

Appendix B

Traffic Impact Assessment

Note:

Stage 1a in this document is the same as Stage 1 in the EIS.

Stage 1b in this document is the same as Stage 2 in the EIS.

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Gladstone Pacific Nickel Refinery Traffic Report

*Prepared for URS
Australia Pty Ltd*

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1.0 INTRODUCTION

1.1 Project Background

Cardno Eppell Olsen has been commissioned by URS Australia Pty Ltd on behalf of Gladstone Pacific Nickel Limited, to undertake a traffic and transport assessment for the Environmental Impact Statement of the proposed high-pressure acid leach (HPAL) refinery in Gladstone and associated project pipelines and Residue Storage Facility (RSF). This report will consider the traffic impacts of the construction and operation of the proposed plant including the impacts related to the construction of pipelines between a proposed nickel and cobalt laterite mine near Marlborough and the Gladstone refinery site. The refinery site is located south of Hanson Road, and is bounded by Reid Road to the west and south and the Calliope River to the east. A general area within the Gladstone State Development Area (GSDA) has been identified for use as a RSF.

1.2 Staging

It is currently proposed that the Gladstone Nickel Refinery and associated facilities will be developed in two stages:

- Stage 1a – Comprises a 60,000t/a nickel and a 4,800t/a cobalt refinery processing ore from Marlborough mine and the shipment of imported ore through the proposed Wiggins Island Coal Terminal;
- Stage 1b – Expansion of Stage 1a to a 126,000t/a nickel and 10,400t/a cobalt refinery.

It should be noted that Gladstone Pacific Nickel has recently changed their nomenclature from Stage 1a and Stage 1b to Stage 1 and Stage 2, respectively. This report uses the initial terminology throughout.

2.0 SCOPE OF WORK

The scope of assessment has been agreed with the Department of Main Roads to include the tasks outlined herein.

Analysis of the operation of the following intersections was undertaken, with and without the refinery (operation and construction):

- Gladstone - Mt Larcom Road/Bruce Highway intersection;
- Hanson Road/Reid Road intersection;
- Dawson Highway/Blain Drive/Herbertson Street intersection;
- Hanson Road/Blain Drive/Alf O'Rourke Drive intersection;
- Hanson Road/Red Rover Road intersection;
- Dawson Highway/Don Young Drive intersection;
- Gladstone - Mt Larcom Road/Landing Road intersection;
- Gladstone - Mt Larcom Road/Targinie - Calliope River Road intersection;
- Bruce Highway/Targinie - Calliope River Road intersection;
- Dawson Highway/Phillip Street intersection.

A pavement impact assessment was completed, related to the construction and operation of the refinery, for the following links:

- Gladstone - Mt Larcom Road between Bruce Highway and Landing Road;
- Hanson Road between Landing Road and Reid Road;
- Hanson Road between Reid Road and Red Rover Road;
- Hanson Road between Red Rover Road and Blain Drive; and
- Dawson Highway between Don Young Drive and Bruce Highway.

In addition, we considered impacts related to the construction of pipelines between Marlborough and the Gladstone Pacific Nickel refinery, at the following locations:

- Ridgeland Road west of Rockhampton;
- Bruce Highway near Bajool;
- Bruce Highway between Mt Larcom and Raglan Creek;
- Gladstone - Mt Larcom Road between Bruce Highway and Landing Road.

The link assessment for the pipeline will consist of an estimation of the additional Equivalent Standard Axles (ESAs) at the above locations, and whether this will lead to an increase above 5% of existing. If the increase is greater than 5%, then the traffic report will identify this to be considered further in the development of a construction management plan for the pipeline construction.

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The traffic associated with the RSF will also be analysed to determine what impact it has upon the intersections detailed above. Additionally, the access requirements with the Bruce Highway will be assessed, including the form of the access.

3.0 STUDY AREA

3.1 Site Location

The proposed site within the Yarwun Precinct of the GSDA is located to the south of Hanson Road, and is bounded by the Calliope River to the east and Reid Road to the west and south. The site extends marginally beyond the GSDA to the east into tidal wetlands.

The prevailing land uses within the broader project area are industry and agriculture. Several industries are located in close proximity to the site, including the ORICA chemical plant, Cement Australia and the Comalco Alumina Refinery.

A new deep sea port is proposed adjacent to the site, north of Hanson Road. The Wiggins Island Coal Terminal is described in more detail in Section 6.0 of this report.

3.2 Existing Road Network

The project site is bounded by Hanson Road to the north, Reid Road to the west and the North Coast Railway to the south. Vehicular access to the nickel refinery site is available via Reid Road and Hanson Road. Hanson Road is a designated haulage route for 23m and 25m B-Doubles only and is controlled by the Department of Main Roads. Reid Road is a local road and is thus controlled by the local government.

Queensland Rail currently provides access to the GSDA via the main North Coast Rail with branch lines to both Fisherman's Landing and East End.

Existing industry near and within the GSDA is serviced by the Central Queensland Ports Authority's facility at Fisherman's Landing.

The road network surrounding the proposed refinery site and key links to be assessed for the pipeline construction are described in the following paragraphs.

3.2.1 Bruce Highway

The Bruce Highway is part of the national highway system. It currently comprises of a two lane, undivided form with 1 – 1.5m sealed shoulder. The pavement appears to be of good quality. The posted speed limit is generally 100km/h, except through the Mt Larcom section where 80km/h applies and in the Rockhampton urban section where a 70km/h speed limit is posted. The urban section generally comprises a median divided, four lane carriageway.

3.2.2 Ridgeland Road

Ridgeland Road is a two lane, undivided form. Access to abutting land uses, mainly agricultural, are generally untreated priority intersections. The posted speed limit is 100km/h.

3.2.3 Gladstone - Mt Larcom Road

Between the Bruce Highway and Landing Road, Gladstone - Mt Larcom Road is a two lane, undivided road. The posted speed limit is 100km/h.

3.2.4 Hanson Road

Hanson Road between the Landing Road and Blain Drive intersections consists of a two lane form. Access intersections to adjacent industrial sites are generally provided in either unsignalised or roundabout configurations. The speed limit is generally 100km/h in the western section and is reduced to 60km/h at the Calliope River. Four lanes are provided in the Gladstone urban area east of the intersection with Blain Drive.

3.2.5 Dawson Highway

The Dawson Highway, between Don Young Drive and the Bruce Highway, provides a 100km/h speed environment. The link is generally a two lane undivided road. Overtaking lanes are provided throughout the link.

3.2.6 Targinie - Calliope River Road

South of Gladstone – Mt Larcom Road, Calliope River Road is a recently sealed two lane, 100km/h road. The northern section extends through the township of Yarwun. Through this section the adjacent land use is mainly residential and the speed limit is reduced to 60km/h.

3.2.7 Landing Road

Landing Road extends north from Gladstone – Mt Larcom Road in a two lane undivided form to Fisherman's Landing. The northern section is unsealed. The speed limit is 80km/h throughout.

3.2.8 Reid Road

Reid Road consists of a two lane undivided link with a nine metre seal and unsealed shoulders. The southernmost section is gravel. Adjacent land uses are mainly industrial, including the ORICA chemical plant, rail yards and water and sewage treatment plants.

3.2.9 Blain Drive

Blain Drive is a two lane undivided link. It provides a through traffic role as well as an access role to the adjacent industrial and residential areas. Current works to Red Rover Road will reduce through traffic demands on Blain Drive.

3.2.10 Red Rover Road/Don Young Drive

Red Rover Road is generally a two lane undivided link. The northern section has frequent access to abutting industrial uses and the pavement is of high quality. The southern section provides indirect connection to the Dawson Highway as it currently has two at-grade rail crossings. Upgrades are underway to provide a more direct alignment at the Don Young Drive continuation of the link. When complete, this will provide a high quality connection from the Dawson Highway to Hanson Road, offering an alternative to Blain Drive.

3.4 Future Road Network

The following reference documents have been considered to ensure that any proposed upgrades take into account the future road planning in the study area:

- Roads Implementation Program (RIP) 2005 - 06 to 2009 – 2010;
- Gladstone Integrated Regional Transport Plan (GIRTP) 2001 – 2030.

3.5 Background Traffic Volumes

Australasian Traffic Surveys was commissioned to undertake traffic surveys at key intersections. Manual traffic counts were undertaken on Thursday 9 February 2006 between 5:45am to 8:30am and 2:45pm to 5:30pm at the following locations:

- Bruce Highway/Gladstone - Mt Larcom Road;
- Hanson Road/Reid Road;
- Hanson Road/Blain Drive/Alf O'Rourke Drive;
- Dawson Highway/Blain Drive/Herbertson Street;
- Hanson Road/Red Rover Road; and
- Dawson Highway/Don Young Drive.

Additional manual turning movement counts were taken on Wednesday 15 March 2006 between 5:45am to 8:30am and 2:45pm to 5:30pm at the following locations:

- Dawson Highway/Philip Street;
- Bruce Highway/Targinie - Calliope River Road;
- Gladstone - Mt Larcom Road/Targinie - Calliope River Road; and
- Gladstone - Mt Larcom Road/Hanson Road/Landing Road.

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The 2006 traffic count volumes are illustrated at Appendix A.

It was noticed that there was an error with the count data taken in the AM Peak at the intersection of Hanson Road, Blain Drive and Alf O'Rourke Drive. The turning movement volumes for the left turn from Blain Drive and the through movement from Hanson Road (east) were considered to be extremely low and thus needed to be amended. Traffic count data taken at this intersection in 2003 was used to determine the correct volume of traffic for each of these movements. The 2003 Count Data for this intersection in the AM Peak is provided at Appendix A.

Additionally, the traffic volumes at the intersection of Hanson Road and Reid Road in the AM and PM Peaks were thought to be somewhat higher than normal due to the construction of the ORICA chemical plant at the time the count data was obtained. The 2006 traffic volumes for movements into and out of Reid Road were amended based upon traffic count data provided by SKM which was obtained in 2004, prior to the chemical plant construction commencing. The turning volumes used for the future background traffic scenarios (i.e. 2009 to 2026) were based upon the projected traffic volumes associated with the chemical plant. The 2004 Traffic Count data and the projected ORICA 2009 traffic volumes for this intersection are included at Appendix A.

4.0 PROPOSED DEVELOPMENT

4.1 Project Description

The development is expected to commence in late 2007 with two stages that include both construction and operational elements. Further details about both stages are outlined herein:

- Stage 1a – Construction of pipelines between the Marlborough mine and a refinery at Gladstone designed to produce up to approximately 60,000 tonnes of nickel per year and the associated RSF;
- Stage 1b – Expansion of the proposed refinery and associated infrastructure to produce approximately 120,000 tonnes of nickel per year.

Transportation by ship of imported ore would rely on the proposed Wiggins Island port facilities and associated conveyer system between the refinery and the port.

4.2 Site Access

Access to the site has been proposed via Reid Road.

This report will consider two access scenarios:

- an unsignalised at grade intersection at Reid Road/Hanson Road; and
- a roundabout at Reid Road/Hanson Road.

4.3 Construction Traffic Demands – Refinery

4.3.1 Construction Stage 1a

The Stage 1a construction phase is proposed to start in late 2007 with an expected completion in mid to late 2010. The later stages of this construction stage will coincide with start of operation (proposed mid 2010). At the construction peak, expected to occur in mid 2009 and last for two months, staff numbers are expected to be in the order of 2,600 personnel, including a small number of operation staff.

Of these staff, it is expected that approximately 67% will travel to and from the construction site in 30 seat buses. The remaining 33% will travel to and from the site in private vehicles with two people in each vehicle. In the construction peak, this results in a generation of approximately 430 light vehicles and 58 buses each day.

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These mode share assumptions were based upon observations at similar sites in the Gladstone area. The Comalco Refinery had a total of 2,200 workers at the construction peak. Of these workers, approximately 1,000, or half, travelled to the site by bus with the remainder travelling by car, with an average occupancy of 1.8 people per car. While the proportion of workers travelling by car was higher in this circumstance, the number of workers travelling by car can be controlled by ensuring that the supply of car parking spaces on the site is limited only to the minimum site requirements to force use of the bus fleet.

The construction of the Residue Storage Facility (RSF) is also expected to occur during Construction Stage 1a. The RSF construction is due to commence during 2008 and take approximately one year to complete. A total of 50 staff is expected to be required to construct the RSF. All of these staff members are expected to travel in private vehicles, with one person per vehicle.

4.3.2 Construction Stage 1b

The Stage 1b Construction phase is due to commence at the end of 2012 and take approximately three years to complete. The construction is expected to peak in the middle of 2014 with staff numbers in the order of some 1,700 workers. The mode share assumptions for this stage are the same as for Stage 1a: 67% of staff will travel by 30 seater bus and 33% by private vehicle. The Stage 1a plant is expected to continue operating at capacity during the construction phase.

4.4 Construction Traffic Demands – Pipeline

At this time, specific details of the pipeline construction are unknown and this report is based upon the hypothetical scenario presented to Cardno Eppell Olsen by RLMS in June 2006.

The scenario posed includes:

- three campsites are to be established near Mt Larcom, Gracemere and Fitzroy River to house a total of 300 construction workers. Workers are assumed to commute to the site using mini buses;
- pipeline materials being transported by ship to Gladstone and stock piled at each of the three campsites. The pipes will be transported to the campsites by semi trailer;
- pipes transported from the stockpiles to the pipeline construction location throughout the construction period;
- a total construction period of approximately eight months with a peak period of four months;
- construction of the pipeline will occur over two spreads, i.e. in three separate sections;

- pipe transport involving approximately 3600 trucks carrying up to 22 tonnes each over the eight month period (10 - 17 trucks per day);
- local traffic consisting of an estimated 30 four wheel drives each day distributed over the construction right of way and local roads;
- up to 100 trucks will be required for mobilisation and demobilisation of plant and equipment required for each spread. Additionally, 100 semi trailers will be required for the establishment of campsites.

4.5 Operation Traffic Demands

4.5.1 Operation Stage 1a

Operations at the plant are expected to start on a small scale in December 2007 and gradually build up to full operation with 380 staff by 2011. Staff will work twelve hour shifts on a four shift roster and commute to the site in private vehicles with one person per vehicle.

During Stage 1a Operations, the plant is expected to generate approximately 60,000 tonnes of nickel annually. Chemical supplies for the plant are required to be trucked in and plant products need to be trucked out. Thus, according to data supplied, approximately 6,550 heavy vehicles will be required annually for this quantity of nickel to be produced. This equates to approximately 24 heavy vehicles added to the road network daily.

It is assumed that deliveries will arrive at the site relatively consistently throughout the day. Therefore any heavy vehicle traffic is unlikely to have a significant impact on the operation of the intersections within the surrounding road network.

The primary concern will be the impact of heavy vehicles on the pavement quality of the surrounding road network.

4.5.2 Operation Stage 1b

Full plant operation is expected to commence in late 2015, following the completion of the Stage 1b Construction phase. Approximately 450 staff members are required for full operation of the plant. Again, it is expected that staff will work twelve hour shifts on a four shift roster and they will travel in private vehicles.

The output for Stage 1b is expected to increase to 120,000 tonnes of nickel annually. Approximately 13,100 heavy vehicles are expected to travel to and from the site annually. This is approximately 49 heavy vehicles each day.

Once again, it is assumed that deliveries will arrive at the site somewhat consistently throughout the day and thus any heavy vehicle traffic is unlikely to have a significant impact on the intersection operations within the surrounding road network.

4.6 Development Traffic Distribution and Assignment

A study has been undertaken by URS to assess potential staff accommodation locations. The outcomes of this study have been considered to estimate the distribution of staff associated with the Nickel Refinery activities as follows:

- Gladstone City, via Hanson Road 10%;
- Gladstone, via Hanson Road and Lord Street 10%;
- Philip Street, via Hanson Road and Blain Drive 55%;
- West Gladstone, via Hanson Road and Blain Drive 5%;
- Clinton, via Hanson Road and Red Rover Road 5%;
- Calliope, via Calliope River Road and Bruce Highway 5%;
- Yarwun, via Gladstone – Mt Larcom Road 5%; and
- Rockhampton area, via Gladstone – Mt Larcom Road 5%.

This distribution also applies to all construction staff for the plant and the Residue Storage Facility as well as operational staff. The distribution is represented graphically at Appendix A.

The distribution of operational heavy vehicle traffic has been determined based upon vehicle origin and destination data provided. The main origins and destinations for the heavy vehicles are Gladstone Port, Rockhampton, Brisbane and Fisherman's Landing. Tables with the origin and destination of the Refinery's inputs and outputs for Stage 1a and 1b Operations are provided at Appendix C.

5.0 FUTURE TRAFFIC VOLUMES

5.1 Background Traffic Growth

One year, five year and ten year growth data was obtained from the Department of Main Roads and analysed across the study network. It was found that a linear growth rate of 5% per annum could be seen through the rural areas of the network. This growth rate was deemed to be appropriate since this area was largely undeveloped and a reasonable amount of growth could be expected in the coming years. In the urban areas, however, a lower rate of 3% per annum was determined. This was because the urban area is already largely developed and growth in this area is expected to occur at a slower rate than the undeveloped rural area. These rates have subsequently been agreed with DMR, and have been applied to the count data to determine the background traffic volumes for the scenarios detailed in Section 5.2.

5.2 Traffic Scenarios

This assessment considers both traffic operations and pavement impact. The following scenarios have been considered for the traffic operations impact assessment:

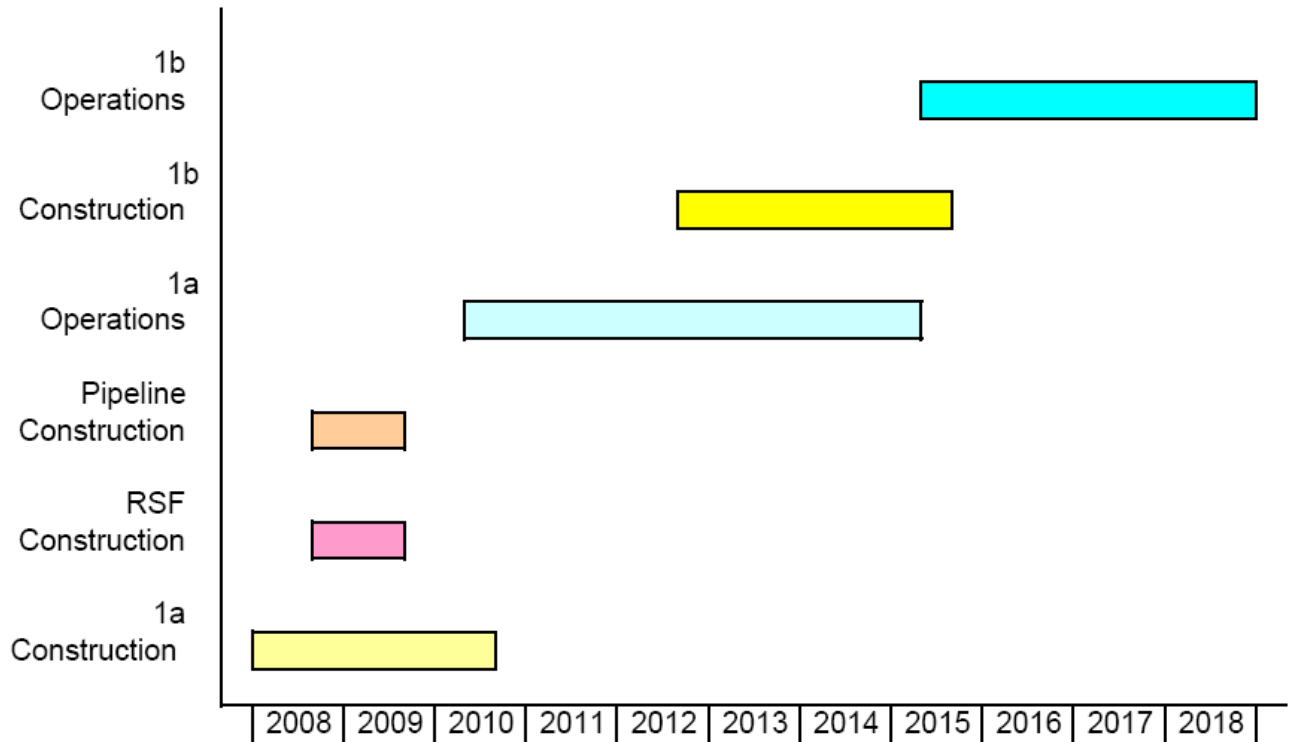
- Scenario 1: 2006 Existing Traffic Volumes;
- Scenario 2: 2009 Background Traffic Volumes;
- Scenario 3: 2009 Background + Stage 1a Construction Traffic Volumes;
- Scenario 4: 2011 Background Traffic Volumes;
- Scenario 5: 2011 Background + Stage 1a Operation Traffic Volumes;
- Scenario 6: 2014 Background Traffic Volumes;
- Scenario 7: 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes;
- Scenario 8: 2016 Background Traffic Volumes;
- Scenario 9: 2016 Background + Stage 1b Operation Traffic Volumes;
- Scenario 10: 2026 Background Traffic Volumes; and
- Scenario 11: 2026 Background + Stage 1b Operation Traffic Volumes.

A timeline showing the timing of these scenarios is depicted on Figure 5.1.

The base traffic and Equivalent Standard Axle (ESA) loadings have been determined using 2006 traffic volumes as a baseline reference.

Figure 5.1

Gladstone Nickel Project Timeline



5.3 Traffic Volumes – State Controlled Road Network

Using the material and assumptions provided herein, the daily two way traffic volumes on each of the State Controlled road sections are summarised in Table 5.1. 2026 represents the ten year design horizon following the completion of Phase 1b Construction. Detailed traffic volumes including intersection turning movements are included at Appendix A.

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Table 5.1 *Daily (Two Way) Link Volumes – State Controlled Roads*

Scenario	Gladstone – Mt Larcom Rd		Hanson Road			Dawson Highway
	Bruce Hwy to Targinie Rd	Targinie Rd to Landing Rd	Landing Rd to Reid Rd	Reid Rd to Red Rover Rd	Red Rover Rd to Blain Dr	Don Young Dr to Bruce Hwy
2006 Base	2,700	2,700	5,800	5,800	6,200	4,400
2009 Background	3,100	3,100	6,600	6,600	7,200	5,100
2011 Background	3,400	3,400	7,200	7,200	7,800	5,500
2014 Background	3,800	3,800	8,100	8,100	8,700	6,200
2016 Background	4,000	4,000	8,700	8,700	9,300	6,600
2026 Background	5,400	5,400	11,500	11,500	12,400	8,900
2009 with Construction	3,200	3,300	6,800	7,600	8,000	5,100
2011 with Operation	3,400	3,400	7,300	7,600	8,100	5,500
2014 with Construction	3,800	3,900	8,300	9,000	9,600	6,200
2016 with Operation	4,100	4,100	8,800	9,100	9,700	6,600
2026 with Operation	5,400	5,500	11,700	11,900	12,800	8,900

The link capacities for these roads are as follows:

- two lanes: < 7,500 vehicles/day;
- two lanes with overtaking lanes: < 15,000 vehicles/day;
- four lanes: > 15,000 vehicles/day.

Based upon these capacities and the volumes shown in Table 5.1, the required mid-block configuration for these links is detailed in Table 5.2.

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Table 5.2

Required Mid-Block Configuration

Scenario	Gladstone – Mt Larcom Rd		Hanson Road			Dawson Highway
	Bruce Hwy to Targinie Rd	Targinie Rd to Landing Rd	Landing Rd to Reid Rd	Reid Rd to Red Rover Rd	Red Rover Rd to Blain Dr	Don Young Dr to Bruce Hwy
2009 Background	2 Lanes	2 Lanes	2 Lanes	2 Lanes	2 Lanes	2 Lanes
2011 Background	2 Lanes	2 Lanes	2 Lanes	2 Lanes	2 Lanes + Overtaking Lanes	2 Lanes
2014 Background	2 Lanes	2 Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes
2016 Background	2 Lanes	2 Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes
2026 Background	2 Lanes	2 Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes
2009 with Construction	2 Lanes	2 Lanes	2 Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes
2011 with Operation	2 Lanes	2 Lanes	2 Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes
2014 with Construction	2 Lanes	2 Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes
2016 with Operation	2 Lanes	2 Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes
2026 with Operation	2 Lanes	2 Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes	2 Lanes + Overtaking Lanes

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The addition of the development traffic causes Hanson Road between Reid Road and Red Rover Road to require overtaking lanes in 2009 as opposed to 2014, without development. Hanson Road also requires overtaking lanes between Red Rover Road and Blain Drive in 2009, as opposed to 2011 without the development traffic. This equates to a bring forward of 21% for the Reid Road to Red Rover Road section and 9% for the Red Rover Road to Blain Drive section. The percentage represents the responsibility of the development as a proportion of the 2006 year value of the upgrade works.

The Roads Implementation Program identifies works on Gladstone - Mt Larcom Road in the planned road projects for Central Queensland. Planning for overtaking lanes to be built between the Calliope River and Reid Road is expected to start late 2006, with the project to be completed by November 2007. These planned upgrades would precede works required as a result of development impacts and a bring forward contribution would therefore not be required.

The Gladstone Integrated Regional Transport Plan (GIRTP) recommends duplication of Hanson Road in the medium term (by 2015 or/and a population not exceeding 52,000 persons). The threshold factors for these works are dependant on the future industrial development in the Yarwun precinct.

5.4 Traffic Volumes – Council Controlled Road Network

In addition to considering the impacts upon the State Controlled Road network, the daily two way traffic volumes on key Council Controlled road sections are summarised in Table 5.3.

Table 5.3 Daily (Two Way) Link Volumes – Council Roads

Scenario	Landing Road	Calliope River Road	Reid Road
	West of Hanson Road	East of Gladstone – Mt Larcom Road	South of Hanson Road
2006 Base	750	750	3,050
2009 Background	850	850	3,500
2011 Background	950	950	3,800
2014 Background	1,050	1,050	4,300
2016 Background	1,150	1,150	4,600
2026 Background	1,500	1,500	6,100
2009 with 1a Construction	900	1,000	4,600
2011 with 1a Operation	950	1,000	4,250
2014 with 1a Operation & 1b Construction	1,100	1,200	5,500
2016 with 1b Operation	1,200	1,200	5,150
2026 with 1b Operation	1,550	1,550	6,650

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Based upon the capacities listed in Section 5.3 and the volumes shown in Table 5.3, the required mid-block configuration for these links is detailed in Table 5.4.

Table 5.4 Required Mid-Block Configuration

Scenario	Landing Road	Calliope River Road	Reid Road
	West of Hanson Road	East of Gladstone – Mt Larcom Road	South of Hanson Road
2006 Base	Two Lanes	Two Lanes	Two Lanes
2009 Background	Two Lanes	Two Lanes	Two Lanes
2011 Background	Two Lanes	Two Lanes	Two Lanes
2014 Background	Two Lanes	Two Lanes	Two Lanes
2016 Background	Two Lanes	Two Lanes	Two Lanes
2026 Background	Two Lanes	Two Lanes	Two Lanes
2009 with 1a Construction	Two Lanes	Two Lanes	Two Lanes
2011 with 1a Operation	Two Lanes	Two Lanes	Two Lanes
2014 with 1a Operation & 1b Construction	Two Lanes	Two Lanes	Two Lanes
2016 with 1b Operation	Two Lanes	Two Lanes	Two Lanes
2026 with 1b Operation	Two Lanes	Two Lanes	Two Lanes

It can be seen from Table 5.4 that no upgrades are required for any of the key Council Controlled Roads due to the addition of traffic generated by this development.

The traffic volumes for Calliope River Road have been investigated further, since this route passes through the town of Yarwun. The traffic volumes are displayed in Table 5.5.

Table 5.5 Calliope River Road Daily Two Way Traffic Volumes

Year	Refinery Stage	Background Traffic	Development Traffic		
			Light Vehicles	Heavy Vehicles	Total Vehicles
2009	Construction 1a	850	90	22	112
2011	Operation 1a	950	40	2	42
2014	Operation 1a & Construction 1b	1,050	102	24	126
2016	Operation 1b	1,150	46	4	50
2026	Operation 1b	1,500	46	4	50

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As shown in this table, the maximum number of vehicles per day using Calliope River Road to access the refinery will be 124 vehicles; of this 19% (24 vehicles) will be heavy. This volume is expected in peak of Stage 1b construction. The other peak in heavy vehicle volumes is associated with the construction period of Stage 1a. Both construction stages are expected to last for a period of two and a half years.

One method of lessening the impact of these additional heavy vehicles upon the residents of Yarwun, would be to ensure that they only pass through the town during the day time. If heavy vehicle movements are required between dusk and dawn, it is suggested that these vehicles use the Bruce Highway and Gladstone – Mt Larcom Road as a mean of accessing the refinery.

6.0 INTERSECTION ANALYSIS

In order to assess the impact of the development on the road network, the following scenarios were analysed using the aaSIDRA programme:

- Scenario 1: 2006 Existing Traffic Volumes;
- Scenario 2: 2009 Background Traffic Volumes;
- Scenario 3: 2009 Background + Stage 1a Construction Traffic Volumes;
- Scenario 4: 2011 Background Traffic Volumes;
- Scenario 5: 2011 Background + Stage 1a Operation Traffic Volumes;
- Scenario 6: 2014 Background Traffic Volumes;
- Scenario 7: 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes;
- Scenario 8: 2016 Background Traffic Volumes;
- Scenario 9: 2016 Background + Stage 1b Operation Traffic Volumes;
- Scenario 10: 2026 Background Traffic Volumes; and
- Scenario 11: 2026 Background + Stage 1b Operation Traffic Volumes.

Note that Scenario 1 was assessed to identify any existing network deficiencies. This scenario is therefore only considered for the analysis of the existing intersection layouts.

A degree of saturation (DOS) of less than 1.0 indicates the intersection is operating within theoretical capacity; however, the maximum DOS typically desired for unsignalised, roundabout and signalised intersection forms is 0.80, 0.85 and 0.90, respectively. A DOS exceeding these values indicates that the intersection is nearing its operational capacity and identifies potential constraints that may impact traffic operations.

Intersection layouts and detailed aaSIDRA output tables for each intersection are included at Appendix B.

6.1 Bruce Highway/Gladstone – Mt Larcom Road

The Bruce Highway/Gladstone – Mt Larcom Road intersection operates as an unsignalised T-junction with a 50m channelised right turn lane and a 140m deceleration lane into Gladstone – Mt Larcom Road from the Bruce Highway. Gladstone – Mt Larcom Road has a give way controlled single lane that allows both right and left turning movements. The aaSIDRA outputs are detailed in Table 6.1.

Table 6.1 *Bruce Highway/Gladstone – Mt Larcom Road
Intersection Performance Measures – Existing Layout*

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.20	6.5	8	0.17	5.4	5
2009 Background	0.25	6.7	10	0.23	5.9	8
2009 with 1a Construction	0.26	7.0	11	0.28	6.3	10
2011 Background	0.27	6.9	12	0.26	6.0	9
2011 with 1a Operations	0.30	7.2	13	0.28	6.2	10
2014 Background	0.33	7.3	16	0.30	6.3	12
2014 with 1a Operations & 1b Construction	0.38	7.7	18	0.35	6.8	16
2016 Background	0.38	7.6	18	0.33	6.5	15
2016 with 1b Operations	0.38	7.8	20	0.35	6.7	16
2026 Background	0.60	9.7	38	0.53	8.0	30
2026 with 1b Operations	0.67	10.1	42	0.57	8.3	32

This intersection operates adequately for all scenarios.

6.2 Hanson Road/Reid Road

The intersection of Hanson Road and Reid Road is currently a T-junction with give way control on Reid Road. Reid Road has one depart lane and two approach lanes, with the left lane being a 30m slip lane. Hanson Road from the west has a single through lane and a channelised 120 right turn lane. From the east, Hanson Road has a through lane and a 100m left turn slip lane. Hanson Road has a single depart lane to the west and an acceleration lane for traffic turning right out of Reid Road to the East. The intersection was analysed in aaSIDRA and the outputs are detailed in Table 6.2.

Table 6.2 *Hanson Road/Reid Road – 1 Hour Peak
Intersection Performance Measures – Existing Layout*

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.28	2.1	6	0.19	2.4	5
2009 Background	0.40	4.0	19	0.29	3.5	12
2009 with 1a Construction	≥ 1	40.0	214	≥ 1	780	2620
2011 Background	0.50	4.5	23	0.32	3.6	13
2011 with 1a Operations	0.82	9.8	48	0.67	7.7	37
2014 Background	0.71	6.3	34	0.38	3.8	16
2014 with 1b Construction	≥ 1	71.3	462	≥ 1	876	2667
2016 Background	0.88	9.2	50	0.43	3.9	18
2016 with 1b Operations	≥ 1	24.3	139	0.98	19.9	113
2026 Background	≥ 1	18.1	80	0.79	7.0	38
2026 with 1b Operations	≥ 1	28.9	160	≥ 1	112	565

This intersection would exceed the accepted Degree of Saturation value in the 2016 AM Peak without development, however with the addition of the construction traffic, the intersection fails in 2009.

Following this, the traffic volumes were applied to a single lane roundabout form with a single approach and depart lane in each direction. The analysis results are displayed in Table 6.3.

Hanson Road/Reid Road – 1 Hour Peak

Table 6.3 Intersection Performance Measures –Single Lane Roundabout

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.35	5.3	24	0.23	5.6	8
2009 Background	0.41	5.6	29	0.28	5.9	10
2009 with 1a Construction	0.76	7.9	88	0.53	8.7	43
2011 Background	0.44	5.6	33	0.31	5.8	11
2011 with 1a Operations	0.51	6.6	40	0.36	6.6	15
2014 Background	0.49	5.6	38	0.34	5.8	12
2014 with 1b Construction	0.79	8.0	98	0.57	8.2	39
2016 Background	0.52	5.5	42	0.36	5.7	13
2016 with 1b Operations	0.60	6.7	54	0.43	6.5	18
2026 Background	0.66	5.6	73	0.47	5.9	41
2026 with 1b Operations	0.75	6.9	91	0.56	6.3	23

The outcome of this analysis shows that the intersection operates within the accepted limits for the intersection performance measures for all scenarios in this form when operations are considered over a one hour peak period.

To determine whether the roundabout would be subject to peak period influences due to shift changes during construction periods, a 30 minute analysis was undertaken. This maintained the Reid Road volumes at the full hour level, but halved the through traffic volumes on Hanson Road. When the 2009 with 1a Construction traffic scenario is analysed in this form with a 30 minute peak hour however, the DOS for both the AM and PM Peaks are greater than 1. Thus this intersection form was considered to be inappropriate. This is shown in Table 6.4.

Hanson Road/Reid Road – 30 Minute Peak

Table 6.4 Intersection Performance Measures –Single Lane Roundabout

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2009 with 1a Construction	≥ 1	119	1307	≥ 1	40	276

To address this deficiency, a single lane roundabout with a continuous through lane for traffic travelling east along Hanson Road (so through traffic can bypass the intersection) was considered. The roundabout has single depart lanes in all three directions and Hanson Road, from the east, and Reid Road, from the south, both have two approach lanes, of which the left is a short lane. The results of this analysis are displayed in Table 6.5. Analysis was only conducted for the 2009 with Stage 1a Construction and 2014 with Stage 1a Operation and 1b Construction scenarios, since these were considered the most critical at this intersection.

Hanson Road/Reid Road– 30 Minute Peak

Table 6.5 Intersection Performance Measures – Roundabout with Bypass Lanes

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2009 with 1a Construction	0.76	12.7	92	0.71	15.8	68
2014 with 1a Operation & 1b Construction	0.66	12.3	61	0.66	14.9	56

In this form the intersection operates within accepted limits for both AM and PM 30 minute peaks in both scenarios.

The Intersection of Hanson Road and Reid Road has also been proposed as one option for accessing the Wiggins Island Coal Terminal, thus this intersection has also been analysed in the form of a roundabout with two circulating lanes with a 30 minute peak. Again this intersection was analysed for the 2009 with 1a Construction and 2014 with 1b Construction scenarios. The results of this analysis are shown in Table 6.6.

Hanson Road/Reid Road– 30 Minute Peak

Table 6.6 Intersection Performance Measures – Two Lane Roundabout

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2009 with 1a Construction	0.75	12.3	90	0.71	16.6	69
2014 with 1a Operation & 1b Construction	0.70	12.0	61	0.65	15.1	53

This intersection operates adequately for both of these scenarios for both peak periods.

6.3 Dawson Highway/Blain Drive/Herbertson Street

The intersection of the Dawson Highway, Blain Drive and Herbertson Street is a roundabout with two circulating lanes. The Dawson Highway has two approach and depart lanes in each direction, north and south of the roundabout. Blain Drive, to the west, has two depart lanes and two approach lanes, with the left lane being 50 metres in length. Herbertson Street has one approach and one depart lane. The aaSIDRA outputs for this intersection are displayed in Table 6.7.

Table 6.7 *Dawson Highway/Blain Drive/Herbertson Street
Intersection Performance Measures – Existing Layout*

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.34	5.0	18	0.51	7.1	31
2009 Background	0.37	5.1	20	0.58	7.7	40
2009 with 1a Construction	0.50	6.0	31	0.74	11.7	72
2011 Background	0.39	5.2	22	0.63	8.2	48
2011 with 1a Operations	0.42	5.5	23	0.65	8.7	53
2014 Background	0.43	5.3	25	0.71	9.3	62
2014 with 1a Operation & 1b Construction	0.52	6.0	33	0.89	19.6	135
2016 Background	0.46	5.4	27	0.77	10.5	76
2016 with 1b Operations	0.50	5.7	29	0.81	12.3	91
2026 Background	0.58	5.8	40	>1	146	1170
2026 with 1b Operations	0.61	6.2	43	>1	213	1735

With development traffic volumes, this intersection exceeds the accepted limits for intersection performance in the 2014 PM Peak traffic scenario. The intersection is expected to operate acceptably until 2026 without the additional traffic demand from the proposed development.

Subsequently, the intersection was analysed in a signalised form. The outputs for this analysis are recorded in Table 6.8.

Table 6.8 *Dawson Highway/Blain Drive/Herbertson Street Intersection Performance Measures – Signalised*

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2014 with 1a Operations and 1b Construction	0.52	24.7	134	0.88	45.1	258
2026 Background	0.65	26.6	185	1.0	79.0	509
2026 with 1b Operations	0.65	27.0	185	>1.0	94.6	563

The signalised layout tested is shown in Table 6.20. Using this layout and phasing arrangement, the intersection operates adequately until around 2026, with or without the development. The provision of additional capacity at the intersection would require additional through lanes on the Dawson Highway, resulting in a six lane form on Dawson Highway.

It is questionable whether this would be the preferred intent for the Dawson Highway in this location. We are aware of proposals to increase the capacity and connectivity in the road network to the west (eg Red Rover Road etc) and consider it likely that improvements in those areas would be more appropriate than six laning the Dawson Highway. In this event, the analysis herein of a four lane signalised intersection is considered appropriate.

6.4 Hanson Road/Blain Drive/Alf O'Rourke Drive

The Hanson Road/Blain Drive/Alf O'Rourke Drive intersection is in the form of a roundabout with a single circulating lane and a single approach and depart lane in each of the four directions. This intersection form was analysed using aaSIDRA and the outputs are displayed in Table 6.9.

Table 6.9 *Hanson Road/Blain Drive/Alf O'Rourke Drive
Intersection Performance Measures – Existing Layout*

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.48	5.0	33	0.34	6.7	22
2009 Background	0.54	5.1	39	0.37	6.9	25
2009 with 1a Construction	0.86	9.4	154	0.62	9.2	59
2011 Background	0.64	7.4	58	0.39	7.1	27
2011 with 1a Operations	0.65	6.1	63	0.44	7.3	32
2014 Background	0.64	5.8	59	0.43	7.3	30
2014 with 1a Operation & 1b Construction	0.93	12.7	223	0.64	9.9	63
2016 Background	0.67	6.0	67	0.45	7.4	33
2016 with 1b Operations	0.77	7.3	101	0.51	7.9	40
2026 Background	0.89	10.3	181	0.63	9.5	62
2026 with 1b Operations	>1	31.6	551	0.69	10.9	79

Without the development traffic, this intersection fails in 2026; however with the addition of construction traffic, the intersection in this form exceeds capacity in 2009 and 2014. It should be noted that the intersection operates within limits in 2011 and 2016 with the operational traffic included.

The intersection was re-analysed for the scenarios that failed with an additional slip lane for traffic turning left from Blain Drive into Hanson Road. The layout of the roundabout itself remained unchanged. The results of this analysis are detailed in Table 6.10. The 2006 Existing Traffic scenario was not re-analysed.

Hanson Road/Blain Drive/Alf O'Rourke Drive

Table 6.10 Intersection Performance Measures – Roundabout with Slip Lane

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2009 with 1a Construction	0.84	8.4	134	0.62	9.2	59
2014 with 1a Operation & 1b Construction	0.91	11.0	195	0.64	9.9	63
2026 Background	0.87	9.0	159	0.63	9.5	62
2026 with 1b Operations	0.99	21.6	414	0.69	10.9	79

The intersection operates within limits for the 2009 with 1a Construction scenario, however exceeds accepted limits for the remaining scenarios.

A two lane roundabout with two approach lanes for each leg except for Alf O'Rourke Drive was analysed for 2014 with 1a Construction scenario and the two 2026 scenarios. The outcomes of this analysis are shown in Table 6.11.

Hanson Road/Blain Drive/Alf O'Rourke Drive

Table 6.11 Intersection Performance Measures – Two Lane Roundabout

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2014 with 1a Operation & 1b Construction	0.67	6.3	61	0.43	7.9	21
2026 Background	0.61	5.8	50	0.42	7.4	21
2026 with 1b Operations	0.70	6.6	73	0.44	7.7	23

The intersection operates within accepted limits for all scenarios analysed as a two lane roundabout.

6.5 Hanson Road/Red Rover Road

Hanson Road and Red Rover Road intersect at a single lane roundabout with a single approach lane to the south and west and single depart lanes on all three legs. There is an additional 50 metre left turn lane on the eastern leg of Hanson Road. The aaSIDRA outputs for this intersection are detailed in Table 6.12.

Hanson Road/Red Rover Road

Table 6.12 *Intersection Performance Measures – Existing Layout*

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.33	3.9	20	0.30	4.9	19
2009 Background	0.38	4.0	24	0.35	5.0	24
2009 with 1a Construction	0.60	4.5	52	0.63	4.9	61
2011 Background	0.41	4.1	27	0.39	5.1	27
2011 with 1a Operations	0.46	4.1	32	0.44	4.9	32
2014 Background	0.47	4.3	33	0.44	5.2	32
2014 with 1a Operation & 1b Construction	0.66	5.0	64	0.69	5.2	70
2016 Background	0.50	4.4	37	0.47	5.3	36
2016 with 1b Operations	0.55	4.5	44	0.54	5.1	44
2026 Background	0.67	6.5	69	0.66	5.8	63
2026 with 1b Operations	0.72	8.9	84	0.77	6.0	83

The intersection is within prescribed limits and thus operates effectively for all scenarios.

6.6 Dawson Highway/Don Young Drive

The intersection of the Dawson Highway and Don Young Drive is a T-junction with single approach and depart lanes with give way control on Don Young Drive. The Dawson Highway has two approach lanes and one depart lane on each leg. To the south, a 50m left turn lane is provided and to the north there is a 60m channelised right turn lane. The aaSIDRA outputs are outlined in Table 6.13. Development impacts here are limited to works related to the RSF construction in 2008 - 2009. This intersection has therefore only been assessed for 2006 base and 2009 future year operation.

Dawson Highway/Don Young Drive

Table 6.13

Intersection Performance Measures – Existing Layout

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.19	1.6	1	0.21	2.6	7
2009 Background	0.22	1.6	2	0.27	2.9	10
2009 with 1a Construction	0.22	1.6	2	0.29	2.9	10

Based upon the aaSIDRA outputs, this intersection operates with sufficient capacity to cater for all traffic scenarios assessed.

6.7 Gladstone – Mt Larcom Road/Hanson Road/Landing Road

At the time analysis of this intersection was undertaken, there was a single approach and depart lane in each direction. Gladstone – Mt Larcom Road was under give way control and there was a 50m left turn slip lane into Landing Road from Gladstone – Mt Larcom Road.

This intersection has since been upgraded to include a protected short left turn lane on Hanson Road and a protected short lane right turn lane on Landing Road. These measures would only serve to improve the operation of the intersection, thus the aaSIDRA analysis has not been repeated.

The intersection performance measures for this intersection are detailed in Table 6.14 below. These figures are more conservative than would actually be seen following the upgrade detailed above.

**Gladstone – Mt Larcom Road/Hanson Road/Landing Road
Intersection Performance Measures – Existing Layout**

Table 6.14

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.17	7.9	7	0.12	7.6	5
2009 Background	0.20	8.1	8	0.15	7.6	6
2009 with 1a Construction	0.29	8.6	13	0.18	8.1	7
2011 Background	0.23	8.1	9	0.16	7.7	6
2011 with 1a Operations	0.25	8.3	10	0.18	7.9	7
2014 Background	0.26	8.3	11	0.18	7.8	7
2014 with 1a Operation & 1b Construction	0.34	8.8	16	0.23	8.2	10
2016 Background	0.29	8.4	12	0.20	7.9	8
2016 with 1b Operations	0.31	8.5	14	0.23	8.0	9
2026 Background	0.42	9.2	24	0.30	8.2	13
2026 with 1b Operations	0.45	9.5	27	0.33	8.4	15

This intersection operates well within prescribed limits for a give way controlled intersection and operates well for all scenarios.

6.8 Gladstone – Mt Larcom Road/Targinie – Calliope River Road

At the intersection of Gladstone – Mt Larcom Road and Targinie – Calliope River Road, Targinie – Calliope River Road has a single approach and depart lane under give way control both north and south of Gladstone – Mt Larcom Road. At the intersection, Gladstone – Mt Larcom Road has two approach and depart lanes in each direction. The left depart lanes in each direction are short, effectively mirroring the short left turn lanes on the approach side and providing a short acceleration lane provision for vehicles turning left into Gladstone – Mt Larcom Road. The aaSIDRA outputs for this intersection are outlined below in Table 6.15.

**Gladstone – Mt Larcom Road/Targinie – Calliope River Road
Intersection Performance Measures – Existing Layout**

Table 6.15

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.13	4.7	5	0.07	2.8	1
2009 Background	0.17	4.1	6	0.08	2.9	1
2009 with 1a Construction	0.31	6.7	13	0.11	4.4	7
2011 Background	0.19	4.3	7	0.09	2.9	1
2011 with 1a Operations	0.23	5.5	9	0.11	4.0	6
2014 Background	0.23	4.6	9	0.10	2.9	1
2014 with 1a Operation & 1b Construction	0.40	7.4	18	0.14	4.6	8
2016 Background	0.26	5.0	11	0.11	3.1	2
2016 with 1b Operations	0.32	7.2	13	0.14	4.3	8
2026 Background	0.45	6.6	21	0.14	3.2	3
2026 with 1b Operations	0.53	9.5	26	0.18	4.7	12

This intersection operates effectively for all scenarios.

6.9 Bruce Highway/Targinie – Calliope River Road

At the Bruce Highway/Calliope River Road intersection, Calliope River Road has a single approach lane under give way control that meets the Bruce Highway at a T-junction. The Bruce Highway from the south has two approach lanes with a 140m short right lane and a single departure lane. On the northern side, the Bruce Highway has a single through lane and a 50m left slip lane into Calliope River Road. There are two departure lanes to the north, one of which is a 140m short downstream lane that requires the traffic to merge into the right lane. The aaSIDRA outputs for this intersection are detailed in Table 6.16.

Table 6.16 *Bruce Highway/Targinie – Calliope River Road
Intersection Performance Measures – Existing Layout*

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.04	3.1	2	0.06	2.1	2
2009 Background	0.05	3.1	2	0.07	2.1	2
2009 with 1a Construction	0.06	3.9	3	0.07	2.9	2
2011 Background	0.06	3.2	3	0.07	2.1	2
2011 with 1a Operations	0.06	3.5	3	0.07	2.3	2
2014 Background	0.07	3.2	3	0.08	2.1	2
2014 with 1a Operations & 1b Construction	0.07	3.9	3	0.08	2.8	3
2016 Background	0.07	3.2	3	0.09	2.2	3
2016 with 1b Operations	0.08	3.5	3	0.09	2.4	3
2026 Background	0.10	3.4	4	0.12	2.3	4
2026 with 1b Operations	0.10	3.6	5	0.12	2.5	4

The intersection performance measures for this intersection are within accepted limits, thus this intersection continues to operate well with the addition of the development traffic.

6.10 Dawson Highway/Philip Street

The Dawson Highway/Philip Street intersection is a roundabout with two circulating lanes and two approach and depart lanes on each leg. The western leg of the roundabout provides access to a shopping centre. The intersection performance measures output by aaSIDRA are listed in Table 6.17.

Dawson Highway/Philip Street

Table 6.17 **Intersection Performance Measures – Existing Layout**

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2006 Existing	0.58	7.7	38	0.69	9.6	55
2009 Background	0.64	8.2	49	≥ 1	11.2	81

The GIRTP Road Study recognises a need to upgrade the Dawson Highway south-west of Phillip Street in the near future. This GIRTP also recognises that sections of the Dawson Highway (in proximity to Philip Street) may require minor upgrading in the event of development in the Gladstone State Development Area. Based on the aaSIDRA analysis, the Dawson Highway/Phillip Street intersection exceeds the accepted intersection performance limits in the 2009 Background scenario. Therefore the intersection would require upgrading before 2009 regardless of whether the development was to occur or not.

6.11 Bruce Highway/RSF Site Access

Access to the RSF is proposed via the Bruce Highway west of the intersection with Calliope River Road. Since the RSF construction is expected to occur for a period two years, starting in 2008, the analysis of this intersection was only undertaken for the 2009 with 1a Construction Traffic scenario.

Similar to the analysis of Hanson Road/Reid Road intersection, the RSF Access/Bruce Highway intersection was analysed for both a one hour peak and a 30 minute peak to determine if the intersection would have sufficient capacity to cater for concentrated traffic in the peak period due to shift changes. This 30 minute analysis maintained the RSF staff volumes at the full hour level, but halved the through traffic volumes on the Bruce Highway. The analysis results are shown in Table 6.18.

Bruce Highway/RSF Site Access

Table 6.18 Intersection Performance Measures – Proposed Layout

Scenario	AM Peak			PM Peak		
	Degree of Saturation	Average Delay (s)	Queue Length (m)	Degree of Saturation	Average Delay (s)	Queue Length (m)
2009 with 1a Construction – One Hour Peak	0.04	7.9	2	0.04	8.1	1
2009 with 1a Construction – 30 Minute Peak	0.07	9.6	3	0.09	9.8	3

Based on the SIDRA outputs, this intersection operates effectively with this volume of traffic for both the standard one hour peak and the 30 minute peak.

6.12 Intersection Analysis Summary

Table 6.18 summarises the impact of the proposed development on the study intersections. Table 6.19 displays the existing and proposed intersection layouts for the intersections that require upgrading.

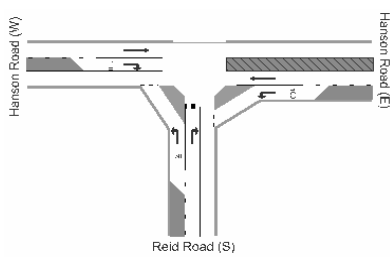
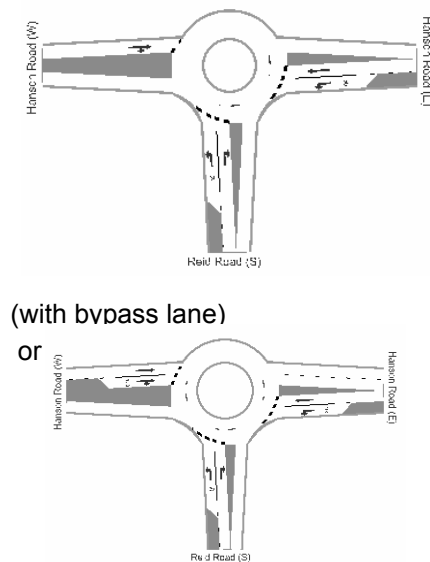
Table 6.19

Intersection Analysis Summary

Intersection	Upgrade Year		Treatment
	Background	With Development	
Bruce Highway/ Gladstone – Mt Larcom Road	-	-	-
Hanson Road/Reid Road	2015	2009	Single lane roundabout with bypass lane OR two lane roundabout
Dawson Highway/Blain Drive/ Herbertson Street	2018	2014	Signals
Hanson Road/Blain Drive/ Alf O'Rourke Drive	2024	2009	Two lane roundabout
Hanson Road/Red Rover Road	-	-	-
Dawson Highway/ Don Young Drive	2018	2018	-
Gladstone – Mt Larcom Road/ Hanson Road/Landing Road	-	-	-
Gladstone – Mt Larcom Road/ Targinie – Calliope River Road	-	-	-
Bruce Highway/ Targinie – Calliope River Road	-	-	-
Dawson Highway/Philip Street	2009	2009	-

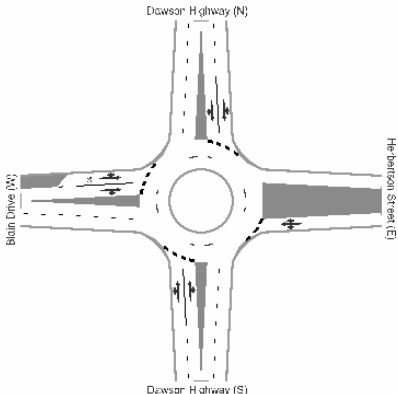
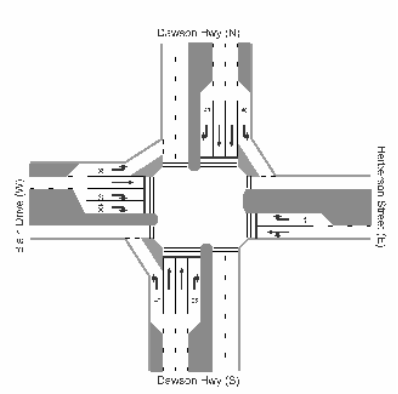
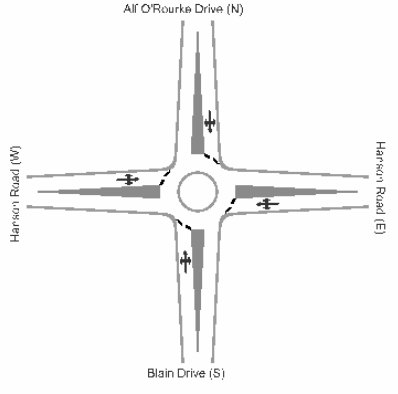
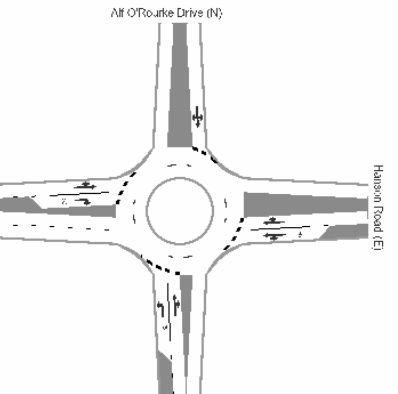
Table 6.20

Intersection Layouts – Existing and Proposed

Intersection	Existing Layout	Proposed Layout
Hanson Road/Reid Road		

Gladstone Pacific Nickel Refinery Traffic Report

Table 6.20 Cont...

<p>Dawson Highway/ Blain Drive/ Herbertson Street</p>		
<p>Hanson Road/Blain Drive/ Alf O'Rourke Drive</p>		

At the Hanson Road/Reid Road intersection, upgrades would be required to accommodate the Stage 1a Construction traffic volumes in 2009. Regardless of the GPN, DMR would have had to upgrade the intersection by 2015 due to background growth. The 2015 to 2009 bring forward responsibility is calculated as 25% of the 2006 value of the works to upgrade the intersection. It is understood that DMR had previously intended to construct overtaking lanes on Hanson Road between the Calliope River and Reid Road. The GIRTP considers the potential duplication of Hanson Road. The works proposed in this report could serve either upgrading scenario.

Similarly at the Dawson Highway/Blain Drive/Herbertson Street intersection, a bring forward contribution of 13% of the 2006 value of the works is required.

Gladstone Pacific Nickel Refinery Traffic Report

At the Hanson Road/Blain Drive/Alf O'Rourke intersection, upgrades are required for the 2009 construction traffic. Without the additional development traffic this intersection would have continued to operate in its current form until 2024. This represents a bring forward contribution requirement of 49% of the 2006 value of the works to upgrade the intersection form at this location.

The above analysis is consistent with the findings of GIRTP Road Study which identifies a potential future need to upgrade sections of the Dawson Highway in the proximity of Philip Street, Blain Drive and Hanson Road near Blain Drive.

It is expected that an appropriate action would be for GPN to enter into an infrastructure agreement with DMR to allocate responsibilities towards to particular works within the road network, including the intersection upgrades mentioned above, as well as the pavement and maintenance responsibilities discussed further in this report.

7.0 INTERSECTION FORM

The intersection turn treatments for the following intersections have been reviewed based upon guidelines outlined in Chapter 13 of the Department of Main Roads "Road Planning and Design Manual":

- Gladstone - Mt Larcom Road/Bruce Highway intersection;
- Don Young Drive/Dawson Highway intersection;
- Landing Road/Gladstone - Mt Larcom Road intersection;
- Targinie - Calliope River Road/Gladstone - Mt Larcom Road intersection; and
- Targinie - Calliope River Road/Bruce Highway intersection.

From this analysis it was found that one intersection had inadequate turn lane provisions. This intersection is discussed below.

Additionally, the required form for the RSF Access was determined based upon these warrants and is discussed in more detail below.

7.1 Gladstone – Mt Larcom Road/Targinie – Calliope River Road

This intersection is a four way intersection with Auxiliary Turn Lanes to the north and south of the intersection. After analysing the predicted background traffic movements for 2009, it was found that, for the PM Peak, a channelised left turn lane is warranted for the northern leg of the intersection. This channelising is also warranted for the PM Peak for all remaining scenarios both with and without the GNP. Thus, this upgrade is not triggered by the GNP.

7.2 RSF Access Form

The aaSIDRA analysis was undertaken with one approach and depart lane in each direction on the Bruce Highway and also for the RSF access. Based upon the aaSIDRA analysis, this intersection form is appropriate for the expected traffic volumes both on the Bruce Highway and entering and exiting the RSF.

After reviewing these volumes against DMR's turn lane warrants, it was found that due to the relatively low volumes of traffic both on the Bruce Highway and accessing the RSF, acceleration and deceleration lanes were not required. Thus no upgrades are required for the Bruce Highway for the RSF Access.

8.0 PAVEMENT IMPACT ASSESSMENT

8.1 State Controlled Road Network

Analysis has been conducted to identify the pavement impacts of the heavy vehicle movements to and from the completed development. This assessment has been conducted in accordance with DMR's RIAS guidelines.

The pavement impact assessment relies on:

- level of heavy vehicle traffic on links, both generated by the development, and also as a background level (existing and other background growth);
- existing and capacity roughness deficiency with the application of a roughness deterioration rate;
- cost to upgrade/rehabilitate/maintain (per km adopted);
- percentage bring forward of the need to rehabilitate;
- maintenance contributions.

The heavy vehicle generation, by classification, of the proposed refinery has been estimated from classification data obtained from data received by URS relating to construction and operation of the refinery. Each stage of the development was considered individually before the total heavy vehicle generation for each year from 2007 to 2026 was determined. The number and type of vehicles generated for each of the refinery development stages has been included at Appendix C.

The Average Equivalent Standard Axle (ESA) loading for each heavy vehicle along the haulage routes was based upon DMR parameters. For the Bruce Highway a value of 2.8 ESAs for each heavy vehicle was applied. For all other State Controlled Roads 3.2 ESAs for each heavy vehicle was used.

Based upon these values, an estimate of existing annual ESA loading along the haulage route was calculated as shown at Appendix C. The classification of heavy vehicles generated by the proposed development was then used to determine additional annual ESA loadings produced along the haulage routes as a result of development traffic added to the network. Due to the complexity of determining the percentage impact for each year and each scenario of the development, the scoping test was not undertaken and a detailed pavement impact assessment was completed for all years and all scenarios.

Table 8.1 shows a summary of the bring forward levels on the State Controlled Road network as a result of the proposed development. A more detailed summary is provided at Appendix C.

Table 8.1

Summary of Bring Forward Costs

Road	Section	Direction	Rehabilitation Year		Bring Forward (%)
			No Development	With Development	
Gladstone – Mt Larcom Road	Bruce Highway – Targinie Road	Southbound	2016.7	2016.7	0%
		Northbound	2016.7	2016.5	0%
	Targinie Road – Landing Road	Southbound	2016.7	2016.6	0%
		Northbound	2016.7	2016.4	0%
Hanson Road	Landing Road – Reid Road	Westbound	2016.7	2016.4	0%
		Eastbound	2016.7	2016.5	0%
	Reid Road – Red Rover Road	Westbound	2016.7	2016.5	0%
		Eastbound	2016.7	2016.6	0%
	Red Rover Road – Blain Drive	Westbound	2016.0	2015.8	0%
		Eastbound	2016.0	2015.8	0%
	East of Blain Drive	Westbound	2021.0	2020.9	0%
		Eastbound	2021.0	2021.0	0%
Dawson Highway	West of Don Young Drive	Southbound	2024.4	2024.2	0%
		Northbound	2024.4	2024.4	0%
	North of Bruce Highway	Southbound	2024.4	2024.2	0%
		Northbound	2024.4	2024.4	0%

Table 8.1 shows that for all road segments considered, the increased heavy vehicle loading due to the proposed GPN project would not result in a significant impact on the timing for pavement rehabilitation works on the State Controlled Network. As the effect on timing is less than 1 year bring forward on all segment, the proposal has no responsibility towards pavement rehabilitation works.

The obligations of the refinery towards routine maintenance of the State Controlled Road network has been calculated by assigning the relative responsibility to the refinery based on the percentage increase in ESA's on each road segment through to 2026. This has been reported as a percentage for each link and each year of the development until 2026, and can be found at Appendix C. The average of these percentages has been calculated and is reported in Table 8.2.

Table 8.2 *Average Development Impact - Maintenance*

Road	Section	Average Impact (%)
Gladstone – Mt Larcom Road	Bruce Highway – Targinie Road	2.2%
Gladstone – Mt Larcom Road	Targinie Road – Landing Road	3.0%
Hanson Road	Landing Road – Reid Road	3.8%
Hanson Road	Reid Road – Red Rover Road	1.5%
Hanson Road	Red Rover Road – Blain Drive	1.7%
Hanson Road	East of Blain Drive	0.7%
Dawson Highway	West of Don Young Drive	1.0%
Dawson Highway	North of Bruce Highway	1.0%

Due to the number of factors that influence the size of the contribution required by the refinery as a result of pavement maintenance, rehabilitation and intersection upgrades, it is recommended that GPN enter into an infrastructure agreement with DMR.

To provide guidance to the level of contribution, the maintenance assessment in Appendix C shows that the refinery would be responsible for a contribution of approximately \$160,000 for activities through to 2026.

8.2 Pipeline Impacts

The impact of the heavy vehicles used for the construction of the pipeline has been included in the assessment above and has also been assessed independently to determine the impacts of the pipeline alone. A Scoping Test was undertaken to determine whether the traffic generated by the Pipeline would be greater than 5% of the expected background traffic on Gladstone-Mt Larcom Road, the Bruce Highway and Rockhampton – Ridgeland Road for 2008 and 2009, the years of pipeline construction. The percentage change expected for these roads for these two years are summarised in Table 8.3. Detailed calculations can be found at Appendix C.

Table 8.3

Pipeline Impact – Scoping Test

Road	Section	Direction	% Impact	
			2008	2009
Gladstone –Mt Larcom Road	Landing Road – Targinie Road	Westbound (G)	3.6%	3.6%
		Eastbound (A)	0.3%	0.3%
	Targinie Road – Bruce Highway	Westbound (G)	3.6%	3.6%
		Eastbound (A)	0.3%	0.3%
Bruce Highway	Gladstone – Mt Larcom Road to Raglan Creek	Northbound (G)	1.4%	1.3%
		Southbound (A)	0.1%	0.1%
	Gavial Creek	Northbound (G)	0.9%	0.9%
		Southbound (A)	0.1%	0.1%
Rockhampton – Ridgeland Road	Bruce Highway to end	Westbound (G)	2.0%	2.0%
		Eastbound (A)	0.0%	0.0%

The traffic attributed to the pipeline construction does not have an impact greater than 5% of the existing traffic, thus no further assessment is necessary in relation to pavement impacts. It would however be appropriate that at the time of approval of the pipeline construction, investigation of the capacity and safety of locations be undertaken where concentrated turning movements will occur.

9.0 CONCLUSIONS

Hanson Road will require the addition of overtaking lanes in two sections earlier due to the additional refinery traffic. The section between Reid Road and Red Rover Road will require overtaking lanes by 2009 and the section from Red Rover Road to Blain Drive will require overtaking lanes by 2011. The Central Queensland Roads Implementation Program includes works to allow overtaking lanes in the section between the Calliope River and Reid Road before this and the development will not be responsible for bring forward costs in this section.

Three intersections require upgrading to accommodate the addition of the refinery traffic. The intersection of Dawson Highway/Blain Drive/Herbertson Street requires upgrading to signals and the intersection of Hanson Road/Blain Drive/Alf O'Rourke Drive requires a two lane roundabout. Further consideration into the form of the intersection at Hanson Road and Reid Road is required, particularly in relation to the presence of the Wiggins Island development. Recommendation is made herein for the provision of a single lane roundabout with a west to east bypass lane.

The intersection form of the intersection of Gladstone – Mt Larcom Road/Targinie-Calliope River Road requires upgrading. This occurs without the addition of the refinery traffic.

Due to the number of factors that influence the size of the contribution required by the refinery as a result of pavement maintenance, rehabilitation and intersection upgrades, it is recommended that the developer enter into an infrastructure agreement with the DMR.

The traffic attributed to the pipeline construction does not have an impact greater than 5% of the existing traffic, thus no further assessment is necessary in relation to pavement impacts. Further investigation of the capacity and safety of locations may be required where concentrated turning movements will occur prior to construction

Appendix A
Traffic Volumes

Appendix A
Traffic Volumes

2003 Traffic Count Data - Hanson Road/Blain Drive/Alf O'Rourke Drive

2003 Traffic Volumes (AM Peak)

Alf O'Rourke Drive				Blain Drive			
7%	14	L	0%				
15%	115	T	5	R			
15%	97	R					
L	T	R	R	R	3	100%	Hanson Road
317	50	55	T	T	199	15%	
5%	2%	11%	L	L	22	23%	

2003 Volumes with Growth Applied (AM Peak)
3% growth

Alf O'Rourke Drive				Blain Drive			
L	7%	14	L	0%	0%	0%	0%
15%	118	T	T	5	10	2	2
15%	100	R	R				
Hanson Road				Hanson Road			
L	327	T	R	R	3	100%	100%
5%	52	57	T	T	205	15%	15%
	2%	11%	L	L	23	23%	23%

2006 ATS Traffic Count Volumes (AM Peak)

Alf O'Rourke Drive										Blain Drive																																																	
16%					25					L					8%					13%					46%																																		
13%					311					T					12					23					13																																		
0%					10					R					R					T					L																																		
L										T										R										R										R																			
59										113										47										T										51										18%									
15%										12%										2%										L										361										4%									
Hanson										Road										Hanson										Road										Hanson																			

2006 Adopted Background Traffic Volumes (AM Peak)

[illegible]



Reid Road Background Traffic Volumes

2004 AM Traffic Count (SKM)

10 Total 10 Light (10) Heavy 10% % Heavy			
57%	(12)	9	21
		L	R
		5	12
		1	5
		(4)	(7)
		80%	58%
		L	R
		57	47
		(10)	(10)
		18%	
		Reid Road	

AM Peak Projected Volumes with ORICA Expansion (provided by SKM)

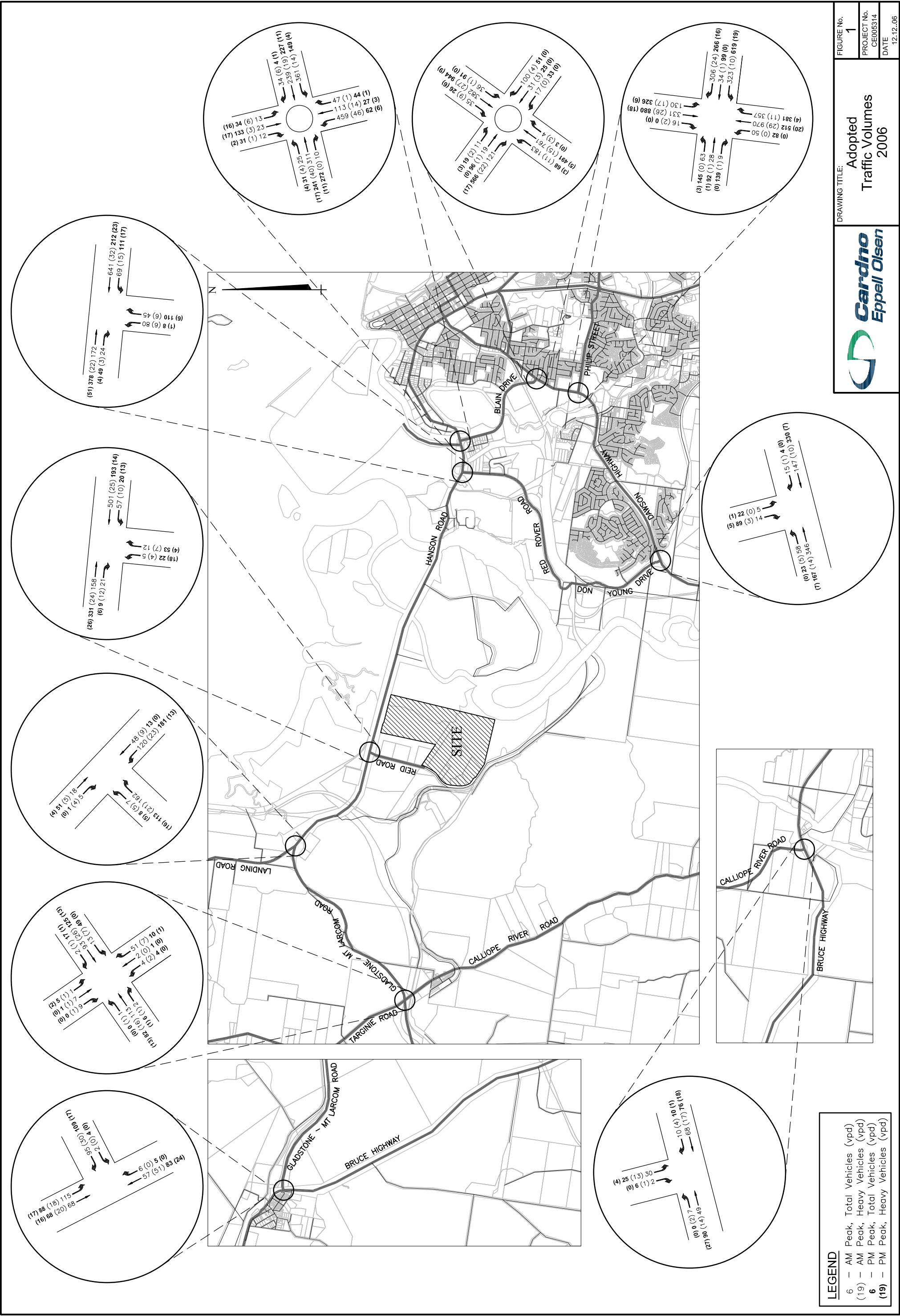
10 Total 10 Light (10) Heavy 10% % Heavy			
57%	(16)	12	28
		L	R
		10	22
		2	8
		(8)	(14)
		80%	64%
		L	R
		71	54
		(17)	(24)
		Reid Road	

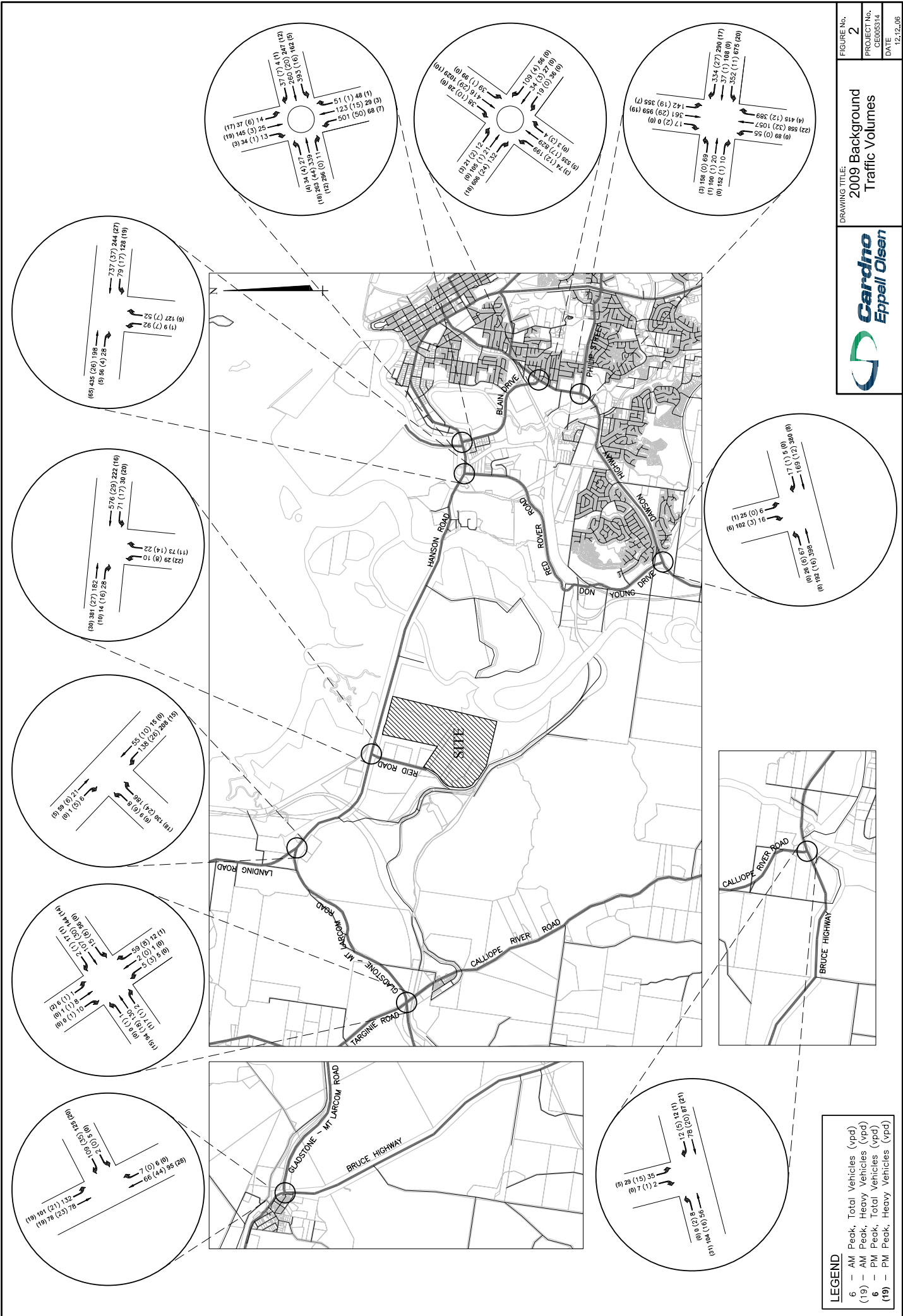
2004 PM Traffic Count (SKM)

10 Total 10 Light (10) Heavy 10% % Heavy			
67%	(6)	3	9
		L	R
		22	53
		4	49
		(18)	(4)
		82%	8%
		L	R
		20	7
		(13)	(13)
		65%	
		Reid Road	

PM Peak Projected Volumes with ORICA Expansion (provided by SKM)

10 Total 10 Light (10) Heavy 10% % Heavy			
71%	(10)	4	14
		L	R
		29	73
		7	62
		(22)	(11)
		76%	15%
		L	R
		30	10
		(20)	(67%)
		Reid Road	





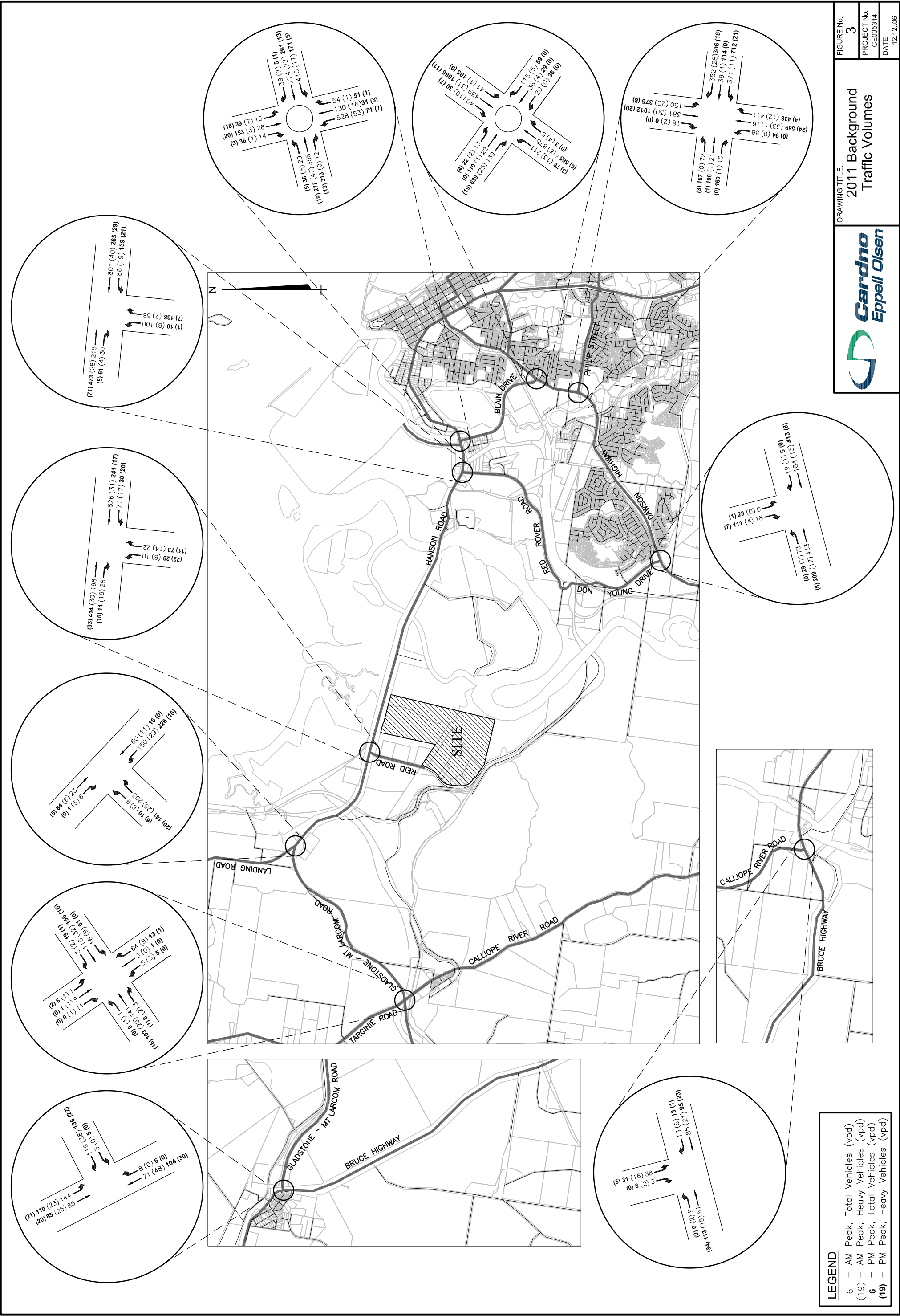


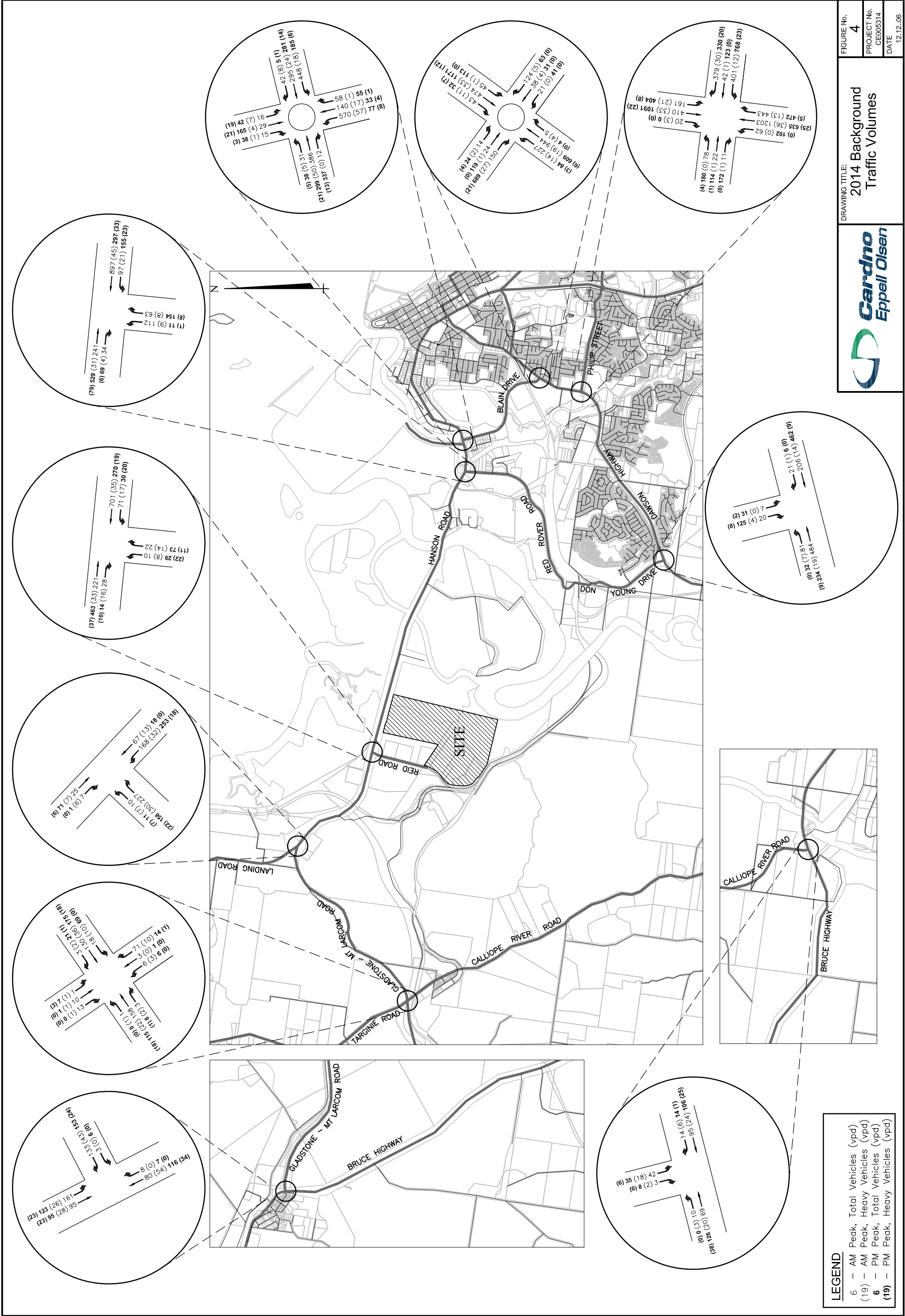
FIGURE NO. 3

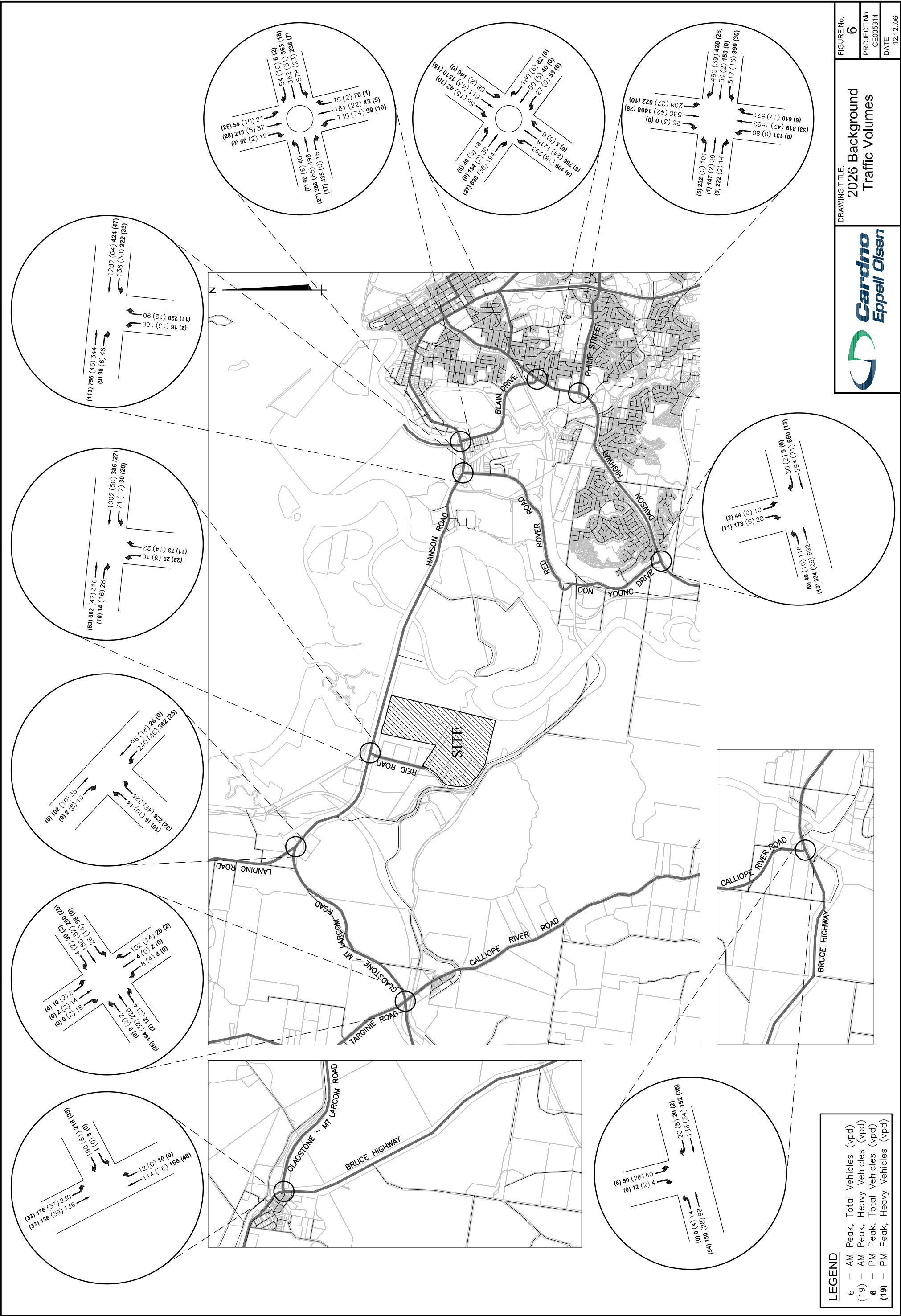
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PROJECT No. CE005314

DATE 12.12.06

- LEGEND**
- 6 - AM Peak, Total Vehicles (vpd)
 - (19) - AM Peak, Heavy Vehicles (vpd)
 - 6 - PM Peak, Total Vehicles (vpd)
 - (19) - PM Peak, Heavy Vehicles (vpd)





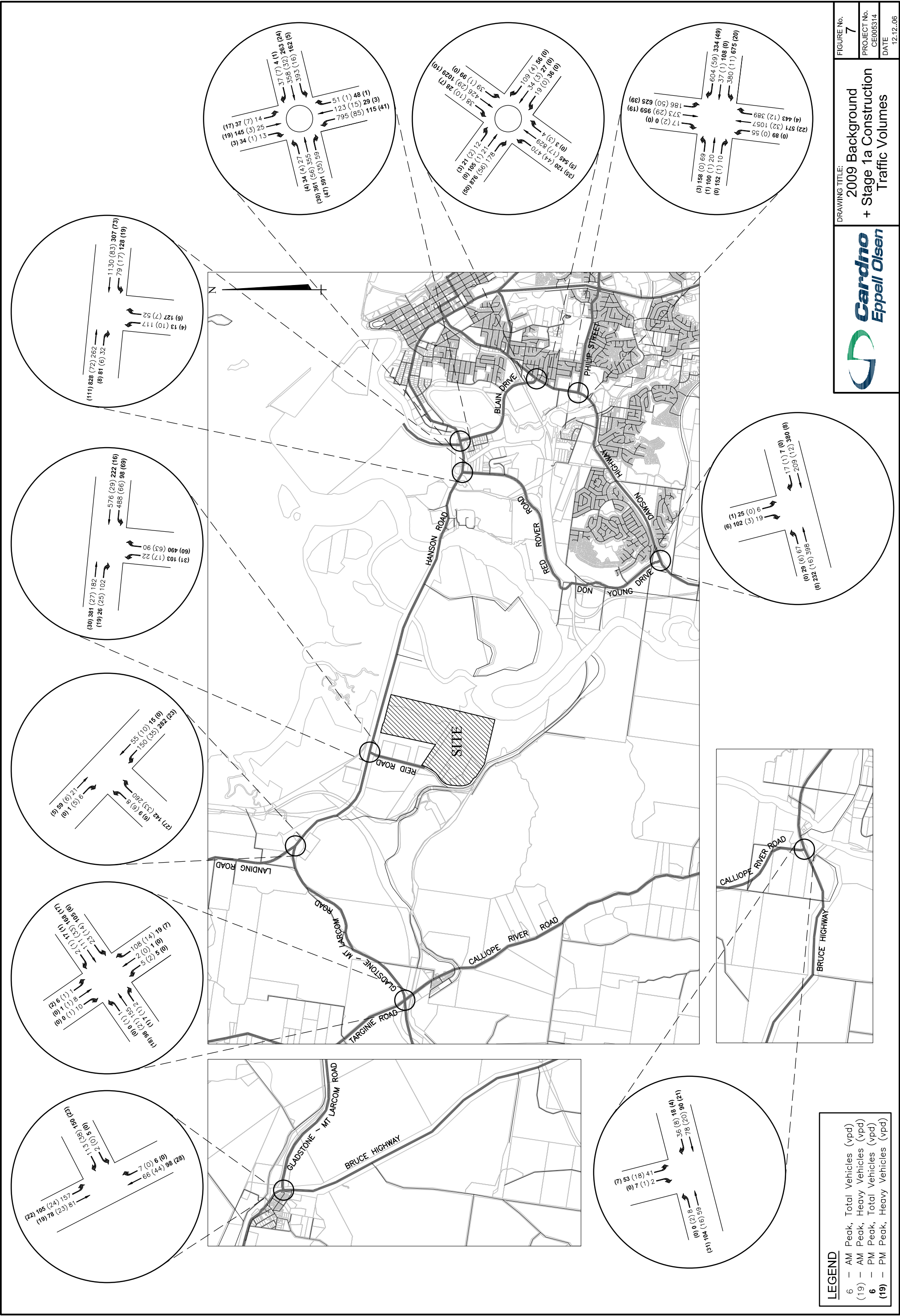
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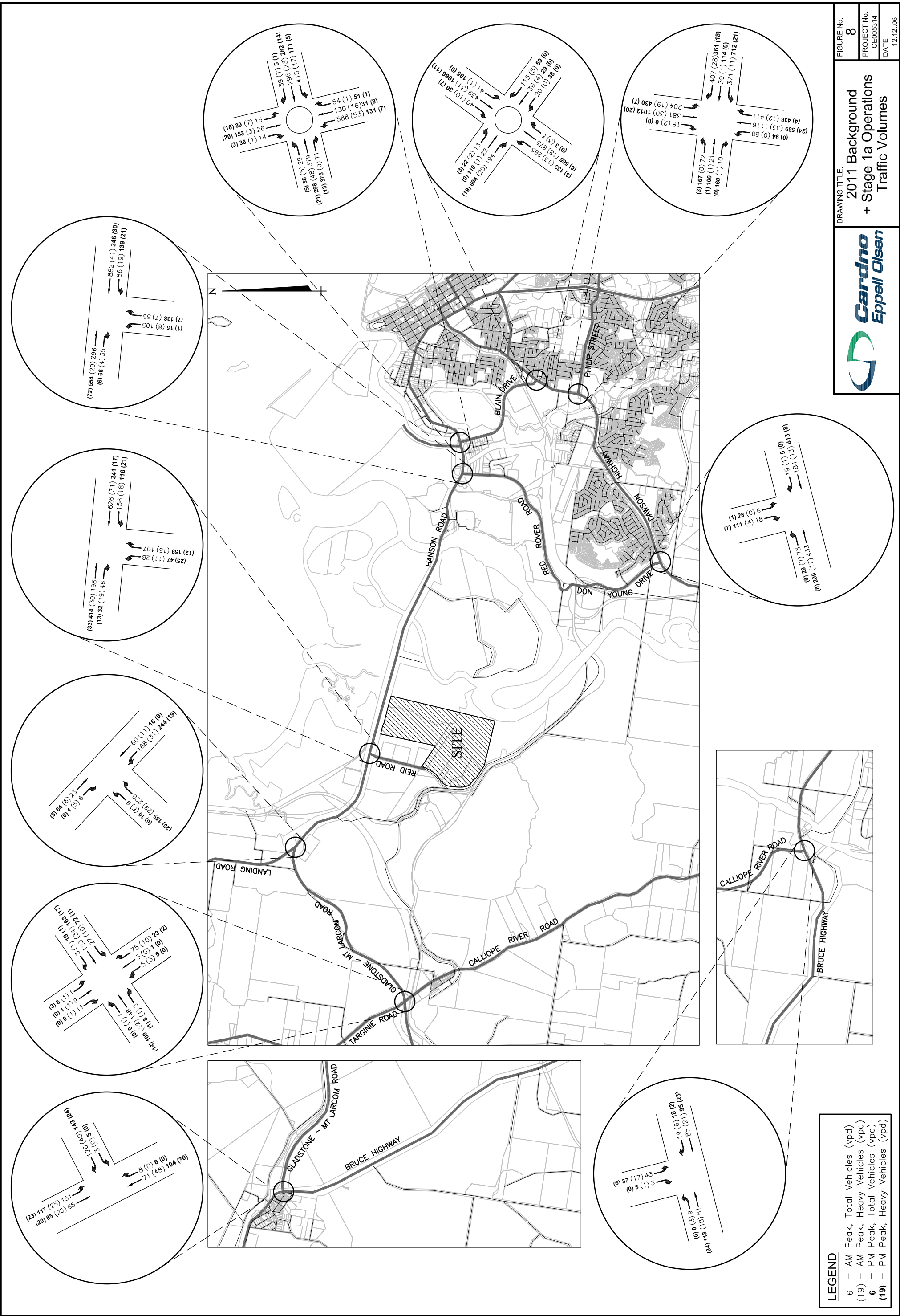
6 - AM Peak, Total Vehicles (vpd)

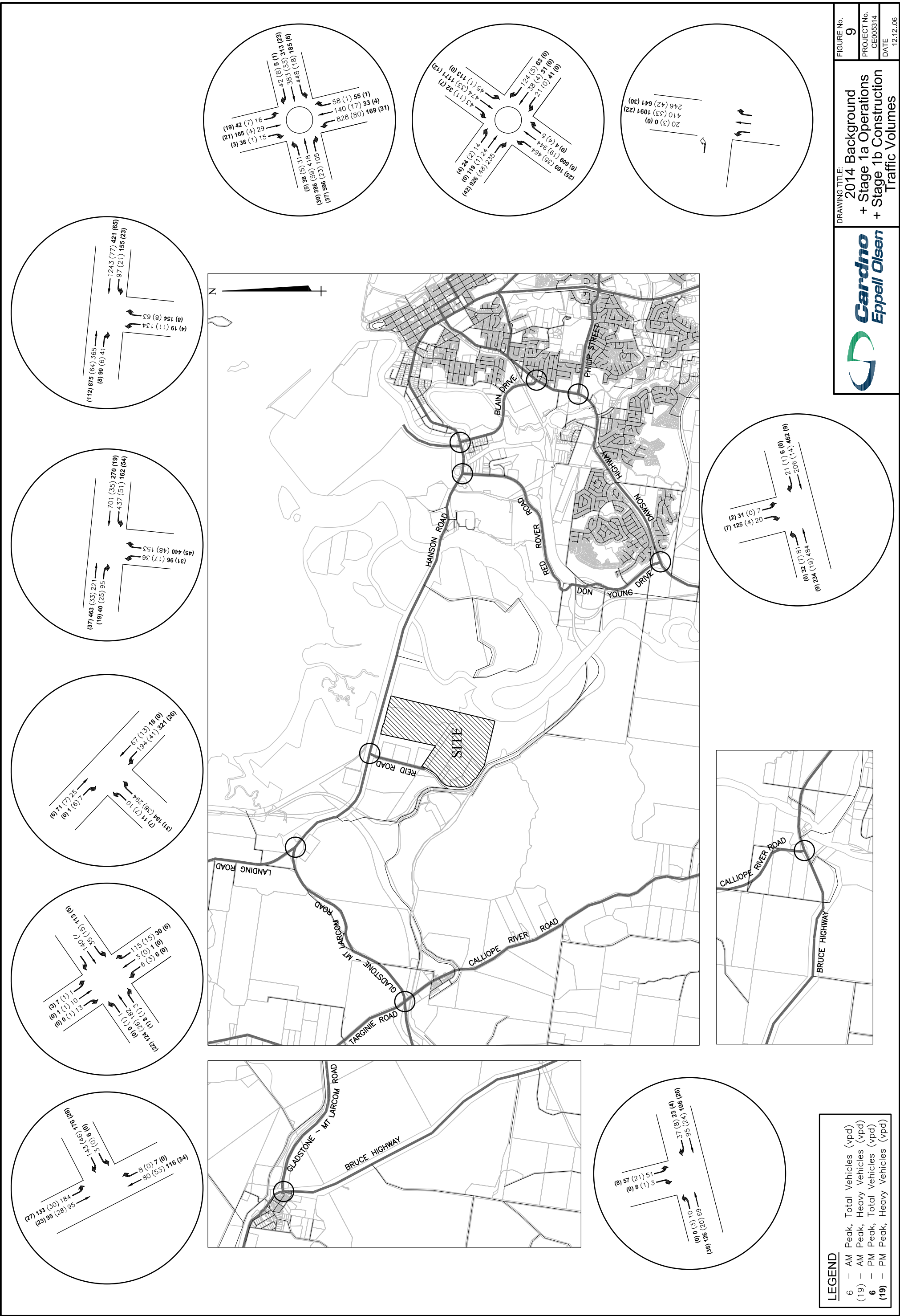
(19) - AM Peak, Heavy Vehicles (vpd)

6 - PM Peak, Total Vehicles (vpd)

(19) - PM Peak, Heavy Vehicles (vpd)







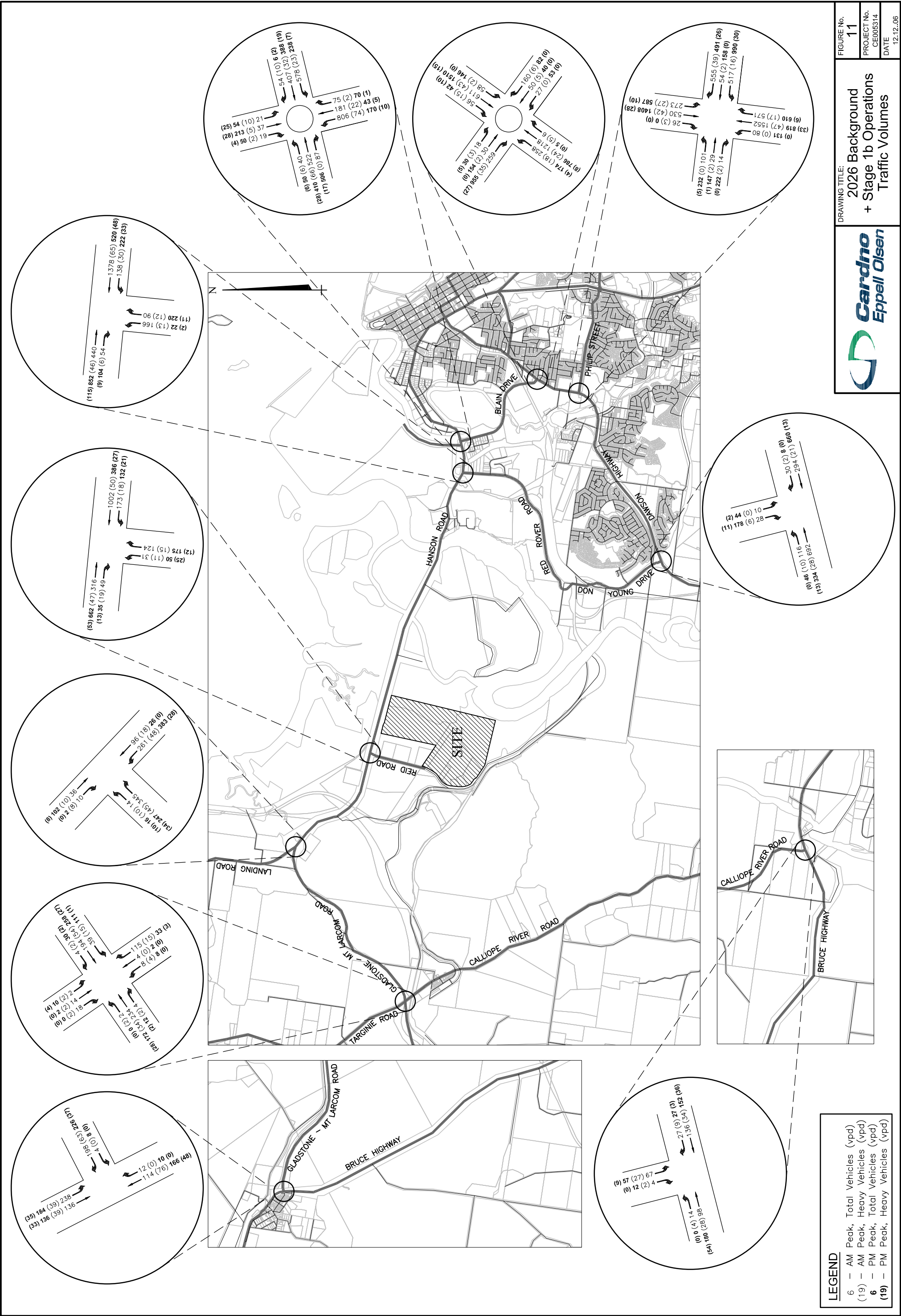


FIGURE NO.
11

DRAWING TITLE:
**2026 Background
+ Stage 1b Operations
Traffic Volumes**

PROJECT No.
CE005314

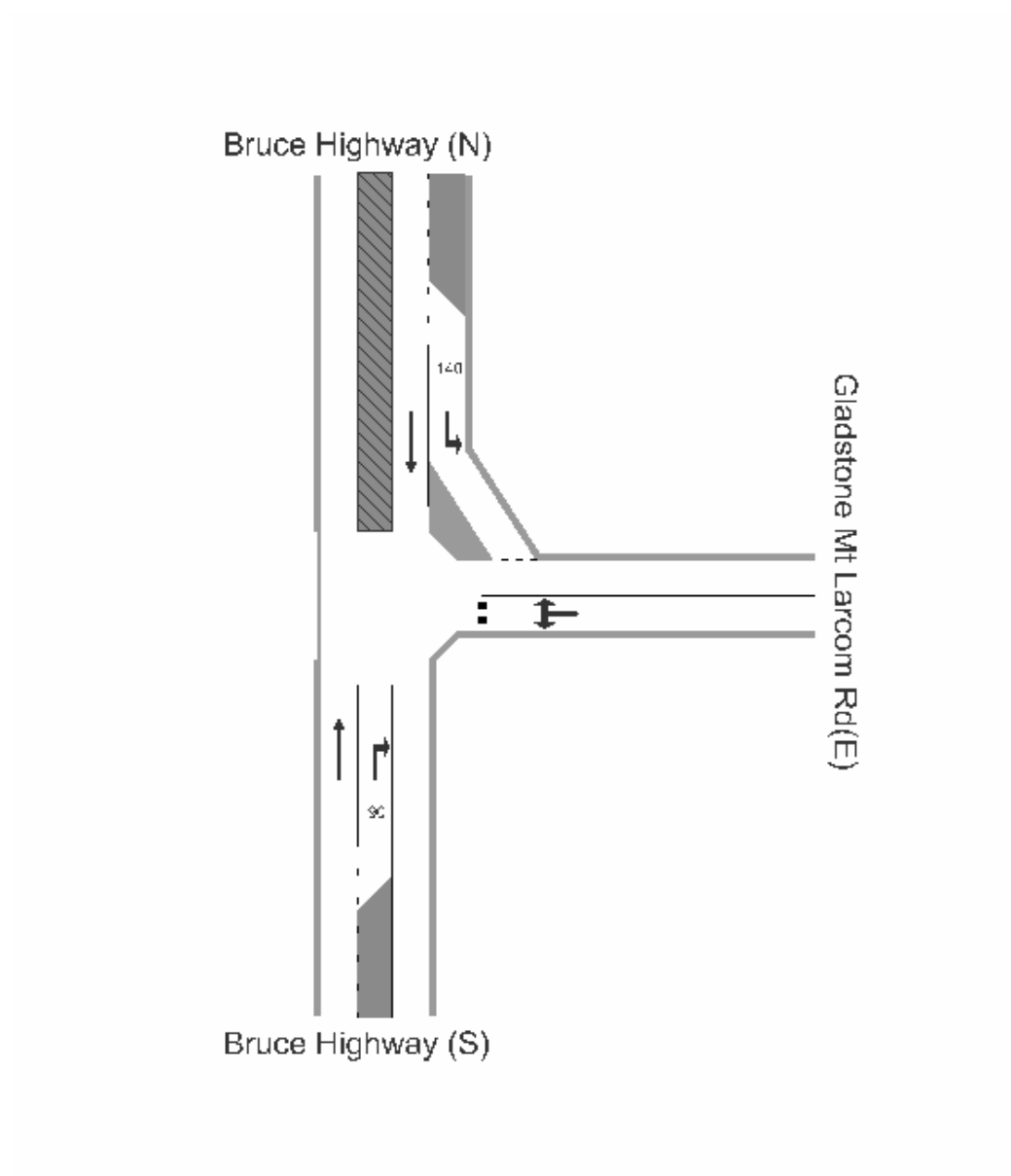
DATE
12.12.06

- LEGEND**
- 6 – AM Peak, Total Vehicles (vpd)
 - (19) – AM Peak, Heavy Vehicles (vpd)
 - 6 – PM Peak, Total Vehicles (vpd)
 - (19) – PM Peak, Heavy Vehicles (vpd)

Appendix B

aaSIDRA Outputs and Layouts

Bruce Highway/Gladstone-Mt Larcom Road



2006 Traffic Volumes

5314 Gladstone Mt Larcom Road/Bruce Highway
 2006 Existing Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Bruce Highway (S)											
1 T		57		57	67			0.044	0.0	0	
2 R			6	6	0			0.004	9.0	0	90
	0	57	6	63	60			0.044	0.9	0	
East: Gladstone Mt Larcom Rd(E)											
1 LR	2		95	97	31			0.195	12.8	8	
	2	0	95	97	31			0.195	12.8	8	
North: Bruce Highway (N)											
1 L	115			115	16			0.096	8.0	4	140
2 T		68		68	29			0.044	0.0	0	
	115	68	0	183	21			0.096	5.1	4	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				343	31			0.200	6.5	8	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x		
South: Bruce Highway (S)											
1 T		83		83	29			0.053	0.0	0	
2 R			5	5	0			0.003	8.9	0	90
	0	83	5	88	27			0.053	0.5	0	
East: Gladstone Mt Larcom Rd(E)											
1 LR	4		109	113	4			0.164	10.3	5	
	4	0	109	113	4			0.164	10.3	5	
North: Bruce Highway (N)											
1 L	88			88	19			0.076	8.1	3	140
2 T		68		68	24			0.042	0.0	0	
	88	68	0	156	21			0.076	4.6	3	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				357	17			0.167	5.4	5	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2009 Traffic Volumes

5314 Gladstone Mt Larcom Road/Bruce Highway
 2009 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		66		66	67				0.051	0.0	0	
2 R			7	7	0				0.005	9.1	0	90
	0	66	7	73	60				0.051	0.9	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	2		109	111	32				0.239	13.7	10	
	2	0	109	111	32				0.239	13.7	10	
North: Bruce Highway (N)												
1 L	132			132	16				0.111	8.1	4	140
2 T		78		78	29				0.050	0.0	0	
	132	78	0	210	21				0.111	5.1	4	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				394	31				0.250	6.7	10	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2009 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		95		95	29				0.061	0.0	0	
2 R			6	6	0				0.004	9.0	0	90
	0	95	6	101	28				0.061	0.5	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	5		125	130	15				0.227	11.8	8	
	5	0	125	130	15				0.227	11.8	8	
North: Bruce Highway (N)												
1 L	101			101	19				0.087	8.1	3	140
2 T		78		78	24				0.049	0.0	0	
	101	78	0	179	21				0.087	4.6	3	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				410	21				0.227	5.9	8	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2009 Background + Stage 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		66		66	67				0.051	0.0	0	
2 R			7	7	0				0.005	9.2	0	90
	0	66	7	73	60				0.051	0.9	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	2		113	115	33				0.259	14.3	11	
	2	0	113	115	33				0.259	14.3	11	
North: Bruce Highway (N)												
1 L	157			157	15				0.131	8.0	5	140
2 T		81		81	28				0.052	0.0	0	
	157	81	0	238	20				0.131	5.3	5	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				426	30				0.259	7.0	11	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2009 Background + Stage 1a Construction Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		98		98	29				0.063	0.0	0	
2 R			6	6	0				0.004	9.0	0	90
	0	98	6	104	27				0.063	0.5	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	5		150	155	15				0.271	12.0	10	
	5	0	150	155	15				0.271	12.0	10	
North: Bruce Highway (N)												
1 L	105			105	21				0.092	8.2	4	140
2 T		78		78	24				0.049	0.0	0	
	105	78	0	183	22				0.092	4.7	4	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				442	21				0.278	6.3	10	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2011 Traffic Volumes

5314 Gladstone Mt Larcom Road/Bruce Highway
 2011 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay	Longest Queue	Shrt Lane
	L	T	R	Tot			1st 2nd	x	(sec)	(m)	(m)
South: Bruce Highway (S)											
1 T		71		71	68			0.055	0.0	0	
2 R			8	8	0			0.006	9.2	0	90
	0	71	8	79	61			0.055	0.9	0	
East: Gladstone Mt Larcom Rd(E)											
1 LR	3		119	122	31			0.273	14.4	12	
	3	0	119	122	31			0.273	14.4	12	
North: Bruce Highway (N)											
1 L	144			144	16			0.121	8.1	5	140
2 T		85		85	29			0.055	0.0	0	
	144	85	0	229	21			0.121	5.1	5	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				430	31			0.273	6.9	12	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2011 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		104		104	29				0.067	0.0	0	
2 R			6	6	0				0.004	9.1	0	90
	0	104	6	110	27				0.067	0.5	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	5		136	141	16				0.255	12.2	9	
	5	0	136	141	16				0.255	12.2	9	
North: Bruce Highway (N)												
1 L	110			110	19				0.095	8.1	4	140
2 T		85		85	24				0.053	0.0	0	
	110	85	0	195	21				0.095	4.6	4	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				446	21				0.255	6.0	9	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2011 Background + Stage 1a Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		71		71	68				0.055	0.0	0	
2 R			8	8	0				0.006	9.2	0	90
	0	71	8	79	61				0.055	0.9	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	3		126	129	31				0.290	14.6	13	
	3	0	126	129	31				0.290	14.6	13	
North: Bruce Highway (N)												
1 L	151			151	17				0.127	8.1	5	140
2 T		85		85	29				0.055	0.0	0	
	151	85	0	236	21				0.127	5.2	5	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				444	31				0.300	7.2	13	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2011 Background + Stage 1a Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		104		104	29				0.067	0.0	0	
2 R			6	6	0				0.004	9.1	0	90
	0	104	6	110	27				0.067	0.5	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	5		143	148	16				0.272	12.4	10	
	5	0	143	148	16				0.272	12.4	10	
North: Bruce Highway (N)												
1 L	117			117	20				0.102	8.2	4	140
2 T		85		85	24				0.053	0.0	0	
	117	85	0	202	21				0.102	4.7	4	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				460	21				0.278	6.2	10	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2014 Traffic Volumes

5314 Gladstone Mt Larcom Road/Bruce Highway

2014 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		80		80	68				0.062	0.0	0	
2 R			8	8	0				0.006	9.3	0	90
	0	80	8	88	61				0.062	0.8	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	3		133	136	32				0.325	15.8	16	
	3	0	133	136	32				0.325	15.8	16	
North: Bruce Highway (N)												
1 L	161			161	16				0.135	8.1	6	140
2 T		95		95	29				0.061	0.0	0	
	161	95	0	256	21				0.135	5.1	6	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				480	31				0.333	7.3	16	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2014 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		116		116	29				0.075	0.0	0	
2 R			7	7	0				0.005	9.2	0	90
	0	116	7	123	28				0.075	0.5	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	6		153	159	15				0.300	13.1	12	
	6	0	153	159	15				0.300	13.1	12	
North: Bruce Highway (N)												
1 L	123			123	19				0.106	8.1	4	140
2 T		95		95	24				0.059	0.0	0	
	123	95	0	218	21				0.106	4.6	4	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				500	21				0.301	6.3	12	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic
 Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		80		80	66				0.062	0.0	0	
2 R			8	8	0				0.006	9.4	0	90
	0	80	8	88	60				0.062	0.9	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	3		143	146	32				0.355	16.4	18	
	3	0	143	146	32				0.355	16.4	18	
North: Bruce Highway (N)												
1 L	184			184	16				0.155	8.1	7	140
2 T		95		95	29				0.061	0.0	0	
	184	95	0	279	21				0.155	5.3	7	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				513	31				0.375	7.7	18	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		116		116	29				0.075	0.0	0	
2 R			7	7	0				0.005	9.2	0	90
	0	116	7	123	28				0.075	0.5	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	6		176	182	15				0.349	13.6	16	
	6	0	176	182	15				0.349	13.6	16	
North: Bruce Highway (N)												
1 L	133			133	20				0.116	8.2	5	140
2 T		95		95	24				0.059	0.0	0	
	133	95	0	228	22				0.116	4.8	5	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				533	21				0.353	6.8	16	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-

controlled intersections and apply only to continuous lanes.

2016 Traffic Volumes

5314 Gladstone Mt Larcom Road/Bruce Highway
 2016 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		86		86	67				0.067	0.0	0	
2 R			9	9	0				0.007	9.4	0	90
	0	86	9	95	61				0.067	0.9	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	3		143	146	32				0.364	16.8	18	
	3	0	143	146	32				0.364	16.8	18	
North: Bruce Highway (N)												
1 L	173			173	16				0.145	8.1	6	140
2 T		102		102	29				0.066	0.0	0	
	173	102	0	275	21				0.145	5.1	6	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				516	31				0.375	7.6	18	

=====
 Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2016 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		125		125	29				0.080	0.0	0	
2 R			8	8	0				0.006	9.2	0	90
	0	125	8	133	27				0.080	0.6	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	6		164	170	15				0.334	13.8	15	
	6	0	164	170	15				0.334	13.8	15	
North: Bruce Highway (N)												
1 L	132			132	19				0.114	8.1	5	140
2 T		102		102	24				0.064	0.0	0	
	132	102	0	234	21				0.114	4.6	5	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				537	21				0.334	6.5	15	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2016 Background + Stage 1a Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		86		86	66				0.067	0.0	0	
2 R			9	9	0				0.007	9.4	0	90
	0	86	9	95	60				0.067	0.9	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	3		150	153	31				0.380	16.9	20	
	3	0	150	153	31				0.380	16.9	20	
North: Bruce Highway (N)												
1 L	180			180	16				0.151	8.1	6	140
2 T		102		102	29				0.066	0.0	0	
	180	102	0	282	21				0.151	5.2	6	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				530	31				0.380	7.8	20	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2016 Background + Stage 1a Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		125		125	29				0.080	0.0	0	
2 R			8	8	0				0.006	9.3	0	90
	0	125	8	133	27				0.080	0.6	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	6		171	177	16				0.353	14.1	16	
	6	0	171	177	16				0.353	14.1	16	
North: Bruce Highway (N)												
1 L	140			140	19				0.121	8.1	5	140
2 T		102		102	24				0.064	0.0	0	
	140	102	0	242	21				0.121	4.7	5	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				552	21				0.353	6.7	16	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2026 Traffic Volumes

5314 Gladstone Mt Larcom Road/Bruce Highway

2026 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T	114			114	67				0.088	0.0	0	
2 R			12	12	0				0.010	9.8	0	90
	0	114	12	126	60				0.088	0.9	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	4		190	194	31				0.596	24.1	38	
	4	0	190	194	31				0.596	24.1	38	
North: Bruce Highway (N)												
1 L	230			230	16				0.193	8.1	8	140
2 T		136		136	29				0.087	0.0	0	
	230	136	0	366	21				0.193	5.1	8	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				686	31				0.596	9.7	38	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2026 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		166		166	29				0.107	0.0	0	
2 R			10	10	0				0.008	9.6	0	90
	0	166	10	176	27				0.107	0.5	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	8		218	226	15				0.531	18.4	30	
	8	0	218	226	15				0.531	18.4	30	
North: Bruce Highway (N)												
1 L	176			176	19				0.152	8.2	6	140
2 T		136		136	24				0.085	0.0	0	
	176	136	0	312	21				0.152	4.6	6	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				714	21				0.533	8.0	30	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2026 Background + Stage 1a Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		114		114	67				0.088	0.0	0	
2 R			12	12	0				0.010	9.8	0	90
	0	114	12	126	60				0.088	0.9	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	4		198	202	31				0.624	24.9	42	
	4	0	198	202	31				0.624	24.9	42	
North: Bruce Highway (N)												
1 L	238			238	16				0.200	8.1	9	140
2 T		136		136	29				0.087	0.0	0	
	238	136	0	374	21				0.200	5.2	9	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				702	31				0.667	10.1	42	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Road/Bruce Highway
 2026 Background + Stage 1a Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		166		166	29				0.107	0.0	0	
2 R			10	10	0				0.008	9.6	0	90
	0	166	10	176	27				0.107	0.5	0	
East: Gladstone Mt Larcom Rd(E)												
1 LR	8		226	234	16				0.557	19.0	32	
	8	0	226	234	16				0.557	19.0	32	
North: Bruce Highway (N)												
1 L	184			184	19				0.159	8.2	7	140
2 T		136		136	24				0.085	0.0	0	
	184	136	0	320	21				0.159	4.7	7	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				730	21				0.571	8.3	32	

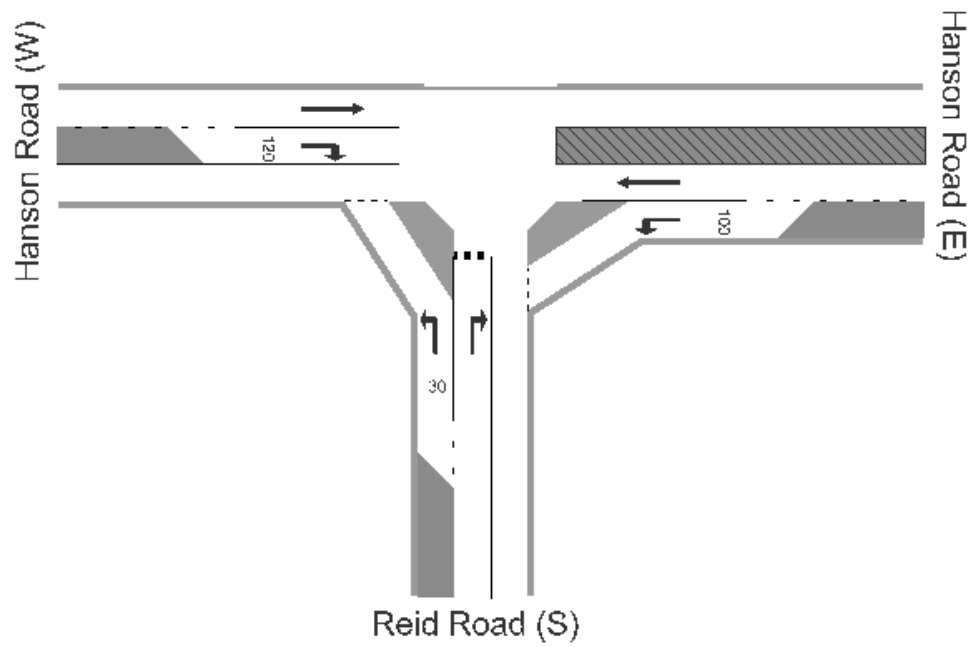
Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Hanson Road/Reid Road

Existing Layout



2006 Traffic Volumes

5314 Hanson Road/Reid Road

2006 Existing Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	5			5	80				0.022	21.9	1	30
2 R			12	12	58				0.135	50.4	6	
	5	0	12	17	65				0.135	42.1	6	
East: Hanson Road (E)												
1 L	57			57	18				0.050	8.2	2	100
2 T		501		501	5				0.280	0.0	0	
	57	501	0	558	6				0.280	0.8	2	
West: Hanson Road (W)												
1 T		158		158	15	1850			0.094	0.0		
2 R			21	21	57				0.054	17.5	3	120
	0	158	21	179	20				0.094	2.1	3	
=====												
ALL VEHICLES				Total	%				Max	Aver.	Max	
				Flow	HV				X	Delay	Queue	
				754	11				0.280	2.1	6	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	22			22	82				0.059	13.3	3	30
2 R			53	53	8				0.151	17.1	5	
	22	0	53	75	29				0.151	16.0	5	
East: Hanson Road (E)												
1 L	20			20	65				0.026	9.5	1	100
2 T		193		193	7				0.109	0.0	0	
	20	193	0	213	13				0.109	0.9	1	
West: Hanson Road (W)												
1 T		331		331	8	1850			0.188	0.0		
2 R			9	9	67				0.014	12.9	1	120
	0	331	9	340	9				0.188	0.4	1	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				628	13				0.188	2.4	5	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2009 Traffic Volumes

5314 Hanson Road/Reid Road
 2009 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 L	10			10	80			0.053	26.2	3	30
2 R			22	22	64			0.400	95.7	19	
	10	0	22	32	69			0.400	74.0	19	
East: Hanson Road (E)											
1 L	71			71	21			0.065	8.4	3	100
2 T		576		576	5			0.322	0.0	0	
	71	576	0	647	7			0.322	0.9	3	
West: Hanson Road (W)											
1 T	182			182	15	1850		0.108	0.0		
2 R			28	28	57			0.085	19.8	4	120
	0	182	28	210	20			0.108	2.7	4	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				889	12			0.400	4.0	19	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2009 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	29			29	76				0.076	13.7	3	30
2 R			73	73	15				0.290	24.2	12	
	29	0	73	102	32				0.290	21.2	12	
East: Hanson Road (E)												
1 L	30			30	67				0.040	9.6	2	100
2 T		222		222	7				0.126	0.0	0	
	30	222	0	252	14				0.126	1.1	2	
West: Hanson Road (W)												
1 T		381		381	8	1850			0.216	0.0		
2 R			14	14	71				0.024	13.7	1	120
	0	381	14	395	10				0.216	0.5	1	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				749	15				0.291	3.5	12	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2009 Background + Stage 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	22			22	77				0.203	43.6	10	30
2 R			90	90	70				1.000	573.8	214	

	22	0	90	112	71				1.000	469.6	214	

East: Hanson Road (E)												
1 L	488			488	14				0.417	8.8	24	100
2 T		576		576	5				0.322	0.0	0	

	488	576	0	1064	9				0.417	4.0	24	

West: Hanson Road (W)												
1 T		182		182	15	1850			0.108	0.0		
2 R			102	102	25				0.192	14.7	8	120

	0	182	102	284	18				0.192	5.3	8	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1460	16				1.000	40.0	214	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2009 Background + Stage 1a Construction Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Reid Road (S)												
1 L	103			103	30				0.173	11.3	7	30
2 R			490	490	12				2.144	2095.2	2620	
	103	0	490	593	15				2.144	1733.3	2620	
East: Hanson Road (E)												
1 L	98			98	70				0.133	10.0	7	100
2 T		222		222	7				0.126	0.0	0	
	98	222	0	320	27				0.133	3.1	7	
West: Hanson Road (W)												
1 T		381		381	8	1850			0.216	0.0		
2 R			26	26	73				0.045	13.9	3	120
	0	381	26	407	12				0.216	0.9	3	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1320	17				2.140	779.7	2620	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2011 Traffic Volumes

5314 Hanson Road/Reid Road
 2011 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x		
South: Reid Road (S)											
1 L	10			10	80			0.060	29.0	3	30
2 R			22	22	64			0.501	128.6	23	
	10	0	22	32	69			0.501	97.5	23	
East: Hanson Road (E)											
1 L	71			71	24			0.067	8.5	3	100
2 T		626		626	5			0.349	0.0	0	
	71	626	0	697	7			0.349	0.9	3	
West: Hanson Road (W)											
1 T	198			198	15	1850		0.118	0.0		
2 R			28	28	57			0.097	21.5	4	120
	0	198	28	226	20			0.118	2.7	4	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				955	12			0.500	4.5	23	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2011 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 L	29			29	76			0.077	14.1	4	30
2 R			73	73	15			0.324	27.0	13	
	29	0	73	102	32			0.324	23.4	13	
East: Hanson Road (E)											
1 L	30			30	67			0.040	9.6	2	100
2 T		241		241	7			0.136	0.0	0	
	30	241	0	271	14			0.136	1.1	2	
West: Hanson Road (W)											
1 T		414		414	8	1850		0.235	0.0		
2 R			14	14	71			0.025	14.0	1	120
	0	414	14	428	10			0.235	0.5	1	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				801	14			0.323	3.6	13	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2011 Background + Stage 1a Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	28			28	39				0.099	19.5	4	30
2 R			107	107	14				0.824	81.8	48	
	28	0	107	135	19				0.824	68.8	48	
East: Hanson Road (E)												
1 L	156			156	12				0.130	8.2	5	100
2 T		626		626	5				0.349	0.0	0	
	156	626	0	782	6				0.349	1.6	5	
West: Hanson Road (W)												
1 T		198		198	15	1850			0.118	0.0		
2 R			46	46	41				0.125	18.3	5	120
	0	198	46	244	20				0.125	3.5	5	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1161	11				0.823	9.8	48	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2011 Background + Stage 1a Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	47			47	53				0.095	13.0	5	30
2 R			159	159	8				0.674	36.7	37	
	47	0	159	206	18				0.674	31.3	37	
East: Hanson Road (E)												
1 L	116			116	18				0.103	8.3	4	100
2 T		241		241	7				0.136	0.0	0	
	116	241	0	357	11				0.136	2.7	4	
West: Hanson Road (W)												
1 T		414		414	8	1850			0.235	0.0		
2 R			32	32	41				0.042	11.8	2	120
	0	414	32	446	10				0.235	0.9	2	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1009	12				0.674	7.7	37	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2014 Traffic Volumes

5314 Hanson Road/Reid Road
 2014 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	10			10	80				0.074	34.1	3	30
2 R			22	22	64				0.700	225.2	34	
	10	0	22	32	69				0.700	165.5	34	
East: Hanson Road (E)												
1 L	71			71	24				0.067	8.5	3	100
2 T		701		701	5				0.391	0.0	0	
	71	701	0	772	7				0.391	0.8	3	
West: Hanson Road (W)												
1 T		221		221	15	1850			0.131	0.0		
2 R			28	28	57				0.119	24.8	5	120
	0	221	28	249	20				0.131	2.8	5	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1053	12				0.710	6.3	34	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2014 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	29			29	76				0.079	14.8	4	30
2 R			73	73	15				0.382	32.3	16	
	29	0	73	102	32				0.382	27.3	16	
East: Hanson Road (E)												
1 L	30			30	67				0.040	9.6	2	100
2 T		270		270	7				0.153	0.0	0	
	30	270	0	300	13				0.153	1.0	2	
West: Hanson Road (W)												
1 T		463		463	8	1850			0.263	0.0		
2 R			14	14	71				0.026	14.4	1	120
	0	463	14	477	10				0.263	0.5	1	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				879	14				0.382	3.8	16	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic
 Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	36			36	47				0.241	34.3	10	30
2 R			153	153	31				1.275	722.2	462	
	36	0	153	189	34				1.275	591.1	462	
East: Hanson Road (E)												
1 L	437			437	12				0.364	8.6	19	100
2 T		701		701	5				0.391	0.0	0	
	437	701	0	1138	8				0.391	3.3	19	
West: Hanson Road (W)												
1 T		221		221	15	1850			0.131	0.0		
2 R			95	95	26				0.237	17.9	10	120
	0	221	95	316	18				0.237	5.4	10	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1643	13				1.275	71.3	462	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak

Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 L	96			96	32			0.172	12.4	7	30
2 R			440	440	10			2.599	2922.1	2667	
	96	0	440	536	14			2.599	2400.9	2667	
East: Hanson Road (E)											
1 L	162			162	33			0.166	8.9	8	100
2 T		270		270	7			0.153	0.0	0	
	162	270	0	432	17			0.166	3.3	8	
West: Hanson Road (W)											
1 T		463		463	8	1850		0.263	0.0		
2 R			40	40	48			0.059	12.6	3	120
	0	463	40	503	11			0.263	1.0	3	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1471	14			2.604	876.2	2667	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2016 Traffic Volumes

5314 Hanson Road/Reid Road
 2016 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	10			10	80				0.085	38.3	4	30
2 R			22	22	64				0.891	390.3	50	
	10	0	22	32	69				0.891	280.3	50	
East: Hanson Road (E)												
1 L	71			71	24				0.067	8.5	3	100
2 T		752		752	5				0.420	0.0	0	
	71	752	0	823	7				0.420	0.7	3	
West: Hanson Road (W)												
1 T		237		237	15	1850			0.141	0.0		
2 R			28	28	57				0.138	27.5	6	120
	0	237	28	265	20				0.141	2.9	6	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1120	12				0.880	9.2	50	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2016 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	29			29	76				0.075	15.2	4	30
2 R			73	73	15				0.430	37.0	18	
	29	0	73	102	32				0.430	30.8	18	
East: Hanson Road (E)												
1 L	30			30	67				0.040	9.6	2	100
2 T		290		290	7				0.164	0.0	0	
	30	290	0	320	13				0.164	0.9	2	
West: Hanson Road (W)												
1 T		497		497	8	1850			0.283	0.0		
2 R			14	14	71				0.027	14.8	1	120
	0	497	14	511	10				0.283	0.4	1	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				933	13				0.429	3.9	18	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2016 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Reid Road (S)												
1 L	31			31	35				0.135	22.8	5	30
2 R			124	124	12				1.033	241.5	139	
	31	0	124	155	17				1.033	197.8	139	
East: Hanson Road (E)												
1 L	173			173	10				0.142	8.2	6	100
2 T		752		752	5				0.420	0.0	0	
	173	752	0	925	6				0.420	1.5	6	
West: Hanson Road (W)												
1 T		237		237	15	1850			0.141	0.0		
2 R			49	49	39				0.173	21.8	7	120
	0	237	49	286	19				0.173	3.7	7	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1366	10				1.033	24.3	139	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2016 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	50			50	50				0.108	13.7	5	30
2 R			175	175	7				0.975	121.4	113	
	50	0	175	225	16				0.975	97.5	113	
East: Hanson Road (E)												
1 L	132			132	16				0.115	8.2	5	100
2 T		290		290	7				0.164	0.0	0	
	132	290	0	422	10				0.164	2.6	5	
West: Hanson Road (W)												
1 T		497		497	8	1850			0.283	0.0		
2 R			35	35	37				0.048	12.0	2	120
	0	497	35	532	10				0.283	0.8	2	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1179	11				0.978	19.9	113	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2026 Traffic Volumes

5314 Hanson Road/Reid Road
 2026 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	10			10	80				0.180	74.7	8	30
2 R			22	22	64				1.000	1052.8	80	
	10	0	22	32	69				1.000	747.1	80	
East: Hanson Road (E)												
1 L	71			71	24				0.067	8.5	3	100
2 T		1002		1002	5				0.559	0.0	0	
	71	1002	0	1073	6				0.559	0.6	3	
West: Hanson Road (W)												
1 T		316		316	15	1850			0.187	0.0		
2 R			28	28	57				0.333	61.8	14	120
	0	316	28	344	18				0.333	5.1	14	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1449	10				1.000	18.1	80	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2026 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Reid Road (S)												
1 L	29			29	76				0.092	17.9	5	30
2 R			73	73	15				0.788	100.0	38	
	29	0	73	102	32				0.788	76.6	38	
East: Hanson Road (E)												
1 L	30			30	67				0.040	9.6	2	100
2 T		386		386	7				0.218	0.0	0	
	30	386	0	416	11				0.218	0.7	2	
West: Hanson Road (W)												
1 T		662		662	8	1850			0.376	0.1		
2 R			14	14	71				0.033	16.8	2	120
	0	662	14	676	9				0.376	0.4	2	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1194	12				0.785	7.0	38	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2026 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 L	31			31	35			0.236	37.5	9	30
2 R			124	124	12			1.033	357.3	160	
	31	0	124	155	17			1.033	293.3	160	
East: Hanson Road (E)											
1 L	173			173	10			0.142	8.2	6	100
2 T		1002		1002	5			0.559	0.0	0	
	173	1002	0	1175	6			0.559	1.2	6	
West: Hanson Road (W)											
1 T		316		316	15	1850		0.187	0.0		
2 R			49	49	39			0.369	43.4	15	120
	0	316	49	365	18			0.369	5.8	15	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1695	9			1.033	28.9	160	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road
 2026 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	50			50	50				0.130	15.7	6	30
2 R			175	175	7				1.458	908.2	565	
	50	0	175	225	16				1.458	709.8	565	
East: Hanson Road (E)												
1 L	132			132	16				0.115	8.2	5	100
2 T		386		386	7				0.218	0.0	0	
	132	386	0	518	9				0.218	2.1	5	
West: Hanson Road (W)												
1 T		662		662	8	1850			0.376	0.1		
2 R			35	35	37				0.056	13.2	3	120
	0	662	35	697	9				0.376	0.7	3	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1440	10				1.458	112.0	565	

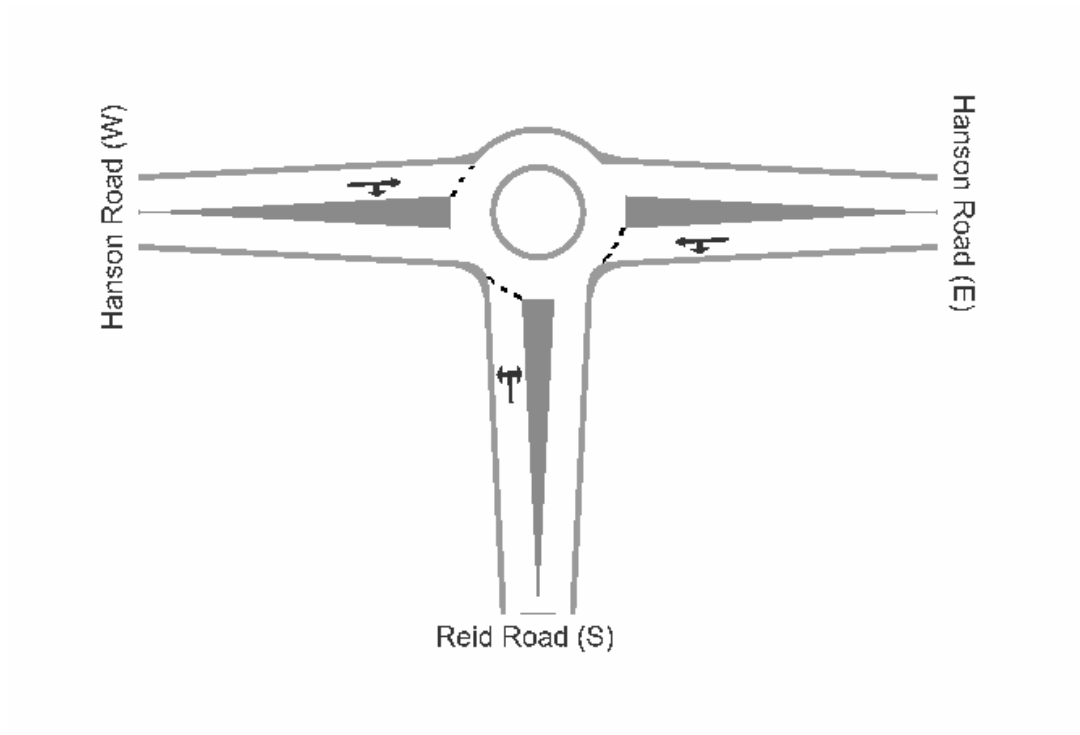
Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Hanson Road/Reid Road

Single Lane Roundabout



2006 Traffic Volumes

5314 Hanson Road/Reid Road Roundabout
 2006 Existing Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 LR	5		12	17	65				0.034	17.1	2	
	5	0	12	17	65				0.034	17.1	2	
East: Hanson Road (E)												
1 LT	57	501		558	6				0.346	4.8	24	
	57	501	0	558	6				0.346	4.8	24	
West: Hanson Road (W)												
1 TR		158	21	179	20				0.127	5.7	9	
	0	158	21	179	20				0.127	5.7	9	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				754	11				0.346	5.3	24	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd	x			

South: Reid Road (S)											
1 LR	22		53	75	29			0.079	11.9	5	

	22	0	53	75	29			0.079	11.9	5	

East: Hanson Road (E)											
1 LT	20	193		213	13			0.139	4.8	8	

	20	193	0	213	13			0.139	4.8	8	

West: Hanson Road (W)											
1 TR		331	9	340	9	1850		0.233	4.8		

	0	331	9	340	9			0.233	4.8		
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				628	13			0.233	5.6	8	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2009 Traffic Volumes

5314 Hanson Road/Reid Road Roundabout
 2009 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Reid Road (S)											
1 LR	10		22	32	69			0.073	18.7	5	
	10	0	22	32	69			0.073	18.7	5	
East: Hanson Road (E)											
1 LT	71	576		647	7			0.409	4.9	29	
	71	576	0	647	7			0.409	4.9	29	
West: Hanson Road (W)											
1 TR		182	28	210	20	1850		0.156	5.8		
	0	182	28	210	20			0.156	5.8		
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				889	12			0.409	5.6	29	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2009 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 LR	29		73	102	32			0.113	12.3	7	
	29	0	73	102	32			0.113	12.3	7	
East: Hanson Road (E)											
1 LT	30	222		252	14			0.170	4.9	10	
	30	222	0	252	14			0.170	4.9	10	
West: Hanson Road (W)											
1 TR		381	14	395	10	1850		0.283	4.9		
	0	381	14	395	10			0.283	4.9		
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				749	15			0.283	5.9	10	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2009 Background + Stage 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 LR	22		90	112	71			0.283	20.6	23	
	22	0	90	112	71			0.283	20.6	23	
East: Hanson Road (E)											
1 LT	488	576		1064	9			0.756	6.7	88	
	488	576	0	1064	9			0.756	6.7	88	
West: Hanson Road (W)											
1 TR		182	102	284	18	1850		0.249	7.3		
	0	182	102	284	18			0.249	7.3		
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1460	16			0.756	7.9	88	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2009 Background + Stage 1a Construction Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 LR	103		490	593	15			0.526	12.7	43	
	103	0	490	593	15			0.526	12.7	43	
East: Hanson Road (E)											
1 LT	98	222		320	27			0.250	5.7	17	
	98	222	0	320	27			0.250	5.7	17	
West: Hanson Road (W)											
1 TR		381	26	407	12	1850		0.498	5.2		
	0	381	26	407	12			0.498	5.2		
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1320	17			0.526	8.7	43	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2011 Traffic Volumes

5314 Hanson Road/Reid Road Roundabout
 2011 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				

South: Reid Road (S)												
1 LR	10		22	32	69				0.077	19.4	6	

	10	0	22	32	69				0.077	19.4	6	

East: Hanson Road (E)												
1 LT	71	626		697	7				0.440	4.9	33	

	71	626	0	697	7				0.440	4.9	33	

West: Hanson Road (W)												
1 TR		198	28	226	20	1850			0.168	5.7		

	0	198	28	226	20				0.168	5.7		
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				955	12				0.440	5.6	33	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2011 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 LR	29		73	102	32				0.116	12.5	7	
	29	0	73	102	32				0.116	12.5	7	
East: Hanson Road (E)												
1 LT	30	241		271	14				0.181	4.9	11	
	30	241	0	271	14				0.181	4.9	11	
West: Hanson Road (W)												
1 TR		414	14	428	10	1850			0.305	4.8		
	0	414	14	428	10				0.305	4.8		
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				801	14				0.305	5.8	11	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2011 Background + Stage 1a Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 LR	28		107	135	19			0.188	15.3	12	
	28	0	107	135	19			0.188	15.3	12	
East: Hanson Road (E)											
1 LT	156	626		782	6			0.505	5.2	40	
	156	626	0	782	6			0.505	5.2	40	
West: Hanson Road (W)											
1 TR		198	46	244	20	1850		0.209	6.1		
	0	198	46	244	20			0.209	6.1		
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1161	11			0.505	6.6	40	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2011 Background + Stage 1a Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				

South: Reid Road (S)												
1 LR	47		159	206	18				0.200	12.1	12	

	47	0	159	206	18				0.200	12.1	12	

East: Hanson Road (E)												
1 LT	116	241		357	11				0.240	5.2	15	

	116	241	0	357	11				0.240	5.2	15	

West: Hanson Road (W)												
1 TR		414	32	446	10	1850			0.357	5.1		

	0	414	32	446	10				0.357	5.1		
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1009	12				0.357	6.6	15	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2014 Traffic Volumes

5314 Hanson Road/Reid Road Roundabout
 2014 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay	Longest Queue	Shrt Lane
	L	T	R	Tot			1st 2nd	x	(sec)	(m)	(m)

South: Reid Road (S)											
1 LR	10		22	32	69			0.084	20.7	6	

	10	0	22	32	69			0.084	20.7	6	

East: Hanson Road (E)											
1 LT	71	701		772	7			0.485	4.9	38	

	71	701	0	772	7			0.485	4.9	38	

West: Hanson Road (W)											
1 TR		221	28	249	20	1850		0.183	5.6		

	0	221	28	249	20			0.183	5.6		
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1053	12			0.485	5.6	38	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2014 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								

South: Reid Road (S)												
1 LR	29		73	102	32				0.119	12.8	8	

	29	0	73	102	32				0.119	12.8	8	

East: Hanson Road (E)												
1 LT	30	270		300	13				0.199	4.9	12	

	30	270	0	300	13				0.199	4.9	12	

West: Hanson Road (W)												
1 TR		463	14	477	10	1850			0.338	4.8		

	0	463	14	477	10				0.338	4.8		
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				879	14				0.338	5.8	12	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak

Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Reid Road (S)												
1 LR	36		153	189	34				0.376	18.6	29	
	36	0	153	189	34				0.376	18.6	29	
East: Hanson Road (E)												
1 LT	437	701		1138	8				0.789	6.6	98	
	437	701	0	1138	8				0.789	6.6	98	
West: Hanson Road (W)												
1 TR		221	95	316	18	1850			0.295	6.9		
	0	221	95	316	18				0.295	6.9		
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1643	13				0.789	8.0	98	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak

Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 LR	96		440	536	14			0.498	13.0	39	
	96	0	440	536	14			0.498	13.0	39	
East: Hanson Road (E)											
1 LT	162	270		432	17			0.313	5.6	22	
	162	270	0	432	17			0.313	5.6	22	
West: Hanson Road (W)											
1 TR		463	40	503	11	1850		0.570	5.3		
	0	463	40	503	11			0.570	5.3		
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1471	14			0.570	8.2	39	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2016 Traffic Volumes

5314 Hanson Road/Reid Road Roundabout
 2016 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 LR	10		22	32	69			0.089	21.6	7	
	10	0	22	32	69			0.089	21.6	7	
East: Hanson Road (E)											
1 LT	71	752		823	7			0.515	4.9	42	
	71	752	0	823	7			0.515	4.9	42	
West: Hanson Road (W)											
1 TR		237	28	265	20	1850		0.194	5.5		
	0	237	28	265	20			0.194	5.5		
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1120	12			0.515	5.5	42	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2016 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 LR	29		73	102	32				0.122	12.9	8	
	29	0	73	102	32				0.122	12.9	8	
East: Hanson Road (E)												
1 LT	30	290		320	13				0.210	4.9	13	
	30	290	0	320	13				0.210	4.9	13	
West: Hanson Road (W)												
1 TR		497	14	511	10	1850			0.361	4.8		
	0	497	14	511	10				0.361	4.8		
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				933	13				0.361	5.7	13	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2016 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 LR	31		124	155	17				0.239	16.6	16	
	31	0	124	155	17				0.239	16.6	16	
East: Hanson Road (E)												
1 LT	173	752		925	6				0.595	5.3	54	
	173	752	0	925	6				0.595	5.3	54	
West: Hanson Road (W)												
1 TR		237	49	286	19	1850			0.248	6.0		
	0	237	49	286	19				0.248	6.0		
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1366	10				0.595	6.7	54	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2016 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Reid Road (S)												
1 LR	50		175	225	16				0.225	12.5	14	
	50	0	175	225	16				0.225	12.5	14	
East: Hanson Road (E)												
1 LT	132	290		422	10				0.281	5.2	18	
	132	290	0	422	10				0.281	5.2	18	
West: Hanson Road (W)												
1 TR		497	35	532	10	1850			0.430	5.1		
	0	497	35	532	10				0.430	5.1		
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1179	11				0.430	6.5	18	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2026 Traffic Volumes

5314 Hanson Road/Reid Road Roundabout
 2026 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				

South: Reid Road (S)												
1 LR	10		22	32	69				0.123	27.5	9	

	10	0	22	32	69				0.123	27.5	9	

East: Hanson Road (E)												
1 LT	71	1002		1073	6				0.664	5.0	73	

	71	1002	0	1073	6				0.664	5.0	73	

West: Hanson Road (W)												
1 TR		316	28	344	18				0.246	5.6	20	

	0	316	28	344	18				0.246	5.6	20	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1449	10				0.664	5.6	73	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2026 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 LR	29		73	102	32				0.134	13.8	8	
	29	0	73	102	32				0.134	13.8	8	
East: Hanson Road (E)												
1 LT	30	386		416	11				0.268	4.8	19	
	30	386	0	416	11				0.268	4.8	19	
West: Hanson Road (W)												
1 TR		662	14	676	9				0.471	5.3	41	
	0	662	14	676	9				0.471	5.3	41	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1194	12				0.471	5.9	41	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2026 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 LR	31		124	155	17			0.335	20.7	24	
	31	0	124	155	17			0.335	20.7	24	
East: Hanson Road (E)											
1 LT	173	1002		1175	6			0.747	5.5	91	
	173	1002	0	1175	6			0.747	5.5	91	
West: Hanson Road (W)											
1 TR		316	49	365	18	1850		0.311	5.7		
	0	316	49	365	18			0.311	5.7		
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1695	9			0.747	6.9	91	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout
 2026 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			(secs) 1st	2nd				
South: Reid Road (S)												
1 LR	50		175	225	16				0.245	13.3	16	
	50	0	175	225	16				0.245	13.3	16	
East: Hanson Road (E)												
1 LT	132	386		518	9				0.340	5.1	23	
	132	386	0	518	9				0.340	5.1	23	
West: Hanson Road (W)												
1 TR		662	35	697	9	1850			0.556	5.0		
	0	662	35	697	9				0.556	5.0		
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1440	10				0.556	6.3	23	

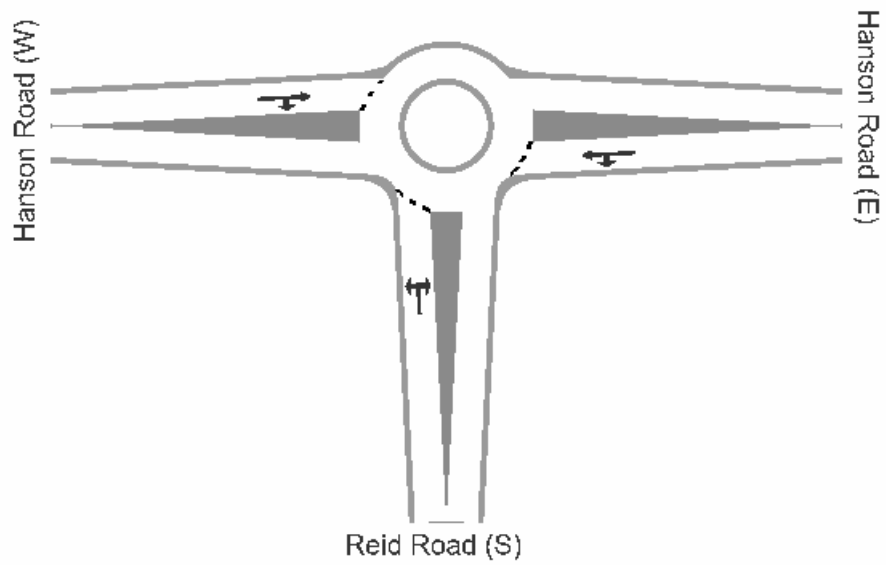
Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Hanson Road/Reid Road

Single Lane Roundabout – 30 Minute Peak



2009 Traffic Volumes

5314 Hanson Road/Reid Road Roundabout - 30 min Peak
 2009 Background + Stage 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Reid Road (S)												
1 LR	44		180	224	71				0.463	19.6	49	
	44	0	180	224	71				0.463	19.6	49	
East: Hanson Road (E)												
1 LT	976	576		1552	10				1.163	160.8	1307	
	976	576	0	1552	10				1.163	160.8	1307	
West: Hanson Road (W)												
1 TR		182	204	386	20	1850			0.371	7.5		
	0	182	204	386	20				0.371	7.5		
ALL VEHICLES												
	Total Flow				% HV				Max X	Aver. Delay	Max Queue	
	2162				19				1.163	118.8	1307	

Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout - 30 min Peak
 2009 Background + Stage 1a Construction Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 LR	206		980	1186	15			0.945	33.8	276	
	206	0	980	1186	15			0.945	33.8	276	
East: Hanson Road (E)											
1 LT	196	222		418	37			0.348	13.7	28	
	196	222	0	418	37			0.348	13.7	28	
West: Hanson Road (W)											
1 TR		382	52	434	16	1850		1.154	82.3		
	0	382	52	434	16			1.154	82.3		
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2038	20			1.154	40.0	276	

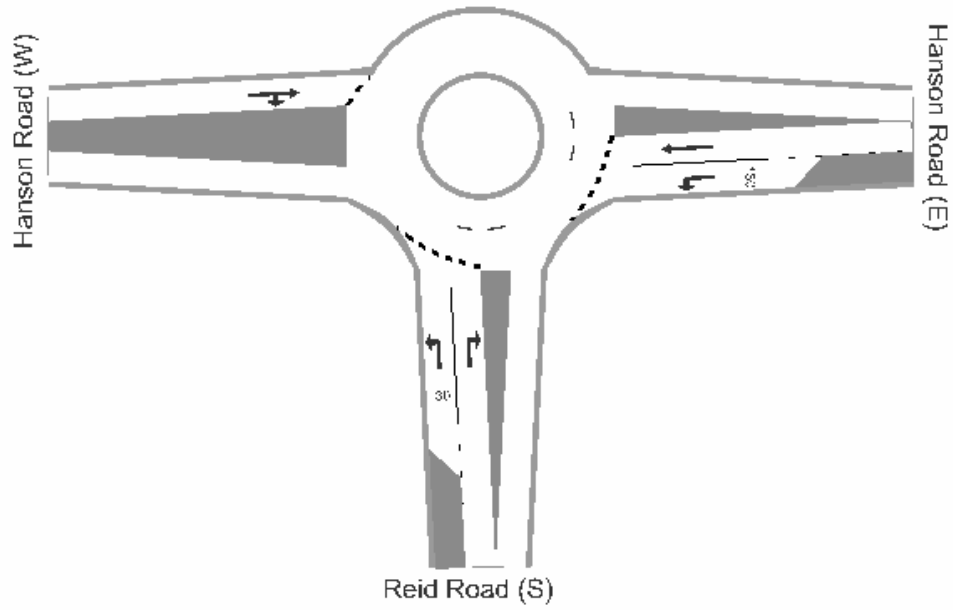
Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Hanson Road/Reid Road

Roundabout with Bypass – 30 Minute Peak



2009 Traffic Volumes

5314 Hanson Road/Reid Road Roundabout - with bypass
 2009 Background + Stage 1a Construction Traffic Volumes AM 30 min Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	44			44	77				0.136	19.8	9	30
2 R			180	180	70				0.322	23.9	25	
	44	0	180	224	71				0.322	23.1	25	
East: Hanson Road (E)												
1 L	976			976	14				0.755	11.7	92	130
2 T		576		576	5				0.510	8.4	36	
	976	576	0	1552	10				0.755	10.5	92	
West: Hanson Road (W)												
1 TR		20	204	224	22				0.220	17.9	16	
	0	20	204	224	22				0.220	17.9	16	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2000	19				0.756	12.7	92	

Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout - with bypass
 2009 Background + Stage 1a Construction Traffic Volumes PM 30 min Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Reid Road (S)												
1 L	206			206	30				0.344	11.5	16	30
2 R			980	980	12				0.715	18.5	68	
	206	0	980	1186	15				0.715	17.3	68	
East: Hanson Road (E)												
1 L	196			196	70				0.255	12.2	21	130
2 T		222		222	7				0.145	7.0	9	
	196	222	0	418	37				0.255	9.4	21	
West: Hanson Road (W)												
1 TR		20	52	72	53				0.253	29.5	21	
	0	20	52	72	53				0.253	29.5	21	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1676	22				0.714	15.8	68	

Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2014 Traffic Volumes

5314 Hanson Road/Reid Road Roundabout - with bypass - 30 min peak
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak

Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 L	72			72	47			0.188	17.4	12	30
2 R			306	306	31			0.433	22.4	35	
	72	0	306	378	34			0.433	21.4	35	
East: Hanson Road (E)											
1 L	874			874	12			0.660	10.1	61	130
2 T		702		702	5			0.590	8.4	47	
	874	702	0	1576	9			0.660	9.3	61	
West: Hanson Road (W)											
1 TR		20	190	210	24			0.231	18.6	17	
	0	20	190	210	24			0.231	18.6	17	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2164	15			0.660	12.3	61	

Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road Roundabout - with bypass - 30min peak
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak

Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	192			192	32				0.334	12.1	16	30
2 R			880	880	10				0.656	18.4	56	
	192	0	880	1072	14				0.656	17.3	56	
East: Hanson Road (E)												
1 L	324			324	33				0.276	10.1	21	130
2 T		270		270	7				0.210	7.2	13	
	324	270	0	594	22				0.276	8.8	21	
West: Hanson Road (W)												
1 TR		20	80	100	38				0.240	25.0	19	
	0	20	80	100	38				0.240	25.0	19	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1766	18				0.656	14.9	56	

Total flow period = 30 minutes. Peak flow period = 30 minutes.

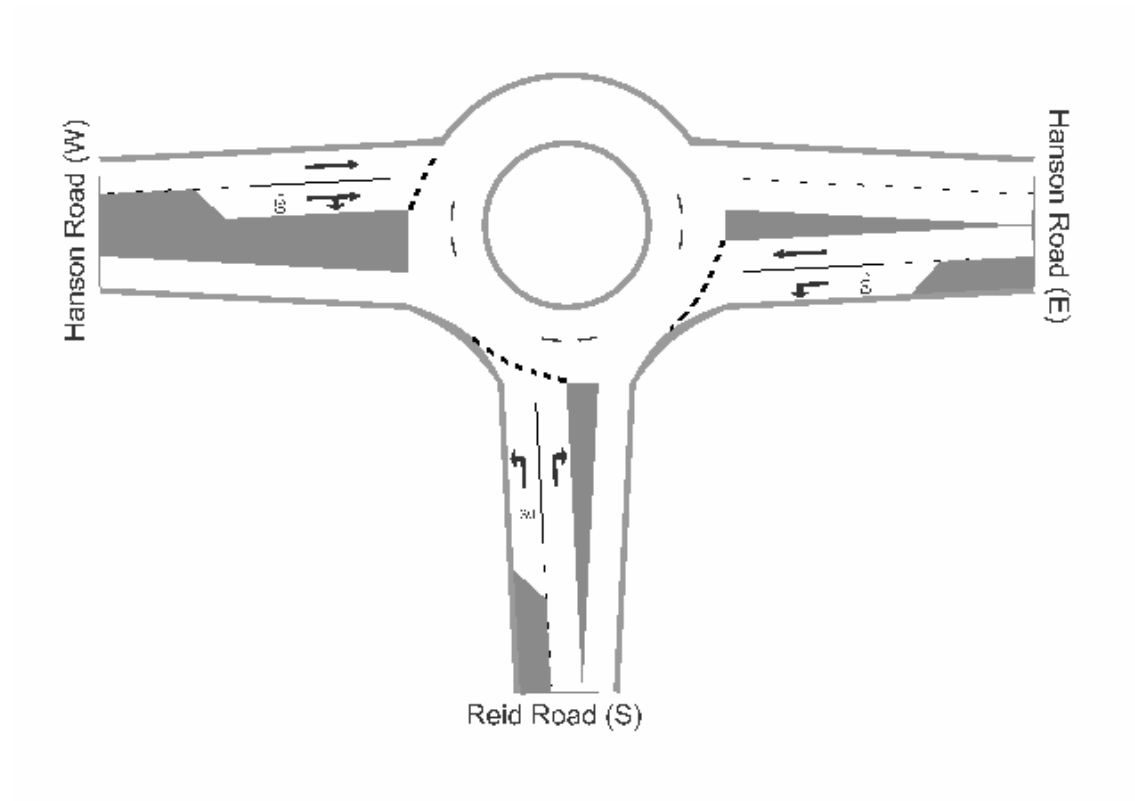
Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-

controlled intersections and apply only to continuous lanes.

Hanson Road/Reid Road

Two Lane Roundabout – 30 Minute Peak



2009 Traffic Volumes

5314 Hanson Road/Reid Road 2 Ln Roundabout - 30 min Peak
 2009 Background + Stage 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	44			44	77				0.136	19.8	9	30
2 R			180	180	70				0.322	23.9	25	
	44	0	180	224	71				0.322	23.1	25	
East: Hanson Road (E)												
1 L	976			976	14				0.752	11.7	90	100
2 T		576		576	5				0.508	8.4	35	
	976	576	0	1552	10				0.752	10.4	90	
West: Hanson Road (W)												
1 T		182		182	15				0.183	8.6	11	
2 R			204	204	25				0.192	18.4	12	120
	0	182	204	386	20				0.192	13.8	12	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2162	19				0.752	12.3	90	

Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road 2 Ln Roundabout - 30 min Peak
 2009 Background + Stage 1a Construction Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	206			206	30				0.344	11.5	16	30
2 R			980	980	12				0.715	18.5	69	
	206	0	980	1186	15				0.715	17.3	69	
East: Hanson Road (E)												
1 L	196			196	70				0.267	12.2	22	100
2 T		222		222	7				0.145	7.0	9	
	196	222	0	418	37				0.267	9.4	22	
West: Hanson Road (W)												
1 T		288		288	8				0.490	17.3	44	
2 TR		94	52	146	31				0.490	29.6	39	120
	0	382	52	434	16				0.490	21.5	44	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2038	20				0.714	16.6	69	
=====												

Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2014 Traffic Volumes

5314 Hanson Road/Reid Road 2 Ln Roundabout - 30 min peak
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Reid Road (S)											
1 L	72			72	47			0.187	17.4	12	30
2 R			306	306	31			0.432	22.4	35	
	72	0	306	378	34			0.432	21.4	35	
East: Hanson Road (E)											
1 L	874			874	12			0.659	10.1	61	100
2 T		702		702	5			0.589	8.4	46	
	874	702	0	1576	9			0.659	9.3	61	
West: Hanson Road (W)											
1 T		222		222	15			0.206	8.7	13	
2 R			190	190	26			0.241	19.7	16	120
	0	222	190	412	20			0.241	13.8	16	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2366	15			0.659	12.0	61	

Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Reid Road 2 Ln Roundabout - 30 min peak
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak

Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Reid Road (S)												
1 L	192			192	32				0.333	12.0	16	30
2 R			880	880	10				0.647	18.1	53	
	192	0	880	1072	14				0.647	17.0	53	
East: Hanson Road (E)												
1 L	324			324	33				0.290	10.1	21	100
2 T		250		250	8				0.198	7.3	12	
	324	250	0	574	22				0.290	8.9	21	
West: Hanson Road (W)												
1 T		342		342	8				0.488	14.7	42	
2 TR		122	80	202	24				0.488	23.9	39	120
	0	464	80	544	14				0.488	18.1	42	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2190	16				0.647	15.1	53	

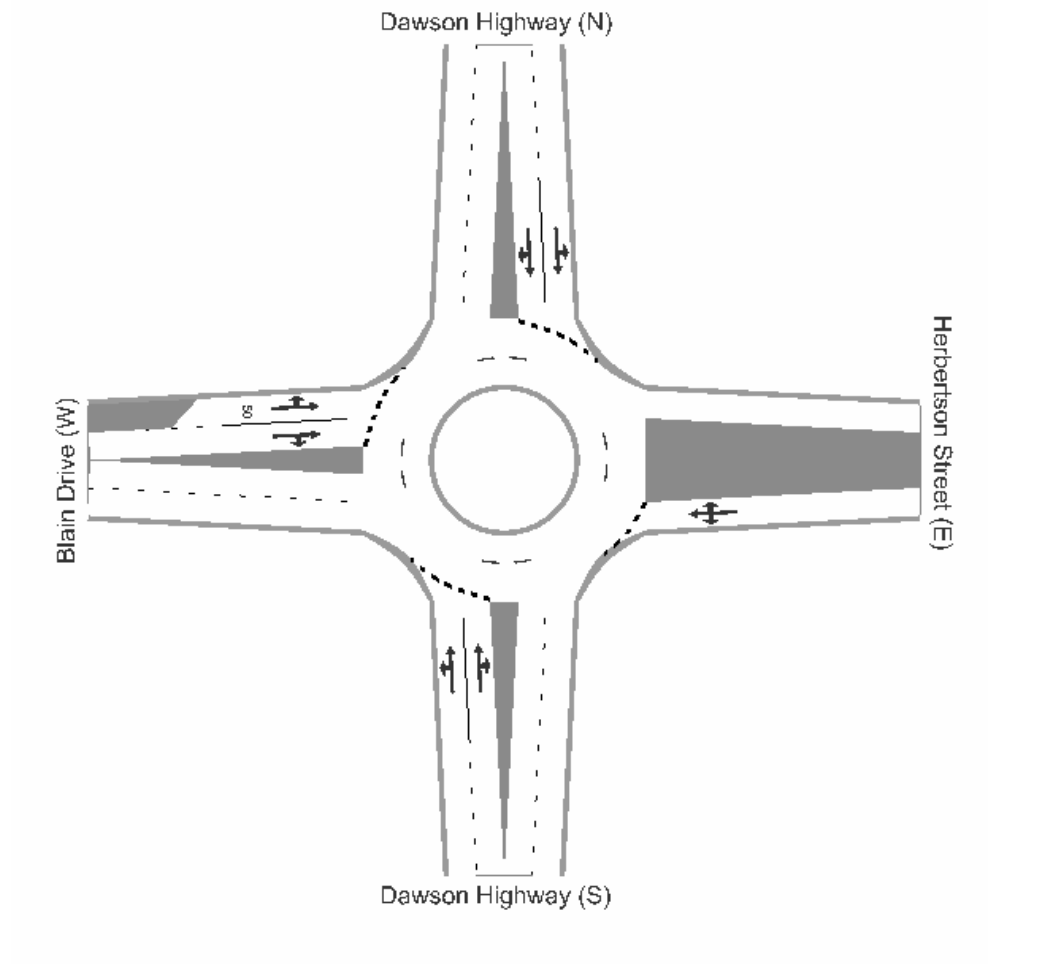
Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes

Dawson Highway/Blain Drive/Herbertson Street

Existing Layout



2006 Traffic Volumes

5314 Dawson Highway/Blain Drive/Herbertson Street
 2006 Existing Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 LT	183	328		511	3				0.336	3.7	18	
2 TR		433	4	437	3				0.336	3.4	17	
	183	761	4	948	3				0.336	3.6	18	
East: Herbertson Street (E)												
1 LTR	17	31	100	148	5				0.145	10.3	6	
	17	31	100	148	5				0.145	10.3	6	
North: Dawson Highway (N)												
1 LT	36	212		248	6				0.169	3.3	8	
2 TR		170	35	205	10				0.169	4.7	8	
	36	382	35	453	8				0.169	3.9	8	
West: Blain Drive (W)												
1 LT	11	19		30	10				0.041	6.1	2	50
2 R			121	121	18				0.124	13.6	6	
	11	19	121	151	17				0.124	12.1	6	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1700	6				0.336	5.0	18	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	68	233		301	2				0.190	3.2	9	
2 TR		258	3	261	1				0.190	3.0	9	
	68	491	3	562	1				0.190	3.1	9	
East: Herbertson Street (E)												
1 LTR	33	25	51	109	0				0.199	13.4	10	
	33	25	51	109	0				0.199	13.4	10	
North: Dawson Highway (N)												
1 LT	91	503		594	1				0.507	5.4	31	
2 TR		441	26	467	2				0.507	6.6	30	
	91	944	26	1061	1				0.507	5.9	31	
West: Blain Drive (W)												
1 LT	19	96		115	3				0.136	4.9	5	50
2 R			556	556	3				0.423	12.7	20	
	19	96	556	671	3				0.423	11.4	20	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2403	2				0.510	7.1	31	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2009 Traffic Volumes

5314 Dawson Highway/Blain Drive/Herbertson Street
 2009 Background Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 LT	199	358		557	3				0.369	3.8	20	
2 TR		471	4	475	3				0.369	3.5	19	
	199	829	4	1032	3				0.369	3.7	20	
East: Herbertson Street (E)												
1 LTR	19	34	109	162	4				0.162	10.4	6	
	19	34	109	162	4				0.162	10.4	6	
North: Dawson Highway (N)												
1 LT	39	231		270	6				0.185	3.3	9	
2 TR		185	38	223	10				0.185	4.8	9	
	39	416	38	493	8				0.185	4.0	9	
West: Blain Drive (W)												
1 LT	12	21		33	9				0.046	6.2	2	50
2 R			132	132	18				0.140	13.8	6	
	12	21	132	165	16				0.140	12.3	6	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1852	6				0.369	5.1	20	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2009 Background Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Dawson Highway (S)											
1 LT	74	254		328	2			0.208	3.2	10	
2 TR		281	3	284	1			0.208	3.0	10	
	74	535	3	612	1			0.208	3.1	10	
East: Herbertson Street (E)											
1 LTR	36	27	56	119	0			0.249	15.1	13	
	36	27	56	119	0			0.249	15.1	13	
North: Dawson Highway (N)											
1 LT	99	551		650	1			0.575	6.2	40	
2 TR		478	28	506	2			0.575	7.6	38	
	99	1029	28	1156	1			0.575	6.8	40	
West: Blain Drive (W)											
1 LT	21	105		126	2			0.150	5.0	5	50
2 R			606	606	3			0.469	13.0	24	
	21	105	606	732	3			0.469	11.6	24	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2619	2			0.576	7.7	40	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2009 Background + 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 LT	470	115		585	8				0.495	5.4	31	
2 TR		714	4	718	2				0.495	3.6	31	
	470	829	4	1303	5				0.495	4.4	31	
East: Herbertson Street (E)												
1 LTR	19	34	109	162	44				0.273	13.6	14	
	19	34	109	162	44				0.273	13.6	14	
North: Dawson Highway (N)												
1 LT	39	238		277	6				0.201	3.5	10	
2 TR		188	38	226	10				0.201	5.1	10	
	39	426	38	503	8				0.201	4.2	10	
West: Blain Drive (W)												
1 LT	12	21		33	9				0.052	7.4	2	50
2 R			178	178	31				0.250	16.1	15	
	12	21	178	211	28				0.250	14.8	15	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2179	11				0.500	6.0	31	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2009 Background + 1a Construction Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	121	170		291	13				0.240	4.0	13	
2 TR		375	3	378	1				0.240	2.9	12	
	121	545	3	669	6				0.240	3.4	13	
East: Herbertson Street (E)												
1 LTR	36	27	56	119	0				0.416	30.8	26	
	36	27	56	119	0				0.416	30.8	26	
North: Dawson Highway (N)												
1 LT	99	565		664	1				0.733	11.6	72	
2 TR		464	28	492	2				0.733	14.1	63	
	99	1029	28	1156	1				0.733	12.7	72	
West: Blain Drive (W)												
1 LT	21	105		126	2				0.153	5.2	6	50
2 R			876	876	6				0.698	15.2	57	
	21	105	876	1002	5				0.698	13.9	57	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2946	4				0.737	11.7	72	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2011 Traffic Volumes

5314 Dawson Highway/Blain Drive/Herbertson Street
 2011 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 LT	211	379		590	4				0.394	3.9	22	
2 TR		497	5	502	3				0.394	3.6	21	
	211	876	5	1092	3				0.394	3.7	22	
East: Herbertson Street (E)												
1 LTR	20	36	115	171	5				0.175	10.5	7	
	20	36	115	171	5				0.175	10.5	7	
North: Dawson Highway (N)												
1 LT	41	244		285	6				0.197	3.3	10	
2 TR		195	40	235	10				0.197	4.8	10	
	41	439	40	520	8				0.197	4.0	10	
West: Blain Drive (W)												
1 LT	13	22		35	9				0.049	6.4	2	50
2 R			139	139	18				0.151	14.0	7	
	13	22	139	174	16				0.151	12.5	7	
ALL VEHICLES												
				Total Flow 1957	% HV 6				Max X 0.394	Aver. Delay 5.2	Max Queue 22	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2011 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	78	268		346	2				0.221	3.2	11	
2 TR		297	3	300	1				0.221	3.0	11	
	78	565	3	646	1				0.221	3.1	11	
East: Herbertson Street (E)												
1 LTR	38	29	59	126	0				0.293	16.5	16	
	38	29	59	126	0				0.293	16.5	16	
North: Dawson Highway (N)												
1 LT	105	584		689	1				0.625	7.0	48	
2 TR		502	30	532	2				0.625	8.6	45	
	105	1086	30	1221	1				0.625	7.7	48	
West: Blain Drive (W)												
1 LT	22	110		132	3				0.161	5.2	6	50
2 R			639	639	3				0.501	13.3	27	
	22	110	639	771	3				0.501	11.9	27	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2764	2				0.625	8.2	48	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2011 Background + 1a Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	256	358		614	3				0.409	4.0	23	
2 TR		517	5	522	3				0.409	3.6	23	
	256	875	5	1136	3				0.409	3.8	23	
East: Herbertson Street (E)												
1 LTR	20	36	115	171	5				0.181	10.7	7	
	20	36	115	171	5				0.181	10.7	7	
North: Dawson Highway (N)												
1 LT	41	244		285	6				0.205	3.5	10	
2 TR		195	40	235	10				0.205	5.0	10	
	41	439	40	520	8				0.205	4.2	10	
West: Blain Drive (W)												
1 LT	13	22		35	9				0.050	6.4	2	50
2 R			194	194	13				0.199	13.9	10	
	13	22	194	229	12				0.199	12.7	10	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2056	5				0.417	5.5	23	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2011 Background + 1a Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 LT	133	243		376	1				0.240	3.5	12	
2 TR		322	3	325	1				0.240	3.0	12	
	133	565	3	701	1				0.240	3.3	12	
East: Herbertson Street (E)												
1 LTR	38	29	59	126	0				0.321	18.4	18	
	38	29	59	126	0				0.321	18.4	18	
North: Dawson Highway (N)												
1 LT	105	587		692	1				0.653	7.8	53	
2 TR		499	30	529	2				0.653	9.5	49	
	105	1086	30	1221	1				0.653	8.5	53	
West: Blain Drive (W)												
1 LT	22	110		132	2				0.160	5.2	6	50
2 R			694	694	3				0.546	13.6	32	
	22	110	694	826	3				0.546	12.2	32	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2874	2				0.653	8.7	53	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2014 Traffic Volumes

5314 Dawson Highway/Blain Drive/Herbertson Street
 2014 Background Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 LT	227	409		636	3				0.429	4.0	25	
2 TR		535	5	540	3				0.429	3.7	24	
	227	944	5	1176	3				0.429	3.8	25	
East: Herbertson Street (E)												
1 LTR	21	38	124	183	5				0.192	10.7	8	
	21	38	124	183	5				0.192	10.7	8	
North: Dawson Highway (N)												
1 LT	45	263		308	6				0.215	3.4	11	
2 TR		211	43	254	10				0.215	4.9	11	
	45	474	43	562	8				0.215	4.1	11	
West: Blain Drive (W)												
1 LT	14	24		38	11				0.057	6.7	2	50
2 R			150	150	18				0.169	14.2	8	
	14	24	150	188	16				0.169	12.7	8	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2109	6				0.429	5.3	25	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2014 Background Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	84	290		374	2				0.240	3.3	12	
2 TR		319	4	323	1				0.240	3.1	12	
	84	609	4	697	1				0.240	3.2	12	
East: Herbertson Street (E)												
1 LTR	41	31	63	135	0				0.377	21.5	22	
	41	31	63	135	0				0.377	21.5	22	
North: Dawson Highway (N)												
1 LT	113	633		746	1				0.705	8.6	62	
2 TR		538	32	570	2				0.705	10.5	57	
	113	1171	32	1316	1				0.705	9.4	62	
West: Blain Drive (W)												
1 LT	24	119		143	3				0.176	5.3	6	50
2 R			689	689	3				0.550	13.7	32	
	24	119	689	832	3				0.550	12.3	32	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2980	2				0.711	9.3	62	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak

Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 LT	464	179		643	6				0.519	5.0	33	
2 TR		765	5	770	3				0.519	3.5	33	
	464	944	5	1413	4				0.519	4.2	33	
East: Herbertson Street (E)												
1 LTR	21	38	124	183	5				0.205	11.2	9	
	21	38	124	183	5				0.205	11.2	9	
North: Dawson Highway (N)												
1 LT	45	265		310	6				0.233	3.7	12	
2 TR		209	43	252	10				0.233	5.3	12	
	45	474	43	562	8				0.233	4.4	12	
West: Blain Drive (W)												
1 LT	14	24		38	8				0.060	7.5	3	50
2 R			235	235	20				0.300	15.7	18	
	14	24	235	273	19				0.300	14.6	18	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2431	7				0.519	6.0	33	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd				
South: Dawson Highway (S)											
1 LT	169	182		351	8			0.276	4.0	15	
2 TR		427	4	431	1			0.276	3.0	15	
	169	609	4	782	4			0.276	3.4	15	
East: Herbertson Street (E)											
1 LTR	41	31	63	135	0			0.712	98.0	60	
	41	31	63	135	0			0.712	98.0	60	
North: Dawson Highway (N)											
1 LT	113	645		758	1			0.892	23.1	135	
2 TR		526	32	558	2			0.892	27.5	116	
	113	1171	32	1316	1			0.892	25.0	135	
West: Blain Drive (W)											
1 LT	24	119		143	3			0.179	5.5	7	50
2 R			926	926	5			0.755	16.4	70	
	24	119	926	1069	4			0.755	14.9	70	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				3302	3			0.893	19.6	135	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2016 Traffic Volumes

5314 Dawson Highway/Blain Drive/Herbertson Street
 2016 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 LT	238	429		667	3				0.453	4.1	27	
2 TR		560	5	565	3				0.453	3.8	26	
	238	989	5	1232	3				0.453	3.9	27	
East: Herbertson Street (E)												
1 LTR	22	40	130	192	5				0.205	10.8	8	
	22	40	130	192	5				0.205	10.8	8	
North: Dawson Highway (N)												
1 LT	47	277		324	6				0.228	3.4	12	
2 TR		220	46	266	10				0.228	5.0	12	
	47	497	46	590	8				0.228	4.1	12	
West: Blain Drive (W)												
1 LT	14	25		39	10				0.060	6.8	2	50
2 R			157	157	18				0.182	14.4	9	
	14	25	157	196	16				0.182	12.9	9	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2210	6				0.455	5.4	27	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2016 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	88	304		392	2				0.253	3.3	13	
2 TR		334	4	338	1				0.253	3.1	13	
	88	638	4	730	1				0.253	3.2	13	
East: Herbertson Street (E)												
1 LTR	43	33	66	142	0				0.460	28.4	29	
	43	33	66	142	0				0.460	28.4	29	
North: Dawson Highway (N)												
1 LT	118	666		784	1				0.764	10.2	76	
2 TR		561	34	595	2				0.764	12.5	69	
	118	1227	34	1379	1				0.764	11.2	76	
West: Blain Drive (W)												
1 LT	25	125		150	3				0.187	5.4	7	50
2 R			723	723	3				0.584	14.0	36	
	25	125	723	873	3				0.584	12.6	36	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				3124	2				0.773	10.5	76	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2016 Background + 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	303	401		704	3				0.476	4.2	29	
2 TR		588	5	593	3				0.476	3.8	28	
	303	989	5	1297	3				0.476	4.0	29	
East: Herbertson Street (E)												
1 LTR	22	40	130	192	5				0.213	11.1	9	
	22	40	130	192	5				0.213	11.1	9	
North: Dawson Highway (N)												
1 LT	47	278		325	6				0.239	3.6	12	
2 TR		219	46	265	10				0.239	5.2	12	
	47	497	46	590	8				0.239	4.3	12	
West: Blain Drive (W)												
1 LT	14	25		39	10				0.060	6.9	3	50
2 R			222	222	13				0.244	14.3	12	
	14	25	222	261	12				0.244	13.2	12	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2340	5				0.500	5.7	29	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2016 Background + 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	153	274		427	2				0.275	3.5	15	
2 TR		364	4	368	1				0.275	3.1	14	
	153	638	4	795	1				0.275	3.3	15	
East: Herbertson Street (E)												
1 LTR	43	33	66	142	0				0.541	40.2	37	
	43	33	66	142	0				0.541	40.2	37	
North: Dawson Highway (N)												
1 LT	118	670		788	1				0.811	12.7	91	
2 TR		557	34	591	2				0.811	15.5	81	
	118	1227	34	1379	1				0.811	13.9	91	
West: Blain Drive (W)												
1 LT	25	125		150	3				0.188	5.4	7	50
2 R			788	788	3				0.640	14.6	44	
	25	125	788	938	3				0.640	13.1	44	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				3254	2				0.811	12.3	91	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2026 Traffic Volumes

5314 Dawson Highway/Blain Drive/Herbertson Street
 2026 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Dawson Highway (S)											
1 LT	293	532		825	3			0.581	4.5	40	
2 TR		686	7	693	3			0.581	4.3	39	
	293	1218	7	1518	3			0.581	4.4	40	
East: Herbertson Street (E)											
1 LTR	27	50	160	237	5			0.277	11.4	12	
	27	50	160	237	5			0.277	11.4	12	
North: Dawson Highway (N)											
1 LT	58	342		400	7			0.292	3.6	16	
2 TR		269	56	325	10			0.292	5.2	16	
	58	611	56	725	8			0.292	4.3	16	
West: Blain Drive (W)											
1 LT	18	31		49	10			0.084	7.6	4	50
2 R			194	194	18			0.267	15.4	15	
	18	31	194	243	16			0.267	13.8	15	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2723	6			0.583	5.8	40	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2026 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	109	375		484	2				0.314	3.4	17	
2 TR		411	5	416	1				0.314	3.2	17	
	109	786	5	900	1				0.314	3.3	17	
East: Herbertson Street (E)												
1 LTR	53	40	82	175	0				1.167	526.4	338	
	53	40	82	175	0				1.167	526.4	338	
North: Dawson Highway (N)												
1 LT	146	833		979	1				1.134	263.6	1170	
2 TR		677	42	719	2				1.134	268.2	886	
	146	1510	42	1698	1				1.134	265.6	1170	
West: Blain Drive (W)												
1 LT	30	154		184	3				0.239	5.8	9	50
2 R			890	890	3				0.758	16.5	64	
	30	154	890	1074	3				0.758	14.6	64	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				3847	2				1.167	146.0	1170	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2026 Background + 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	358	503		861	3				0.605	4.6	43	
2 TR		715	6	721	3				0.605	4.5	43	
	358	1218	6	1582	3				0.605	4.6	43	
East: Herbertson Street (E)												
1 LTR	27	50	160	237	5				0.290	11.8	13	
	27	50	160	237	5				0.290	11.8	13	
North: Dawson Highway (N)												
1 LT	58	344		402	7				0.306	3.8	17	
2 TR		267	56	323	10				0.306	5.5	17	
	58	611	56	725	8				0.306	4.6	17	
West: Blain Drive (W)												
1 LT	18	30		48	10				0.084	7.7	4	50
2 R			259	259	14				0.344	15.5	20	
	18	30	259	307	13				0.344	14.3	20	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2851	6				0.606	6.2	43	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Blain Drive/Herbertson Street
 2026 Background + 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	174	345		519	1				0.335	3.5	19	
2 TR		441	5	446	1				0.335	3.2	18	
	174	786	5	965	1				0.335	3.4	19	
East: Herbertson Street (E)												
1 LTR	53	40	82	175	0				1.167	542.3	346	
	53	40	82	175	0				1.167	542.3	346	
North: Dawson Highway (N)												
1 LT	146	837		983	1				1.227	427.4	1735	
2 TR		673	42	715	2				1.227	431.2	1291	
	146	1510	42	1698	1				1.227	429.0	1735	
West: Blain Drive (W)												
1 LT	30	154		184	3				0.240	5.9	9	50
2 R			955	955	3				0.819	18.1	82	
	30	154	955	1139	3				0.819	16.1	82	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				3977	2				1.235	212.5	1735	

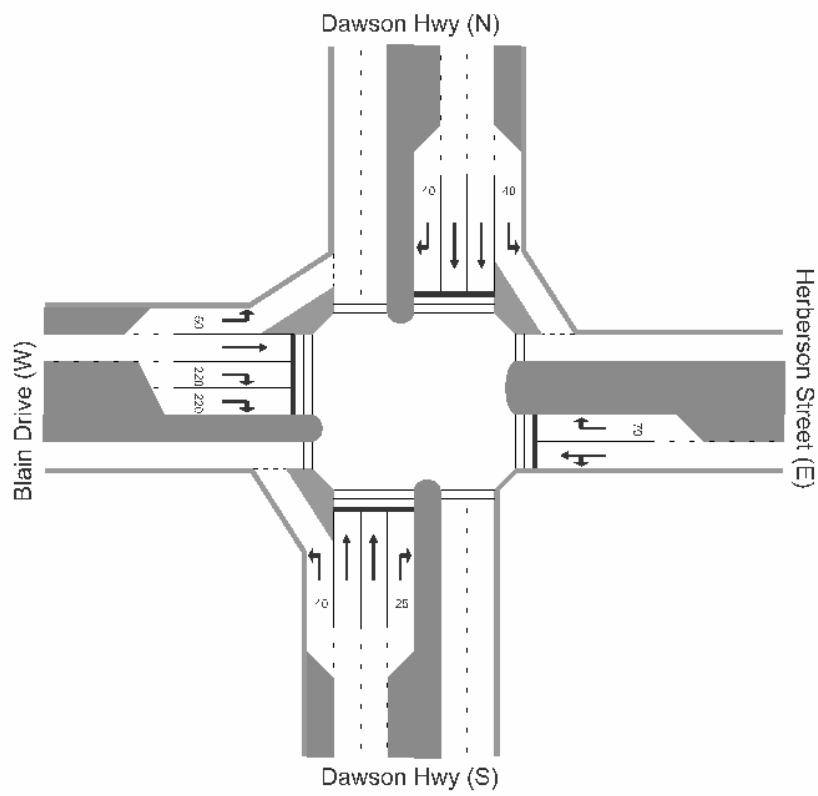
Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Dawson Highway/Blain Drive/Herbertson Street

Signalised Layout



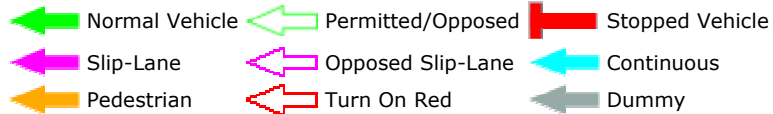
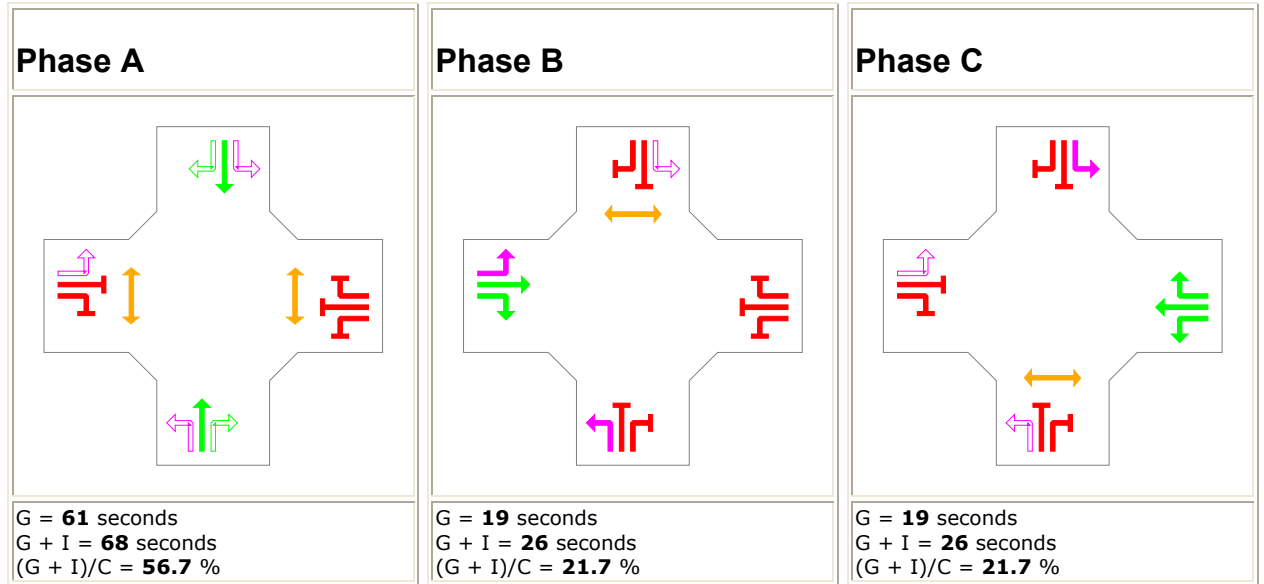
Signal Phasing

Dawson Highway/Blain/Herbertson Street - Signalised 2026 Background + Stage 1a Operation + Stage 1b Construction AM Peak

C = **120** seconds

Cycle Time Option: **User-specified cycle time**

Phase times determined by the program.



C Cycle Time
G Green Time
I Intergreen Time (yellow plus all-red)
(G + I)/C Phase time as a percentage of cycle

2014 Traffic Volumes

Dawson Highway/Blain/Herbertson Street - Signalised
 2026 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak

Intersection ID:

Fixed-Time Signals, Cycle Time = 120

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Hwy (S)												
1 L	464			464	8	1869	86	17	0.521	9.1	31	40
2 T		472		472	2	1869	61		0.503	20.7	134	
3 T		472		472	2	1869	61		0.503	20.7	134	
4 R			5	5	80	1869	52		0.062	32.5	3	25
	464	944	5	1413	4				0.521	16.9	134	
East: Herberson Street (E)												
1 LT	21	38		59	7	1869	19		0.212	51.0	32	
2 R			124	124	4	1869	19		0.453	58.5	61	70
	21	38	124	183	5				0.453	56.1	61	
North: Dawson Hwy (N)												
1 L	45			45	2	1869	61	44	0.045	8.1	2	40
2 T		237		237	7	1869	61		0.261	17.7	70	
3 T		237		237	7	1869	61		0.261	17.7	70	
4 R			43	43	26	1869	41		0.327	41.5	24	40
	45	474	43	562	8				0.327	18.8	70	
West: Blain Drive (W)												
1 L	14			14	14	1869	19	60	0.039	13.4	3	50
2 T		24		24	4	1869	19		0.083	46.7	13	
3 R			118	118	20	1869	19		0.478	59.5	67	220
4 R			118	118	20	1869	19		0.478	59.5	67	220
	14	24	235	273	19				0.478	56.0	67	
Pedestrians												
Across S approach				50			6		0.083	54.2	0.2	
Across E approach				50			54		0.009	18.1	0.1	
Across N approach				50			6		0.083	54.2	0.2	
Across W approach				50			51		0.010	19.8	0.1	
=====												
ALL VEHICLES				Total Flow	% HV		Cycle Time		Max X	Aver. Delay	Max Queue	
				2431	7		120		0.521	24.7	134	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

Dawson Highway/Blain/Herbertson Street - Signalised
2026 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
PM Peak

Intersection ID:

Fixed-Time Signals, Cycle Time = 120

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic	Eff Grn (secs)		Deg Sat	Aver. Delay	Longest Queue	Shrt Lane
	L	T	R	Tot		Satf.	1st	2nd	x	(sec)	(m)	(m)
South: Dawson Hwy (S)												
1 L	169			169	15	1869	86	18	0.195	8.6	9	40
2 T		305		305	1	1869	43		0.458	31.6	105	
3 T		305		305	1	1869	43		0.458	31.6	105	
4 R			4	4	0	1869	8		0.051	67.9	3	25
	169	609	4	782	4				0.458	26.9	105	
East: Herberson Street (E)												
1 LT	41	31		72	0	1869	19		0.250	53.1	36	
2 R			63	63	0	1869	19		0.224	56.1	32	70
	41	31	63	135	0				0.250	54.5	36	
North: Dawson Hwy (N)												
1 L	113			113	0	1869	43	58	0.141	8.5	8	40
2 T		586		586	1	1869	43		0.880	49.2	258	
3 T		586		586	1	1869	43		0.880	49.2	258	
4 R			32	32	22	1869	28		0.234	49.9	19	40
	113	1171	32	1316	1				0.880	45.7	258	
West: Blain Drive (W)												
1 L	24			24	17	1869	37	51	0.050	11.1	4	50
2 T		119		119	0	1869	37		0.206	32.8	47	
3 R			463	463	5	1869	37		0.871	60.8	214	220
4 R			463	463	5	1869	37		0.871	60.8	214	220
	24	119	926	1069	4				0.871	56.6	214	
Pedestrians												
Across S approach				50			6		0.083	54.2	0.2	
Across E approach				50			36		0.014	29.4	0.1	
Across N approach				50			24		0.021	38.4	0.1	
Across W approach				50			33		0.015	31.5	0.1	
=====												
ALL VEHICLES				Total Flow	% HV		Cycle Time		Max X	Aver. Delay	Max Queue	
				3302	3		120		0.880	45.1	258	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

2026 Traffic Volumes

Dawson Highway/Blain/Herbertson Street - Signalised

2026 Background Traffic Volumes AM Peak

Intersection ID:

Fixed-Time Signals, Cycle Time = 120

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Dawson Hwy (S)											
1 L	293			293	6	1869	86 17	0.333	8.5	18	40
2 T		609		609	2	1869	61	0.649	23.0	185	
3 T		609		609	2	1869	61	0.649	23.0	185	
4 R			7	7	71	1869	49	0.090	34.8	5	25
	293	1218	7	1518	3			0.649	20.3	185	
East: Herbertson Street (E)											
1 LT	27	50		77	6	1869	19	0.276	51.6	40	
2 R			160	160	4	1869	19	0.583	59.7	76*	70
	27	50	160	237	5			0.583	57.1	76	
North: Dawson Hwy (N)											
1 L	58			58	3	1869	61 44	0.059	8.2	3	40
2 T		306		306	7	1869	61	0.336	18.6	89	
3 T		306		306	7	1869	61	0.336	18.6	89	
4 R			58	58	26	1869	32	0.595	55.8	40	40
	58	611	58	727	8			0.595	20.7	89	
West: Blain Drive (W)											
1 L	18			18	17	1869	19 48	0.063	18.1	5	50
2 T		31		31	6	1869	19	0.109	47.0	17	
3 R			97	97	18	1869	19	0.389	58.5	55	220
4 R			97	97	18	1869	19	0.389	58.5	55	220
	18	31	194	243	16			0.389	54.1	55	
Pedestrians											
Across S approach				50			6	0.083	54.2	0.2	
Across E approach				50			54	0.009	18.1	0.1	
Across N approach				50			6	0.083	54.2	0.2	
Across W approach				50			51	0.010	19.8	0.1	
=====											
ALL VEHICLES				Total Flow	% HV		Cycle Time	Max X	Aver. Delay	Max Queue	
				2725	6		120	0.649	26.6	185	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

Dawson Highway/Blain/Herbertson Street - Signalised
2026 Background Traffic Volumes PM Peak
Intersection ID:

Fixed-Time Signals, Cycle Time = 120

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Hwy (S)												
1 L	109			109	4	1869	86	17	0.119	8.4	6	40
2 T		394		394	1	1869	49		0.520	28.5	128	
3 T		394		394	1	1869	49		0.520	28.5	128	
4 R			5	5	0	1869	3		0.076	73.5	3	25
	109	788	5	902	1				0.520	26.3	128	
East: Herbertson Street (E)												
1 LT	53	40		93	0	1869	19		0.323	53.8	45	
2 R			82	82	0	1869	19		0.291	56.7	41	70
	53	40	82	175	0				0.323	55.2	45	
North: Dawson Hwy (N)												
1 L	146			146	0	1869	49	50	0.197	8.8	12	40
2 T		755		755	1	1869	49		0.996	104.9	509	
3 T		755		755	1	1869	49		0.996	104.9	509	
4 R			42	42	24	1869	30		0.323	49.9	26	40
	146	1510	42	1698	1				0.996	95.3	509	
West: Blain Drive (W)												
1 L	30			30	17	1869	31	52	0.073	12.4	6	50
2 T		154		154	0	1869	31		0.319	38.8	63	
3 R			445	445	3	1869	31		0.989	115.0	292*	220
4 R			445	445	3	1869	31		0.989	115.0	292*	220
	30	154	890	1074	3				0.989	101.2	292	
Pedestrians												
Across S approach				50			6		0.083	54.2	0.2	
Across E approach				50			42		0.012	25.3	0.1	
Across N approach				50			18		0.028	43.3	0.1	
Across W approach				50			39		0.013	27.3	0.1	
=====												
ALL VEHICLES				Total Flow	% HV		Cycle Time		Max X	Aver. Delay	Max Queue	
				3849	2		120		0.996	79.0	509	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Dawson Highway/Blain/Herbertson Street - Signalised
 2026 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Fixed-Time Signals, Cycle Time = 120

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Hwy (S)												
1 L	358			358	5	1869	86	17	0.403	8.6	22	40
2 T		609		609	2	1869	61		0.649	23.0	185	
3 T		609		609	2	1869	61		0.649	23.0	185	
4 R			6	6	83	1869	49		0.084	35.3	4	25
	358	1218	6	1582	3				0.649	19.8	185	
East: Herbertson Street (E)												
1 LT	27	50		77	6	1869	19		0.276	51.6	40	
2 R			160	160	4	1869	19		0.583	59.7	76*	70
	27	50	160	237	5				0.583	57.1	76	
North: Dawson Hwy (N)												
1 L	58			58	3	1869	61	44	0.059	8.2	3	40
2 T		306		306	7	1869	61		0.336	18.6	89	
3 T		306		306	7	1869	61		0.336	18.6	89	
4 R			56	56	27	1869	32		0.583	55.4	39	40
	58	611	56	725	8				0.583	20.6	89	
West: Blain Drive (W)												
1 L	18			18	17	1869	19	48	0.063	18.0	5	50
2 T		30		30	7	1869	19		0.106	47.0	17	
3 R			130	130	14	1869	19		0.504	59.4	69	220
4 R			130	130	14	1869	19		0.504	59.4	69	220
	18	30	259	307	13				0.504	55.8	69	
Pedestrians												
Across S approach				50			6		0.083	54.2	0.2	
Across E approach				50			54		0.009	18.1	0.1	
Across N approach				50			6		0.083	54.2	0.2	
Across W approach				50			51		0.010	19.8	0.1	
=====												
ALL VEHICLES				Total Flow	% HV		Cycle Time		Max X	Aver. Delay	Max Queue	
				2851	6		120		0.649	27.0	185	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Dawson Highway/Blain/Herbertson Street - Signalised
 2026 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:

Fixed-Time Signals, Cycle Time = 120

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Hwy (S)												
1 L	174			174	2	1869	86	17	0.189	8.4	10	40
2 T		393		393	1	1869	48		0.529	29.3	129	
3 T		393		393	1	1869	48		0.529	29.3	129	
4 R			5	5	0	1869	3		0.076	73.5	3	25
	174	786	5	965	1				0.529	25.7	129	
East: Herberson Street (E)												
1 LT	53	40		93	0	1869	19		0.323	53.8	45	
2 R			82	82	0	1869	19		0.291	56.7	41	70
	53	40	82	175	0				0.323	55.2	45	
North: Dawson Hwy (N)												
1 L	146			146	0	1869	48	51	0.197	8.8	12	40
2 T		755		755	1	1869	48		1.016	129.3	563	
3 T		755		755	1	1869	48		1.016	129.3	563	
4 R			42	42	24	1869	29		0.325	50.9	26	40
	146	1510	42	1698	1				1.016	117.0	563	
West: Blain Drive (W)												
1 L	30			30	17	1869	32	51	0.073	12.4	6	50
2 R		154	10	164	0	1869	32		0.330	144.1	352	
3 R			473	473	3	1869	32		1.016	144.1	352*	220
4 R			473	473	3	1869	32		1.016	144.1	352*	220
	30	154	955	1139	3				1.016	125.4	352	
Pedestrians												
Across S approach				50			6		0.083	54.2	0.2	
Across E approach				50			41		0.012	26.0	0.1	
Across N approach				50			19		0.026	42.5	0.1	
Across W approach				50			38		0.013	28.0	0.1	
ALL VEHICLES												
				Total Flow	% HV		Cycle Time		Max X	Aver. Delay	Max Queue	
				3977	2		120		1.016	94.6	563	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

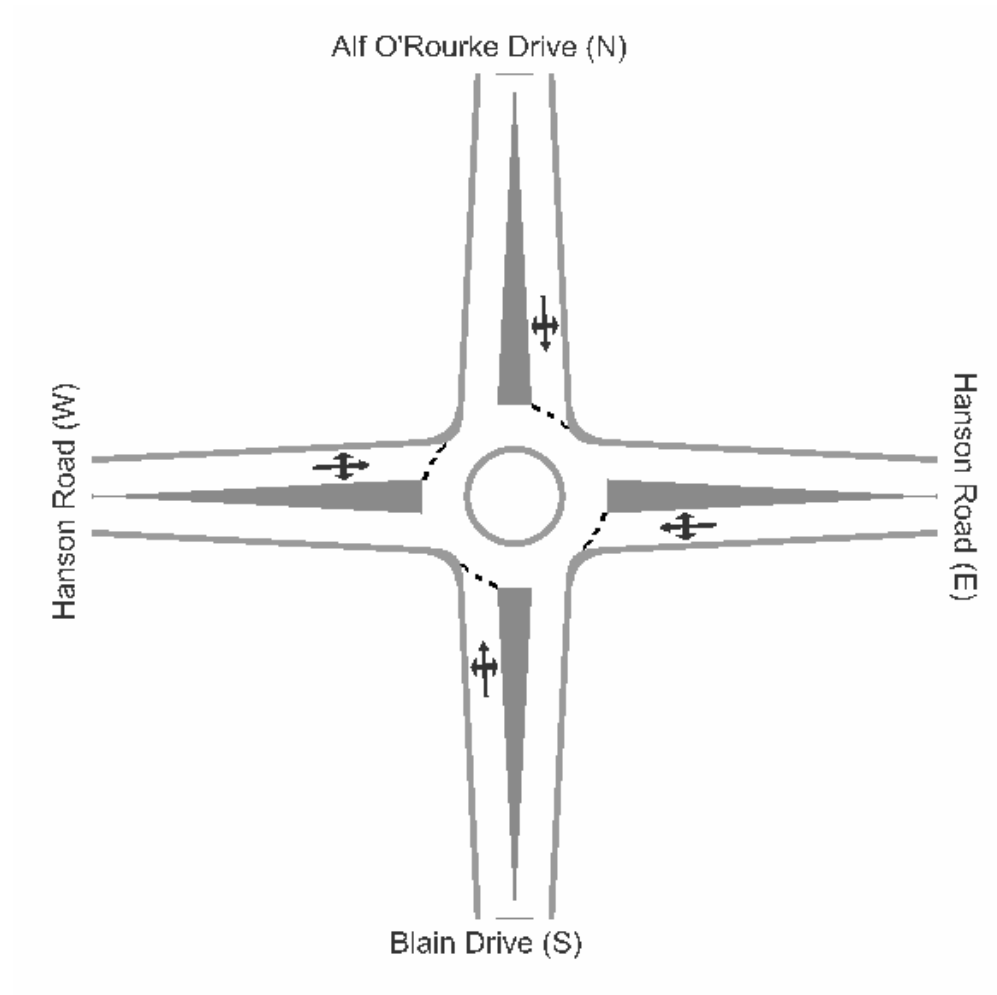
Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Hanson Road/Blain Drive/Alf O'Rourke Drive

Existing Layout



2006 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2006 Existing Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x		
South: Blain Drive (S)											
1 LTR	459	113	47	619	10			0.483	6.2	33	
	459	113	47	619	10			0.483	6.2	33	
East: Hanson Road (E)											
1 LTR	361	239	34	634	6			0.380	4.1	26	
	361	239	34	634	6			0.380	4.1	26	
North: Alf O'Rourke Drive (N)											
1 LTR	13	23	12	48	21			0.047	7.2	3	
	13	23	12	48	21			0.047	7.2	3	
West: Hanson Road (W)											
1 LTR	25	311	10	346	13			0.266	4.0	16	
	25	311	10	346	13			0.266	4.0	16	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1647	9			0.483	5.0	33	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 LTR	62	27	44	133	8				0.103	7.2	6	
	62	27	44	133	8				0.103	7.2	6	
East: Hanson Road (E)												
1 LTR	149	227	4	380	4				0.314	5.3	19	
	149	227	4	380	4				0.314	5.3	19	
North: Alf O'Rourke Drive (N)												
1 LTR	34	133	31	198	18				0.207	7.4	13	
	34	133	31	198	18				0.207	7.4	13	
West: Hanson Road (W)												
1 LTR	31	241	272	544	6				0.339	7.3	22	
	31	241	272	544	6				0.339	7.3	22	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1255	7				0.339	6.7	22	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2009 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2009 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x		
South: Blain Drive (S)											
1 LTR	501	123	51	675	10			0.536	6.5	39	
	501	123	51	675	10			0.536	6.5	39	
East: Hanson Road (E)											
1 LTR	393	260	37	690	6			0.416	4.2	29	
	393	260	37	690	6			0.416	4.2	29	
North: Alf O'Rourke Drive (N)											
1 LTR	14	25	13	52	19			0.051	7.3	3	
	14	25	13	52	19			0.051	7.3	3	
West: Hanson Road (W)											
1 LTR	27	339	11	377	13			0.294	4.1	19	
	27	339	11	377	13			0.294	4.1	19	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1794	9			0.536	5.1	39	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2009 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 LTR	68	29	48	145	8				0.115	7.3	6	
	68	29	48	145	8				0.115	7.3	6	
East: Hanson Road (E)												
1 LTR	162	247	4	413	4				0.351	5.6	22	
	162	247	4	413	4				0.351	5.6	22	
North: Alf O'Rourke Drive (N)												
1 LTR	37	145	34	216	18				0.236	7.8	15	
	37	145	34	216	18				0.236	7.8	15	
West: Hanson Road (W)												
1 LTR	34	263	296	593	6				0.371	7.4	25	
	34	263	296	593	6				0.371	7.4	25	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1367	7				0.371	6.9	25	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2009 Background + 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 LTR	795	123	51	969	13				0.862	15.2	154	
	795	123	51	969	13				0.862	15.2	154	
East: Hanson Road (E)												
1 LTR	393	358	37	788	4				0.511	4.5	38	
	393	358	37	788	4				0.511	4.5	38	
North: Alf O'Rourke Drive (N)												
1 LTR	14	25	13	52	21				0.058	8.0	3	
	14	25	13	52	21				0.058	8.0	3	
West: Hanson Road (W)												
1 LTR	27	355	59	441	22				0.382	5.5	29	
	27	355	59	441	22				0.382	5.5	29	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2250	12				0.862	9.4	154	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2009 Background + 1a Construction Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Blain Drive (S)												
1 LTR	116	29	48	193	24				0.190	7.7	12	
	116	29	48	193	24				0.190	7.7	12	
East: Hanson Road (E)												
1 LTR	162	263	4	429	7				0.487	9.5	39	
	162	263	4	429	7				0.487	9.5	39	
North: Alf O'Rourke Drive (N)												
1 LTR	37	145	34	216	18				0.369	13.0	28	
	37	145	34	216	18				0.369	13.0	28	
West: Hanson Road (W)												
1 LTR	34	361	591	986	8				0.621	8.5	59	
	34	361	591	986	8				0.621	8.5	59	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1824	11				0.621	9.2	59	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2011 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2011 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x		
South: Blain Drive (S)											
1 LTR	528	130	54	712	10			0.636	9.5	58	
	528	130	54	712	10			0.636	9.5	58	
East: Hanson Road (E)											
1 LTR	415	274	39	728	6			0.467	5.7	35	
	415	274	39	728	6			0.467	5.7	35	
North: Alf O'Rourke Drive (N)											
1 LTR	15	26	14	55	20			0.064	9.3	4	
	15	26	14	55	20			0.064	9.3	4	
West: Hanson Road (W)											
1 LTR	29	358	12	399	13			0.351	6.3	23	
	29	358	12	399	13			0.351	6.3	23	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1894	9			0.636	7.4	58	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2011 Background Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Blain Drive (S)											
1 LTR	71	31	51	153	7			0.122	7.4	7	
	71	31	51	153	7			0.122	7.4	7	
East: Hanson Road (E)											
1 LTR	171	261	5	437	4			0.379	5.9	24	
	171	261	5	437	4			0.379	5.9	24	
North: Alf O'Rourke Drive (N)											
1 LTR	39	153	36	228	18			0.257	8.2	17	
	39	153	36	228	18			0.257	8.2	17	
West: Hanson Road (W)											
1 LTR	36	277	313	626	6			0.394	7.4	27	
	36	277	313	626	6			0.394	7.4	27	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1444	7			0.394	7.1	27	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2011 Background + 1a Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Blain Drive (S)											
1 LTR	588	130	54	772	12			0.650	8.0	63	
	588	130	54	772	12			0.650	8.0	63	
East: Hanson Road (E)											
1 LTR	415	296	39	750	3			0.477	4.4	34	
	415	296	39	750	3			0.477	4.4	34	
North: Alf O'Rourke Drive (N)											
1 LTR	15	26	14	55	20			0.060	8.0	4	
	15	26	14	55	20			0.060	8.0	4	
West: Hanson Road (W)											
1 LTR	29	379	71	479	11			0.374	5.3	26	
	29	379	71	479	11			0.374	5.3	26	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2056	9			0.650	6.1	63	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2011 Background + 1a Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 LTR	131	31	51	213	5				0.169	6.8	10	
	131	31	51	213	5				0.169	6.8	10	
East: Hanson Road (E)												
1 LTR	171	282	5	458	4				0.414	6.3	27	
	171	282	5	458	4				0.414	6.3	27	
North: Alf O'Rourke Drive (N)												
1 LTR	39	153	36	228	18				0.276	8.9	19	
	39	153	36	228	18				0.276	8.9	19	
West: Hanson Road (W)												
1 LTR	36	298	373	707	6				0.444	7.7	32	
	36	298	373	707	6				0.444	7.7	32	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1606	7				0.444	7.3	32	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2014 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2014 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Blain Drive (S)											
1 LTR	570	140	58	768	10			0.637	8.0	59	
	570	140	58	768	10			0.637	8.0	59	
East: Hanson Road (E)											
1 LTR	448	296	42	786	6			0.483	4.3	37	
	448	296	42	786	6			0.483	4.3	37	
North: Alf O'Rourke Drive (N)											
1 LTR	16	29	25	70	19			0.072	8.5	4	
	16	29	25	70	19			0.072	8.5	4	
West: Hanson Road (W)											
1 LTR	31	386	12	429	13			0.345	4.3	23	
	31	386	12	429	13			0.345	4.3	23	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2053	9			0.637	5.8	59	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2014 Background Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Blain Drive (S)												
1 LTR	77	33	55	165	8				0.136	7.5	8	
	77	33	55	165	8				0.136	7.5	8	
East: Hanson Road (E)												
1 LTR	185	281	5	471	4				0.421	6.2	28	
	185	281	5	471	4				0.421	6.2	28	
North: Alf O'Rourke Drive (N)												
1 LTR	42	165	38	245	18				0.288	8.6	19	
	42	165	38	245	18				0.288	8.6	19	
West: Hanson Road (W)												
1 LTR	38	299	337	674	6				0.427	7.5	30	
	38	299	337	674	6				0.427	7.5	30	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1555	7				0.427	7.3	30	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak

Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot									
South: Blain Drive (S)													
1 LTR	828	140	58	1026	10					0.926	23.1	223	
	828	140	58	1026	10					0.926	23.1	223	
East: Hanson Road (E)													
1 LTR	448	383	42	873	7					0.597	4.9	50	
	448	383	42	873	7					0.597	4.9	50	
North: Alf O'Rourke Drive (N)													
1 LTR	16	29	15	60	20					0.073	8.7	5	
	16	29	15	60	20					0.073	8.7	5	
West: Hanson Road (W)													
1 LTR	31	418	105	554	16					0.462	6.0	36	
	31	418	105	554	16					0.462	6.0	36	
=====													
ALL VEHICLES				Total Flow	% HV					Max X	Aver. Delay	Max Queue	
				2513	10					0.925	12.7	223	
=====													

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Blain Drive (S)												
1 LTR	169	33	55	257	14				0.238	7.4	16	
	169	33	55	257	14				0.238	7.4	16	
East: Hanson Road (E)												
1 LTR	185	313	5	503	6				0.577	11.6	54	
	185	313	5	503	6				0.577	11.6	54	
North: Alf O'Rourke Drive (N)												
1 LTR	42	165	38	245	18				0.438	15.3	37	
	42	165	38	245	18				0.438	15.3	37	
West: Hanson Road (W)												
1 LTR	38	386	596	1020	7				0.645	8.4	63	
	38	386	596	1020	7				0.645	8.4	63	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2025	9				0.644	9.9	63	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2016 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2016 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 LTR	597	147	61	805	10				0.671	8.6	67	
	597	147	61	805	10				0.671	8.6	67	
East: Hanson Road (E)												
1 LTR	469	310	44	823	6				0.501	4.3	40	
	469	310	44	823	6				0.501	4.3	40	
North: Alf O'Rourke Drive (N)												
1 LTR	17	30	16	63	21				0.068	7.9	4	
	17	30	16	63	21				0.068	7.9	4	
West: Hanson Road (W)												
1 LTR	33	404	13	450	13				0.367	4.4	25	
	33	404	13	450	13				0.367	4.4	25	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2141	9				0.671	6.0	67	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2016 Background Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 LTR	81	35	57	173	8				0.144	7.5	8	
	81	35	57	173	8				0.144	7.5	8	
East: Hanson Road (E)												
1 LTR	194	295	5	494	4				0.452	6.5	31	
	194	295	5	494	4				0.452	6.5	31	
North: Alf O'Rourke Drive (N)												
1 LTR	44	173	40	257	18				0.312	9.0	21	
	44	173	40	257	18				0.312	9.0	21	
West: Hanson Road (W)												
1 LTR	40	313	354	707	6				0.449	7.5	33	
	40	313	354	707	6				0.449	7.5	33	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1631	7				0.452	7.4	33	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2016 Background + 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 LTR	668	147	61	876	12				0.769	10.9	101	
	668	147	61	876	12				0.769	10.9	101	
East: Hanson Road (E)												
1 LTR	469	335	44	848	3				0.548	4.6	42	
	469	335	44	848	3				0.548	4.6	42	
North: Alf O'Rourke Drive (N)												
1 LTR	17	30	16	63	21				0.075	8.5	5	
	17	30	16	63	21				0.075	8.5	5	
West: Hanson Road (W)												
1 LTR	33	429	84	546	11				0.439	5.6	32	
	33	429	84	546	11				0.439	5.6	32	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2333	9				0.768	7.3	101	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2016 Background + 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 LTR	151	35	57	243	5				0.201	7.1	12	
	151	35	57	243	5				0.201	7.1	12	
East: Hanson Road (E)												
1 LTR	194	320	5	519	4				0.498	7.6	38	
	194	320	5	519	4				0.498	7.6	38	
North: Alf O'Rourke Drive (N)												
1 LTR	44	173	40	257	18				0.343	10.0	24	
	44	173	40	257	18				0.343	10.0	24	
West: Hanson Road (W)												
1 LTR	40	338	424	802	5				0.507	7.8	40	
	40	338	424	802	5				0.507	7.8	40	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1821	7				0.507	7.9	40	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2026 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2026 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Blain Drive (S)											
1 LTR	736	181	76	993	10			0.894	19.2	181	
	736	181	76	993	10			0.894	19.2	181	
East: Hanson Road (E)											
1 LTR	578	382	54	1014	6			0.625	4.4	60	
	578	382	54	1014	6			0.625	4.4	60	
North: Alf O'Rourke Drive (N)											
1 LTR	21	37	19	77	22			0.096	8.7	6	
	21	37	19	77	22			0.096	8.7	6	
West: Hanson Road (W)											
1 LTR	40	498	16	554	13			0.481	5.0	37	
	40	498	16	554	13			0.481	5.0	37	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2638	9			0.894	10.3	181	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2026 Background Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Blain Drive (S)												
1 LTR	99	43	70	212	8				0.191	8.0	12	
	99	43	70	212	8				0.191	8.0	12	
East: Hanson Road (E)												
1 LTR	238	363	7	608	4				0.628	10.8	62	
	238	363	7	608	4				0.628	10.8	62	
North: Alf O'Rourke Drive (N)												
1 LTR	54	213	50	317	18				0.471	12.8	40	
	54	213	50	317	18				0.471	12.8	40	
West: Hanson Road (W)												
1 LTR	51	386	435	872	6				0.566	7.8	48	
	51	386	435	872	6				0.566	7.8	48	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2009	8				0.628	9.5	62	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2026 Background + 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Blain Drive (S)												
1 LTR	806	181	75	1062	13				1.014	75.0	551	
	806	181	75	1062	13				1.014	75.0	551	
East: Hanson Road (E)												
1 LTR	578	407	54	1039	3				0.678	4.9	63	
	578	407	54	1039	3				0.678	4.9	63	
North: Alf O'Rourke Drive (N)												
1 LTR	21	37	19	77	22				0.107	9.5	7	
	21	37	19	77	22				0.107	9.5	7	
West: Hanson Road (W)												
1 LTR	40	522	87	649	11				0.552	6.0	45	
	40	522	87	649	11				0.552	6.0	45	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2827	9				1.014	31.6	551	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2026 Background + 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Blain Drive (S)											
1 LTR	170	43	70	283	6			0.256	7.6	17	
	170	43	70	283	6			0.256	7.6	17	
East: Hanson Road (E)											
1 LTR	238	388	6	632	4			0.692	13.9	79	
	238	388	6	632	4			0.692	13.9	79	
North: Alf O'Rourke Drive (N)											
1 LTR	54	213	50	317	18			0.534	16.6	51	
	54	213	50	317	18			0.534	16.6	51	
West: Hanson Road (W)											
1 LTR	50	410	506	966	5			0.625	8.0	58	
	50	410	506	966	5			0.625	8.0	58	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2198	7			0.692	10.9	79	
=====											

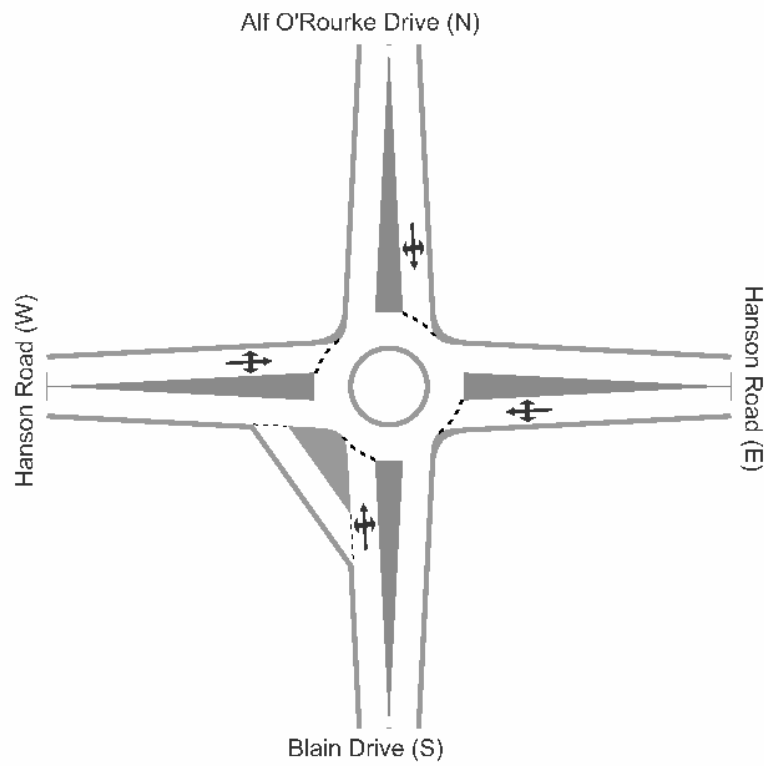
Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Hanson Road/Blain Drive/Alf O'Rourke Drive

Single Lane Roundabout with Slip Lane



2009 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive added slip lane
 2009 Background + 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x			
South: Blain Drive (S)												
1 LTR	795	123	51	969	10				0.838	13.0	134	
	795	123	51	969	10				0.838	13.0	134	
East: Hanson Road (E)												
1 LTR	393	358	37	788	7				0.521	4.5	40	
	393	358	37	788	7				0.521	4.5	40	
North: Alf O'Rourke Drive (N)												
1 LTR	14	25	13	52	21				0.058	8.0	3	
	14	25	13	52	21				0.058	8.0	3	
West: Hanson Road (W)												
1 LTR	27	355	59	441	22				0.382	5.5	29	
	27	355	59	441	22				0.382	5.5	29	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2250	12				0.838	8.4	134	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2014 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive added slip lane
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Blain Drive (S)											
1 LTR	828	140	58	1026	10			0.907	18.9	195	
	828	140	58	1026	10			0.907	18.9	195	
East: Hanson Road (E)											
1 LTR	448	383	42	873	7			0.597	4.9	50	
	448	383	42	873	7			0.597	4.9	50	
North: Alf O'Rourke Drive (N)											
1 LTR	16	29	15	60	20			0.073	8.7	5	
	16	29	15	60	20			0.073	8.7	5	
West: Hanson Road (W)											
1 LTR	31	418	105	554	16			0.462	6.0	36	
	31	418	105	554	16			0.462	6.0	36	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2513	10			0.907	11.0	195	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive added slip lane
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 LTR	169	33	55	257	14				0.237	7.2	16	
	169	33	55	257	14				0.237	7.2	16	
East: Hanson Road (E)												
1 LTR	185	313	5	503	6				0.577	11.6	54	
	185	313	5	503	6				0.577	11.6	54	
North: Alf O'Rourke Drive (N)												
1 LTR	42	165	38	245	18				0.438	15.3	37	
	42	165	38	245	18				0.438	15.3	37	
West: Hanson Road (W)												
1 LTR	38	386	596	1020	7				0.644	8.4	63	
	38	386	596	1020	7				0.644	8.4	63	
=====												
ALL VEHICLES				Total Flow 2025	% HV 9				Max X 0.644	Aver. Delay 9.9	Max Queue 63	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2026 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive added slip lane

2026 Background Traffic Volumes AM Peak

Intersection ID:

Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x			
South: Blain Drive (S)												
1 LTR	736	181	76	993	10				0.872	15.9	159	
	736	181	76	993	10				0.872	15.9	159	
East: Hanson Road (E)												
1 LTR	578	382	54	1014	6				0.625	4.4	60	
	578	382	54	1014	6				0.625	4.4	60	
North: Alf O'Rourke Drive (N)												
1 LTR	21	37	19	77	22				0.096	8.7	6	
	21	37	19	77	22				0.096	8.7	6	
West: Hanson Road (W)												
1 LTR	40	498	16	554	13				0.481	5.0	37	
	40	498	16	554	13				0.481	5.0	37	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2638	9				0.872	9.0	159	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive
 2026 Background Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Blain Drive (S)												
1 LTR	99	43	70	212	8				0.191	8.0	12	
	99	43	70	212	8				0.191	8.0	12	
East: Hanson Road (E)												
1 LTR	238	363	7	608	4				0.628	10.8	62	
	238	363	7	608	4				0.628	10.8	62	
North: Alf O'Rourke Drive (N)												
1 LTR	54	213	50	317	18				0.471	12.8	40	
	54	213	50	317	18				0.471	12.8	40	
West: Hanson Road (W)												
1 LTR	51	386	435	872	6				0.566	7.8	48	
	51	386	435	872	6				0.566	7.8	48	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2009	8				0.628	9.5	62	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive added slip lane
 2026 Background + 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Blain Drive (S)												
1 LTR	806	181	75	1062	13				0.989	48.3	414	
	806	181	75	1062	13				0.989	48.3	414	
East: Hanson Road (E)												
1 LTR	578	407	54	1039	3				0.678	4.9	63	
	578	407	54	1039	3				0.678	4.9	63	
North: Alf O'Rourke Drive (N)												
1 LTR	21	37	19	77	22				0.107	9.5	7	
	21	37	19	77	22				0.107	9.5	7	
West: Hanson Road (W)												
1 LTR	40	522	87	649	11				0.554	6.0	45	
	40	522	87	649	11				0.554	6.0	45	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2827	9				0.989	21.6	414	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive added slip lane
 2026 Background + 1bOperation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Blain Drive (S)												
1 LTR	170	43	70	283	6				0.255	7.4	17	
	170	43	70	283	6				0.255	7.4	17	
East: Hanson Road (E)												
1 LTR	238	388	6	632	4				0.692	13.9	79	
	238	388	6	632	4				0.692	13.9	79	
North: Alf O'Rourke Drive (N)												
1 LTR	54	213	50	317	18				0.534	16.6	51	
	54	213	50	317	18				0.534	16.6	51	
West: Hanson Road (W)												
1 LTR	50	410	506	966	5				0.625	8.0	58	
	50	410	506	966	5				0.625	8.0	58	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2198	7				0.692	10.9	79	
=====												

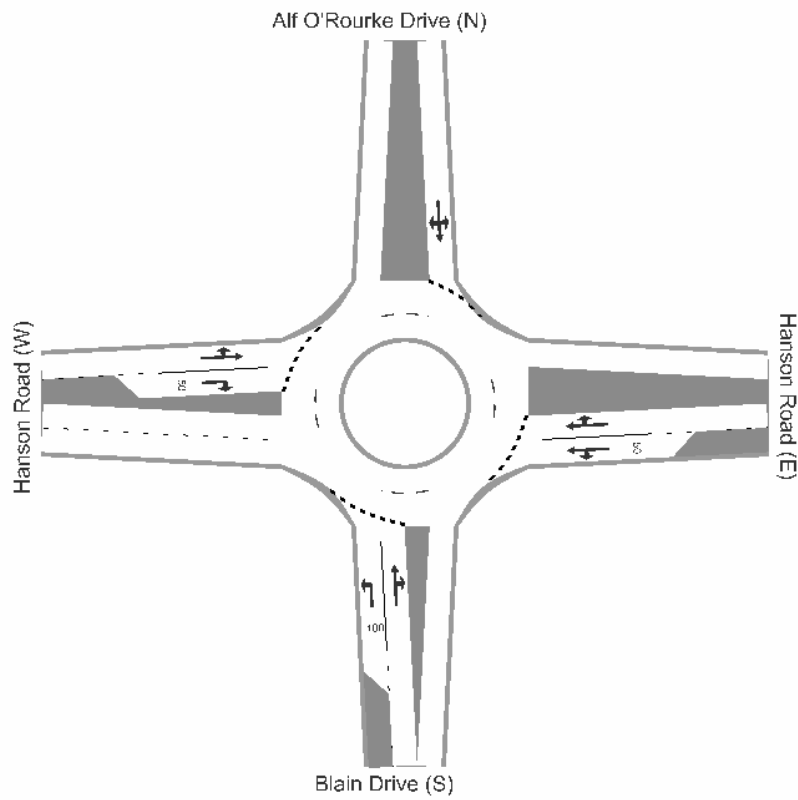
Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Hanson Road/Blain Drive/Alf O'Rourke Drive

Two Lane Roundabout



2014 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive two lanes
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak

Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Blain Drive (S)												
1 L	828			828	10				0.674	8.1	61	100
2 TR		140	58	198	9				0.245	7.7	11	
	828	140	58	1026	10				0.674	8.0	61	
East: Hanson Road (E)												
1 LT	448	7		455	4				0.331	4.8	15	50
2 TR		376	42	418	10				0.331	4.3	17	
	448	383	42	873	7				0.331	4.5	17	
North: Alf O'Rourke Drive (N)												
1 LTR	16	29	15	60	20				0.076	7.8	3	
	16	29	15	60	20				0.076	7.8	3	
West: Hanson Road (W)												
1 LT	31	418		449	14				0.345	3.8	20	
2 R			105	105	22				0.133	13.3	6	50
	31	418	105	554	16				0.345	5.6	20	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2513	10				0.674	6.3	61	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive two lanes
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 L	169			169	18				0.147	5.6	7	100
2 TR		33	55	88	6				0.087	9.2	4	
	169	33	55	257	14				0.147	6.8	7	
East: Hanson Road (E)												
1 LT	185	101		286	5				0.284	7.6	17	50
2 TR		212	5	217	8				0.284	7.7	16	
	185	313	5	503	6				0.284	7.7	17	
North: Alf O'Rourke Drive (N)												
1 LTR	42	165	38	245	18				0.346	8.6	16	
	42	165	38	245	18				0.346	8.6	16	
West: Hanson Road (W)												
1 LT	38	386		424	8				0.320	3.2	17	
2 R			596	596	6				0.431	11.6	21	50
	38	386	596	1020	7				0.431	8.1	21	
=====												
ALL VEHICLES				Total Flow 2025	% HV 9				Max X 0.431	Aver. Delay 7.9	Max Queue 21	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2026 Traffic Volumes

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive two lanes
 2026 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Blain Drive (S)											
1 L	736			736	10			0.609	7.8	50	100
2 TR		181	76	257	9			0.295	7.8	15	
	736	181	76	993	10			0.609	7.8	50	
East: Hanson Road (E)											
1 L	578			578	4			0.410	4.6	19	50
2 TR		382	54	436	9			0.324	4.0	18	
	578	382	54	1014	6			0.410	4.3	19	
North: Alf O'Rourke Drive (N)											
1 LTR	21	37	19	77	22			0.103	8.3	5	
	21	37	19	77	22			0.103	8.3	5	
West: Hanson Road (W)											
1 LT	40	498		538	13			0.430	4.3	27	
2 R			16	16	0			0.018	12.5	1	50
	40	498	16	554	13			0.430	4.5	27	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2638	9			0.609	5.8	50	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive two lanes
 2026 Background Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Blain Drive (S)												
1 L	99			99	10				0.097	5.7	4	100
2 TR		43	70	113	5				0.089	8.9	4	
	99	43	70	212	8				0.097	7.4	4	
East: Hanson Road (E)												
1 LT	238	103		341	4				0.314	6.9	19	50
2 TR		260	7	267	6				0.314	6.7	17	
	238	363	7	608	4				0.314	6.8	19	
North: Alf O'Rourke Drive (N)												
1 LTR	54	213	50	317	18				0.417	8.4	21	
	54	213	50	317	18				0.417	8.4	21	
West: Hanson Road (W)												
1 LT	51	386		437	8				0.284	3.2	15	
2 R			435	435	4				0.356	11.7	16	50
	51	386	435	872	6				0.356	7.4	16	
ALL VEHICLES												
				Total Flow 2009	% HV 8				Max X 0.417	Aver. Delay 7.4	Max Queue 21	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive two lanes
 2026 Background + 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Blain Drive (S)											
1 L	806			806	14			0.704	9.5	73	100
2 TR		181	75	256	9			0.304	7.9	15	
	806	181	75	1062	13			0.704	9.1	73	
East: Hanson Road (E)											
1 L	578			578	4			0.413	4.8	19	50
2 TR		407	54	461	2			0.350	4.2	17	
	578	407	54	1039	3			0.413	4.5	19	
North: Alf O'Rourke Drive (N)											
1 LTR	21	37	19	77	22			0.107	8.5	5	
	21	37	19	77	22			0.107	8.5	5	
West: Hanson Road (W)											
1 LT	40	522		562	13			0.448	4.3	29	
2 R			87	87	0			0.096	12.7	4	50
	40	522	87	649	11			0.448	5.4	29	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2827	9			0.704	6.6	73	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Blain Drive/Alf O'Rourke Drive two lanes
 2026 Background + 1bOperation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

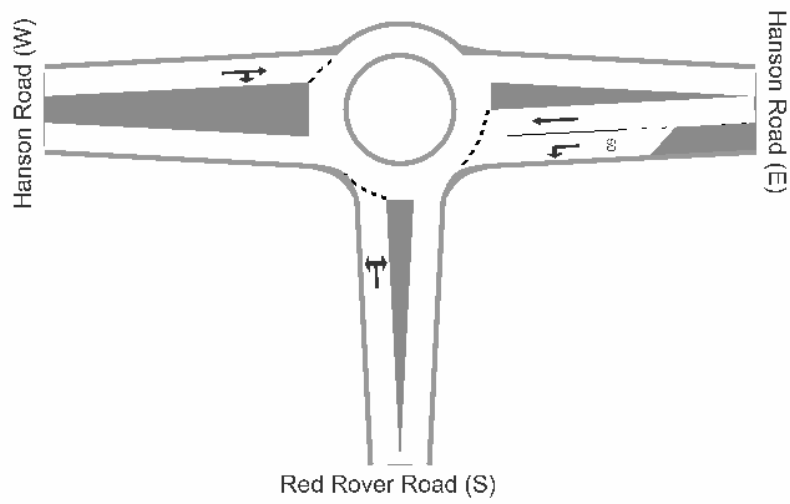
Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Blain Drive (S)												
1 L	170			170	6				0.134	5.3	6	100
2 TR		43	70	113	5				0.113	9.3	5	
	170	43	70	283	6				0.134	6.9	6	
East: Hanson Road (E)												
1 LT	238	118		356	4				0.344	7.4	21	50
2 TR		270	6	276	6				0.344	7.4	20	
	238	388	6	632	4				0.344	7.4	21	
North: Alf O'Rourke Drive (N)												
1 LTR	54	213	50	317	18				0.436	9.0	23	
	54	213	50	317	18				0.436	9.0	23	
West: Hanson Road (W)												
1 LT	50	410		460	7				0.343	3.3	19	
2 R			506	506	3				0.366	11.6	17	50
	50	410	506	966	5				0.366	7.7	19	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2198	7				0.435	7.7	23	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Hanson Road/Red Rover Road



2006 Traffic Volumes

5314 Hanson Road/Red Rover Road
 2006 Existing Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Red Rover Road (S)											
1 LR	80		45	125	10			0.122	9.8	7	
	80	0	45	125	10			0.122	9.8	7	
East: Hanson Road (E)											
1 L	69			69	22			0.070	4.8	3	50
2 T		641		641	5			0.330	2.7	20	
	69	641	0	710	7			0.330	2.9	20	
West: Hanson Road (W)											
1 TR		172	24	196	13			0.129	3.9	8	
	0	172	24	196	13			0.129	3.9	8	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1031	8			0.330	3.9	20	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-

controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Red Rover Road (S)											
1 LR	8		111	119	6			0.086	11.6	4	
	8	0	111	119	6			0.086	11.6	4	
East: Hanson Road (E)											
1 L	111			111	15			0.101	4.7	4	50
2 T		212		212	11			0.117	2.8	6	
	111	212	0	323	12			0.117	3.4	6	
West: Hanson Road (W)											
1 TR		378	46	424	14			0.299	4.2	19	
	0	378	46	424	14			0.299	4.2	19	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				866	12			0.299	4.9	19	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2009 Traffic Volumes

5314 Hanson Road/Red Rover Road
 2009 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Red Rover Road (S)											
1 LR	92		52	144	10			0.152	10.6	9	
	92	0	52	144	10			0.152	10.6	9	
East: Hanson Road (E)											
1 L	79			79	22			0.080	4.8	3	50
2 T		737		737	5			0.381	2.7	24	
	79	737	0	816	7			0.381	2.9	24	
West: Hanson Road (W)											
1 TR		198	28	226	13			0.151	4.0	9	
	0	198	28	226	13			0.151	4.0	9	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1186	8			0.380	4.0	24	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2009 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Red Rover Road (S)												
1 LR	9		127	136	5				0.099	11.7	5	
	9	0	127	136	5				0.099	11.7	5	
East: Hanson Road (E)												
1 L	128			128	15				0.116	4.8	5	50
2 T		244		244	11				0.136	2.8	7	
	128	244	0	372	12				0.136	3.5	7	
West: Hanson Road (W)												
1 TR		435	56	491	14				0.351	4.4	24	
	0	435	56	491	14				0.351	4.4	24	
ALL VEHICLES												
				Total Flow 999	% HV 12				Max X 0.351	Aver. Delay 5.0	Max Queue 24	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2009 Background +Stage 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x		
South: Red Rover Road (S)											
1 LR	117		52	169	10			0.279	16.7	21	
	117	0	52	169	10			0.279	16.7	21	
East: Hanson Road (E)											
1 L	79			79	22			0.080	4.8	3	50
2 T		1130		1130	7			0.599	2.8	52	
	79	1130	0	1209	8			0.599	2.9	52	
West: Hanson Road (W)											
1 TR		262	32	294	27			0.221	4.1	16	
	0	262	32	294	27			0.221	4.1	16	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1672	12			0.599	4.5	52	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2009 Background + Stage 1a Construction Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Red Rover Road (S)												
1 LR	13		127	140	7				0.113	12.0	6	
	13	0	127	140	7				0.113	12.0	6	
East: Hanson Road (E)												
1 L	128			128	15				0.119	4.9	5	50
2 T		308		308	24				0.198	3.1	13	
	128	308	0	436	21				0.198	3.6	13	
West: Hanson Road (W)												
1 TR		828	81	909	13				0.634	4.5	61	
	0	828	81	909	13				0.634	4.5	61	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1485	15				0.633	4.9	61	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2011 Traffic Volumes

5314 Hanson Road/Red Rover Road
 2011 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay	Longest Queue	Shrt Lane
	L	T	R	Tot			1st	2nd	x	(sec)	(m)

South: Red Rover Road (S)											
1 LR	100		56	156	10			0.174	11.2	11	

	100	0	56	156	10			0.174	11.2	11	

East: Hanson Road (E)											
1 L	86			86	22			0.087	4.8	4	50
2 T		801		801	5			0.414	2.7	27	

	86	801	0	887	7			0.414	2.9	27	

West: Hanson Road (W)											
1 TR		215	30	245	13			0.164	4.0	10	

	0	215	30	245	13			0.164	4.0	10	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1288	8			0.414	4.1	27	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2011 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x		
South: Red Rover Road (S)											
1 LR	10		138	148	5			0.110	11.8	5	
	10	0	138	148	5			0.110	11.8	5	
East: Hanson Road (E)											
1 L	139			139	15			0.127	4.8	5	50
2 T		265		265	11			0.148	2.8	8	
	139	265	0	404	12			0.148	3.5	8	
West: Hanson Road (W)											
1 TR		473	61	534	14			0.385	4.4	27	
	0	473	61	534	14			0.385	4.4	27	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1086	12			0.385	5.1	27	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2011 Background +Stage 1a Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x		
South: Red Rover Road (S)											
1 LR	105		56	161	9			0.193	12.0	13	
	105	0	56	161	9			0.193	12.0	13	
East: Hanson Road (E)											
1 L	86			86	22			0.088	4.9	4	50
2 T		882		882	5			0.457	2.7	32	
	86	882	0	968	6			0.457	2.9	32	
West: Hanson Road (W)											
1 TR		296	35	331	10			0.214	3.8	14	
	0	296	35	331	10			0.214	3.8	14	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1460	7			0.457	4.1	32	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2011 Background + Stage 1a Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Red Rover Road (S)												
1 LR	15		138	153	5				0.119	11.9	6	
	15	0	138	153	5				0.119	11.9	6	
East: Hanson Road (E)												
1 L	139			139	15				0.129	4.8	6	50
2 T		346		346	9				0.190	2.8	11	
	139	346	0	485	11				0.190	3.4	11	
West: Hanson Road (W)												
1 TR		554	66	620	13				0.439	4.4	32	
	0	554	66	620	13				0.439	4.4	32	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1258	11				0.439	4.9	32	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2014 Traffic Volumes

5314 Hanson Road/Red Rover Road
 2014 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Red Rover Road (S)												
1 LR	112		63	175	10				0.214	12.4	14	
	112	0	63	175	10				0.214	12.4	14	
East: Hanson Road (E)												
1 L	97			97	22				0.098	4.9	4	50
2 T		897		897	5				0.465	2.7	33	
	97	897	0	994	7				0.465	2.9	33	
West: Hanson Road (W)												
1 TR		241	34	275	13				0.185	4.0	12	
	0	241	34	275	13				0.185	4.0	12	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1444	8				0.466	4.3	33	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2014 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Red Rover Road (S)												
1 LR	11		154	165	5				0.125	12.0	6	
	11	0	154	165	5				0.125	12.0	6	
East: Hanson Road (E)												
1 L	155			155	15				0.141	4.8	6	50
2 T		297		297	11				0.167	2.9	10	
	155	297	0	452	12				0.167	3.5	10	
West: Hanson Road (W)												
1 TR		529	69	598	14				0.437	4.6	32	
	0	529	69	598	14				0.437	4.6	32	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1215	12				0.437	5.2	32	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd				
South: Red Rover Road (S)											
1 LR	134		63	197	10			0.384	20.5	30	
	134	0	63	197	10			0.384	20.5	30	
East: Hanson Road (E)											
1 L	97			97	22			0.099	4.9	4	50
2 T		1243		1243	6			0.655	2.9	64	
	97	1243	0	1340	7			0.655	3.0	64	
West: Hanson Road (W)											
1 TR		365	41	406	17			0.283	3.9	21	
	0	365	41	406	17			0.283	3.9	21	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1943	10			0.655	5.0	64	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Red Rover Road (S)												
1 LR	19		154	173	7				0.149	12.4	8	
	19	0	154	173	7				0.149	12.4	8	
East: Hanson Road (E)												
1 L	155			155	15				0.146	4.9	7	50
2 T		421		421	15				0.252	3.0	17	
	155	421	0	576	15				0.252	3.5	17	
West: Hanson Road (W)												
1 TR		875	90	965	12				0.688	4.8	70	
	0	875	90	965	12				0.688	4.8	70	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1714	13				0.687	5.2	70	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2016 Traffic Volumes

5314 Hanson Road/Red Rover Road
 2016 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd	x			
South: Red Rover Road (S)											
1 LR	120		68	188	10			0.247	13.4	17	
	120	0	68	188	10			0.247	13.4	17	
East: Hanson Road (E)											
1 L	104			104	22			0.106	4.9	4	50
2 T		962		962	5			0.500	2.7	37	
	104	962	0	1066	7			0.500	2.9	37	
West: Hanson Road (W)											
1 TR		258	36	294	13			0.201	4.1	13	
	0	258	36	294	13			0.201	4.1	13	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1548	8			0.500	4.4	37	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2016 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Red Rover Road (S)												
1 LR	12		165	177	6				0.137	12.1	7	
	12	0	165	177	6				0.137	12.1	7	
East: Hanson Road (E)												
1 L	167			167	15				0.153	4.9	7	50
2 T		318		318	11				0.180	2.9	11	
	167	318	0	485	12				0.180	3.6	11	
West: Hanson Road (W)												
1 TR		567	74	641	14				0.474	4.7	36	
	0	567	74	641	14				0.474	4.7	36	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1303	12				0.474	5.3	36	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2016 Traffic Volumes

5314 Hanson Road/Red Rover Road
 2016 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Red Rover Road (S)												
1 LR	126		68	194	10				0.284	14.9	20	
	126	0	68	194	10				0.284	14.9	20	
East: Hanson Road (E)												
1 L	104			104	22				0.106	4.9	5	50
2 T		1057		1057	5				0.551	2.8	44	
	104	1057	0	1161	6				0.551	3.0	44	
West: Hanson Road (W)												
1 TR		354	42	396	10				0.260	3.9	18	
	0	354	42	396	10				0.260	3.9	18	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1751	7				0.550	4.5	44	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2016 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Red Rover Road (S)												
1 LR	18		165	183	5				0.150	12.3	8	
	18	0	165	183	5				0.150	12.3	8	
East: Hanson Road (E)												
1 L	167			167	15				0.155	4.9	7	50
2 T		414		414	9				0.230	2.9	14	
	167	414	0	581	10				0.230	3.4	14	
West: Hanson Road (W)												
1 TR		663	79	742	13				0.538	4.7	44	
	0	663	79	742	13				0.538	4.7	44	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				1506	11				0.538	5.1	44	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2026 Traffic Volumes

5314 Hanson Road/Red Rover Road
 2026 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Red Rover Road (S)												
1 LR	160		90	250	10				0.521	29.7	51	
	160	0	90	250	10				0.521	29.7	51	
East: Hanson Road (E)												
1 L	138			138	22				0.141	4.9	6	50
2 T		1282		1282	5				0.672	2.9	69	
	138	1282	0	1420	7				0.672	3.1	69	
West: Hanson Road (W)												
1 TR		344	48	392	13				0.274	4.2	20	
	0	344	48	392	13				0.274	4.2	20	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2062	8				0.672	6.5	69	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2026 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Red Rover Road (S)											
1 LR	16		220	236	6			0.198	12.7	11	
	16	0	220	236	6			0.198	12.7	11	
East: Hanson Road (E)											
1 L	222			222	15			0.206	5.0	10	50
2 T		424		424	11			0.245	3.0	16	
	222	424	0	646	12			0.245	3.7	16	
West: Hanson Road (W)											
1 TR		756	98	854	14			0.663	5.5	63	
	0	756	98	854	14			0.663	5.5	63	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1736	12			0.664	5.8	63	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2026 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd				
South: Red Rover Road (S)											
1 LR	166		90	256	10			0.653	52.5	80	
	166	0	90	256	10			0.653	52.5	80	
East: Hanson Road (E)											
1 L	138			138	22			0.141	5.0	6	50
2 T		1378		1378	5			0.724	3.0	84	
	138	1378	0	1516	6			0.724	3.2	84	
West: Hanson Road (W)											
1 TR		440	54	494	11			0.335	4.1	25	
	0	440	54	494	11			0.335	4.1	25	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				2266	8			0.724	8.9	84	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Hanson Road/Red Rover Road
 2026 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

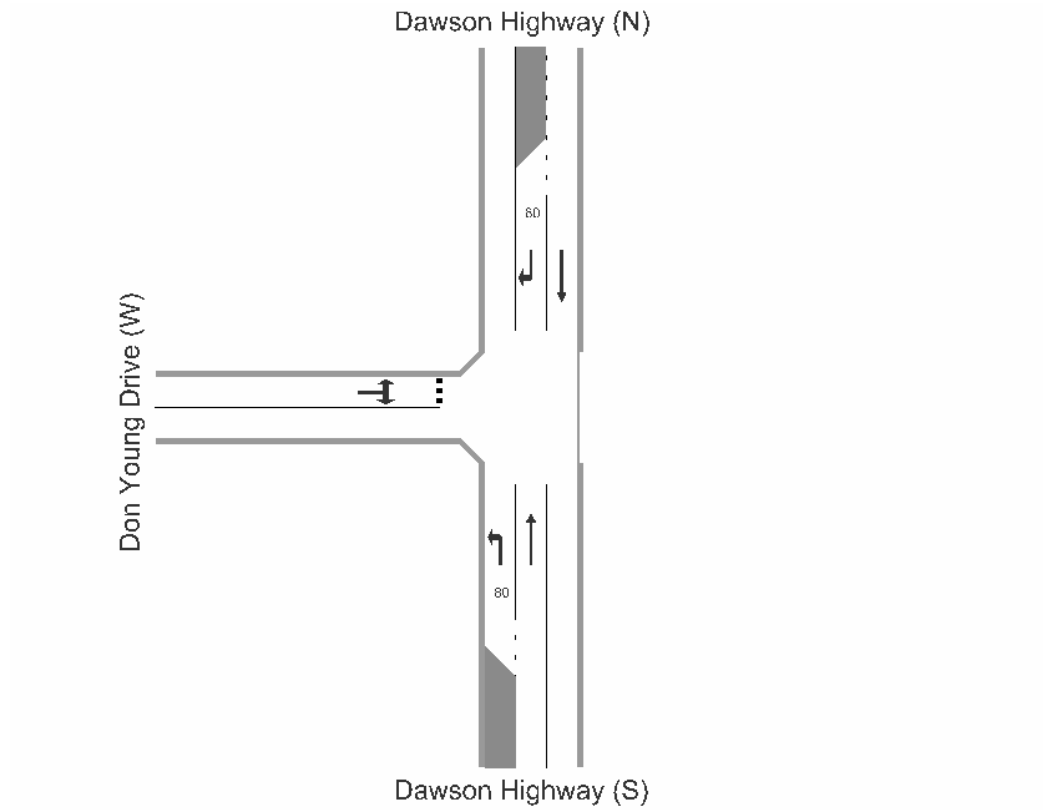
Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Red Rover Road (S)											
1 LR	22		220	242	5			0.217	13.0	13	
	22	0	220	242	5			0.217	13.0	13	
East: Hanson Road (E)											
1 L	222			222	15			0.209	5.0	11	50
2 T		520		520	9			0.297	3.0	21	
	222	520	0	742	11			0.297	3.6	21	
West: Hanson Road (W)											
1 TR		852	104	956	13			0.733	6.2	83	
	0	852	104	956	13			0.733	6.2	83	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				1940	11			0.733	6.0	83	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Dawson Highway/Don Young Drive



2006 Traffic Volumes

5314 Don Young Drive/Dawson Highway

2006 Existing Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 L	58			58	9				0.035	8.5	0	80
2 T		346		346	4				0.192	0.0	0	
	58	346	0	404	5				0.192	1.2		
North: Dawson Highway (N)												
1 T		147		147	7				0.083	0.0	0	
2 R			15	15	7				0.020	11.0	1	60
	0	147	15	162	7				0.083	1.0	1	
West: Don Young Drive (W)												
1 LR	5		14	19	16				0.047	14.4	1	
	5	0	14	19	16				0.047	14.4	1	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				585	6				0.192	1.6	1	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Don Young Drive/Dawson Highway
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Dawson Highway (S)											
1 L	23			23	0			0.013	8.2	0	80
2 T		167		167	4			0.093	0.0	0	
	23	167	0	190	4			0.093	1.0		
North: Dawson Highway (N)											
1 T		330		330	2			0.181	0.0	0	
2 R			4	4	0			0.004	9.3	0	60
	0	330	4	334	2			0.181	0.1	0	
West: Don Young Drive (W)											
1 LR	22		89	111	5			0.213	12.9	7	
	22	0	89	111	5			0.213	12.9	7	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				635	3			0.214	2.6	7	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2009 Traffic Volumes

5314 Don Young Drive/Dawson Highway
 2009 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Dawson Highway (S)											
1 L	67			67	9			0.040	8.5	0	80
2 T		398		398	4			0.221	0.0	0	
	67	398	0	465	5			0.221	1.2		
North: Dawson Highway (N)											
1 T		169		169	7			0.096	0.0	0	
2 R			17	17	6			0.024	11.4	1	60
	0	169	17	186	7			0.096	1.0	1	
West: Don Young Drive (W)											
1 LR	6		16	22	14			0.058	15.4	2	
	6	0	16	22	14			0.058	15.4	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				673	6			0.221	1.6	2	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Don Young Drive/Dawson Highway
 2009 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Dawson Highway (S)											
1 L	26			26	0			0.015	8.2	0	80
2 T		192		192	4			0.107	0.0	0	
	26	192	0	218	4			0.107	1.0		
North: Dawson Highway (N)											
1 T		380		380	2			0.208	0.0	0	
2 R			5	5	0			0.005	9.4	0	60
	0	380	5	385	2			0.208	0.1	0	
West: Don Young Drive (W)											
1 LR	25		102	127	6			0.271	14.4	10	
	25	0	102	127	6			0.271	14.4	10	
ALL VEHICLES											
			Total Flow	% HV				Max X	Aver. Delay	Max Queue	
			730	3				0.272	2.9	10	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Don Young Drive/Dawson Highway
 2009 Background + 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Dawson Highway (S)											
1 L	67			67	9			0.040	8.5	0	80
2 T		398		398	4			0.221	0.0	0	
	67	398	0	465	5			0.221	1.2		
North: Dawson Highway (N)											
1 T		209		209	6			0.117	0.0	0	
2 R			17	17	6			0.024	11.3	1	60
	0	209	17	226	6			0.117	0.9	1	
West: Don Young Drive (W)											
1 LR	6		19	25	12			0.069	15.7	2	
	6	0	19	25	12			0.069	15.7	2	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				716	5			0.221	1.6	2	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Don Young Drive/Dawson Highway
 2009 Background + 1a Construction Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 L	29			29	0				0.016	8.2	0	80
2 T		232		232	3				0.128	0.0	0	
	29	232	0	261	3				0.128	0.9		
North: Dawson Highway (N)												
1 T		380		380	2				0.208	0.0	0	
2 R			7	7	0				0.008	9.7	0	60
	0	380	7	387	2				0.208	0.2	0	
West: Don Young Drive (W)												
1 LR	25		102	127	6				0.288	15.2	10	
	25	0	102	127	6				0.288	15.2	10	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				775	3				0.288	2.9	10	
=====												

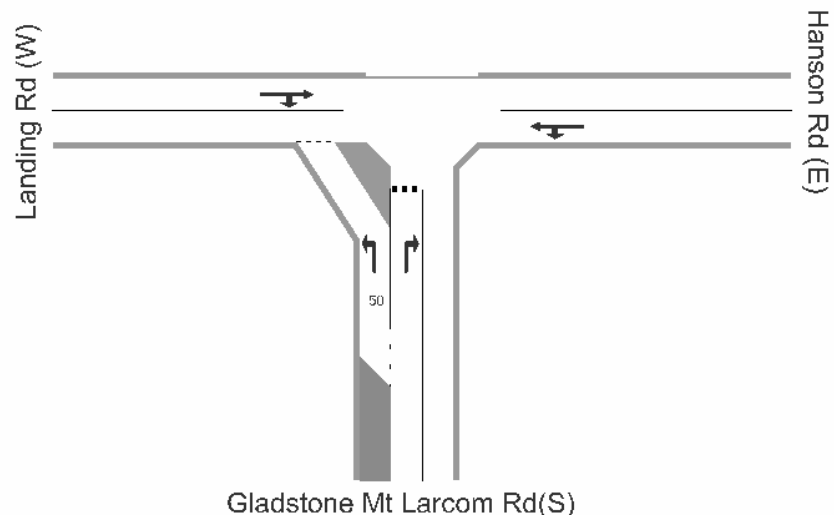
Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-

controlled intersections and apply only to continuous lanes.

Gladstone Mt Larcom Road/Hanson Road/Landing Road



2006 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2006 Existing Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic	Eff Grn	Deg Sat	Aver. Delay	Longest Queue	Shrt Lane
	L	T	R	Tot		Satf.	(secs)	x	(sec)	(m)	(m)

South: Gladstone Mt Larcom Rd(S)											
1 L	7			7	71			0.013	11.1	1	50
2 R			162	162	13			0.173	10.0	7	

	7	0	162	169	15			0.173	10.0	7	

East: Hanson Rd (E)											
1 LT	120	48		168	19			0.107	6.3	0	

	120	48	0	168	19			0.107	6.3		

West: Landing Rd (W)											
1 TR		18	5	23	39			0.018	4.3	2	

	0	18	5	23	39			0.018	4.3	2	
=====											
ALL VEHICLES				Total	%			Max	Aver.	Max	
				Flow	HV			X	Delay	Queue	
				360	19			0.173	7.9	7	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd				
South: Gladstone Mt Larcom Rd(S)											
1 L	8			8	63			0.014	10.5	1	50
2 R			113	113	14			0.123	10.0	5	
	8	0	113	121	17			0.123	10.0	5	
East: Hanson Rd (E)											
1 LT	181	13		194	7			0.115	7.9	0	
	181	13	0	194	7			0.115	7.9		
West: Landing Rd (W)											
1 TR		51	1	52	8			0.030	0.8	1	
	0	51	1	52	8			0.030	0.8	1	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				367	10			0.123	7.6	5	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2009 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2009 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd				
South: Gladstone Mt Larcom Rd(S)											
1 L	8			8	75			0.016	11.4	1	50
2 R			186	186	13			0.203	10.2	8	
	8	0	186	194	15			0.203	10.2	8	
East: Hanson Rd (E)											
1 LT	138	55		193	19			0.122	6.4	0	
	138	55	0	193	19			0.122	6.4		
West: Landing Rd (W)											
1 TR		21	6	27	41			0.022	4.8	2	
	0	21	6	27	41			0.022	4.8	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				414	19			0.204	8.1	8	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2009 Background Traffic Volumes PM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	9			9	67			0.017	10.7	1	50
2 R			130	130	14			0.145	10.2	6	
	9	0	130	139	17			0.145	10.2	6	
East: Hanson Rd (E)											
1 LT	208	15		223	7			0.132	7.9	0	
	208	15	0	223	7			0.132	7.9		
West: Landing Rd (W)											
1 TR		59	1	60	8			0.034	0.8	2	
	0	59	1	60	8			0.034	0.8	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				422	10			0.145	7.6	6	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2009 Background + Stage 1a Construction Traffic Volumes AM peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	8			8	75			0.016	11.7	1	50
2 R			260	260	13			0.287	10.3	13	
	8	0	260	268	15			0.287	10.4	13	
East: Hanson Rd (E)											
1 LT	150	55		205	22			0.133	6.6	0	
	150	55	0	205	22			0.133	6.6		
West: Landing Rd (W)											
1 TR		21	6	27	41			0.022	5.1	2	
	0	21	6	27	41			0.022	5.1	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				500	19			0.287	8.6	13	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2009 Background + Stage 1a Construction Traffic Volumes PM peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	9			9	67			0.017	11.4	1	50
2 R			142	142	19			0.175	10.9	7	
	9	0	142	151	22			0.175	10.9	7	
East: Hanson Rd (E)											
1 LT	282	15		297	8			0.177	8.1	0	
	282	15	0	297	8			0.177	8.1		
West: Landing Rd (W)											
1 TR		59	1	60	8			0.034	1.1	2	
	0	59	1	60	8			0.034	1.1	2	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				508	12			0.177	8.1	7	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2011 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2011 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	9			9	67			0.017	11.4	1	50
2 R			203	203	13			0.226	10.3	9	
	9	0	203	212	15			0.226	10.3	9	
East: Hanson Rd (E)											
1 LT	151	60		211	19			0.134	6.4	0	
	151	60	0	211	19			0.134	6.4		
West: Landing Rd (W)											
1 TR		23	6	29	38			0.023	4.9	2	
	0	23	6	29	38			0.023	4.9	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				452	18			0.226	8.1	9	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2011 Background Traffic Volumes PM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	10			10	60			0.018	10.8	1	50
2 R			141	141	14			0.160	10.3	6	
	10	0	141	151	17			0.160	10.3	6	
East: Hanson Rd (E)											
1 LT	226	16		242	7			0.143	7.9	0	
	226	16	0	242	7			0.143	7.9		
West: Landing Rd (W)											
1 TR		64	1	65	8			0.037	0.9	2	
	0	64	1	65	8			0.037	0.9	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				458	10			0.160	7.7	6	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2011 Background + Stage 1a Operation Traffic Volumes AM peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	9			9	67			0.017	11.5	1	50
2 R			220	220	13			0.248	10.4	10	
	9	0	220	229	15			0.248	10.5	10	
East: Hanson Rd (E)											
1 LT	168	60		228	18			0.144	6.5	0	
	168	60	0	228	18			0.144	6.5		
West: Landing Rd (W)											
1 TR		23	6	29	38			0.024	5.2	2	
	0	23	6	29	38			0.024	5.2	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				486	18			0.248	8.3	10	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2011 Background + Stage 1a Operations PM peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	10			10	60			0.018	10.8	1	50
2 R			159	159	14			0.183	10.4	7	
	10	0	159	169	17			0.183	10.5	7	
East: Hanson Rd (E)											
1 LT	244	16		260	7			0.155	8.0	0	
	244	16	0	260	7			0.155	8.0		
West: Landing Rd (W)											
1 TR		64	1	65	8			0.037	1.0	2	
	0	64	1	65	8			0.037	1.0	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				494	11			0.183	7.9	7	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2014 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2014 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd				
South: Gladstone Mt Larcom Rd(S)											
1 L	10			10	70			0.019	11.8	1	50
2 R			227	227	13			0.261	10.5	11	
	10	0	227	237	16			0.261	10.6	11	
East: Hanson Rd (E)											
1 LT	168	67		235	19			0.149	6.4	0	
	168	67	0	235	19			0.149	6.4		
West: Landing Rd (W)											
1 TR		25	7	32	41			0.027	5.6	3	
	0	25	7	32	41			0.027	5.6	3	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				504	19			0.261	8.3	11	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2014 Background Traffic Volumes PM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	11			11	64			0.020	11.0	1	50
2 R			158	158	14			0.184	10.5	7	
	11	0	158	169	17			0.184	10.6	7	
East: Hanson Rd (E)											
1 LT	253	18		271	7			0.161	7.9	0	
	253	18	0	271	7			0.161	7.9		
West: Landing Rd (W)											
1 TR		71	1	72	8			0.041	1.0	2	
	0	71	1	72	8			0.041	1.0	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				512	10			0.184	7.8	7	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x		
South: Gladstone Mt Larcom Rd(S)											
1 L	10			10	70			0.019	12.1	1	50
2 R			294	294	13			0.343	10.8	16	
	10	0	294	304	15			0.343	10.9	16	
East: Hanson Rd (E)											
1 LT	194	67		261	21			0.168	6.7	0	
	194	67	0	261	21			0.168	6.7		
West: Landing Rd (W)											
1 TR		25	7	32	41			0.028	6.2	3	
	0	25	7	32	41			0.028	6.2	3	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				597	19			0.343	8.8	16	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Gladstone Mt Larcom Rd(S)												
1 L	11			11	64				0.020	11.6	1	50
2 R			184	184	17				0.232	11.1	10	
	11	0	184	195	19				0.232	11.1	10	
East: Hanson Rd (E)												
1 LT	321	18		339	8				0.202	8.0	0	
	321	18	0	339	8				0.202	8.0		
West: Landing Rd (W)												
1 TR		71	1	72	8				0.041	1.3	2	
	0	71	1	72	8				0.041	1.3	2	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				606	12				0.232	8.2	10	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2016 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2016 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd				
South: Gladstone Mt Larcom Rd(S)											
1 L	11			11	73			0.021	12.1	1	50
2 R			243	243	13			0.284	10.7	12	
	11	0	243	254	16			0.284	10.8	12	
East: Hanson Rd (E)											
1 LT	180	72		252	19			0.160	6.3	0	
	180	72	0	252	19			0.160	6.3		
West: Landing Rd (W)											
1 TR		27	8	35	40			0.029	5.6	3	
	0	27	8	35	40			0.029	5.6	3	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				541	19			0.285	8.4	12	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2016 Background Traffic Volumes PM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	12			12	67			0.023	11.3	1	50
2 R			170	170	14			0.203	10.7	8	
	12	0	170	182	18			0.203	10.7	8	
East: Hanson Rd (E)											
1 LT	272	20		292	7			0.173	7.9	0	
	272	20	0	292	7			0.173	7.9		
West: Landing Rd (W)											
1 TR		77	2	79	8			0.045	1.2	2	
	0	77	2	79	8			0.045	1.2	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				553	10			0.203	7.9	8	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2016 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	11			11	64			0.020	11.8	1	50
2 R			264	264	13			0.312	10.9	14	
	11	0	264	275	15			0.312	10.9	14	
East: Hanson Rd (E)											
1 LT	201	72		273	19			0.173	6.5	0	
	201	72	0	273	19			0.173	6.5		
West: Landing Rd (W)											
1 TR		27	8	35	40			0.030	5.9	3	
	0	27	8	35	40			0.030	5.9	3	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				583	18			0.312	8.5	14	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2016 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	12			12	67			0.023	11.6	1	50
2 R			190	190	14			0.230	10.8	9	
	12	0	190	202	17			0.230	10.9	9	
East: Hanson Rd (E)											
1 LT	292	20		312	7			0.185	7.9	0	
	292	20	0	312	7			0.185	7.9		
West: Landing Rd (W)											
1 TR		77	2	79	8			0.045	1.3	2	
	0	77	2	79	8			0.045	1.3	2	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				593	11			0.230	8.0	9	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2026 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2026 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	14			14	71			0.031	13.3	2	50
2 R			324	324	13			0.415	12.3	24	
	14	0	324	338	15			0.415	12.3	24	
East: Hanson Rd (E)											
1 LT	240	96		336	19			0.213	6.3	0	
	240	96	0	336	19			0.213	6.3		
West: Landing Rd (W)											
1 TR		36	10	46	39			0.042	7.4	4	
	0	36	10	46	39			0.042	7.4	4	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				720	19			0.415	9.2	24	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd

2026 Background Traffic Volumes PM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Gladstone Mt Larcom Rd(S)											
1 L	16			16	63			0.030	12.0	1	50
2 R			226	226	14			0.297	11.6	13	
	16	0	226	242	17			0.297	11.6	13	
East: Hanson Rd (E)											
1 LT	362	26		388	6			0.230	7.9	0	
	362	26	0	388	6			0.230	7.9		
West: Landing Rd (W)											
1 TR		102	2	104	8			0.060	1.6	4	
	0	102	2	104	8			0.060	1.6	4	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				734	10			0.297	8.2	13	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2026 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd				
South: Gladstone Mt Larcom Rd(S)											
1 L	14			14	71			0.031	13.5	2	50
2 R			345	345	13			0.448	12.7	27	
	14	0	345	359	15			0.448	12.7	27	
East: Hanson Rd (E)											
1 LT	261	96		357	18			0.226	6.5	0	
	261	96	0	357	18			0.226	6.5		
West: Landing Rd (W)											
1 TR		36	10	46	39			0.043	7.9	5	
	0	36	10	46	39			0.043	7.9	5	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				762	18			0.449	9.5	27	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Landing Rd/Hanson Rd
 2026 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

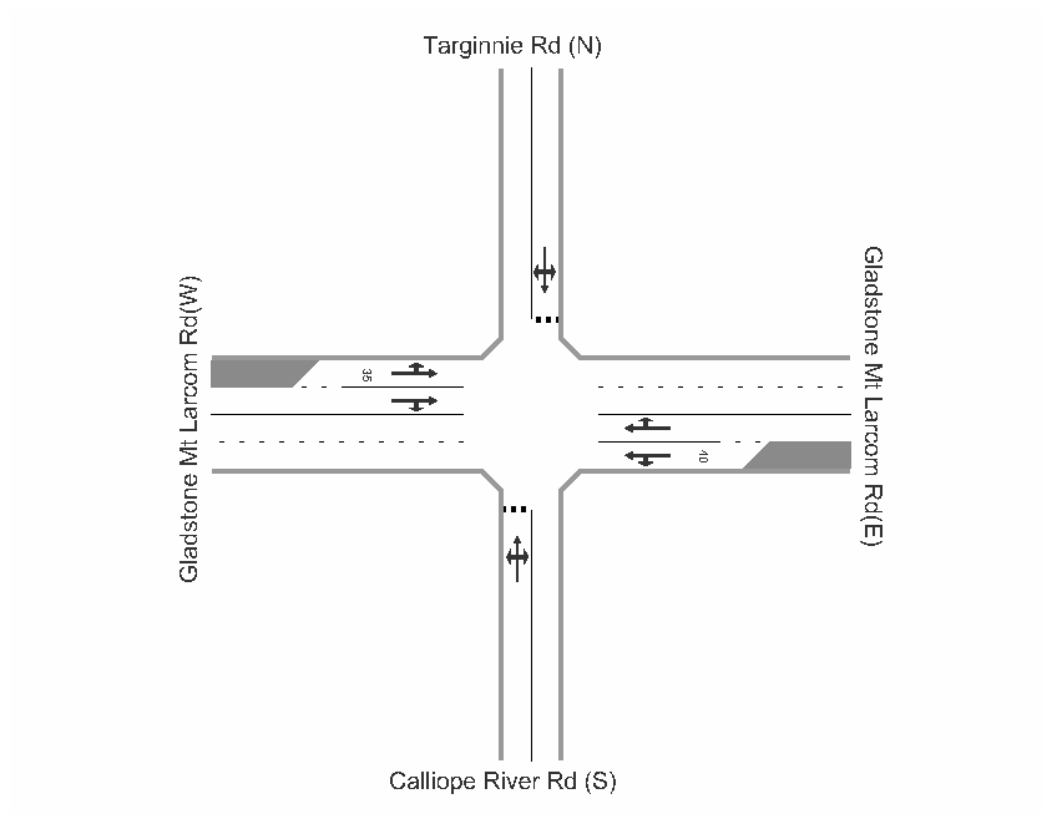
Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd	x			
South: Gladstone Mt Larcom Rd(S)											
1 L	16			16	63			0.031	12.2	1	50
2 R			247	247	14			0.328	11.9	15	
	16	0	247	263	17			0.328	11.9	15	
East: Hanson Rd (E)											
1 LT	383	26		409	7			0.243	7.9	0	
	383	26	0	409	7			0.243	7.9		
West: Landing Rd (W)											
1 TR		102	2	104	8			0.060	1.7	4	
	0	102	2	104	8			0.060	1.7	4	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				776	10			0.328	8.4	15	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Gladstone Mt Larcom Road/Targinnie Road/Calliope River Road



2006 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2006 Existing Traffic Volumes AM Peak
 Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Eff Grn Basic (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot		Satf. 1st	2nd				
South: Calliope River Rd (S)											
1 LTR	4	2	51	57	16			0.133	13.2	5	
	4	2	51	57	16			0.133	13.2	5	
East: Gladstone Mt Larcom Rd(E)											
1 LT	13	6		19	46			0.013	6.9	0	40U
2 TR		87	2	89	28			0.058	1.5	5	
	13	93	2	108	31			0.058	2.5	5	
North: Targinnie Rd (N)											
1 LTR	1	7	9	17	18			0.040	12.3	1	
	1	7	9	17	18			0.040	12.3	1	
West: Gladstone Mt Larcom Rd(W)											
1 LT	1	22		23	18			0.013	0.5	0	35U
2 TR		91	2	93	15			0.057	1.6	5	
	1	113	2	116	16			0.057	1.4	5	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				298	21			0.133	4.7	5	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Calliope River Rd (S)											
1 LTR	4	1	10	15	7			0.030	11.5	1	
	4	1	10	15	7			0.030	11.5	1	
East: Gladstone Mt Larcom Rd(E)											
1 L	49			49	0			0.028	8.2	0	50
2 T		126		126	10			0.073	0.0	0	
3 R			15	15	7			0.016	9.1	0	50
	49	126	15	190	7			0.073	2.8	0	
North: Targinnie Rd (N)											
1 LTR	5	1	1	7	29			0.011	10.6	0	
	5	1	1	7	29			0.011	10.6	0	
West: Gladstone Mt Larcom Rd(W)											
1 L	1			1	0			0.001	8.2	0	50
2 T		82		82	16			0.049	0.0	0	
3 R			6	6	17			0.007	10.1	0	50
	1	82	6	89	16			0.049	0.8	0	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				301	10			0.073	2.8	1	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2009 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd

2009 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	6	2	59	67	16				0.166	14.0	6	
	6	2	59	67	16				0.166	14.0	6	
East: Gladstone Mt Larcom Rd(E)												
1 L	15			15	53				0.012	10.2	0	50
2 T		107		107	28				0.068	0.0	0	
3 R			2	2	50				0.003	11.8	0	50
	15	107	2	124	31				0.068	1.4	0	
North: Targinnie Rd (N)												
1 LTR	1	8	10	19	16				0.047	12.8	2	
	1	8	10	19	16				0.047	12.8	2	
West: Gladstone Mt Larcom Rd(W)												
1 L	1			1	100				0.001	11.9	0	50
2 T		130		130	14				0.077	0.0	0	
3 R			2	2	50				0.003	11.9	0	50
	1	130	2	133	15				0.077	0.3	0	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				343	21				0.167	4.1	6	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2009 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Calliope River Rd (S)											
1 LTR	5	1	12	18	6			0.037	12.0	1	
	5	1	12	18	6			0.037	12.0	1	
East: Gladstone Mt Larcom Rd(E)											
1 L	56			56	0			0.032	8.2	0	50
2 T		144		144	10			0.083	0.0	0	
3 R			17	17	6			0.018	9.2	1	50
	56	144	17	217	7			0.083	2.8	1	
North: Targinnie Rd (N)											
1 LTR	6	1	1	8	25			0.012	10.7	0	
	6	1	1	8	25			0.012	10.7	0	
West: Gladstone Mt Larcom Rd(W)											
1 L	1			1	100			0.001	11.9	0	50
2 T		94		94	16			0.056	0.0	0	
3 R			7	7	14			0.008	10.2	0	50
	1	94	7	102	17			0.056	0.8	0	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				345	10			0.083	2.9	1	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2009 Background + Stage 1a Construction Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	5	2	108	115	14				0.311	16.5	13	
	5	2	108	115	14				0.311	16.5	13	
East: Gladstone Mt Larcom Rd(E)												
1 L	23			23	61				0.018	10.4	0	40
2 TR		111	2	113	30				0.075	2.0	7	
	23	111	2	136	35				0.075	3.4	7	
North: Targinnie Rd (N)												
1 LTR	1	8	10	19	11				0.049	13.4	2	
	1	8	10	19	11				0.049	13.4	2	
West: Gladstone Mt Larcom Rd(W)												
1 LT	1	31		32	13				0.018	0.3	0	35U
2 TR		124	2	126	14				0.076	2.1	7	
	1	155	2	158	14				0.076	1.7	7	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				428	21				0.312	6.7	13	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2009 Background + Stage 1a Construction Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Calliope River Rd (S)											
1 LTR	5	1	20	26	27			0.090	18.0	3	
	5	1	20	26	27			0.090	18.0	3	
East: Gladstone Mt Larcom Rd (E)											
1 L	105			105	6			0.059	8.4	0	40
2 TR		168	17	185	10			0.113	1.4	7	
	105	168	17	290	8			0.113	3.9	7	
North: Targinnie Rd (N)											
1 LTR	6	1	1	8	25			0.013	10.9	0	
	6	1	1	8	25			0.013	10.9	0	
West: Gladstone Mt Larcom Rd (W)											
1 LT	1	21		22	18			0.013	0.4	0	35U
2 TR		77	7	84	18			0.055	2.5	4	
	1	98	7	106	18			0.055	2.1	4	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				430	12			0.113	4.4	7	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

2011 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd

2011 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	6	3	64	73	16				0.193	14.8	7	
	6	3	64	73	16				0.193	14.8	7	
East: Gladstone Mt Larcom Rd(E)												
1 L	16			16	56				0.013	10.2	0	50
2 T		116		116	28				0.074	0.0	0	
3 R			4	4	50				0.007	11.9	0	50
	16	116	4	136	32				0.074	1.5	0	
North: Targinnie Rd (N)												
1 LTR	1	9	11	21	14				0.054	13.4	2	
	1	9	11	21	14				0.054	13.4	2	
West: Gladstone Mt Larcom Rd(W)												
1 L	1			1	100				0.001	11.9	0	50
2 T		141		141	14				0.083	0.0	0	
3 R			4	4	50				0.007	12.0	0	50
	1	141	4	146	16				0.083	0.4	0	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				376	22				0.194	4.3	7	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2011 Background Traffic Volumes PM Peak
 Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	5	1	13	19	5				0.041	12.4	1	
	5	1	13	19	5				0.041	12.4	1	
East: Gladstone Mt Larcom Rd(E)												
1 L	61			61	0				0.035	8.2	0	50
2 T		156		156	10				0.090	0.0	0	
3 R			19	19	5				0.020	9.2	1	50
	61	156	19	236	7				0.090	2.9	1	
North: Targinnie Rd (N)												
1 LTR	6	1	1	8	25				0.012	10.9	0	
	6	1	1	8	25				0.012	10.9	0	
West: Gladstone Mt Larcom Rd(W)												
1 L	1			1	100				0.001	11.9	0	50
2 T		103		103	16				0.061	0.0	0	
3 R			8	8	13				0.009	10.3	0	50
	1	103	8	112	16				0.061	0.8	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				375	10				0.090	2.9	1	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2011 Background + Stage 1a Operations Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic	Eff Grn (secs)		Deg Sat	Aver. Delay	Longest Queue	Shrt Lane
	L	T	R	Tot		Satf.	1st	2nd	x	(sec)	(m)	(m)
South: Calliope River Rd (S)												
1 LTR	5	3	75	83	16				0.229	15.6	9	
	5	3	75	83	16				0.229	15.6	9	
East: Gladstone Mt Larcom Rd(E)												
1 LT	27	1		28	37				0.019	9.3	0	40U
2 TR		122	3	125	28				0.082	1.6	7	
	27	123	3	153	29				0.082	3.0	7	
North: Targinnie Rd (N)												
1 LTR	1	9	11	21	10				0.054	13.4	2	
	1	9	11	21	10				0.054	13.4	2	
West: Gladstone Mt Larcom Rd(W)												
1 LT	1	29		30	14				0.017	0.3	0	35U
2 TR		119	3	122	15				0.074	1.8	6	
	1	148	3	152	15				0.074	1.5	6	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				409	20				0.229	5.5	9	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2011 Background + Stage 1a Operations Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Calliope River Rd (S)											
1 LTR	5	1	23	29	7			0.069	13.5	2	
	5	1	23	29	7			0.069	13.5	2	
East: Gladstone Mt Larcom Rd(E)											
1 L	72			72	1			0.039	8.2	0	40
2 TR		163	19	182	10			0.112	1.5	6	
	72	163	19	254	7			0.112	3.4	6	
North: Targinnie Rd (N)											
1 LTR	1	1	6	8	38			0.031	18.5	1	
	1	1	6	8	38			0.031	18.5	1	
West: Gladstone Mt Larcom Rd(W)											
1 LT	1	24		25	16			0.014	0.3	0	35U
2 TR		85	8	93	16			0.061	2.2	4	
	1	109	8	118	16			0.061	1.8	4	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				409	11			0.112	4.0	6	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

2014 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd

2014 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Calliope River Rd (S)											
1 LTR	6	3	71	80	16			0.229	16.0	9	
	6	3	71	80	16			0.229	16.0	9	
East: Gladstone Mt Larcom Rd(E)											
1 L	18			18	56			0.014	10.2	0	50
2 T		130		130	28			0.083	0.0	0	
3 R			4	4	50			0.007	12.1	0	50
	18	130	4	152	32			0.083	1.5	0	
North: Targinnie Rd (N)											
1 LTR	1	10	13	24	13			0.065	14.0	2	
	1	10	13	24	13			0.065	14.0	2	
West: Gladstone Mt Larcom Rd(W)											
1 L	1			1	100			0.001	11.9	0	50
2 T		158		158	14			0.093	0.0	0	
3 R			4	4	50			0.006	12.3	0	50
	1	158	4	163	15			0.093	0.4	0	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				419	21			0.231	4.6	9	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2014 Background Traffic Volumes PM Peak
 Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	6	1	14	21	5				0.047	13.0	1	
	6	1	14	21	5				0.047	13.0	1	
East: Gladstone Mt Larcom Rd(E)												
1 L	69			69	0				0.039	8.2	0	50
2 T		176		176	10				0.101	0.0	0	
3 R			21	21	5				0.022	9.3	1	50
	69	176	21	266	7				0.101	2.9	1	
North: Targinnie Rd (N)												
1 LTR	7	1	1	9	33				0.015	11.2	1	
	7	1	1	9	33				0.015	11.2	1	
West: Gladstone Mt Larcom Rd(W)												
1 L	1			1	100				0.001	11.9	0	50
2 T		115		115	16				0.068	0.0	0	
3 R			8	8	13				0.009	10.5	0	50
	1	115	8	124	16				0.068	0.8	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				420	10				0.101	2.9	1	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	6	3	115	124	15				0.389	20.0	18	
	6	3	115	124	15				0.389	20.0	18	
East: Gladstone Mt Larcom Rd(E)												
1 L	35			35	43				0.025	9.8	0	40
2 TR		140	3	143	29				0.094	2.0	8	
	35	140	3	178	31				0.094	3.5	8	
North: Targinnie Rd (N)												
1 LTR	1	10	13	24	8				0.069	14.8	2	
	1	10	13	24	8				0.069	14.8	2	
West: Gladstone Mt Larcom Rd(W)												
1 LT	1	36		37	14				0.021	0.2	0	35U
2 TR		146	3	149	15				0.090	2.2	8	
	1	182	3	186	15				0.090	1.8	8	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				512	20				0.400	7.4	18	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	6	1	30	37	16				0.125	17.9	4	
	6	1	30	37	16				0.125	17.9	4	
East: Gladstone Mt Larcom Rd(E)												
1 L	113			113	4				0.063	8.3	0	40
2 TR		198	21	219	10				0.135	1.6	8	
	113	198	21	332	8				0.135	3.9	8	
North: Targinnie Rd (N)												
1 LTR	7	1	1	9	33				0.016	11.7	1	
	7	1	1	9	33				0.016	11.7	1	
West: Gladstone Mt Larcom Rd(W)												
1 LT	1	27		28	17				0.016	0.3	0	35U
2 TR		97	8	105	17				0.069	2.7	5	
	1	124	8	133	17				0.069	2.2	5	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				511	12				0.135	4.6	8	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

2016 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd

2016 Background Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	6	3	77	86	16				0.263	17.5	11	
	6	3	77	86	16				0.263	17.5	11	
East: Gladstone Mt Larcom Rd(E)												
1 L	20			20	55				0.016	10.2	0	50
2 T		140		140	28				0.089	0.0	0	
3 R			4	4	50				0.006	12.3	0	50
	20	140	4	164	32				0.089	1.5	0	
North: Targinnie Rd (N)												
1 LTR	2	11	14	27	22				0.085	15.9	3	
	2	11	14	27	22				0.085	15.9	3	
West: Gladstone Mt Larcom Rd(W)												
1 L	2			2	100				0.002	11.9	0	50
2 T		170		170	14				0.100	0.0	0	
3 R			4	4	50				0.007	12.4	0	50
	2	170	4	176	16				0.100	0.4	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				453	22				0.263	5.0	11	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2016 Background Traffic Volumes PM Peak
 Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	6	2	16	24	8				0.063	14.3	2	
	6	2	16	24	8				0.063	14.3	2	
East: Gladstone Mt Larcom Rd(E)												
1 L	74			74	0				0.042	8.2	0	50
2 T		188		188	10				0.108	0.0	0	
3 R			23	23	9				0.025	9.4	1	50
	74	188	23	285	7				0.108	2.9	1	
North: Targinnie Rd (N)												
1 LTR	8	2	1	11	27				0.019	11.5	1	
	8	2	1	11	27				0.019	11.5	1	
West: Gladstone Mt Larcom Rd(W)												
1 L	1			1	0				0.001	8.2	0	50
2 T		123		123	16				0.074	0.0	0	
3 R			9	9	22				0.012	10.9	0	50
	1	123	9	133	17				0.074	0.8	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				453	11				0.108	3.1	2	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2016 Background + Stage 1b Operations Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	6	3	89	98	15				0.310	18.9	13	
	6	3	89	98	15				0.310	18.9	13	
East: Gladstone Mt Larcom Rd(E)												
1 LT	32	2		34	34				0.023	8.9	0	40U
2 TR		145	3	148	29				0.098	3.1	12	
	32	147	3	182	30				0.098	4.2	12	
North: Targinnie Rd (N)												
1 LTR	2	11	14	27	11				0.077	14.8	3	
	2	11	14	27	11				0.077	14.8	3	
West: Gladstone Mt Larcom Rd(W)												
1 LT	2	34		36	17				0.021	0.6	0	35U
2 TR		143	3	146	16				0.090	3.5	11	
	2	177	3	182	16				0.090	2.9	11	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				489	21				0.316	7.2	13	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2016 Background + Stage 1b Operations Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs)	Grn	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x			
South: Calliope River Rd (S)												
1 LTR	6	2	28	36	6				0.098	15.0	3	
	6	2	28	36	6				0.098	15.0	3	
East: Gladstone Mt Larcom Rd(E)												
1 L	86			86	1				0.047	8.2	0	40
2 TR		195	23	218	11				0.136	1.8	8	
	86	195	23	304	8				0.136	3.6	8	
North: Targinnie Rd (N)												
1 LTR	8	2	1	11	27				0.020	11.7	1	
	8	2	1	11	27				0.020	11.7	1	
West: Gladstone Mt Larcom Rd(W)												
1 LT	1	29		30	16				0.017	0.3	0	35U
2 TR		102	9	111	17				0.074	3.0	6	
	1	131	9	141	17				0.074	2.4	6	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				492	11				0.136	4.3	8	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

2026 Traffic Volumes

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd

2026 Traffic Volumes AM Peak

Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Calliope River Rd (S)											
1 LTR	8	4	102	114	16			0.446	25.1	21	
	8	4	102	114	16			0.446	25.1	21	
East: Gladstone Mt Larcom Rd(E)											
1 L	26			26	54			0.020	10.2	0	50
2 T		186		186	28			0.119	0.0	0	
3 R			4	4	50			0.007	13.0	0	50
	26	186	4	216	31			0.119	1.5	0	
North: Targinnie Rd (N)											
1 LTR	2	14	18	34	18			0.131	19.2	5	
	2	14	18	34	18			0.131	19.2	5	
West: Gladstone Mt Larcom Rd(W)											
1 L	2			2	100			0.002	11.9	0	50
2 T		226		226	14			0.133	0.0	0	
3 R			4	4	50			0.007	13.3	0	50
	2	226	4	232	16			0.133	0.3	0	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				596	21			0.445	6.6	21	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2026 Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd			
South: Calliope River Rd (S)											
1 LTR	8	2	20	30	7			0.097	17.1	3	
	8	2	20	30	7			0.097	17.1	3	
East: Gladstone Mt Larcom Rd(E)											
1 L	98			98	0			0.056	8.2	0	50
2 T		250		250	10			0.144	0.0	0	
3 R			30	30	7			0.031	9.6	1	50
	98	250	30	378	7			0.144	2.9	1	
North: Targinnie Rd (N)											
1 LTR	10	2	1	13	31			0.026	12.6	1	
	10	2	1	13	31			0.026	12.6	1	
West: Gladstone Mt Larcom Rd(W)											
1 L	1			1	0			0.001	8.2	0	50
2 T		164		164	16			0.098	0.0	0	
3 R			12	12	17			0.017	11.4	1	50
	1	164	12	177	16			0.098	0.8	1	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				598	10			0.144	3.2	3	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2026 Background + Stage 1b Operations Traffic Volumes AM Peak
 Intersection ID:

Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic	Eff Grn (secs)		Deg Sat	Aver. Delay	Longest Queue	Shrt Lane
	L	T	R	Tot		Satf.	1st	2nd	x	(sec)	(m)	(m)
South: Calliope River Rd (S)												
1 LTR	8	4	115	127	15				0.520	28.0	26	
	8	4	115	127	15				0.520	28.0	26	
East: Gladstone Mt Larcom Rd(E)												
1 LT	39	4		43	37				0.029	8.6	0	40U
2 TR		190	4	194	28				0.128	3.5	15	
	39	194	4	237	30				0.128	4.5	15	
North: Targinnie Rd (N)												
1 LTR	2	14	18	34	15				0.136	19.9	5	
	2	14	18	34	15				0.136	19.9	5	
West: Gladstone Mt Larcom Rd(W)												
1 LT	2	46		48	16				0.027	0.4	0	35U
2 TR		188	4	192	15				0.119	4.0	14	
	2	234	4	240	15				0.119	3.3	14	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				638	21				0.533	9.5	26	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Gladstone Mt Larcom Rd/Targinnie/Calliope River Rd
 2026 Background + Stage 1b Operations Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Calliope River Rd (S)												
1 LTR	8	2	33	43	7				0.154	19.0	5	
	8	2	33	43	7				0.154	19.0	5	
East: Gladstone Mt Larcom Rd(E)												
1 L	111			111	1				0.060	8.2	0	40
2 TR		258	30	288	10				0.180	2.1	12	
	111	258	30	399	8				0.180	3.8	12	
North: Targinnie Rd (N)												
1 LTR	10	2	1	13	31				0.026	12.9	1	
	10	2	1	13	31				0.026	12.9	1	
West: Gladstone Mt Larcom Rd(W)												
1 LT	1	39		40	16				0.022	0.2	0	35U
2 TR		133	12	145	16				0.097	3.6	8	
	1	172	12	185	16				0.097	2.9	8	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				640	10				0.180	4.7	12	
=====												

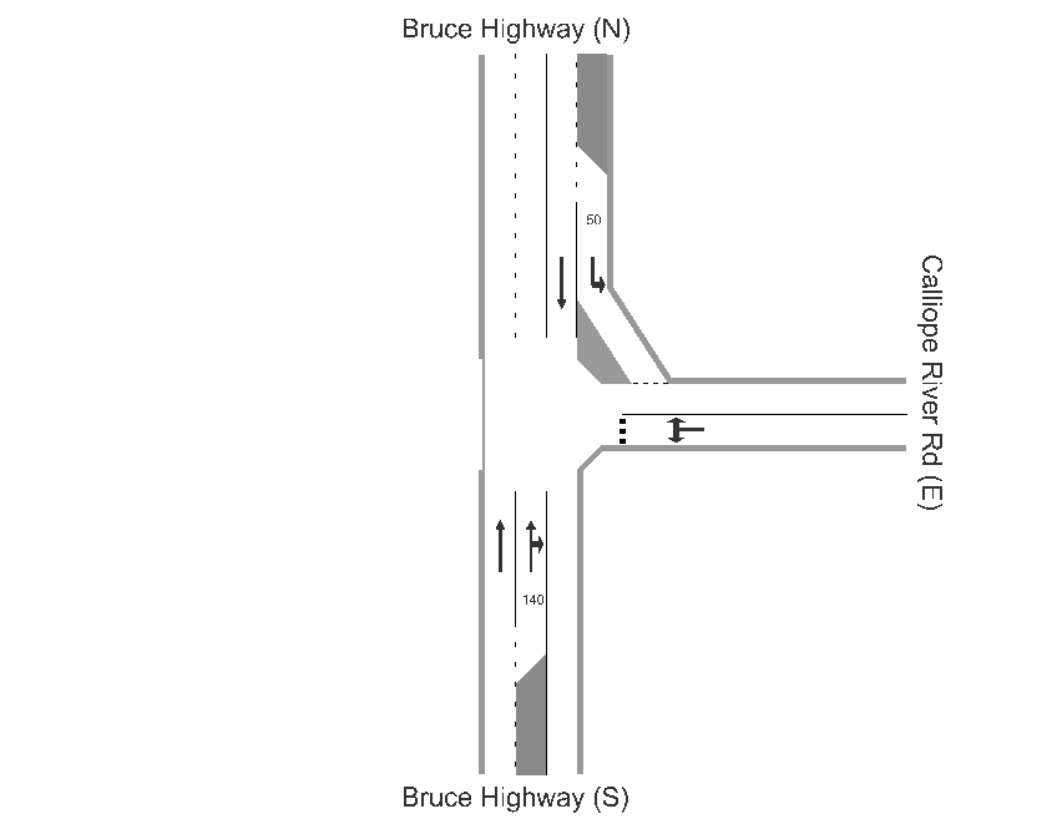
Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

Calliope River Road/Bruce Highway



2006 Traffic Volumes

5314 Calliope River Road/Bruce Highway
 2006 Existing Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Bruce Highway (S)											
1 T		35		35	25			0.022	0.0	0	U
2 TR		33	10	43	29			0.033	2.7	2	140
	0	68	10	78	27			0.033	1.5	2	
East: Calliope River Rd (E)											
1 LR	30		2	32	44			0.042	10.5	2	
	30	0	2	32	44			0.042	10.5	2	
North: Bruce Highway (N)											
1 L	7			7	29			0.008	8.4	0	50
2 T		49		49	29			0.031	0.0	0	
	7	49	0	56	29			0.031	1.1	0	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				166	31			0.042	3.1	2	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		35		35	24				0.022	0.0	0	U
2 TR		41	10	51	21				0.032	2.1	2	140
	0	76	10	86	22				0.032	1.2	2	
East: Calliope River Rd (E)												
1 LR	25		6	31	13				0.035	9.5	1	
	25	0	6	31	13				0.035	9.5	1	
North: Bruce Highway (N)												
1 L	5			5	0				0.004	7.6	0	50
2 T		90		90	30				0.058	0.0	0	
	5	90	0	95	28				0.058	0.4	0	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				212	24				0.058	2.1	2	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

2009 Traffic Volumes

5314 Calliope River Road/Bruce Highway
 2009 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		41		41	25				0.026	0.0	0	U
2 TR		38	12	50	29				0.039	2.8	2	140
	0	79	12	91	27				0.039	1.5	2	
East: Calliope River Rd (E)												
1 LR	35		2	37	43				0.049	10.5	2	
	35	0	2	37	43				0.049	10.5	2	
North: Bruce Highway (N)												
1 L	8			8	25				0.008	8.5	0	50
2 T		56		56	29				0.036	0.0	0	
	8	56	0	64	28				0.036	1.1	0	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				192	31				0.049	3.1	2	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2009 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 T		40		40	24				0.025	0.0	0	U
2 TR		47	12	59	21				0.037	2.2	2	140
	0	87	12	99	22				0.037	1.3	2	
East: Calliope River Rd (E)												
1 LR	29		7	36	14				0.042	9.6	1	
	29	0	7	36	14				0.042	9.6	1	
North: Bruce Highway (N)												
1 L	5			5	0				0.004	7.6	0	50
2 T		104		104	30				0.067	0.0	0	
	5	104	0	109	28				0.067	0.3	0	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				244	24				0.067	2.1	2	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2009 Background + Stage 1a Construction AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		50		50	26				0.031	0.0	0	U
2 TR		28	36	64	24				0.047	5.5	2	140
	0	78	36	114	25				0.047	3.1	2	
East: Calliope River Rd (E)												
1 LR	41		2	43	44				0.057	10.6	3	
	41	0	2	43	44				0.057	10.6	3	
North: Bruce Highway (N)												
1 L	8			8	25				0.009	8.5	0	50
2 T		59		59	27				0.038	0.0	0	
	8	59	0	67	27				0.038	1.0	0	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				224	29				0.057	3.9	3	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2009 Background + Stage 1a Construction PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		45		45	23				0.028	0.0	0	U
2 TR		45	18	63	23				0.042	3.2	2	140
	0	90	18	108	23				0.042	1.9	2	
East: Calliope River Rd (E)												
1 LR	53		7	60	13				0.067	9.6	2	
	53	0	7	60	13				0.067	9.6	2	
North: Bruce Highway (N)												
1 L	1			1	0				0.001	7.6	0	50
2 T		104		104	30				0.067	0.0	0	
	1	104	0	105	30				0.067	0.1	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				273	23				0.067	2.9	2	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

2011 Traffic Volumes

5314 Calliope River Road/Bruce Highway
 2011 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		44		44	25				0.028	0.0	0	U
2 TR		41	13	54	28				0.042	2.8	2	140
	0	85	13	98	27				0.042	1.5	2	
East: Calliope River Rd (E)												
1 LR	38		4	42	43				0.058	10.7	3	
	38	0	4	42	43				0.058	10.7	3	
North: Bruce Highway (N)												
1 L	9			9	33				0.010	8.5	0	50
2 T		61		61	30				0.039	0.0	0	
	9	61	0	70	30				0.039	1.1	0	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				210	31				0.058	3.2	3	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2011 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		44		44	24				0.027	0.0	0	U
2 TR		51	13	64	21				0.041	2.2	2	140
	0	95	13	108	22				0.041	1.3	2	
East: Calliope River Rd (E)												
1 LR	31		8	39	13				0.046	9.7	2	
	31	0	8	39	13				0.046	9.7	2	
North: Bruce Highway (N)												
1 L	5			5	0				0.004	7.6	0	50
2 T		113		113	30				0.073	0.0	0	
	5	113	0	118	29				0.073	0.3	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				265	24				0.073	2.1	2	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2011 Background + Stage 1a Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		47		47	25				0.029	0.0	0	U
2 TR		38	19	57	27				0.044	3.6	2	140
	0	85	19	104	26				0.044	2.0	2	
East: Calliope River Rd (E)												
1 LR	43		3	46	39				0.060	10.4	3	
	43	0	3	46	39				0.060	10.4	3	
North: Bruce Highway (N)												
1 L	9			9	33				0.010	8.6	0	50
2 T		61		61	30				0.039	0.0	0	
	9	61	0	70	30				0.039	1.1	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				220	30				0.060	3.5	3	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2011 Background + Stage 1a Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Bruce Highway (S)											
1 T		46		46	24			0.029	0.0	0	U
2 TR		49	18	67	21			0.043	2.9	2	140
	0	95	18	113	22			0.043	1.7	2	
East: Calliope River Rd (E)											
1 LR	37		8	45	13			0.053	9.7	2	
	37	0	8	45	13			0.053	9.7	2	
North: Bruce Highway (N)											
1 L	1			1	0			0.001	7.6	0	50
2 T		113		113	30			0.073	0.0	0	
	1	113	0	114	30			0.073	0.1	0	
ALL VEHICLES											
				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				272	24			0.073	2.3	2	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

2014 Traffic Volumes

5314 Calliope River Road/Bruce Highway
 2014 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st 2nd				
South: Bruce Highway (S)											
1 T		50		50	25			0.031	0.0	0	U
2 TR		45	14	59	29			0.047	2.9	3	140
	0	95	14	109	28			0.047	1.5	3	
East: Calliope River Rd (E)											
1 LR	42		4	46	43			0.064	10.9	3	
	42	0	4	46	43			0.064	10.9	3	
North: Bruce Highway (N)											
1 L	10			10	30			0.011	8.5	0	50
2 T		69		69	29			0.044	0.0	0	
	10	69	0	79	29			0.044	1.1	0	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				234	31			0.065	3.2	3	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2014 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		48		48	24				0.030	0.0	0	U
2 TR		58	14	72	20				0.045	2.2	2	140
	0	106	14	120	22				0.045	1.3	2	
East: Calliope River Rd (E)												
1 LR	35		8	43	14				0.052	9.9	2	
	35	0	8	43	14				0.052	9.9	2	
North: Bruce Highway (N)												
1 L	5			5	0				0.004	7.6	0	50
2 T		126		126	30				0.081	0.0	0	
	5	126	0	131	29				0.081	0.3	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				294	24				0.081	2.1	2	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 AM Peak

Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		58		58	25				0.036	0.0	0	U
2 TR		37	37	74	23				0.054	5.0	3	140
	0	95	37	132	24				0.054	2.8	3	
East: Calliope River Rd (E)												
1 LR	51		3	54	41				0.072	10.6	3	
	51	0	3	54	41				0.072	10.6	3	
North: Bruce Highway (N)												
1 L	10			10	30				0.011	8.6	0	50
2 T		69		69	29				0.044	0.0	0	
	10	69	0	79	29				0.044	1.1	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				265	29				0.072	3.9	3	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

314 Calliope River Road/Bruce Highway
 2014 Background + Stage 1a Operation + Stage 1b Construction Traffic Volumes
 PM Peak

Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		53		53	25				0.033	0.0	0	U
2 TR		53	23	76	22				0.050	3.4	3	140
	0	106	23	129	23				0.050	2.0	3	
East: Calliope River Rd (E)												
1 LR	57		8	65	12				0.075	9.7	3	
	57	0	8	65	12				0.075	9.7	3	
North: Bruce Highway (N)												
1 L	1			1	0				0.001	7.7	0	50
2 T		126		126	30				0.081	0.0	0	
	1	126	0	127	30				0.081	0.1	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				321	24				0.081	2.8	3	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

2016 Traffic Volumes

5314 Calliope River Road/Bruce Highway
 2016 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		49		49	25				0.031	0.0	0	U
2 TR		54	15	69	28				0.046	2.7	3	140
	0	103	15	118	27				0.046	1.6	3	
East: Calliope River Rd (E)												
1 LR	45		4	49	43				0.069	10.9	3	
	45	0	4	49	43				0.069	10.9	3	
North: Bruce Highway (N)												
1 L	11			11	27				0.012	8.5	0	50
2 T		74		74	28				0.047	0.0	0	
	11	74	0	85	28				0.047	1.1	0	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				252	31				0.069	3.2	3	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2016 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		53		53	24				0.033	0.0	0	U
2 TR		61	16	77	21				0.049	2.4	3	140
	0	114	16	130	22				0.049	1.4	3	
East: Calliope River Rd (E)												
1 LR	38		9	47	13				0.057	10.0	2	
	38	0	9	47	13				0.057	10.0	2	
North: Bruce Highway (N)												
1 L	5			5	0				0.004	7.6	0	50
2 T		136		136	30				0.088	0.0	0	
	5	136	0	141	29				0.088	0.3	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				318	24				0.088	2.2	3	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2016 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		52		52	25				0.033	0.0	0	U
2 TR		50	22	72	27				0.049	3.4	3	140
	0	102	22	124	27				0.049	2.0	3	
East: Calliope River Rd (E)												
1 LR	52		3	55	40				0.075	10.7	3	
	52	0	3	55	40				0.075	10.7	3	
North: Bruce Highway (N)												
1 L	11			11	27				0.012	8.5	0	50
2 T		74		74	28				0.047	0.0	0	
	11	74	0	85	28				0.047	1.1	0	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				264	30				0.075	3.5	3	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2016 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		55		55	24				0.035	0.0	0	U
2 TR		59	22	81	20				0.051	3.0	3	140
	0	114	22	136	21				0.051	1.8	3	
East: Calliope River Rd (E)												
1 LR	44		9	53	13				0.064	10.0	2	
	44	0	9	53	13				0.064	10.0	2	
North: Bruce Highway (N)												
1 L	1			1	0				0.001	7.6	0	50
2 T		135		135	30				0.087	0.0	0	
	1	135	0	136	30				0.087	0.1	0	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				325	24				0.087	2.4	3	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

2026 Traffic Volumes

5314 Calliope River Road/Bruce Highway
 2026 Background Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		69		69	25				0.043	0.0	0	U
2 TR		67	20	87	28				0.064	3.2	4	140
	0	136	20	156	27				0.064	1.8	4	
East: Calliope River Rd (E)												
1 LR	60		4	64	44				0.094	11.3	4	
	60	0	4	64	44				0.094	11.3	4	
North: Bruce Highway (N)												
1 L	14			14	29				0.015	8.5	1	50
2 T		98		98	29				0.063	0.0	0	
	14	98	0	112	29				0.063	1.1	1	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				332	31				0.095	3.4	4	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2026 Background Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)	Deg Sat	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd	x		
South: Bruce Highway (S)											
1 T		70		70	24			0.044	0.0	0	U
2 TR		82	20	102	21			0.065	2.6	4	140
	0	152	20	172	22			0.065	1.5	4	
East: Calliope River Rd (E)											
1 LR	50		12	62	13			0.083	10.5	3	
	50	0	12	62	13			0.083	10.5	3	
North: Bruce Highway (N)											
1 L	5			5	0			0.004	7.6	0	50
2 T		180		180	30			0.116	0.0	0	
	5	180	0	185	29			0.116	0.2	0	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				419	24			0.116	2.3	4	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2026 Background + Stage 1b Operation Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Bruce Highway (S)											
1 T		69		69	25			0.043	0.0	0	U
2 TR		67	27	94	27			0.064	3.4	4	140
	0	136	27	163	26			0.064	2.0	4	
East: Calliope River Rd (E)											
1 LR	67		4	71	41			0.102	11.2	5	
	67	0	4	71	41			0.102	11.2	5	
North: Bruce Highway (N)											
1 L	14			14	29			0.015	8.5	1	50
2 T		98		98	29			0.063	0.0	0	
	14	98	0	112	29			0.063	1.1	1	
=====											
ALL VEHICLES				Total Flow	% HV			Max X	Aver. Delay	Max Queue	
				346	30			0.103	3.6	5	
=====											

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

U Lane under-utilisation specified by the "User". This includes under-utilisation due to the specification of a downstream short lane.

5314 Calliope River Road/Bruce Highway
 2026 Background + Stage 1b Operation Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

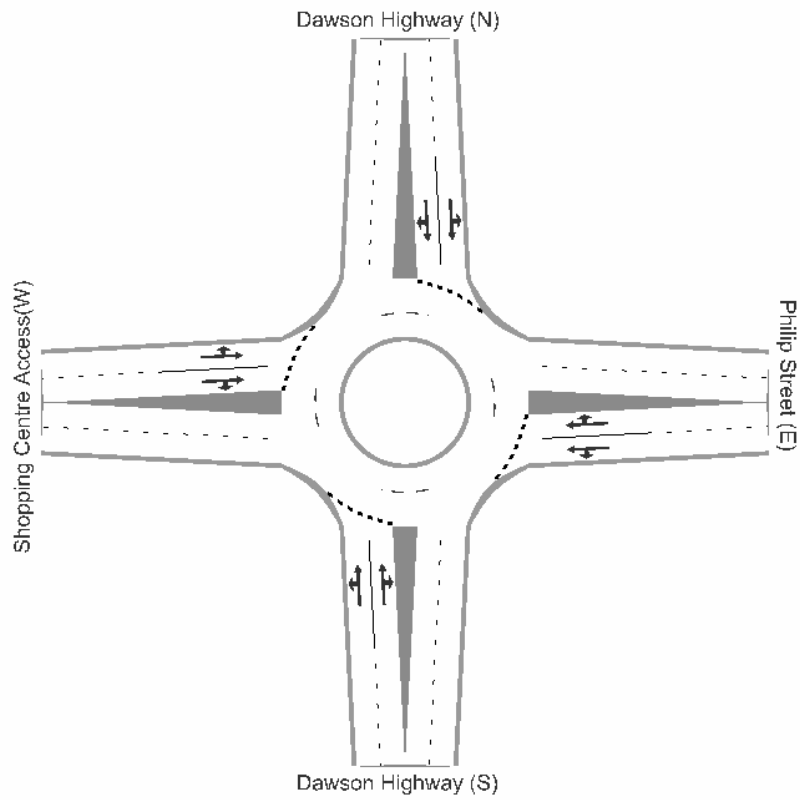
Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 T		74		74	24				0.046	0.0	0	U
2 TR		78	27	105	20				0.069	3.1	4	140
	0	152	27	179	22				0.069	1.8	4	
East: Calliope River Rd (E)												
1 LR	57		12	69	13				0.091	10.5	3	
	57	0	12	69	13				0.091	10.5	3	
North: Bruce Highway (N)												
1 L	1			1	0				0.001	7.7	0	50
2 T		180		180	30				0.116	0.0	0	
	1	180	0	181	30				0.116	0.0	0	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				429	24				0.116	2.5	4	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Dawson Highway/Phillip Street



2006 Traffic Volumes

5314 Dawson Highway/Philip St
 2006 Existing Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 LT	50	693		743	3				0.572	5.3	38	
2 TR		277	357	634	3				0.572	10.2	38	
	50	970	357	1377	3				0.572	7.5	38	
East: Philip Street (E)												
1 LT	323	34		357	3				0.278	5.8	13	
2 R			306	306	8				0.287	12.8	14	
	323	34	306	663	5				0.287	9.0	14	
North: Dawson Highway (N)												
1 LT	130	86		216	11				0.220	6.2	11	
2 TR		245	16	261	8				0.220	5.4	12	
	130	331	16	477	9				0.220	5.8	12	
West: Shopping Centre Access (W)												
1 L	63			63	0				0.090	9.2	5	
2 TR		18	9	27	7				0.057	12.1	3	
	63	18	9	90	2				0.090	10.1	5	
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2607	5				0.575	7.7	38	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Philip St
 2006 Existing Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Dawson Highway (S)											
1 LT	82	442		524	3			0.427	5.2	27	
2 TR		70	381	451	1			0.427	11.9	26	
	82	512	381	975	2			0.427	8.3	27	
East: Philip Street (E)											
1 L	619			619	3			0.689	11.0	55	
2 TR		99	266	365	4			0.547	15.0	33	
	619	99	266	984	4			0.689	12.5	55	
North: Dawson Highway (N)											
1 LT	326	334		660	2			0.589	7.9	44	
2 TR		546	1	547	2			0.589	8.1	42	
	326	880	1	1207	2			0.589	8.0	44	
West: Shopping Centre Access (W)											
1 LT	145	70		215	2			0.239	7.3	12	
2 TR		22	139	161	0			0.239	13.9	10	
	145	92	139	376	1			0.239	10.1	12	
ALL VEHICLES											
	Total Flow				% HV			Max X	Aver. Delay	Max Queue	
	3542				2			0.689	9.6	55	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

2009 Traffic Volumes

5314 Dawson Highway/Philip St
 2009 Background Traffic Volumes AM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Dawson Highway (S)												
1 LT	55	757		812	3				0.638	6.0	49	
2 TR		300	389	689	3				0.638	11.1	48	
	55	1057	389	1501	3				0.638	8.3	49	
East: Philip Street (E)												
1 LT	352	37		389	3				0.309	5.9	15	
2 R			334	334	8				0.322	13.0	16	
	352	37	334	723	5				0.322	9.2	16	
North: Dawson Highway (N)												
1 LT	142	93		235	11				0.248	6.5	13	
2 TR		268	17	285	8				0.248	5.6	14	
	142	361	17	520	9				0.248	6.0	14	
West: Shopping Centre Access (W)												
1 L	69			69	0				0.112	10.2	6	
2 TR		20	10	30	7				0.071	13.2	3	
	69	20	10	99	2				0.112	11.1	6	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				2843	5				0.640	8.2	49	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Dawson Highway/Philip St
 2009 Background Traffic Volumes PM Peak
 Intersection ID:
 Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

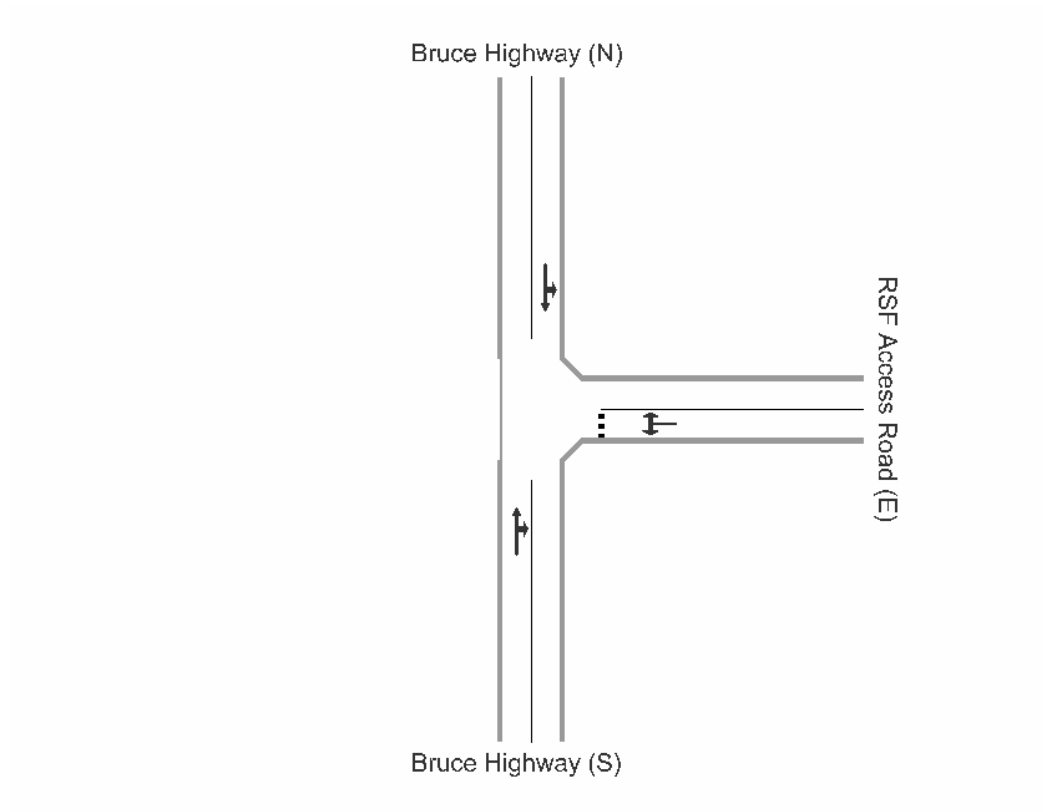
Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st 2nd	Grn	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Dawson Highway (S)												
1 LT	89	483		572	3				0.482	5.4	33	
2 TR		75	415	490	1				0.482	12.2	30	
	89	558	415	1062	2				0.482	8.5	33	
East: Philip Street (E)												
1 L	675			675	3				0.815	15.2	81	
2 TR		108	290	398	4				0.653	17.2	44	
	675	108	290	1073	3				0.815	16.0	81	
North: Dawson Highway (N)												
1 LT	355	367		722	2				0.672	9.4	58	
2 TR		592	1	593	2				0.672	9.9	55	
	355	959	1	1315	2				0.672	9.6	58	
West: Shopping Centre Access (W)												
1 LT	158	78		236	2				0.282	7.7	14	
2 TR		22	152	174	0				0.282	14.6	13	
	158	100	152	410	1				0.282	10.6	14	
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				3860	2				1.000	11.2	81	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Bruce Highway/RSF Access



2009 Traffic Volumes

5314 Bruce Highway/RSF Site Access - One Hour Peak
 2009 Background + Stage 1a & RSF Construction Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs) 1st 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot							
South: Bruce Highway (S)											
1 TR	25	45		70	4			0.040	7.9	2	
	0	25	45	70	4			0.040	7.9	2	
East: RSF Access Road (E)											
1 LR	1		1	2	0			0.002	12.6	0	
	1	0	1	2	0			0.002	12.6	0	
North: Bruce Highway (N)											
1 LT	5	4		9	33			0.006	7.0	0	
	5	4	0	9	33			0.006	7.0		
ALL VEHICLES											
	Total Flow			% HV				Max X	Aver. Delay	Max Queue	
	81			7				0.040	7.9	2	

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Bruce Highway/RSF Site Access - One Hour Peak
 2009 Background + Stage 1a & RSF Construction Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff (secs) 1st	Grn 2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot								
South: Bruce Highway (S)												
1 TR		4	1	5	60				0.004	2.5	0	
	0	4	1	5	60				0.004	2.5	0	
East: RSF Access Road (E)												
1 LR	45		5	50	0				0.043	12.6	1	
	45	0	5	50	0				0.043	12.6	1	
North: Bruce Highway (N)												
1 LT	1	25		26	12				0.015	0.5	0	
	1	25	0	26	12				0.015	0.5		
=====												
ALL VEHICLES				Total Flow 81	% HV 7				Max X 0.043	Aver. Delay 8.1	Max Queue 1	
=====												

Total flow period = 60 minutes. Peak flow period = 60 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Bruce Highway/RSF Site Access - 30 minute peak
 2009 Background + Stage 1a & RSF Construction Traffic Volumes AM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 TR	26	90	116	3					0.066	9.5	3	
	0	26	90	116	3				0.066	9.5	3	
East: RSF Access Road (E)												
1 LR	2		2	4	0				0.004	12.7	0	
	2	0	2	4	0				0.004	12.7	0	
North: Bruce Highway (N)												
1 LT	10	4		14	14				0.009	9.0	0	
	10	4	0	14	14				0.009	9.0		
=====												
ALL VEHICLES				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				134	4				0.066	9.6	3	
=====												

Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

5314 Bruce Highway/RSF Site Access - 30 minute peak
 2009 Background + Stage 1a & RSF Construction Traffic Volumes PM Peak
 Intersection ID:
 Give-Way Sign Controlled Intersection

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h)				%HV	Adj. Basic Satf.	Eff Grn (secs)		Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
	L	T	R	Tot			1st	2nd				
South: Bruce Highway (S)												
1 TR		4	2	6	33				0.004	4.2	0	
	0	4	2	6	33				0.004	4.2	0	
East: RSF Access Road (E)												
1 LR	90		10	100	0				0.086	12.7	3	
	90	0	10	100	0				0.086	12.7	3	
North: Bruce Highway (N)												
1 LT	2	26		28	14				0.017	0.9	0	
	2	26	0	28	14				0.017	0.9		
ALL VEHICLES												
				Total Flow	% HV				Max X	Aver. Delay	Max Queue	
				134	4				0.086	9.8	3	

Total flow period = 30 minutes. Peak flow period = 30 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Appendix C

Pavement Impact Assessment

GLADSTONE NICKEL PROJECT - REAGENTS AND EMISSIONS SUMMARY - 60,000tpa Ni

Material	Source (Landing Road, Rockhampton, Gladstone)	Load Size	Unit	Type of Truck	Estimated Vehicle Class	Loads/Year	Site Storage Quantities	Site Storage Location/Area
MAJOR REAGENTS								
Liquids Fuel	LPG Total	Gladstone Port	10	kL	Semi flat top	Class 9	13	10 kL
	Diesel Fuel Total	Gladstone Port	20	kL	Semi tanker	Class 9	47	20 kL
Quick Lime	Total	Rockhampton	35	t	B-Double tanker	Class 10	1486	400 t
Flocculant	Total	Gladstone Port	15	t	semi	Class 9	241	200 t
MISCELLANEOUS CHEMICALS								
Polymer	Total	Brisbane	20	t		Class 9	25	4t
Antiscalant	Total	Brisbane	20	t		Class 9	24	6t
Steel Grinding Balls	Total	Brisbane	25	t		Class 9	85	56 t
Lime Hydrate	Total	Rockhampton	25	t		Class 9	30	30 t
Catalyst	Total	Brisbane	20	ea	Semi	Class 9	25	400 drums
Caustic	Total	Gladstone Port	35	t	B-Double	Class 10	286	60 t
Filter Aid	Total	Brisbane	25	t	Semi	Class 9	55	NA
Polyacrylic Acid	Total	Brisbane	20	t		Class 9	21	35 t
Minor Miscellaneous Chemicals	Total	Brisbane/Sydney				Class 9	19	
Minor Miscellaneous Chemicals	Total	Brisbane/Perth				Class 3	55	
TOTAL LOADS						2410		
PROCESS PLANT EMISSIONS								
Solvent Extraction								
Organic cruds		Gladstone Port	2	t	truck	Class 3	2	nominal
Spent Activated Carbon		Gladstone Port	20	t	semi	Class 9	3	nominal
Ammonium Sulphate Plant								
Amsul Product		Landing Road	42	t	B-Double	Class 10	3952	25,000 t
Miscellaneous Solid Wastes	Total	Landing Road	20	t		Class 9	200	
TOTAL LOADS						4157		

60ktpa output

TRUCK NUMBERS - INCOMING					
Origin/Destinat	Class	Annually	Monthly	Weekly	Daily (340 days/yr)
Gladstone Port	Class 3	0	0	0	0
	Class 9	300	25	6	1
	Class 10	286	24	6	1
	TOTAL	586	49	11	2
Brisbane Perth	Class 3	55	5	1	0
	Class 9	254	21	5	1
	Class 10	0	0	0	0
	TOTAL	309	26	6	1
Rockhampton	Class 3	0	0	0	0
	Class 9	30	3	1	0
	Class 10	1,486	124	29	4
	TOTAL	1,516	126	29	4
TOTAL (Check)		2,410	201	46	7

TRUCK NUMBERS - OUTGOING					
Origin/Destinat	Class	Annually	Monthly	Weekly	Daily (340 days/yr)
Landing Road	Class 3	0	0	0	0
	Class 9	200	17	4	1
	Class 10	3,952	329	76	12
	TOTAL	4,152	346	80	12
Gladstone Port	Class 3	2	0	0	0
	Class 9	3	0	0	0
	Class 10	0	0	0	0
	TOTAL	5	0	0	0
TOTAL (Check)		4,157	346	80	12

Ave Pk hour vols

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GLADSTONE NICKEL PROJECT - REAGENTS AND EMISSIONS SUMMARY - 120,000tpa Ni

Material	Source (Landing Road, Rockhampton, Gladstone)	Load Size	Unit	Type of Truck	Estimated Vehicle Class	Loads/Year	Site Storage Quantities	Site Storage Location/Area
MAJOR REAGENTS								
Liquids Fuel								
LPG Total	Gladstone Port	10	kL	semi	Class 9	26	10 kL	Store
Diesel Fuel Total	Gladstone Port	20	kL	semi tanker	Class 9	97	20 kL	Fuel Dispensing Area adjacent Store
Lime								
Total	Rockhampton	35	t	B-Double	Class 10	2,943	250 t	Final Neutralisation
Flocculant								
Total	Gladstone Port	20	t	semi	Class 9	355	100 t	Store/Areas as Indicated
MISCELLANEOUS CHEMICALS								
Polymer								
Total	Brisbane	20	t		Class 9	52	30 t	Store/Destination as indicated
Antiscalant								
Total	Brisbane	20	t		Class 9	50	30 t	Store/Destination as indicated
Steel Grinding Balls								
Total	Brisbane	20	t		Class 9	174	100 t	Beneficiation
Lime Hydrate								
Total	Rockhampton	1000	t		Class 9	60	30 t	Sulphuric Acid Plant
Catalyst								
Total	Brisbane	20	ea	semi	Class 9	50	400 drums	Store
Caustic								
Total	Gladstone Port	35	t	B-double	Class 10	360	60 t	Store
Filter Aid								
Total	Brisbane	20	t	semi	Class 9	141	30 t	Store/Destination as indicated
Hydrogen Peroxide								
Total	Brisbane	4	t		Class 3	30	6 t	Store/Destination as indicated
Polyacrylic Acid								
Total	Brisbane	20	t		Class 9	43	30 t	Nickel Reduction
Minor Miscellaneous Chemicals								
Total	Brisbane				Class 9	25		
Minor Miscellaneous Chemicals								
Total	Brisbane/Perth				Class 3	83		
TOTAL LOADS						4,488		
PROCESS PLANT EMISSIONS								
Solvent Extraction								
Organic cruds	Gladstone Port	2	t		Class 3	3	nominal	Licensend Facility
Spent Activated Carbon	Gladstone Port	20	t		Class 9	5	nominal	Licensed Facility
Ammonium Sulphate Plant								
Amsul Product	Landing Road	42	t	B-Double	Class 10	8,167	50,000 t	Amsul Storage Shed
Miscellaneous Solid Wastes								
Total	Landing Road	20	t		Class 9	400		
TOTAL LOADS						8,575		

TRUCK NUMBERS - INCOMING

Origin/ Destination	Class	Annually	Monthly	Weekly	Daily (340 days/yr)
Gladstone Port	Class 3	0	0	0	0
	Class 9	477	40	9	1
	Class 10	360	30	7	1
	TOTAL	837	70	16	2
Brisbane Perth	Class 3	113	9	2	0
	Class 9	535	45	10	2
	Class 10	0	0	0	0
	TOTAL	648	54	12	2
Rockhampton	Class 3	0	0	0	0
	Class 9	60	5	1	0
	Class 10	2,943	245	57	9
	TOTAL	3,003	250	58	9
TOTAL (Check)		4,488	374	86	13

TRUCK NUMBERS - OUTGOING

Origin/ Destination	Class	Annually	Monthly	Weekly	Daily (340 days/yr)
Landing Road	Class 3	0	0	0	0
	Class 9	400	33	8	1
	Class 10	8,167	681	157	24
	TOTAL	8,567	714	165	25
Gladstone Port	Class 3	3	0	0	0
	Class 9	5	0	0	0
	Class 10	0	0	0	0
	TOTAL	8	1	0	0
TOTAL (Check)		8,575	1	0	0

Ave Pk hour vols

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Annual Heavy Vehicles - Summary

All Vehicles 2007

Link	Section	Direction	Two Axle Truck (0% loaded)	Two Axle Truck (50% loaded)	Two Axle Truck (100% loaded)	Six Axle Semi Trailer (0% loaded)	Six Axle Semi Trailer (50% loaded)	Six Axle Semi Trailer (100% loaded)	Nine Axle B Double (0% loaded)	Nine Axle B Double (100% loaded)
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0	18	0	0	26	0	0	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0	18	0	0	0	26	0	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	0	55	0	0	104	0	0	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0	55	0	0	0	104	0	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	0	55	0	0	156	0	0	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0	55	0	0	0	156	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	0	309	0	0	0	104	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0	309	0	0	104	0	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	0	291	0	0	0	78	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0	291	0	0	78	0	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	0	73	0	0	0	52	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0	73	0	0	52	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0	0	0	0	0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0	18	0	0	26	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0	18	0	0	0	26	0	0

All Vehicles 2008

Link	Section	Direction	Two Axle Truck (0% loaded)	Two Axle Truck (50% loaded)	Two Axle Truck (100% loaded)	Six Axle Semi Trailer (0% loaded)	Six Axle Semi Trailer (50% loaded)	Six Axle Semi Trailer (100% loaded)	Nine Axle B Double (0% loaded)	Nine Axle B Double (100% loaded)
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0	822	0	0	312	1790	0	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0	822	0	1790	0	312	0	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	0	2465	0	0	1248	1790	0	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0	2465	0	1790	0	1248	0	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	0	2465	0	0	1872	0	0	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0	2465	0	0	0	1872	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	0	13967	0	0	0	1248	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0	13967	0	0	1248	0	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	0	13146	0	0	0	936	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0	13146	0	0	936	0	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	0	3286	0	0	0	624	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0	3286	0	0	624	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	0	0	0	0	52	0	6288
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	0	0	52	0	0	6288	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0	0	0	0	0	52	0	6288
Dawson Highway	North of Bruce Highway	Northbound (A)	0	0	0	52	0	0	6288	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0	822	0	0	312	1790	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0	822	0	1790	0	312	0	0

All Vehicles 2009

Link	Section	Direction	Two Axle Truck (0% loaded)	Two Axle Truck (50% loaded)	Two Axle Truck (100% loaded)	Six Axle Semi Trailer (0% loaded)	Six Axle Semi Trailer (50% loaded)	Six Axle Semi Trailer (100% loaded)	Nine Axle B Double (0% loaded)	Nine Axle B Double (100% loaded)
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0	1279	0	0	312	1790	0	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0	1279	0	1790	0	312	0	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	0	3838	0	0	1248	1790	0	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0	3838	0	1790	0	1248	0	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	0	3838	0	0	1872	0	0	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0	3838	0	0	0	1872	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	0	21746	0	0	0	1248	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0	21746	0	0	1248	0	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	0	20467	0	0	0	936	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0	20467	0	0	936	0	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	0	5117	0	0	0	624	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0	5117	0	0	624	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	0	0	35	0	17	13	6275
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	0	0	17	0	35	6275	13
Dawson Highway	North of Bruce Highway	Southbound (G)	0	0	0	35	0	17	13	6275
Dawson Highway	North of Bruce Highway	Northbound (A)	0	0	0	17	0	35	6275	13
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0	1279	0	0	312	1790	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0	1279	0	1790	0	312	0	0

All Vehicles 2010

Link	Section	Direction	Two Axle Truck (0% loaded)	Two Axle Truck (50% loaded)	Two Axle Truck (100% loaded)	Six Axle Semi Trailer (0% loaded)	Six Axle Semi Trailer (50% loaded)	Six Axle Semi Trailer (100% loaded)	Nine Axle B Double (0% loaded)	Nine Axle B Double (100% loaded)
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0	335	0	23	234	0	1114	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0	335	0	0	0	257	0	1115
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	41	1006	0	213	936	0	1115	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0	1006	41	0	0	1149	0	1115
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	41	1006	0	213	1404	150	1115	2964
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0	1006	41	150	0	1617	2964	1115
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	2	5702	0	2	0	1161	0	215
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0	5702	2	225	936	2	215	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	2	5366	0	2	0	927	0	215
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0	5366	2	225	702	2	215	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	2	1342	0	2	0	693	0	215
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0	1342	2	225	468	2	215	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0	0	0	0	0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0	335	0	23	234	0	1115	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0	335	0	0	0	257	0	1115

Annual Heavy Vehicles - Summary

All Vehicles 2011

Link	Section	Direction	Two Axle Truck (0% loaded)	Two Axle Truck (50% loaded)	Two Axle Truck (100% loaded)	Six Axle Semi Trailer (0% loaded)	Six Axle Semi Trailer (50% loaded)	Six Axle Semi Trailer (100% loaded)	Nine Axle B Double (0% loaded)	Nine Axle B Double (100% loaded)
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0	0	0	30	0	0	1486	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0	0	0	0	0	30	0	1486
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	55	0	0	284	0	0	1486	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0	0	55	0	0	284	0	1486
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	55	0	0	284	0	200	1486	3952
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0	0	55	200	0	284	3952	1486
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	2	0	0	3	0	300	0	286
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0	0	2	300	0	3	286	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	2	0	0	3	0	300	0	286
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0	0	2	300	0	3	286	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	2	0	0	3	0	300	0	286
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0	0	2	300	0	3	286	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0	0	0	0	0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0	0	0	30	0	0	1486	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0	0	0	0	0	30	0	1486

All Vehicles 2012

Link	Section	Direction	Two Axle Truck (0% loaded)	Two Axle Truck (50% loaded)	Two Axle Truck (100% loaded)	Six Axle Semi Trailer (0% loaded)	Six Axle Semi Trailer (50% loaded)	Six Axle Semi Trailer (100% loaded)	Nine Axle B Double (0% loaded)	Nine Axle B Double (100% loaded)
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0	13	0	30	26	0	1486	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0	13	0	0	0	56	0	1486
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	55	39	0	284	104	0	1486	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0	39	55	0	0	388	0	1486
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	55	39	0	284	156	200	1486	3952
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0	39	55	200	0	440	3952	1486
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	2	221	0	3	0	404	0	286
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0	221	2	300	104	3	286	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	2	208	0	3	0	378	0	286
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0	208	2	300	78	3	286	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	2	73	0	3	0	352	0	286
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0	73	2	300	52	3	286	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0	0	0	0	0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0	13	0	30	26	0	1486	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0	13	0	0	0	56	0	1486

All Vehicles 2013

Link	Section	Direction	Two Axle Truck (0% loaded)	Two Axle Truck (50% loaded)	Two Axle Truck (100% loaded)	Six Axle Semi Trailer (0% loaded)	Six Axle Semi Trailer (50% loaded)	Six Axle Semi Trailer (100% loaded)	Nine Axle B Double (0% loaded)	Nine Axle B Double (100% loaded)
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0	497	0	30	312	0	1486	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0	497	0	0	0	342	0	1486
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	55	1490	0	284	1248	0	1486	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0	1490	55	0	0	1532	0	1486
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	55	1490	0	284	1872	200	1486	3952
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0	1490	55	200	0	2156	3952	1486
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	2	8442	0	3	0	1548	0	286
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0	8442	2	300	1248	3	286	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	2	7946	0	3	0	1236	0	286
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0	7946	2	300	936	3	286	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	2	3286	0	3	0	924	0	286
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0	3286	2	300	624	3	286	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0	0	0	0	0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0	497	0	30	312	0	1486	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0	497	0	0	0	342	0	1486

All Vehicles 2014

Link	Section	Direction	Two Axle Truck (0% loaded)	Two Axle Truck (50% loaded)	Two Axle Truck (100% loaded)	Six Axle Semi Trailer (0% loaded)	Six Axle Semi Trailer (50% loaded)	Six Axle Semi Trailer (100% loaded)	Nine Axle B Double (0% loaded)	Nine Axle B Double (100% loaded)
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0	845	0	30	312	0	1486	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0	845	0	0	0	342	0	1486
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	55	2535	0	284	1248	0	1486	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0	2535	55	0	0	1532	0	1486
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	55	2535	0	284	1872	200	1486	3952
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0	2535	55	200	0	2156	3952	1486
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	2	14365	0	3	0	1548	0	286
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0	14365	2	300	1248	3	286	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	2	13520	0	3	0	1236	0	286
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0	13520	2	300	936	3	286	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	2	5117	0	3	0	924	0	286
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0	5117	2	300	624	3	286	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0	0	0	0	0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0	845	0	30	312	0	1486	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0	845	0	0	0	342	0	1486

Expected Heavy Vehicle Numbers - Construction Stage 1a - Staff Movements

Staff Bus Trips 2007 728
 Staff Bus Trips 2008 32,864
 Staff Bus Trips 2009 51,168
 Staff Bus Trips 2010 13,416

Expected Heavy Vehicle Numbers During Construction Phase 1a - Staff Bus Pick Up/Drop Off (30 seater Bus)

Link	Section	Direction	%	%	Volume 2007	Volume 2008	Volume 2009	Volume 2010
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)		2.5%	18	822	1,279	335
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	5%		18	822	1,279	335
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)		7.5%	55	2,465	3,838	1,006
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	15%		55	2,465	3,838	1,006
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)		7.5%	55	2,465	3,838	1,006
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	15%		55	2,465	3,838	1,006
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)		42.5%	309	13,967	21,746	5,702
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	85%		309	13,967	21,746	5,702
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)		40.0%	291	13,146	20,467	5,366
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	80%		291	13,146	20,467	5,366
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)		10.0%	73	3,286	5,117	1,342
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	20%		73	3,286	5,117	1,342
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)		0.0%	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0%		0	0	0	0
Dawson Highway	North of Bruce Highway.	Southbound (G)		0.0%	0	0	0	0
Dawson Highway	North of Bruce Highway.	Northbound (A)	0%		0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)		2.5%	18	822	1,279	335
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	5%		18	822	1,279	335

Assessment is based on Class 3 Vehicles - 50% loaded

Expected Heavy Vehicle Numbers - Construction Stage 1b - Staff Movements

Staff Bus Trips 2012 520
 Staff Bus Trips 2013 19,864
 Staff Bus Trips 2014 33,800
 Staff Bus Trips 2015 8,112

Expected Heavy Vehicle Numbers During Construction Stage 1b - Staff Pick Up/Drop Off (30 seater Bus)

Link	Section	Direction	%	%	Volume 2012	Volume 2013	Volume 2014	Volume 2015
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)		2.5%	13	497	845	203
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	5%		13	497	845	203
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)		7.5%	39	1,490	2,535	608
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	15%		39	1,490	2,535	608
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)		7.5%	39	1,490	2,535	608
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	15%		39	1,490	2,535	608
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)		42.5%	221	8,442	14,365	3,448
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	85%		221	8,442	14,365	3,448
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)		40.0%	208	7,946	13,520	3,245
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	80%		208	7,946	13,520	3,245
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)		10.0%	73	3,286	5,117	1,342
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	20%		73	3,286	5,117	1,342
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)		0.0%	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0%		0	0	0	0
Dawson Highway	North of Bruce Highway.	Southbound (G)		0.0%	0	0	0	0
Dawson Highway	North of Bruce Highway.	Northbound (A)	0%		0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)		2.5%	13	497	845	203
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	5%		13	497	845	203

Assessment is based on Class 3 Vehicles - 50% loaded



Expected Heavy Vehicle Numbers During Construction - Deliveries (Semi-trailer)

Stage 1a
December 2007 - September 2010
Stage 1b
December 2012 - September 2015

Months of Operation
Deliveries per day
Deliveries per month (6 day week)
Annual Deliveries
Incoming Trips (assumed to be 100% loaded)
Outgoing Trips (assumed to be 50% loaded)

2007
1
260
260
260
260

2008
12
10
3120
3120
3120

2009
12
10
260
2340
2340

2010
9
10
260
2340
2,340

2011
0
260
0
0
0

2012
1
260
260
260
260

2013
12
10
3120
3120
3,120

2014
12
10
2340
3120
3,120

2015
9
10
260
2340
2,340

Expected Annual Heavy Vehicle Numbers During Stage 1a Construction - 100% Loaded

Link	Section	Direction	%	%	Volume 2007	Volume 2008	Volume 2009	Volume 2010	Volume 2011	Volume 2012	Volume 2013	Volume 2014	Volume 2015
Gladstone-Mt Larcom Rd	Bruce Highway to Targhnie Road	Southbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targhnie Road	Northbound (A)	10%	10.0%	26	312	312	234	0	26	312	312	234
Gladstone-Mt Larcom Rd	Targhnie Road to Landing Road	Southbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	Targhnie Road to Landing Road	Northbound (A)	40%	40.0%	104	1,248	1,248	936	0	104	1,248	1,248	936
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	60%	60.0%	156	1,872	1,872	1,404	0	156	1,872	1,872	1,404
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	40%	40.0%	104	1,248	1,248	936	0	104	1,248	1,248	936
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	40%	0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)		30.0%	78	936	936	702	0	78	936	936	702
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	30%	0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)		20.0%	52	624	624	468	0	52	624	624	468
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	20%	0.0%	0	0	0	0	0	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0%	0.0%	0	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Southbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0%	0.0%	0	0	0	0	0	0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	10%	10.0%	26	312	312	234	0	26	312	312	234

Note: Semi-trailers are assessed as Class 9 Vehicles - 100% loaded

Expected Annual Heavy Vehicle Numbers During Stage 1a Construction - 50% Loaded

Link	Section	Direction	%	%	Volume 2007	Volume 2008	Volume 2009	Volume 2010	Volume 2011	Volume 2012	Volume 2013	Volume 2014	Volume 2015
Gladstone-Mt Larcom Rd	Bruce Highway to Targhnie Road	Southbound (G)		10.0%	26	312	312	234	0	26	312	312	234
Gladstone-Mt Larcom Rd	Bruce Highway to Targhnie Road	Northbound (A)	10%	0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	Targhnie Road to Landing Road	Southbound (G)		40.0%	104	1,248	1,248	936	0	104	1,248	1,248	936
Gladstone-Mt Larcom Rd	Targhnie Road to Landing Road	Northbound (A)	40%	0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)		60.0%	156	1,872	1,872	1,404	0	156	1,872	1,872	1,404
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	60%	0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	40%	40.0%	104	1,248	1,248	936	0	104	1,248	1,248	936
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	30%	30.0%	78	936	936	702	0	78	936	936	702
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	20%	20.0%	52	624	624	468	0	52	624	624	468
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0%	0.0%	0	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Southbound (G)		0.0%	0	0	0	0	0	0	0	0	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0%	0.0%	0	0	0	0	0	0	0	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)		10.0%	26	312	312	234	0	26	312	312	234
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	10%	0.0%	0	0	0	0	0	0	0	0	0

Assessment is based on Class 9 Vehicles - 50% loaded

Stage 1a Operation (April 2010 - April 2015)

Expected Annual Heavy Vehicle Numbers During Stage 1a Operations - Loaded

Link	Section	Direction	%	Class 3	%	Class 9	%	Class 10
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0.00%	0	1.24%	30	61.64%	1,486
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	2.28%	55	11.76%	284	61.64%	1,486
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	0.00%	0	4.81%	200	95.07%	3,952
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	2.28%	55	11.76%	284	61.64%	1,486
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	0.00%	0	12.45%	300	11.86%	286
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0.05%	2	0.07%	3	0.00%	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	0.00%	0	12.45%	300	11.86%	286
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0.05%	2	0.07%	3	0.00%	0
Gladstone-Mt Larcom Rd	East of Blain Drive	Westbound (G)	0.00%	0	12.45%	300	11.86%	286
Gladstone-Mt Larcom Rd	East of Blain Drive	Eastbound (A)	0.05%	2	0.07%	3	0.00%	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0.00%	0	0.00%	0	0.00%	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0.00%	0	1.24%	30	61.64%	1,486

Class 10 Vehicles are assessed as 9 Axle B Doubles

Incoming 2410

Outgoing 4157

Expected Annual Heavy Vehicle Numbers During Stage 1a Operations - Unloaded

Link	Section	Direction	%	Class 3	%	Class 9	%	Class 10
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0.00%	0	1.24%	30	61.64%	1,486
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	2.28%	55	11.76%	284	61.64%	1,486
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	2.28%	55	11.76%	284	61.64%	1,486
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0.00%	0	4.81%	200	95.07%	3,952
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	0.05%	2	0.07%	3	0.00%	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0.00%	0	12.45%	300	11.86%	286
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	0.05%	2	0.07%	3	0.00%	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0.00%	0	12.45%	300	11.86%	286
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	0.05%	2	0.07%	3	0.00%	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0.00%	0	12.45%	300	11.86%	286
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0.00%	0	1.24%	30	61.64%	1,486
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0.00%	0	0.00%	0	0.00%	0

Class 10 Vehicles are assessed as 9 Axle B Doubles

Incoming 4157

Outgoing 2410

Stage 1b Operation (April 2015 onwards)

Expected Annual Heavy Vehicle Numbers During Stage 1b Operations - Loaded

Link	Section	Direction	%	Class 3	%	Class 9	%	Class 10
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0.00%	0	1.34%	60	65.57%	2,943
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	2.52%	113	13.26%	595	65.57%	2,943
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	0.00%	0	4.66%	400	95.24%	8,167
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	2.52%	113	13.26%	595	65.57%	2,943
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	0.00%	0	10.63%	477	8.02%	360
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0.03%	3	0.06%	5	0.00%	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	0.00%	0	10.63%	477	8.02%	360
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0.03%	3	0.06%	5	0.00%	0
Gladstone-Mt Larcom Rd	East of Blain Drive	Westbound (G)	0.00%	0	10.63%	477	8.02%	360
Gladstone-Mt Larcom Rd	East of Blain Drive	Eastbound (A)	0.03%	3	0.06%	5	0.00%	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0.00%	0	0.00%	0	0.00%	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0.00%	0	1.34%	60	65.57%	2,943
		Incoming	4488					
		Outgoing	8575					

Expected Annual Heavy Vehicle Numbers During Stage 1b Operations - Unloaded

Link	Section	Direction	%	Class 3	%	Class 9	%	Class 10
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	0.00%	0	1.34%	60	65.57%	2,943
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	2.52%	113	13.26%	595	65.57%	2,943
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	2.52%	113	13.26%	595	65.57%	2,943
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0.00%	0	4.66%	400	95.24%	8,167
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	0.03%	3	0.06%	5	0.00%	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0.00%	0	10.63%	477	8.02%	360
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	0.03%	3	0.06%	5	0.00%	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0.00%	0	10.63%	477	8.02%	360
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	0.03%	3	0.06%	5	0.00%	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0.00%	0	10.63%	477	8.02%	360
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0.00%	0	0.00%	0	0.00%	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0.00%	0	0.00%	0	0.00%	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	0.00%	0	1.34%	60	65.57%	2,943
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0.00%	0	0.00%	0	0.00%	0
		Incoming	8575					
		Outgoing	4488					

Pipeline Construction (2008 - 2009)

Total Deliveries: 3580 Semi-trailers
 Annual Deliveries 2008 1790 Semi-trailers
 Annual Deliveries 2009 1790 Semi-trailers
 100% Loaded from Landing Road to Campsites
 0% Loaded from Campsites to Landing Road (return trip)

Expected Annual Heavy Vehicle Numbers (2008)

Link	Section	Direction	Loaded	Unloaded
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	1,790	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0	1,790
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	1,790	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0	1,790
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	0	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	0
Dawson Highway	North of Bruce Highway.	Southbound (G)	0	0
Dawson Highway	North of Bruce Highway.	Northbound (A)	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	1,790	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0	1,790

Assessment is based on Class 9 Vehicles

Expected Annual Heavy Vehicle Numbers (2009)

Link	Section	Direction	Loaded	Unloaded
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	1,790	0
Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	0	1,790
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	1,790	0
Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	0	1,790
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	0	0
Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	0	0
Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	0	0
Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Westbound (G)	0	0
Gladstone-Mt Larcom Rd	West of Blain Drive	Eastbound (A)	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	0
Dawson Highway	North of Bruce Highway.	Southbound (G)	0	0
Dawson Highway	North of Bruce Highway.	Northbound (A)	0	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Westbound (G)	1,790	0
Bruce Highway	West of Gladstone Mt-Larcom Road	Eastbound (A)	0	1,790

Assessment is based on Class 9 Vehicles

Expected Heavy Vehicle Numbers During RSF Construction

Initial Mobilisation (2008)

Total Loads

Delivery	Total Loads	Vehicle Types
Site Sheds	12	Semi Trailers
Float Loads Up to 30t	40	B Double
Float Loads Up to 60t	20	Specials
Float Loads Up to 70t	12	Specials
Float Loads Up to 80t	3	Specials
Float Loads Up to 90t	2	Specials
Total Loads	105	Equivalent Six Axle Semi Trailer
	40	Nine Axle B Double

Semi Trailer Capacity* 26.5 tonnes

*source: 5314 Pavement Impact Assessment- truck ESA's

2 Year Construction (2008 - 2009)

Annual Loads

Delivery	Loads	Total Loads	Vehicle Types
Fuel	2 per week	104	Nine Axle B Double
General	1 per week	52	Six Axle Semi Trailer
Sand	40 per day	12480	Nine Axle B Double
Rock	40 per day	12480	Nine Axle B Double
Total Loads		52	Six Axle Semi Trailer
		25064	Nine Axle B Double

Demobilisation (2009)

As per Initial mobilisation

Distirbution - General

Gladstone via Dawson Highway	33%
Rockahampton via Bruce Highway	33%
Calliope via Bruce Highway	33%

Distirbution - Sand

Calliope via Bruce Highway	100%
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Distirbution - Rock

Gladstone via Dawson Highway	50%
Calliope via Bruce Highway	50%

Initial Mobilisation (2008)

Link	Section	Direction	Six Axle Semi Trailer (0% loaded)	Six Axle Semi Trailer (100% loaded)	Nine Axle B Double (0% loaded)	Nine Axle B Double (100% loaded)
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	35	0	13
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	35	0	13	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0	35	0	13
Dawson Highway	North of Bruce Highway	Northbound (A)	35	0	13	0

Annual Loads During Construction

Link	Section	Direction	Trailer (0% loaded)	Trailer (100% loaded)	(0% loaded)	(100% loaded)
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	0	17	0	6,275
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	17	0	6,275	0
Dawson Highway	North of Bruce Highway	Southbound (G)	0	17	0	6,275
Dawson Highway	North of Bruce Highway	Northbound (A)	17	0	6,275	0

Demobilisation (2009)

Link	Section	Direction	Trailer (0% loaded)	Trailer (100% loaded)	(0% loaded)	(100% loaded)
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	35	0	13	0
Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	0	35	0	13
Dawson Highway	North of Bruce Highway	Southbound (G)	35	0	13	0
Dawson Highway	North of Bruce Highway	Northbound (A)	0	35	0	13

Detailed Pavement Impact Assessment

Project: Gladstone Pacific Nickel

Scenario: All Scenarios Combined



Road	Section	Direction	Length (KM)	% Growth Per Annum	2006 Existing Daily Volume (vpd)	Existing Heavy Vehicle Daily Volume (vpd)	Existing Annual ESA	Base Roughness	Base Year	Roughness Count Deficiency	Roughness Deterioration Rate		Rehabilitation Year (No Development)	ESA Breakpoint (No Development)	Breakpoint Year (With Development)	Bring Forward Time Period (Years)	Bring Forward (%)
1	Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Southbound (G)	15.9	5.00%	1,326	225	262,800	88.0	2006	120.0	3.0	2016.7	3,898,638	2016.7	0.00	n/a
2	Gladstone-Mt Larcom Rd	Bruce Highway to Targinie Road	Northbound (A)	15.9	5.00%	1,359	237	276,816	88.0	2006	120.0	3.0	2016.7	4,106,565	2016.5	0.20	n/a
3	Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Southbound (G)	4	5.00%	1,326	225	262,800	88.0	2006	120.0	3.0	2016.7	3,898,638	2016.6	0.10	n/a
4	Gladstone-Mt Larcom Rd	Targinie Road to Landing Road	Northbound (A)	4	5.00%	1,359	237	276,816	88.0	2006	120.0	3.0	2016.7	4,106,565	2016.4	0.30	n/a
5	Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Westbound (G)	2.5	5.00%	2,869	495	578,160	88.0	2006	120.0	3.0	2016.7	8,577,004	2016.4	0.30	n/a
6	Gladstone-Mt Larcom Rd	Landing Road to Reid Road	Eastbound (A)	2.5	5.00%	2,902	466	544,288	88.0	2006	120.0	3.0	2016.7	8,074,512	2016.5	0.20	n/a
7	Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Westbound (G)	6	5.00%	2,869	495	578,160	88.0	2006	120.0	3.0	2016.7	8,577,004	2016.5	0.20	n/a
8	Gladstone-Mt Larcom Rd	Reid Road to Red Rover Road	Eastbound (A)	6	5.00%	2,902	466	544,288	88.0	2006	120.0	3.0	2016.7	8,074,512	2016.6	0.10	n/a
9	Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Westbound (G)	0.5	5.00%	3,103	385	449,680	90.0	2006	120.0	3.0	2016.0	6,183,100	2015.8	0.20	n/a
10	Gladstone-Mt Larcom Rd	Red Rover Road to Blain Drive	Eastbound (A)	0.5	5.00%	3,122	390	455,520	90.0	2006	120.0	3.0	2016.0	6,263,400	2015.8	0.20	n/a
11	Gladstone-Mt Larcom Rd	East of Blain Drive	Westbound (G)	1.9	5.00%	2,955	359	419,312	75.0	2006	120.0	3.0	2021.0	9,224,864	2020.9	0.10	n/a
12	Gladstone-Mt Larcom Rd	East of Blain Drive	Eastbound (A)	1.9	5.00%	2,743	360	420,480	75.0	2006	120.0	3.0	2021.0	9,250,560	2021.0	0.00	n/a
13	Dawson Highway	West of Don Young Dr (Red Rover Rd)	Southbound (G)	3.2	5.00%	2,732	169	197,392	65.0	2006	120.0	3.0	2024.4	5,592,115	2024.2	0.20	n/a
14	Dawson Highway	West of Don Young Dr (Red Rover Rd)	Northbound (A)	3.2	5.00%	2,741	178	207,904	65.0	2006	120.0	3.0	2024.4	5,889,920	2024.4	0.00	n/a
15	Dawson Highway	North of Bruce Highway	Southbound (G)	8.7	5.00%	2,116	176	205,568	65.0	2006	120.0	3.0	2024.4	5,823,741	2024.2	0.20	n/a
16	Dawson Highway	North of Bruce Highway	Northbound (A)	8.7	5.00%	2,309	189	220,752	65.0	2006	120.0	3.0	2024.4	6,253,904	2024.4	0.00	n/a

Notes:

- Existing pavement roughness calculated from 2004 data using a 3 counts/year roughness increase (advised by DMR)
- Rehabilitation years calculated by determining the year at which the pavement roughness will reach the deficiency limit assuming a constant deterioration rate of 3 counts per annum (as discussed with DMR)
- ESA Breakpoint (No development) is the anticipated ESA loading at the time of rehabilitation assuming appropriate background traffic growth in ESAs for the life of the pavement.
- The Rehabilitation year with development identifies the year at which the ESA breakpoint (no development) is reached with the additional ESA loading generated by the development
- Bring forward percentage is the difference in net present value percentage between the 2 rehabilitation years identified (with and without development)

История науки



Road	Section	Length (km)	Annual Background ESA's (Two-Way)																			
			2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Gladstone-Mt Larcom Rd	Bruce Highway to Targintie Road	15.9	539,616	566,597	593,578	620,558	647,539	674,520	701,501	728,482	755,462	782,443	809,424	836,405	863,386	890,366	917,347	944,328	971,309	998,290	1,025,270	1,052,251
	Targintie Road to Landing Road	4	539,616	566,597	593,578	620,558	647,539	674,520	701,501	728,482	755,462	782,443	809,424	836,405	863,386	890,366	917,347	944,328	971,309	998,290	1,025,270	1,052,251
	Landing Road to Reid Road	2.5	1,122,448	1,178,570	1,234,693	1,290,815	1,346,938	1,403,060	1,459,182	1,515,305	1,571,427	1,627,550	1,683,672	1,739,794	1,795,917	1,852,039	1,908,162	1,964,284	2,020,406	2,076,529	2,132,651	2,188,774
	Reid Road to Red Rover Road	6	1,122,448	1,178,570	1,234,693	1,290,815	1,346,938	1,403,060	1,459,182	1,515,305	1,571,427	1,627,550	1,683,672	1,739,794	1,795,917	1,852,039	1,908,162	1,964,284	2,020,406	2,076,529	2,132,651	2,188,774
	Red Rover Road to Blain Drive	0.5	939,290	950,460	965,720	1,040,980	1,088,240	1,131,500	1,176,760	1,220,020	1,267,280	1,312,540	1,357,800	1,403,060	1,448,320	1,493,580	1,538,840	1,584,100	1,629,360	1,674,620	1,719,880	1,765,140
	East of Blain Drive	1.9	839,792	881,782	923,771	965,761	1,007,750	1,049,740	1,091,730	1,133,719	1,175,709	1,217,698	1,259,688	1,301,678	1,343,667	1,385,657	1,427,646	1,469,636	1,511,628	1,553,618	1,595,608	1,637,594
Dawson Highway	West of Don Young Dr	3.2	405,296	425,561	445,826	466,090	486,355	506,620	526,885	547,150	567,414	587,679	607,944	628,209	648,474	668,739	689,003	709,268	729,533	749,798	770,062	790,327
	North of Bruce Highway	8.7	426,320	447,636	468,952	490,268	511,584	532,900	554,216	575,532	596,848	618,164	639,480	660,796	682,112	703,428	724,744	746,060	767,376	788,692	810,008	831,324

[illegible][illegible][illegible][illegible]

Pipeline Heavy Vehicle Impacts - Scoping

2008

Link	Location	Direction	Length	% Growth per annum	Existing Daily Flow (vpd)		Base Year	Assessment Year	ESA Factor (No. of ESAs per Heavy Vehicle)	ESA/Annum	Development ESAs - 100% Loaded		Development ESAs - 0% Loaded	Development	ESA/annum	Percentage Change
					Total	Heavy										
Gladstone - Mt Larcom Road	Landing Road - Targinie Road	Westbound (G)	4	5%	1205	204	2004	2008	2.80	250341	9129	0	9129	0	9129	3.6%
Gladstone - Mt Larcom Road	Landing Road - Targinie Road	Eastbound (A)	4	5%	1235	216	2004	2008	2.80	264450	0	913	913	0	913	0.3%
Gladstone - Mt Larcom Road	Targinie Road - Bruce Highway	Westbound (G)	15.9	5%	1205	204	2004	2008	2.80	250341	9129	0	9129	0	9129	3.6%
Gladstone - Mt Larcom Road	Targinie Road - Bruce Highway	Eastbound (A)	15.9	5%	1235	216	2004	2008	2.80	264450	0	913	913	0	913	0.3%
Bruce Highway	Gladstone - Mt Larcom Rd to Raglan Creek	Northbound (G)	39.91	5%	2250	547	2004	2008	2.80	671362	9129	0	9129	0	9129	1.4%
Bruce Highway	Gladstone - Mt Larcom Rd to Raglan Creek	Southbound (A)	39.91	5%	2268	519	2004	2008	2.80	636680	0	913	913	0	913	0.1%
Bruce Highway	Gavial Creek	Northbound (G)	5.45	5%	2499	557	2005	2008	2.80	654674	6086	0	6086	0	6086	0.9%
Bruce Highway	Gavial Creek	Southbound (A)	5.45	5%	2330	536	2005	2008	2.80	630117	0	609	609	0	609	0.1%
Rockhampton - Ridglands Rd	Bruce Highway to end	Westbound (G)	28.88	5%	2986	125	2005	2008	3.20	168453	3043	0	3043	0	3043	2%
Rockhampton - Ridglands Rd	Bruce Highway to end	Eastbound (A)	28.88	5%	1613	74	2005	2008	3.20	99013	0	304	304	0	304	0%

2009

Link	Location	Direction	Length	% Growth per annum	Existing Daily Flow (vpd)		Base Year	Assessment Year	ESA Factor (No. of ESAs per Heavy Vehicle)	ESA/Annum	Development ESAs - 100% Loaded		Development ESAs - 0% Loaded	Development	ESA/annum	Percentage Change
					Total	Heavy										
Gladstone - Mt Larcom Road	Landing Road - Targinie Road	Westbound (G)	4	5%	1205	204	2004	2008	2.80	250341	9129	0	9129	0	9129	3.6%
Gladstone - Mt Larcom Road	Landing Road - Targinie Road	Eastbound (A)	4	5%	1235	216	2004	2008	2.80	264450	0	913	913	0	913	0.3%
Gladstone - Mt Larcom Road	Targinie Road - Bruce Highway	Westbound (G)	15.9	5%	1205	204	2004	2008	2.80	250341	9129	0	9129	0	9129	3.6%
Gladstone - Mt Larcom Road	Targinie Road - Bruce Highway	Eastbound (A)	15.9	5%	1235	216	2004	2008	2.80	264450	0	913	913	0	913	0.3%
Bruce Highway	Gladstone - Mt Larcom Rd to Raglan Creek	Northbound (G)	39.91	5%	2250	547	2004	2009	2.80	699335	9129	0	9129	0	9129	1.3%
Bruce Highway	Gladstone - Mt Larcom Rd to Raglan Creek	Southbound (A)	39.91	5%	2268	519	2004	2009	2.80	663208	0	913	913	0	913	0.1%
Bruce Highway	Gavial Creek	Northbound (G)	5.45	5%	2499	557	2005	2009	2.80	683138	6086	0	6086	0	6086	0.9%
Bruce Highway	Gavial Creek	Southbound (A)	5.45	5%	2330	536	2005	2009	2.80	657514	0	609	609	0	609	0.1%
Rockhampton - Ridglands Rd	Bruce Highway to end	Westbound (G)	28.9	5%	2986	125	2005	2009	3.20	175777	3043	0	3043	0	3043	2%
Rockhampton - Ridglands Rd	Bruce Highway to end	Eastbound (A)	28.9	5%	1613	74	2005	2009	3.20	103318	0	304	304	0	304	0%