3.5			3.6	
LOS		D	B		D	A		A			A	
Approach Delay		26.3			15.8			3.5			3.6	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 4.2		Intersection LOS: A	
Intersection Capacity Utilization 72.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 9: Gordon St. & Heritage Dr.

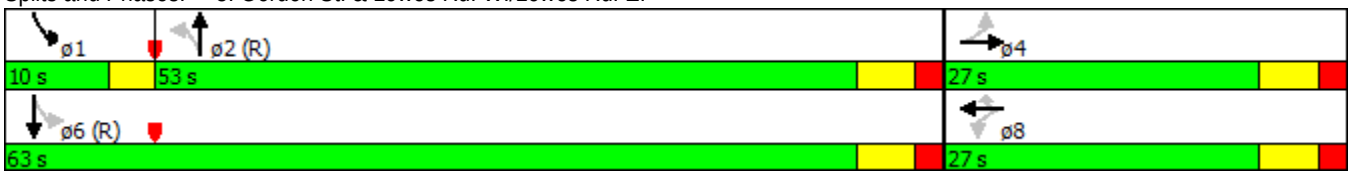


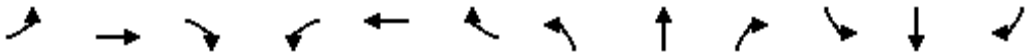
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	2	3	10	7	88	2	1428	32	139	1548	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	30.0		0.0	35.0		0.0	70.0		0.0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (m)	20.0			15.0			50.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.910				0.850		0.997			0.998	
Flt Protected	0.950				0.972		0.950			0.950		
Satd. Flow (prot)	1770	1695	0	0	1811	1583	1770	3529	0	1770	3532	0
Flt Permitted	0.745				0.819		0.141			0.080		
Satd. Flow (perm)	1388	1695	0	0	1526	1583	263	3529	0	149	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				96		4			3	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		247.1			165.8			452.3			237.8	
Travel Time (s)		22.2			14.9			27.1			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	2	3	11	8	96	2	1552	35	151	1683	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	5	0	0	19	96	2	1587	0	151	1706	0
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			3.6			3.6	
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	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	53.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	58.9%	58.9%		11.1%	70.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0	21.0	47.0	47.0		7.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	35.0	35.0			35.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0	14.0	12.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	7.0	7.0			7.0	7.0	47.0	47.0		74.0	71.0	
Actuated g/C Ratio	0.08	0.08			0.08	0.08	0.52	0.52		0.82	0.79	
v/c Ratio	0.08	0.04			0.16	0.45	0.01	0.86		0.30	0.61	
Control Delay	38.9	29.0			40.8	15.7	5.5	21.3		15.8	4.6	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.1	
Total Delay	38.9	29.0			40.8	15.7	5.5	21.3		15.8	4.7	
LOS	D	C			D	B	A	C		B	A	
Approach Delay		35.3			19.9			21.3			5.6	
Approach LOS		D			B			C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 13.1		Intersection LOS: B	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Gordon St. & Lowes Rd. W./Lowes Rd. E.



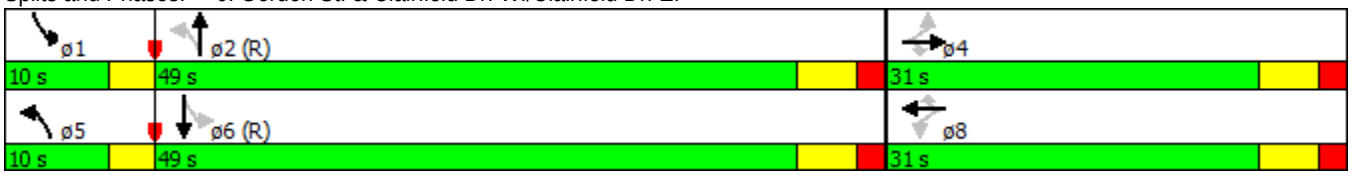


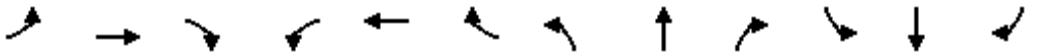
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	21	8	21	13	87	22	1221	22	239	1199	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		60.0	0.0		0.0	30.0		0.0	75.0		0.0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (m)	7.5			7.5			45.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.997			0.986	
Flt Protected		0.958			0.970		0.950			0.950		
Satd. Flow (prot)	0	1785	1583	0	1807	1583	1770	3529	0	1770	3490	0
Flt Permitted		0.725			0.764		0.150			0.087		
Satd. Flow (perm)	0	1350	1583	0	1423	1583	279	3529	0	162	3490	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			95		3			17	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		217.9			202.5			284.9			452.3	
Travel Time (s)		19.6			18.2			17.1			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	23	9	23	14	95	24	1327	24	260	1303	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	190	9	0	37	95	24	1351	0	260	1437	0
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)		5.0			5.0			6.0			7.0	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (%)	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	11.1%	54.4%		11.1%	54.4%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	7.0	43.0		7.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0	3.0	6.0		3.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		27.0			27.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		16.0			16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)		17.8	17.8		17.8	17.8	51.9	43.0		62.7	56.4	
Actuated g/C Ratio		0.20	0.20		0.20	0.20	0.58	0.48		0.70	0.63	
v/c Ratio		0.71	0.02		0.13	0.24	0.09	0.80		0.71	0.65	
Control Delay		47.7	0.1		28.2	7.4	6.6	24.4		32.2	16.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		47.7	0.1		28.2	7.4	6.6	24.4		32.2	16.9	
LOS		D	A		C	A	A	C		C	B	
Approach Delay		45.5			13.3			24.1			19.2	
Approach LOS		D			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 44 (49%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 22.5		Intersection LOS: C	
Intersection Capacity Utilization 77.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Gordon St. & Clairfield Dr. W./Clairfield Dr. E.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	0	31	19	0	29	29	1471	24	28	1658	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		35.0	0.0		15.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	20.0			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850			0.850		0.998			0.997	
Flt Protected		0.950			0.950			0.999			0.999	
Satd. Flow (prot)	0	1770	1583	0	1770	1583	0	3529	0	0	3525	0
Flt Permitted		0.755			0.755			0.857			0.886	
Satd. Flow (perm)	0	1406	1583	0	1406	1583	0	3027	0	0	3126	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			36		3			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		140.1			134.6			237.8			173.0	
Travel Time (s)		12.6			12.1			14.3			10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	0	34	21	0	32	32	1599	26	30	1802	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	34	0	21	32	0	1657	0	0	1865	0
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)		0.0			0.0			3.6			3.6	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	

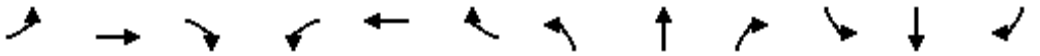
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0	21.0	57.0	57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	45.0	45.0		45.0	45.0	
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0	14.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)		7.7	7.7		7.6	7.6		77.5			77.5	
Actuated g/C Ratio		0.09	0.09		0.08	0.08		0.86			0.86	
v/c Ratio		0.27	0.20		0.18	0.19		0.64			0.69	
Control Delay		43.3	15.1		40.7	14.5		6.8			6.2	
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.0	
Total Delay		43.3	15.1		40.7	14.5		6.8			6.2	
LOS		D	B		D	B		A			A	
Approach Delay		28.8			24.9			6.8			6.2	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 7.2		Intersection LOS: A	
Intersection Capacity Utilization 85.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Gordon St. & Heritage Dr.

Appendix E

Total Traffic Level of Service Conditions

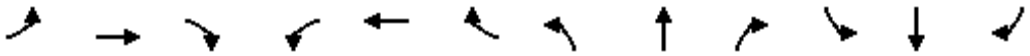


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	4	4	23	6	174	9	1249	14	43	1012	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	30.0		0.0	35.0		0.0	70.0		0.0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (m)	20.0			15.0			50.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.925				0.850		0.998			0.997	
Flt Protected	0.950				0.962		0.950			0.950		
Satd. Flow (prot)	1770	1723	0	0	1792	1583	1770	3532	0	1770	3529	0
Flt Permitted	0.736				0.768		0.253			0.095		
Satd. Flow (perm)	1371	1723	0	0	1431	1583	471	3532	0	177	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				170		2			5	
Link Speed (k/h)		50			40			60			60	
Link Distance (m)		39.3			165.8			452.3			237.8	
Travel Time (s)		2.8			14.9			27.1			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	4	4	25	7	189	10	1358	15	47	1100	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	8	0	0	32	189	10	1373	0	47	1124	0
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			3.6			3.6	
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	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	53.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	58.9%	58.9%		11.1%	70.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0	21.0	47.0	47.0		7.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	35.0	35.0			35.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0	14.0	12.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	8.4	8.4			8.4	8.4	47.0	47.0		72.6	69.6	
Actuated g/C Ratio	0.09	0.09			0.09	0.09	0.52	0.52		0.81	0.77	
v/c Ratio	0.16	0.05			0.24	0.63	0.04	0.74		0.10	0.41	
Control Delay	38.4	27.6			40.7	17.8	8.3	21.3		3.1	3.8	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	38.4	27.6			40.7	17.8	8.3	21.3		3.1	3.8	
LOS	D	C			D	B	A	C		A	A	
Approach Delay		35.3			21.1			21.2			3.8	
Approach LOS		D			C			C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Gordon St. & Lowes Rd. E.

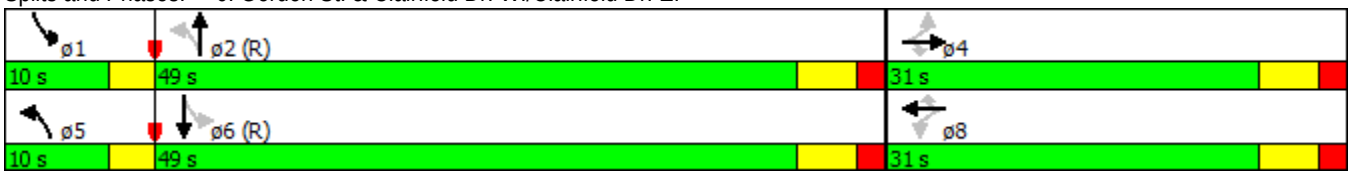


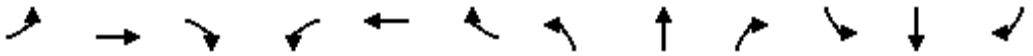
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	179	35	21	41	21	170	4	923	5	66	944	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		60.0	0.0		0.0	30.0		0.0	75.0		0.0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (m)	7.5			7.5			45.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.999			0.995	
Flt Protected		0.960			0.968		0.950			0.950		
Satd. Flow (prot)	0	1788	1583	0	1803	1583	1770	3536	0	1770	3522	0
Flt Permitted		0.714			0.615		0.238			0.209		
Satd. Flow (perm)	0	1330	1583	0	1146	1583	443	3536	0	389	3522	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			185		1			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		217.9			202.5			284.9			452.3	
Travel Time (s)		19.6			18.2			17.1			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	195	38	23	45	23	185	4	1003	5	72	1026	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	233	23	0	68	185	4	1008	0	72	1058	0
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)		5.0			5.0			6.0			7.0	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (%)	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	11.1%	54.4%		11.1%	54.4%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	7.0	43.0		7.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0	3.0	6.0		3.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		27.0			27.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		16.0			16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)		20.0	20.0		20.0	20.0	57.6	50.1		60.6	56.2	
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.64	0.56		0.67	0.62	
v/c Ratio		0.79	0.06		0.27	0.37	0.01	0.51		0.20	0.48	
Control Delay		51.3	0.3		29.8	6.4	6.2	15.0		7.7	13.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		51.3	0.3		29.8	6.4	6.2	15.0		7.7	13.2	
LOS		D	A		C	A	A	B		A	B	
Approach Delay		46.7			12.7			15.0			12.8	
Approach LOS		D			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 44 (49%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 16.9		Intersection LOS: B	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Gordon St. & Clairfield Dr. W./Clairfield Dr. E.



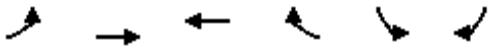


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	0	40	6	0	19	21	1399	21	17	1031	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		35.0	0.0		15.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	20.0			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850			0.850		0.998			0.995	
Flt Protected		0.950			0.950			0.999			0.999	
Satd. Flow (prot)	0	1770	1583	0	1770	1583	0	3529	0	0	3518	0
Flt Permitted		0.753			0.740			0.923			0.911	
Satd. Flow (perm)	0	1403	1583	0	1378	1583	0	3260	0	0	3208	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43			36		3			7	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		140.1			134.6			237.8			173.0	
Travel Time (s)		12.6			12.1			14.3			10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	0	43	7	0	21	23	1521	23	18	1121	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	43	0	7	21	0	1567	0	0	1178	0
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)		0.0			0.0			3.6			3.6	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0	21.0	57.0	57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	45.0	45.0		45.0	45.0	
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0	14.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)		7.3	7.3		7.3	7.3		74.2			74.2	
Actuated g/C Ratio		0.08	0.08		0.08	0.08		0.82			0.82	
v/c Ratio		0.23	0.26		0.06	0.13		0.58			0.45	
Control Delay		43.0	16.1		38.3	8.3		3.5			3.6	
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.0	
Total Delay		43.0	16.1		38.3	8.3		3.5			3.6	
LOS		D	B		D	A		A			A	
Approach Delay		26.3			15.8			3.5			3.6	
Approach LOS		C			B			A			A	

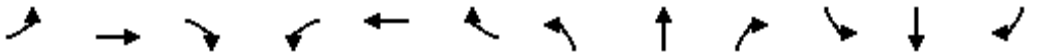
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 4.2		Intersection LOS: A	
Intersection Capacity Utilization 72.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 9: Gordon St. & Heritage Dr.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	22	8	29	4	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.895			
Flt Protected					0.950	
Satd. Flow (prot)	0	1863	1667	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1863	1667	0	1770	0
Link Speed (k/h)		40	40		25	
Link Distance (m)		207.7	39.3		59.0	
Travel Time (s)		18.7	3.5		8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	24	9	32	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	24	41	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		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
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

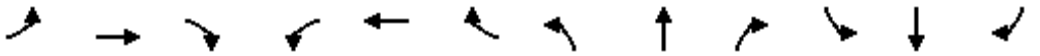


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	7	10	10	8	88	3	1428	32	139	1548	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	30.0		0.0	35.0		0.0	70.0		0.0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (m)	20.0			15.0			50.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.913				0.850		0.997			0.998	
Flt Protected	0.950				0.973		0.950			0.950		
Satd. Flow (prot)	1770	1701	0	0	1812	1583	1770	3529	0	1770	3532	0
Flt Permitted	0.744				0.818		0.140			0.080		
Satd. Flow (perm)	1386	1701	0	0	1524	1583	261	3529	0	149	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				96		4			3	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		40.0			165.8			452.3			237.8	
Travel Time (s)		3.6			14.9			27.1			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	8	11	11	9	96	3	1552	35	151	1683	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	19	0	0	20	96	3	1587	0	151	1708	0
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			3.6			3.6	
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	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	53.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	53.0	53.0		10.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	58.9%	58.9%		11.1%	70.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0	21.0	47.0	47.0		7.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	35.0	35.0			35.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0	14.0	12.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)	7.2	7.2			7.2	7.2	47.0	47.0		73.8	70.8	
Actuated g/C Ratio	0.08	0.08			0.08	0.08	0.52	0.52		0.82	0.79	
v/c Ratio	0.20	0.13			0.16	0.45	0.02	0.86		0.30	0.61	
Control Delay	42.0	26.2			40.7	15.4	5.7	21.3		15.9	4.7	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.1	
Total Delay	42.0	26.2			40.7	15.4	5.7	21.3		15.9	4.8	
LOS	D	C			D	B	A	C		B	A	
Approach Delay		34.7			19.8			21.3			5.7	
Approach LOS		C			B			C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 69.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Gordon St. & Lowes Rd. E.

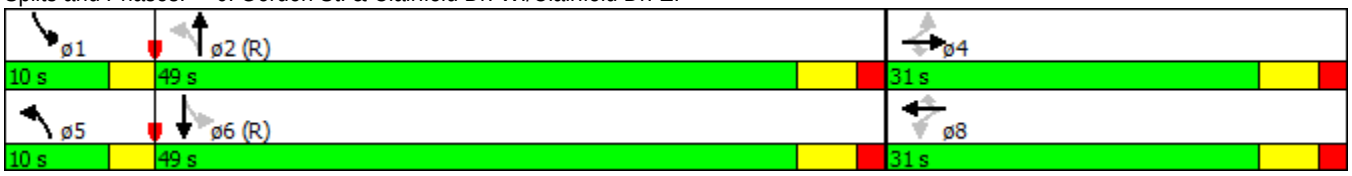


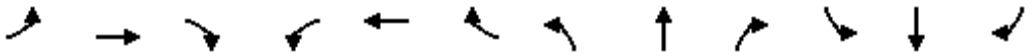
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	21	8	21	13	87	22	1222	22	239	1206	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		60.0	0.0		0.0	30.0		0.0	75.0		0.0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (m)	7.5			7.5			45.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.997			0.986	
Flt Protected		0.958			0.970		0.950			0.950		
Satd. Flow (prot)	0	1785	1583	0	1807	1583	1770	3529	0	1770	3490	0
Flt Permitted		0.725			0.764		0.148			0.087		
Satd. Flow (perm)	0	1350	1583	0	1423	1583	276	3529	0	162	3490	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			95		3			16	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		217.9			202.5			284.9			452.3	
Travel Time (s)		19.6			18.2			17.1			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	23	9	23	14	95	24	1328	24	260	1311	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	190	9	0	37	95	24	1352	0	260	1445	0
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)		5.0			5.0			6.0			7.0	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	10.0	49.0		10.0	49.0	
Total Split (%)	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	11.1%	54.4%		11.1%	54.4%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	7.0	43.0		7.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0	3.0	6.0		3.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		27.0			27.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		16.0			16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0			0	
Act Effct Green (s)		17.8	17.8		17.8	17.8	51.9	43.0		62.7	56.4	
Actuated g/C Ratio		0.20	0.20		0.20	0.20	0.58	0.48		0.70	0.63	
v/c Ratio		0.71	0.02		0.13	0.24	0.09	0.80		0.71	0.66	
Control Delay		47.7	0.1		28.2	7.4	6.6	24.4		32.1	16.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		47.7	0.1		28.2	7.4	6.6	24.4		32.1	16.9	
LOS		D	A		C	A	A	C		C	B	
Approach Delay		45.5			13.3			24.1			19.2	
Approach LOS		D			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 44 (49%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 22.5		Intersection LOS: C	
Intersection Capacity Utilization 77.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Gordon St. & Clairfield Dr. W./Clairfield Dr. E.



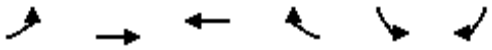


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	0	31	19	0	29	29	1483	24	28	1660	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		35.0	0.0		15.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	20.0			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850			0.850		0.998			0.997	
Flt Protected		0.950			0.950			0.999			0.999	
Satd. Flow (prot)	0	1770	1583	0	1770	1583	0	3529	0	0	3525	0
Flt Permitted		0.755			0.755			0.857			0.886	
Satd. Flow (perm)	0	1406	1583	0	1406	1583	0	3027	0	0	3126	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			36		3			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		140.4			134.6			237.8			173.0	
Travel Time (s)		12.6			12.1			14.3			10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	0	34	21	0	32	32	1612	26	30	1804	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	34	0	21	32	0	1670	0	0	1867	0
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)		0.0			0.0			3.6			3.6	
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	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0	21.0	57.0	57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	45.0	45.0		45.0	45.0	
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0	14.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)		7.7	7.7		7.6	7.6		77.5			77.5	
Actuated g/C Ratio		0.09	0.09		0.08	0.08		0.86			0.86	
v/c Ratio		0.27	0.20		0.18	0.19		0.64			0.69	
Control Delay		43.3	15.1		40.7	14.5		6.8			6.2	
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.0	
Total Delay		43.3	15.1		40.7	14.5		6.8			6.2	
LOS		D	B		D	B		A			A	
Approach Delay		28.8			24.9			6.8			6.2	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 7.2		Intersection LOS: A	
Intersection Capacity Utilization 85.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Gordon St. & Heritage Dr.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	13	30	4	24	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.985			
Flt Protected					0.950	
Satd. Flow (prot)	0	1863	1835	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1863	1835	0	1770	0
Link Speed (k/h)		40	40		25	
Link Distance (m)		207.0	40.0		61.4	
Travel Time (s)		18.6	3.6		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	14	33	4	26	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	14	37	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		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
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			